Introducing NeSI's Flexible HPC: Cloud native platform for enabling challenging solutions

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ABSTRACT / INTRODUCTION

In 2021, the New Zealand eScience Infrastructure (NeSI) procured and integrated Flexible HPC (FlexiHPC), a new high-performance private cloud platform. It is envisaged that NeSI's FlexiHPC will provide the sector with a programmable platform for collaboration around scientific data and support a scalable approach to mid-tier HPC with national expertise complementing localised integration.

NeSI is launching its FlexiHPC with its essential building blocks and aims to share how it helps RSE/DevOps users to deploy complex and challenging solutions that enable science.

This talk will cover some of the use-cases from our early access tenants, key services and features, alongside a helicopter view of the core technology components, key partnerships and integrations. In particular, a recent use case of NeSI building a training environment will be looked at; with examples using technologies such as Open OnDemand and Kubernetes. We will also talk about DevOps practices applied to the system and examples of interacting with the cloud native platform via code, and how these best practices help develop solutions in ways that are sustainable and reproducible, and also enable collaboration.

ABOUT THE AUTHOR(S)

Jun Huh

Jun Huh is a Product Manager at NeSI. Jun brings his experience from start-up industries into the field of eResearch. He has been involved in genomic data management, and data sovereignty related projects in the recent past years, including Aotearoa Genomic Data Repository and Rakeiora Pathfinder project. Recently he has been focused on service design facilitation to help launching of NeSI's new Flexible HPC.

Chris Scott

Chris Scott is a Research Software Engineer working at NeSI with a background in Computational Materials Modelling and High Performance Computing. He works with researchers around New Zealand through NeSI's Consultancy Service to help them develop and optimise code for their research.

Kahu Anderson

Kahu Anderson is a Research DevOps Support Engineer at NeSI with a strong background in Information Technology. He is currently the 'pathfinder' when it comes to NeSI's new FlexiHPC Platform, providing the Support team with information and documentation to facilitate collaboration between researchers and NeSI's new platform.