

Title	An architecture for non-stop upgrading of Web application
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Citation	
Issue Date	2010-09
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/9148
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Description	Supervisor:Associate Professor Masato Suzuki, 情報科学研究科, 修士

An architecture for non-stop upgrading of Web application

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August 10, 2010

Keywords: dynamic upgrading, non-stop upgrading, E-Commerce System, web application, non-stop upgrading architecture.

Today, information technology is not an unfamiliar concept. Information technology is using in many fields such as economy, transport, health care or science, research, etc Information technology can be applied in many ways but the evident example is using software to improve business process. We can see many advantages of information technology. It can make globalization, help the company to run more effective, reduce cost of time in many activities, etc With the important of applying information technology, software development industrial becomes an essential part in information technology.

There are many steps in the software development process: design, implementation, testing, deployment and maintenance. Maintenance step is one of the most costly steps in this process. This is especially true with web-based application software such as economic application, transfer management application or air control system, etc These systems need to work continuously. So we need architecture for making the updating of these application systems without stopping their services.

First of all, we introduced a new way to model the web application system. For easily control the data in the system, we need a formal definition language to describe the system activities. We combine the usage of Architecture Analysis and Design Language (AADL) with a simple Sequence

Diagram that we call Restricted Sequence Diagram. With this combination, we can model the data of system formally and easily to control.

After that, we determine characteristics of upgrading. Depend on the characteristics we categorize the updating type into 5 types. We find out the features of each of updating type and define each type identities.

Next, we introduced a real use case using the Electronic Commerce System. Electronic Commerce System is the standard of a commerce application so that we use it as the real example for applying our modeling method. We will find out all functions of the Electronic Commerce System and model it using the combination of AADL and Restricted Sequence Diagram.

Finally, we evaluate the ability of upgrading web application through system data model. We also discuss about the process of making non-stop upgrading without overall data affection and stopping the application services. We will have a general view of the data using in an application and determine that the non-stop upgrading can be made or not in a specific situation.