MICHIGAN STATE
UNIVERSITY

Project Plan Presentation
Infinity Gauntlet

The Capstone Experience

Team Kohl's

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From Students…
…to Professionals

Project Sponsor Overview

- Kohl's is the largest department store chain in the United States, with 1,165 locations

- Kohl's also has a large e-commerce presence, where they are expanding their online capabilities more

- Due to the shifting retail market, Kohl's is highly vertically integrated – developments such as their mobile app or Kohl's Cash

Project Functional Specifications

- There are a growing number of cloud service providers – Google Cloud Platform, Amazon Web Services, Microsoft Azure, etc.

- For a developer to switch to a new platform, there is a learning curve to learn the GUI and options and what they mean

- Our project aims to simplify this, by creating one unified online platform that Kohl's developers can use to bring together all the cloud service providers into one place without having to learn the ins and outs of each

- This can cut down on development time, but also costs. If one platform raises prices, this software can easily enable devs to switch to another
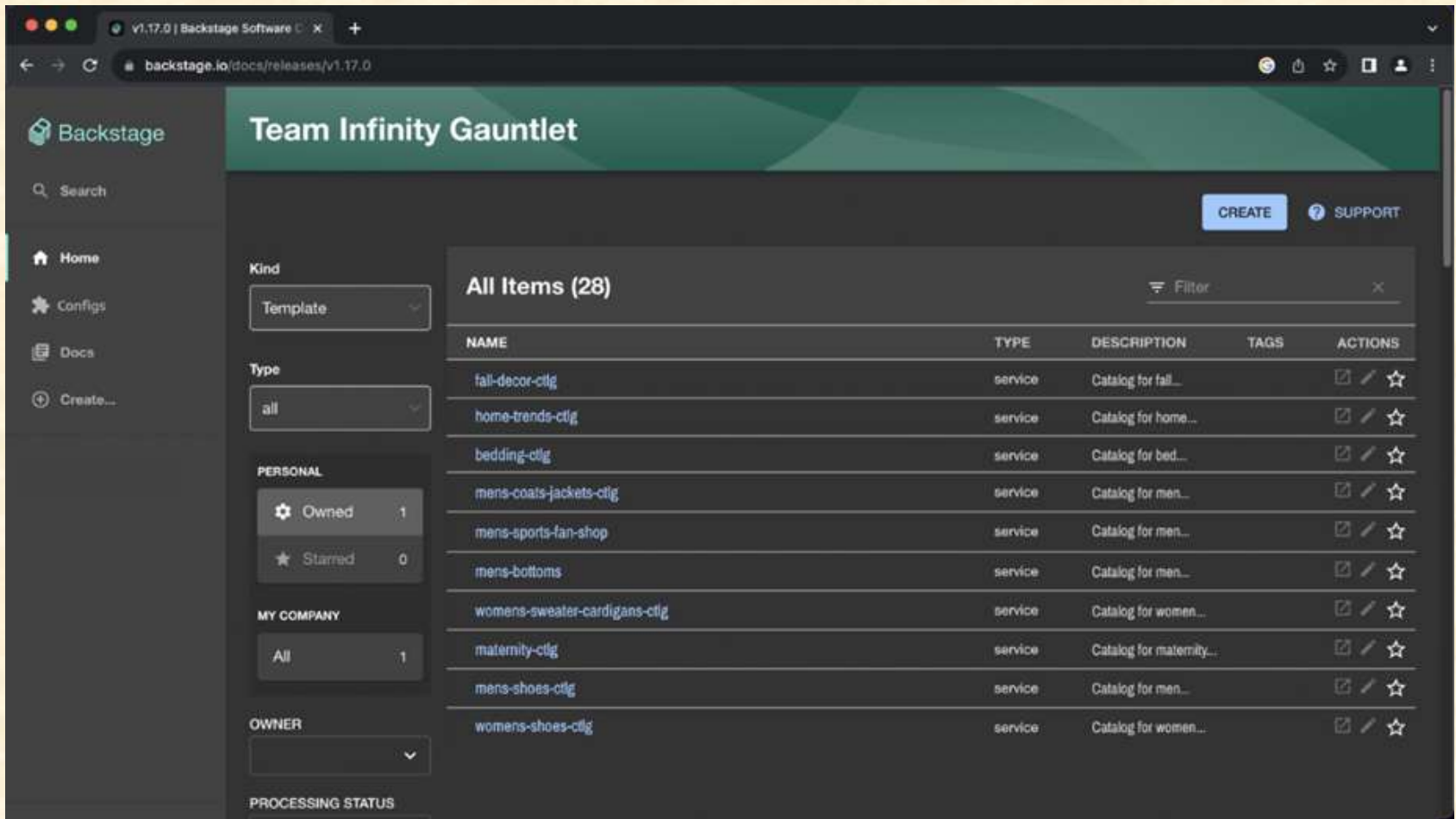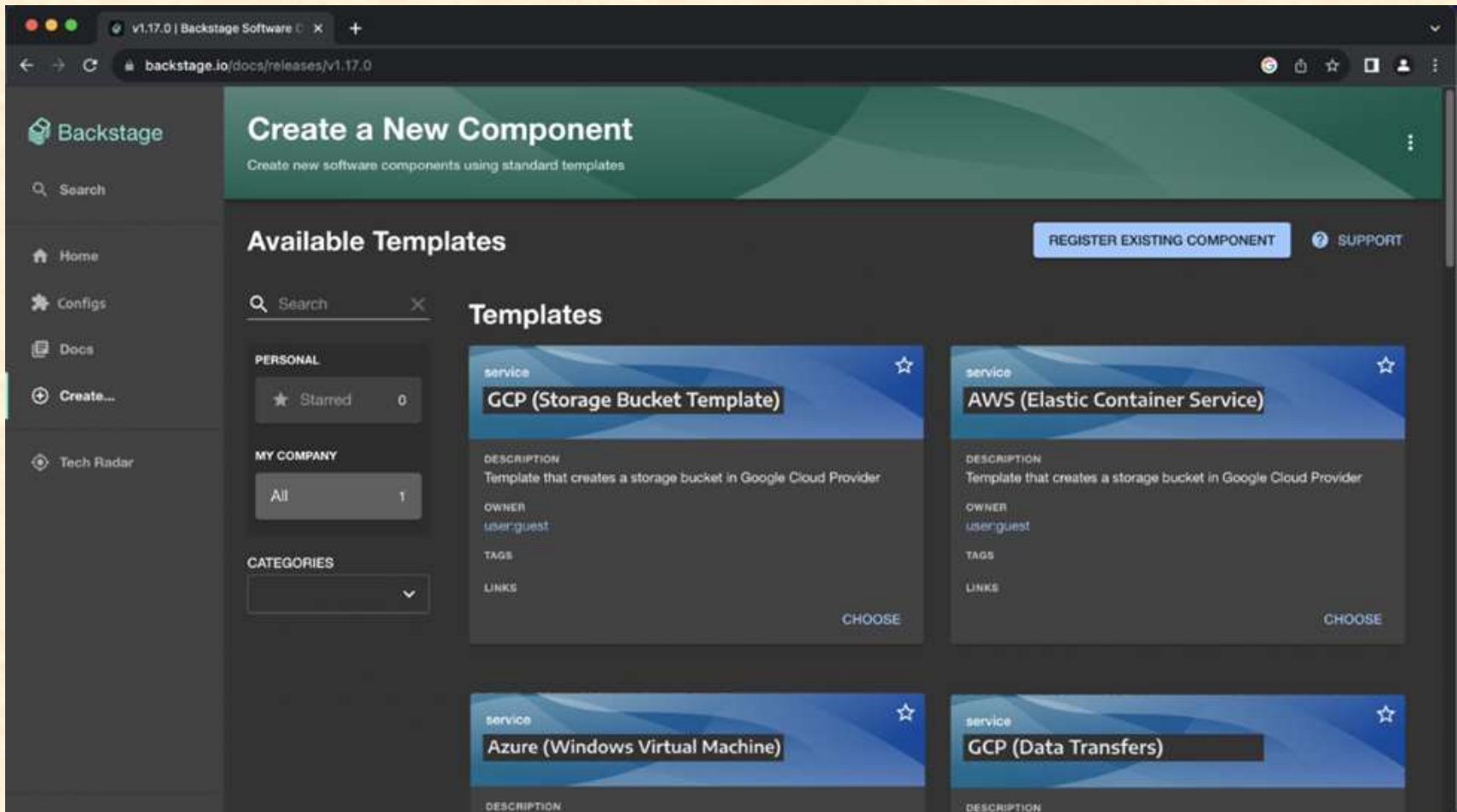
Project Design Specifications

- The Infinity Gauntlet will be an online web app that internal Kohl's developers can access

- On this app, developers will be able to create, view, and edit configurations for each of the major cloud platform providers

- When doing the set-up, developers can pick from several "t-shirt sizes" that can give them a brief overview of what their app will be like.
  - In other words, a dev can make a "small" or "large" app – without having to know exactly how much RAM or resources their system has

Screen Mockup: Home Page
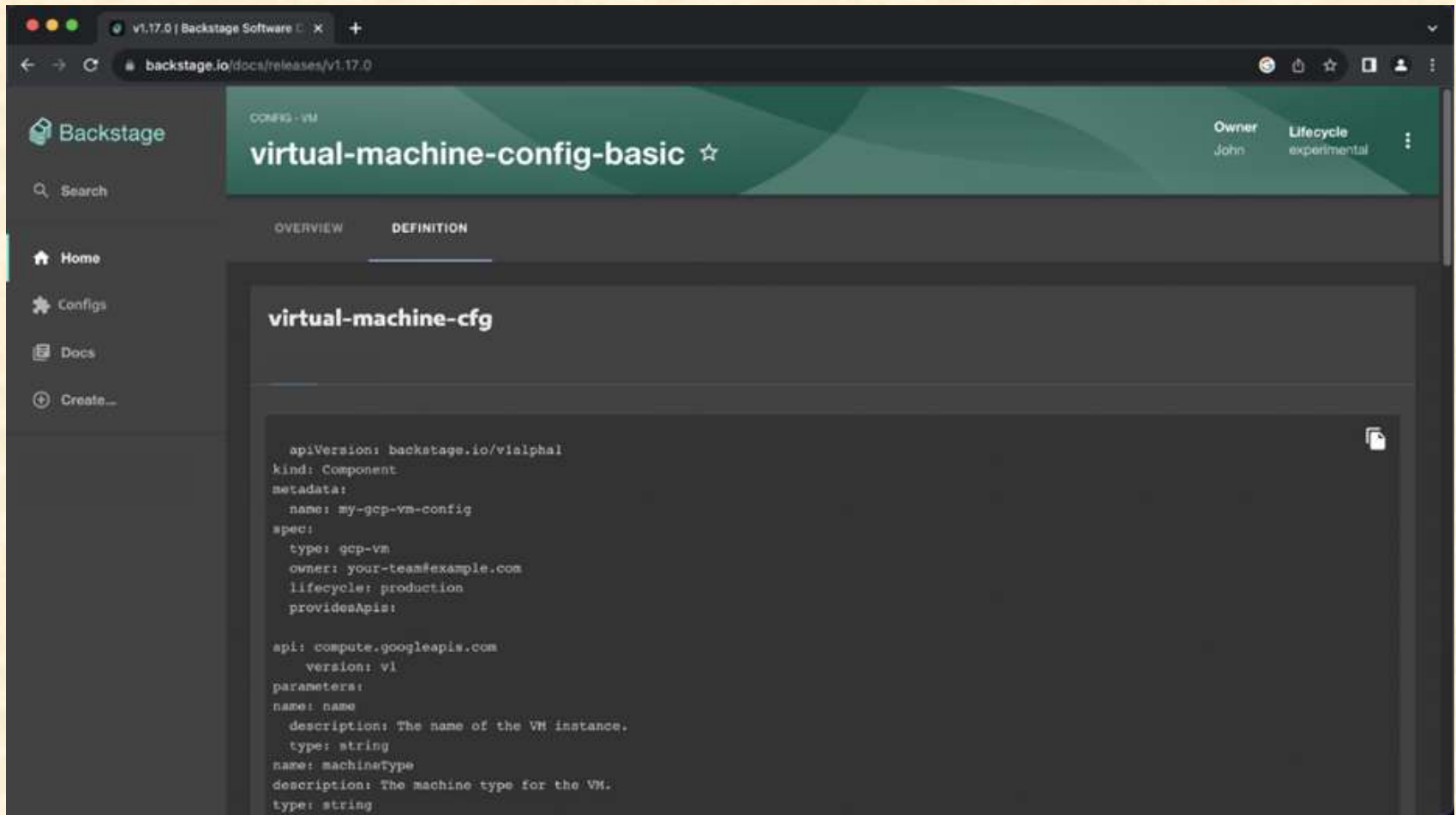
Screen Mockup: Create New Project

Screen Mockup: Configurations

Screen Mockup: Configuration Code

Project Technical Specifications

- Backstage (Used for Frontend)
- Terraform (Backend)
- Plugins (Used to connect components)
- Cloud Providers (Linked with Terraform to complete a given task)

Project System Architecture
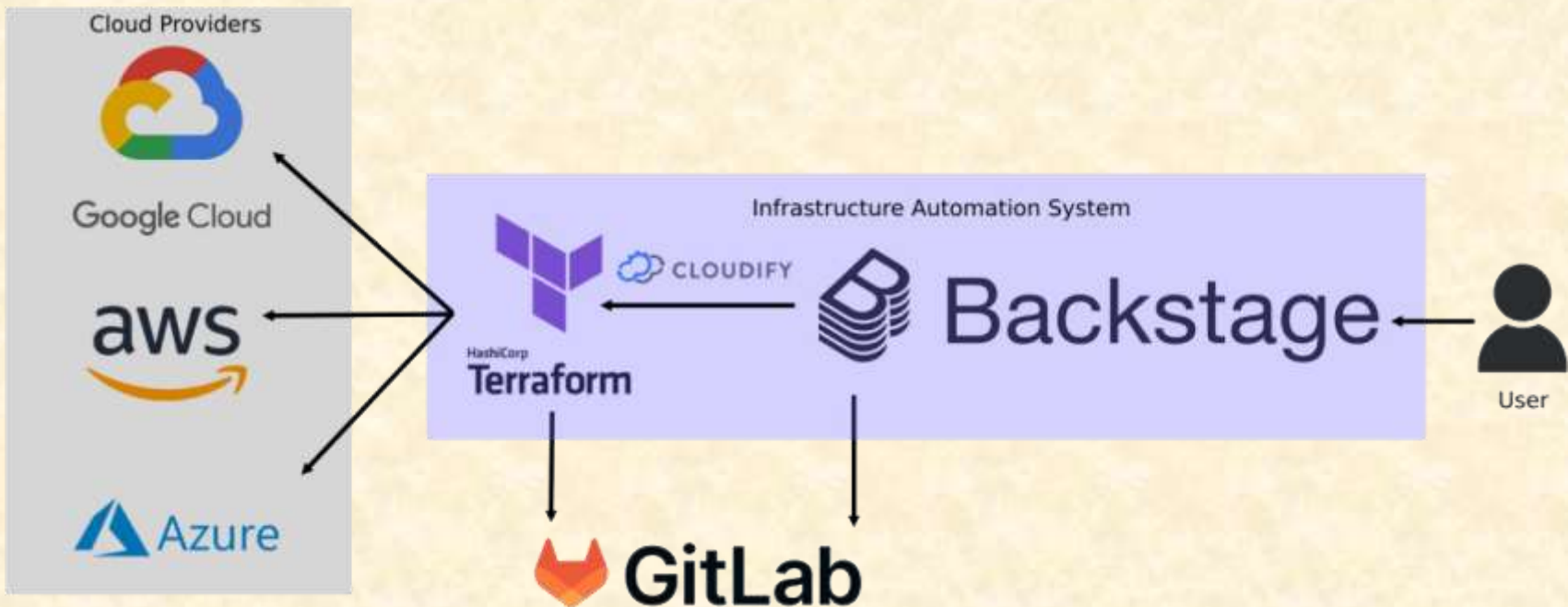
Project System Components

- Software Platforms / Technologies
  - Backstage
    - Cloudify
    - Other plug-ins for cloud providers & Gitlab
  - Terraform
  - Gitlab
  - Google Cloud Platform
  - Amazon Web Services
  - Microsoft Azure

Team Kohl's
Status Report

Infinity Gauntlet

Risks

- Risk 1
  - Terraform may not be able to integrate all cloud platform providers that Kohl's may use
  - Find alternatives to Terraform, or how other platforms may be able to be integrated into our application
- Risk 2
  - Terraform and Backstage may not perfectly integrate with one another
  - Develop our own layer to go between the two, and can communicate between both platforms
- Risk 3
  - Will we be able to ship our solution to the teams at Kohl's for use if most of what we make is configurations and setup files
  - Creating some kind of system for us to test and develop our code on our own, shipping across our machines

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- Risk 4
  - Does Backstage provide the modular GUI creation capabilities necessary for our project?
  - To be sure we can accomplish our goals in Backstage, we are creating simple and empty UI mockups to be sure

Questions?