Software Requirements Specification (SRS)

Employee management system (EMS)

Version 1.0

September 9th, 2013

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6. Supporting Information

1. Introduction

The following subsections of the Software Requirements Specifications (SRS) document provide an overview of the entire Employee Management System.

1.1 Purpose

The purpose of this document is to present a detailed description of the Employee Management System. It will explain the purpose and features of the system, the interfaces of the system, what the system would do, the constraints under which it must operate.

This document is intended for both the database operator of this system and the developers of the system .

1.2 Scope

This software system will be a employee management system for any company which need to manage it's employee's details on a distributed database. The software system can be used to update,search,delete and perform any basic data manipulation tasks. The main benefit of this system will be that the database is distributed and a huge number of employees can be handled using this without requiring any special systems.

1.3 Definitions, Acronyms, and Abbreviations.

EMS – Stands for *Employee management system*. This is a distributed database application which allows routine employee management tasks to be done in a robust and efficient way.

DD – Stands for Distributed Database. A distributed database is a database in which storage devices are not all attached to a common processing unit such as the CPU, controlled by a distributed database management system [DDMS](together sometimes called a distributed database system). It may be stored in multiple computers, located in the same physical location; or may be dispersed over a network of interconnected computers. Distributed database application offers the user following important properties:

- Transperent distribution – Users are able to interact with the system as if it were one logical system.
- Transperent transactions - Each transaction must maintain database integrity across multiple databases. Transactions are also divided into subtransactions (if required) –each affecting one database.

Computer Network - A computer network or data network is a telecommunications network that allows computers to exchange data. The connections between networked computing devices are established using either cable media or wireless media.

DBA – Stands for database administrator. A database administrator (short form DBA) is a person responsible for the installation, configuration, upgrade, administration, monitoring and maintenance of databases in an organization. In this particular system, Local database administrator and Central Database administrator – both have a specific set of previleges in regards to modification and maintainance of the Distributed Database.

VPN - Stands for Virtual private network. VPN extends a private network across a public network, such as the Internet. It enables a computer to send and receive data across shared or public networks as if it were directly connected to the private network, while benefiting from the functionality, security and management policies of the private network.

Database catalog - The database catalog of a database instance consists of metadata in which definitions of database objects such as base tables, views (virtual tables), synonyms, value ranges, indexes, users, and user groups are stored.

Gateway - A gateway is a link between two computer programs or systems such as Internet Forums. A gateway acts as a portal between two programs allowing them to share information by communicating between protocols on a computer or between dissimilar computers.

GUI – Stands for Graphical user interface**.** It is a human-computer interface (i.e., a way for humans to interact with computers) that uses windows, icons and menus and which can be manipulated by a mouse (and often to a limited extent by a keyboard as well).

SSH – Stands for secure shell. Secure Shell is a network protocol that allows data to be exchanged using a secure channel between two networked devices.

1.4 References

Not applicable in this version of the document.

1.5 Overview

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

2. The Overall Description

This section provides a high level overview of the requirements of the software product. This section gives a background for those requirements which will laid out in a specific manner in Section 3 of this document.

2.1 Product Perspective

The Employee Management System depends on other hardware (refer Section 3), network connectivity and external stimulus. The following block diagram details the same.

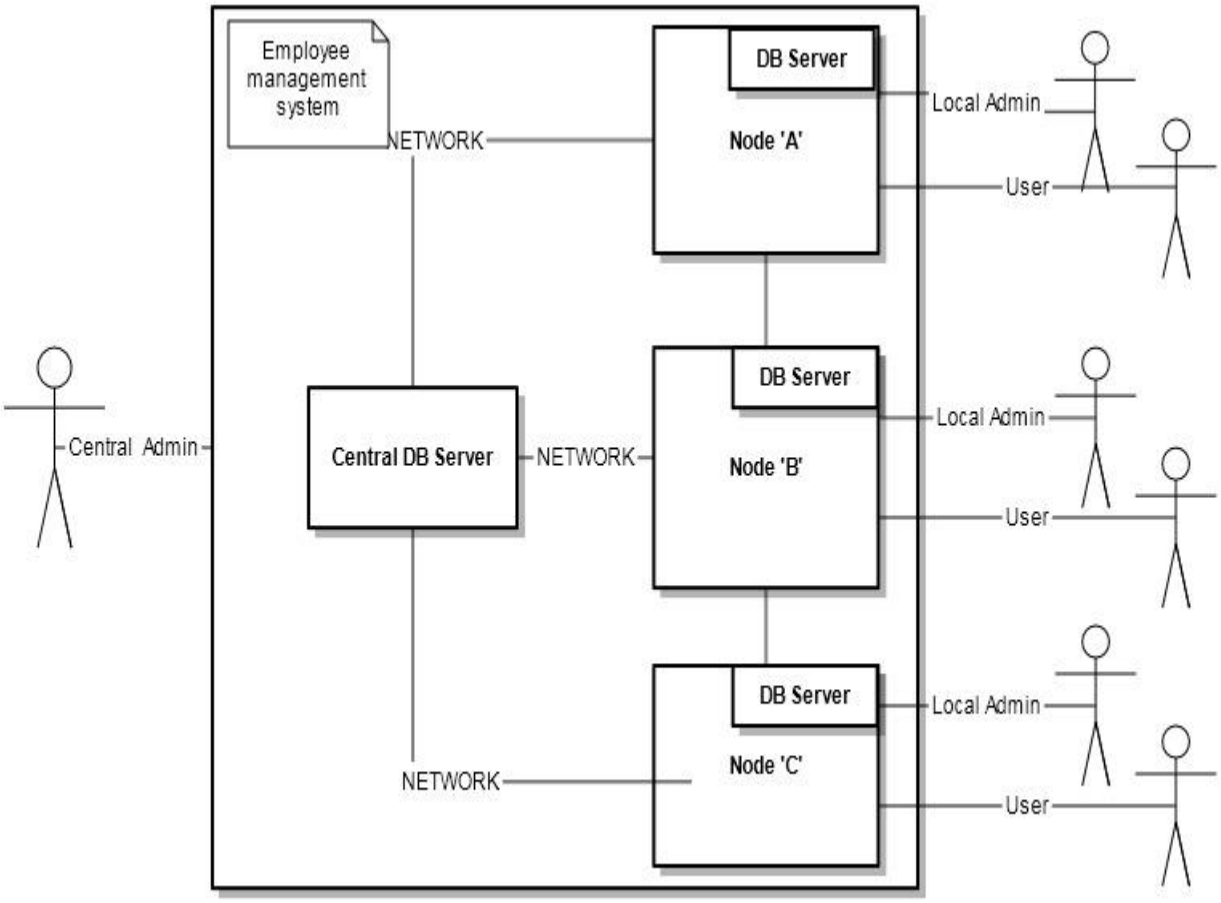

Fig 1

The EMS consists of multiple nodes synchronized and connected to every other node using a network to process the given querries. Each node typically comprises of a Database server and a Database management system running onto it.

A Local administrator is in charge of modifying/ maintaining the local Database. The Central Database administrator has previleges to modify/ monitor all the databases apart from all the previleges held by local DBA.

Local DB servers typically hold the data which is frequently accessed at that particular location. When a DB is querried – it looks for data in its local server. If the data requested for is available at the local site, it returns the result. Otherwise it uses a 'catalog' to send request to the specific DB which holds that particular data and returns the same to the user.

The following subsections describe how the software operates inside various constraints.

2.1.1 System Interfaces

1. The user primarily interacts with the EMS using a suitable Graphical User Interface.

2. The database administrators have access to the database servers via Secure Shell (SSH).

2.1.2 Interfaces

1. **Graphical User Interface**: The local users interact with the EMS using a suitable GUI that takes in input parameters and generates a query which is subsequently processed by the database servers.

   It provides an intuitive yet robust platform to perform activities like querying, creating and updating the employee records in database on a web based platform.

   e.g: Adding new employees.
   Attendance, leave and payroll management etc.

2. **Secure Shell (SSH):** Administrators have access to the respective databases. .

   Local Administrator: Has access to the database within his geographical location.
   Central Administrator: Has access to all the databases in the EMS.

2.1.3 Hardware Interfaces

The EMS would work on a web based platform. Any device supporting the standard operations of a full fledged web browser will be supported.

2.1.4 Software Interfaces

Operating system requirements – Windows XP and above
Minimum OS requirement to support PHP and MySql is Windows XP.

Software requirement – PHP 5.2.8, MySql 5.5 or above

2.1.5 Communications Interfaces

The databases located at different nodes are connected via the Internet or the client's Private Networks (VPN). The users specific to a node access the EMS using the Intranet. Other users and adminstrators use either the Internet or Virtual Private Networks.

2.1.6 Memory Constraints

Not applicable in this version of the document.

2.1.7 Operations

The mode of operation and the corresponding skill sets are automatically decided based on the user login.

Admin type users would be interacting with a dashboard containing admin specific functions like database maintenance, backup, maintenance activities among others.

Typical users would be entitled to a view that is specific to the hierarchy of the user. Certain users can update and modify the employee records, whereas, another set of users only are able to search the database.

2.2 Product Functions

EMS offers various functionalities. Some of them are listed below:

- Employee Records Information Management.
- Leave records, Payroll Management.
- Attendance Management.
- Employee Skill Management.

Following figure shows various users of the system along with the functionalities they will be accessing.

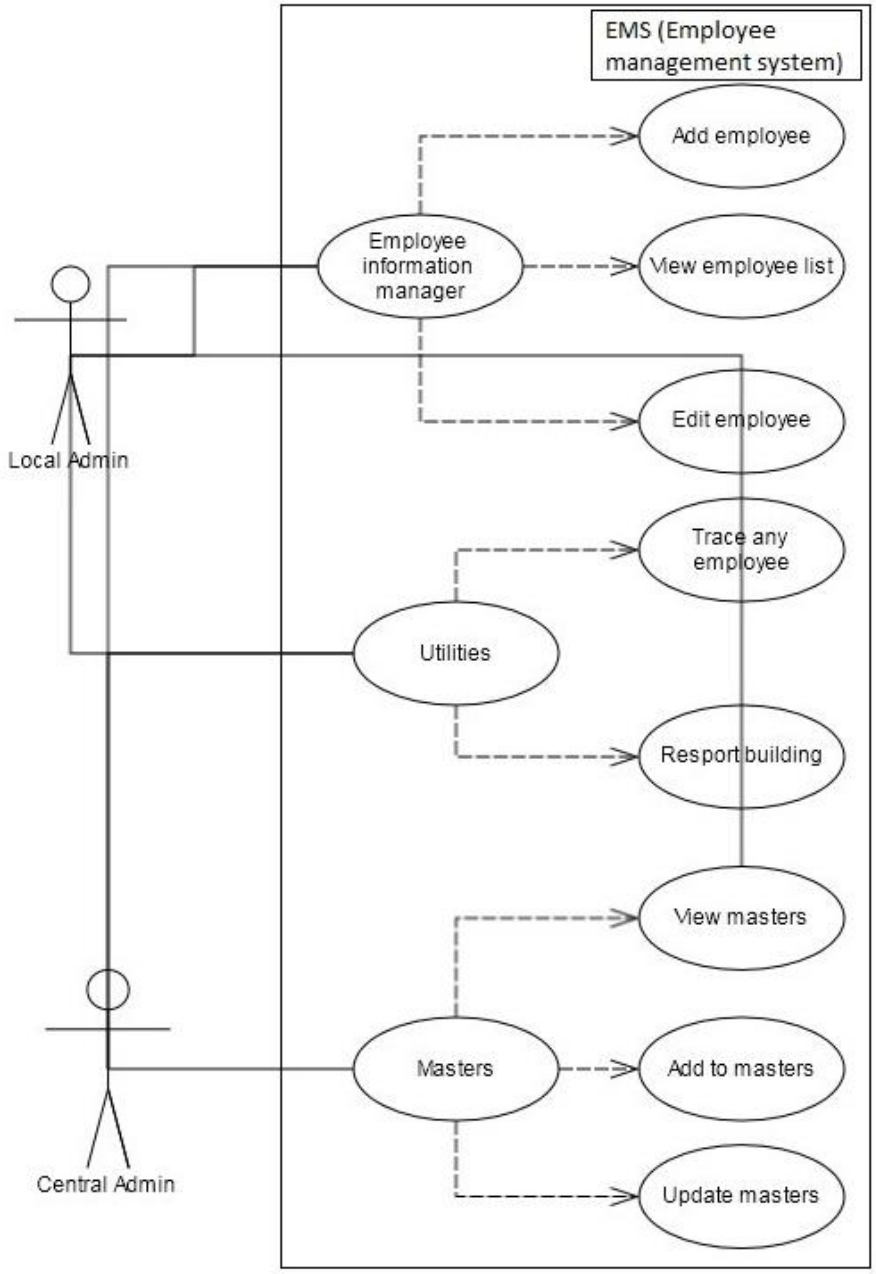

Fig 2

2.3 User Characteristics

Primary users of the EMS would be the employees under the Human Resource vertical in the client organization. These users are expected to have a basic knowledge of databases (elaborated in section 3). The user need not belong to a technical domain.

2.4 Constraints

Not applicable in this version of the document.

2.5 Assumptions and Dependencies

1. The SRS assumes that the client machine has a web browser installed. Further sections of the document outline the specific versions of the different flavors of web browsers available.

3. Specific Requirements

Not applicable in this version of the document.

3.1 External Interfaces

Not applicable in this version of this document.

3.2 Functions

Not applicable in this version of this document.

3.3 Performance Requirements

Not applicable in this version of the document.

3.4 Logical Database Requirements

Not applicable in this version of the document.

3.5 Design Constraints

Not applicable in this version of the document.

3.5.1 Standards Compliance

Not applicable in this version of the document.

3.6 Software System Attributes

Not applicable in this version of the document.

3.6.1 Reliability

Not applicable in this version of the document.

3.6.2 Availability

Not applicable in this version of the document.

3.6.3 Security

Not applicable in this version of the document.

3.6.4 Maintainability

Not applicable in this version of the document.

3.6.5 Portability

Not applicable in this version of the document.