NetApp-Pitt Capstone Project Fall 2020:

A Procedurally-Generated API Client Library for Go

Project Background

In application development, RESTful APIs are an increasingly popular method of exposing functionality to users. This popularity has led to an effort known as the **OpenAPI Initiative**, which has formed to standardize how REST APIs are described and documented.

Developers at **NetApp** have designed a RESTful API for our storage operating system known as **ONTAP®**. Our API specification follows the OpenAPI standards, which allows our customers and partners to more easily read, explore, test, and consume our API. This, in turn, makes it simple for anyone to develop applications and scripts that are built on ONTAP!

These aren't the only benefits of adopting the OpenAPI standard—doing so also brings a large ecosystem of tools built around OpenAPI. For this Capstone project, NetApp is looking to leverage the code-generating tool known as **Swagger-Codegen**. This tool can take any API specification written according to the OpenAPI standard and procedurally generate code designed for any number of purposes and written in any number of different programming languages.

A previously implemented Capstone project to generate an API client library for Python resulted in an **officially-released Python Client Library(PCL).**

Project Summary

In this project, students will work with the Swagger-Codegen tool to generate an API client library for Go. This procedurally generated library will enable simple management of ONTAP with Go.

Project Details

Over the course of this Capstone project, students will utilize several programming language and concepts, including:

- Working with HTTP to interact with RESTful software applications.
- Writing in Java to extend the Swagger-Codegen tool to utilize the unique functionality of the ONTAP REST APIs.
- Implementing object-oriented coding principles to design abstract templates used for procedural code generation.
- Leveraging the strengths of the Go programming language and the functionality of the ONTAP API to create a new Go library to be used by NetApp customers and developers here at NetApp!

About NetApp

Throughout the world, leading organizations count on NetApp for software, systems, and services to manage and store their data. We help enterprises and service providers envision, deploy, and evolve their IT environments. Customers also benefit from our open collaboration with other technology leaders to create the specific solutions they need.

Our team is passionate about customer success. Our company culture and work environment support that dedication. Together with our global network of partners, we are united in one goal: to help our customers achieve the outcomes that matter most to them. To learn more, visit www.netapp.com.

The project is driven by the Software Defined Core Infrastructure team which provides the cluster infrastructure to support ONTAP for FAS and software defined environments. The team owns and maintains the clustering software components that drive the core functionality and scalability of ONTAP.

NetApp At-A-Glance

- $6.2B in revenue
- Over 10,000 employees in more than 150 offices worldwide
- Great Place to Work Institute's "World's Best Multinational Workplaces" list
- FORTUNE Magazine's "100 Best Companies" list
- A FORTUNE 500® Company
- Member of S&P 500 and NASDAQ
- Stock symbol: NTAP
- Close partnerships with global industry leaders

"We believe that the strongest and most creative product teams have the best talent, are unified in spirit, and diverse in thought and background representing the customers and communities that we serve."

—George Kurian, NetApp CEO