



SRE II Assignment

SRE Development Assignment: Hosting Gitea and Grafana with Single Sign-On using Authelia

Objective

The goal of this assignment is to set up a self-hosted Gitea instance for Git repository management and Grafana for monitoring and visualization. You will implement Single Sign-On (SSO) using Authelia and configure a reverse proxy (Nginx or Caddy) to manage access to these services. Optionally, you can use Docker and Terraform to streamline the deployment process.

Requirements

Core Tasks

1. Set Up Gitea:

- Deploy a Gitea instance to manage Git repositories.
- Ensure that Gitea is accessible through the reverse proxy.

2. Set Up Grafana:

- Deploy a Grafana instance for monitoring and visualization.
- Ensure that Grafana is accessible through the reverse proxy.

3. Implement Single Sign-On (SSO) with Authelia:

- Deploy Authelia to provide SSO capabilities for both Gitea and Grafana.
- Configure Authelia to authenticate users and manage access to the services.
- For simplicity, you can use a YAML database for storing user data.

4. Configure Reverse Proxy:

- Choose either Nginx or Caddy as the reverse proxy.
- Set up the reverse proxy to route traffic to Gitea and Grafana.
- Ensure that the reverse proxy is configured to work with Authelia for authentication.

Optional Tasks

1. Containerization:

- Use Docker to containerize Gitea, Grafana, and Authelia.
- Create a `docker-compose.yml` file to manage the services.

2. Infrastructure as Code:

- Use Terraform to provision the infrastructure required for hosting Gitea, Grafana, and Authelia.
- Ensure that the Terraform configuration is idempotent and can be reused.

3. Monitoring and Logging:

- Set up Grafana to monitor the health and performance of Gitea and Authelia.
- Configure Grafana to visualize logs from Gitea and Authelia (consider using Loki for log aggregation).

Deliverables

- A public git repository containing:
 - Configuration files for Gitea, Grafana, Authelia, and the reverse proxy.
 - Docker and/or Terraform files (if applicable).
 - Documentation on how to deploy and access the services, including any prerequisites.
 - A brief report on the architecture, decisions made, and any challenges faced during the implementation.

Evaluation Criteria

There is no right or wrong way to approach this task. We just want to evaluate the approach taken.

- **Functionality:** All services (Gitea, Grafana, Authelia) should be operational and accessible through the reverse proxy.
- **Security:** Proper authentication and authorization should be enforced using Authelia.
- **Documentation:** Clear and concise documentation on setup and usage.
- **Code Quality:** Clean, maintainable, and well-structured code/configuration files.
- **Optional Features:** Bonus points for using Docker and Terraform effectively, as well as for implementing monitoring and logging.

Resources

- [Gitea Documentation](#)
- [Grafana Documentation](#)
- [Authelia Documentation](#)
- [Authelia Auth Example](#)
- [Nginx Documentation](#)
- [Caddy Documentation](#)
- [Docker Documentation](#)
- [Terraform Documentation](#)