Triple Monitoring Engine

The monitoring engine manages and correlates/aggregates monitoring data from different levels to provide a better analysis of the environment, the application and data; allowing the orchestrator to take informed decisions in the adaptation engine. The engine collects data from three different sources (infrastructure, data operations, applications) and exposes them for consumption.

Input

• Scraping metrics configuration,
• Subscription request

Output

• Metrics
• QoS percentile

Initial TRL

TRL 1

Final TRL

TRL 7

End Users

The triple monitoring engine is addressed to QoS component, data-driven decision making component.

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Key Features and Benefits

The triple monitoring engine is based on Prometheus. Therefore, the triple monitoring has the capability to collect a huge amount of metrics, store them and expose them for consumption in ad-hoc and streaming mode using less memory and providing a small metric freshness. Exploiting the federation feature, the triple monitoring engine can be scaled for satisfying the need of distributed platform. The engine is container compatible thus, the installation is simplified.

Essential Information for Users

The triple monitoring engine requires at 4G and 8CPUs to run correctly. The maximum number of consumer on the pub/sub interface are limited to 2000 per instance. In order to increase this number, the use of RabbitMQ scale can be performed or the memory need to be increased. Metrics are saved to Elasticsearch for historical purposes, so on a VM environment, the count map parameters must be adjust according to Elasticsearch requirement.

Standards involved in the development of the component

The triple monitoring engine is aligned with the ISO/IEC 33001 regarding the Information technology, Process assessment and Concepts and terminology.

BigDataStack
Holistic stack for big data applications and operations

Triple Monitoring Engine

Implementation in BigDataStack Use Cases

What BigDataStack Use Case is the component related with? The triple monitoring is related to all use cases of BigDataStack, in the Insurance, Shipping and Retail industries. Since actions need to be made, metrics will be collected and exposed for analysis.

How can the BigDataStack component contribute to Standardization foundations or initiatives?

The outcomes of the triple monitoring engine will contribute in the design of monitoring tool for data-driven environment. The approaches used for solving different challenges could be used in the following manner:
• Data and system interoperability,
• Data Processing Architectures,
• Data Visualization,
• Data services and scalable systems using Queuing system,
• Prometheus' exporter building and features extension.

Differentiators from competitors in the market

• The triple monitoring provides API for collecting metrics from stateless application,
• The engine provides QoS information of monitored applications,
• Metrics collected can be consume by streaming mode using a pub/sub mechanism.

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