MES/MOM in the cloud: Schneider Electric's cloud migration journey

Electronics

Case Study

MES/MOM in the cloud: Schneider Electric's cloud migration journey

Streamline and expand operations efficiently while reducing energy consumption.

Schneider Electric's mission is to be the trusted partner for sustainability and efficiency. The company is helping customers across industries unlock efficiency, productivity, and resilience through digital transformation.   Schneider Electric is also accelerating its own digital transformation across production facilities. It is gradually moving the MES/MOM solution from iTAC Software AG used at various locations to the AWS cloud. This ensures that processes can be digitalized, operated and scaled more easily and cost-effectively across company boundaries – while saving energy at the same time.

→ **Leader of global industrial technology.**

Electrification, Automation and Digitalization

About Schneider

Schneider Electric is a global industrial technology leader bringing world-leading expertise in electrification, automation and digitalization to smart industries, resilient infrastructure, future-proof data centers, intelligent buildings, and intuitive homes. The provider promotes the transformation of companies towards digitalization, energy efficiency and sustainability. This is something Schneider Electric also applies in its own production facilities. The company has therefore decided to gradually migrate the iTAC MES/MOM solution to the AWS cloud at various locations. This step brings immense advantages such as cost, resources and energy savings.

14
MES/MOM plants

10
production enviroments

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Well-proven MES/MOM gradually migrates to the cloud

Schneider Electric has been using the iTAC.MES.Suite (now iTAC.MOM.Suite) for the production of cooling products and batteries for uninterruptible power supplies (UPS) since 2010. This MES/MOM software solution is used, among other things, for traceability, interlocking and quality control in the manufacturing process. Initially, a simple line integration was implemented in a French plant. In 2012, further plants were equipped with the iTAC.MES.Suite.

In addition to France, the MES was later also implemented in North America, India, China, the Philippines and other countries.

iTAC's MES/MOM is currently used in 10 production environments. These include 14 plants at different locations. All plants are to be successively connected to the cloud. Among others, the sites in LA, Monterrey, Mexico City, Pennsylvania, Netherlands and Italy are already using the cloud solution. A migration in Batam (Indonesia) also went smoothly in May 2024.

Significant cost savings at the Batam site

The example of Batam shows the advantages of MES/MOM in the cloud. „The on-premises hardware at the site in Indonesia was more than seven years old and needed to be replaced. Knowing that an MES is a business-critical application, we wanted to make the replacement as safe as possible. We had two options: either procure new hardware or migrate the iTAC application to the AWS cloud. After careful consideration, we decided to integrate the iTAC solution into the AWS cloud," says Rahul Hege, Digital Manufacturing Leader at Schneider Electric.

The cloud migration in Batam offers major economic benefits. By using AWS cloud services, the company does not have to invest in expensive hardware or take on any maintenance.

Instead of having to operate servers and storage systems in its own data center, Schneider Electric can rely on the cloud provider's infrastructure. This reduces the costs of operating and maintaining its own systems. The company only pays for the resources it actually uses and can therefore reduce its overall operating costs.

The cloud solution also has a positive impact on productivity. Rahul Hege explains: „The iTAC servers were previously Windows-based, which required monthly patches, and Batam was experiencing nine hours of downtime per month due to these patches. Now the iTAC servers are Linux-based and require no downtime, which means additional productivity for the site."

There is also a gain in scalability. On-site servers are difficult to scale as they depend on the availability of additional hardware. Cloud servers, on the other hand, can be flexibly adapted as required. On-site uptime is often impacted by local IT factors such as power outages or hardware failures, whereas AWS offers defined uptime with 99.9% availability.

The on-premise database was not optimized for applications with frequent disk I/O operations, such as MES. AWS RDS, on the other hand, offers better performance and faster I/O operations. Previous magnetic tape backups were unreliable, now backups are available in multiple availability zones of AWS, enabling fast recovery.

In summary, the cloud migration in Batam enables significant cost savings, better scalability, higher reliability and performance optimizations as well as improved data protection and faster response times.
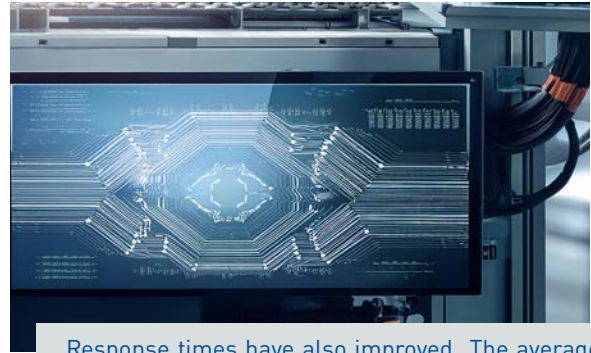
Response times have also improved „The average response times of the standard APIs fell from 90 ms to 60 ms and the user-defined APIs from 240 ms to 160 ms, which is an improvement of 33%. In addition, the MES/MOM offers significant advantages over other systems as it can be rolled out across multiple production sites, offers comprehensive ERP, PLM and plant interfaces and contributes to zero-defect manufacturing with its real-time process interlocking mechanisms."

Rahul Hege, Digital Manufacturing Leader at Schneider Electric

Easily digitalize, centralize and scale worldwide

The advantages achieved at the Batam site are exemplary of the potential that is opening up for the company with its numerous plants. By using the cloud, Schneider Electric can provide servers in the Amazon data center within a week.

Using the cloud platform also makes it much easier to network and optimize processes across company boundaries. Data from different locations can be centralized. This enables standardized data storage and processing, which increases efficiency and improves the quality of production data. The solution also provides real-time insights into production processes across different locations, which allows the company to react quickly to changing conditions, identify bottlenecks and optimize production processes.

Employees can access the systems from anywhere and at any time, as long as there is an internet connection. This facilitates collaboration in globally distributed teams and enables them to manage production processes more effectively.

In addition, the high scalability and flexibility allows Schneider Electric to better adapt to changing requirements both site-specifically and across locations. Resources can be scaled as required and new functions and services can be easily integrated.

Data protection through IT security and data availability

Another important aspect is security. AWS invests significant resources in the security of its infrastructure, including data encryption, access controls, regular security audits and backups. This helps to protect production data from threats and meet compliance requirements.

„When all data is stored in the cloud, it remains secure from local disruptions and accessible. Amazon also offers a managed relational database service that is not only optimized for better performance, but also handles data backup and recovery. In the event of a disaster, only a maximum of five minutes of data is lost with AWS," explains Rahul Hege, Digital Manufacturing Leader.

More efficiency and flexibility – lower costs and energy

Overall, the cloud-based MES/MOM solution offers a modern, flexible and cost-efficient way to manage and optimize production processes. It enables Schneider Electric to focus on its core business while increasing competitiveness through improved (energy) efficiency, sustainability and productivity.

> „Cloud computing also fits perfectly with our strategy of promoting energy and CO_2 savings and in the industry. This concept helps to reduce energy consumption through the efficient use of resources and advanced technologies by optimally distributing computing loads and using modern, demand-oriented and energy-efficient hardware,"
>
> Rahul Hege, Digital Manufacturing Leader at Schneider Electric

iTAC Software AG, an independent company of the mechanical and plant engineering group Dürr, provides Internet-enabled information and communication technologies for the manufacturing industry.

Founded in 1998, the company is one of the leading MES/MOM providers in Germany.

The iTAC.MOM.Suite is a holistic Manufacturing Operations Management that is used worldwide by companies in different industry sectors such as automotive, electronics/EMS, telecommunication, medical engineering, metal casting and energy. Additional services and solutions for implementing IIoT and Industry 4.0 requirements complete the portfolio.

iTAC Software AG is headquartered in Montabaur, Germany and has subsidiaries and a partner network for sales and service worldwide.

Our philosophy is to connect people, data and systems.

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