Chapter 2

Controlling and Surveying of On-Site and Off-Site Systems Using Web Monitoring

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ABSTRACT

Monitoring and surveillancing of large amounts of data is a matter of prime concern in the current scenario for major organisations as well as small-scale and large-scale industries. Presently, the increasing need to collect, analyse, and store the data in a real-time environment as well as ensure the qualitative and quantitative analysis of real-time data has become a challenge. In addition, traditional data acquisition and monitoring systems lead industries to face multiple constraints and limitations, which affect their functioning, such as physical infrastructure setup and cost constraints. In this chapter, the surveillance of various applications has been discussed. The chapter also focuses on use of cloud-based model to perform the real-time monitoring with the help of the web. The chapter deeply discusses the use of web for on-site and off-site monitoring of various industries and organizations.

INTRODUCTION

The Internet, referred to as a system of interconnected networks, has connected people across the world together and has revolutionised communication systems since the end of 20th century. It is a plethora of information about almost everything. Other than communication, the internet is a storehouse of information based on what is requested by the user surfing the internet. The advent of the internet can be credited to the Advanced Research Projects Agency (ARPA), which belongs to the United States Defence (USD). ARPA was into research for time-sharing systems, resource sharing, and packet switching. This led to the incorporation of a data communication network in ARPA which came to be known as ARPA Network (ARPANET) (McKelvey & Driscoll, 2018). Gradually with more research and advancements in the field of networking, the Internet service providers (ISP) emerged commercially and allowed the civil people to use the Internet or World Wide Web (WWW) for personal or related uses. The Internet is based on the framework of the Internet Protocol suite which includes the Transmission Control Protocol/ Internet Protocol (TCP/IP) (Goralski, 2017). This framework consists of IP addresses, routing and subnetting. The Internet can be classified as public, private or organization-specific, called intranet, based on the type of usage and the type of users. It is sometimes interchangeably used with the term WWW, which includes the use of frontend and backend programming languages such as the Hyper-Text Markup Language (HTML), Cascading Style Sheets (CSS), eXtensive Markup Language (XML), JavaScript along with other tools and multimedia technology by designing the web pages and linking pages with the help of hyperlinks and delivering information to users in a more user-friendly manner. Now, it is able to serve a lot of applications as well as services to its users in such a way that one cannot imagine a life without it. Be it the electronic mails, browsing the web, social media applications or entertainment, business and education softwares, all of this is a boon of the internet.

As the internet serves myriad applications to the users, and connects the users to the other parts of the world as well, it is important to safeguard the security of devices and information. It is also important to monitor the browsing activity and ensure safe browsing. Since the Internet serves both home and business activities, surveillance becomes a matter of prime concern. Thus, an important application of the internet can be found in designing and implementing surveillance systems (Isravel et al., 2020). As per the term, surveillance systems are responsible to monitor the activities on the devices, and alert the authorised users using the devices about the same if any suspicious behaviour or anomaly is detected. It can be considered similar to an alert or alarm system and can be both wired or wireless. The choice of a wired or wireless surveillance system depends on the area to monitor and bandwidth factor. The most common example of a surveillance system is a Closed Circuit Television

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