

SAMSUNG SDS Cloud Platform

Case Study



Fast global expansion of Manufacturing Execution System (MES)

Case of PaaS-based standardized platform for development and operation

* MES : Manufacturing Execution System

Challenge

Manufacturing execution system (MES) is an IT system to track and document the transformation of raw materials to finished goods. It provides information about product automation equipment control, operation control in product line, analysis of production and quality, etc..

This global manufacturer was not only unable to respond flexibly to rapid market changes due to the monolithic system structure of MES, but also suffered from a rapid increase in system size and complexity because of business expansion. Separate systems for each global manufacturing site resulted in sporadic and overlapping IT investment, and failure to secure visibility in overseas production undermined production stability. In addition, request for manufacturing innovations based on new technologies has been growing, including increasing productivity and streamlining the supply chain based on manufacturing data.

As a result, the company has built a new MES to continue to strengthen its manufacturing competitiveness with low-cost and flexible architecture that can respond flexibly and proactively to business changes.

Monolithic system structure	Individual operation by overseas branch	Needs for smart factory
<ul style="list-style-type: none">· Complexity and effectiveness ↑· High IT costs	<ul style="list-style-type: none">· Scattered and redundant IT investment· Manufacturing stability ↓	<ul style="list-style-type: none">· Response to market and technology ↓· Manufacturing competitiveness ↓

SDS Cloud Service

SDS PaaS

Samsung SDS provides its own PaaS based on Kubernetes and Docker engine technology. As a Gold Member of CNCF (Cloud Native Computing Foundation), SDS is now leading Kubernetes-based cloud technology and has acquired KCSP (Kubernetes Certified Service Provider) first time in Korea in 2017.

- Provide 30 verified services that have been applied in SDS internal system development
- Provide latest virtualization technology (Docker Container) and APIs for development, middleware and service
- Enable to expand ecosystem without technology dependencies using open source software
- Easily support container-based MSA (Micro Service Architecture) and cloud-native development (supported by SDS' own development processes, methodologies and technologies)

※ KCSP (Kubernetes Certified Service Provider) is a qualified vendor by CNCF which can provide Kubernetes support, consulting, professional service and training for successful Kubernetes adoption of customers.

Solution

Cloud-based architecture enhancement

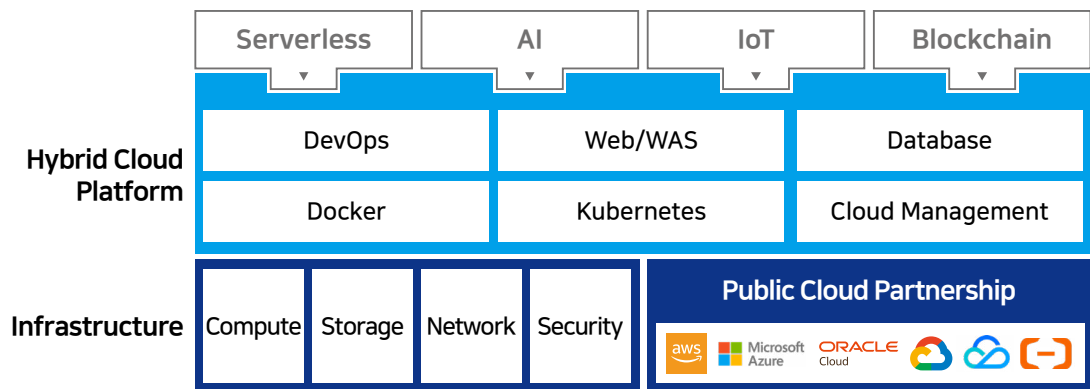
- Convert monolithic architecture to Micro Service Architecture (MSA) which supports independent functional units
- Standardize development/operation process and automated CI/CD (Continuous Integration/ Continuous Deployment)

PaaS-based standardized development and operation

- Build container-based DevOps and governance system for development and operation
- Provide user portal for PaaS users and administrators

SDS PaaS-based machine learning analysis

- Provide container image for analysis (including development library, template)
- Install pipeline to automatically deploy data model



Benefit



Apply standard development platform

- Development environment build 8 days → 1 day



Increase development / operation reliability

- Frequent deployment of function change
- Manually deploy → automated






Improve process and reduce cost

- Defect analysis 1 day → 5 minutes

FOR MORE INFORMATION

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