

# Software Requirements Specification

## Team 5 - Server Metric Tracker

### Project Description

There are four components. Component 1 is a database. Component 2 is a data generator - that updates the database with some "server traffic data" in a random manner. Component 3 is a backend server that talks to the database (and potentially some cloud APIs). Component 4 is a frontend server that talks to the backend server.

There needs to be authentication using JWT. There needs to be a dashboard that provides different ways (graphical, tabular) of viewing different servers traffic (for example, 3-day average, 7-day average etc). There needs to be an alerting system – including email/mobile/web alerts. There needs to be different types of users with permissions to view or to set up alerting or perform admin tasks.

### Use Cases

- Sign-in - each user should be signed in according to their privilege level.
- A user should be able to create an account
- A user can change/update their password
- A user can change the data seen on the dashboard
- A user can monitor servers that are assigned to them
- A user can add a server to monitor
- A user should be able to remove a server (warning about server removal and privilege)
- A user can subscribe to server alerts
- A user should be able to compare statistics between servers

### Types of Users

- Admin user: Needs to be able to be the IT guy who monitors the system
- Client: Is a normal user that is the Server/Router owner
- Service manager: Can assign service providers to clients
- Service provider: Can gather data from the client's server/router to perform ML, data analysis visualization, etc.

### Functional Requirements

- When a user signs into the system, the software shall authenticate their credentials using JWT
- The software shall be able to accept data from outside sources, such as:
  - Google forms or sheets

- Web API
- File upload
- Custom connection
- The software shall display server traffic in different ways (graphical, tabular)
- The software shall have a ticketing system for reporting issues
- When a server is down, the software shall notify the appropriate users in real time
- The software shall allow new client servers to be connected at any time
- The software shall generate data for testing purposes
- The software shall have a data generator to generate real traffic “data”
- The software shall allow users to change passwords and emails addresses
- The software shall send real-time notifications to users that the user subscribes to
- The software shall have different user privileges
- The software shall allow users to add servers
- The software shall allow service managers to add service providers to users.
- The software shall have admin capabilities
- The software shall have service provider capabilities
- The software shall have service manager capabilities
- The software shall have client capabilities

## Non-Functional requirements and Constraints

- Backend: Springboot
- Frontend: React and TypeScript
- IDE: Visual Studio Code
- The code must be modular
- CI/CD is required
- The system shall respond in real time