STORAGE DEVELOPER CONFERENCE

SDC 21

BY Developers FOR Developers

Virtual Conference
September 28-29, 2021

A SNIA. Event

# Distributed WorkLoad Generator for Performance/Load Testing Using Emerging Technologies
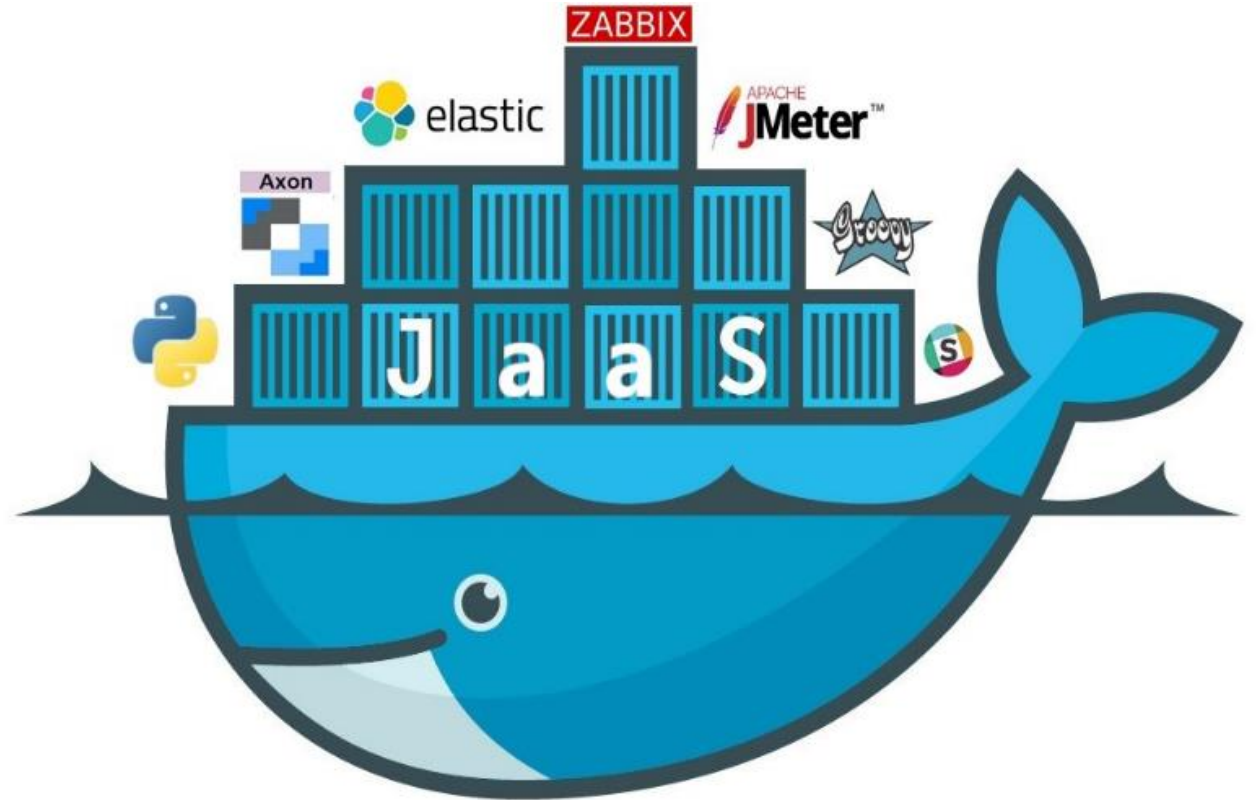
JMeter as a Service

Vishnu Murty Karrotu

# Presenter



- Automation Technologist at Dell Technologies - Infrastructure Solutions Group, is a Masters in Software Systems from BITS Pilani with a total experience of 15+ years in Leading Product Validation and Automation Development efforts. The domains Vishnu has worked on include Server, Storage and System Management Software. Responsible of Delivering Zeno - Continues Test Automation framework, JAAS(JMeter As A Service) and ICEMAN(Information CollEctor Monitor Analyzer) Tools.

- 9 Patents Granted by USPTO and 128 Disclosures recognized by Dell Patent Committee.

- Presented Technical papers in Pycon(Python developer forum), STeP-IN, Targeting Quality 2019  and Quality Connect Conferences.

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# Agenda

- Server Validation Overview
- What is System Test?
- Challenges and Solution
- Technology Stack
- Solution Overview
- What Next?

# Server Validation Overview

Austin / Round Rock

Taipei

Bangalore

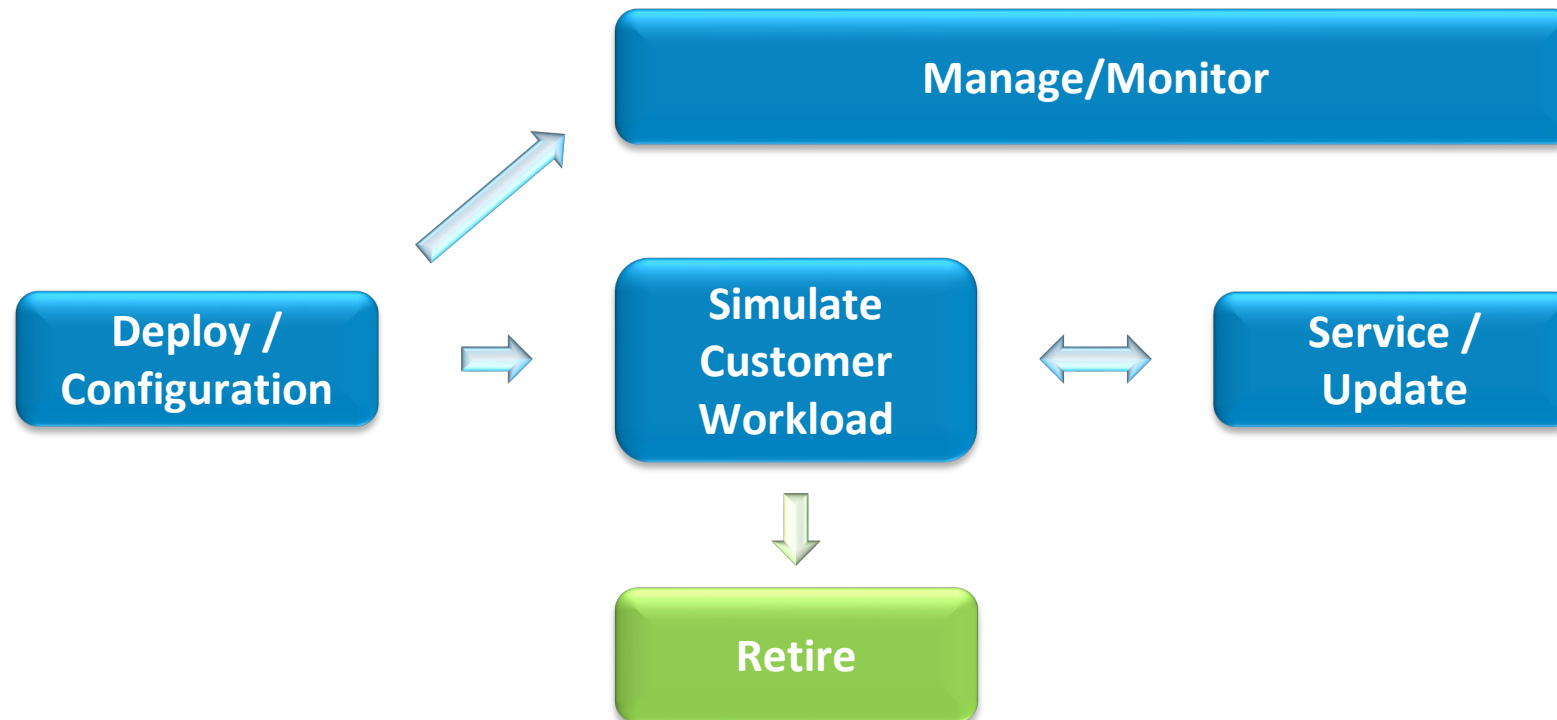## Validate PowerEdge Solutions

TMMi® CERTIFIED LEVEL 3

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# What is System Test?

- Customer-focused validation of Sever solutions
- Simulates real world usage with typical applications on Servers

# Challenges with Current Load Generation Solutions

- Needs to be installed in local Lab on Proprietary hardware.
- Expensive, Complex, Licensing
- Requires highly specialized performance engineers to Develop Scripts
- Data Analytics and Correlation

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# Proposed Solution

- JaaS – JMeter as a Service : on-premise cloud.
  - JMeter, Docker,  Elasticsearch-Logstash-Kibana(ELK) Stack
  - Axon – UI
  - DellEMC Hardware as Load Generators

- Massively Scalable across Regions/Labs
- Build or incorporate to support new workloads
- Automate and integrate via REST API
- Advanced Dashboards and Visualizations.

# Key Technologies



**Supports many types of load tests**

**Platform-independent tool**

**Full multithreading framework**

**Open Source Software**

**Portable**

**Disposable**

**Resource-efficient**

**Open Source**

**Cluster management and Orchestration**

**Cluster of Docker nodes**
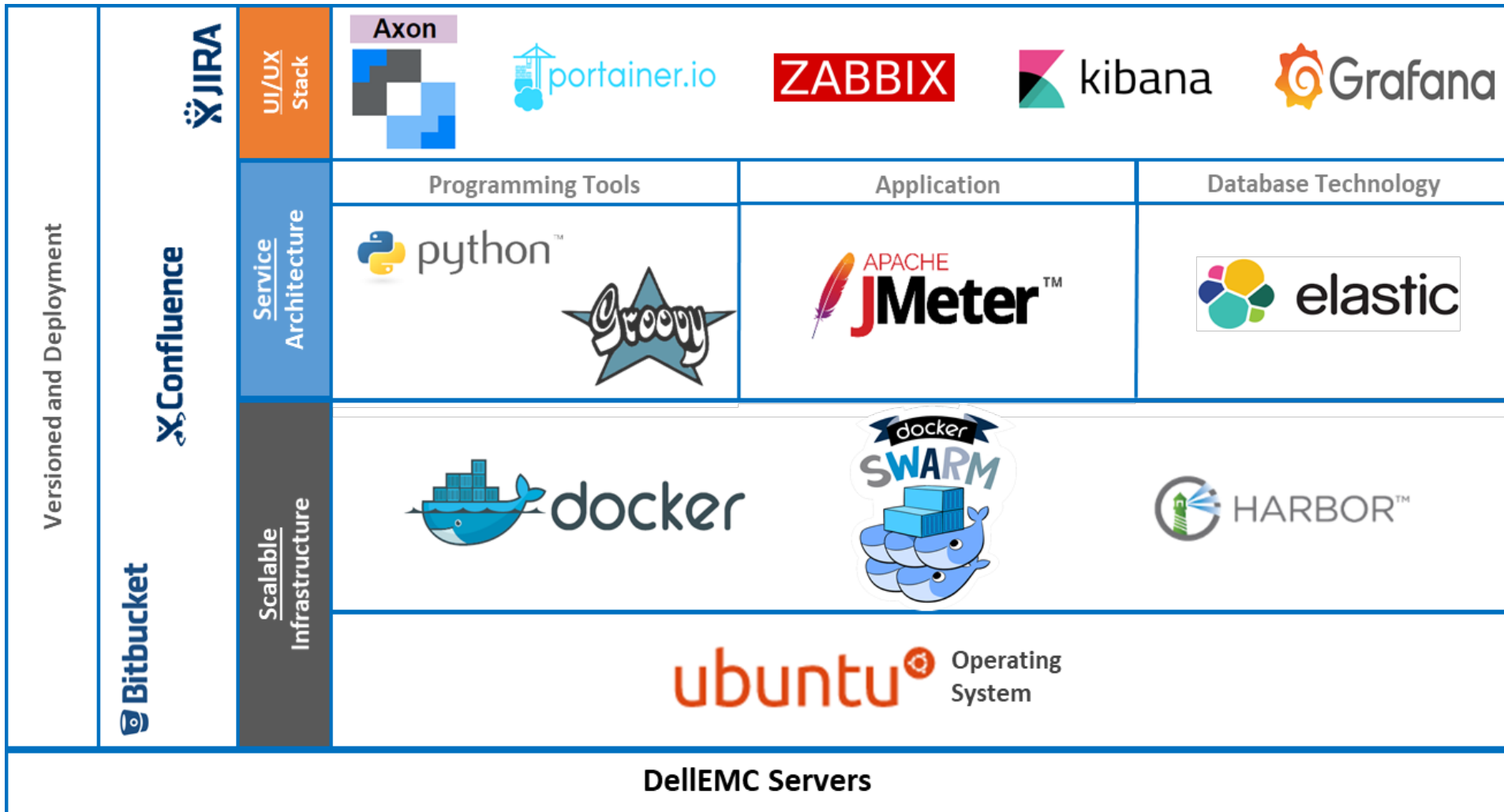
**Load balancing**

**RESTful API**

**Flexible and Powerful**
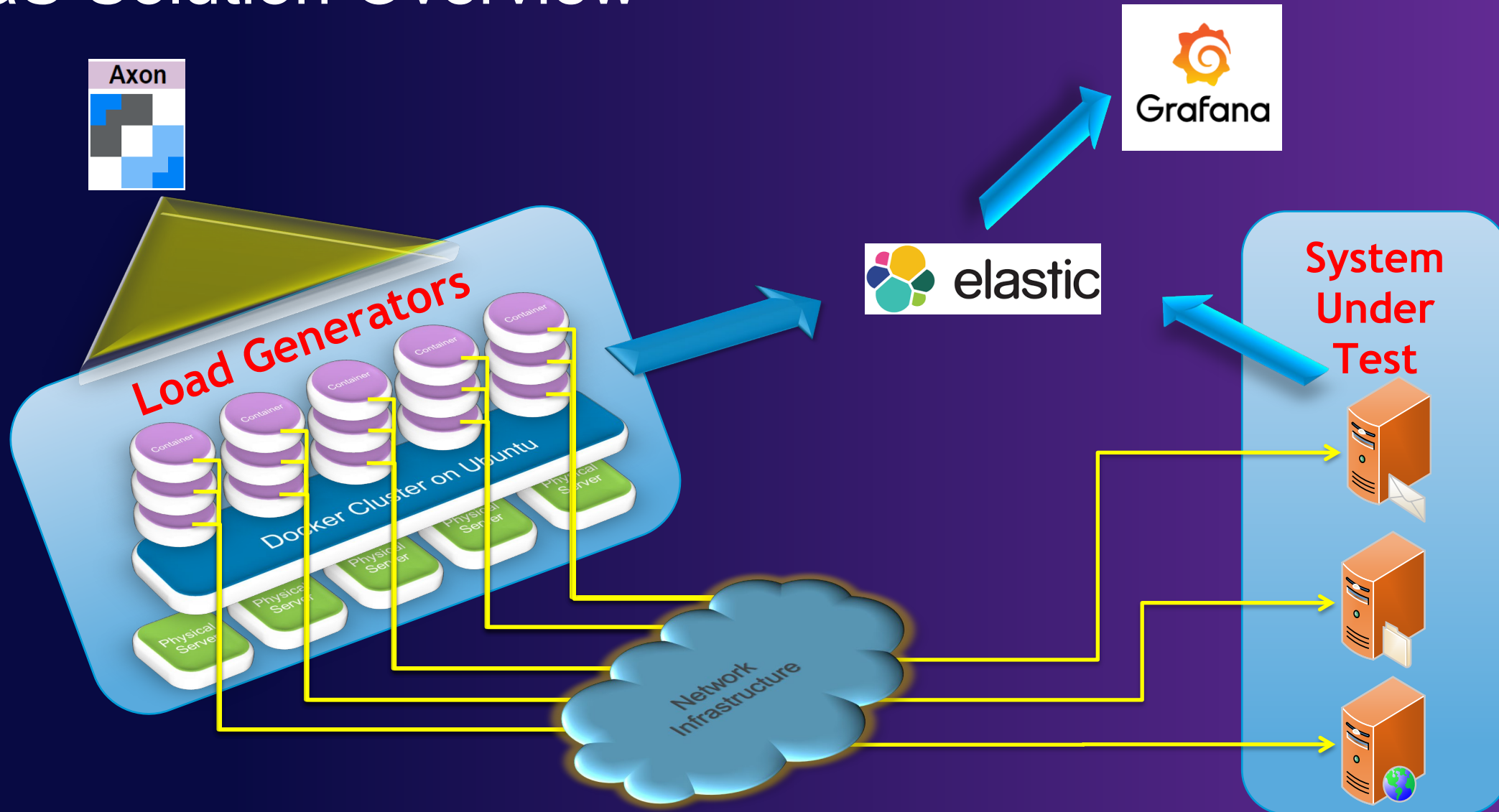
**Distributed real-time Search and Analytics Engine**
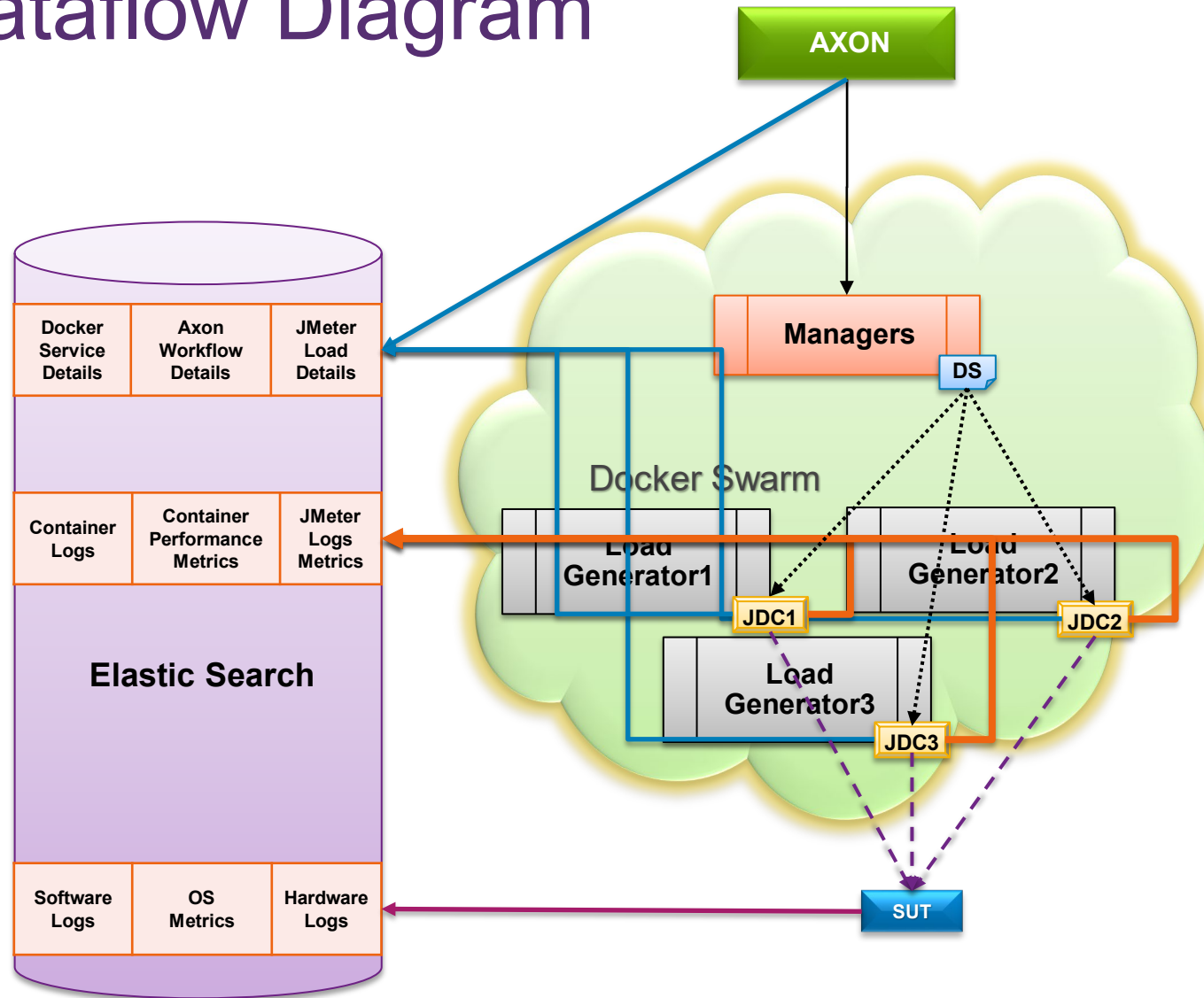
**Schema free & RESTful API**

**Open Source Software**

# JaaS - Technology Stack



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# JaaS Solution Overview

# JaaS Dataflow Diagram



**AXON**

**Managers**

Docker Swarm

Load Generator1
Load Generator2
Load Generator3

JDC1  JDC2  JDC3

DS

SUT

**Elastic Search**

| Docker Service Details | Axon Workflow Details | JMeter Load Details |
|---|---|---|

| Container Logs | Container Performance Metrics | JMeter Logs Metrics |
|---|---|---|

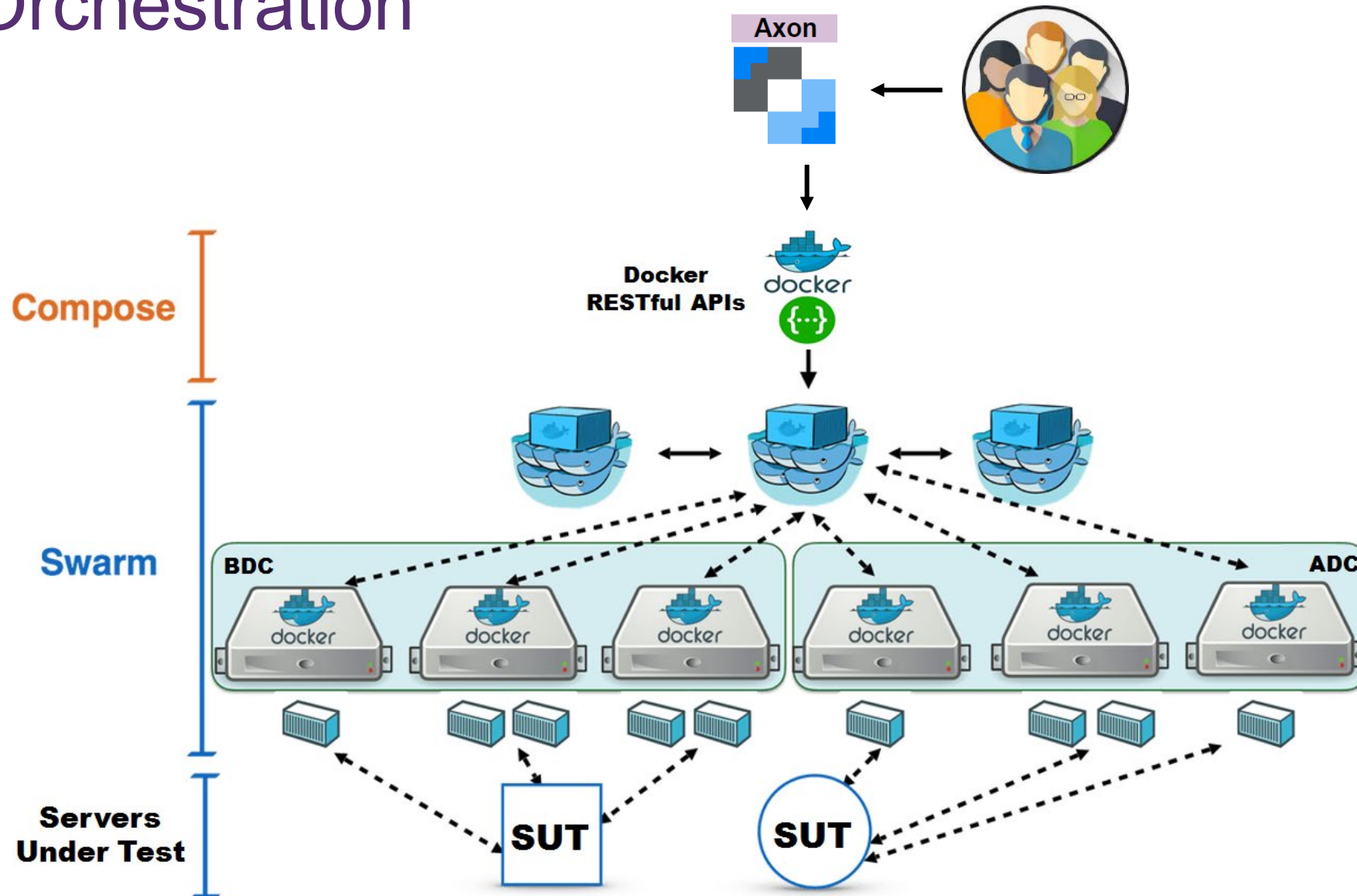| Software Logs | OS Metrics | Hardware Logs |
|---|---|---|

**DS** : Docker Service
**JDC** : JMeter Docker Container
**SUT** : System Under Test

# JaaS Orchestration
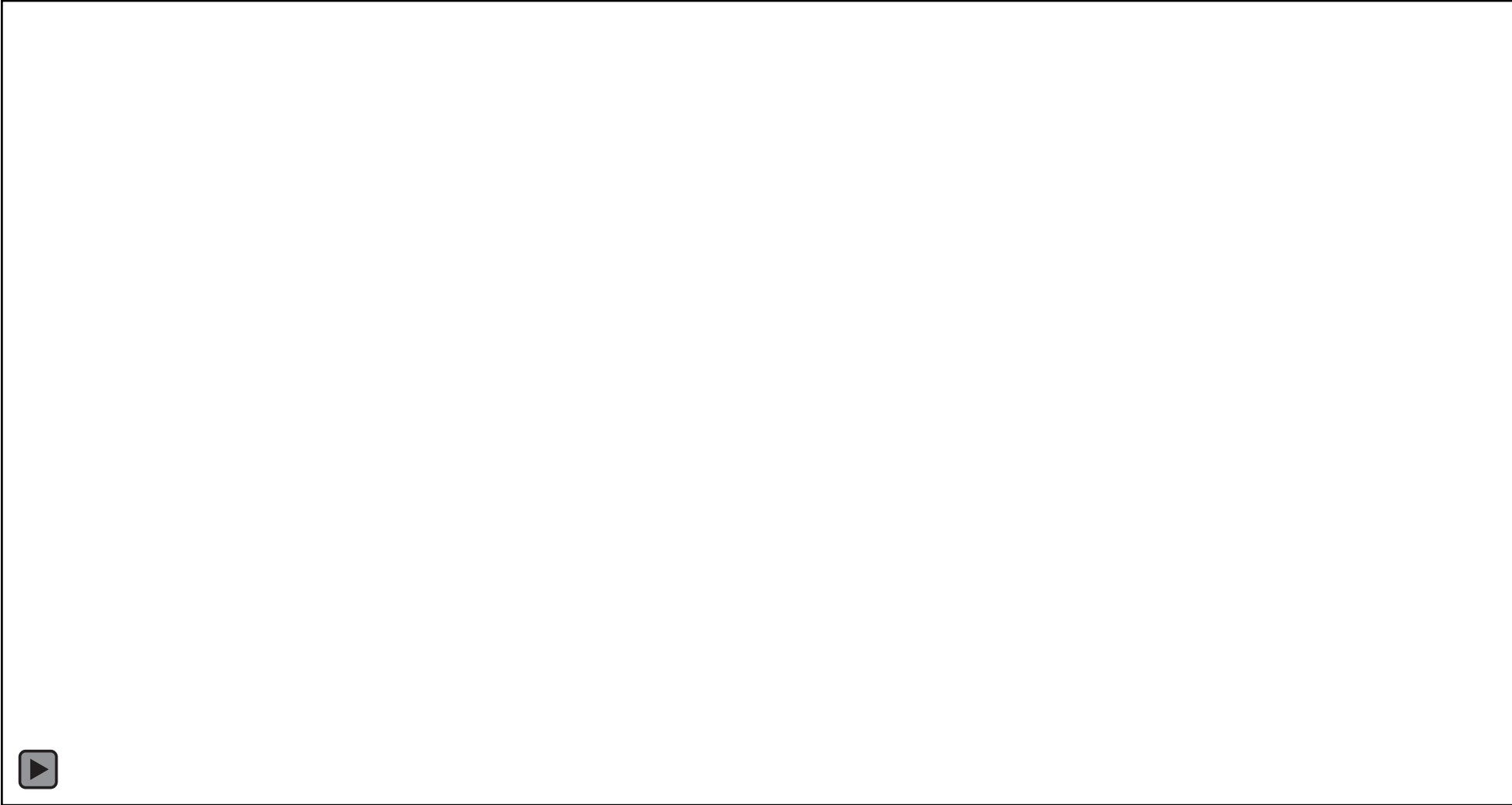
# Current Supported Workloads



Web Workloads

File Workloads

Database Workloads

Mail Workloads

# Demo

# What Next?



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