**OVERLAY NETWORK MONITORING**

USER DOCUMENT

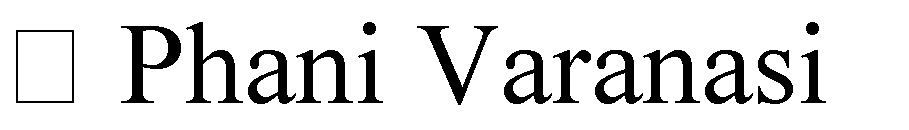
Version 1.2

**Team Name:** Smart Developers

**Team Members:**











Sana











1. **Preface:**

Initial Version

The main concern of the project is to provide the customer with a simple and unified way of maintaining and updating its application which interacts with the monitoring system through a RESTful API. This is the initial version of the document.

The tool displays the statistical information regarding user’s network data and user’s CPU data in the form graphs.

1. **Glossary and Abbreviations:**

* **API**: Application Programming Interface
  + An API is a set of routines, protocols, and tools for building software applications.
* **InfluxDB**: Influx Database
  + InfluxDB is an open source time series database. InfluxDB has no external dependencies and provides an SQL-like language with built in time-centric functions for querying a data structure composed of measurements, series, and points.
* **Grafana**:
  + Grafana is most commonly used for visualising time series data for Internet infrastructure and application analytics but many use it in other domains including industrial sensors, home automation, weather, and process control. Grafana features pluggable panels and data sources allowing easy extensibility and a variety of panels, including fully featured graph panels with rich visualization options. There is built in support for many of the most popular time series data sources.
* **SSL**: Secure Sockets Layer
  + SSL is a standard security technology for establishing an encrypted link between a web server and a browser.
* **RTT**: Round Trip Time
* **HTTPS**: Hyper Text Transport Protocol Secure
* **RESTful**: Representative State Transfer

1. **Pre-Requisites:**

* Knowledge about Linux operations for installing the pre-requisite packages for running the tool
* Knowledge about the using of a web browser
* Knowledge about HTTP and SSH
* Basic knowledge about Grafana

1. **Features of the Tool:**

The tool consists of a Frontend, Database and a Backend. The Frontend consists of web pages written in HTML and CSS used to create an intuitive, drill down GUI that provides a user-friendly interface.

The Database is used by Frontend and Backend. The tool uses InfluxDB database management tool to store and manage data. By default, the database name is db2. The database consists of tables required for storing user credentials as well as CPU statistics, RTT and Bandwidth data retrieved by the backend.

The Backend consists of a series of python files that need to be running in the background in order to ensure the proper functioning of the tool. An HTTP connection must be established between the server and the user node. For this, the tool is provided in folder.

1. **CPU stats, RTT and Bandwidth of each User:**

After logging in to the Web GUI, the user is redirected to a dashboard for an interface with our tool. In the dashboard, there is will be an option on the menu bar i.e. Statistics, which on clicking redirects towards Grafana.

Grafana shows the graphs on the basis of data stored to the database which is extracted y our tool from the user’s CPU.

1. **RESTful APi:**

The RESTful APi creates an interface for the server and the user nodes. It exports the user credentials to the database and stores in it. At the time of authentication, the user login credentials are verified with the credentials stored in the database.

1. **Usage Guide:**

* The user initially needs to redirect to the below mentioned web address in order to get started with the tool

<http://<server_ip_address>:8080/>

* Then, the user needs to sign up at first so that he can start using the tool.
* The user is required to run our .py file in order to get started with the interface. The .py file that has to be run is **user\_runner.py**
* The RESTful APi stores the user credentials when the user gives the GET request, and then the REST uses those credentials from the database to authenticate the user.