

## Quality of service factor categorization for restful web services

Sewwandi M.A.N.D.<sup>1</sup> and Ilayperuma T.S.<sup>2</sup>

<sup>1</sup>*Department of Information and Communication Technology, Faculty of Technology, University of Ruhuna, Matara, Sri Lanka.*

<sup>2</sup>*Department of Computer Science, Faculty of Science, University of Ruhuna, Matara, Sri Lanka.*

Representational State Transfer (REST) is a lightweight architecture for designing networked hypermedia applications. RESTful web services are web services which are based on REST architecture. Quality of Service (QoS) determines utilitarian value and usability of a web service thus influencing the popularity of the service. On one hand, for web service consumer, having an idea about the quality of service is essential as it will enable him to choose the best-suited web service among many services providing the same service. On the other hand, with the widespread proliferation of web services, QoS will enable service providers to distinguish their services from similar services of their competitors thus giving a competitive advantage. Currently, RESTful web services are primarily focusing on the functionality aspect rather than the quality aspect of services. To address this problem, our objective in this study is to evaluate existing QoS standards and to develop a QoS model for describing quality of RESTful web services. Towards this end, we first analyse different quality factors related to SOAP and WSDL based web services. They are then categorized into two dimensions: perspective (business, system) and behaviour (static, dynamic). The most appropriate quality factors for REST architecture are then selected by considering the light-weight characteristics the REST architecture. The proposed quality categorization can be used by web service developers to develop QoS aware web services. Also service consumers can effectively use this categorization in order to select most suitable web services according to their requirements.

**Keywords:** *REST, web services, Quality of Service, quality factors*

\*Corresponding Author: sewwandi@ictec.ruh.ac.lk