



NSAI
Standards

Irish Standard Recommendation
S.R. CWA 17494:2020

Analytics Insights and Scaling Policies for Microservices

S.R. CWA 17494:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

S.R. CWA 17494:2020 is the adopted Irish version of the European Document CWA 17494:2020, Analytics Insights and Scaling Policies for Microservices

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CEN

CWA 17494

WORKSHOP

January 2020

AGREEMENT

ICS 35.080

English version

Analytics Insights and Scaling Policies for Microservices

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

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CWA 17494:2020 (E)

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Foreword

This CEN Workshop Agreement has been developed in accordance with the CEN-CENELEC Guide 29 “CEN/CENELEC Workshop Agreements – The way to rapid consensus” and with the relevant provisions of CEN/CENELEC Internal Regulations - Part 2. It was approved by a Workshop of representatives of interested parties on 2019-10-25, the constitution of which was supported by CEN following the public call for participation made on 2018-09-10. However, this CEN Workshop Agreement does not necessarily include all relevant stakeholders.

The final text of this CEN Workshop Agreement was provided to CEN for publication on 2019-12-16.

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Introduction

The emergence of cloud computing altered radically the way modern applications are managed. Virtualization offers many technical and financial advantages since it contributes to rapid provisioning and to decrease of operational expenses. One of the most significant implications of the cloud computing dominance is the emergence of microservices as the de-facto application development paradigm. Thus, modern applications are not architected in a monolithic way. Instead, applications are decomposed in several microservices that can be managed independently. Management refers to all states of a microservice e.g. start, stop, scale in, scale out etc. One of the crucial aspects of microservice management is elasticity. Elasticity refers to the way a microservice is reacting to the increase or decrease of its load. Microservices that have the ability to scale in/out are considered elastic-by-design. The scope of this document is to set the guidelines for platform agnostic elasticity management.

1 Scope

This CEN Workshop Agreement gives guidelines for platform-agnostic elasticity management of elastic-by-design microservices. Platform-agnostic implies that the mechanism/orchestration entity which will perform the actual scale-in/out process is outside of the scope of this document. Instead, the definition of the actual elasticity events and the relationship of this definition with the underlying monitoring mechanisms will be formally described. The specification is using the Backus Naur form [1].

This document is applicable to independent software vendors (also known as ISVs) or developers of microservice orchestration platforms.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

Extended Backus-Naur form

EBNF

formal notation which can be used to express a context-free grammar, consisting of terminal symbols and non-terminal production rules which are the restrictions governing how terminal symbols can be combined into a legal sequence

3.2

Infrastructure as a Service

IaaS

form of cloud computing that provides virtualized computing resources over the internet to provision processing, storage, networks, and other fundamental computing resources

3.3

Independent Software Vendor

ISV

software producer that is not owned or controlled by a hardware manufacturer or a company whose primary function is to distribute software

4 Metric Definition

A Metric is an essential part of an autonomous system that aims to capture and quantify the behaviour of a system's element (e.g. how many requests are handled by a service). In Table 1, the definition of a *Metric* is described. The unique identifier of a metric is composed by the name of the metric and the identifier of the agent that belongs to; each agent is responsible for collecting one or more metrics through its probes. The *MetricDefinition* production rule consists of useful information about the metric, such as, description, type, unit, group and an initial value. The attribute *HigherIsBetter* is useful for visualization and analysis purposes, as it specifies whether a higher value is better or not in terms of

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