

CUSTOMER: SMA SOLAR TECHNOLOGY AG

## tecRacer renews web server infrastructure for SMA

As a leading global specialist in photovoltaic and storage system technology, the SMA Group is creating the conditions today for tomorrow's decentralised and renewable energy supply. SMA's portfolio includes a wide range of efficient solar and battery inverters, holistic system solutions for photovoltaic plants and storage systems of all power classes, intelligent energy management systems, as well as charging solutions for electric vehicles and power-to-gas applications. Digital energy and comprehensive services, including operational management and maintenance services for photovoltaic power plants, round off the range of products and services. The existing web server environment needed to be revised to a highly scalable and highly available multi-server system. In addition, outdated software could no longer be updated. tecRacer renewed the web server infrastructure for all of SMA's country sites.

### The new infrastructure required due to no longer supported software

For various reasons, the old system still needs to meet the requirements. For example, software versions that were no longer supported were being used. Some proprietary software had been used. But the implementation of the website architecture also contributed to this. Patching the operating system and the associated components and updating the Typo3 application could no longer be carried out. As an APN Premier Consulting Partner in the APN Amazon Partner Network, tecRacer refined the web server infrastructure for all SMA country sites using Infrastructure as Code and Chef.



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### Parallel operation until transfer, now scalable and automated

The old environment had to remain operational until all websites could be transferred to the new environment. The new web server environment was redesigned from scratch in parallel. It is now highly available, scalable and fully automated. tecRacer implemented the latest Ubuntu operating system and component versions. The team also worked closely with SMA's backend service providers to provide all the necessary components and configurations for using the latest versions of the content management system Typo3. By using as many native services from Amazon Web Services (AWS) as possible, automation is significantly simplified. The deployment of the software is also carried out via CodeTools from AWS.



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### Load test shows: Double performance compared to before

tecRacer worked closely with SMA and other service providers to design the environment and implemented it via CDK - Infrastructure as Code - and the EC2 instances using chef.io. Great attention was paid to maximum performance and reliability while at the same time optimising costs. Content delivery networks handle server instances of the load of the individual web. Different file types are provided via S3 and Cloudfront, which are integrated into the web pages of SMA. The country code of a web page no longer plays a role. The same data pool is always accessed. This saves resources and administrative work. Thanks to IaC and Chef.io, disaster recovery is possible in a minimum of time.

For example, web server instances can be easily replaced without manual configuration effort. Due to the scalability, resources can be used more sparingly overall: two cases by default, a maximum of four instances under load. A load test has shown that the new environment offers twice the performance of the old one.

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**Contact person at the customer:**

Michael Kleim, IT-Consultant, Niestetal:

*„tecRacer was significantly involved in the conception, set-up and operation of our new web server infrastructure and has provided us with a future-proof system for the coming years. By comparison with the old environment, we now get twice the performance with maximum cost optimisation. That's a significant saving!“*



**Project goals**

- New web server environment as a highly scalable and highly available multi-server system
- Scalable, highly available and automated system

**Project duration**

since December 2021

**Project performance tecRacer**

- Refinement of the web server infrastructure for all SMA country sites using Infrastructure as Code and chef
- Parallel operation of the old and new system
- Automation through many AWS services
- Software deployment via CodeTools from AWS

**Tools used**

- Infrastructure as Code: CDK
- Orchestration: Chef.io
- Content Delivery Network: Cloudfront
- Shared Volumes: ElasticFilesystem
- Deployment: CodeCommit, CodePipeline, CodeBuild and CodeDeploy
- Backup: AWS Backup
- Patching: AWS Systems Manager
- Database: Amazon Aurora - MySQL
- AWS EC2 AutoScaling

**About tecRacer**

tecRacer is based in Hanover and has offices in Duisburg; Frankfurt am Main, Hamburg, Munich, Vienna, Lisbon and Lucerne. It consists of the division's Cloud Consulting - Amazon Web Services, Agile App Development - Web & Mobile and Managed Services.

tecRacer is an Amazon Web Services Authorised Training, Premier Consulting and audited Managed Services Partner and offers official training, consulting, projects and managed hosting around Amazon Web Services.

tecRacer was founded in 1999 as the business unit „iRacer“ of Herrlich & Ramuschkat GmbH. In 2006, tecRacer GmbH & Co. KG was founded as a separate company. Today, the owner-managed company employs more than 120 permanent staff and has more than 450 customers and 1,500 projects worldwide since 1999.

You can find more information at [www.tecracer.com](http://www.tecracer.com) or contact us at [aws-sales@tecracer.com](mailto:aws-sales@tecracer.com).

