

Java EE Monolith to Cloud-Ready Architecture: Lessons from the Drools/jBPM Ecosystem

Eder Ignatowicz
Sr. Software Engineer @ Red Hat

Alex Porcelli
Principal Software Engineer @ Red Hat



"The big question is whether you are going to
be able to say a hearty yes to your adventure"

Joseph Campbell



Business Central 101



Welcome to KIE Workbench

KIE Workbench offers a set of flexible tools that support the way you need to work. Select a tool below to get started.



Design

Create and modify [projects](#) and [pages](#).



Deploy

Administer [provisioning](#) and [servers](#).



Manage

Access [process definitions](#), [process instances](#), [tasks](#), [jobs](#) and [executions errors](#).



Track

View [task inbox](#), [process reports](#) and [task reports](#).

Business Central 101

The screenshot shows the KIE IDE Business Central interface. At the top, there is a dark header bar with the KIE IDE logo, a home icon, a "Menu" dropdown, and user information for "markp". Below the header, the URL "Spaces > myteam" is visible. The main content area is titled "myteam". It displays three tabs: "Projects" (0), "Contributors" (1), and "Metrics". The "Projects" tab is active. In the center, there is a large "Nothing Here" message with a plus sign icon, indicating no projects are available. Below this message, a sub-message states: "There are currently no projects available for you to view or edit. To get started, create a new project or import one." At the bottom of the central area, there are two buttons: "Add Project" and "Try Samples/Import Project".

Business Central 101

The screenshot shows the KIE IDE interface with a dark theme. At the top, there is a navigation bar with the KIE IDE logo, a home icon, and a "Menu" dropdown. On the right side of the top bar are icons for help, settings, and user authentication (markp). Below the navigation bar, the URL "Spaces > myteam > Try Samples" is visible. The main area is titled "Try Samples" and contains a search bar. There are six sample cards arranged in a grid:

- Course Scheduling**
University course scheduli...
- Dinner Party**
Guest seating optimisatio...
- Employee Rostering**
Employee rostering probl...
- Evaluation Process**
Getting started Business P...
- IT Orders**
Case Management IT Ord...
- Mortgages**
Loan approval process aut...
- OptaCloud**
Resource allocation optim...

The "Mortgages" card is highlighted with a blue border.

Business Central 101

The screenshot shows the KIE IDE interface with the following details:

- Header:** KIE IDE, Home, Menu, Help, Settings, User markp.
- Breadcrumbs:** Spaces > myteam > Mortgages
- Toolbar:** Build, Deploy, View Alerts, More
- Section Headers:** Assets (19), Contributors (1), Metrics, Settings
- Search and Pagination:** All, Q, 1-15 of 19, 1 of 2, Import Asset, Add Asset
- Table of Assets:** A list of 19 assets, each with a small icon, name, type, last modified date, and created date.

Asset	Type	Last modified	Created
Applicant	Data Objects	Today	Today
ApplicantDsl	Domain Specific Language Definitions	Today	Today
Are they old enough	Test Scenarios	Today	Today
Bankruptcy history	Guided Rules	Today	Today
Bankruptcy	Data Objects	Today	Today
credit ratings	Enumeration Definitions	Today	Today

Business Central 101

KIE IDE

Spaces > myteam > proj1

Add Asset

All

Cancel

Business Process Process	Business Process (legacy) Process	Data Object Model	Decision Table (Spreadsheet) Decision
DRL file Decision	DSL definition Decision	Enumeration Model	Form Form
Global Variable(s) Decision	Guided Decision Table Decision	Guided Decision Table Graph Decision	Guided Decision Tree Decision
Guided Rule Decision	Guided Rule Template Decision	Guided Score Card Decision	Package Others
Score Card (Spreadsheet) Decision	Solver configuration Others	Test Scenario Others	Work Item definition Others
Case definition Process			

Business Central 101

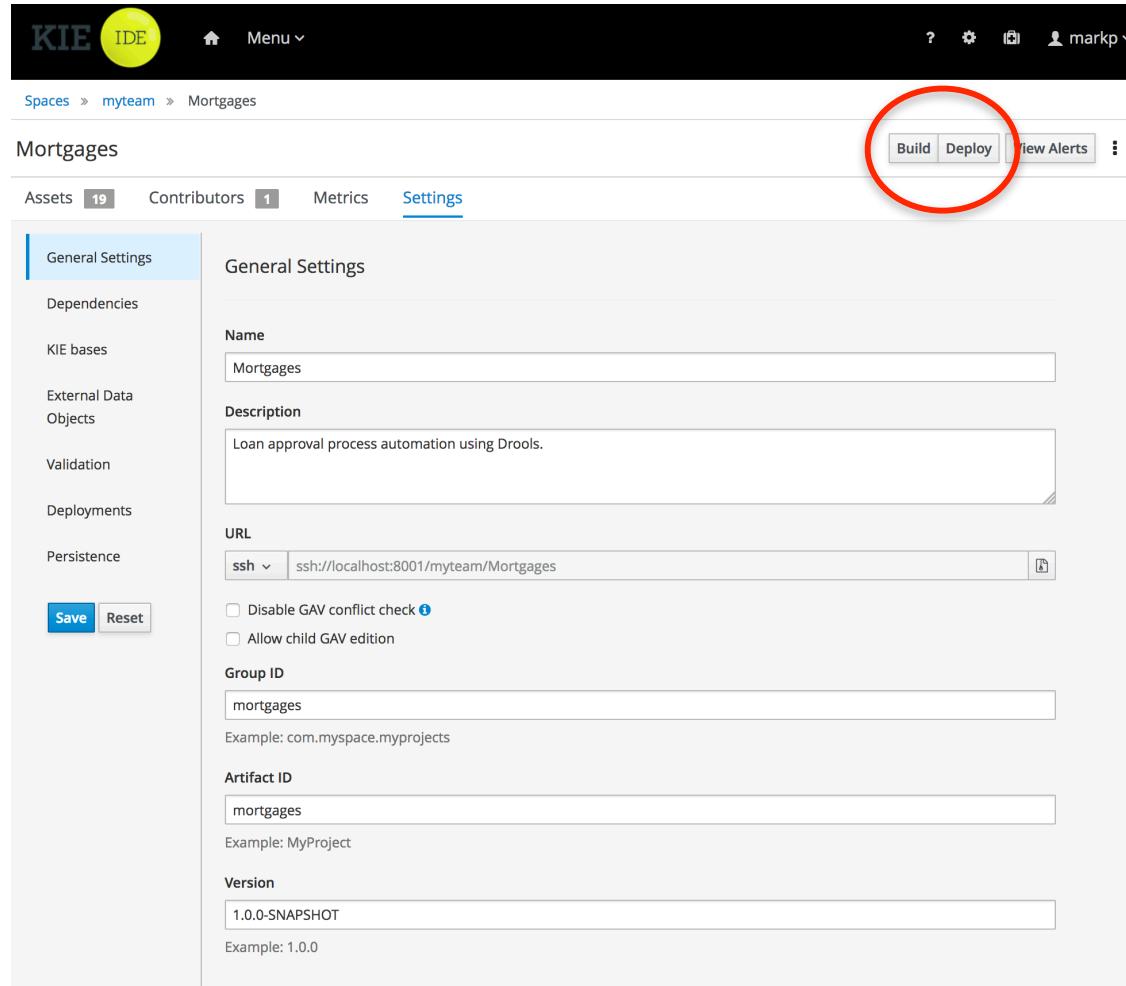
The image displays two screenshots of business process management tools.

KIE IDE (Top Screenshot): This screenshot shows a BPMN process named "process1....". The process starts with a "Start" event (green circle) which triggers the "Hire Employee" task (rectangle with a person icon). After the "Hire Employee" task, the flow splits into two parallel paths. One path leads to a "Fire Employee" task (rectangle with a person icon), and the other path leads to a decision diamond (orange diamond with a plus sign). From the decision diamond, the flow continues to a final end event (red circle).

RED HAT JBOSS BPM SUITE (Bottom Screenshot): This screenshot shows a "Pricing loans.gdst - Guided Decision Tables" editor. The table has the following columns:

#	Description	application : LoanApplication			ome : IncomeSour		application		
1		amount min	amount max	period	deposit max	income	Loan approved	LMI	rate
2		131000	200000		20000	Asset	true	0	2
3		10000	100000	20	2000	Job	true	0	4
4		100001	130000	20	3000	Job	true	10	6

Business Central 101



The screenshot shows the KIE IDE interface for managing a project named 'Mortgages'. The top navigation bar includes the KIE IDE logo, a home icon, a 'Menu' dropdown, and a user profile for 'markp'. Below the header, the breadcrumb navigation shows 'Spaces > myteam > Mortgages'. The main content area displays the 'Mortgages' project settings. On the left, a sidebar lists project components: General Settings (selected), Dependencies, KIE bases, External Data Objects, Validation, Deployments, and Persistence. At the bottom of the sidebar are 'Save' and 'Reset' buttons. The main panel contains the following fields:

- General Settings**:
 - Name**: Mortgages
 - Description**: Loan approval process automation using Drools.
 - URL**: ssh://localhost:8001/myteam/Mortgages
 - Disable GAV conflict check
 - Allow child GAV edition
- Group ID**: mortgages
- Artifact ID**: mortgages
- Version**: 1.0.0-SNAPSHOT

Business Central 101

Drools Workbench

Home ▾ Authoring ▾ Deploy ▾ Tasks Extensions ▾

SERVER TEMPLATES

+ New Server Template

kie-server-568b4abd2d4d

demo Group Id:mortgages | Artifact Id:mortgages

Status Version Configuration Process Configuration

Capabilities:

- Rule
- Process
- Planning

KIE CONTAINERS

+ Add Container

demo

kie-server-568b4abd2d4d@172.17.0.4:8080

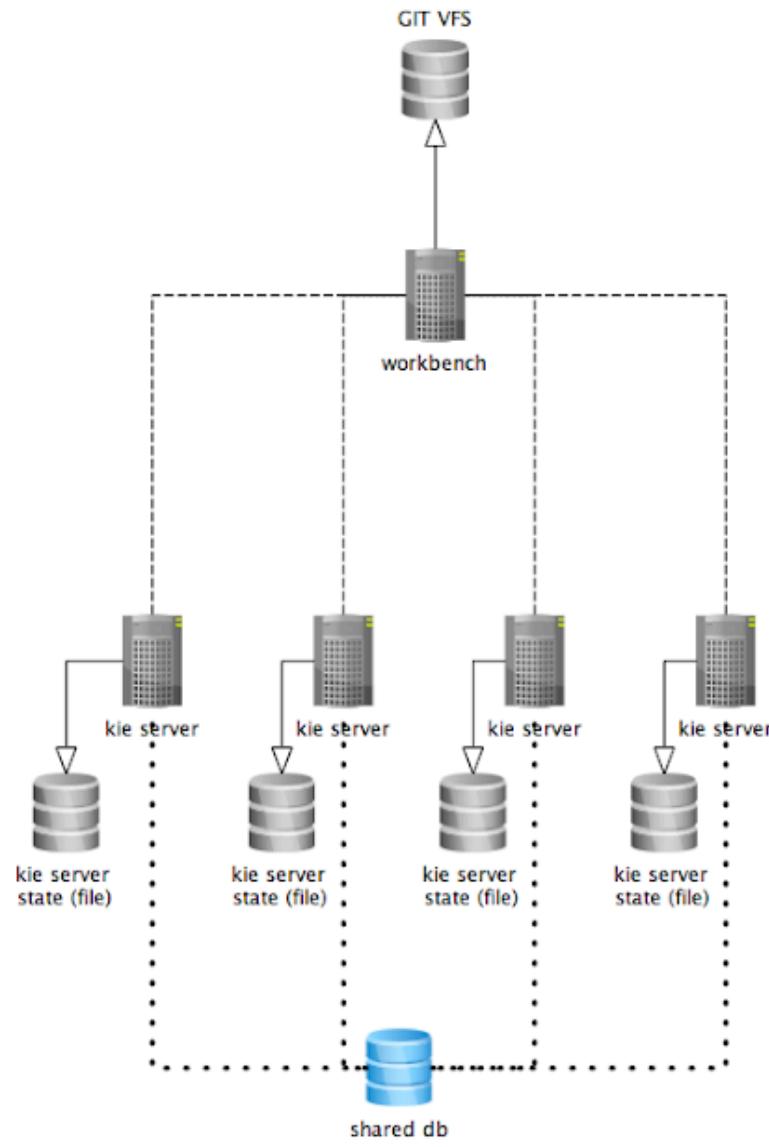
v0.0.1

http://172.17.0.4:8080/kie-server/services/rest/server/containers/demo

REMOTE SERVERS

kie-server-568b4abd2d4d@172.17.0.4:8080

Business Central 101



Rules evaluation :: BRM

POST /server/containers/instances/{id} Evaluates rules by executing commands on the rule session

Parameters

Name Description

id * required string (path)
Container id where rules should be evaluated on
Id - Container id where rules should be evaluated on

body * required (body)
Commands to be executed on rule engine given as BatchExecutionCommand type

Example Value | Model

```
{  
  "lookup": "default-stateless-ksession",  
  "commands": [  
    {  
      "object": {  
        "con_rehat_demos_de_loan.model.Applicant": {  
          "creditScore": 123,  
          "name": "Jim Whitehurst"  
        },  
        "out-identifier": "applicant"  
      },  
      "insert": {  
        "object": {  
          "con_rehat_demos_de_loan.model.Applicant": {  
            "creditScore": 123,  
            "name": "Jim Whitehurst"  
          },  
          "out-identifier": "applicant"  
        }  
      }  
    }  
  ]  
}
```

Cancel

Parameter content type application/json

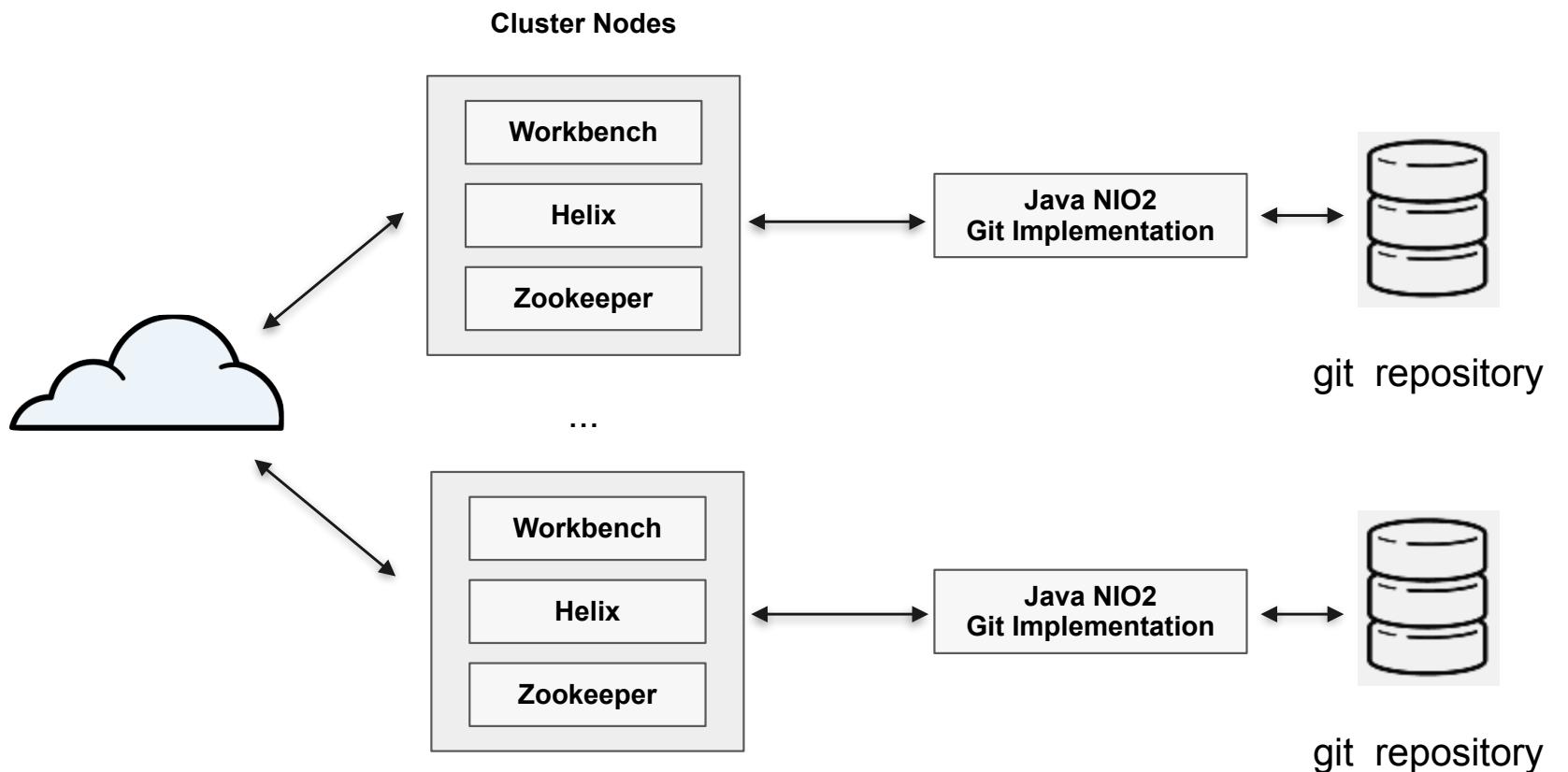
Execute

Responses

Response content type application/json

Clustering?

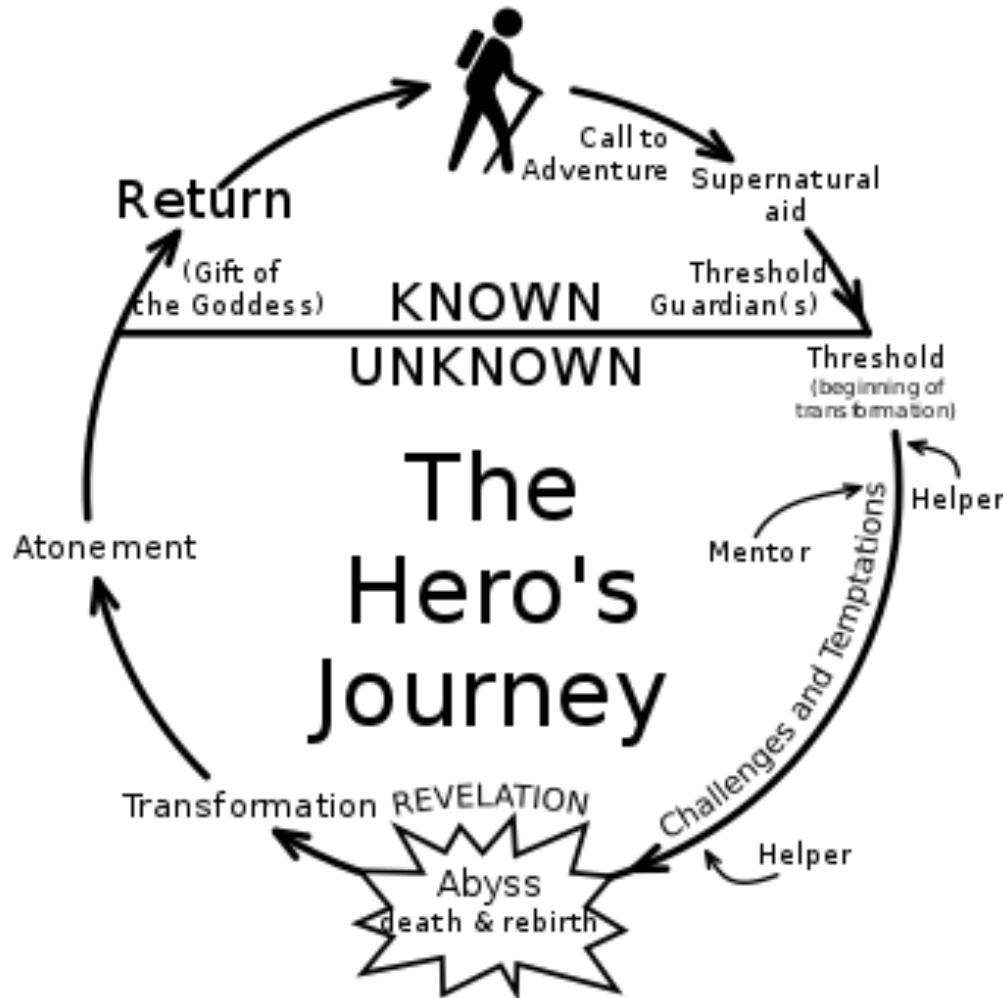
Business Central 101





JavaEE 'Monolith' To Cloud Ready Architecture

JavaEE -> Cloud Ready



Cloud Maturity Levels

Level 1 - Cloud Viable

Works in the cloud, but can be improved.

Level 2 - Cloud Native

Optimised for Containers, will scale for size and demand with manual setup.

Level 3 - Cloud Mature

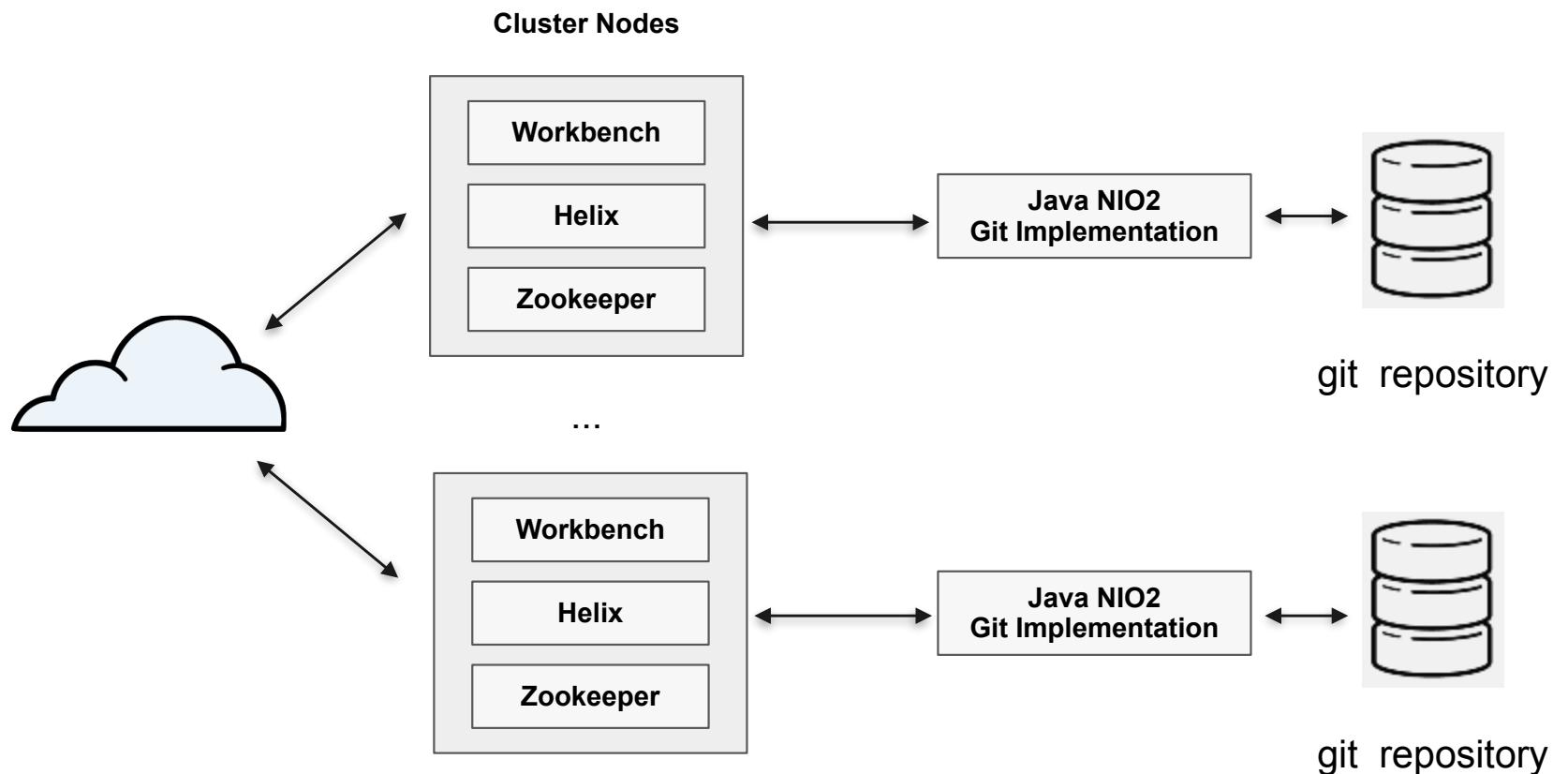
Elastic auto-scaling

Matured and Hardened

Level 4 - Hosted

Hosted (fully managed)

Level 0



Level 1: Cloud Viable

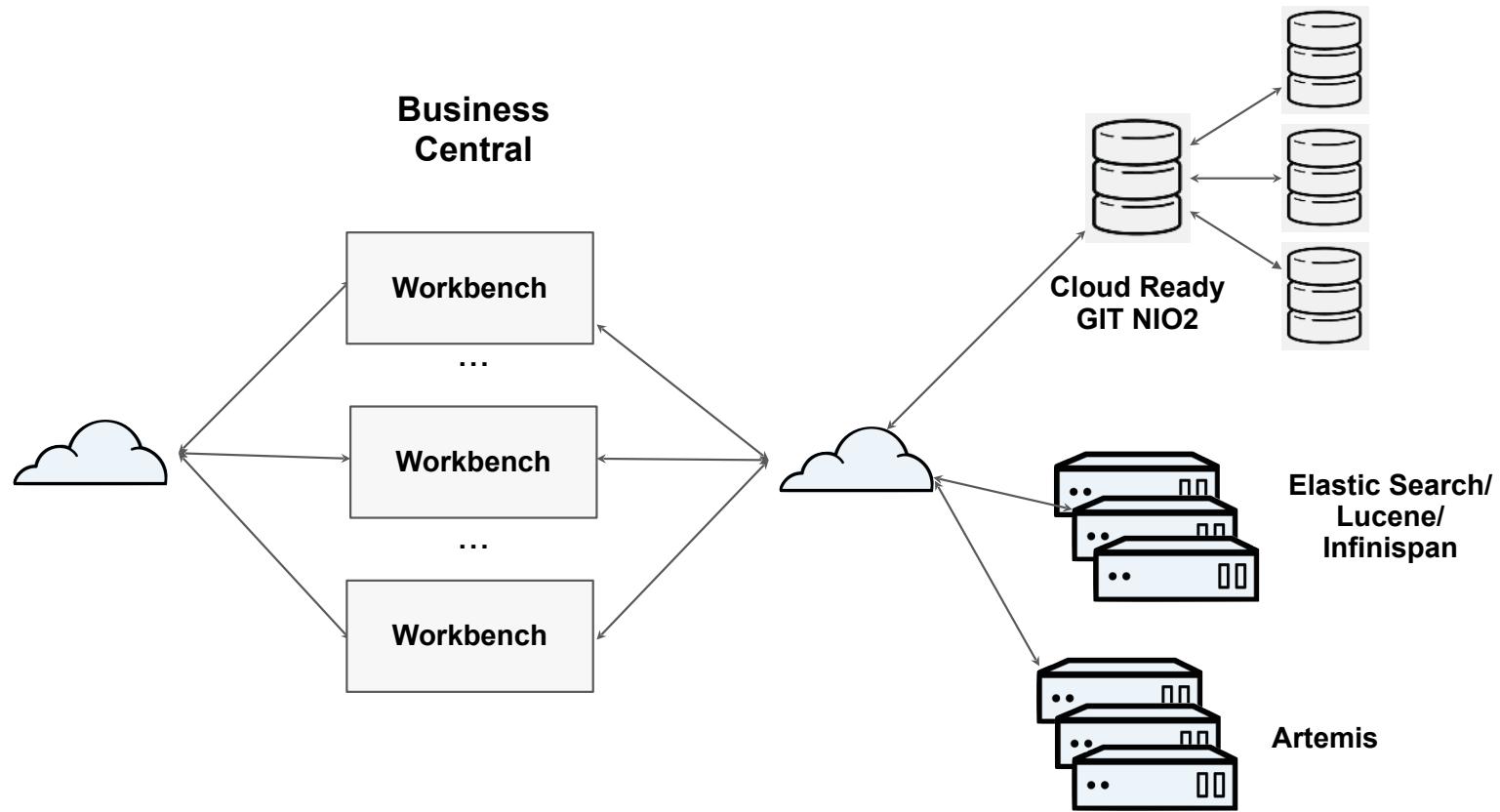
Level 1: Cloud Viable

Level 1 - Cloud Viable

Works in the cloud, but can be improved.

TODO: CARACTERÍSTICAS

Level 1: Cloud Viable



Virtual File System

Virtual File System

Indexing

Indexing

Events and Messaging

Events and Messaging

Level 2: Cloud Mature

Level 3: Cloud Mature

Level 2 - Cloud Mature

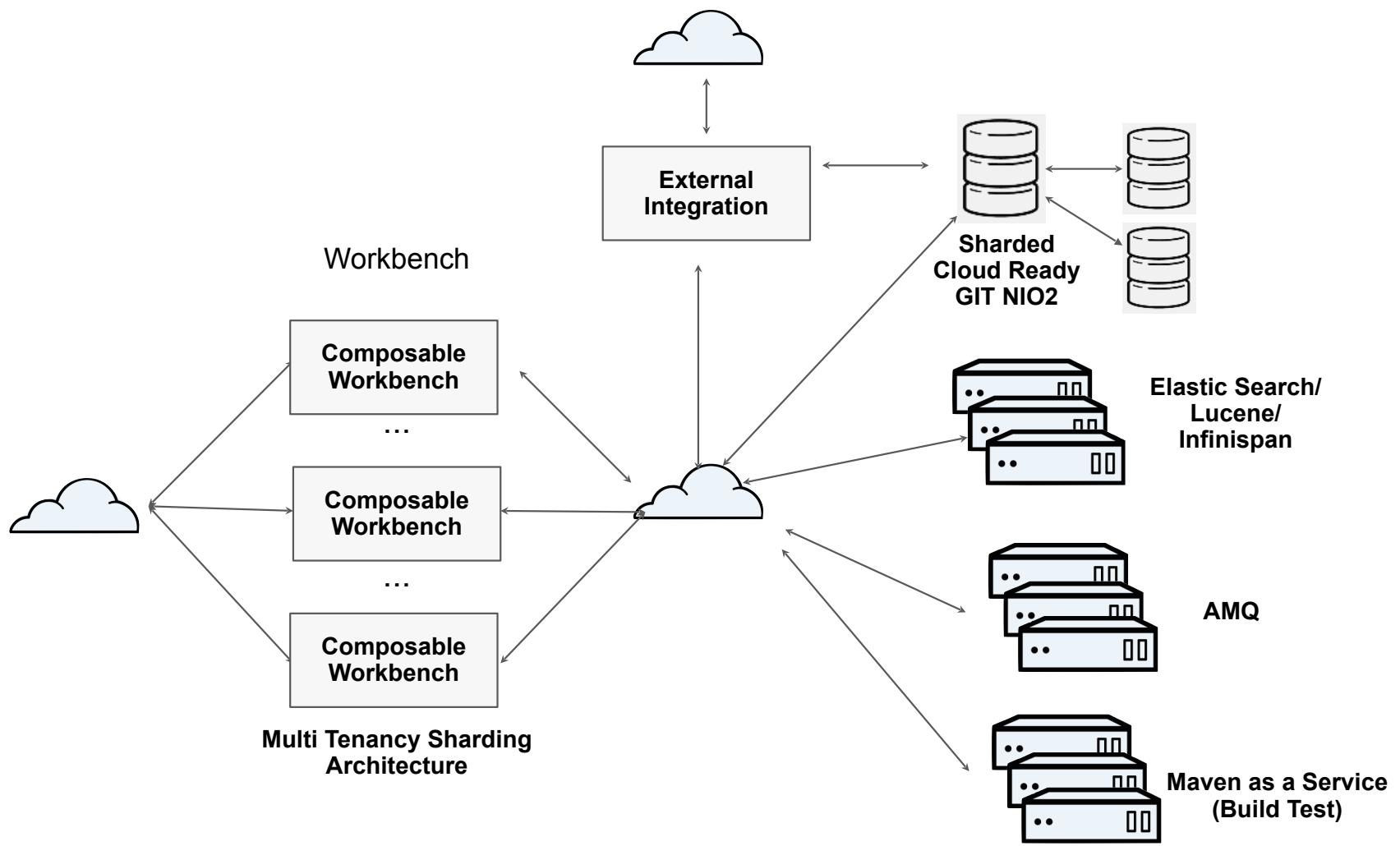
Optimised for Containers, will scale for size and demand with manual setup.

Elastic auto-scaling

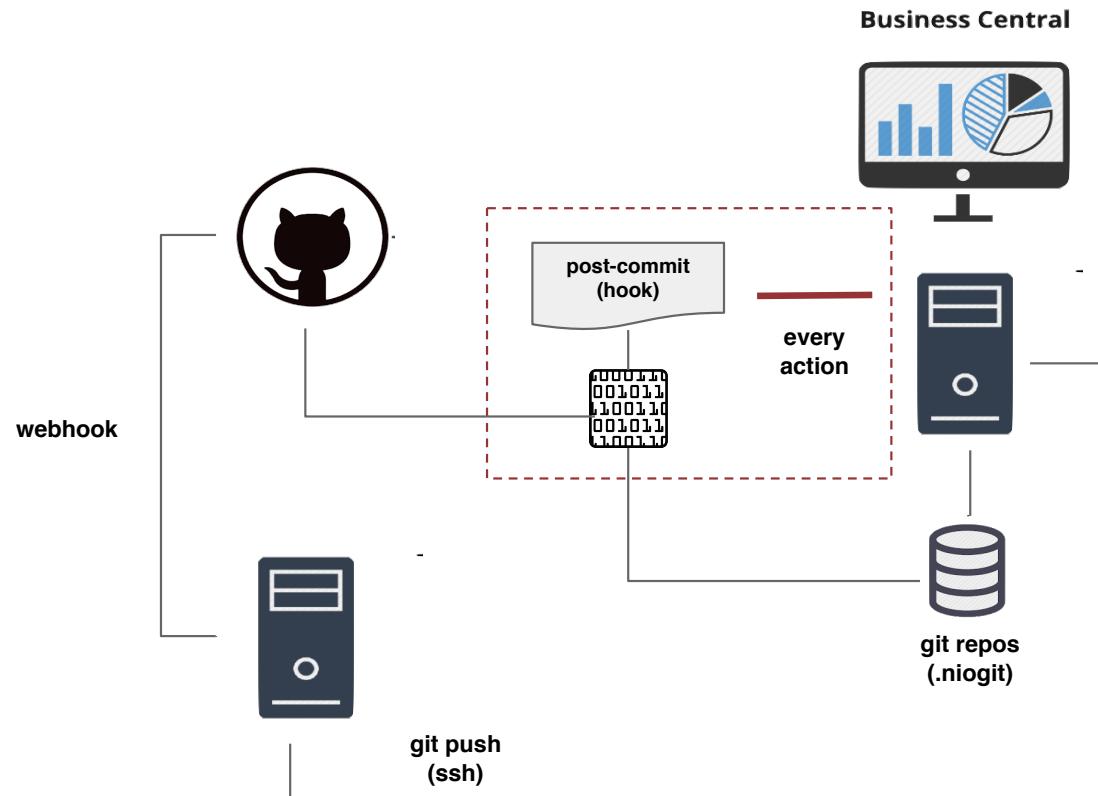
Matured and Hardened

TODO: CARACTERÍSTICAS

Level 3: Cloud Mature



External Integration



Level 4: Hosted

Level 4: Hosted

Level 4 - Hosted

Fully managed

TODO: CARACTERÍSTICAS

Level 4: Cloud Native

Thank you.

Eder Ignatowicz
Sr. Software Engineer @ Red Hat

Alex Porcelli
Principal Software Engineer @ Red Hat



