High Availability & Performance. Effective Resource Usage. Low Cost.

Regarding the Performance Efficiency Pillar of AWS' Well-Architected Framework focused on Load and Performance Testing – Part #1

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Introduction

What is the AWS Well-Architected Framework?

The AWS Well-Architected Framework "documents a set of foundational questions that allow you to understand if a specific architecture aligns well with cloud best practices"[1] in the form of a whitepaper. AWS published the first version of it in 2016. We already wrote a [blog article](#) about it.

AWS reworked the guidelines (published in November 2018) and extracted five extra whitepapers covering each of the five pillars introduced in the Well-Architected Framework (Operational Excellence, Security, Reliability, Performance Efficiency, and Cost Optimization).

We will have a look at the whitepaper about the Performance Efficiency Pillar focusing on load and performance testing.

What is the Performance Efficiency Pillar?

The Performance Efficiency Pillar deals with "the efficient use of computing resources to meet requirements and how to maintain that efficiency as demand changes and technologies evolve"[2]. You might have created a great architecture and built your infrastructure in a very reasoned way but you cannot rest upon your work. Technologies change and are refined and so has your system.

What is Amazon Web Services (AWS)?

Amazon Web Services (AWS) is a U.S. cloud computing provider founded in 2006 as a subsidiary of Amazon.com. AWS offers cloud infrastructure services for businesses. A lot of popular services such as Netflix, Dropbox, Reddit or Foursquare rely on the services of AWS. As AWS itself describes: "One of the key benefits of cloud computing is the opportunity to replace up-front capital infrastructure expenses with low variable costs that scale with your business"[3]. AWS supports its customers by providing all means to have high performance at low cost.

What is StormForger – Load and Performance Testing?

StormForger is a cloud-based Software as a Service (SaaS) tool for continuous load and performance testing. As an AWS Advanced Technology Partner StormForger empowers agile and DevOps teams to create, manage and run large scale load and performance tests – automated, integrated and in real time.

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[1] AWS Well-Architected Framework – November 2018, p. 1c,
https://d1.awsstatic.com/whitepapers/architecture/AWS_Well-Architected_Framework.pdf
[2] Performance Efficiency Pillar. AWS Well-Architected Framework – July 2018, p. 1,
https://d1.awsstatic.com/whitepapers/architecture/AWS-Performance-Efficiency-Pillar.pdf
[3] About AWS, https://aws.amazon.com/about-aws/

StormForger takes advantage of AWS' cloud infrastructure to scale test clusters based on the customers' needs so they can explore the behavior of their API and web application, investigate potential issues and focus on reliability and scalability.

Five Design Principles for Performance Efficiency in the Cloud

The Performance Efficiency Pillar of the AWS Well-Architected Framework suggests the following five design principles to "help you achieve performance efficiency"[4]:

- Democratize advanced technologies
- Go global in minutes
- Use serverless architectures
- Experiment more often
- Mechanical sympathy

In the following, we will examine each one of these five design principles focusing on how load and performance testing can empower you to optimize your performance efficiency.

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[4] Performance Efficiency Pillar AWS Well-Architected Framework, p. 2

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