



Application Dimensioning Workbench

BigDataStack Software Component developed by UPRC

Description

The component has two purposes: a) generate load against target services via easily configured and automated parameter sweep tests, thus gathering the necessary performance data b) extend experimentation to other aspects such as multitenancy overheads that can affect SaaS business models.

Features

- Automated test setup, launch, lifecycle management and result gathering.
- Embedded service inclusion in the benchmark graph to detect performance overheads.
- UI and REST API based test submission.
- Test scalability through the usage of containerized deployment platforms and clusters.
- Test abstraction through automated test configuration and modular architecture.

Areas of Application

- Load injection/Stress Testing as a Service.
- Performance Engineering.
- Business and Cost model validation.

 bigdatastack.eu



Application Dimensioning Workbench

Market trends & opportunities

“Big Data technologies need to generate sufficient load sizes to demonstrate their ability to handle an increased amount of work. Such load sizes go beyond the abilities of a single node and setup and require a substantial effort in managing the load creation and test execution process.

Furthermore, different types of technologies or services may require diverse load generation processes and baseline tools. The flexibility of ADW to incorporate such baseline tools is key for extending the scope of the tool and/or adapting it per case of needed stress testing. Software as a Service is a key business model for companies to reutilize their software developments as well as automate software management (updates, versioning etc) for their offerings towards their clients. However, in many cases of SaaS deployment options (e.g. offerings deployed in multitenant infrastructures), the performance degradation from the underlying sharing of resources may lead to undesired QoS levels and poor service performance. To this end, service owners must conduct multitenancy experiments to highlight the limits of each multitenancy scenario and thus drive deployment options and/or SaaS packages based on the trade-off between performance and cost. This also dictates the baseline cost of the service and thus the finally offered price towards their customers.

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Customer benefits

Accurate knowledge of the performance of their services.
Accurate knowledge of limits of multitenancy deployments.
Investigation of performance vs cost trade-offs and definition of baseline SaaS packages.

Technological novelty

Abstracted test design and execution.
Modular and extendible architecture.
The exploitation of large-scale clusters for load injection.
Stress testing as a Service offering.

TRL level: 5

Find the Open Source code here:



• <http://bigdatastack-tasks.ds.unipi.gr/gkousiou/adw>