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Stream processing

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uCosminexus
Stream Data Platform

Real-time management of real-world data

Real-time processing makes it possible to instantly analyze large amounts of real-world data

Due to the widespread use of broadband technologies and IC cards, and the reduction of RFID costs, the quality and quantity of real-world data that businesses handle have rapidly increased.

In order to meet this need, Cosminexus's stream data processing base, *uCosminexus Stream Data Platform*, makes it possible to handle and analyze large amounts of data in real time. uCosminexus Stream Data Platform instantly ascertains system statuses and aids in the decision-making process.

Utilizing cutting-edge technology, large amounts of data can be instantly analyzed

High-speed, time series processing of bulk data

Two different technologies are used to quickly process large amounts of data. These technologies are called stream data processing and in-memory data processing.

Stream data processing is a technology that takes large amounts of real-world data and time series processes it. Instead of first saving the data into a database and then processing it, this technology takes data as it occurs, extracts any data according to a given scenario, and then analyzes only that data.

In-memory data processing is a technology that takes all the data in use by an online system or a batch system, stores it in memory, and then processes while in memory. This makes it possible to process data faster than the alternative of retrieving the data from hard drives in external storage. These technologies provides better performance compared to conventional database processing technologies.

Using a query language to easily created scenarios

Scenarios can be created by using CQL, an extension of SQL. CQL is a very basic language that is compatible with wide range of applications. Using CQL with uCosminexus Stream Data Platform makes it possible to perform the following types of time series processing:

• Filtering

Essential data needed for analyses can be extracted.

• Trend analyses

Data trends can be analyzed from a given point in time up to the present.

• Correlation analyses

Various threads of data can be analyzed, and correlations between the data can be detected.

What's more, there is no need to create a separate application for scenarios. Scenarios can be easily added and modified, as what is needed is just to apply scenarios by building them in uCosminexus Stream Data Processing after simply defining in text files.

Note
SQL: Structured Query Language
CQL: Continuous Query Language
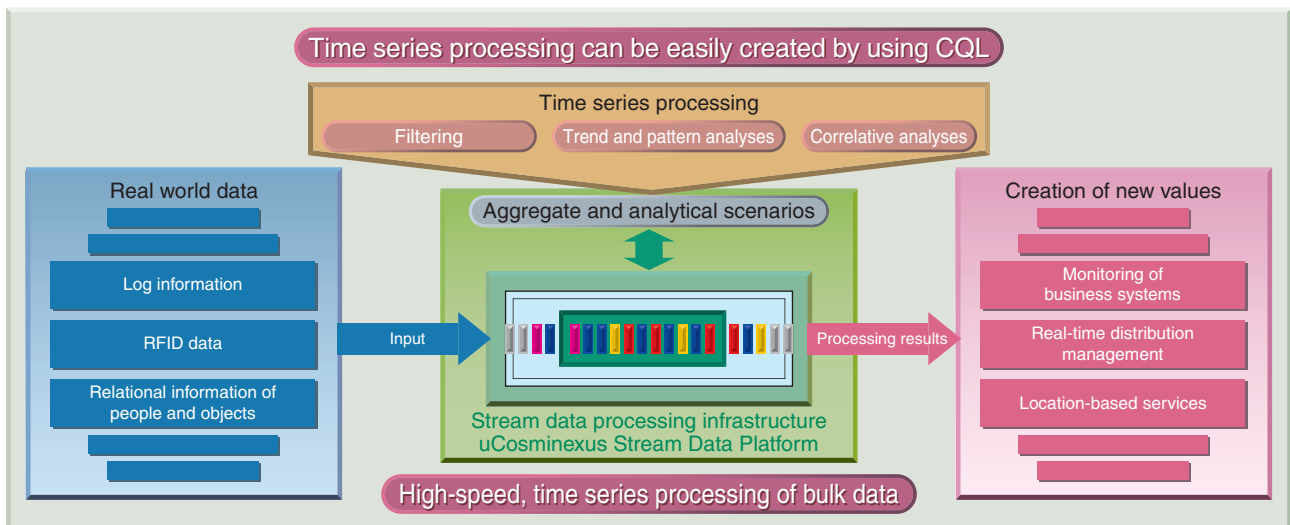
## Handling real-world data in a variety of industries

uCosminexus Stream Data Platform can be used to analyze real-world data in real time for a variety of industries, such as the manufacturing, distribution, financial, and transportation industries. The followings are just a few examples of the many real-world uses of uCosminexus Stream Data Platform:
- Using logs to monitor business systems
- Proactively or early detecting defects in factory assembly lines
- Automatically reading electric, gas, and water meters, and billing the appropriate parties
- Using RFID data to manage distribution in real time
- Using logs to check compliance and to control network flows
- Distributing information to people and objects based on their position

Practical examples
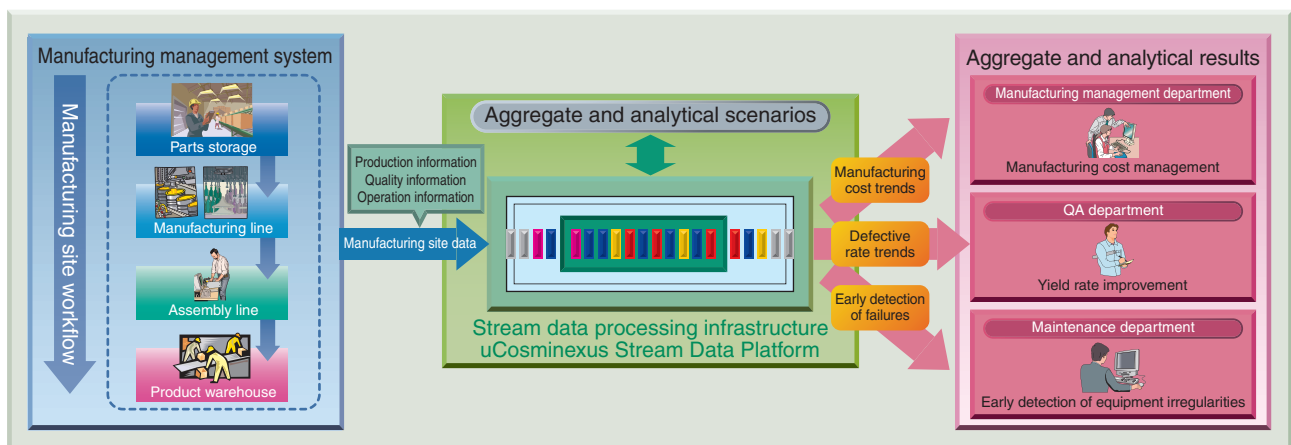
Supporting stability in an IT system

uCosminexus Stream Data Platform can take the massive amount of log data generated from large, complicated IT systems, and then time series process it to create an easy-to-view business system overview. This makes it possible to monitor the operating status of a business system in real time.

Also, by analyzing trends and correlations, possible system failures can be predicted and avoided before they even occur. IT system stability can be supported through these features of uCosminexus Stream Data Platform.
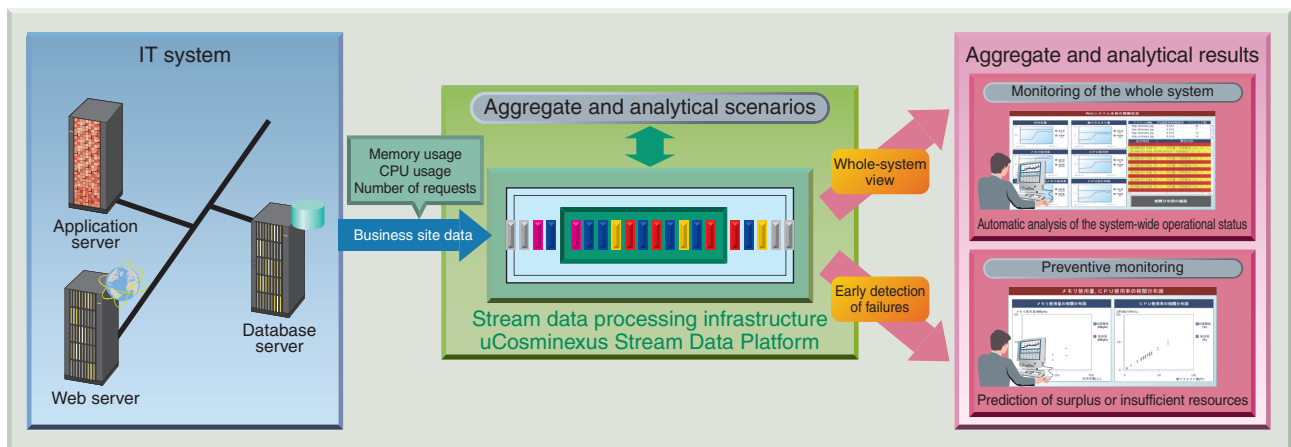
Supporting greater efficiency on manufacturing site

uCosminexus Stream Data Platform can take manufacturing management system sensor information and log information (i.e., production information, quality information, and operation information), and creates an easy-to-view map of the status of the manufacturing floor.

Also, defect trend analyses can be used to predict future defects and improve the overall yield of a product line. A high-level PDCA cycle can be supported through these features of uCosminexus Stream Data Platform.

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