IT Auditing to Assure a Secure Cloud Computing for Enterprise Applications

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Abstract— Recently, all over the world mechanism of cloud computing is widely acceptable and used by most of the enterprise businesses in order increase their productivity. However there are still some concerns about the security provided by the cloud environment are raises. Thus in this our research project, we are discussing over the cloud computing paradigm evolvement for the large business applications like CRM as well as introducing the new framework for the secure cloud computing using the method of IT auditing. In this case our approach is basically directed towards the establishment of the cloud computing framework for the CRM applications with the use of checklists by following the data flow of the CRM application and its lifecycle. Those checklists are prepared on the basis of models of cloud computing such as deployment models and services models. With this project our main concern is to present the cloud computing implications through the large database enterprise CRM application and achieving the desired level of security with design and implementation of IT auditing technique. We claim that with this our proposed methods for the CRM applications, we will providing the security, regulations, compliance of such cloud computing environments.

Keywords— Cloud Computing Security and CRM

PROBLEM STATEMENT:

Moving traditional applications and their infrastructure to cloud has shifted the in-house control to a third party. It posts many challenges including security and privacy, performance and availability out of the security is the number one concern. Clearly using cloud computing does not make the security issue go away. It becomes an even challenging topic. In that sense, it is not quite a usual utility concept we are talking about it. Still there is problem with the security as the data leakage due to the poor authentications and information assurance.

AIMS AND OBJECTIVES:

Thus in this project our main aim and objective is to address the security issue from information assurance and security point of view. That is, we take holistic view of securing cloud computing by using the IT auditing vehicle. IT auditing or in general accounting auditing under cloud computing has added extra role of building strategic plan for the enterprise in addition to the traditional auditing role. We make master checklists as a framework specifically toward cloud computing based on its deployment models and service models. The goal is to create a framework with master check list so that both internal and external auditors can reference to it when they come to audit this new and dynamic cloud computing territory. Following are summarized objectives of our project:

- To present and study the detailed framework of the cloud computing for enterprise applications.
- To design and implement the large database based enterprise application for the cloud computing environment.
- To implement the IT auditing mechanism for the security purpose.

Research Methodologies:

1)Research Methods Used: For our research we used the qualitative research and quantitative research methods for the collection and analysis of data for our research.

A)Qualitative Research:

In this chapter the main research area of the proposed research work and their findings during our study.

Qualitative research is referred as the scientific research which is consisting of the various investigations during procedures for the same:

- Seeking for the answers for the questions.

- In order to answer the questions, systematically needs to use the predefined procedures set.
- Evidence collection.
- Generating the findings which weren't determined in advance.
- Produces the findings which are applicable beyond the immediate boundaries of study.

[Ref: Qualitative Research Methods: A Data Collector's Field Guide]

This all characteristics are shared by the qualitative research. In addition to this, using these research methods we can understand given research problem from the point of view of local population it involves. This type research is especially important in obtaining the culturally related information regarding to the opinions, values, social contexts and opinions.

There frequently used qualitative methods which are in-depth interviews, participant's observation, and focus groups, each method is responsible for getting the particular information for the same. [Ref: Qualitative Research Methods: A Data Collector's Field Guide]

- Participant observation: this is suitable method for collecting the data on the naturally occurring behaviors during their usual contexts.
- In-depth interviews: This kind of methods is optional for the collection of data and mostly depends on the personal perspectives.
- Focus groups are effective in eliciting data on the cultural norms of a group and in generating broad overviews of issues of concern to the cultural groups or subgroups represented.

[Ref: Qualitative Research Methods: A Data Collector's Field Guide]

B)Quantitative Research :On the other hand, in quantitative research, sampling techniques are used and their findings are presented in the form of numerical as well as statistical calculations are done in order to do the estimations of future quantities or events. Thus both research methods are differing in several ways.

[Ref: http://www.businessdictionary.com/definition/quantitative-research.html]

Thus in our case, we did the information collection related to the various surveillance methods, there ways to use, advantages, correctness ratios etc. As we know the main aim of such system is to develop the remote surveillance systems which are very cost effective, fast, robust, and secure as compare to the existing remote surveillance systems. Thus our main area of research for such system was CRM functionality, IT auditing concept etc.

[Ref: http://www.businessdictionary.com/definition/quantitative-research.html]

TIME PLAN: PROJECT BREAKDOWN:

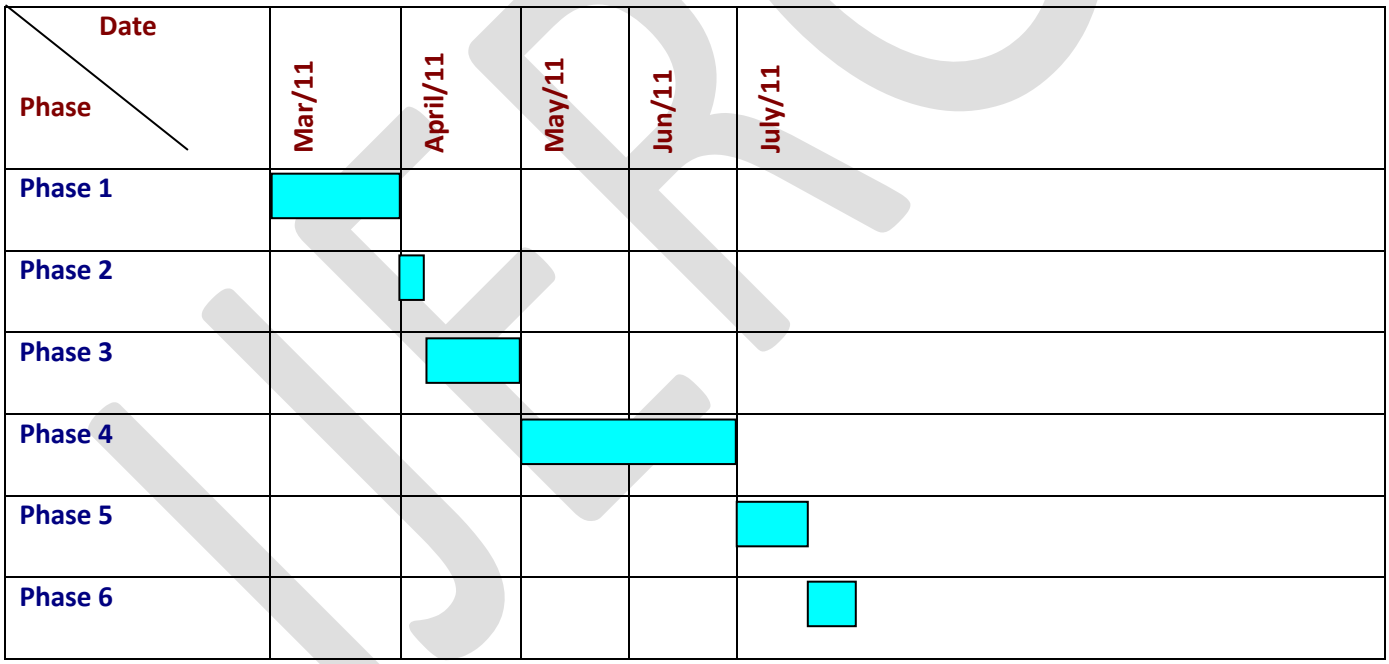
1) Effort estimate table:

Task	Effort weeks	Deliverables	Milestones
Analysis of existing systems & compare with proposed one	**4 weeks**		
Literature survey	**1 week**		
Designing & planning	**1+2 weeks**		
○ **System flow**	**1 weeks**		
○ **Designing modules & it's deliverables**	**2 week**	Modules design document	
Implementation	**8 weeks**	Primary system	
Testing	**3 weeks**	Test Reports	formal
Thesis	**1 weeks**	Complete project report	formal

2) Phase Description:

Phase	Task	Description
Phase 1	Analysis	Analyze the information related to the Cloud Computing.
Phase 2	Literature survey	Collect raw data and elaborate on literature surveys.
Phase 3	Design	Assign the module and design the process flow control.
Phase 4	Implementation	Implement the code for all the modules and integrate all the modules.
Phase 5	Testing	Test the code and overall process whether the process works properly.
Phase 6	Thesis	Prepare the thesis for this project with conclusion and future enhancement.

3) Project plan:



HARDWARE AND SOFTWARE REQUIREMENTS:

There are following software and hardware.

1) Hardware Requirements are:

- Intel Pentium III or above processor
- Minimum of 256 MB RAM
- Secondary Memory of minimum 5 GB
- NIC Card (Network Interface Card)

2) Software Requirements

- JDK1.4 onwards
- JCreator 4.1 onwards
- Myeclipse6.0 onwards
- Tomcat Apache 5.25 onwards

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