COMPUTER HARDWARE SOFTWARE WORKSHOP

**DEVOPS**

horizontal line

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# Introduction

**DevOps** is a set of practices that combines software development(*Dev*) and IT operations(*Ops*). It aims to shorten the system development life-cycle and provide continuous delivery with high software quality.

Other than it being a cross functional combination of the terms and concepts for “development” and “operations”, DevOps characterised by key principles: shared ownership, workflow automation and rapid feedback.

# Why DevOps on cloud

1. Bring products at a faster rate to market
2. Reduction of cloud complexity and maintenance of servers
3. Increased security
4. Elimination of Downtime
5. Increased scalability

# Toolchains

As DevOps is intended to be a cross functional mode of working, those who practice the methodology used different types of tools-referred to as to as “toolchains” rather than a single one. These toolchains are expected to fit into one or more of the following categories, reflective of key aspects of the development and delivery process.

1. Coding- code development and review, source code management tools, code merging.
2. Building- continuous integration tools, build status.
3. Testing- Continuous testing tools that provide quick and timely feedback on business risks.
4. Packaging- Artefact repository, application pre-deployment staging.
5. Releasing- Change management, release approvals, release automation.
6. Configuring- infrastructure configuration and management, infrastructure as code tools.
7. Monitoring- Applications performance monitoring, end user experience.

# DevOps practices and adoption

DevOps practices, and their dependencies include a dependency network which connects potential benefits to an ordered chain of practices. Using this network organisations can choose a path that enables fulfilment of their goals.

Adoption of DevOps is being driven by many factors including:

1. Use of agile and other development processes and methods
2. Demand for an increased rate of production releases – from application and business unit stakeholders
3. Wide availability of virtualized and cloud infrastructure– from internal and external providers;
4. Increased usage of data centre automation and configuration management tools;
5. Increased focus on test automation and continuous integration methods;
6. A critical mass of publicly available best practices.

# Creating a sample app using Elastic Beanstalk

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# Creating a pipeline using CodePipeline

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# Result

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