

SIT226 Cloud Automation Technologies

Pass Task 7.1P

Researching New API Elements

Background

Throughout the trimester we have been learning how to work with the Kubernetes platform. Although already significant in the world of cloud computing, Kubernetes is relatively young (released in 2015) and is still being actively developed by the open source community. This results in both new functionality being added and existing functionality being improved and/or replaced over time, in turn resulting in changes to the Kubernetes API. In this task, we consider a very simple API element that is not addressed in the unit.

Get Prepared

This task requires you to become familiar with HostAliases in Kubernetes, a simple concept that you should be able to understand quite quickly, however, there are several elements you will need to understand:

1. Start by conducting research into how configuring HostAliases affects a Pod. You will quickly discover this mechanism relates to modifying a particular system file.
2. Take the time to discover what this system file actually does for a working system and why someone would want to modify this file (note this file is present in all platforms).

If you understand both these elements you should be able to prepare a correct answer below.

Complete the Task

Page Limit: 1 page of text formatted reasonably, e.g., 2cm margins, 11 or 12 point font, appropriate headings/spacing, etc., no limit for the example required for task 4.

Prepare a document according to the following requirements:

1. Reflect on the content for this week. In $\frac{1}{2}$ - $\frac{3}{4}$ page, identify the most important lessons/topics this week relevant to your future studies/career and explain why they are the most important. Note: Do not present/explain topics, you are explaining why the things you learned are important!
2. Provide one or more screenshots for each activity, demonstrating that you have completed the lab session this week and briefly explain what is shown in each screenshot (one or two short sentences each).
3. In approximately $\frac{1}{2}$ page, explain what HostAliases are and how/why an application would use such a configuration.
4. Starting on a new page, write an example Pod configuration that configures two different HostAliases (not in page limit). This must be your own example, not something copied from a web site. Note that your example does not need to reflect a realistic/existing deployment.

Submit Your Task

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

Taking it Further (Optional)

This task focuses on learning something new in the Kubernetes API. The pace of Kubernetes development by the open source community remains very high, with functionality being added, modified, and removed regularly. It is important to know how and when new changes are being made to Kubernetes and where to go to learn about these changes and how they may impact you. You should review the following sites and become familiar with the information contained within them:

- Kubernetes Release Cycle (<https://kubernetes.io/releases/release/>) – this site provides information regarding when and how Kubernetes releases are made. Of particular interest is to read the section on The Release Cycle, which explains how changes are selected and then progressed through development and testing to the point of release.
- Version Skew Policy (<https://kubernetes.io/releases/version-skew-policy/>) – this site explains how the version numbers of Kubernetes works and how different versions of the various components will interact with each other (where is backward compatibility required, order of updating, etc.)
- Kubernetes Release History (<https://kubernetes.io/releases/>) – this site provides summary information about the most recent official releases of Kubernetes and links to associated changes. Take the time to review the information on this page. Make sure you take the time to browse through the information on at least one of the linked “Changelog” pages. Although you don’t need to know all the information here currently, if you become responsible for running a Kubernetes cluster you would need to review this information to plan for and upgrade your cluster.
- Kubernetes Patch Releases (<https://kubernetes.io/releases/patch-releases/>) – this site provides an overview of how particular versions are maintained/supported over time, and when patches are released to resolve known problems.
- Kubernetes Blog (<https://kubernetes.io/blog/>) – this site effectively provides news and insights into what the current work that is happening in Kubernetes development, including important new features, deprecation of features (planned removal), and removal of features. If you are working with Kubernetes you would want to keep an eye on this site to keep aware of changes to the platform.

Citations and Referencing

When completing any work it is necessary to acknowledge the work of others that you have relied upon. For written assessment, we achieve this 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.