GitOps

INSPUR's 400+ Cloud Native Applications GitOps Practice

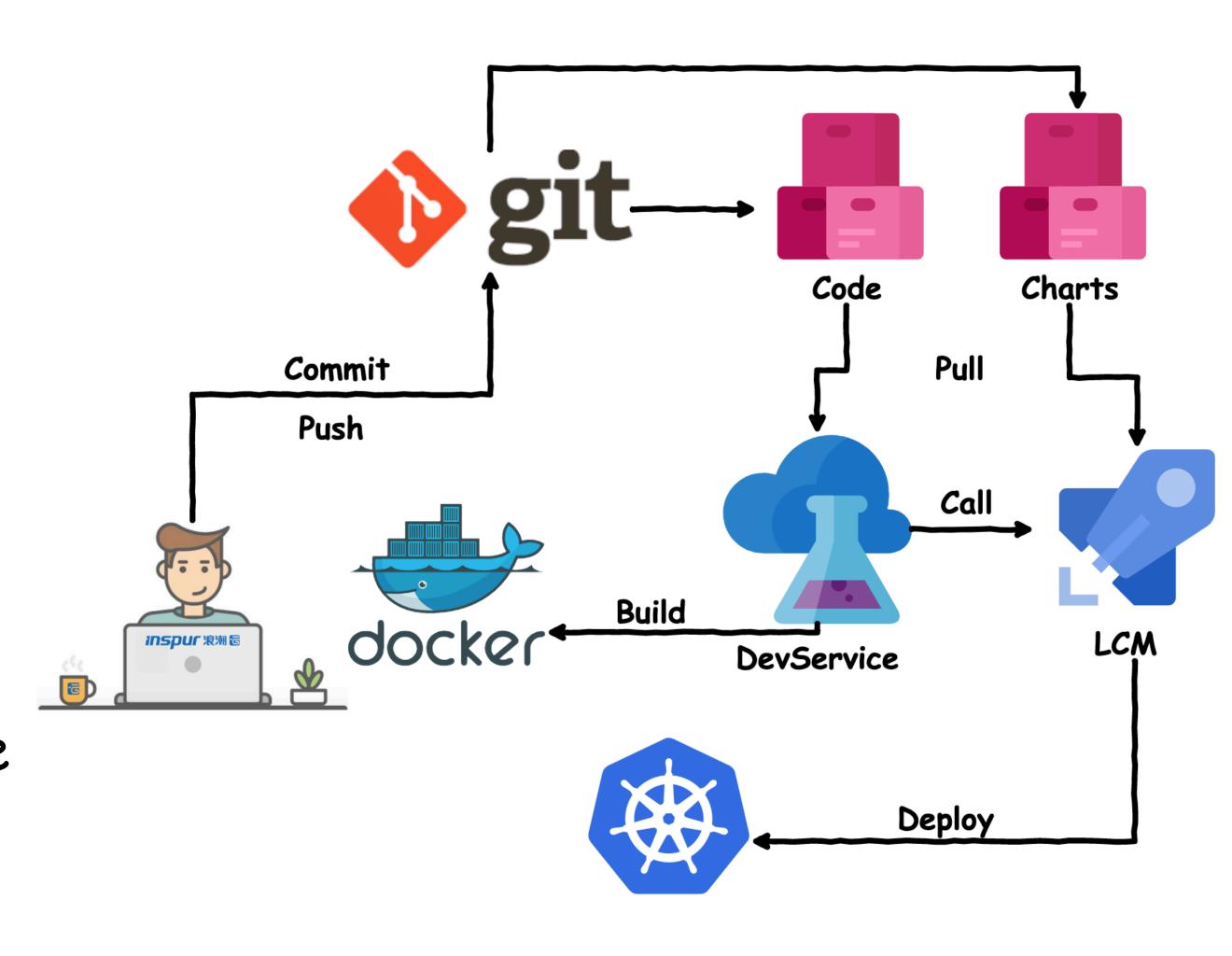


GitOps

Git significance

- GitOps is a continuous delivery method. Its core idea is to store the declarative infrastructure and applications of the application system in the Git repository.
- By applying GitOps best practices, the infrastructure and application code of the application system have "truth sources"











Helm Chats Manage By Git

```
67
           containers:
          - image: {{ .Values.global.registry }}/{{ .Values.image.cicdApi.name }}
68
             imagePullPolicy: {{ .Values.image.pullPolicy }}
69
70
             readinessProbe:
71
              failureThreshold: 3
72
              httpGet:
73
                path: /cicd/core/v1/home
74
                port:
75
                scheme: HTTP
76
               initialDelaySeconds: 20
77
               periodSeconds: 20
78
               successThreshold: 1
79
              timeoutSeconds: 1
80
             livenessProbe:
81
               failureThreshold: 3
82
              httpGet:
83
                path: /cicd/core/v1/home
84
                port:
85
                scheme: HTTP
86
               initialDelaySeconds: 120
87
               periodSeconds: 60
88
              successThreshold: 1
89
              timeoutSeconds: 1
90
             name: cicd-api
91
             ports:
92
             - containerPort:
93
              protocol: TCP
94
             command: [
```

- As a cloud native tool, kubernetes can regard its "declarativeness" as "code". Declaration means that the configuration is composed of a set of facts rather than a set of instructions.
- By using git library, it is easier to deploy the application to kubernetes and roll back the version. More importantly, when a disaster occurs, the infrastructure of the cluster can be reliably and quickly recovered from the Git library



Basic principles of GitOps



Code of conduct

- · Anything that can be described must be stored in the Git library
- · Kubectl should not be used directly
- · Calling the Kubernetes API interface should follow Operator mode

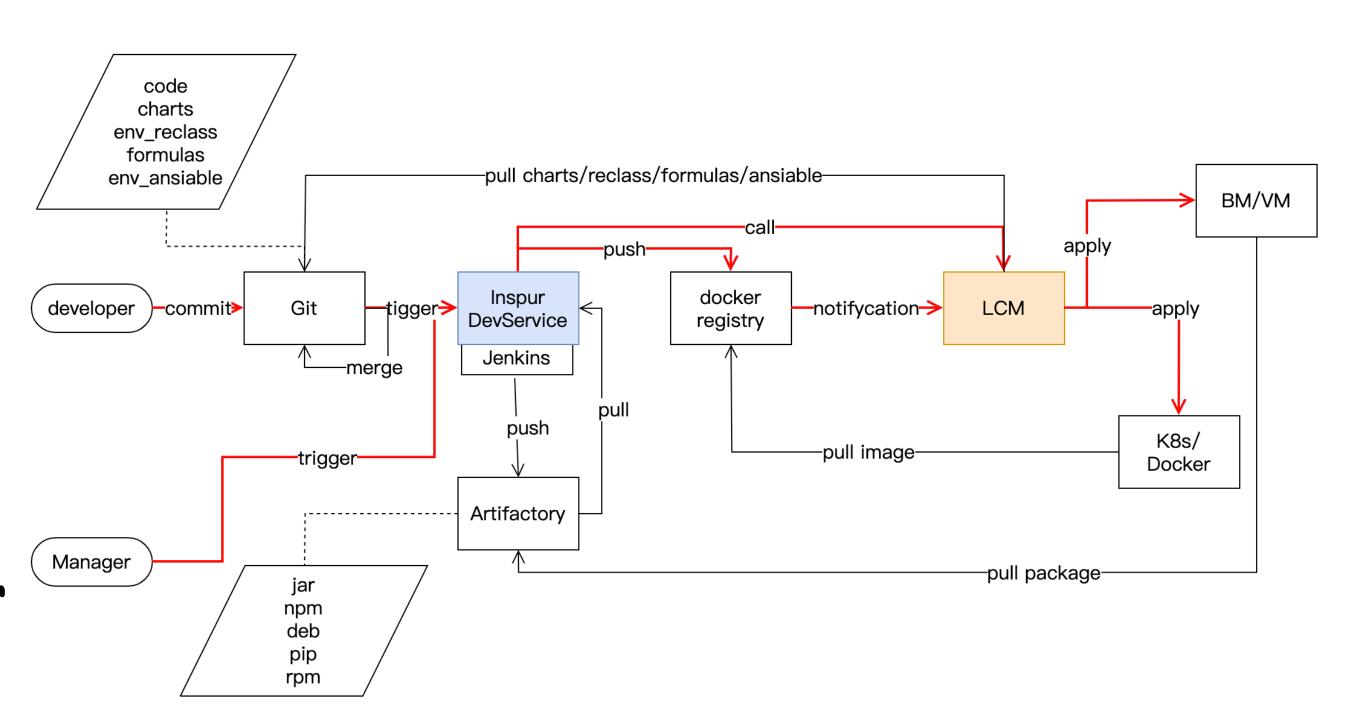


LCM

CD.FOUNDATION

Life Cycle Manager

- Inspur Cloud, based on GitOps concepts, has developed a deployment component called LCM to bond the connection between CI and CD in the pipeline
- Code-based facilities enable automated deployment, automated updates, automated upgrades, and automated rollback of cloud environments and upper applications through LCM workflows.



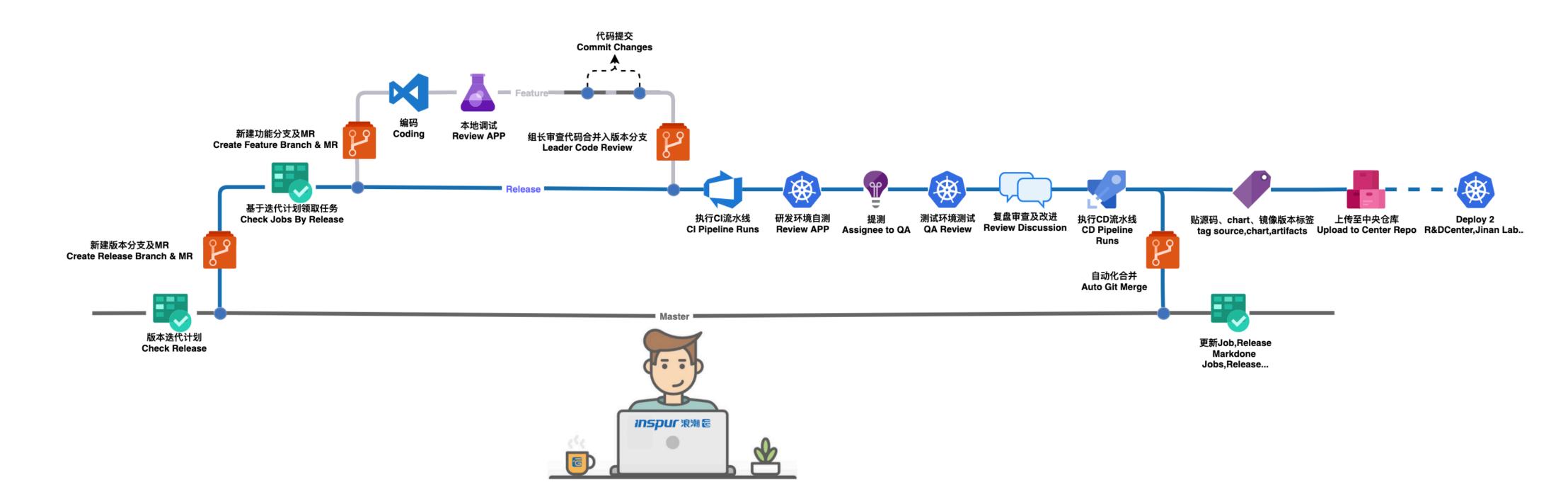


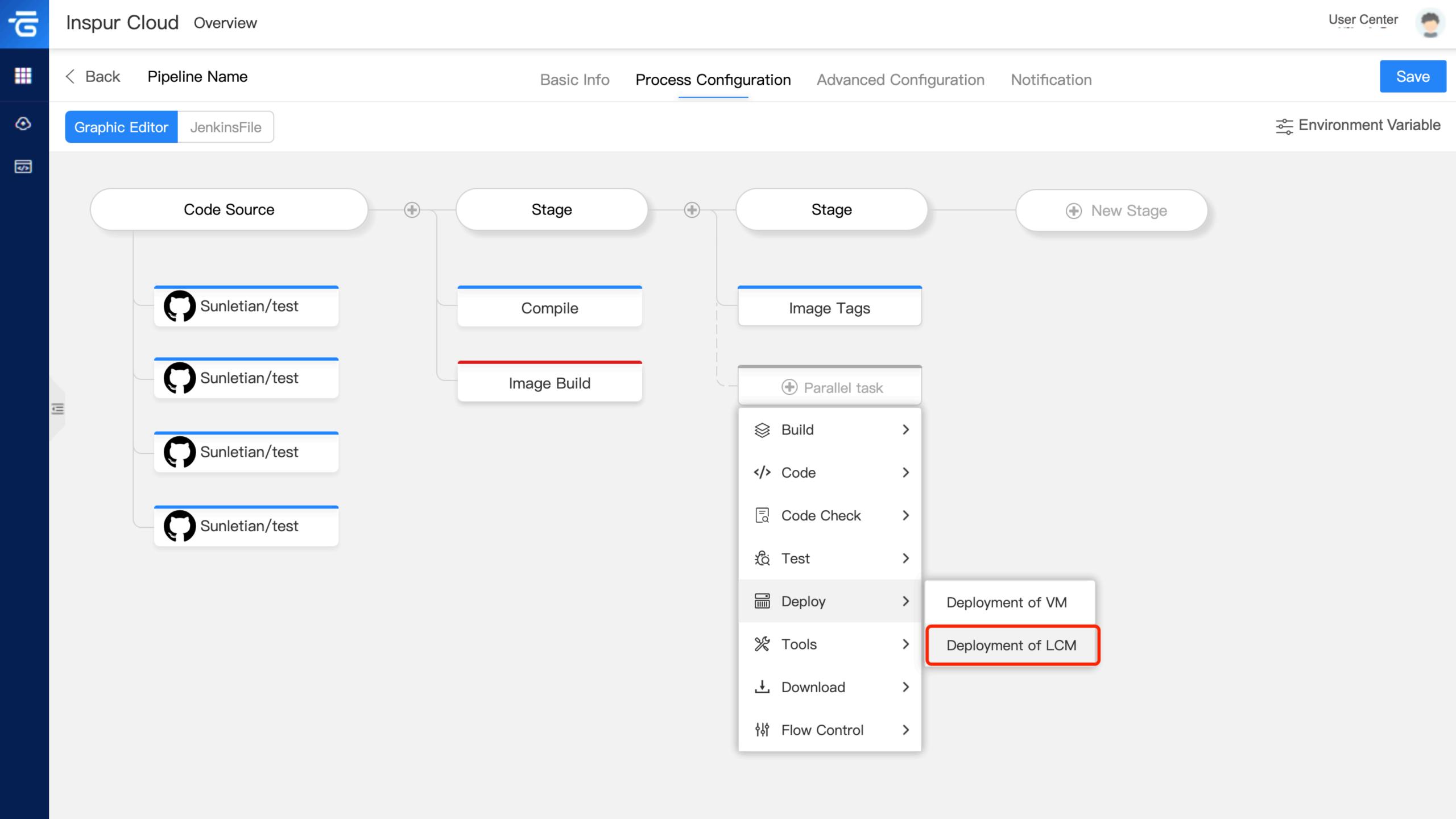
Pipeline



Inspur Cloud DevService

- Inspur cloud software development service provides developers with Devops related cloud services, realizing the whole process of R & amp; D tool support and one-stop service from "development \rightarrow testing \rightarrow release \rightarrow operation and maintenance".
- The service is on the go, realizing code hosting, code quality control, pipeline management, code compilation, image construction, application deployment, testing, publishing and other functions in the cloud anytime and anywhere. It is convenient for developers to build and deliver products quickly and reliably, closely linked with the development and operation and maintenance work.









400+ Cloud Native Applications GitOps Practice

 With the deployment of LCM, Inspur Cloud enables continuous integration and deployment of over 400 micro-service applications. Ensure average daily production environment pushed more than 2.5 times

| ★ component-kubectl-plugin-cke AMD | | | | | | | | | | | | |
|-------------------------------------|------------|----------|-----------------------------|----|-------------------|----|-------------|-----------------|---------------|------------|---------------------------|--|
| | ✓ Build 1m | » | Version number_Timestamp 6s | >> | Smoke environment | >> | cke-e2e | >> | Manual review | - > | Integrated environment 2s | |
| | Success | | Success | | Not Running | | Not Running | | Success | | Success | |



Celebrate the 2nd Anniversary of CDF



As CNCF Gold Member

- Inspur has been paying close attention to the development of CDF, actively participating in the community contribution of CDF, and hoping to become a CDF incubation project one day.
- "By enhancing our focus on cloud, data and AI driven applications, we're working to create
 more dynamic platforms based on ecosystems between customers, businesses and
 governments, where data can be shared to benefit all," said Max Zhang, vice president of
 Inspur. "Our increased engagement with CNCF will accelerate our work with the global
 community to further collaboration around data, and work with developers for rapid
 innovation".



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