

# Segment Routing v6 network programming

## Students



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**Initial Situation:** Configuring network devices using the command line interface (CLI) is usually time consuming because all commands have to be written for each function inside devices.

These commands must be applied to each device individually.

Furthermore, the specific commands have to be known and correct.

These reasons make CLI not very user friendly.

**Objective:** The goal of this work is to develop a web based SRv6 Network Programming Web App that allows a user to configure a given network. Configuring SR endpoint behavior, such as L3VPN on a network should be possible.

The user selects which configuration he/she wants to have on a specified router of the network, then the app configures the devices as desired.

The SRv6 Network Programming Web App only shows the ProviderEdge routers of the provided network topology, as only these routers are required to configure SRv6. Generally speaking, this project is designed to facilitate the configuration of SRv6 network programming on endpoints by providing a web app.

**Result:** A web app was developed with ReactJS, which allows L3VPN to be configured.

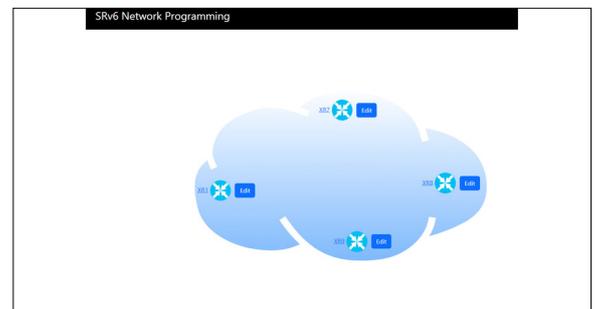
For this purpose, a single source of truth was built, which stores the data in a PostgresDB.

The connection to the frontend is done via an API based on GO.

To write the data from the single source of truth to the devices, a GO component was developed that uses Jinja-netconf, Gornir and Scrapligo.

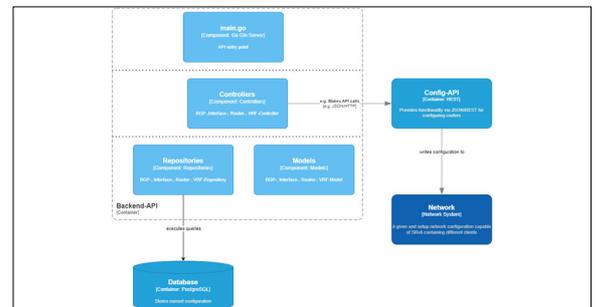
## Overview

Own presentation



## Backend

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## Configuration template

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## Advisor

Prof. Laurent Metzger

Subject Area  
Internet Technologies  
and Applications

