

SIT226 Cloud Automation Technologies

Distinction Task 2.3D

Deploying Your Own Application

Background

In recent weeks we learned how to deploy a trivial NodeJS web site to Kubernetes. When working in Information Technology, particularly in the systems area, we often need to work with technologies we are not familiar with. In this task you will demonstrate that you are developing the high degree of proficiency in these skills expected of the distinction grade by deploying a slightly more complicated web service using a platform that we aren't familiar with.

Note: you will require your own installation of Ubuntu and Kubernetes to attempt this exercise.

Get Prepared

For this task you must deploy a simple web service using a model-view-controller (MVC) framework. There are many different MVC frameworks for delivering a web service, including ASP.Net Core, CakePHP, Django, Laravel, Ruby on Rails, Spring, and so on. You are required to select an MVC framework to demonstrate your skills, either one of these examples or of your own choosing, however you may not select a framework based on NodeJS and should avoid a framework that you are otherwise already familiar with.

You don't need to become an expert in the framework or develop any significant functionality, and most frameworks are quick to get a basic web site running. Start by researching these frameworks on the web. Look for tutorials showing how to get started with the framework, and tutorials that show how to deploy an application using that framework in a container. You will need both of these (some will be more complex than others). In learning how to work with the framework note that in some cases it may be easier to develop your example first, then work out how to containerize your example application.

Note 1. Some frameworks allow you to develop trivial sites without using the MVC elements. Your application must use the MVC pattern, which typically involves some kind of routing of web requests to a controller, which then processes/marshals data from the model (typically a database, either server-based or serverless), that is formatted by the view for the client (typically HTML for a web application).

Note 2. You don't need to create significant database driven functionality for this task (potentially can have just an empty database). Stay focused on the target of demonstrating that you can deploy a trivial application to Kubernetes that uses a framework you aren't familiar with.

Note 3. You may not paraphrase online tutorials and/or reuse screenshots from such tutorials. You may also not use Helm Charts or similar pre-written solutions from other authors.

Complete the Task

Page Limit: 1 page of text formatted reasonably, e.g., 2cm margins, 11 or 12 point font, appropriate headings/spacing, etc. Note that the appendices requirement is not included in the above page limit.

Prepare a short journal describing your activities that satisfies the following requirements:

1. Identify and justify your selection of MVC framework (approximately 0.25 page). Why did you choose this particular platform? How does it differ from the NodeJS used in the unit materials?
2. Briefly explain how you learned how to create a web application using your chosen web service, the challenges you faced, and how you overcame them (approximately 0.25 page).
3. Explain the steps you completed to deploy the application, including how you overcame any challenges, and how you verified the site was operating correctly (approximately 0.25 page).
4. Reflect on the work you completed for this activity and briefly discuss what you learned (approximately 0.25 page). Issues you may wish to consider include
 - Advantages/disadvantages of deploying applications in this manner.
 - Challenges learning to work with unfamiliar software.
 - If you had to repeat this exercise for a different framework or different software, what would you do differently?
 - Unique challenges introduced by the use of Kubernetes.
5. Appendices - provide step-by-step instructions for how to prepare the web application and deploy it using Kubernetes according to the work you've completed (not counted in page limit). You must include any source code you developed as part of this activity and include relevant screenshots to demonstrate your application working and running under Kubernetes.

Reminder: This work must be your own. Although you may refer to online tutorials and instructions in learning how to do this task, your journal must reflect only the work you completed for this task.

Submit Your Task

Prepare your submission using the word processor of your choice and submit a PDF to OnTrack.

Citations and Referencing

When completing any work for assessment it is necessary to acknowledge any content created by others that your work has relied upon through the use of citations and references. Failing to correctly identify the work of others is known as plagiarism and is considered an issue of Academic Integrity.

If your submission to this task has involved the work of others, you must include citations and references where appropriate. Deakin provides a web site that explains how to use citations and references, and includes explanations of various referencing styles:

<https://www.deakin.edu.au/students/studying/study-support/referencing>

You may select any style for your citations/references, however you must be consistent in applying that style in this task (you can use other styles in other tasks if you wish).

Note that any bibliography/list of references is not included in page limits.