# 

Software Requirements Specification

For

**Automated System Monitoring**

Version 1.1

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# INTRODUCTION

## PURPOSE OF REQUIREMENT DOCUMENT

This Software Requirements Specification provides a complete description of all the functions and specifications of the automated system monitoring application.

It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate.

The main purpose of this software is to monitor different logs of systems in a network ,report errors in non-technical language and perform automated actions in response of critical errors and scenerios. Different reports will be produced using detailed and complex statistical analysis of logs error data that can be used to generate graphs and that can be used by an organization to take security measures and cost-effective decisions.

## PROJECT SCOPE

**1.2.1 Description**

This software product can facilitate an organization to handle most of the technical issues in different systems of a network automatically.It also helps a non-technical user to understand these errors easily so that he/she can make a decision against any issue and perform actions by selecting suitable options from the software.

**1.2.2 Benefits**

There are number of benefits of automated system monitoring on a server through log files like automatically accessing the system logs without manual effort , extracting information through log files of systems for report analysis , measure errors rate and risk level, understand the log errors and gain deeper insight, monitoring event logs for critical events and automated feedback actions against them helps an organization to reduce manual efforts of their technical teams and reduce cost in terms of time and money.

* + 1. **Corporate Goals**

As Monitoring is an important factor to maintain stability for the network, with effective real time monitoring and timely notifications of issues in network, the overall performance of the network in an organization is expected to be improved. Also, the product will help them in resolving most of the issues normally encountered for example hacking attempts, IP conflicts etc. without technical help.

## DEFINITIONS, ACRONYMS & ABBREVIATIONS

**SQL Server**

SQL stands for Structured Query Language

SQL is a [database](http://en.wikipedia.org/wiki/Database) computer language designed for managing [data](http://en.wikipedia.org/wiki/Data) in [relational database management systems](http://en.wikipedia.org/wiki/Relational_database_management_systems) (RDBMS), and originally based upon [relational algebra](http://en.wikipedia.org/wiki/Relational_algebra) and [calculus](http://en.wikipedia.org/wiki/Relational_calculus). Its scope includes data insert, query, update and delete, [schema](http://en.wikipedia.org/wiki/Database_schema) creation and modification, and data access control.

**ADO.NET**

ADO stands for [ActiveX Data Objects](http://en.wikipedia.org/wiki/ActiveX_Data_Objects)

ADO.NET is a set of computer software components that programmers can use to access data and data services. It is a part of the [base class library](http://en.wikipedia.org/wiki/Base_Class_Library) that is included with the [Microsoft .NET Framework](http://en.wikipedia.org/wiki/.NET_Framework). It is commonly used by programmers to access and modify data stored in [relational database systems](http://en.wikipedia.org/wiki/Relational_DBMS), though it can also access data in non-relational sources.

**ADMIN**

ADMIN stands for Administration

ADMIN means to work for Organization, Controlling the operation itself in the Company by Adhering the Policies of Company.

**GUI**

GUI stands for graphical user interface

A user interface based on graphics (icons and pictures and menus) instead of text; uses a mouse as well as a keyboard as an input device, where the user clicks on a visual screen that has icons, windows and menus, by using a pointing device. GUI makes it easy for the user, therefore makes user-friendly.

**ASCII**

ASCII stands for American Standard Code for Information Interchange  
  
ASCII is a code that assigns a number to each letter of the alphabet (lower case and upper case) and to each special character found on a standard English typewriter, plus various special codes (backspace, space, delete, carriage return, line feed, etc)

**CENTERALIZED SERVER**

A type of [network](http://www.webopedia.com/TERM/N/network.html) where all users connect to a central server, which is the acting agent for all communications. This server would store both the communications and the user account information. Most public [instant messaging](http://www.webopedia.com/TERM/I/instant_messaging.html) [platforms](http://www.webopedia.com/TERM/P/platform.html) use a centralized network. Also called centralized server-structure.

**LOG FILE**

A logfile is a file that records either events that occur in an operating system or other software runs, or messages between different users of a communication software. Logging is the act of keeping a log. In the simplest case, messages are written to a single logfile.

**LOG MONITOR**

Log monitors are a type of software that monitor [log files](https://en.wikipedia.org/wiki/Computer_data_logging). Servers, application, network and security devices generate log files. Errors, problems, and more information is constantly logged and saved for analysis. In order to detect problems automatically, [system administrators](https://en.wikipedia.org/wiki/System_administrator) and operations set up monitors on the generated logs. The log monitors scan the log files and search for known text patterns and rules that indicate on important events. Once an event is detected, the monitoring system will send alert, either to a person or to another software/hardware system.

**TECHNICAL SUPPORT TEAM**

User-friendly assistance for individuals having technical problems with electronic devices. The technical support team is composed of individuals that are familiar with the ins and outs of a device. With this knowledge, they are able to troubleshoot most problems that a user experiences. Information on how to reach technical support is usually provided with the packaged materials included with a device. Technical support may be provided over the phone, through email, or with a live-chat interface.

## REFERENCES

* IEEE Std 830-1998 .IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.
* http://www.scribd.com/doc/9138468/Software-Requirement-Specification-SrsMidtems
* <http://www.processimpact.com/process_assets/srs_template.doc>

**1.5 OVERVIEW**

The rest of this SRS is organized as follows:

* Section 2 gives an overall description of the software. It gives what level of proficiency is expected of the user, some general constraints while making the software and some assumptions and dependencies that are assumed.
* Section 3 contains most important features presented with detailed description, and requirements. It gives specific requirements which the software is expected to deliver. Functional requirements are given in this section. This section is written primarily for the developers and describes in technical terms the details of the functionality of the product and about safety and performance.

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

# GENERAL DESCRIPTION

## PRODUCT PERSPECTIVE

This monitoring application will be used by administration of an organization. The environment where the project will be implemented in a multinational company that offering several products and needs to conduct market and customer surveys.

## PRODUCT FUNCTION

* + 1. **For Administration**

The administrator will analyze errors and take action against them via software.He/she can

also automate some actions via software like automatic powering off systems in a network that are idle.

* + 1. **For Technical Support Team**

A technical person will be called by admin if there are issues in the software configuration and

Working.He/She will also deal with the critical errors of the systems in a network that cannot

be handled via software.

**2.2.3** **For Data Management Team**

The objective of this team is to manage the log history of all systems in a database and

generating weekly and monthly reports and graphs to analyze data for different purposes.

# USER CLASSES AND CHARACTERISTICS

We will be having different classes for following users.

## 2.3.1 Administration

This includes function to view errors and automate actions against errors.

## 2.3.3 Data Analyst

This class contains functions to generate graphs and reports.

## GENERAL CONSTRAINTS

## 2.4.1 Hardware Limitations

Hardware limitation of this software product can be unavailability of network . If network devices and proper lan connections are not available then the admin can’t use the software to monitor systems.

## 2.4.2 Security Consideration

Security issues can be that if any employee or any other person using id of other employee. May be that person login with the id of any other employee and order food but the amount of food will be deducting from the salary of the person from which order was given. There can be misuse of any employee id by other employee if he knew his/her password.

* 1. **ASSUMPTIONS AND DEPENDENCIES**

## ****Assumptions****

This software will be installed on admin`s system and other employees of organization cannot use this software

## ****2.5.2 Dependencies****

This software is highly dependent on the availability of network devices and proper lan connection without this software is unable to read logs of systems and becomes useless. The software also depends on how the admin handles the application on computer.

# SPECIFIC REQUIREMENT

## FUNCTIONAL REQUIREMENT

## For ADMIN

1. The user will login to the system by entering user name and password.
2. The user once logged in will monitor errors and take timely action against them.
3. Automate tasks by selecting suitable options in software.

## For Data Analyst Operator

1. The user will login to the system by entering user name and password.
2. The user once logged in will be doing analysis by generating graphs and reports.

* **For Technical Support:**

1. The user will login to the system by entering user name and password.
2. User will do monthly maintenance of software and in case of software malfunctioning

He/she will solve the problem.

1. User will do the initial configuration of software during installation.

## NON FUNCTIONAL REQUIREMENTS

**3.2.1 Product Requirements**

* **Usability**

Our software does not need to be that much user friendly as it is designed for the organizations. It is a user centered designed. On source code comments are also encoded. Tools are user friendly which made easier for the user to use our software.

* **Reliability**

It analysis testing procedures that allows previewing of software warranty and service cost long. Our software can be worked for a wide range of time. It will be worked on without any failure.

## Performance

It is open software. It can create powerful, realistic work for thousands of users running software.

* **Efficiency**

Our software provides easy to use tools that any user can access software that are appropriate and well managed. User login will not take much time. It will operate quickly with acceptable system performance.

* **Portability**

Our software can run on the environment that support network domain like Windows8 and onwards .Time requirement is needed to move the software.

**3.2.2 External Requirements**

**Ethical**

* The user will not find any odious data in the software.
* The software’s abusive and fake usage will highly be condemned.

**Safety**

No such heavy downloadable in the software which can lead to system crash.

## Security

No external user is allowed to make changes in the software, only administrator can make changes. The whole login time should not take much time and the password entered by the administrative person display as ASCII character”\*”.

## EXTERNAL INTERFACE REQUIREMENTS

### 3.5.1 Hardware Interfaces

The software requires network devices (routers ,switches,lan cables) and proper lan connection.

### 3.5.2 Software Interfaces

SQL Server 2014 is used for storing database. The system must provide SQL data table definitions and all commands used in SQL Server 2014.

C# windows form is used which provides the front end coding i.e. user login options, graphical analysis, information and designing of the whole software is done by using C# windows form application.Visual C# 2012 edition is used for coding .

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