BigDataStack
Holistic stack for big data applications and operations

Singular Logic

Information Driven Networking

BigDataStack Software Component developed by Singular Logic

Description

The Information Driven Networking component provides a set of network engineering methods combined with software-defined networking technologies over containers and virtual machines for the enforcement of targeted policies according to the data (real-time, near real-time and offline), security requirements and application (response time, requests per second, traffic prioritization, etc.) requirements. It supports a set of mechanisms (i.e. proxies, sidecars, etc.) operating at services layer to understand the virtual hosts, URLs and other HTTP headers and at the network layer to understand the workloads in storage services, DNS and a plethora of other services that do not use HTTP.

Features

The main features of the component are, as follows:
- Fully parameterized and easily configured network policies through YAML28 files;
- Automatic service/pods discovery through sidecar injection;
- Deployable at any cloud environment.

Areas of Application

Virtual Networking;
Software Defined Networking;
Network Policies Enforcement.

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Market trends & opportunities

Diverse network engineering capabilities; Multiple policies enablement at different OSI layers; and Diverse protocols and runtimes support.

Customer benefits

Automation; Narrowing services technical specificities; Ease of installation; Control app panel architecture of microservices.

Technological novelty

Service discovery; traffic management; service-to-service and origin-to-service security and access control; observability (including telemetry and distributed tracing); monitoring of rolling releases and resiliency.

TRL level: 5

Find the Open Source codes here:

- bigdatastack-tasks.ds.unipi.gr/ppetrouubi/istioyaml/
- bigdatastack-tasks.ds.unipi.gr/ppetrouubi/istioproxy
- bigdatastack-tasks.ds.unipi.gr/ppetrouubi/istiopod
- bigdatastack-tasks.ds.unipi.gr/ppetrouubi/istiopodconsumer