

Chapter 4

Cloud– and IoT–Powered Smart Connected Cities

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ABSTRACT

The internet of things (IoT) is rising at a stunning rate. Consistently, every day, the presence of new gadgets, cameras, cell phones, and sensors these are associated with the internet. It is envisioned IoT will find, coordinate, and make utilization of such gadgets and their information in the advance of new service and items that can change and emphatically blow our lives. Presently, IoT and cloud computing are the hottest area used by the researchers. In any case, to the best of the authors' insight, these works do not have a point-by-point investigation of the new Cloud-IoT worldview, which includes totally new applications, challenges, and research issues. To connect this hole, this chapter gives a review on the reconciliation of Cloud and IoT. Beginning by describing basics of both IoT and cloud computing, the authors examine their complementarity, itemizing what is at present heading to their integration. At the end this chapter, the authors describe the smart roadside assistance for smart communities.

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INTRODUCTION

Internet of things (IoT) is a new revolution that is speedily growing in the field of the technology world. The main motivation of IoT concept to provide advanced connectivity and pervasive presence of things such as actuators, RFID tag, and sensing device (Bitam, 2015). Unique addressing schemes are available to connect and communicate with the things or object over the internet, e.g., smart homes, car sensors, appliances in smart cities, robots, etc. In IoT, connectivity and near-field communications create enormous new interactive features which are presuming to provide a promising area to upgrade the role of industrial systems such as transport and industrial systems. Systems authority will be able to track vehicles location, predict its future and possible road traffic. IoT can be acknowledged in three ideal models: 1) Internet situated (middleware), 2) Things arranged (sensors), 3) Semantic arranged (information). This result in the generation of tremendous measures of data which must be stored processed and presented in a consistent, proficient and effectively interpretative frame (Gurav, 2010.). These models will represent of an organization that are wares and address in a way like customary wares. cloud computing can give the virtual foundation to such utility processing which coordinates checking devices, storage, analytics, perception stages and customer conveyance. Internet of things (IoT) is a fundamental part of the today's development of the smart city. Individuals could remotely get to and interface with an extensive variety of gadgets coordinated with sensors, from home apparatuses, wearable gadgets to ecological screens. With such huge scope potential in our day by day life, IoT with lessened vitality utilization (the 'green' quality) has attracted more and more attention. In later a long time, vitality effective systems administration and processing have been broadly considered from numerous points of view, for example, the structure plan, the calculation outline, and the asset reusing

Although a few studies on IoT have been led, none of them is specifically focused on building parts of IoT. With the point of investigating IoT architecture designs, this study is conducted. Accordingly, this work is propelled by the requirement for arranging models, as will be required later on to oblige trillions of devices.

The commitments of the article are various: First, this proposal investigate, highlight, and report premier research propels made in IoT design recently.

- Then this chapter is categorize and classify IoT structures and devise a scientific categorization
- Then identify and plot the key prerequisites for future cloud based IoT architecture and smart city concept.
- A few prominent case studies on smart city based cloud of things are discovered and presented

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