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Deployment of ATLAS using Kubernetes

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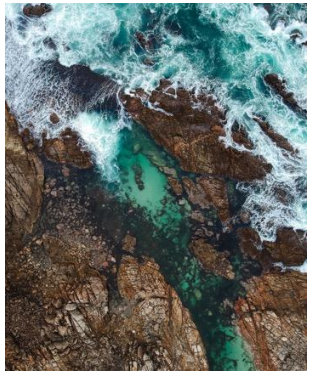

Acknowledgement of Country

We acknowledge and celebrate the First Australians on whose traditional lands we meet, and we pay our respect to their elders past and present.

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About the ARDC

The ARDC is Australia's leading research data infrastructure facility.

Our Purpose

To provide Australian researchers with competitive advantage through data.

Our Mission

To accelerate research and innovation by driving excellence in the creation, analysis and retention of high-quality data assets.

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PEOPLE

Research Data Commons

National-scale data infrastructure for health research and research translation.

Data Integration

Empowering health and medical researchers through national initiatives that integrate and standardise health data

An approach is OMOP Common Data Model (CDM)

We recognise that ATLAS and OHDSI's framework offers a globally recognised approach to achieving this goal.

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ATLAS Deployment: Introduction

- ATLAS is a tool which helps in managing and interacting with Common Data Model (CDM) databases. Where CDM DB store standardised data from varied health record systems and institutions.
- Purpose of deployment on Kubernetes
  - Cloud Native implementation
  - Portable
  - Easy to deploy using Helm package manager avoiding complex installation process.
  - Containerised
  - Scalable

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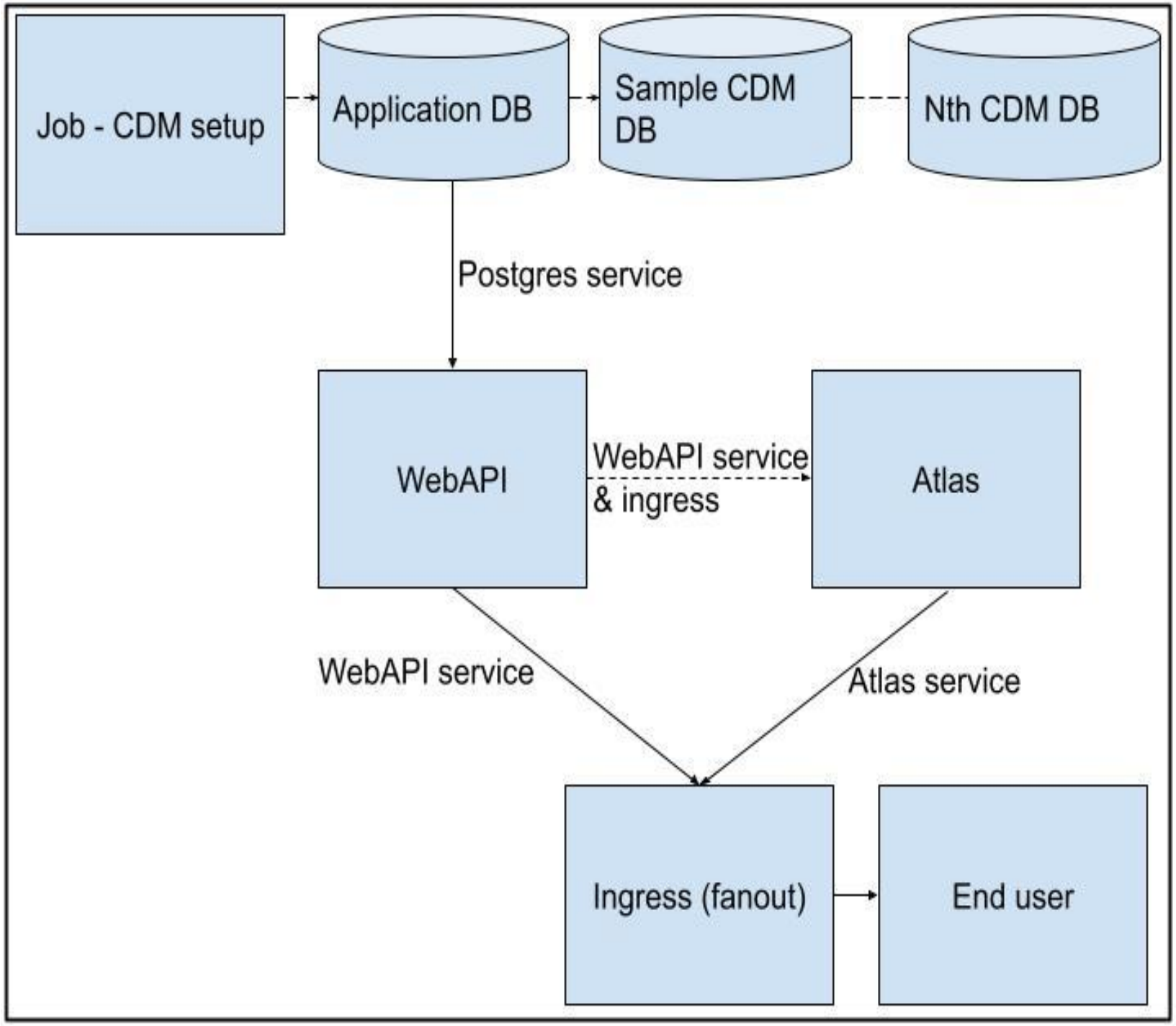
K8s System Architecture



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Implementation on Kubernetes (2)

Default implementation provided by OHDSI

- Legacy on Virtual Machine (VM)
- Docker compose - not suitable for cloud
- Existing container images for each functional block such as WebAPI, Atlas, Postgres.
    - Sample CDM (Broadsea).

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Problems Faced

- Legacy application with convoluted instructions.
- A lot of DB handling required.
- Understanding the architecture thoroughly.
  - Many blocks to integrate
  - Won't work without sample CDM.
- Putting it all together
  - K8s Secrets for DB passwords
  - Application DB persistence
  - Sample DB (Broadsea DB)
  - Use of existing containers atlas, webapi, broadseaDB, postgres.

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Live demo in less than 10 minutes

- Requirements:
- Kubernetes cluster
- Min 5Gb volume storage for application DB and Medium size k8s cluster with 2 nodes.
- Two options
  a. Simply kubernetes Yaml file apply.
  b. Helm chart - ability to deploy in few command. (recommended)
- Ability to add a new CDM using a K8s Job.
- Source code - https://github.com/Aleem2/Atlas-OHDSI-ARDC
- Demo on Nectar research cloud.

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