

# Streamlining manufacturing business with cloud-SAP for Siemens

A holistic set of secured cloud services for agile operations

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## At a glance

The joint forces of Atos and Amazon Web Services (AWS) succeed in migrating Siemens' large-scale SAP HANA to cloud, activating a lightweight, flexible, and agile future-adapted operations.

### Outcomes

- Maintained data durability up to 99.99%
- Augmented SAP HANA databases with high-memory instances up to 9TB
- Ensured business continuity
- Accelerated service expansion circle by 90%
- 25% + cloud operational efficiency

“ We are thrilled to work with Atos and Amazon Web Services on the SAP cloud migration project. Thanks to the combined power of professional services and excellent products, our business continuity has increased from promised 99.5% to 99.9%, way beyond our expectation. ”

Vineet Gupta,  
Siemens Ltd., China IT ECP ERP-AAE TSM



# Client Challenge

Siemens Global initiated SAP's data strategy on the cloud, to enable agile and harmonious coordination between businesses and developments and better integration with artificial intelligence, machine learning and big data analysis into current and future businesses. With that approach, Siemens can get more insights and financial outcomes out of enterprise data.

Siemens in China needed support to migrate large-scale SAP HANA to cloud.

## Challenges included:

- Continuously growing data volumes
- Rigidity of the offline infrastructure which needed more elasticity to support SAP's expansion
- High level of operation and maintenance complexity due to multiple interfaces and users
- Strict security and compliance standards
- Orchestration among multiple parties and business lines

## Solution

Atos and AWS provided Siemens with a comprehensive solution covering assessment, migration, optimization, and managed services.

### Full assessment

To host the huge SAP workload, Atos recommended using m6i.12xlarge and u-9tb1.112xlarge high-memory Amazon Elastic Compute Cloud (Amazon EC2) instances as they are built for large in-memory databases up to 24TiB.

### Disaster recovery

For disaster recovery, all SAP systems and data deployed in the same region were backed up incrementally – daily between Availability Zones and full backups weekly. All backup data was synced to another region through the Amazon Backup service. The new backup policy helped Siemens improve disaster recovery capabilities while ensuring that the 48-hour backup and recovery window was met.

### Migration

Faced with the challenge of huge capacity (up to 8 TB) of Siemens' SAP system database (almost 100 million files to be migrated), Atos experts implemented a compression mechanism for synchronized data, reducing the data synchronization time from 8 days to 4 days.

To migrate EFS (Elastic File System) from on-premise to the cloud, including tuning the performance of EFS itself for processing many small files, the Atos team designed a file system to sort directories according to the frequency of file access, and designed multiple EFS systems to achieve greater throughput. Hundreds of threads transferred SAP source files according to directories, and enhanced throughput mode was enabled to 1024 MiB/s during migration and back to 100 MiB/s after stabilization.

### Security and compliance

Atos and AWS met 100% of the security and compliance requirements. Our joint solution aligned with the global unified safety standards of Siemens, covering 14 major categories and as many as 332 safety standards from the three dimensions of CIA, thus leveling the entire system safety standard up to level 2.

## Business Benefits

### Atos and AWS successfully migrated Siemens' SAP to the cloud, achieving:

- +30% overall performance improvement
- Up to 99.9% data durability provided by Amazon Simple Storage Service (Amazon S3)
- System availability up to 98% owing to multiple region deployment
- A reliable backup solution for disaster recovery
- Qualified security and compliance
- Business expansion in less than a week, supporting the IT department to perform multi-task synchronous processing
- +25% cloud operational efficiency

In addition, Atos and AWS integrated Siemens' entire management and existing IT services, including automated operation and maintenance framework FMO (Future Mode of Operating), Microsoft Teams, and WeCom, resulting in doubling the response efficiency of system operation and maintenance.

## Why Atos



**Trusted by many established customers, Atos and Amazon Web Services are skilled in core applications implementation and cloud deployment.**

Our solutions and delivery capabilities have been tested in many projects of different business scenarios and can be relied on for your mission-critical business needs.

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