



Australian Government  
Department of Defence  
Science and Technology

# Virgil enhancements – Planned improvements for a distributed processing scheduling software system

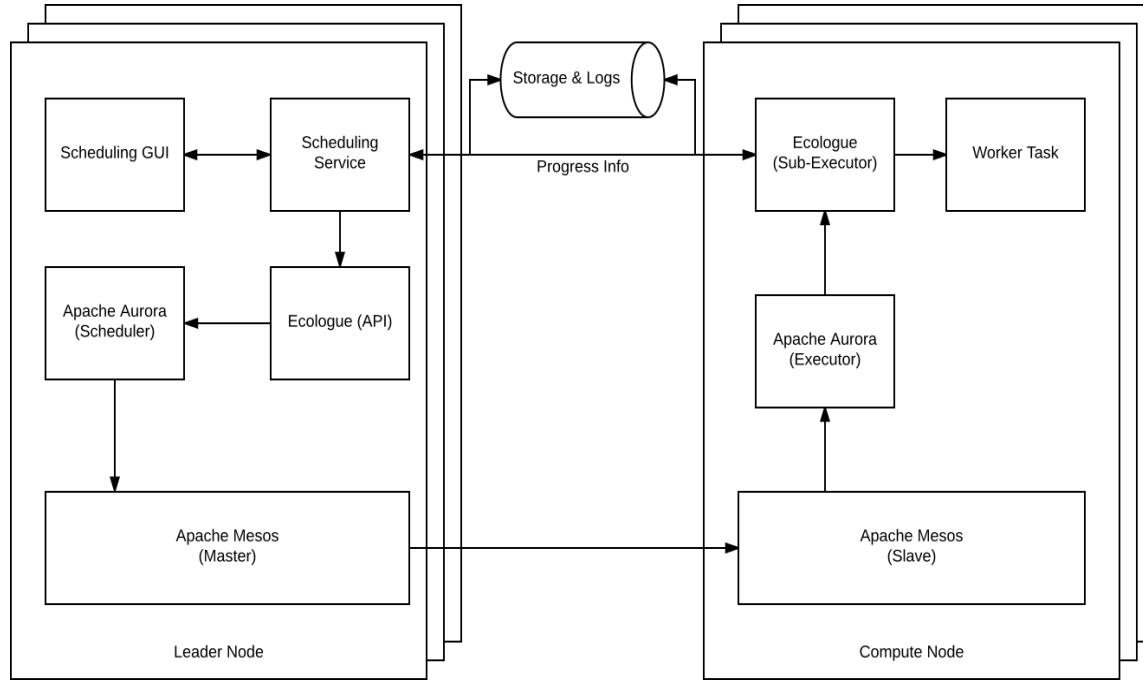
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## Introduction

- Data generation
  - Black box functions
  - Collating resources
- Problems
  - Lack of experience
  - Limited resources
- Deakin University research collaboration

# Virgil



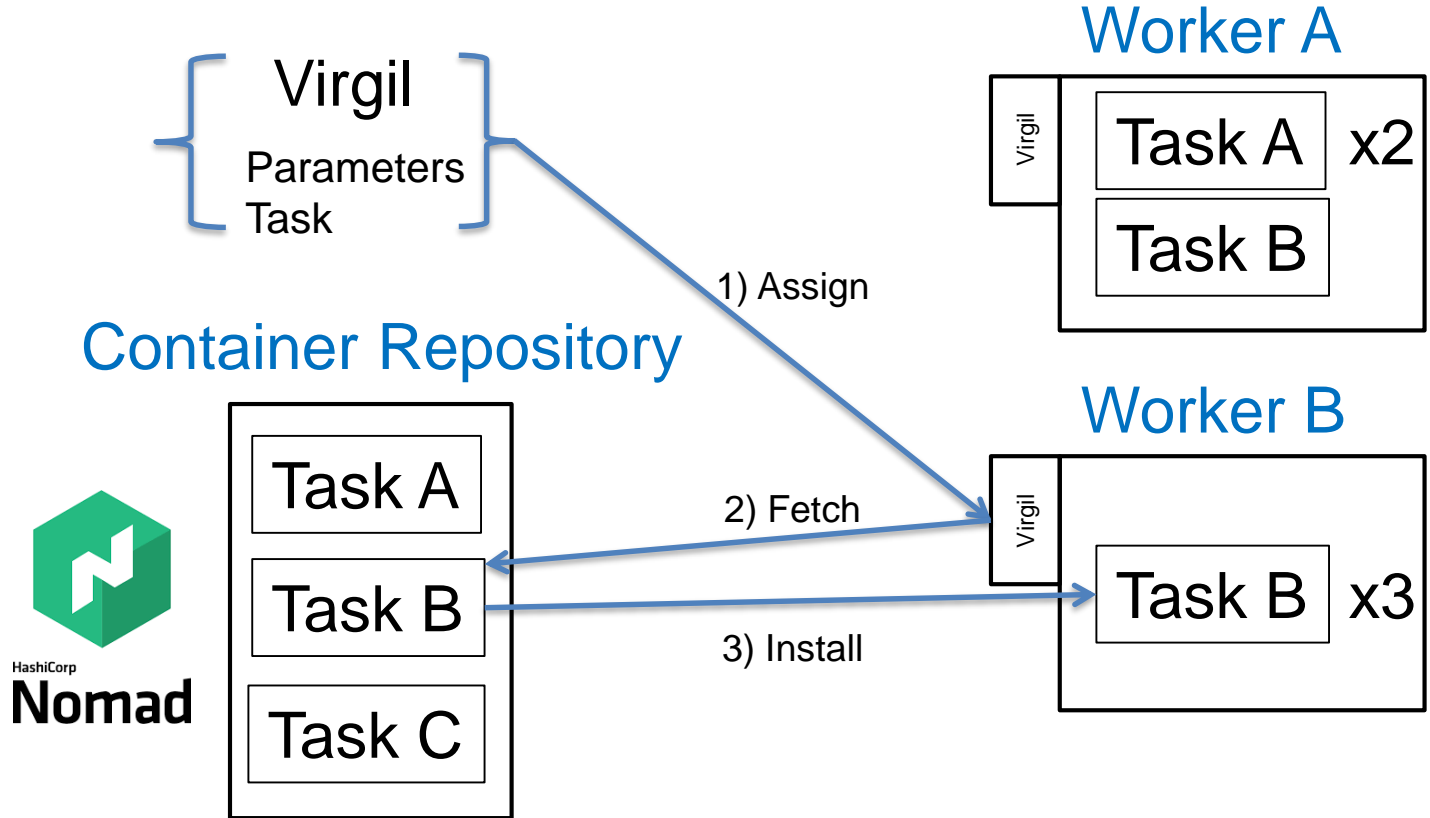
## Identified Issues

- Scheduling
  - Job linking
  - Progress monitoring
- Resources
  - Worker configuration
  - Execution commands

# Domain Language

```
{  
  title: "Job",  
  properties: {  
    container: "cxxi-exporter-1.0",  
    arguments: [ { configURL : "http://simr-server/export/config.json" },  
                 { monitor : "http://simr-server/monitor/jobA32B33" } ],  
  },  
  resources: {  
    properties: { cpu: 2048, ram: 8192 },  
    required: ["cpu", "ram"]  
  },  
  capturestdout: True,  
  dependson: [ { name: "JobA1", optional: False },  
               { name: "JobA2", optional: True } ]  
}
```

# Containerisation



## Future

- Domain Language
  - Workflow description
  - Workflow monitoring
  - Persistence
  - Load calculation
- Containerisation
  - Implementation

## Expected Virgil Outcomes

- Distributed processing
- Descriptive specification
- Self configuring execution environment
- Resource maximisation

<https://dstil.github.io/virgil/>