

HTML5 based Notification System for Updating E-Training Contents

Yu-Doo Kim¹ and Il-Young Moon¹

¹ Department of Computer Science Engineering, KoreaTech, Korea
{kydman, iymoon}@koreatech.ac.kr

Abstract. We had developed E-Training system that training car management using AR(Augmented Reality) in past project. But this systems not support updating contents in real-time. So now we researching and developing real-time contents updating system for AR E-Training system. In this system, we concern about supporting multi platforms, using easily. Because it will used by non-experts in computer and play on multi platforms such as desktop, mobile. So we discuss about how to develop updating system. So we implement HTML5 based updating system that supporting various platforms and easy to use.

Keywords: CDN, Network, Notification, HTML5, E-Training

1 Introduction

In ours past project, we had implemented contents delivery network system and e-Training system using AR. E-Training system based on AR provides information on car maintenance training[1]. But it is not support modifying contents. So we study about contents updating by contents developers. Therefore we implemented contents delivery network system for AR[2]. However it is not support updating contents in real-time and use only in desktop environment. So this research is focused on how to update contents in real-time.

This system use HTML5 that is running on web browser so it supporting various platforms such as mobile, desktop, smart TV, etc. HTML5 is a markup language for structuring and presenting content for the World Wide Web, and is a core technology of the Internet originally proposed by Opera Software. It is the fifth revision of the HTML standard and, as of June 2012, is still under development. Its core aims have been to improve the language with support for the latest multimedia while keeping it easily readable by humans and consistently understood by computers and devices. HTML5 is intended to subsume not only HTML 4, but XHTML 1 and DOM Level 2 HTML as well[3][4]. So we had developed web system based on HTML5.

In this paper, we develop contents notification system to many clients. Through this system, contents provider will offer updating alarm to clients easily and clients who using e-Training system can know latest update of contents in real-time. Therefore e-Training contents updating will be easier using this system.

2 System Architecture

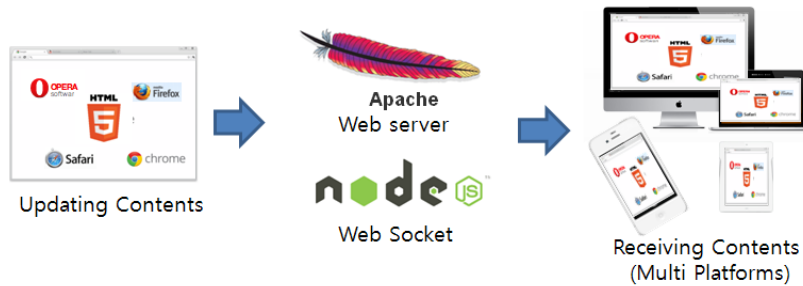


Fig. 1. System Architecture.

It is separated by three parts, first is update site. Contents providers are connecting web site that is update contents and send notify to web socket server. After that, web socket server send contents updating message with contents address to connected clients. Finally clients who connecting contents update client web site receive contents updating message and contents URL(Uniform Resource Locator). So clients receive latest e-Training contents via web server.

2.1 Contents Updating Server

Contents updating server was developed using HTML5 technology which is running on the Apache web server. When contents developer login, it is support contents upload page. After contents developer upload contents, It store contents in web server and send update notification message to web socket server.

2.2 Notification Server

Notification server receives and sends contents updating message on Node.js server. Node.js server is web based server system using JavaScript language. It is support web socket and simple coding. In this system, it develop update notify message and contents URL receiving from contents updating web server and send message to many clients via web socket in HTML5.

2.3 Web Clients

Web client is developed for e-Training contents user. For update AR contents directly, clients are connect contents web client site via web browser that support HTML5 technology. Next clients wait update message until arrive update message from Node.js server. After receive update message and URL, clients are join the contents server via web browser and download latest contents.

3 Implementation

Table 1. System Configuration.

System	Language	Role
Web Server	Apache	Running HTML5 web page
Web Socket	Node.js, Java Script	Sending notification message and contents URL
Server Web	HTML5, Java Script	Update contents
Client Web	HTML5, Java Script	Download contents

It is separated four systems. First is web server, it is running all html5 pages. Next is web socket server, it developed by node.js language. Web socket receive contents updating message from contents provider page of web server and send a contents updating message to client web page. The server web page provides contents upload capability. So contents developer updates AR contents on the server web page. Client web page shows updating message and contents URL from web socket server.

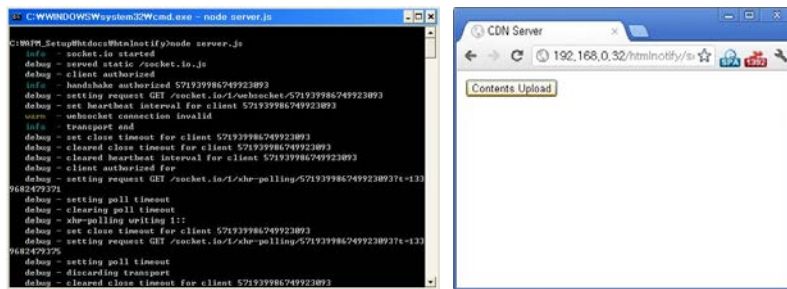


Fig. 2. Socket and Contents Update Server.

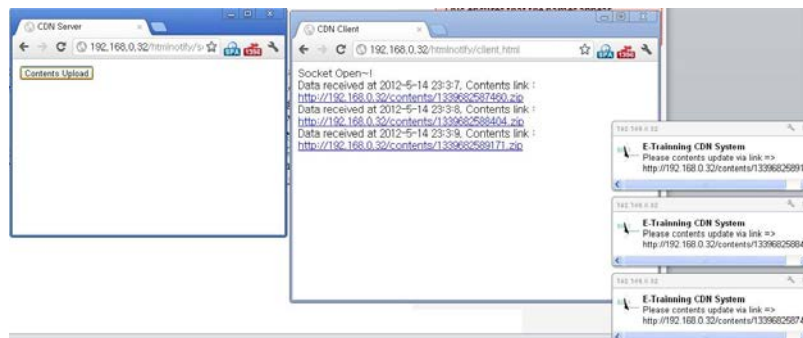
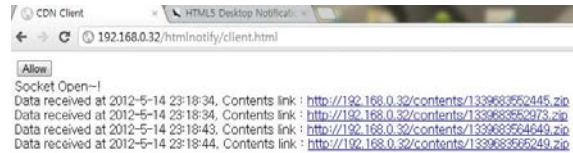
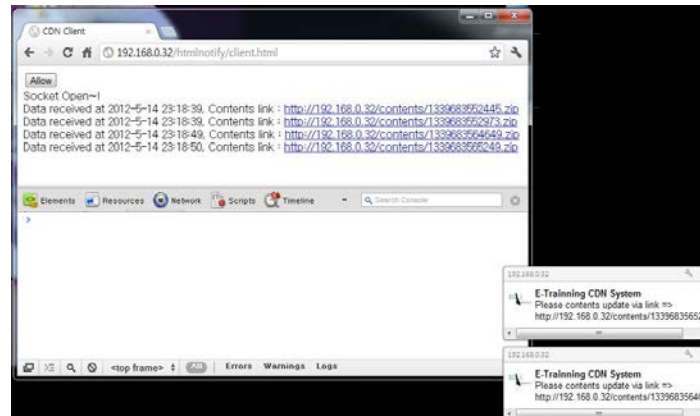


Fig. 3. Running Contents Update in Local System.

Figure 2 shows web socket system. It runs on the prompt in windows system. It is possible running on the Linux system because use Node.js system. Update server page provide contents updating by contents developer. And it sends contents updating message to web socket server. After that, web socket server sends a message to client web pages.



(a) Client A



(b) Client B

Fig. 4. Contents Receiving from another Systems.

Figure 3 shows running the system on local system. Client web page receive latest contents message and URL from server. Messages that shows on the bottom right in windows show notification for clients. It use HTML5 notification function[5]. Through this function, clients can be found contents updating from server.

Clients can connect this system on different various platform because it made by web. Web is support almost device because smart devices are including web browser. Therefore this system support various platform and clients run easily. Clients are connect and setup this system easily that run browser and type url only.

4 Conclusion

In this paper, we implement web based contents updating notification system using HTML5. Web technology supports various platforms by once development. So this system can connect in various devices such as desktop, tablet, smart TV. Therefore contents provider support contents updating to various users easily. And this system can utilize another system.

Acknowledgement

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