Chapter 14
Examining Communication Technologies of IoT for Best QoS

Jayashree K
Rajalakshmi Engineering College, India

Babu R
Rajalakshmi Engineering College, India

Chithambaramani R
Rajalakshmi Engineering College, India

ABSTRACT

The Internet of Things (IoT) architecture has gained an increased amount of attention from academia as well as the industry sector as a significant methodology for the development of innovative applications and systems. Currently, the merging of this architecture with that of Cloud computing has been largely motivated by the need for various applications and infrastructures in IoT. In addition to this, the Cloud ascends as an eminent solution that would help solve various challenges that are faced by the IoT standard when varied physical devices. There are an excessive number of Cloud service providers the web along with many other services. Thus, it becomes critical to choose the provider who can be efficient, consistent, and suitable, and who can deliver the best Quality of Service (QoS). Thus, this chapter discusses QoS for cloud computing and IoT.

INTRODUCTION

A network that connects several physical "things" also called objects, with electronics, required software and adequate sensors, enabling these to exchange information and data with servers and other devices using various means of communication framework is referred to as Internet of Things (IoT) (Bertino 2016). IoT is branded by real world and consists of little things that have limitations in storage as well as the processing ability. There are many issues associated with dependability, performance, privacy as well as security. There are enormous capabilities when it comes to storage of data and processing ability, virtually when it comes to cloud computing. It is highly developed and many IoT issues are solved to some extent.

Introducing IoT into the internet results in lot of smart objects gets connected to the internet and these objects generate large amount of data that cannot be handled by normal databases. If the objects have very simple interface then they cannot even perform small amount of computation that might be necessary. Hence cloud concepts are integrated with IoT so that storing and computation is done in the cloud. Managing huge amount of data can be easily done by combining IoT with cloud (Suchetha & Guruprasad, 2015). Hence, a fresh IT standard with cloud and IoT as the two balancing technologies that are merged together will surely disrupt the current as well as the future Internet (Zhou et al, 2013 & Chao et al, 2011). Hence, when the complementary technologies such as Cloud and IoT are integrated as one module into a novel IT paradigm, it will disturb both present as well as forthcoming Internet.

Smart towns and societies, smart home and metering, Healthcare, Video observance, automatic and smart transport, smart grid and smart energy, smart logistics and monitoring of environmental conditions are some of the primary applications that are developed using Cloud and IoT. Increase in the amount of data, their types and unpredictability leads to the issue of QoS.

Section 2 introduces the background of cloud computing. Section 3 discusses the related work based on QoS of IoT, cloud computing and Cloud of Things (CoT). Section 4 explains the communication technologies involved in IoT. Section 5 explains the solutions. The conclusion of the chapter is described in Section 6.

BACKGROUND

Cloud Computing Platforms

The computing services that are being delivered through internet is cloud computing. With these cloud provisions, software and hardware that are managed by third parties are allowed to be accessed by individuals and businesses (Lovesum, et al., 2014).

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/examining-communication-technologies-of-iot-for-best-qos/191843

Related Content

Big Data: An Emerging Field of Data Engineering
Piyush Kumar Shuklaand Madhuvan Dixit (2015). *Handbook of Research on Security Considerations in Cloud Computing (pp. 326-344).*
www.irma-international.org/chapter/big-data/134299

A Multi-Dimensional Mean Failure Cost Model to Enhance Security of Cloud Computing Systems
Mouna Jouiniand Latifa Ben Arfa Rabai (2019). *Cloud Security: Concepts, Methodologies, Tools, and Applications (pp. 211-225).*
www.irma-international.org/chapter/a-multi-dimensional-mean-failure-cost-model-to-enhance-security-of-cloud-computing-systems/224574

Comparative Study for Different Provisioning Policies for Load Balancing in Cloudsim
Layla Albdour (2017). *International Journal of Cloud Applications and Computing (pp. 76-86).*
www.irma-international.org/article/comparative-study-for-different-provisioning-policies-for-load-balancing-in-cloudsim/182254

A Secure Framework to Prevent Three-Tier Cloud Architecture From Malicious Malware Injection Attacks
B. V. Subba Rao, Vivek Sharma, Neeraj Rathore, Devendra Prasad, Harishchander Anandaramand Gaurav Soni (2023). *International Journal of Cloud Applications and Computing (pp. 1-22).*
www.irma-international.org/article/a-secure-framework-to-prevent-three-tier-cloud-architecture-from-malicious-malware-injection-attacks/317220

Biometrics-Based Un-Locker to Enhance Cloud Security Systems
Ashima Narang, Deepali Guptaand Amandeep Kaur (2020). *International Journal of Cloud Applications and Computing (pp. 1-12).*
www.irma-international.org/article/biometrics-based-un-locker-to-enhance-cloud-security-systems/262612