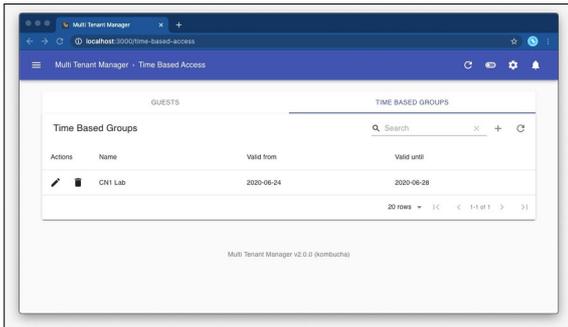
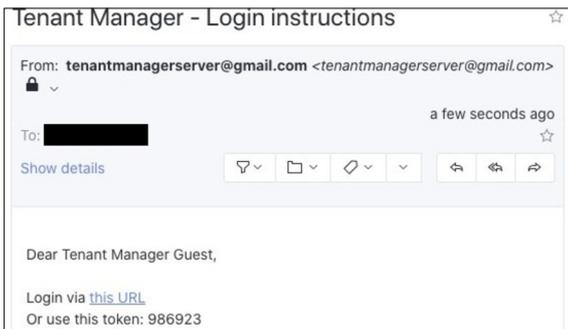


Graduate Candidates	Dennis Ligtenberg, Aaron Meier
Examiner	Prof. Laurent Metzger
Co-Examiner	Laurent Billas, Führungsunterstützungsbasis FUB, Bern, BE
Subject Area	Miscellaneous
Project Partner	Cisco Systems (Switzerland) GmbH

## Cisco DNA Multi Tenant Manager v2



Create a time limited group for interface configuration  
Own presentment



Invite mail sent to guests  
Own presentment

**Introduction:** In the scope of a student research project a PoC (prove of concept) was developed that allows for port configuration by multiple tenants on Cisco edge network switches. This was achieved by leveraging the API capabilities of Cisco's Software Defined Networking (SDN) platform DNA center.

To further show external functionality the DNA platform enables through programmability, this thesis expands the student research project.

Included in the scope is not only implementation but also finding and elaborating on new use cases together with the industry partner and the thesis advisor.

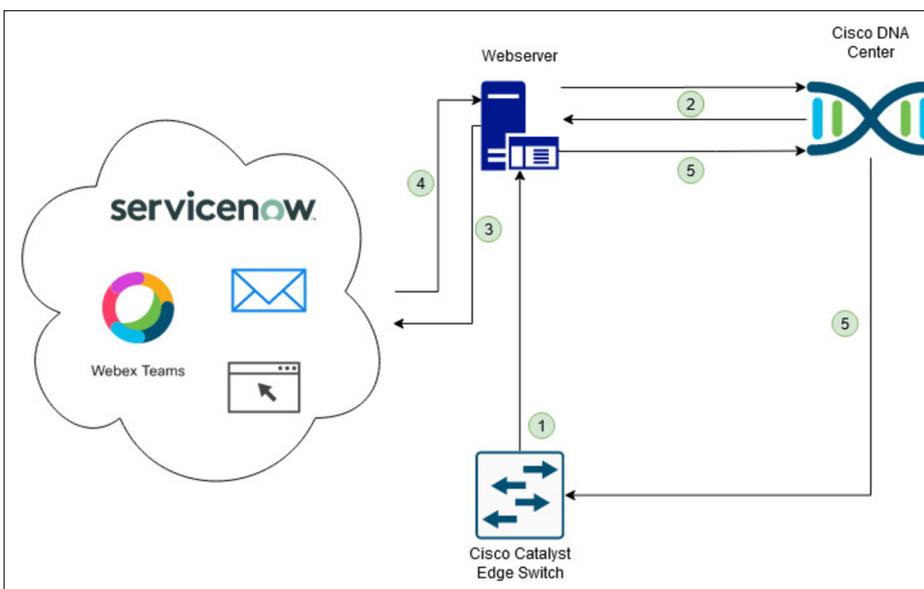
**Approach:** The base for the new features was a design thinking session with all involved project parties. It was decided to add a time based guest access feature with automatic rollback for the pre-existing port configuration functionality.

Device configuration change management and notification should be added as another new feature.

Before adding new features some updates were made to the existing base. This includes updates to the infrastructure, libraries and frame-works used plus improvements to the code architecture and quality.

**Result:** As a result three main features were added:

- Expanding port configuration and access management with time based access including automatic rollback of any configuration made during this access.
- Detecting configuration changes directly on edge switches.
- Notifying users about detected changes and an approval workflow with automatic configuration rollback when denied.



Change control workflow diagram  
Icons from servicenow.com, cisco.com and diagrams.net