



Huawei Cloud – CodeArts (DevCloud)

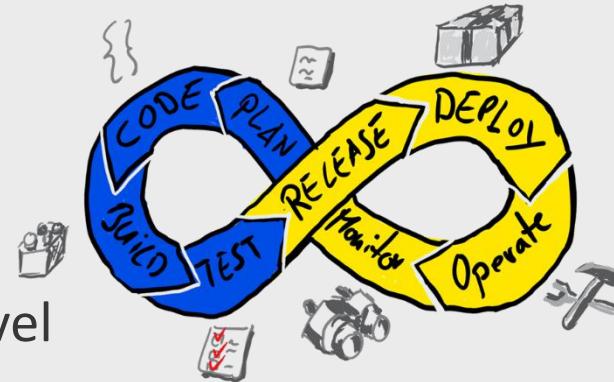
Hands-on Lab [CI/CD]

Aphiwat Kitkitiwirya (Tae)
Solution Architect | Partner | Thailand



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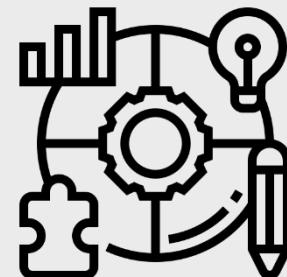
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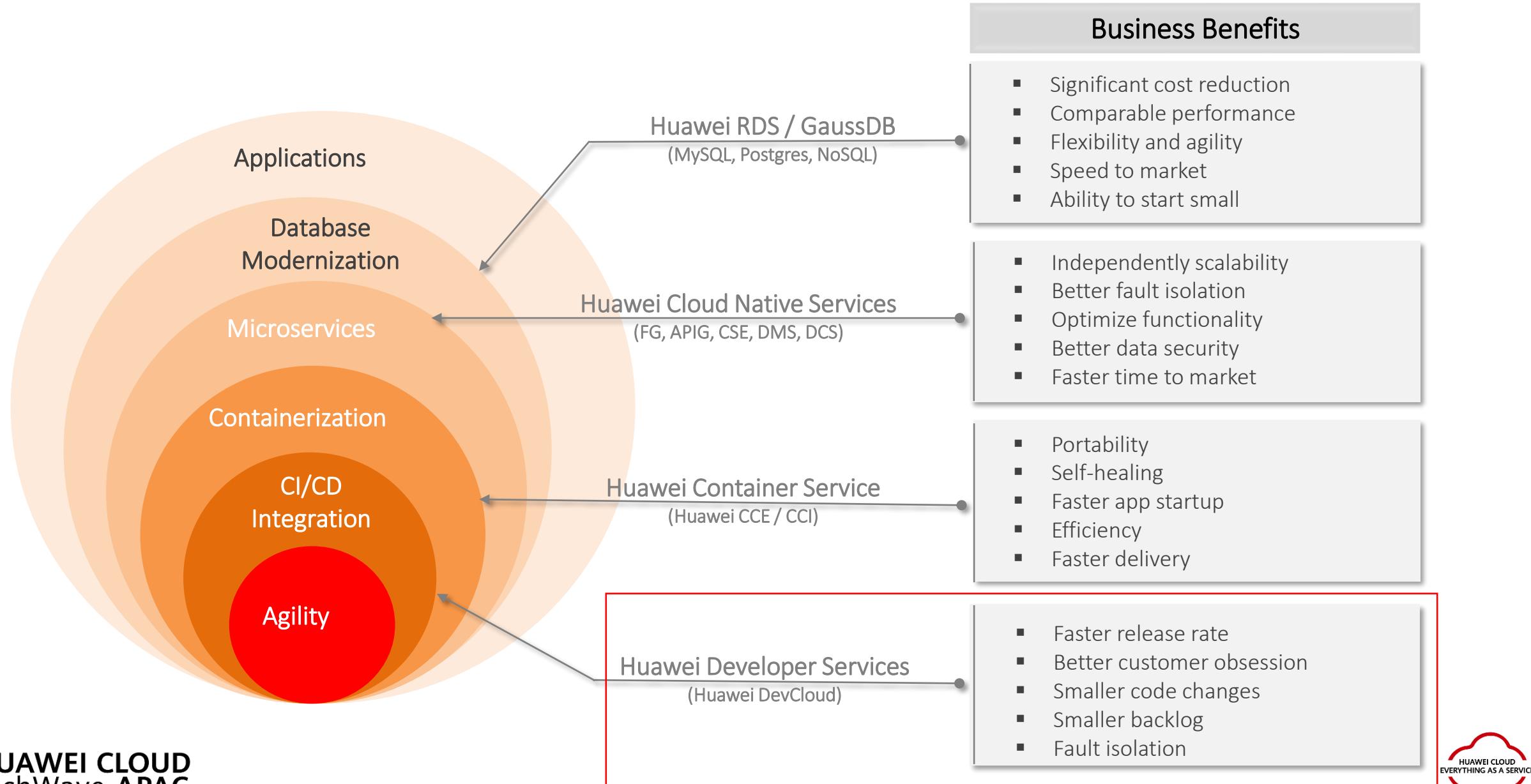
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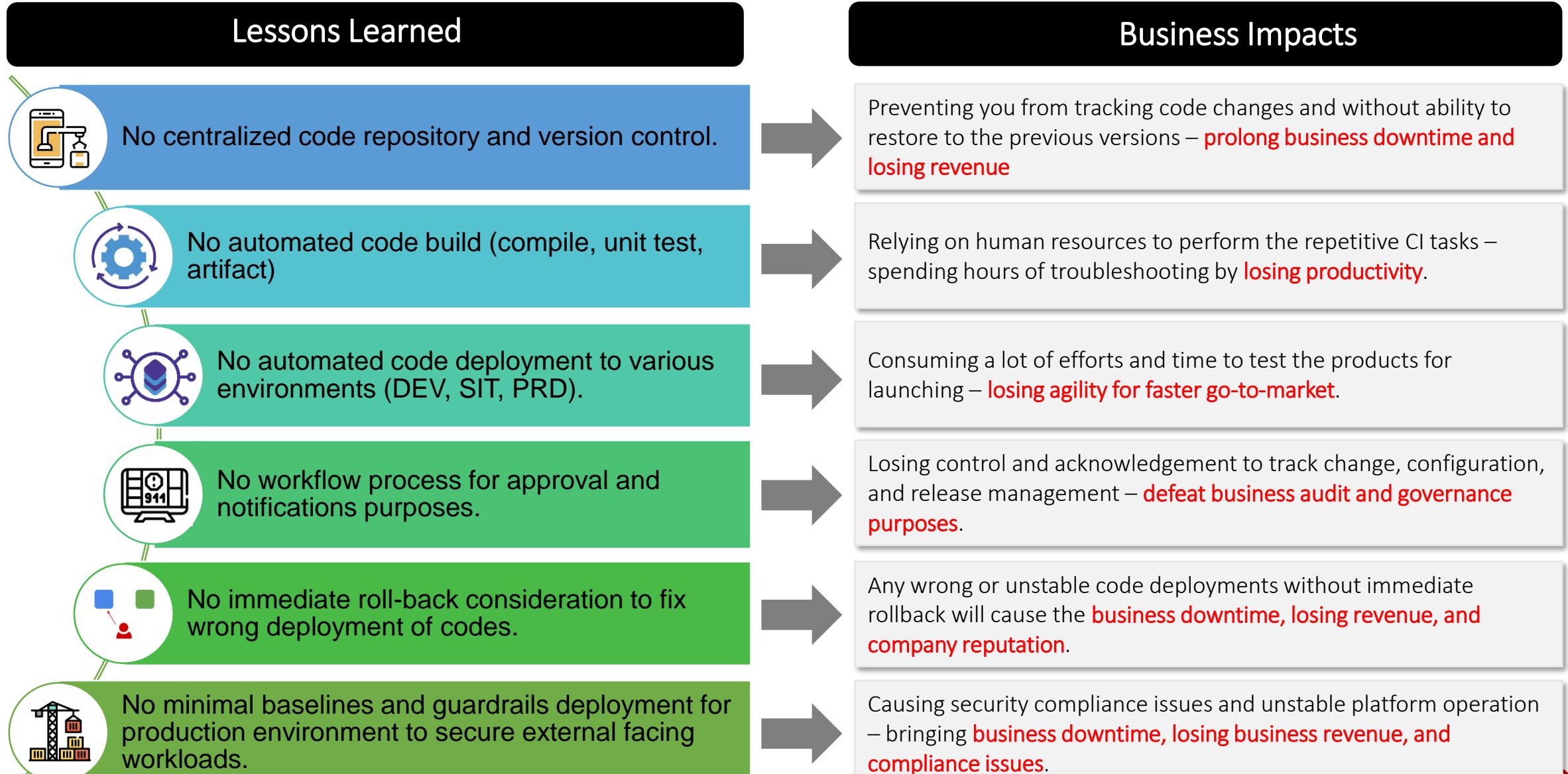
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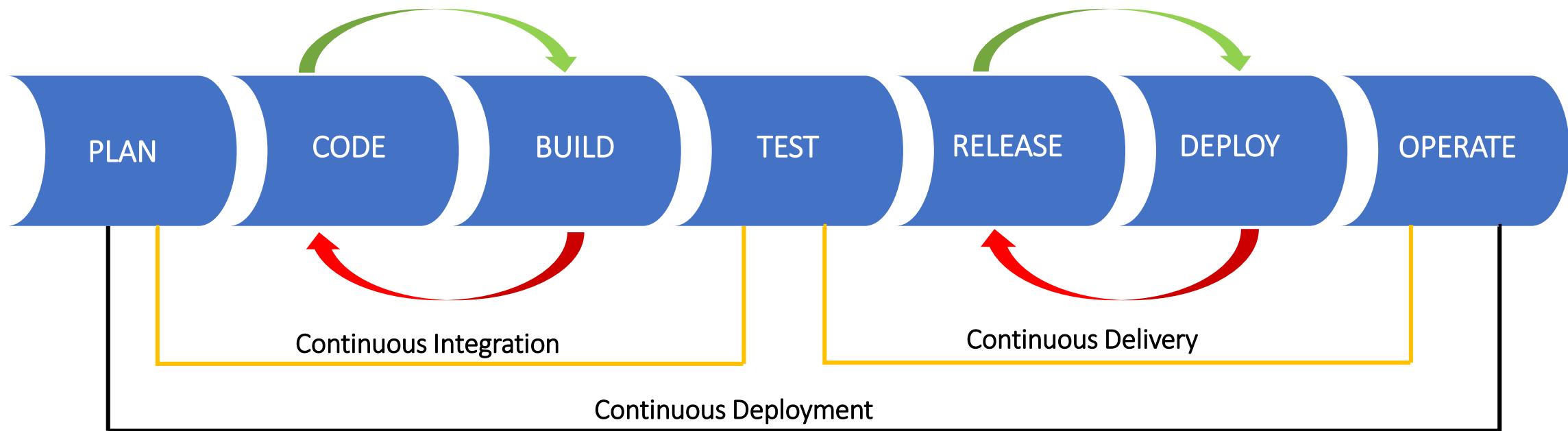
Agility on Huawei Cloud from Application Perspective



Common CI/CD lessons learned and impact analysis



Holistic E2E CI/CD Lifecycle Considerations and Deployment



Planning

- Requirement finalization
- Updates & new changes
- Architecture & design
- Task assignment
- Time finalization

Code

- Development
- Configuration finalization
- Check-in source code
- Static-code analysis
- Automated review & peer review

Build

- Compile code
- Unit testing
- Code-metrics
- Build container image or package
- Preparation or update in deployment template
- Create or update monitor dashboard

Test

- Integration test with other component
- Load & stress test
- UI testing
- Penetration testing
- Requirement testing

Release

- Preparing release notes
- Version tagging
- Code freeze
- Feature freeze

Deploy

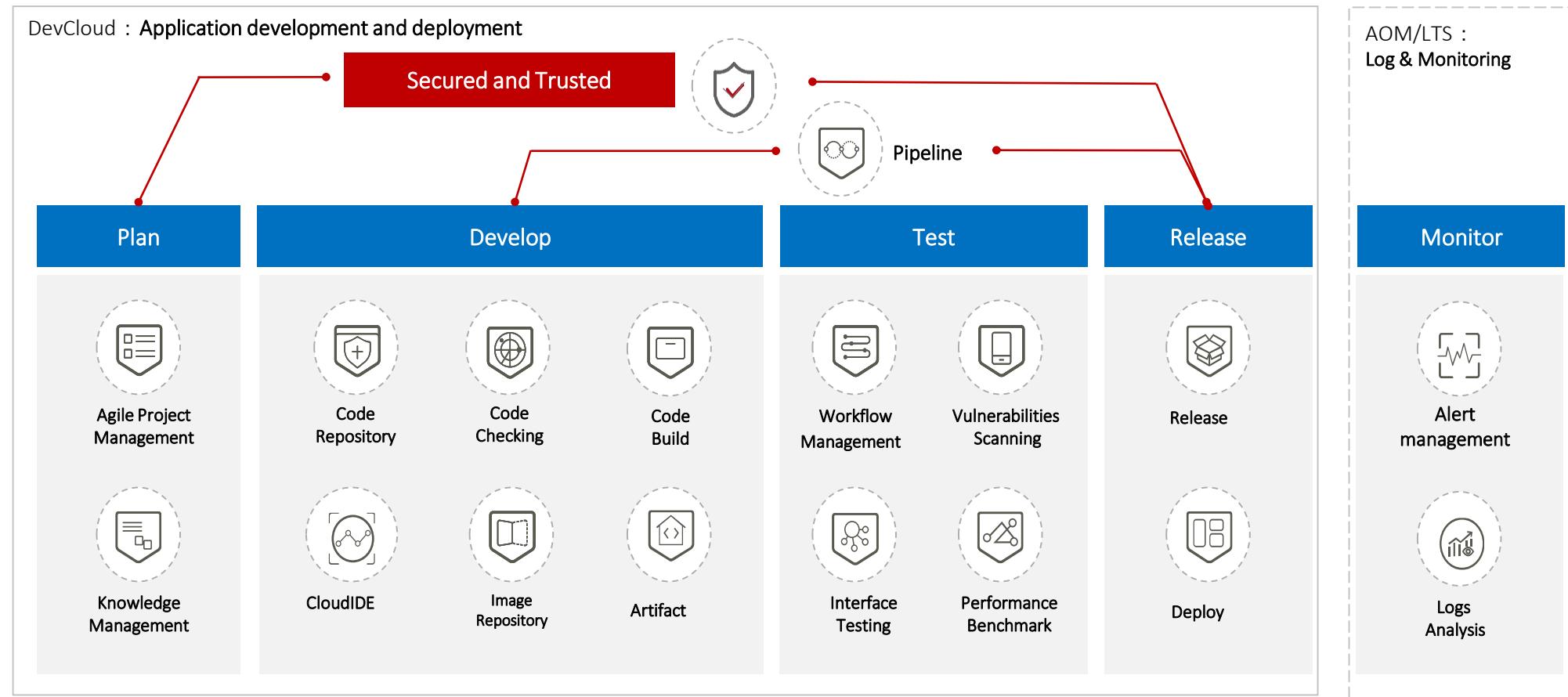
- Updating the infrastructure code
- Verification on deployment – smoke tests

Operate

- Monitor designed dashboard
- Alarm Triggers
- Automatic critical event handler
- Monitor error logs

HUAWEI CLOUD Software Development Platform DevCloud

DevSecOps Lifecycle



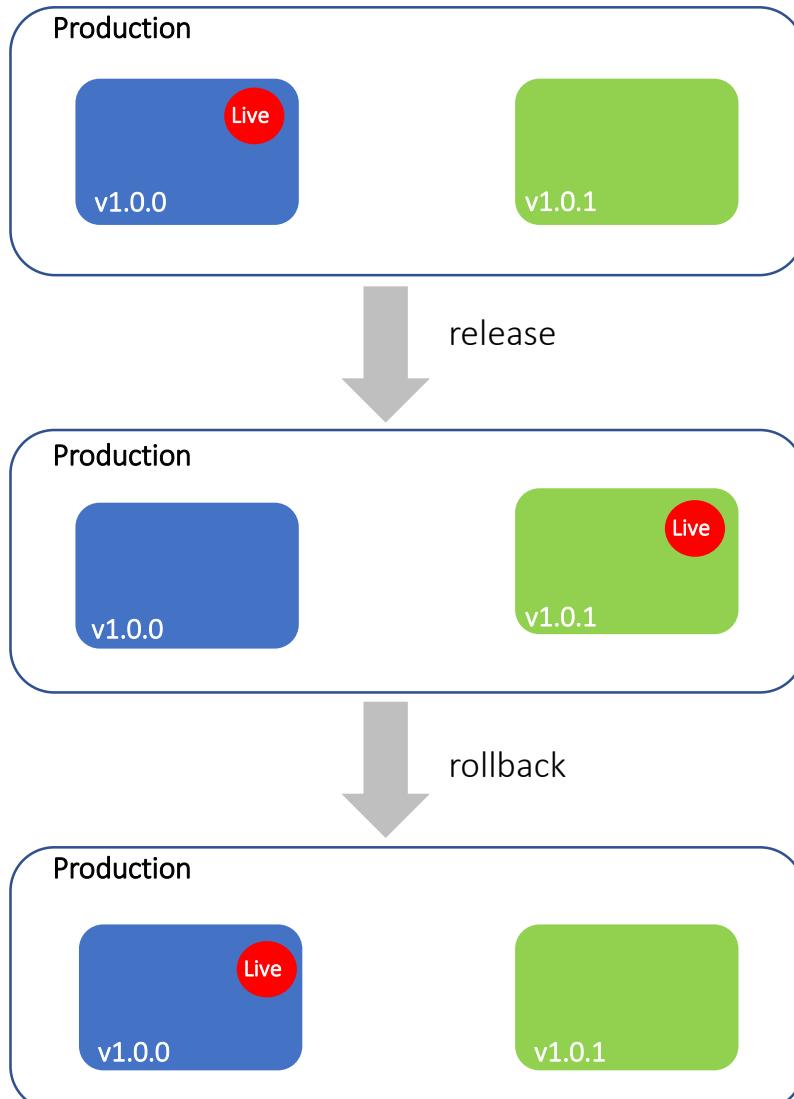
Influence:

- IDC: China DevOps Cloud Service Leader in 2019
- Forrest Wave: Infrastructure and Development Platform Leader
- Founder of the CDF: Sustained Delivery Foundation under the Linux Foundation

Competitiveness:

- **Full process:** One platform covers common software development functions. Software development functions are embedded and integrated, and interconnection governance and O&M are provided.
- **Rich programming languages and technology stacks:** 20+ mainstream programming languages, development frameworks, and running environments, seamlessly migrating applications to the cloud.
- **Security and trustworthiness:** Security test, trustworthiness construction, 5 + security standards, and 3000 + code check rules.

Blue Green Deployment



Pre-release:

- The **Blue** environment is live and stable and serving as production environment while **Green** is idle.
- During release preparation the **Green** is used to run user acceptance test and other test before moving the version to production.

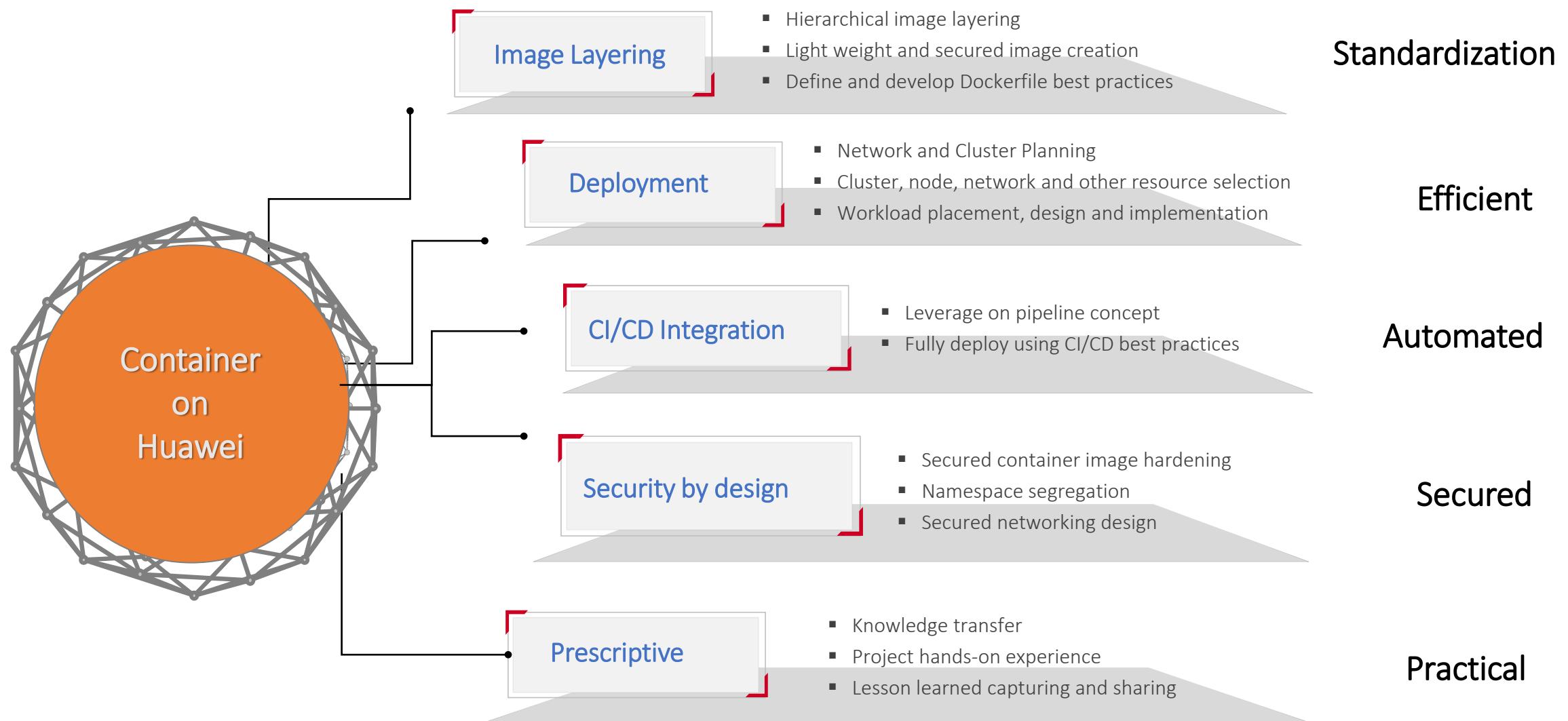
Post-release:

- Once the desired stability is achieved with new version, the production environment switches to **Green** which is live serving as production while **Blue** is idle.

Post-failure:

- In case of failure, the previous version is retained and the **Blue** is once again live in action without any hassle.

Holistic Containerization Design Process



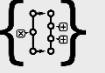
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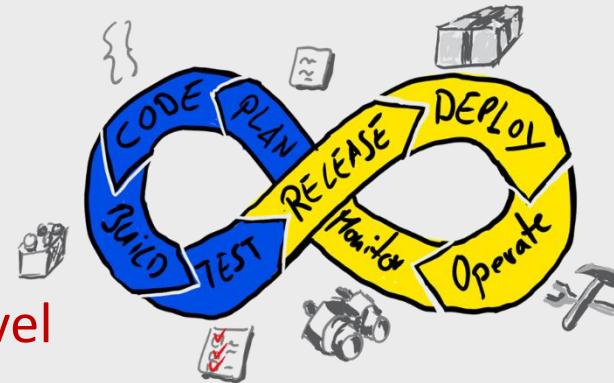
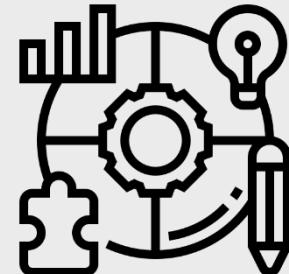
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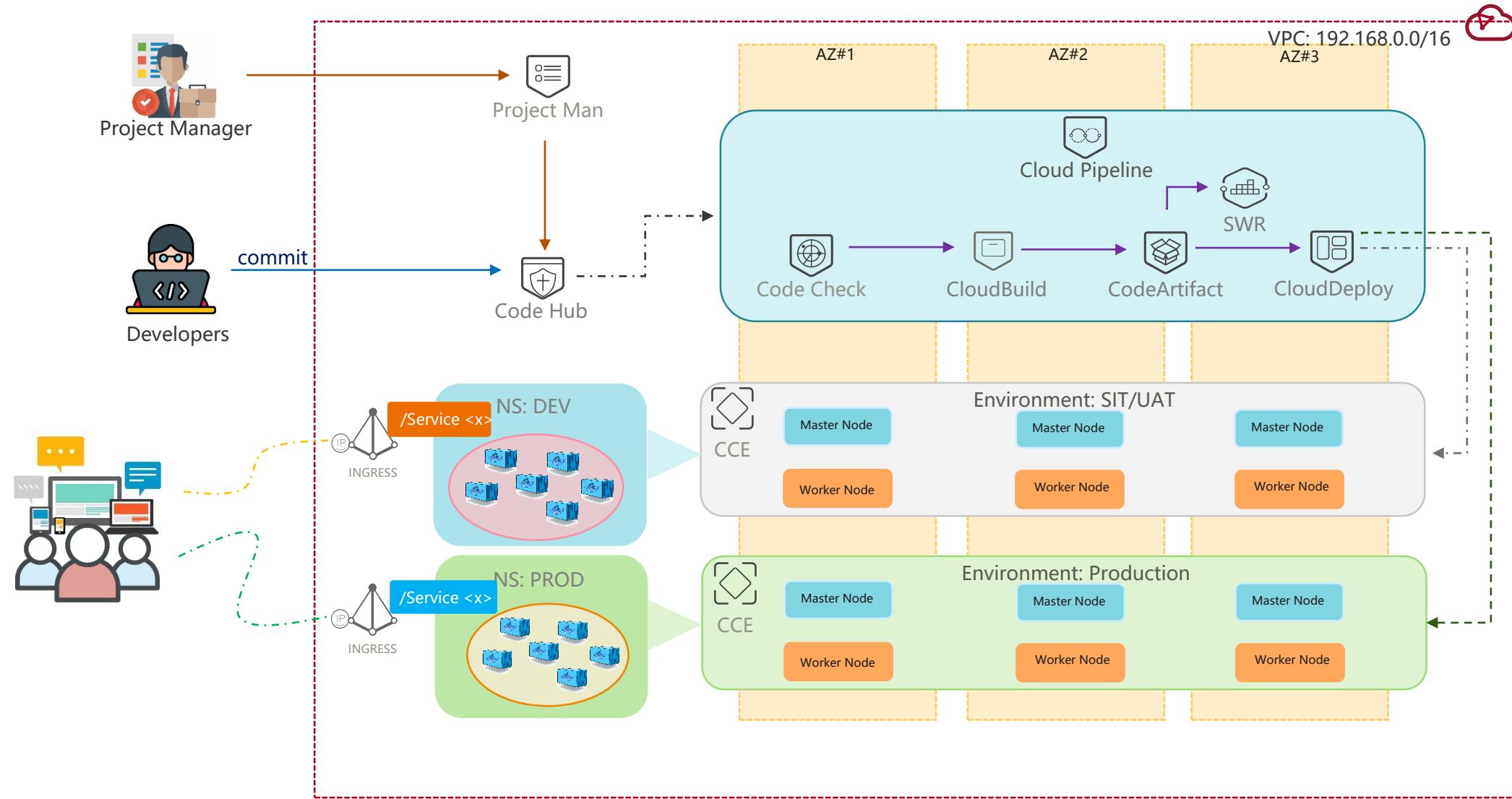
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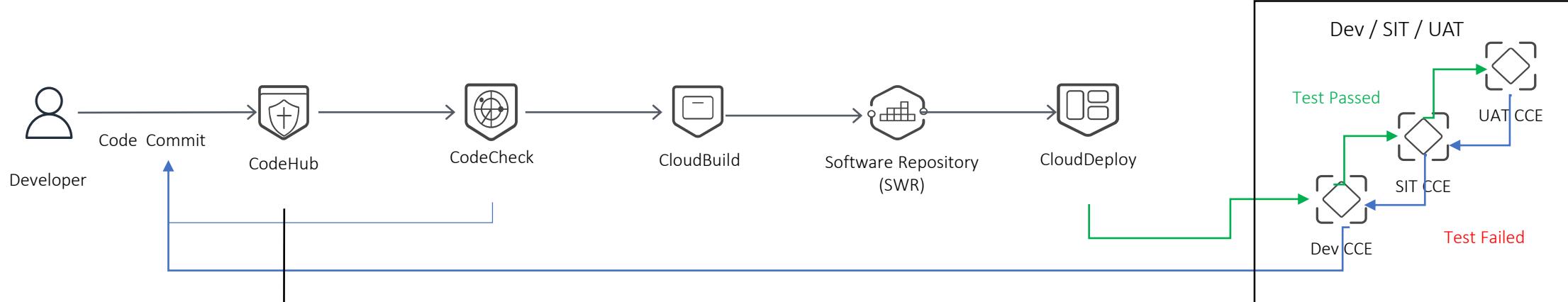


Solution Architecture Overview

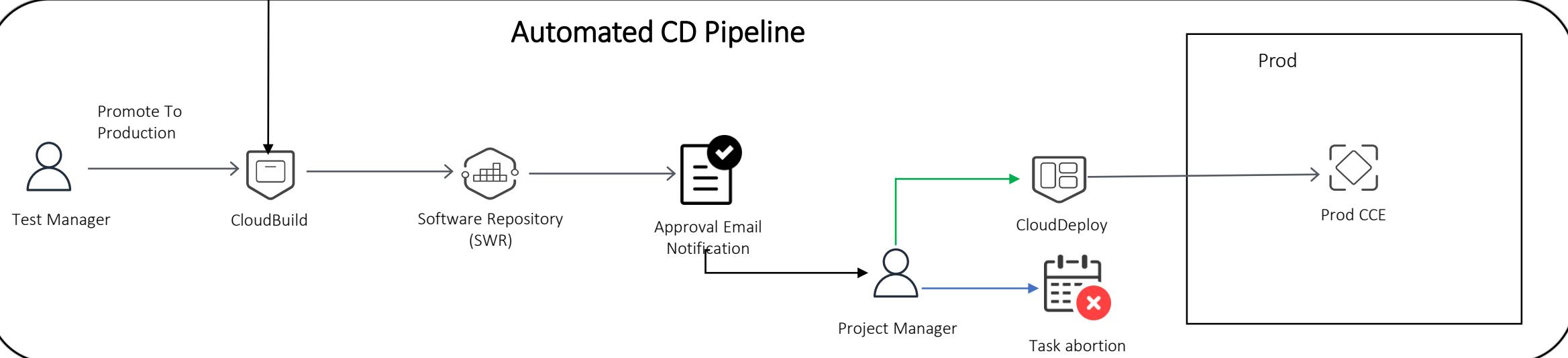


Logical View Application Deployment Workflows

Automated CI Pipeline

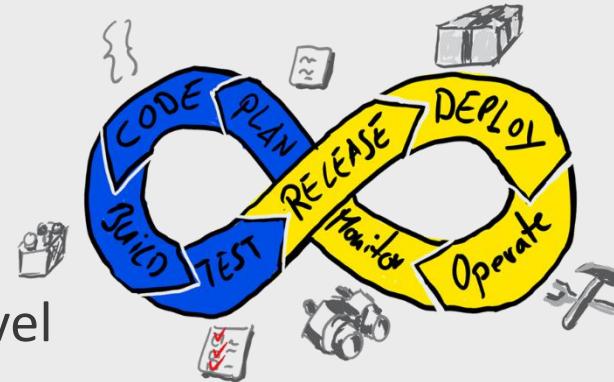


Automated CD Pipeline



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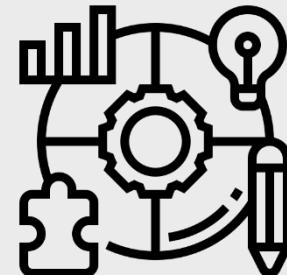
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“Starting Hands-on Labs – CodeArt(DevCloud)”

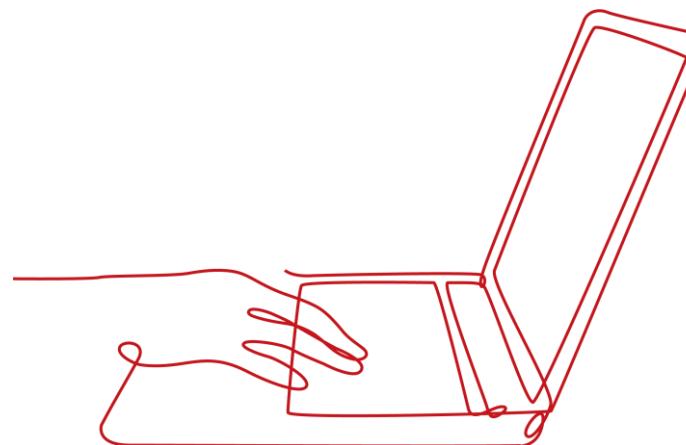
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Transformation

Professional
Services

Going-
Global

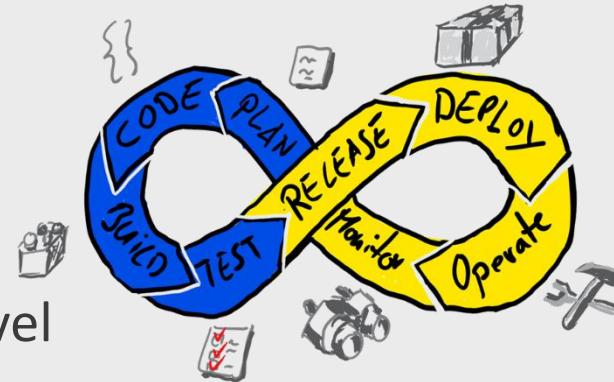
Cloud-Cloud
Collaboration

Green
Practices



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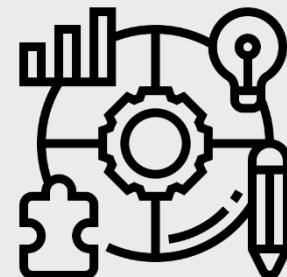
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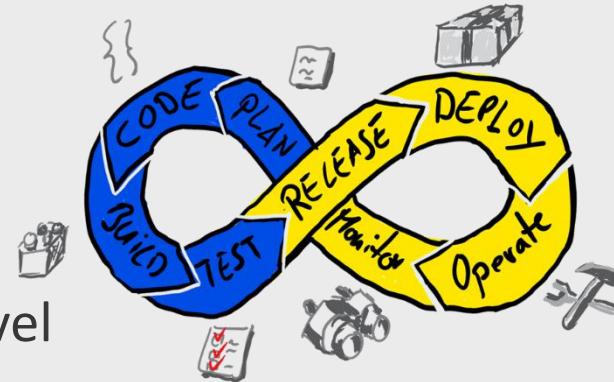


Preparations :

1. Registered Huawei Cloud Account
2. Creation VPC (CIDR) : 192.168.0.0/16
 - I. Creation Subnet: 192.168.0.0/24 (subnet01)/ 192.168.1.0/24 (subnet02)/ 192.168.2.0/24 (subnet03)
 - II. Creation Security Group:
3. Creation ECS (Windows/Linux)
Purposing for Developer submit code to CodeHub
 - I. Installed git libraries command [refer: <https://github.com/git-guides/install-git>]
 - II. Installed terraform command
[refer: https://developer.hashicorp.com/terraform/downloads?product_intent=terraform]
 - III. Generated SSH Key
Purposing for automated commit source code files changed to CodeHub.
4. Creation CCE Cluster and Worker Nodes
Purposing for running workloads container deployment.
5. Creation SWR with Organization
Purposing for store the container images from CloudBuild.

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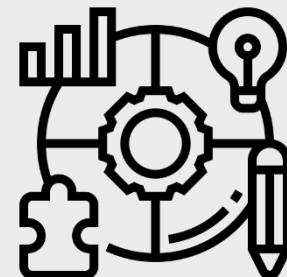
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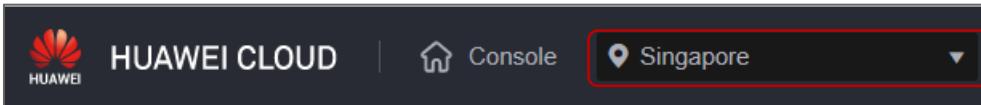
4. Question & Answer



1. Project Man – Create Project (1)

1.1 On Huawei Cloud Console Access to DevCloud Menu.

I. Selected Singapore Region.



II. Click Burger Menu Icon > DevCloud which is under the section of "Developer Services"

A screenshot of the Huawei Cloud Service List page. The left sidebar shows various service categories like Cloud Container Engine, Relational Database Service, Auto Scaling, etc. The 'Developer Services' section is highlighted with a red box. Within this section, the 'DevCloud' service is also highlighted with a red box. The main content area lists numerous other services such as Application Operations Management, DevCloud, Software Repository for Container, Host Security Service, Cloud Container Engine, Data Encryption workshop, API Gateway, Cloud Performance Test Service, Business Applications, Media Services, Content Delivery & Edge Computing, Analytics, Blockchain, and many more. A modal window titled 'Buy ECS' is partially visible on the right side of the screen.



1. Project Man – Create Project (2)

1.2 After access “DevCloud” you will got this page then click on the button “Access Service”



HUAWEI CLOUD | [Console](#) | [Singapore](#) | Search | More | [Intl-English](#) | APClouddemoTH a00641269 | 99+

DevCloud Note: The current page belongs to the console, which is used to manage billing and capacity usage. To create a project and build a service, go to the [console](#)

DevCloud is a one-stop, full-process, secure, and trustworthy cloud-native DevSecOps platform. It provides services such as ProjectMan, CodeHub, CloudPipeline, CloudBuild, CloudDeploy, and CloudArtifact, helping improve quality and efficiency. [Learn more](#)

Used Resources

| Service | Usage | Capacity |
|------------|-------|--------------|
| ProjectMan | 0 | 0.01MB/10G |
| CodeHub | 0.021 | 214.26MB/10G |

Current Edition

Basic Edition

Specifications cannot be changed or unsubscribed within five days from the expiration date | [Change Specifications](#) | [Renew](#) | [Unsubscribe](#)

| Service | Spec |
|---------------|--------------------------------------|
| ProjectMan | 10 GB storage |
| CodeHub | 10 GB storage, maximum capacity 2 GB |
| CloudArtifact | 10 GB storage |

Parallel Job: 2 parallel jobs for CloudPipeline, CloudBuild, or CloudDeploy

Status: Normal | Region: Singapore | Auto-renewal: Yes | [Settings](#)

Users: 15person | Validity period: Aug 18, 2022 16:20:54 GMT+07:00-Aug 18, 2023 22:59:59 GMT+07:00

Capacity Package

No Capacity Package available. [Capacity Package](#)

Parallel Package

No Parallel Package available. [Parallel Package](#)

1. Project Man – Create Project (3)

1.3 On the Homepage, the system will be show all the project that you have

- I. In this labs, we will create new project by click on the button "Create Project"

The screenshot shows the HUAWEI CLOUD homepage. At the top, there is a navigation bar with the HUAWEI CLOUD logo, 'Console', 'AP-Singa...', 'Homepage' (which is highlighted in blue), 'Workspace', 'DevCloud', and user notifications (93). Below the navigation bar, the main content area displays a greeting 'Hello, a00641269'. On the left, there is a sidebar with links for 'Followed Projects', 'All Projects' (which is selected and highlighted in blue), 'Archived', 'Project Groups', and '+ Create Group'. The main content area shows a list of projects under 'All Projects', with one project named 'App-demo-code' listed. This project card includes a code icon, the name 'App-demo-code', the status 'Scrum', and the creator 'Creator: a00641269'. To the right of the project list, there is a search bar with the placeholder 'Enter a keyword.' and a 'Create Project' button, which is highlighted with a red border.



1. Project Man – Create Project (4)

- 1.4. On the Homepage, the system will be show all the project that you have
- I. In this labs, we will create new project by click on the button “Create Project”
 - II. Then select “new” - Scrum



A screenshot of the Huawei Cloud homepage. The top navigation bar includes links for 'Console', 'AP-Singa...', 'Homepage' (which is selected), 'Workspace', and 'DevCloud'. A search bar with placeholder text 'Enter a keyword.' and a red-bordered 'Create Project' button are also visible. The main content area displays a 'Hello, a00641269' greeting and a 'Followed Projects' section. Below this is a 'All Projects' section with tabs for 'All Projects' (selected) and 'Archived'. A sidebar on the left offers options like 'Project Groups' and '+ Create Group'. The central area features a 'Create Project' interface with two sections: 'New' (highlighted with a red box) and 'Sample'. The 'New' section shows a 'Scrum' template with three user icons and arrows indicating a cycle. The 'Sample' section shows a 'DevOps Full-Process Sample Project' with various icons representing different stages of the DevOps pipeline.

1. Project Man – Create Project (5)

1.5. On the creation project page you need to enter your <project name> on the Project Name Text Box.

I. Project Name: <PRJ-DEMO-DevOps>



Back

Create Project

Type



Scrum ?

* Project Template

Scrum(System)

[Click here](#)

* Project Name

PRJ-DEMO-DevOps

Project Code

Only letters, digits, hyphens (-), and underscores (_) are allowed.

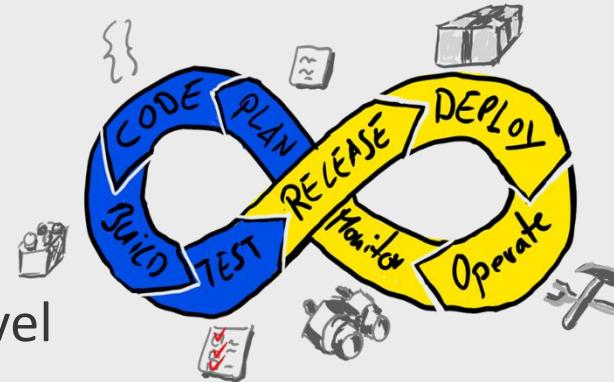
Description

OK Cancel

The screenshot shows the 'Create Project' dialog box. The 'Project Name' field contains the value 'PRJ-DEMO-DevOps'. This input field is highlighted with a red border. The 'OK' button at the bottom of the dialog is also highlighted with a red border.

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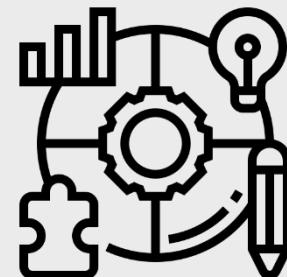
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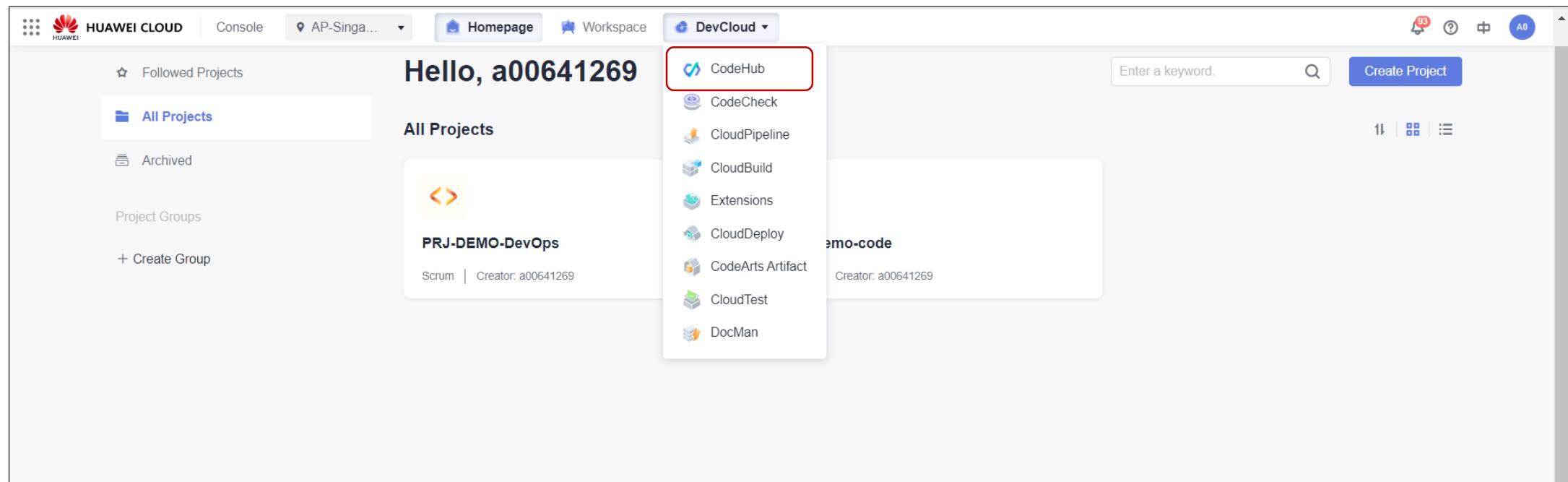
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4. Question & Answer



2. CodeHub – Version Control Repository (1)

2.1 On the screen of DevCloud after you created project then you need to working with CodeHub.
I. Switches to CodeHub on the upper as the picture below.



2. CodeHub – Version Control Repository (2)

2.2 on the page CodeHub, then click button “+Create Directly”

- I. Repository Name: CH-DEMO-DEVOPS.
- II. Project Name: PRJ-DEMO-DevOps

The image shows two screenshots of the CodeHub interface. The left screenshot displays the main dashboard with a 'Create Directly' button highlighted by a red box. The right screenshot shows the 'Create Repository' dialog box, also with the 'Repository Name' and 'Project' fields highlighted by a red box. Both screenshots show the same repository details: Repository Name: CH-DEMO-DEVOPS, Project: PRJ-DEMO-DevOps, and a description field. The dialog box includes sections for Programming Language, Type, Permissions, and Visibility, with the 'OK' button at the bottom.

CodeHub Basic Edition

Storage Space Used 214.20 MBB | Repositories 21

+ Create Directly

Enter a keyword.

Repository

App-demo-code / DevOps-demo

Create Directly

Create Repository

* Repository Name: CH-DEMO-DEVOPS

* Project: PRJ-DEMO-DevOps

Description

Enter a description. 0 / 500

Programming Language of .gitignore

Select

Type

Android Console GUI Kunpeng (64-bit Arm) REST API
ServiceStage Web server

Permissions

Allow project members to access the repository
Allow generation of a README file

Visibility

Private (Only members of the repository can access the repository and commit code.)
Public read-only (The repository is read-only for visitors, but not displayed in the repository list or search result for visitors.)

OK Cancel

HTTPS Password

Operation

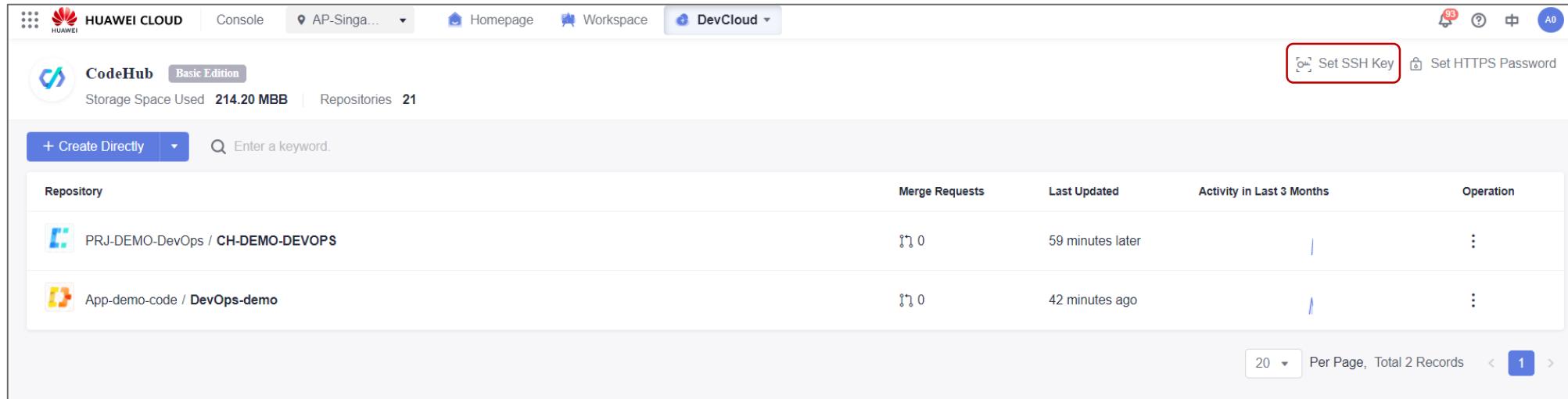
1

HUAWEI

2. CodeHub – Version Control Repository (3)

2.3 After you created repository, then you will get like this screen

- I. Then you need to binding the SSH Key where did you generated from ECS in previous.
- II. Click on “Set SSH Key”



The screenshot shows the HUAWEI CLOUD CodeHub interface. At the top, there are navigation links: Console, AP-Singa..., Homepage, Workspace, DevCloud (selected), and user notifications (93). Below the header, the CodeHub logo and "Basic Edition" are displayed, along with storage space used (214.20 MBB) and the number of repositories (21). A search bar and a "+ Create Directly" button are also present. The main content area displays two repository cards:

| Repository | Merge Requests | Last Updated | Activity in Last 3 Months | Operation |
|----------------------------------|----------------|------------------|---------------------------|-----------|
| PRJ-DEMO-DevOps / CH-DEMO-DEVOPS | 0 | 59 minutes later | / | ⋮ |
| App-demo-code / DevOps-demo | 0 | 42 minutes ago | / | ⋮ |

At the bottom, there are pagination controls: "20 Per Page, Total 2 Records" and a page number "1". A red box highlights the "Set SSH Key" button in the top right corner of the header.

2. CodeHub – Version Control Repository (4)

2.4 Now let's work on ECS (Developer's Machine)

- I. Generate SSK-Key by using command “ssh-keygen” [In this sample, we have running on linux (CentOS8.2)]

```
[root@ecssgak-centos8-terminal01 ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/aphiwatk/.ssh/id_rsa):
Created directory '/home/aphiwatk/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/aphiwatk/.ssh/id_rsa.
Your public key has been saved in /home/aphiwatk/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:6QvrVdKwplheK3LX7aW8qScYyCKvlcLFu6n1HCKreGA aphiwatk@ecssgak-centos8-terminal01
The key's randomart image is:
+---[RSA 3072]----+
|                               |
|                               |
|                               |
|                               |
| .   =                     |
| o...S o                   |
|.E...*o=.= .                 |
..+o0.B =o. . .               |
|.. .*0 B...o.+               |
|oo+oo.= . .+*.
+---[SHA256]----+
[root@ecssgak-centos8-terminal01 ~]#
```

2. CodeHub – Version Control Repository (5)

- 2.5 After you had generated ssh-key then you will got two(2) files that is id_rsa (private key) and id_rsa.pub (public key)
- I. The located or directory of generated ssh-key will be on your “<home-directory>/.ssh”
 - II. Executed command “cat id_rsa.pub” to get key information from public key.
 - III. Copy those of key information.

```
[root@ecssgak-centos8-terminal01 .ssh]# pwd  
/root/.ssh  
[root@ecssgak-centos8-terminal01 .ssh]# ll  
total 12  
-rw----- 1 root root 0 Mar 15 17:05 authorized_keys  
-rw----- 1 root root 2622 Mar 15 17:08 id_rsa  
-rw-r--r-- 1 root root 585 Mar 15 17:08 id_rsa.pub  
-rw-r--r-- 1 root root 444 Mar 15 17:33 known_hosts  
[root@ecssgak-centos8-terminal01 .ssh]#
```

```
[root@ecssgak-centos8-terminal01 .ssh]# cat id_rsa.pub  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAABgQCgTqPZ8q83SFwNU0mfUXBSSU9CCSu0pdYE0070hQ0scR2Eq8ST0ek0yVSF7xCEbgHyZDKMjeGgvG4gmCA2IxKHwebuyiY60oqI1tV4gwVx5B0g/heIvb0g  
2K0o30gWWbaysCXHr/s3bbVF85gA77EeRtUQujVeREdBpabKFluUaB8GzS7XpxcVj/AzTo4VzIK5cUhY+p+chLVqoCRoB+yhiCp064zM+UGiwwb5np4no0m08CHh4lTQnZH7MY7Z8wBQil4KI63834ChRr2WH  
q4q+I0YONncq4/yiEkfuU1kT6JMIfMJdBV5trXvj2hnIb2FjW3uQ53vcMZmkqPuyx2Gg40dw+udj5MEMNR/Ca2VdrTkRwTsAtdyaCJRW2tE8KKiQvvCyFRmV1JbxHlMuRQz ikoRnVxK58KG7DYHNBHhGP3Vqlw  
XUabLUPKUMiXEPMrIwUOPKhMsHo2u7/jT2srF2E/Uz fH9h+zaIDI076tD4fE8ATAvPHlW4fg8Qd6s= root@ecssgak-centos8-terminal01  
[root@ecssgak-centos8-terminal01 .ssh]#
```

2. CodeHub – Version Control Repository (6)

2.6 Now Jump to CodeHub > Set SSH Key page.

- I. Key Name: <enter-your-key-name>
- II. Key: Paste key information that you had copied key information from generated ssh-key from the previous step.

SSH Keys

SSH keys can be used to establish a secure connection between your computers and CodeHub.

Add SSH Key

| Key Name | Key | Added | Operation |
|----------|--|-----------------------|-----------|
| centos | ssh-rsa AAAAAB3NzaC1yc2EAAAQABAAQABgQCgTqPZ8q83SFwNU0mfUxB SSU9CCSu0pdpyEOO70hQ0scR2Eq8STOek0yVSVf7xCEbgHyZDKMje GgvG4gmCA2IxKHwebuyiY60oql1tV4gwVx5BOg/helvb0g2K0o3OgWV WbaysCXHr/s3bbVF85gA77EeRtUQujVeREdBpabKFluUaB8GzS7Xpxc Vj/AzTo4VzIK5cUhY+p+chLVqoCRoB+yhiCp064zM+UGiwb5np4no0m 08CHh4ITQnZH7MY7Z8wBQi4KI63834ChRr2WHq4q+IOYONncq4/yiEk fuU1kT6JMifMJdBV5trXvj2hnlb2FjW3uQ53vcMZmkqPux2Gg40dw+udj 5MEMNR/Ca2VdrTkRwTsAtdyaCJRW2tE8KKiQvvCyFRmV1JbxHIMUrQ zikoRnVxK58KG7DYHNBHhGP3VqlwXUabLUPKUMiXEPMrlwU0PKhM sHo2u7/jT2srF2E/UzfH9h+zaIDI076tD4fE8ATAvPHIw4fg8Qd6s= root@ecssgak-centos8-terminal01 | Mar 16, 2023 15:13... | |

Note

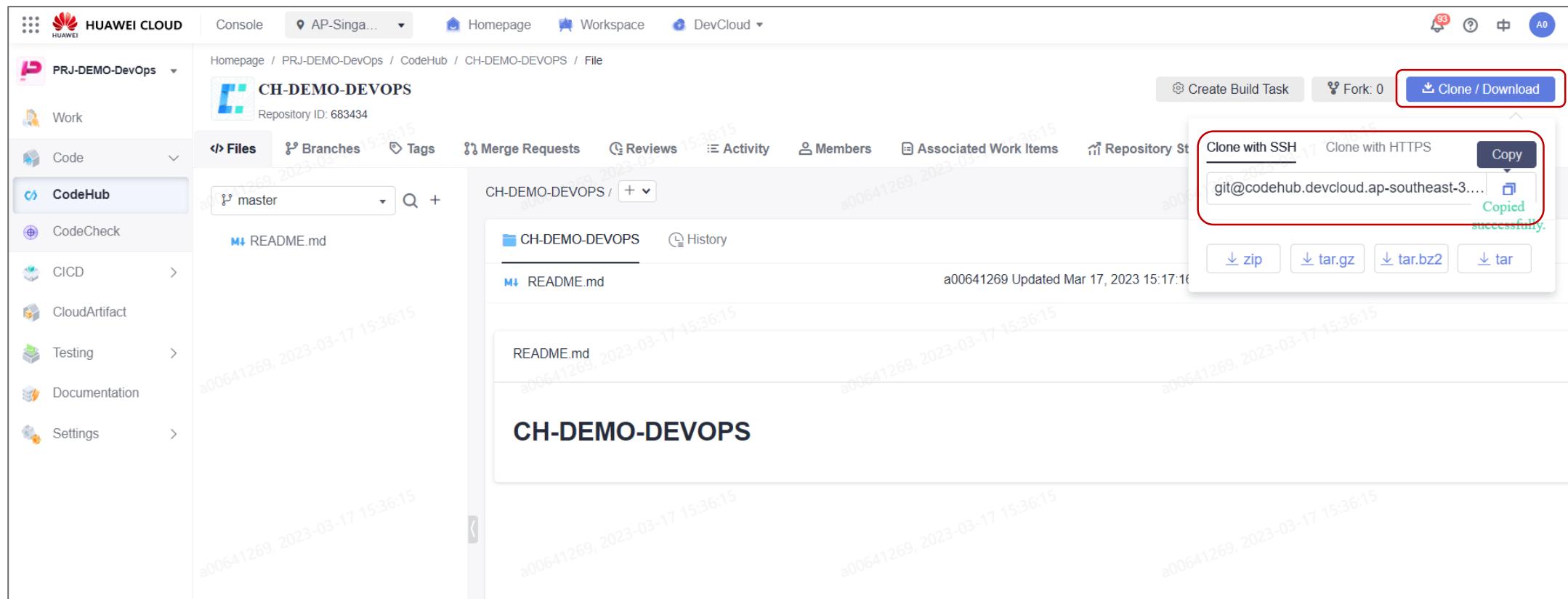
- SSH keys connect users/computers with CodeHub, whereas deploy keys connect repositories with CodeHub.
- Keep SSH keys secure and do not share them with others.
- If you use SSH to clone a repository to the local host for the first time, a message is displayed on the Git client indicating that the authenticity of host * <Server Domain> cannot be established. **The clone can only continue after you enter yes to confirm the trust.**
- The procedures for configuring SSH keys of Git plug-ins differ between IDEs. For details, search for your desired configurations on the Internet.

Total 1 Records

2. CodeHub – Version Control Repository (7)

2.6 Then Access your CodeHub repository that you was created “CH-DEMO-DEVOPS”.

- I. The right hand side, you will be the button “Clone / Download”.
- II. Click on that button and select icon “copy”  under the menu “Clone with SSH”.



2. CodeHub – Version Control Repository (8)

2.6 it's time to submit your source code to CodeHub by git command.



- I. Now, Jump back on your ECS (Linux – CentOS).
- II. Let's do creation directory work for git repository (such as “/gitrepo”)
- III. Execution git command for initial git repository by command “git init”
- IV. Then executed the git clone command by command “git clone <clone with ssh from codehub>” and you will got “<CodeHub Repository Name> as a Directory”

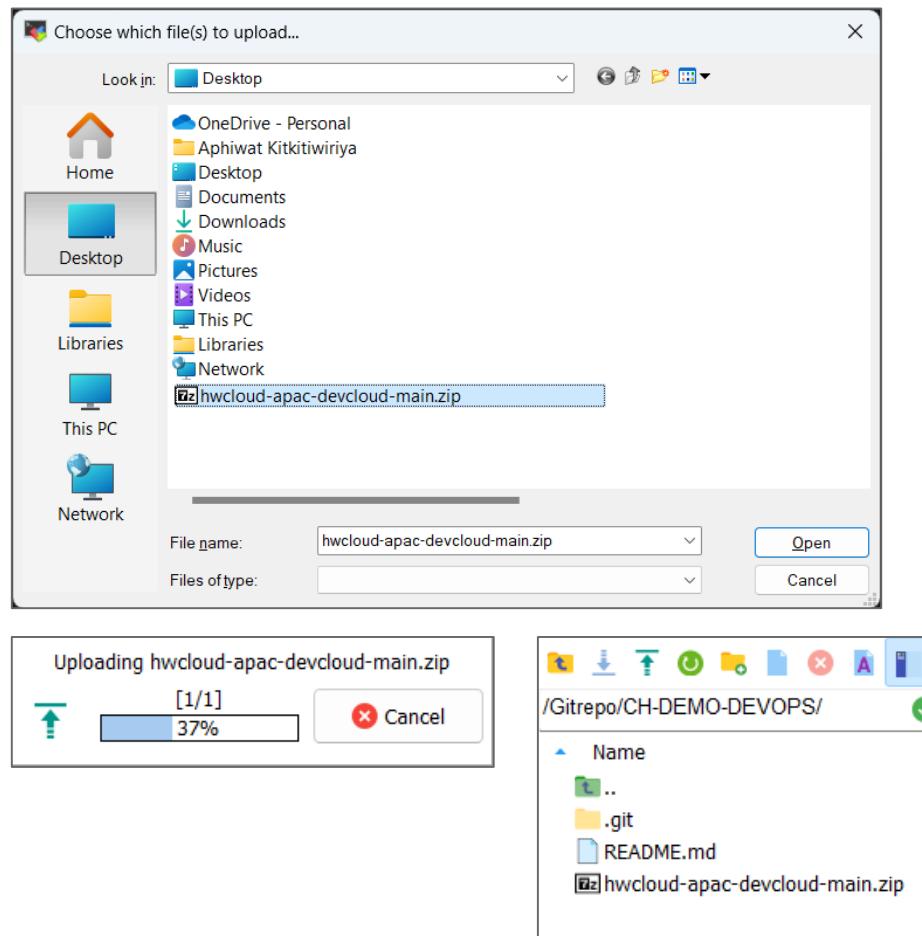
```
[root@ecssgak-centos8-terminal01 Gitrepo]# pwd
/Gitrepo
[root@ecssgak-centos8-terminal01 Gitrepo]# git init
Initialized empty Git repository in /Gitrepo/.git/
[root@ecssgak-centos8-terminal01 Gitrepo]# git clone git@codehub.devcloud.ap-southeast-3.huaweicloud.com:PRJ-DEMO-DevOps00001/CH-DEMO-DEVOPS.git
Cloning into 'CH-DEMO-DEVOPS'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0)
Receiving objects: 100% (3/3), done.
[root@ecssgak-centos8-terminal01 Gitrepo]#
```

```
[root@ecssgak-centos8-terminal01 Gitrepo]# ls -la
total 16
drwxr-xr-x  4 root root 4096 Mar 20 11:47 .
dr-xr-xr-x. 23 root root 4096 Mar 20 11:46 ..
drwxr-xr-x  3 root root 4096 Mar 20 11:47 CH-DEMO-DEVOPS
drwxr-xr-x  7 root root 4096 Mar 20 11:47 .git
[root@ecssgak-centos8-terminal01 Gitrepo]#
```

2. CodeHub – Version Control Repository (9)

2.7 Then Let's work on your source code development on this directory “/gitrepo/CH-DEMO-DEVOPS”.

I. In this Labs, will we extract file that we got from the GitHub.



```
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]# pwd  
/Gitrepo/CH-DEMO-DEVOPS  
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]# ll  
total 4  
-rw-r--r-- 1 root root 16 Mar 20 11:47 README.md  
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]# ll  
total 2880  
-rw-r--r-- 1 root root 2942308 Mar 20 11:53 hwcloud-apac-devcloud-main.zip  
-rw-r--r-- 1 root root 16 Mar 20 11:47 README.md  

```

2. CodeHub – Version Control Repository (10)

2.8 update your source code from your developer machine to CodeHub repository.

- I. Execution git command by “git add .” (* update every files)
- II. Execution git command by “git commit –am “first time commit to code repository”
- III. Execution git command by “git push origin master”

Homepage / PRJ-DEMO-DevOps / CodeHub / CH-DEMO-DEVOPS / File

CH-DEMO-DEVOPS
Repository ID: 683434

Create Build Task Fork: 0 Clone / Download

Files Branches Tags Merge Requests Reviews Activity Members Associated Work Items Repository Statistics Commit Graph Settings

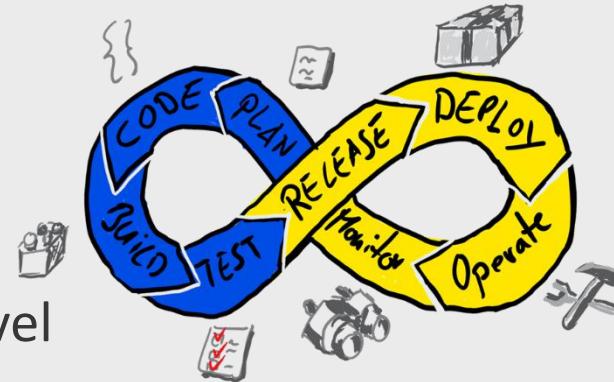
master + +

CH-DEMO-DEVOPS / History

| File/Folder | Last Updated | Commit ID | Message |
|-------------|--|-----------|-------------------------------------|
| cceenv | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| images | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| pipeline | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| project | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| Dockerfile | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| README.md | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |

Contents

1. Overview DevOps – CodeArts (DevCloud)



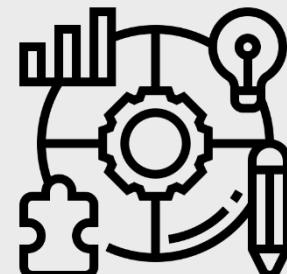
2. Solution Architect Logical Diagram – High Level

3. Hands-on Labs (DevCloud)

- Pre-Requisite
- Project Man
- CodeHub
- CloudBuild

- CloudDeploy
- CloudPipeline
- Commit Source Code and Automation Deployment
- Result / Outcome

4. Question & Answer



3. CloudBuild – Build/ Packages/ Release Your Application (1)

3.1 After we did upload/commit the original source code files to CodeHub, Then let's continue to working on CloudBuild for build or complied or packages.

- I. on the DevCloud Console, Access to CloudBuild.
- II. Create Task by click button “Create Task”.

The screenshot shows the DevCloud interface with the CloudBuild section. On the left, there is a list of existing build tasks, one of which is highlighted with a red box. On the right, a detailed 'New Build Task' configuration dialog is open, showing the following fields:

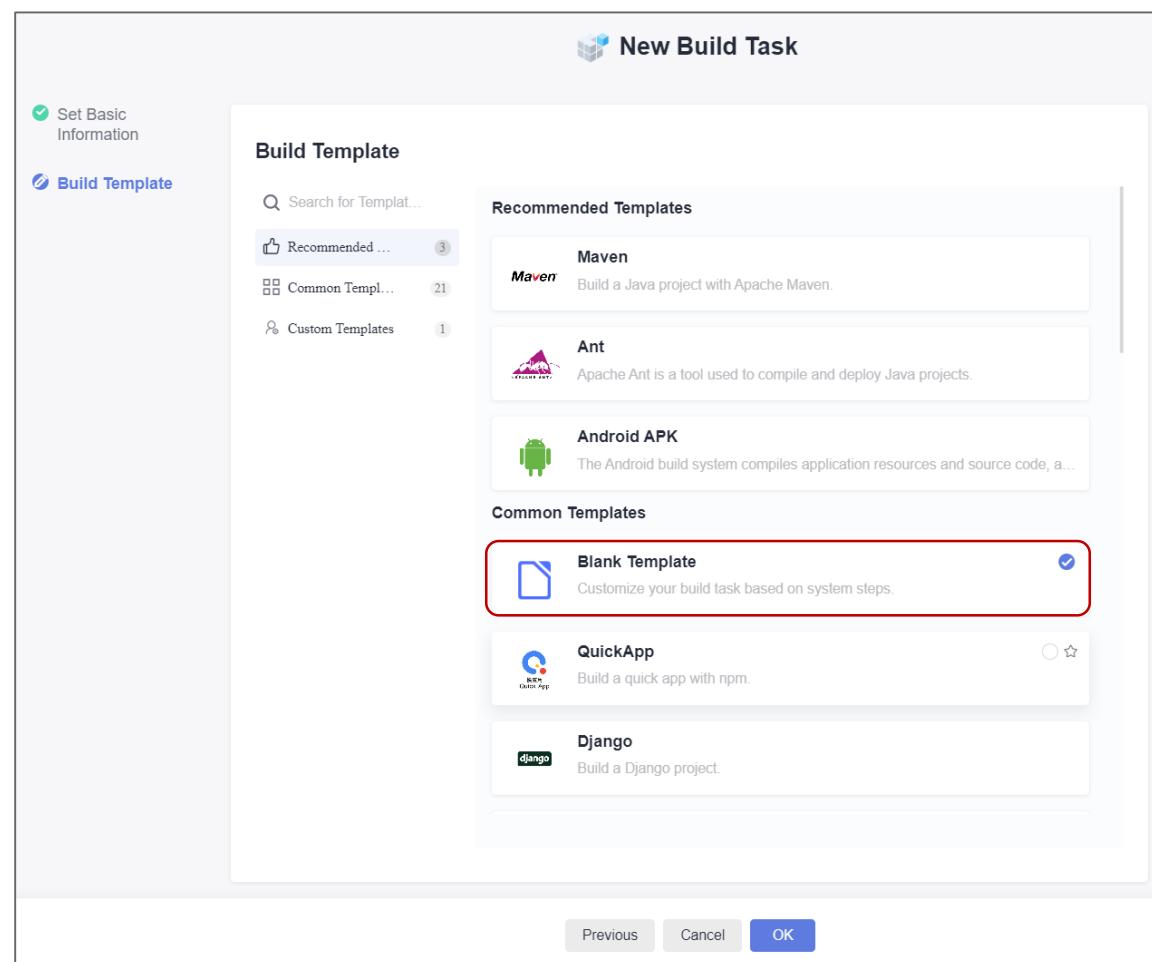
- Basic Information**:
 - Task Name: BuildAppXYZ01
 - Project: PRJ-DEMO-DevOps
 - Code Source: CodeHub (selected)
 - Source Code Repository: CH-DEMO-DEVOPS
 - Branch: master
- Description: (empty)

At the bottom of the dialog are 'Cancel' and 'Next' buttons.

3. CloudBuild – Build/ Packages/ Release Your Application (2)

3.1 On step, Build Templates.

- I. Selected “Blank Template”.
- II. Then you will get on the Build Action Step. So you need to define the “Parameters”.



3. CloudBuild – Build/ Packages/ Release Your Application (2)

3.1 On step, Build Templates.

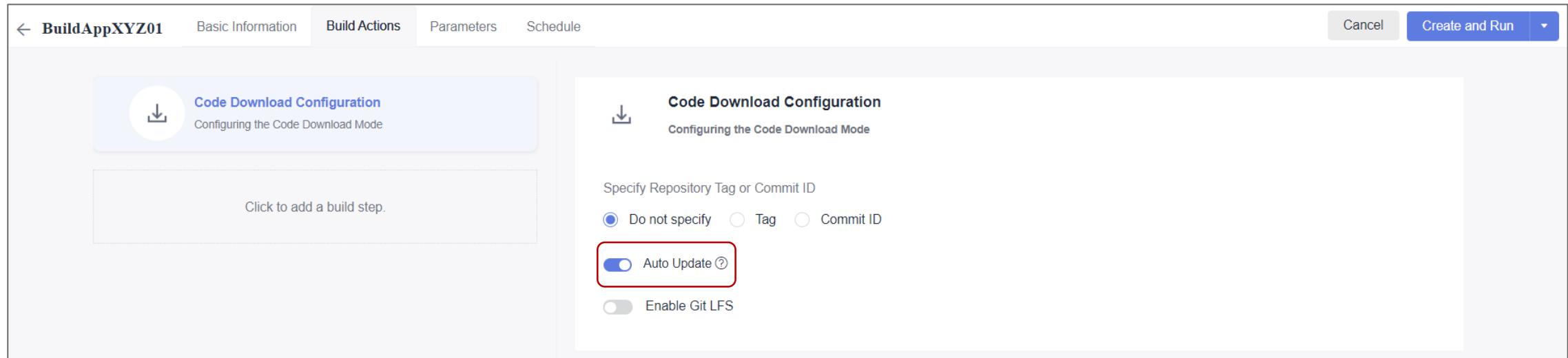
- I. Selected “Blank Template”.
- II. Then you will get on the Build Action Step. So you need to define the “Parameters”.

| Parameter Name | Parameter Type | Parameter Value | Private Parameter | Runtime Settings |
|----------------|----------------|--------------------|--------------------------|-------------------------------------|
| codeBranch | Text | master | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| imageName | Text | hwc-devop-demo | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| buildVersion | Text | v1.\${INCREASENUM} | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

3. CloudBuild – Build/ Packages/ Release Your Application (3)

3.1 Let's working on Build Actions Step.

- I. On the Code Download Configuration, Enabled “Auto Update”.
- II. Then Click “Click to add a build step.” and selected “Build Image and Push to SWR”.



3. CloudBuild – Build/ Packages/ Release Your Application (3)

3.1 Let's working on Build Actions Step.

- I. On the Code Download Configuration, Enabled “Auto Update”.
- II. Then Click “Click to add a build step.” and selected “Build Image and Push to SWR”.

The screenshot shows the 'Build Actions' tab of the CloudBuild configuration interface for a project named 'BuildAppXYZ01'. The 'Build Image and Push to SWR' step is selected. The configuration fields are as follows:

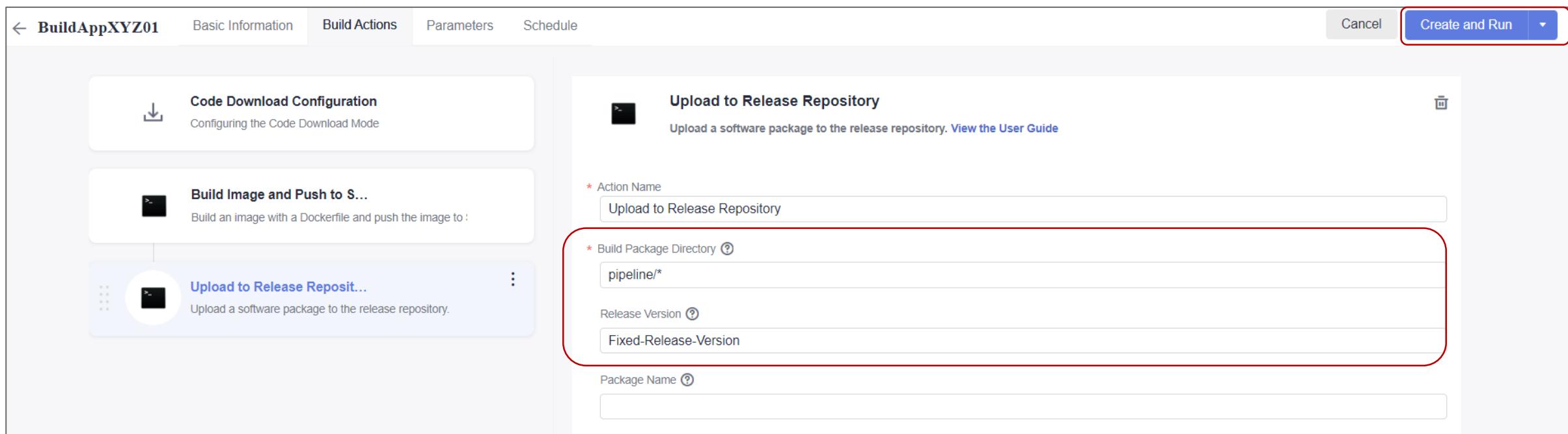
- Action Name: Build Image and Push to SWR
- Tool Version: docker18.03
- Image Repository: SWR
- Authorized User: Current
- Push Region: AP-Singapore
- Organization: ak-devops-swr
- Image Name: \${imageName}
- Image Tag: \${buildVersion}
- Working Directory: .
- Dockerfile Path: ./Dockerfile
- Add Build Metadata to Image: No (radio button selected)

A red box highlights the 'Image Name' and 'Image Tag' fields.

3. CloudBuild – Build/ Packages/ Release Your Application (4)

3.2 on Build Actions Step.

- I. Click icon  to Add “Upload to Release Repository”.
- II. Build Package Directory: pipeline/*
- III. Release Version: Fixed-Release-Version.
- IV. Then Click on the button “Create and Run”



BuildAppXYZ01 Basic Information Build Actions Parameters Schedule Cancel Create and Run ▾

Code Download Configuration
Configuring the Code Download Mode

Upload to Release Repository
Upload a software package to the release repository. [View the User Guide](#)

* Action Name: Upload to Release Repository

* Build Package Directory: pipeline/*

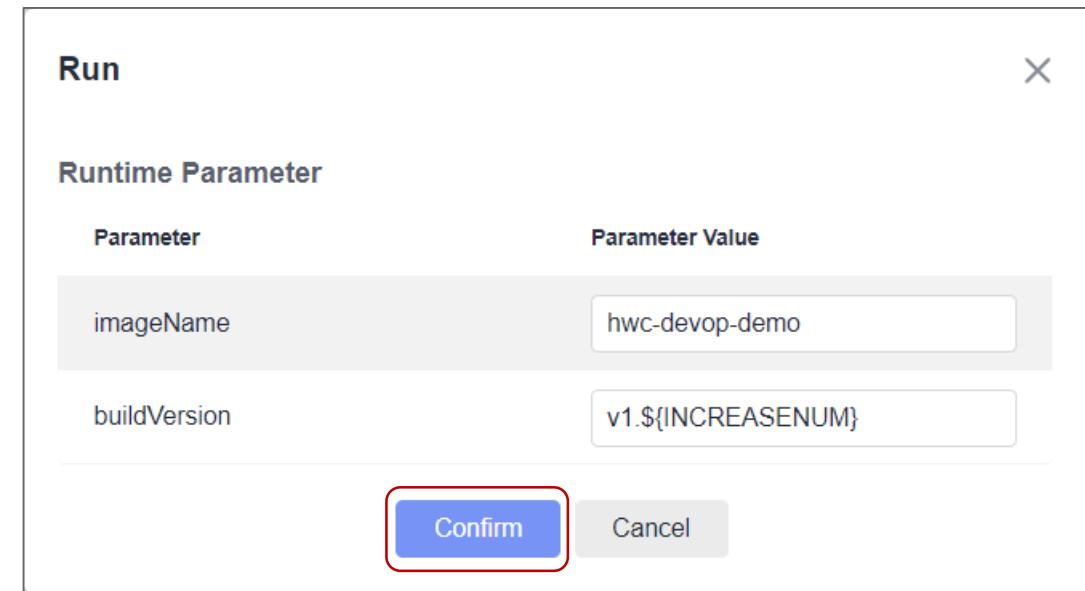
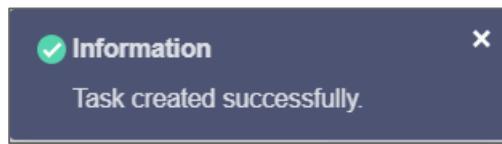
Release Version: Fixed-Release-Version

Package Name: [empty input field]

3. CloudBuild – Build/ Packages/ Release Your Application (5)

3.3 After you had click on the button “Create and Run”:

- I. Then the system will be pop-up “Run” with the parameters, then then default values and click button “Confirm”



3. CloudBuild – Build/ Packages/ Release Your Application (5)

3.3 After you had click on the button “Create and Run”.

I. Then the system will be pop-up “Run” with the parameters, then then default values and click button “Confirm”

Homepage / PRJ-DEMO-DevOps / CloudBuild / Build History / BuildAppXYZ01

← **#20230320.1** Edit Task Execution ⋮

source code CH-DEMO-DEVOPS 43628b13 Triggered By a00641269 Manual Build Time & Duration 2023-03-20 14:03:23 34s Association 3 Download Build Package

Actions Settings

Code Check Out 2s
Build Image and Push 14s
Upload to Release Repository < 1s

All Logs

```
132 [Mar 20, 2023 15:03:51.740] Deleted: sha250:4074e2d7022c912d1e42407e0424107d4105349410c12e071d4c234e4038d700
133 [Mar 20, 2023 15:03:51.746] Deleted: sha256:1b645c4c2184fa81b3460987c0b797f940c9efbae89cff80e2c03d3b18ab382b
134 [Mar 20, 2023 15:03:51.746] Deleted: sha256:8f992d49a4733d38e0c426dc84dcf3eeff934e3385f7a364fa499c0d35c3ccf41
135 [Mar 20, 2023 15:03:51.746] Deleted: sha256:c2bd10bedfd2f6080ff47f9b47bd6f779da3caee05dac49b1ea0f91265f29544
136 [Mar 20, 2023 15:03:51.833] [INFO] [Build Image and Push to SWR:Build Image and Push to SWR] : upload docker info success. register
137 [Mar 20, 2023 15:03:51.834] [INFO] [Build Image and Push to SWR:Build Image and Push to SWR] : This step is complete.
138
139 [Mar 20, 2023 15:03:53.447] shell4.2.46-git2.23-zip-1.1.0: Pulling from codeci/shell
140 [Mar 20, 2023 15:03:53.447] Digest: sha256:cb2b80ace7897cf5b96f372c7fd4e34c834d5b22b3349018171f5de966334c9e
141 [Mar 20, 2023 15:03:53.447] Status: Image is up to date for swr.ap-southeast-3.myhuaweicloud.com/codeci/shell:shell4.2.46-git2.23
142
143 [Mar 20, 2023 15:03:54.559] [INFO] [Upload to Release Repository:Upload software package] : This step is start.
144 [Mar 20, 2023 15:03:54.566] [INFO] [Upload to Release Repository:Upload software package] : Begin to verify the file: pipeline/pr
145 [Mar 20, 2023 15:03:54.566] [INFO] [Upload to Release Repository:Upload software package] : Begin to verify the file: pipeline/si
146 [Mar 20, 2023 15:03:54.566] [INFO] [Upload to Release Repository:Upload software package] : Begin to verify the file: pipeline/pr
147 [Mar 20, 2023 15:03:54.674] [INFO] [Upload to Release Repository:Upload software package] : File pipeline/sit-app-demo-recreate.y
148 [Mar 20, 2023 15:03:54.675] [INFO] [Upload to Release Repository:Upload software package] : File pipeline/prod-app-demo-rollupdat
149 [Mar 20, 2023 15:03:54.675] [INFO] [Upload to Release Repository:Upload software package] : File pipeline/prod-app-demo-green.yam
150 [Mar 20, 2023 15:03:55.427] [INFO] [Upload to Release Repository:Upload software package] : outputs ("sit-app-demo-recreate.yaml"
151 [Mar 20, 2023 15:03:55.453] [INFO] [Upload to Release Repository:Upload software package] : This step is complete.
152 [Mar 20, 2023 15:03:54.683] [INFO] [Upload to Release Repository:Upload software package] : Begin to upload file:pipeline/prod-ap
153 [Mar 20, 2023 15:03:55.126] [INFO] [Upload to Release Repository:Upload software package] : Adequate storage space
154 [Mar 20, 2023 15:03:55.126] [INFO] [Upload to Release Repository:Upload software package] : Uploading artifact pipeline/prod-app-
155 [Mar 20, 2023 15:03:55.128] [INFO] [Upload to Release Repository:Upload software package] : Begin to upload file:pipeline/sit-app-
156 [Mar 20, 2023 15:03:55.129] [INFO] [Upload to Release Repository:Upload software package] : Begin to upload file:pipeline/prod-ap-
157 [Mar 20, 2023 15:03:55.416] [INFO] [Upload to Release Repository:Upload software package] : Adequate storage space
158 [Mar 20, 2023 15:03:55.416] [INFO] [Upload to Release Repository:Upload software package] : Uploading artifact pipeline/prod-app-
159 [Mar 20, 2023 15:03:55.430] [INFO] [Upload to Release Repository:Upload software package] : Adequate storage space
160 [Mar 20, 2023 15:03:55.431] [INFO] [Upload to Release Repository:Upload software package] : Uploading artifact pipeline/sit-app-
161
162 [Mar 20, 2023 15:03:56.777] [INFO] : find empty location by state: 2DBK4YLC
163
164 [Mar 20, 2023 15:03:59.981] [INFO] : [JobStatusPlugin] onCompleted: j_8TC6lxWF #1
165 [Mar 20, 2023 15:03:59.983] [INFO] : [JobStatusPlugin] onCompleted end: j_8TC6lxWF #1
166 [Mar 20, 2023 15:04:00.040] Finished: SUCCESS
```

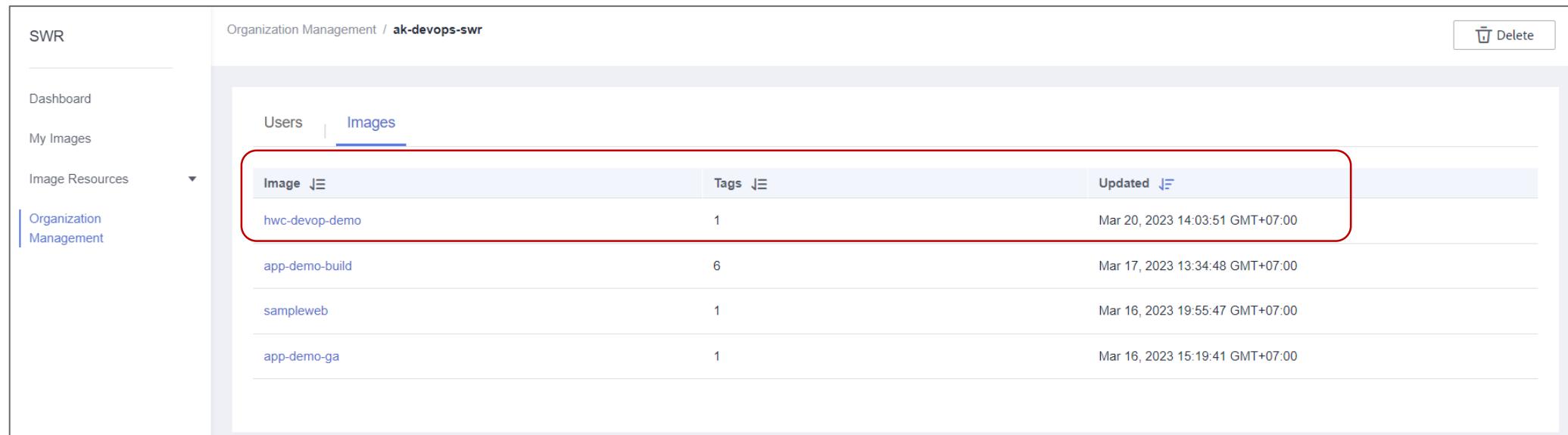
Search All Full Screen log More

HUAWEI

3. CloudBuild – Build/ Packages/ Release Your Application (6)

3.4 Once we check back on Huawei Cloud – SWR.

- I. The Organization “ak-devops-swr” will show the image name “hwc-devop-demo” that will got from the Cloud Build.

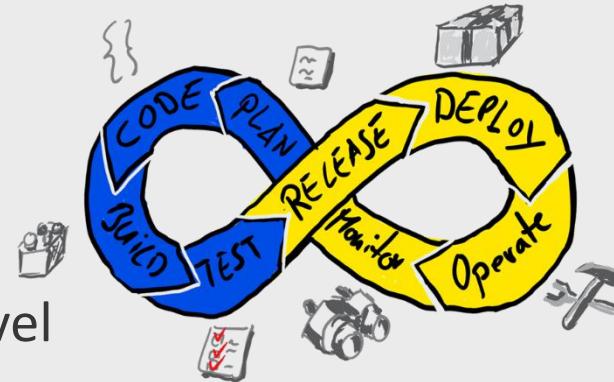


The screenshot shows the Huawei Cloud SWR interface. On the left, there is a sidebar with the following navigation items: SWR (selected), Dashboard, My Images, Image Resources, and Organization Management (which is currently selected). The main area is titled "Organization Management / ak-devops-swr". Below this, there are two tabs: "Users" and "Images", with "Images" being the active tab. A red box highlights the first row of the table below. The table has columns for "Image", "Tags", and "Updated".

| Image | Tags | Updated |
|----------------|------|---------------------------------|
| hwc-devop-demo | 1 | Mar 20, 2023 14:03:51 GMT+07:00 |
| app-demo-build | 6 | Mar 17, 2023 13:34:48 GMT+07:00 |
| sampleweb | 1 | Mar 16, 2023 19:55:47 GMT+07:00 |
| app-demo-ga | 1 | Mar 16, 2023 15:19:41 GMT+07:00 |

Contents

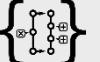
1. Overview DevOps – CodeArts (DevCloud)



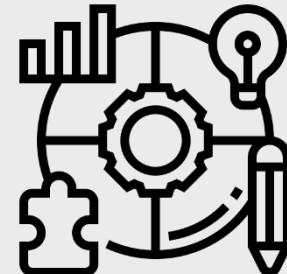
2. Solution Architect Logical Diagram – High Level

3. Hands-on Labs (DevCloud)

- Pre-Requisite 
- Project Man 
- CodeHub 
- CloudBuild 

- CloudDeploy 
- CloudPipeline 
- Commit Source Code and Automation Deployment 
- Result / Outcome 

4. Question & Answer



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (1)

4.1 Now, switch to working with “CloudDeploy”.

- I. Under the Applications Tab, click on the button “+ Create Application”.

The screenshot shows the DevCloud interface on the left and the Deploy application page on the right.

Left Panel (DevCloud):

- Header: DevCloud
- Items: CodeHub, CodeCheck, CloudPipeline, CloudBuild, Extensions, **CloudDeploy** (highlighted with a red box), CodeArts Artifact, CloudTest, DocMan.

Right Panel (Deploy Application Page):

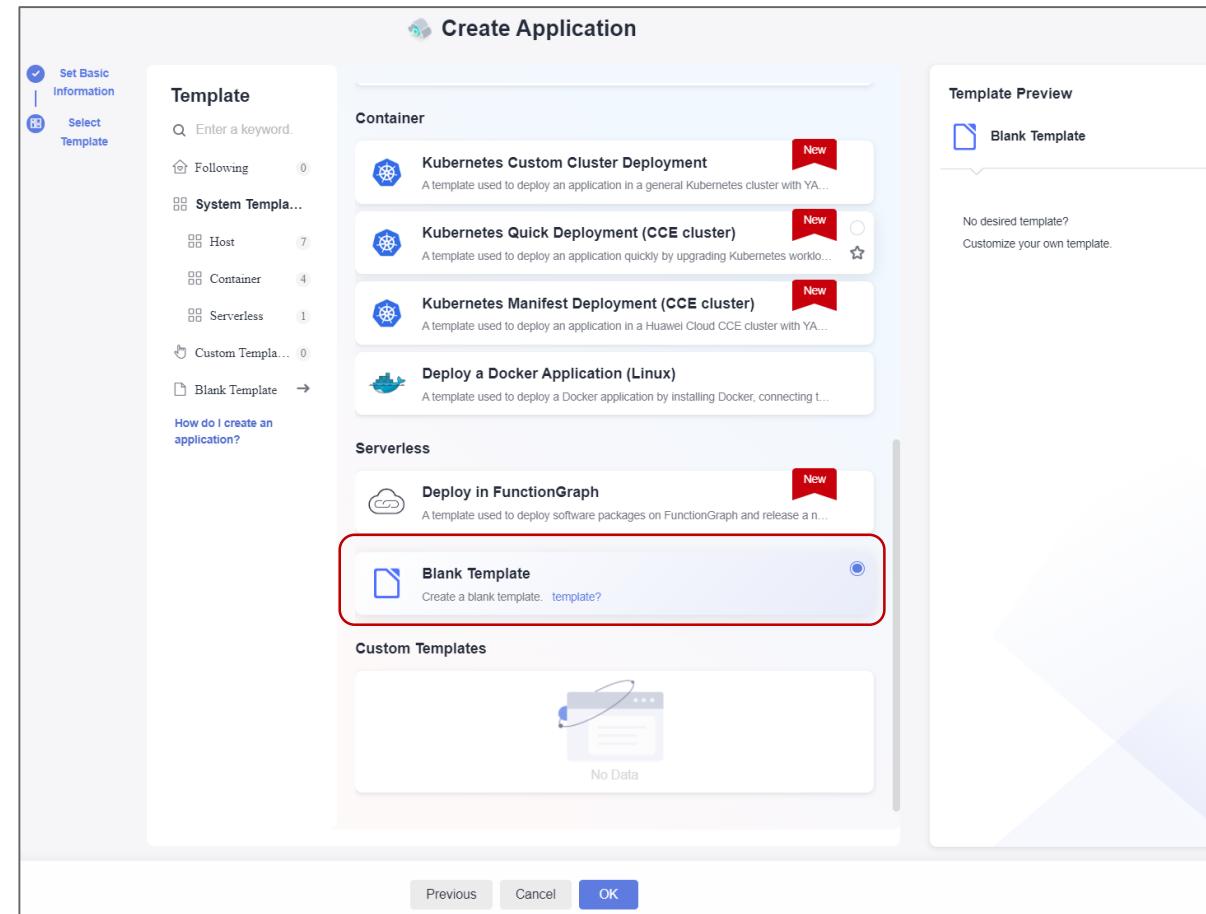
- Header: HUAWEI CLOUD, Console, AP-Singa..., Homepage, Workspace, DevCloud.
- Section: Deploy
- Sub-section: Applications (selected) and Orchestration Template Management.
- Buttons: + Create Application (highlighted with a red box), Try Guide Here.
- Search bar: Enter an application name.
- Table:

| Application Name | Last Deployment | Start Time & Deployment Duration | Operation |
|-------------------------------------|------------------|----------------------------------|-----------|
| App-demo-code / deploy-uat-app-demo | #12 a00641269 | 3 days ago 57s | ... |

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (2)

4.2 On the Basic Information Step.

- I. Enter your App Name: “<DevOps-Deploy-AppXYZ-DEMO>”.
- II. Project: “PRJ-DEMO-DevOps”.
- III. On The Templates, Selected “Blank Template”.



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (3)

4.3 On the CloudDeploy under the “Parameters” Tab.

I. Add the Parameters like the picture below.

The screenshot shows the 'Parameters' tab of a CloudDeploy configuration. The table lists four parameters:

| Name | Type | Default Value | Private Parameter | Runtime Settings | Description |
|--------------|----------|--------------------------------------|--------------------------|-------------------------------------|-------------|
| imageName | {String} | DevOps-AppXYZ-DEMO | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| buildVersion | {String} | v1.0 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| swrURL | {String} | swr.ap-southeast-3.myhuaweicloud.com | <input type="checkbox"/> | <input type="checkbox"/> | |
| orgName | {String} | ak-devops-swl | <input type="checkbox"/> | <input type="checkbox"/> | |

A red box highlights the first four rows (imageName, buildVersion, swrURL, orgName), indicating they are the parameters to be added. The 'Private Parameter' and 'Runtime Settings' columns show toggle switches; for the highlighted rows, the 'Runtime Settings' switch is turned on for all four parameters.

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (4)

4.4 On the CloudDeploy under the “Deployment Actions” Tab.

- I. Add Action “Deploy on Kubernetes”
- II. Add Action “Run Shell Commands”
- III. Add Action “Run Shell Script”

The screenshot shows the 'Deployment Actions' tab of the CloudDeploy interface. At the top, there are tabs for Basic Information, Deployment Actions (which is selected), Parameters, Environment Management, Permissions, and Notifications. On the right, there are buttons for Cancel, Save, and Save & Deploy. Below the tabs, there's a search bar with the text 'Deploy on Kubernetes' and a magnifying glass icon. A large text box on the left says 'Select actions in the right pane and add them to this card.' Below it, a button says 'Save as Custom Template'. On the right, there's a section titled 'Add Actions' with tabs for Common, File Related, Software Related, Container Related, and All (which is selected). A card for 'Deploy on Kubernetes' is highlighted with a red border. It has a blue icon of a ship's wheel, the text 'Deploy on Kubernetes', and a link 'View Guide'. Below this, there are cards for 'Run Shell Commands' and 'Run Shell Script', each with a warning message about host groups.

← DevOps-Deploy-AppXYZ-DEMO Basic Information Deployment Actions Parameters Environment Management Permissions Notifications Cancel Save Save & Deploy

Select actions in the right pane and add them to this card.

Save this action combination as a custom template for future use.

Save as Custom Template

Add Actions

Common File Related Software Related Container Related All

Deploy on Kubernetes

Deploy applications on Kubernetes clusters. [View Guide](#)

Deploy on Kubernetes Kubernetes Service Endpoint...
Deploy applications on Kubernetes clusters.

Run Shell Commands Host Group cannot be left bl...
Run the entered shell commands on hosts.

Run Shell Script Host Group cannot be left bl...
Run the shell script in the specified path on Linux hosts.

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (5)

4.5 On the “Deploy on Kubernetes” and put information like the picture.

The screenshot shows the 'Deployment Actions' tab of the 'DevOps-Deploy-AppXYZ-DEMO' application. The main panel displays a flowchart with three steps: 'Deploy Applications on Kubernetes Clusters', 'Run Shell Commands', and 'Run Shell Script'. A red box highlights the configuration details for the first step. The configuration includes:

- Action Name:** Deploy Applications on Kubernetes Clusters
- * Cluster Type:** Custom
- * Kubernetes Service Endpoint:** cce-devops-demo
- * kubectl Command:** apply
- * Use YAML files:** checked

A second red box highlights the 'File Source' section, which is set to 'CloudRelease' (selected) and 'CodeHub' (unchecked). Below this, a note states: "For CCE clusters, -f and the file path will be added after kubectl when you select a YAML file. Use {{}} to reference the parameters added to a deployment task's parameter settings in the file. Use \${} to reference the parameters added to a deployment task's parameter configurations in the CLI parameter area. If File Source is set to CodeHub, enter the relative path of the file. The current directory is the root directory of the code branch. For custom clusters, select either a single YAML file or a folder. For CCE clusters, you can only select a YAML file."

*** YAML File/Folder:** /BuildAppXYZ01/Fixed-Release-Version/sit-app-demo-recreate.yaml

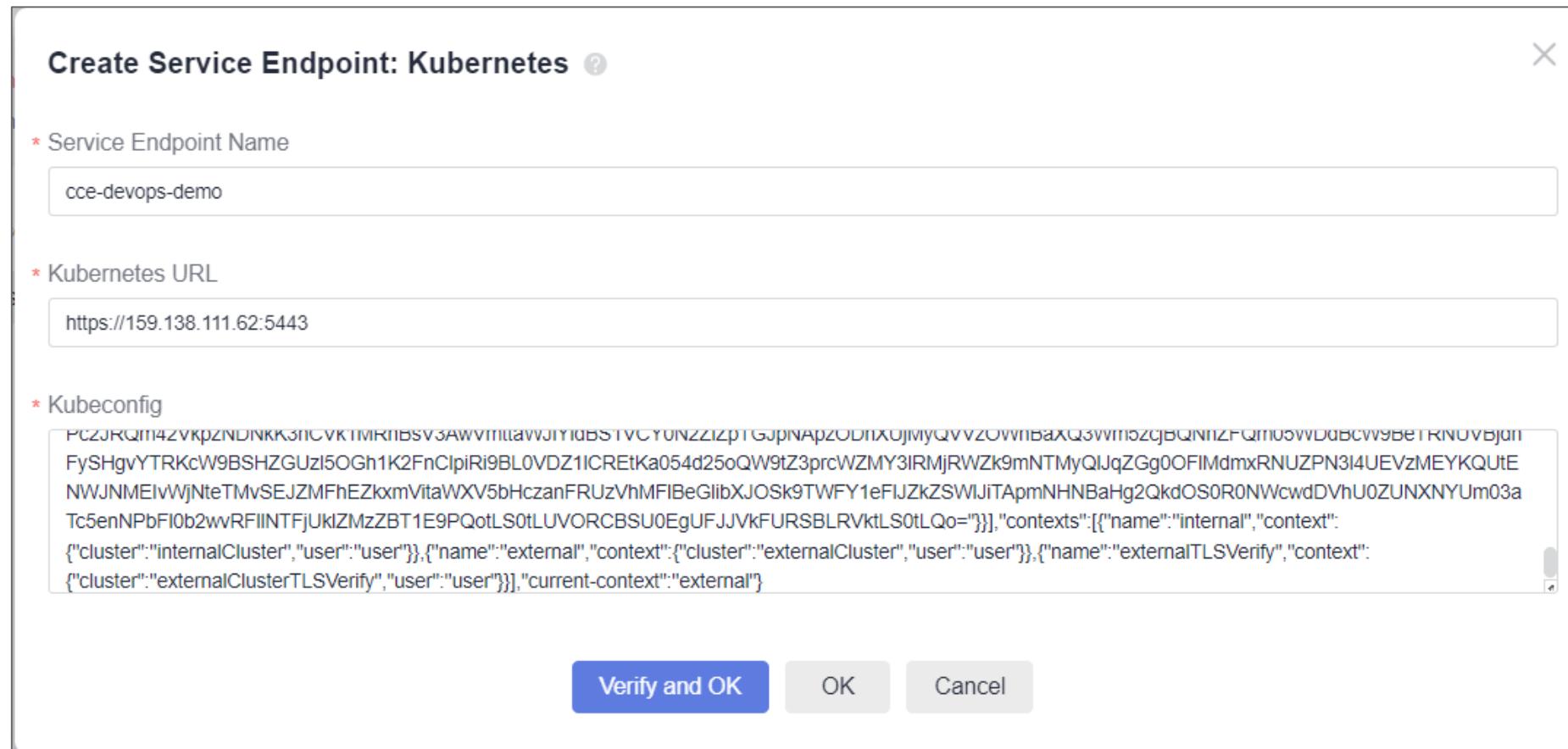
※When working with YAML files for CCE clusters:
YAML folders are not supported.
Only Kubernetes objects Deployment, Service, Ingress, ConfigMap, and Endpoints can be created and upgraded. There cannot be more than 1 Deployment.
Define different Kubernetes objects in the same YAML file for each step.
Separate different objects by characters starting with '---'.

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (6)

4.6 If you didn't have the service endpoint for Kubernetes before, please create it.

I. on the Kubenets URL: “<https://<Enter Public IP of Kubernetes Cluster>:<Port>>”

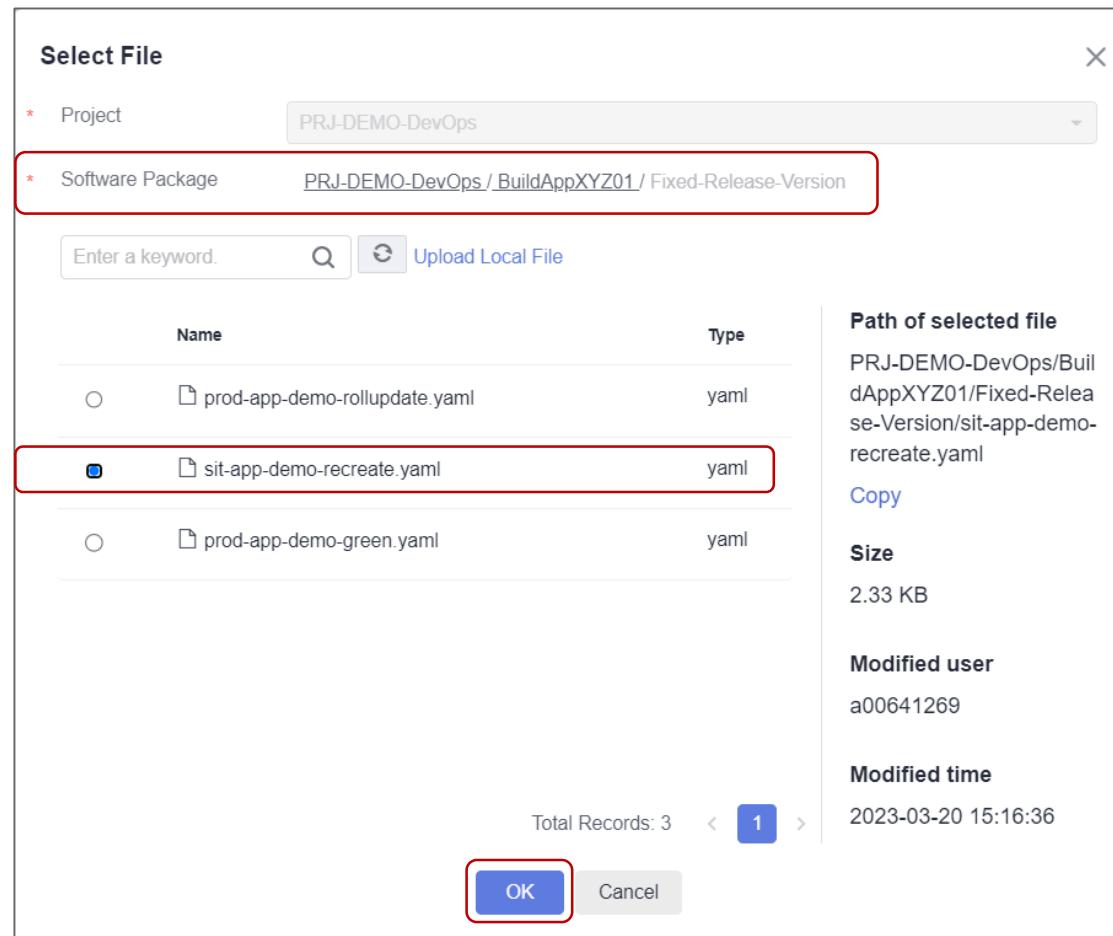
II. Kubeconfig: copy & pate your kubeconfig where did you it information from your existing kubernetes cluster (cce)



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (7)

4.7 regarding “YAML File”/Folder, Select on the icon browse 

- I. then will show the pop-up “Select File”, then you need to selected the file “sit-app-demo-recreate.yaml” where is the located in directory “PRJ-DEMO-DevOps/BuildAppXYZ01/Fixed-Release-Version”



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (8)

4.7 On the CloudDeploy under the “Deployment Actions” Tab.

- I. Action Name: keep the default values.
- II. Host Group: selected your “Host Group”
- III. If you didn’t have the “Host Group” then let’s creation.

Run Shell Commands
Run the entered shell commands on hosts.
[View Guide](#)

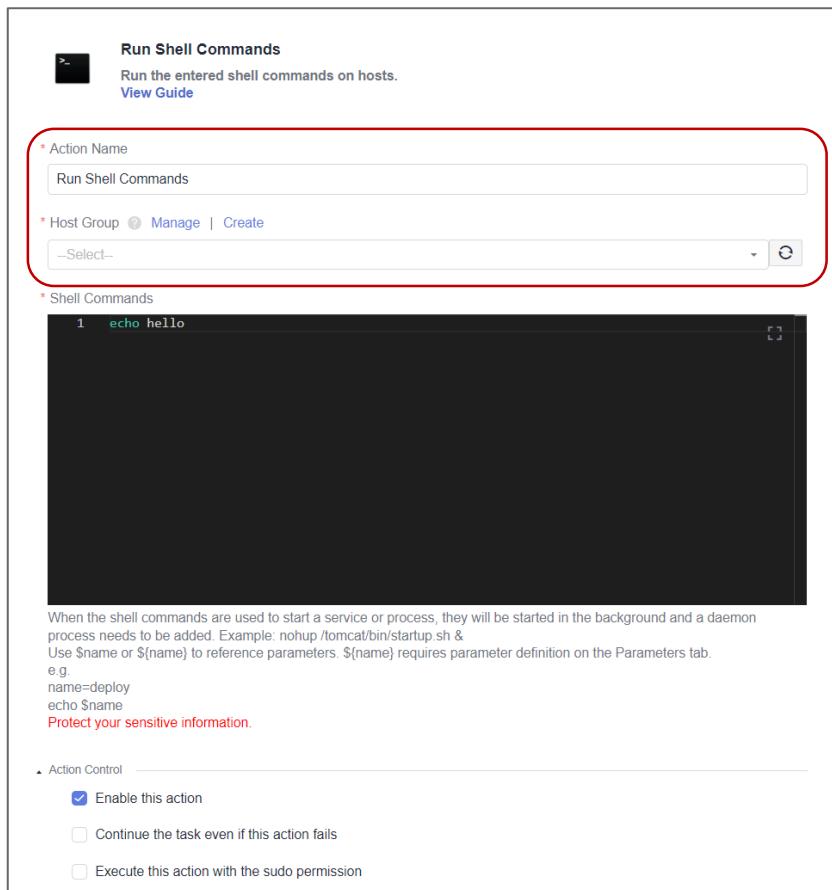
* Action Name
Run Shell Commands

* Host Group [Manage](#) | [Create](#)
--Select--

* Shell Commands
1 echo hello

When the shell commands are used to start a service or process, they will be started in the background and a daemon process needs to be added. Example: nohup /tomcat/bin/startup.sh &
Use \$name or \${name} to reference parameters. \${name} requires parameter definition on the Parameters tab.
e.g.
name=deploy
echo \$name
Protect your sensitive information.

Action Control
 Enable this action
 Continue the task even if this action fails
 Execute this action with the sudo permission



Homepage / PRJ-DEMO-DevOps / Deploy / DevOps-Deploy-AppXYZ-DEMO

← DevOps-Deploy-AppXYZ-DEMO

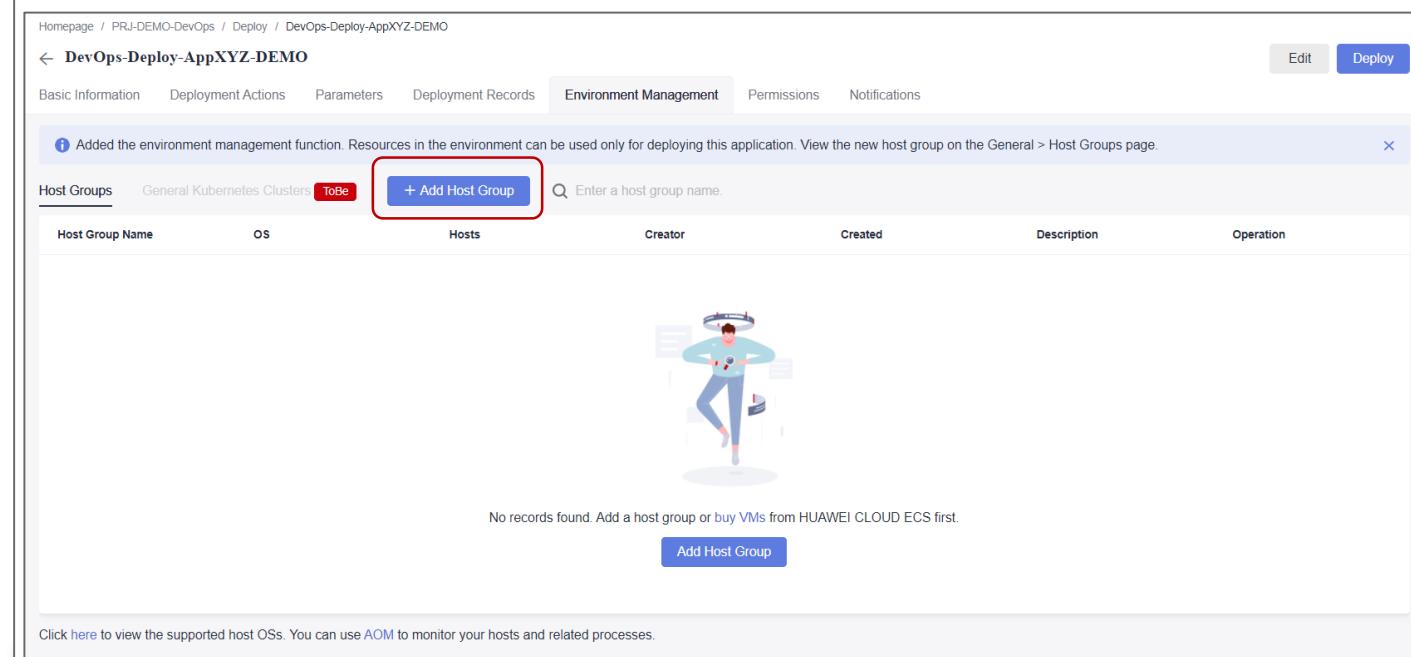
Edit Deploy

Basic Information Deployment Actions Parameters Deployment Records Environment Management Permissions Notifications

Added the environment management function. Resources in the environment can be used only for deploying this application. View the new host group on the General > Host Groups page.

Host Groups General Kubernetes Cluster ToBe + Add Host Group Enter a host group name.

| Host Group Name | OS | Hosts | Creator | Created | Description | Operation |
|---|----|-------|---------|---------|-------------|-----------|
| No records found. Add a host group or buy VMs from HUAWEI CLOUD ECS first. | | | | | | |
| Add Host Group | | | | | | |
| Click here to view the supported host OSs. You can use AOM to monitor your hosts and related processes. | | | | | | |



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (8)

4.7 On the CloudDeploy under the “Deployment Actions” Tab.

- I. Action Name: keep the default values.
- II. Host Group: selected your “Host Group”
- III. If you didn’t have the “Host Group” then let’s creation.

Add Host Group

Host Group Information

* Host Group Name
cce-devope-demo-noes

Host Information

* OS
Linux

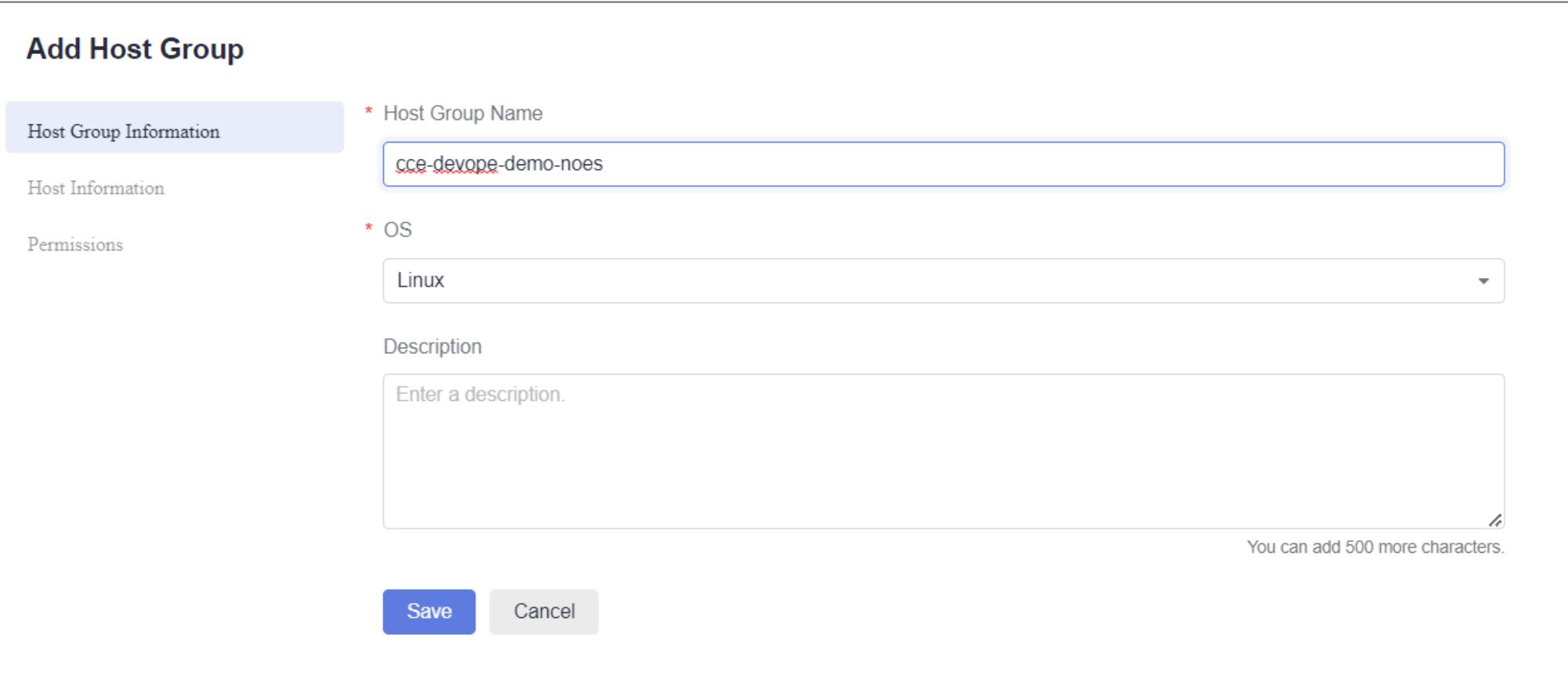
Permissions

Description

Enter a description.

You can add 500 more characters.

Save Cancel



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (9)

4.9 On the Step Add “Host Group”, click on the button “+ Add Host”.

- Add Host Information as required field.

The screenshot shows the 'Host Group' configuration page for a cluster named 'cce-devope-demo-noes'. The left sidebar has tabs for 'Host Group Information', 'Host Information' (which is selected and highlighted in blue), and 'Permissions'. The main area has a header with a search bar ('Enter a keyword.'), a 'Import ECS' button, and a 'Verify' button. Below the header is a table with columns: Host Name, Type, IP, Username, Port, SSH Proxy, Verification result, and Creator. A red box highlights the '+ Add Host' button, which is located above the table. The table body contains a message: 'No records found.' with an illustration of a person working on a laptop. At the bottom, there is a note: 'Click [here](#) to view the supported host OSs. You can use [AOM](#) to monitor your hosts and related processes.'

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (9)

4.9 On the Step Add “Host Group”, click on the button “+ Add Host”.

I. Add Host Information as required field.

Add Host ⓘ

Host Proxy

* Host Name:

If no VM is available, go to Huawei Cloud ECS [here](#) and EIP on Huawei Cloud.

Use SSH

Proxy:

* IP:

If no EIP is available, view [EIP documentation](#) to buy an EIP on Huawei Cloud.

* OS:

To ensure successful authorization, check the configuration according to [Linux Host Configuration](#).

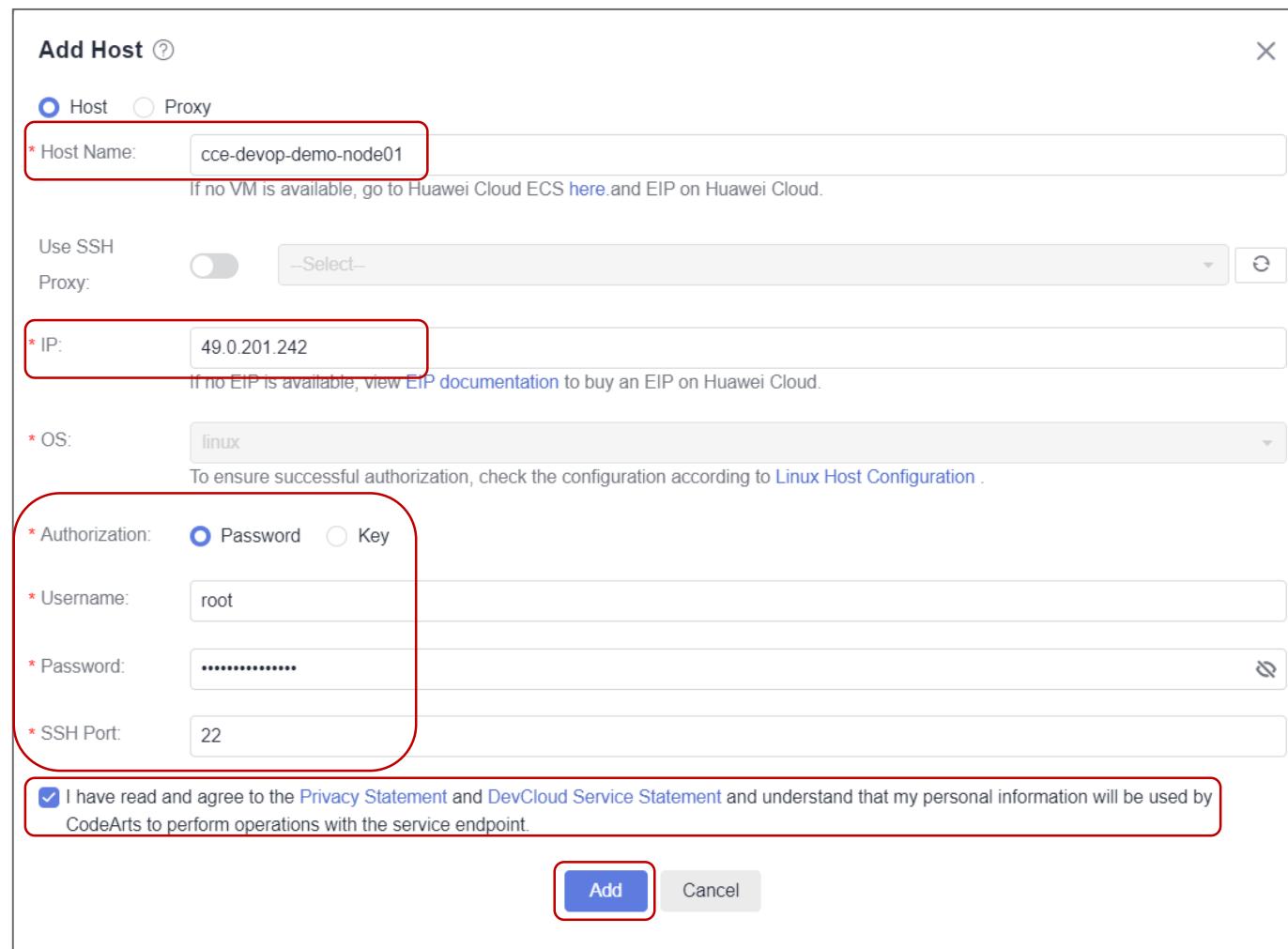
* Authorization: Password Key

* Username:

* Password:

* SSH Port:

I have read and agree to the [Privacy Statement](#) and [DevCloud Service Statement](#) and understand that my personal information will be used by CodeArts to perform operations with the service endpoint.



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (9)

4.9 On the Step Add “Host Group”, click on the button “+ Add Host”.

I. Add Host Information as required field.

The screenshot shows the 'cce-devope-demo-noes' host group interface. The left sidebar has tabs for 'Host Group Information' (selected), 'Host Information' (highlighted in blue), and 'Permissions'. The main area has a header with '+ Add Host' (blue button), a dropdown menu ('All'), a search bar ('Enter a keyword.'), and buttons for 'Import ECS' and 'Verify'. A table lists two hosts:

| | Host Name | Type | IP | Username | Port | SSH Proxy | Verification result | Creator | Operation |
|--------------------------|-----------------------|------|--------------|----------|------|-----------|---------------------|-----------|-----------|
| <input type="checkbox"/> | cce-devop-demo-node02 | Host | 49.0.206.2 | root | 22 | -- | Successful | a00641269 | |
| <input type="checkbox"/> | cce-devop-demo-node01 | Host | 49.0.201.242 | root | 22 | -- | Successful | a00641269 | |

At the bottom, a note says: 'Click [here](#) to view the supported host OSs. You can use [AOM](#) to monitor your hosts and related processes.'

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (10)

4.10 On the Step Add “Host Group”, click on the button “+ Add Host”.

I. The script on the TextBox shell commands.

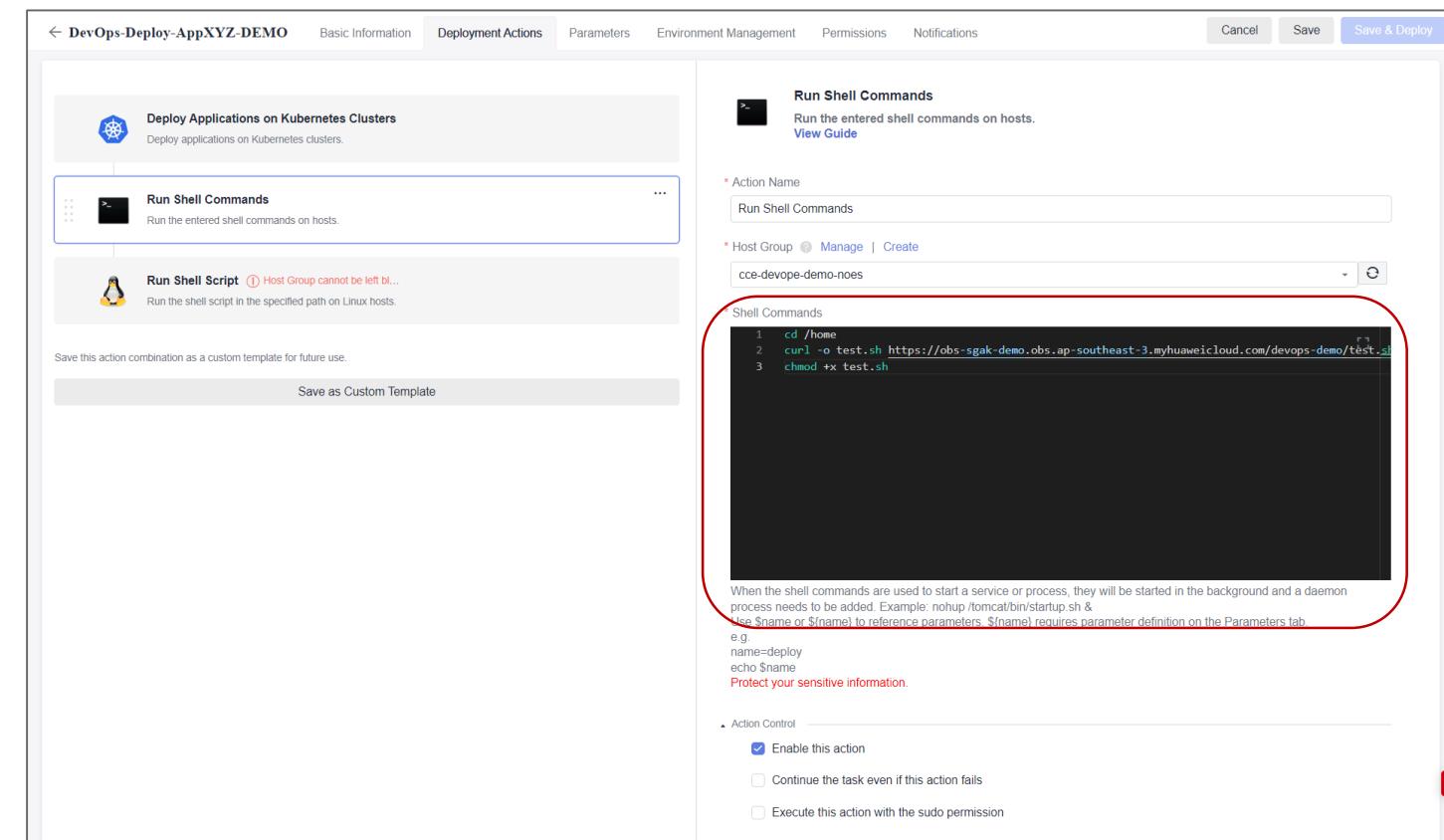
```
=====
```

```
cd /home
```

```
curl -o test.sh https://obs-sgak-demo.obs.ap-southeast-3.myhuaweicloud.com/devops-demo/test.sh
```

```
chmod +x test.sh
```

```
=====
```



4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (11)

4.11 On the Step Add “Run Shell Script”.

I. Enter the information as required.

The screenshot shows the 'Run Shell Script' configuration screen within the CloudDeploy interface. The top navigation bar includes tabs for 'Basic Information', 'Deployment Actions', 'Parameters', 'Environment Management', 'Permissions', and 'Notifications'. On the far right are 'Cancel', 'Save', and 'Save & Deploy' buttons. The main area is divided into two sections: 'Deploy Applications on Kubernetes Clusters' and 'Run Shell Commands'. The 'Run Shell Script' section is highlighted with a blue border. It contains fields for 'Action Name' (set to 'Run Shell Script'), 'Host Group' (set to 'cce-devope-demo-noes'), 'Running Mode' (set to 'Default'), 'Shell Script Path' (set to '/home/test.sh'), and 'Running Parameters'. A red oval highlights the 'Action Name', 'Host Group', 'Running Mode', and 'Shell Script Path' fields. At the bottom, there are 'Action Control' options: 'Enable this action' (checked), 'Continue the task even if this action fails' (unchecked), and 'Execute this action with the sudo permission' (checked). The bottom right corner features a small red square icon with a white message symbol and a 'EI' logo.

DevOps-Deploy-AppXYZ-DEMO Basic Information Deployment Actions Parameters Environment Management Permissions Notifications Cancel Save Save & Deploy

Deploy Applications on Kubernetes Clusters
Deploy applications on Kubernetes clusters.

Run Shell Commands
Run the entered shell commands on hosts.

Run Shell Script
Run the shell script in the specified path on Linux hosts.

Action Name: Run Shell Script

Host Group: Manage | Create
cce-devope-demo-noes

Running Mode: Default

Shell Script Path: /home/test.sh

Running Parameters:

(Optional) Separate running parameters with spaces, such as param1 param2 param3. Reference a parameter in the script using \$Number. For example, \$1 indicates the first parameter and \$2 indicates the second parameter.

Action Control:

Enable this action

Continue the task even if this action fails

Execute this action with the sudo permission

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (12)

4.12 Click the button “Save & Deploy”.

- I. ~~The system will show the pop up “Runtime Parameter. Keep the default values and click button “OK”.~~

The screenshot shows the CCE (Cloud Container Engine) interface for managing Kubernetes resources. The top navigation bar includes links for Homepage, PRJ-DEMO-DevOps, Deploy, DevOps-Deploy-AppXYZ-DEMO, and a deployment ID #1. Below the navigation is a green success banner indicating a deployment was successful (#1, a00641269, Deployed at 2023/03/20 15:37:40 GMT+07:00, Time required 55s). A 'Roll Back to This Version' button is also present.

The main area displays the 'Deployments' tab under the 'Cluster: ccesg-devops-sgak-demo01' and 'Namespace: All namespaces'. The interface includes 'Quick Links', 'Create Workload' (in red), and 'Create from YAML' buttons.

The deployment list table has columns: Workload Name, Status, Pods (Normal/All), Namespace, Created, Image Name, and Operation. It lists three workloads:

| Workload Name | Status | Pods (Normal/All) | Namespace | Created | Image Name | Operation |
|------------------------|---------|-------------------|-------------|---------------|-------------------------------|---|
| php-fpm-nginx | Running | 3 / 3 | ns-devops | 2 minutes ... | hwc-devops-demo:v1.2 nginx | Monitor View Log Upgrade More ▾ |
| coredns | Running | 2 / 2 | kube-system | 4 days ago | coredns:1.25.1 | Monitor View Log View YAML Delete |
| everest-csi-controller | Running | 2 / 2 | kube-system | 4 days ago | everest:2.1.13 | Monitor View Log View YAML Delete |

A large black rectangular redaction box covers the bottom portion of the page content.

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (12)

4.12 Click the button “Save & Deploy”.

- I. The system will show the pop-up “Runtime Parameter, Keep the default values and click button “OK”.

The image shows two screenshots side-by-side. On the left is a 'Runtime Parameter' dialog box with two entries: 'imageName' set to 'hwc-devops-demo' and 'buildVersion' set to 'v1.2'. Both entries have a 'Description' field of '--'. At the bottom are 'OK' and 'Cancel' buttons, with 'OK' highlighted. On the right is a deployment log page for 'DevOps-Deploy-AppXYZ-DEMO #1'. The log shows a successful deployment process with four actions: 'Init', 'Deploy Applications on Kubernetes Clust...', 'Run Shell Commands', and 'Run Shell Script'. The log output includes messages like 'Server returned: 200', 'Message: The unit test passed', and deployment statistics at the end. The log page has tabs for 'Logs', 'Parameters', 'Access Mode', and 'Destination Host', with 'Logs' selected. There are also buttons for 'Search', 'All', 'Full Screen', and 'Download All Logs'.

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (12)

4.12 Click the button “Save & Deploy”.

I. The system will show the pop-up “Runtime Parameter, Keep the default values and click button “OK”.

The screenshot shows the CCE cluster interface with the following details:

- Cluster:** ccesg-devops-sgak-demo01
- Namespace:** All namespaces
- Deployments:** The current tab selected.
- Filter:** Quick Links, Create Workload, Create from YAML.
- Table Headers:** Workload Name, Status, Pods (Normal/All), Namespace, Created, Image Name, Operation.
- Data Rows:**
 - php-fpm-nginx:** Status: Running, 3 / 3 pods, Namespace: ns-devops, Created: 2 minutes ago, Image: hwc-devops-demo:v1.2. Actions: Monitor | View Log | Upgrade | More.
 - coredns:** Status: Running, 2 / 2 pods, Namespace: kube-system, Created: 4 days ago, Image: coredns:1.25.1. Actions: Monitor | View Log | View YAML | Delete.
 - everest-csi-controller:** Status: Running, 2 / 2 pods, Namespace: kube-system, Created: 4 days ago, Image: everest:2.1.13. Actions: Monitor | View Log | View YAML | Delete.

4. CloudDeploy – Deploy Your Application to Kubernetes Cluster [CCE] (13)

4.13 Let's checking on your workload on your CCE Cluster”.

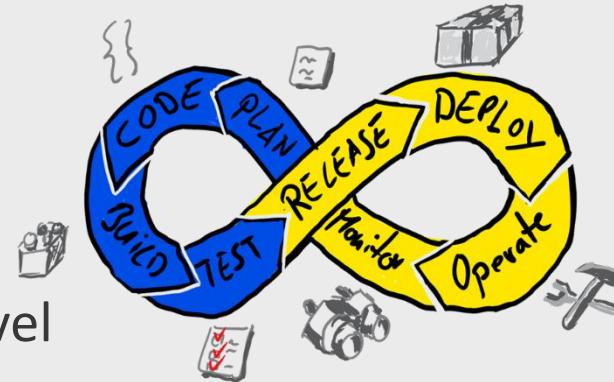
- I. On the workload you will saw the workload name is “**php-fpm-nginx**” has deploy by CloudDeploy.

The screenshot shows the CCE Cluster Deployment list. The top navigation bar includes 'Cluster: ccesg-devops-sgak-demo01', 'CCE cluster', 'Namespace: All namespaces', 'Deployments', 'Quick Links', 'Create Workload', and 'Create from YAML'. Below the navigation is a table header with columns: 'Workload Name', 'Status', 'Pods (Normal/All)', 'Namespace', 'Created', 'Image Name', and 'Operation'. A red box highlights the first row, which corresponds to the 'php-fpm-nginx' deployment. This row shows the workload name 'php-fpm-nginx' is 'Running' with 3/3 pods in the 'ns-devops' namespace, created 2 minutes ago, using the image 'hwc-devops-demo:v1.2' (with a 'nginx' icon). The 'Operation' column contains links: 'Monitor | View Log | Upgrade | More'. The table also lists other workloads: 'coredns' and 'everest-csi-controller', both running with 2/2 pods in the 'kube-system' namespace, created 4 days ago, using images 'coredns:1.25.1' and 'everest:2.1.13' respectively. Each of these rows has an 'Operation' column with links: 'Monitor | View Log | View YAML | Delete'.

| Workload Name | Status | Pods (Normal/All) | Namespace | Created | Image Name | Operation |
|------------------------|---------|-------------------|-------------|---------------|-------------------------------|---|
| php-fpm-nginx | Running | 3 / 3 | ns-devops | 2 minutes ... | hwc-devops-demo:v1.2 nginx | Monitor View Log Upgrade More |
| coredns | Running | 2 / 2 | kube-system | 4 days ago | coredns:1.25.1 | Monitor View Log View YAML Delete |
| everest-csi-controller | Running | 2 / 2 | kube-system | 4 days ago | everest:2.1.13 | Monitor View Log View YAML Delete |

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1. Overview DevOps – CodeArts (DevCloud)



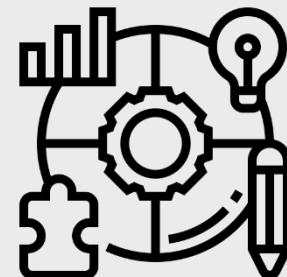
2. Solution Architect Logical Diagram – High Level

3. Hands-on Labs (DevCloud)

- Pre-Requisite
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- CodeHub
- CloudBuild

- CloudDeploy
- **CloudPipeline**
- Commit Source Code and Automation Deployment
- Result / Outcome

4. Question & Answer



5. CloudPipeline – Define your application pipeline [CI/CD] (1)

5.1 Let's work on "CloudPipeline" to define your application automation deployment.

- I. Click on the button "Create Pipeline".

The screenshot shows the Huawei CloudCodearts Pipeline interface. On the left, there is a sidebar with the 'CodeArts Pipeline' logo, 'Pipelines' tab selected, and a 'Create Pipeline' button highlighted with a red box. Below it, there is a list of existing pipelines. In the center, a 'Create Pipeline' dialog box is open. It has fields for 'Project' (set to 'PRJ-DEMO-DevOps'), 'Pipeline Source' (set to 'Repo'), 'Repository' (set to 'CH-DEMO-DEVOPS'), 'Default Branch' (set to 'master'), and 'Alias' (empty). On the right side of the interface, there is a vertical sidebar with sections for 'DevCloud', 'CodeHub', 'CodeCheck', and 'CloudPipeline'. The 'CloudPipeline' section is highlighted with a red box. At the bottom of the screen, there is a navigation bar with 'Cancel' and 'Next' buttons.

5. CloudPipeline – Define your application pipeline [CI/CD] (1)

5.1 Let's work on "CloudPipeline" to define your application automation deployment.

- I. Click on the button "Create Pipeline".

The image shows two screenshots of the Huawei Cloud DevCloud interface. The left screenshot displays a sidebar menu under 'DevCloud' with various services: CodeHub, CodeCheck, CloudPipeline (which is highlighted with a red box), CloudBuild, Extensions, CloudDeploy, CodeArts Artifact, CloudTest, and DocMan. The right screenshot shows the 'CodeArts Pipeline' dashboard. At the top, there is a navigation bar with the Huawei logo, 'HUAWEI CLOUD', 'Console', 'AP-Singa...', 'Homepage', 'Workspace', 'DevCloud', and notification icons. Below the navigation is a search bar with the placeholder 'Enter a pipeline name.' and a 'Create Pipeline' button, which is also highlighted with a red box. The main area displays a table of pipelines:

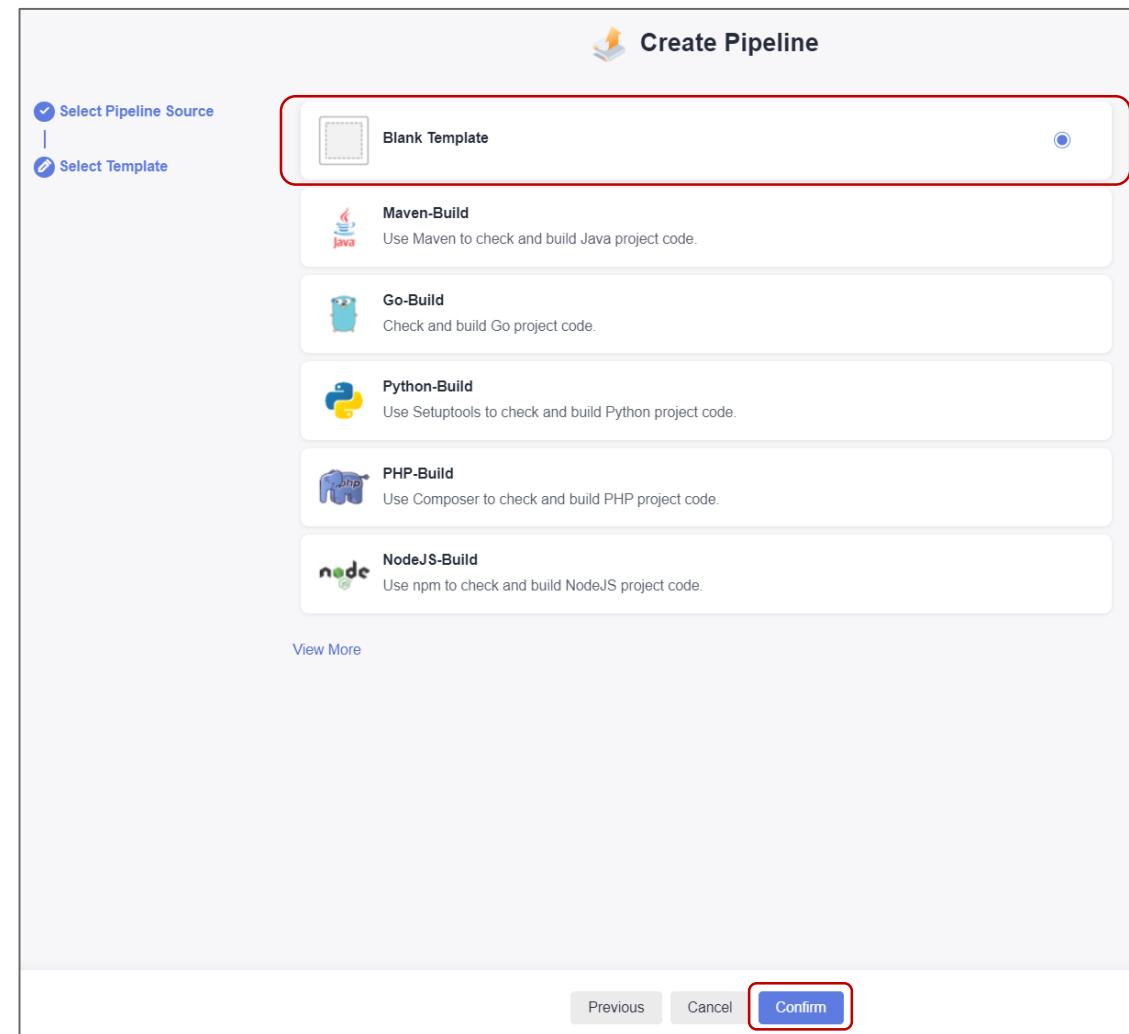
| Name | Last Executed | Execution Type | Workflow | Start Time & Execution Duration | Operation |
|-------------------------------------|---|----------------------------|----------|---------------------------------|-----------|
| App-demo-code / PipelineUAT-APPD... | #6 release blue version master -o 1ae57953 | Push-Triggered (a00641269) | ✓-✓-✓ | 3 days ago 1m41s | ⋮ |

At the bottom of the dashboard, there are pagination controls: '10 Per Page, Total 1 Records', a page number '1', and a 'Go To' input field.

5. CloudPipeline – Define your application pipeline [CI/CD] (2)

5.2 on the Template.

- I. Click on “Blank Template”.



5. CloudPipeline – Define your application pipeline [CI/CD] (3)

5.3 on the “Workflow”.

I. Define your pipeline step like the picture below.

The screenshot shows the CloudPipeline interface for defining a CI/CD pipeline. On the left, there's a sidebar with 'Source' and 'Repo' sections. The main area shows a 'Build_and_Check' step with one task. A modal window titled 'Add Task' is open, prompting for task details. The 'Type' is set to 'Build'. The 'Name' is 'CloudBuild'. Under 'Select Task', 'BuildAppXYZ01' is chosen. The 'Repository' is 'CH-DEMO-DEVOPS', 'imageName' is 'hwc-devops-demo', and 'buildVersion' is 'v1.0-\${TIMESTAMP}'.

pipeline-20230320161150 Basic Information Workflow Parameter Configuration

Source + Build_and_Check 1 Task

Repo Repository CH-DEMO-DEVOPS Default Branch master

Too many code repositories.

Add Task

* Type: Build

* Name: CloudBuild

* Select Task: Create one. BuildAppXYZ01

* Repository: CH-DEMO-DEVOPS

* imageName: hwc-devops-demo

* buildVersion: v1.0-\${TIMESTAMP}

Cancel Save and Run Save

5. CloudPipeline – Define your application pipeline [CI/CD] (3)

5.3 on the “Workflow”.

I. Define your pipeline step like the picture below.

The screenshot shows the CloudPipeline interface for defining a CI/CD pipeline. The main view displays a workflow with three main steps: Source, Build_and_Check, and DeployAppToCCE. The DeployAppToCCE step contains a single task named 'CloudDeploy'. A red box highlights this task. A modal window titled 'Add Task' is open, showing the configuration for this task. The 'Type' is set to 'Deployment', the 'Name' is 'CloudDeploy', and the 'Select Task' dropdown is set to 'DevOps-Deploy-AppXYZ-DEMO'. The 'imageName' field is 'hwc-devops-demo' and the 'buildVersion' is 'v1.2'. The 'Build Task' dropdown is set to 'CloudBuild'.

pipeline-20230320161150

Basic Information Workflow Parameter Configuration Execution Plan Permissions Notifications

Source + Build_and_Check 1 Task DeployAppToCCE 1 Task

Repo Repository CH-DEMO-DEVOPS Default Branch master

Task List CloudBuild [CloudBuild] BuildA... + Add Task

Task List CloudDeploy [CloudDeploy] Dev... + Add Task

Add Task

* Type: Deployment

* Name: CloudDeploy

* Select Task: Create one. DevOps-Deploy-AppXYZ-DEMO

* imageName: hwc-devops-demo

* buildVersion: v1.2

Build Task: CloudBuild

5. CloudPipeline – Define your application pipeline [CI/CD] (3)

5.4 Now, it's time to Test and Running your pipeline.

- I. Click on the button “New Execution”. Or “Run” if you stay on the Home page of CloudPipeline

The screenshot shows the CloudPipeline interface. At the top, there is a navigation bar with links for Console, AP-Singa..., Homepage, Workspace, DevCloud, and user notifications (99+). Below the navigation bar, the breadcrumb path is: Homepage / PRJ-DEMO-DevOps / CodeArts Pipeline / pipeline-20230320161150. In the center, there is a back arrow and the pipeline name "pipeline-20230320161150". To the right of the pipeline name is a date range selector showing "2023/03/14 - 2023/03/20" and a blue button labeled "New Execution" which is highlighted with a red box. Below this, there is a table with four columns: "Execution Information", "Execution Type", "Workflow", and "Start Time & Execution Duration". The "Execution Type" column contains an illustration of a person running, and the "Workflow" column says "None".

5. CloudPipeline – Define your application pipeline [CI/CD] (3)

5.4 Now, it's time to Test and Running your pipeline.

- I. Click on the button “New Execution”. Or “Run” if you stay on the Home page of CloudPipeline

The screenshot shows the HUAWEI CLOUD CodeArts Pipeline interface. At the top, there are navigation links: Console, AP-Singa..., Homepage, Workspace, DevCloud, and a notification badge (99+). Below the header, the title "CodeArts Pipeline" is displayed, along with tabs for "Pipelines" (selected) and "Templates". A search bar allows entering a pipeline name. A prominent blue button labeled "Create Pipeline" is visible. The main area displays a table of pipelines:

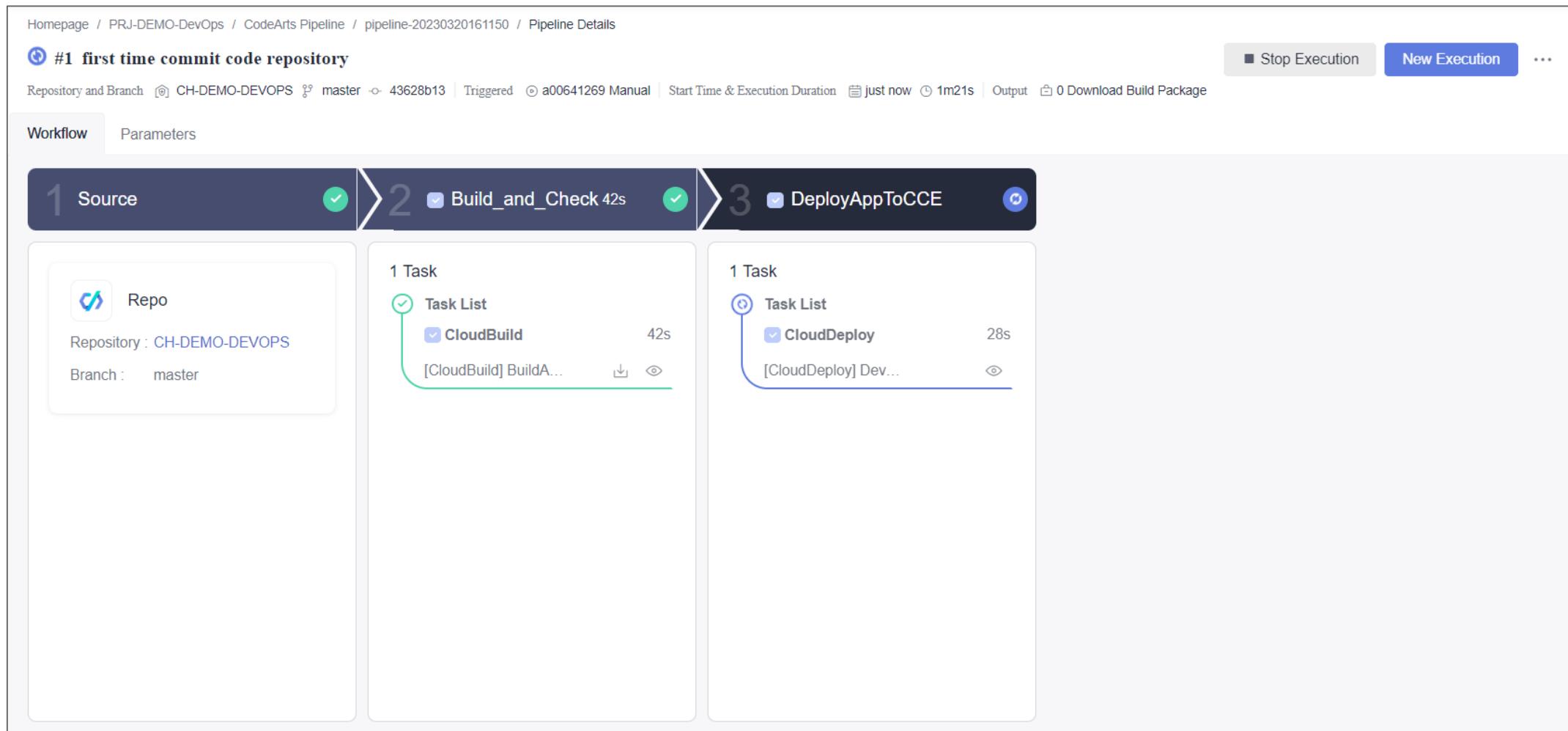
| Name | Last Executed | Execution Type | Workflow | Start Time & Execution Duration | Operation |
|---------------------------------------|---|----------------------------|----------|---------------------------------|--|
| PRJ-DEMO-D... / pipeline-202303201... | Not executed | Execute | ... | -- | ⋮ |
| App-demo-code / PipelineUAT-APPD... | #6 release blue version master -> 1ae57953 | Push-Triggered (a00641269) | ✓—✓—✓ | 3 days ago 1m41s | Run Edit Clone Delete |

At the bottom right, there are buttons for "Per Page" (set to 10), "Total 2 Records", and "Clone" and "Delete" options.

5. CloudPipeline – Define your application pipeline [CI/CD] (3)

5.4 Now, it's time to Test and Running your pipeline.

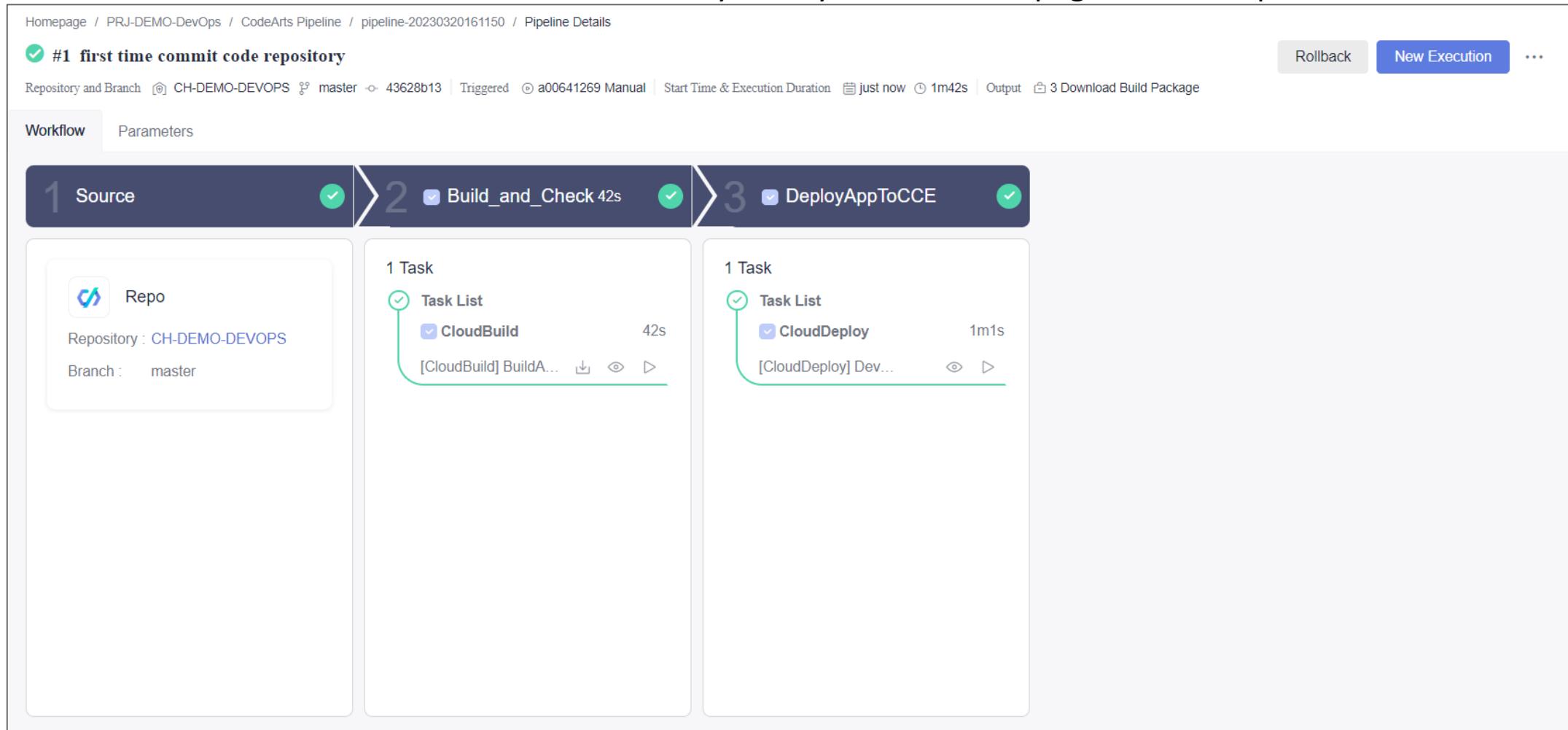
- I. Click on the button “New Execution”. Or “Run” if you stay on the Home page of CloudPipeline



5. CloudPipeline – Define your application pipeline [CI/CD] (3)

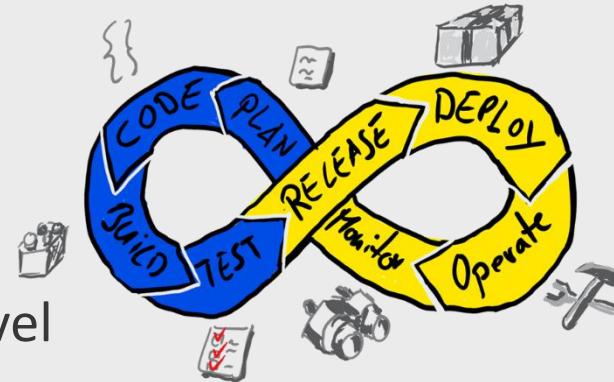
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1. Overview DevOps – CodeArts (DevCloud)



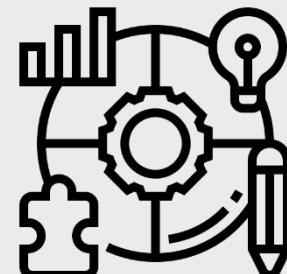
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- CloudBuild

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- Result / Outcome

4. Question & Answer



6. Commit – Update your source code and commit to CodeHub [CI/CD] (1)

6.1 Now, jump back to working on your source code.

I. Changed your source code.

Original source code

```
<html>
  <head>
    <title>Sunway Demo</title>
  </head>
  <style>
    div {
      display: table-cell;
      width: 1400px;
      height: 800px;
      font-family: 'Courier New';
      vertical-align: middle;
      font-size: 2em;
      text-align: center;
      color: white;
    }
  </style>
  <!-- <body style="background-color:Red;"> -->
  <!-- <body style="background-color:DodgerBlue;"> -->
  <!-- <body style="background-color:#AAFF00;"> -->
  <!-- <body style="background-color:#088F8F;"> -->
  <body style="background-color:MediumSeaGreen;">

    <div>
      <h1> www.sunway-test.live</h1>
      <h1> Sunway DevOps Demo</h1>
      <!-- <h1> Red v1.13-<?php date_default_timezone_set("Asia/Kuala_Lumpur");echo date("YmdHis");?> </h1> -->
      <!-- <h1> Blue v1.14-<?php date_default_timezone_set("Asia/Kuala_Lumpur");echo date("YmdHis");?> </h1> -->
      <!-- <h1> SIT - Green v1.14-<?php date_default_timezone_set("Asia/Kuala_Lumpur");echo date("YmdHis");?> </h1> -->
      <!-- <h1> PROD - Red v1.13 </h1> -->
      <!-- <h1> PROD - Blue v1.14 </h1> -->

      <h1> (Production under Observed) </h1>
      <h1> Green v1.15 </h1>
    </div>
  </body>
</html>
```

Changed source code

```
<html>
  <head>
    <title>Sunway Demo</title>
  </head>
  <style>
    div {
      display: table-cell;
      width: 1400px;
      height: 800px;
      font-family: 'Courier New';
      vertical-align: middle;
      font-size: 2em;
      text-align: center;
      color: white;
    }
  </style>
  <!-- <body style="background-color:Red;"> -->
  <body style="background-color:DodgerBlue;">
  <!-- <body style="background-color:#AAFF00;"> -->
  <!-- <body style="background-color:#088F8F;"> -->
  <!-- <body style="background-color:MediumSeaGreen;"> -->

    <div>
      <h1> www.sunway-test.live</h1>
      <h1> Sunway DevOps Demo</h1>
      <!-- <h1> Red v1.13-<?php date_default_timezone_set("Asia/Kuala_Lumpur");echo date("YmdHis");?> </h1> -->
      <h1> Blue v1.14-<?php date_default_timezone_set("Asia/Kuala_Lumpur");echo date("YmdHis");?> </h1>
      <!-- <h1> SIT - Green v1.14-<?php date_default_timezone_set("Asia/Kuala_Lumpur");echo date("YmdHis");?> </h1> -->
      <!-- <h1> PROD - Red v1.13 </h1> -->
      <!-- <h1> PROD - Blue v1.14 </h1> -->

      <h1> (Production under Observed) </h1>
      <!-- <h1> Green v1.15 </h1> -->
      <h1> Dev Environment - BLUE version 1.2 </h1>
    </div>
  </body>
</html>
```

6. Commit – Update your source code and commit to CodeHub [CI/CD] (2)

6.2 Now, jump back to working on your source code.

- I. Executed git command by “git add .”
- II. Executed git command by ‘ “git commit –am “changed source code in blue color”’
- III. Executed git command by “git push origin master”

```
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]# git add .
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]# git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   project/index.php

[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]#
```

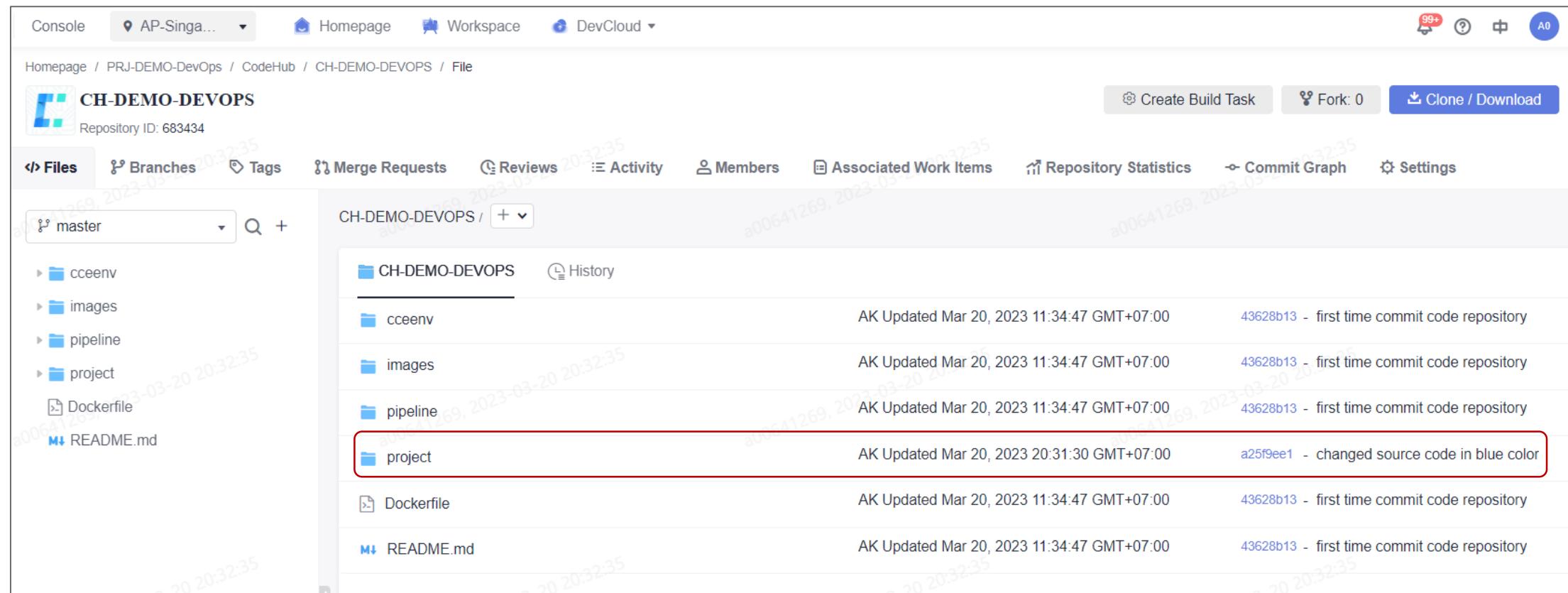
```
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]# git commit -am "changed source code in blue color"
[master a25f9ee] changed source code in blue color
 1 file changed, 5 insertions(+), 4 deletions(-)
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]#
```

```
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]# git push origin master
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 460 bytes | 460.00 KiB/s, done.
Total 4 (delta 3), reused 0 (delta 0), pack-reused 0
To codehub.devcloud.ap-southeast-3.huaweicloud.com:PRJ-DEMO-DevOps00001/CH-DEMO-DEVOPS.git
  43628b1..a25f9ee master -> master
[root@ecssgak-centos8-terminal01 CH-DEMO-DEVOPS]#
```

6. Commit – Update your source code and commit to CodeHub [CI/CD] (3)

6.2 Checked on your CodeHub Repository.

I. CloudPipeline are automated running.



The screenshot shows the CodeHub interface for the repository 'CH-DEMO-DEVOPS' (Repository ID: 683434). The left sidebar displays the file structure: master branch with cceenv, images, pipeline, project, Dockerfile, and README.md. The right panel shows the commit history for the 'master' branch:

| Commit | Date | Author | Message |
|------------|--|----------|-------------------------------------|
| cceenv | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| images | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| pipeline | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| project | AK Updated Mar 20, 2023 20:31:30 GMT+07:00 | a25f9ee1 | - changed source code in blue color |
| Dockerfile | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |
| README.md | AK Updated Mar 20, 2023 11:34:47 GMT+07:00 | 43628b13 | - first time commit code repository |

6. Commit – Update your source code and commit to CodeHub [CI/CD] (3)

6.2 Checked on your CodeHub Repository.

I. CloudPipeline are automated running.

Homepage / PRJ-DEMO-DevOps / CodeArts Pipeline / pipeline-20230320161150

← pipeline-20230320161150 2023/03/14 - 2023/03/20 New Execution ...

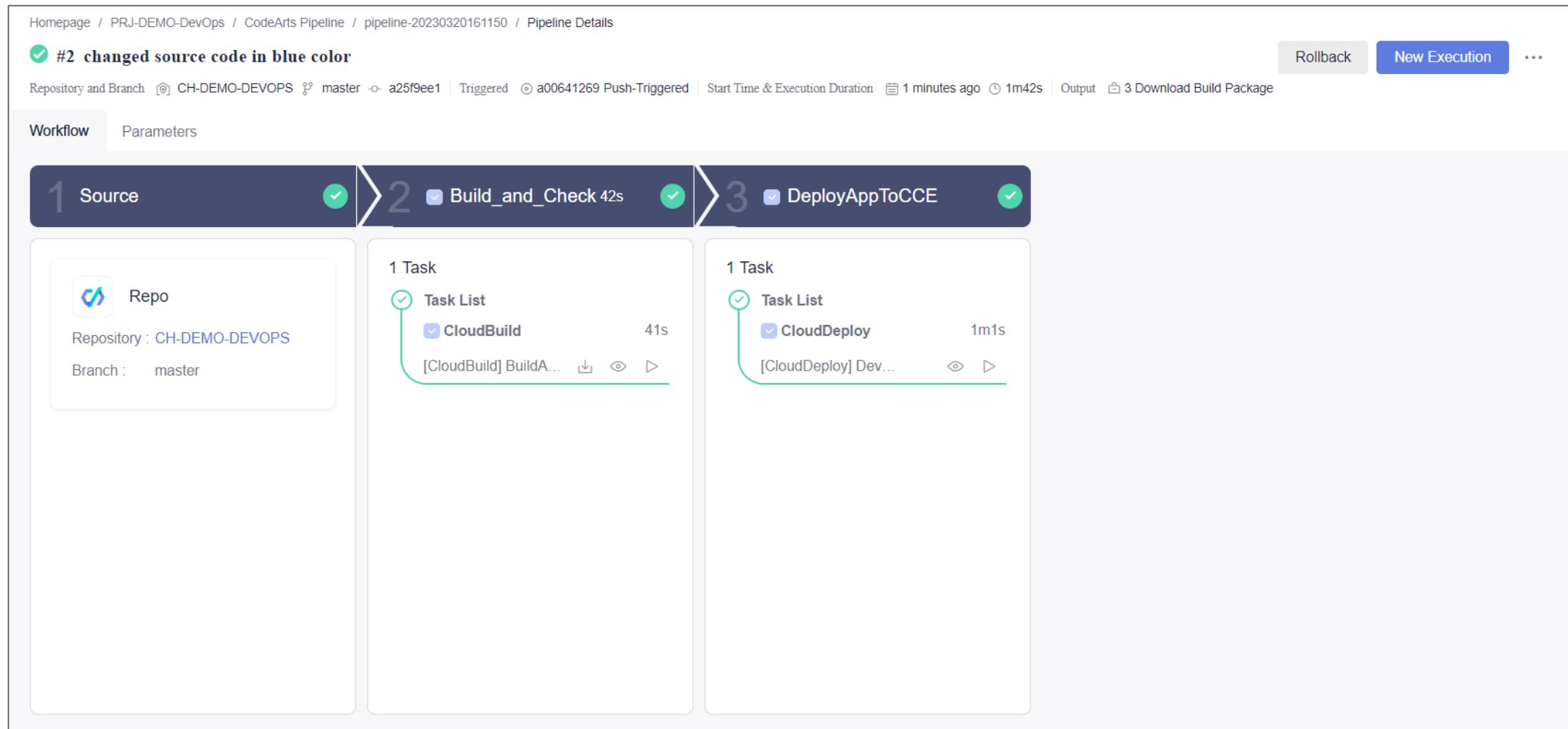
| Execution Information | Execution Type | Workflow | Start Time & Execution Duration |
|--|---------------------------|-----------|---------------------------------|
| #2 changed source code in blue color master -> a25f9ee1 | Push-Triggered(a00641269) | ✓ - ✓ - ○ | 1 minutes ago 1m7s |
| #1 first time commit code repository master -> 43628b13 | Manual(a00641269) | ✓ - ✓ - ✓ | 21 minutes ago 1m41s |

10 Per Page, Total 2 Records < 1 > Go To 1

6. Commit – Update your source code and commit to CodeHub [CI/CD] (3)

6.2 Checked on your CodeHub Repository.

I. CloudPipeline are automated running.



7. Create Ingress – Access from external to your application [CI/CD] (2)

7.1 on this step, is the manual step that you need to creation the ingress for access on your application.

- I. Go to your CCE Cluster > Workloads.
- II. Under the Deployments Tab. Click your application “**php-fpm-nginx**”

The screenshot shows the HUAWEI CLOUD CCE Cluster Workloads interface. The left sidebar has a tree view with 'ccesg-devops-s...' expanded, showing 'Cluster Information', 'Resources' (selected), 'Nodes', 'Workloads' (selected), 'Networking', 'Storage', 'ConfigMaps and Secrets', 'Custom Resources', and 'Namespaces'. The main area shows the 'Deployments' tab selected under 'Workloads'. The top navigation bar includes 'Search', 'More', 'Intl-English', 'APClouddemoTH a00641269', and a notification icon with '99+'. The deployment list table has columns: 'Workload Name', 'Status', 'Pods (Normal/All)', 'Namespace', 'Created', 'Image Name', and 'Operation'. It lists three entries:

| Workload Name | Status | Pods (Normal/All) | Namespace | Created | Image Name | Operation |
|------------------------|---------|-------------------|-------------|---------------|-------------------------------|---|
| php-fpm-nginx | Running | 3 / 3 | ns-devops | 3 minutes ... | hwc-devops-demo:v1.2 nginx | Monitor View Log Upgrade More ▾ |
| coredns | Running | 2 / 2 | kube-system | 4 days ago | coredns:1.25.1 | Monitor View Log View YAML Delete |
| everest-csi-controller | Running | 2 / 2 | kube-system | 4 days ago | everest:2.1.13 | Monitor View Log View YAML Delete |

7. Create Ingress – Access from external to your application [CI/CD] (2)

7.2 on this step, is the manual step that you need to creation the ingress for access on your application.

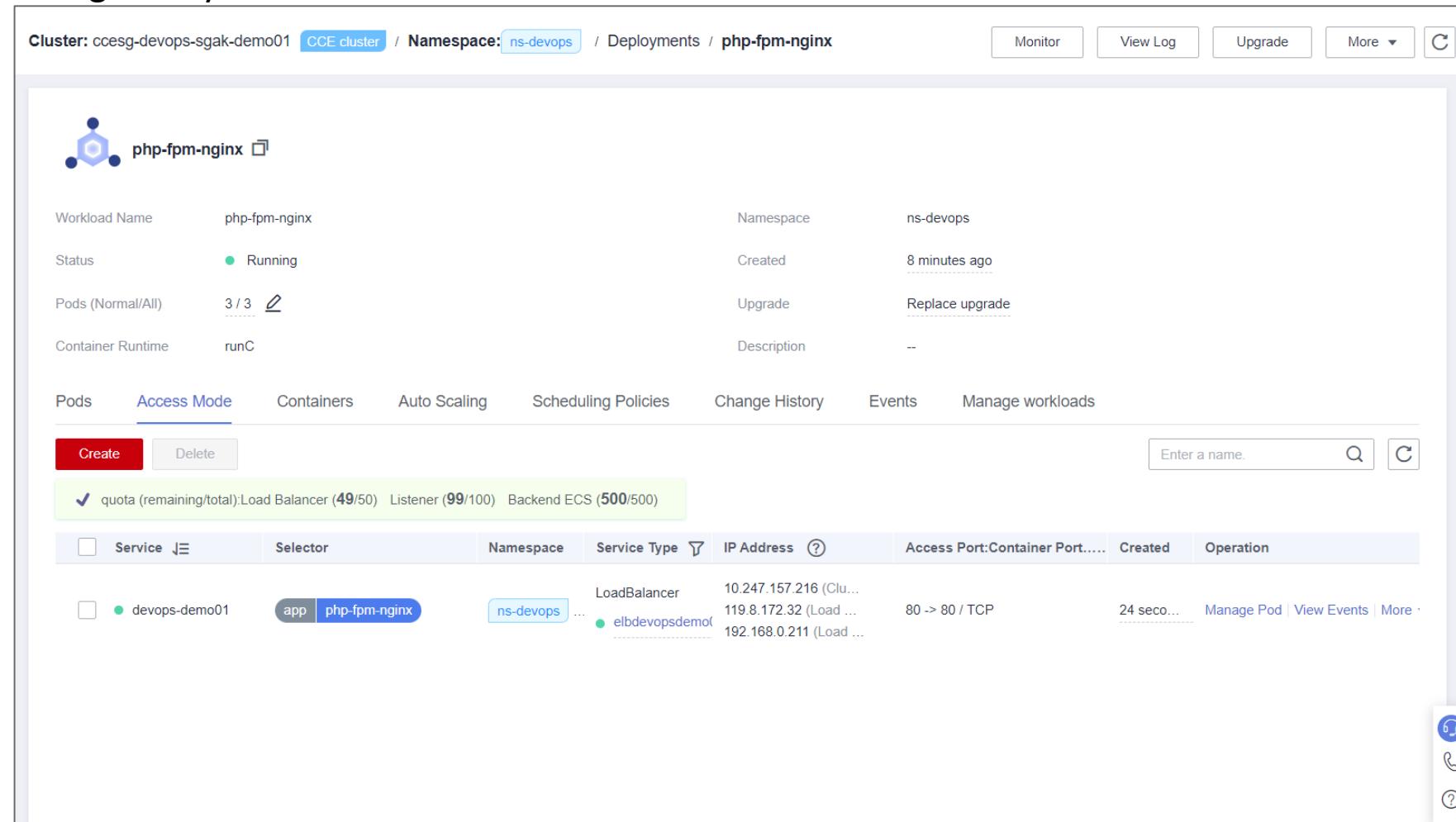
I. Creation ingress by click on the button “Create” under the menu “Access Mode”

The screenshot shows the CCE Cluster interface for the cluster `ccesg-devops-sgak-demo01`. On the left, a deployment named `php-fpm-nginx` is listed with a status of "Running". The "Access Mode" tab is selected. A red box highlights the "Create" button. On the right, a modal window titled "Create Service" is displayed. The "Service Name" field contains `devops-demo01`. Under "Service Type", the "LoadBalancer" option is selected. The "Service Affinity" dropdown is set to "Cluster-level". The "Load Balancer" section includes "Shared" and "Auto cr..." dropdowns. A note states: "Create a load balancing instance based on the following configurations. The automatically created instance will be automatically deleted when the current resource is deleted." It also mentions: "Automatically created load balancers are pay-per-use." Below this, the "Instance Name" is set to `elbdevopsdemo01`. The "Public Access" toggle is turned on. A note says: "An EIP with 5 Mbit/s bandwidth will be created.. Billed by traffic by default." The "Set ELB:" section specifies: "Load balancing algorithm: Weighted round robin; Sticky session: Disable; Health check: TCP". A checkbox is checked with the note: "I have read Notes on Using Load Balancers." The "Port" section shows a table with two rows for port mappings: "Protocol: TCP, Container Port: 80, Service Port: 80". An "Operation" column shows a "Delete" link for each row. Below the table is an "Annotation" section with a "Key" and "Value" input field, a "confirm to add" button, and a "Quick Links" button. At the bottom of the modal are "Create from YAML", "OK", and "Cancel" buttons.

7. Create Ingress – Access from external to your application [CI/CD] (2)

7.2 on this step, is the manual step that you need to creation the ingress for access on your application.

I. Creation ingress by click on the button “Create” under the menu “Access Mode”



Cluster: ccesg-devops-sgak-demo01 / CCE cluster / Namespace: ns-devops / Deployments / php-fpm-nginx

Workload Name: php-fpm-nginx

Status: Running

Pods (Normal/All): 3 / 3

Container Runtime: runC

Namespace: ns-devops

Created: 8 minutes ago

Upgrade: Replace upgrade

Description: --

Access Mode

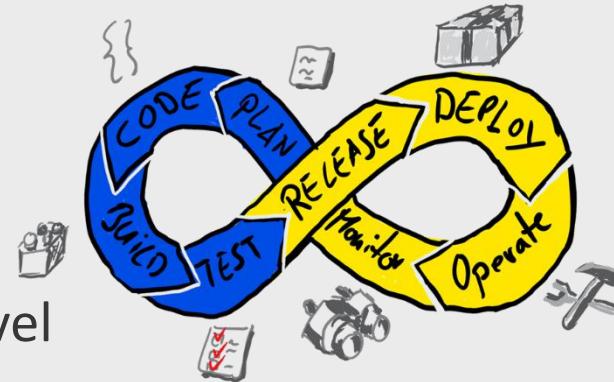
Create

Enter a name.

| Service | Selector | Namespace | Type | IP Address | Access Port | Container Port | Created | Operation |
|---------------|-------------------|-----------|--------------|--|-------------|----------------|-----------|---------------------------------|
| devops-demo01 | app:php-fpm-nginx | ns-devops | LoadBalancer | 10.247.157.216 (Clu... 119.8.172.32 (Load ... elbdevopsdemo) | 80 -> 80 | /TCP | 24 sec... | Manage Pod View Events More |

Contents

1. Overview DevOps – CodeArts (DevCloud)



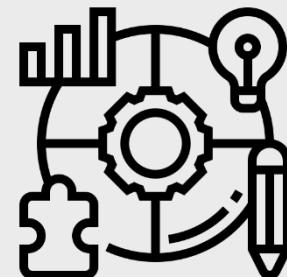
2. Solution Architect Logical Diagram – High Level

3. Hands-on Labs (DevCloud)

- Pre-Requisite
- Project Man
- CodeHub
- CloudBuild

- CloudDeploy
- CloudPipeline
- Commit Source Code and Automation Deployment
- Result / Outcome

4. Question & Answer



8. Result – Test Access from external to your application [CI/CD] (1)

8.1 Finally, your application deployment is ready.

- I. Now, let's start to access your application by access from internet to your public ip address.

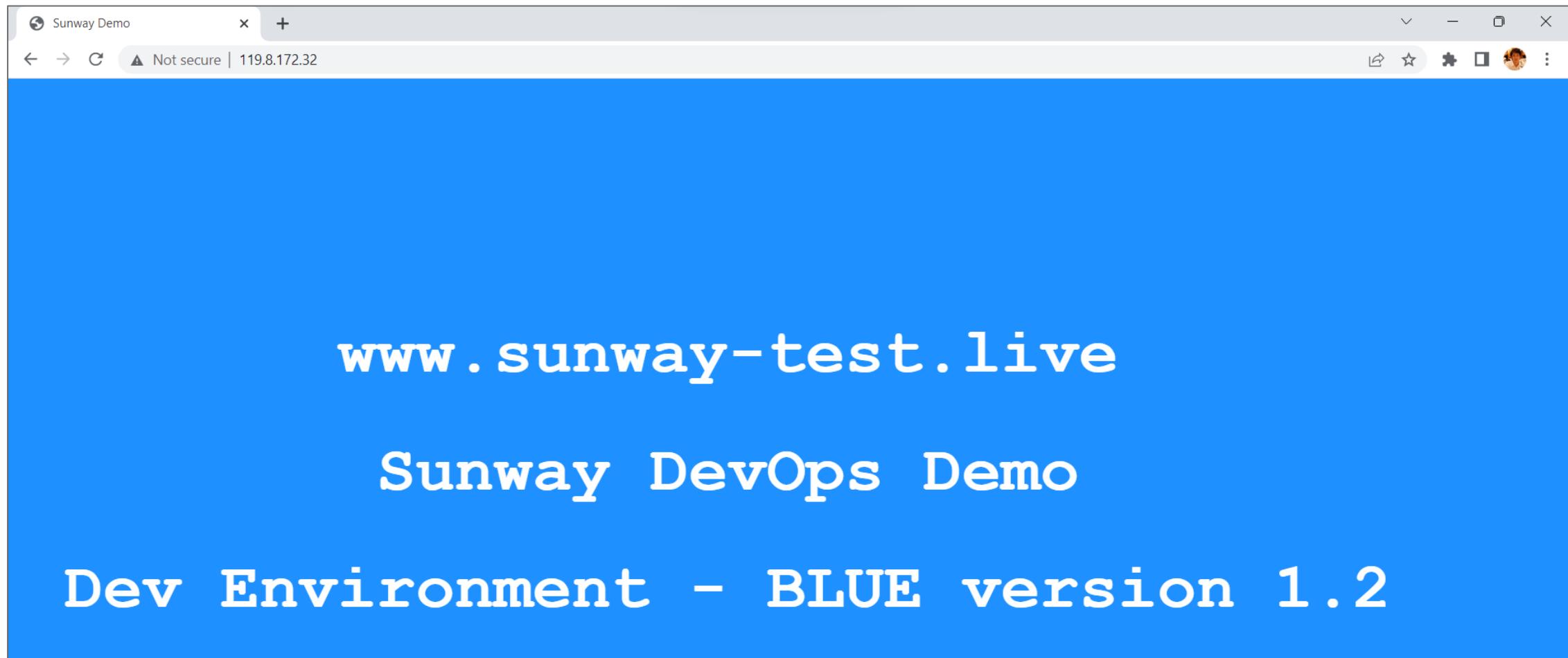
The screenshot shows the CCE Cluster Services page. The top navigation bar includes 'Cluster: ccesg-devops-sgak-demo01' (CCE cluster), 'Namespace: All namespaces', and 'Services'. Below the navigation are 'Services' and 'Ingresses' tabs, with 'Services' selected. A search bar at the top right allows filtering by selector or name. The main table lists services, with the first row being the 'devops-demo01' service. The 'Service' column shows the service name, 'Selector' shows 'app: php-fpm-nginx', 'Namespace' shows 'ns-devops', and 'Service Type' shows 'LoadBalancer'. The 'External IP' column displays three IP addresses: '10.247.157.216 (Cluster IP)', '119.8.172.32 (Load Balancer IP)', and '192.168.0.211 (Load Balancer IP)'. The 'Status' column indicates 'quota (remaining/total): Load Balancer (48/50) Listener (98/100) Backend ECS (498/500)'. The 'Created' column shows '3 minutes ago'. The 'Operation' column contains links for 'Manage Pod', 'View Events', and 'More'. Other services listed include 'coredns', 'etcd-server-proxy', 'kube-controller-pr...', 'kube-scheduler-pr...', and 'proxy-exporter', each with their respective details.

| Service | Selector | Namespace | Type | External IP | Status | Created | Operation |
|-----------------------|----------------------------------|-------------|--------------|--|--|---------------|---------------------------------|
| devops-demo01 | app: php-fpm-nginx | ns-devops | LoadBalancer | 10.247.157.216 (Cluster IP) 119.8.172.32 (Load Balancer IP) 192.168.0.211 (Load Balancer IP) | quota (remaining/total): Load Balancer (48/50) Listener (98/100) Backend ECS (498/500) | 3 minutes ago | Manage Pod View Events More |
| coredns | app: coredns k8s-app: coredns | kube-system | ClusterIP | 10.247.3.10 (Cluster IP) 53 -> 5353 / UDP 53 -> 5353 / TCP 8080 -> 8080 / TCP | | 4 days ago | Manage Pod View Events More |
| etcd-server-proxy | -- | kube-system | ClusterIP | 10.247.84.227 (Cluster IP) 4001 -> 10451 / TCP | | 4 days ago | Manage Pod View Events More |
| kube-controller-pr... | -- | kube-system | ClusterIP | 10.247.51.113 (Cluster IP) 10257 -> 10451 / TCP | | 4 days ago | Manage Pod View Events More |
| kube-scheduler-pr... | -- | kube-system | ClusterIP | 10.247.167.99 (Cluster IP) 10259 -> 10451 / TCP | | 4 days ago | Manage Pod View Events More |
| proxy-exporter | -- | kube-system | ClusterIP | 10.247.8.180 (Cluster IP) 10451 -> 10451 / TCP | | 4 days ago | Manage Pod View Events More |

8. Result – Test Access from external to your application [CI/CD] (2)

8.2 Finally, your application deployment is ready.

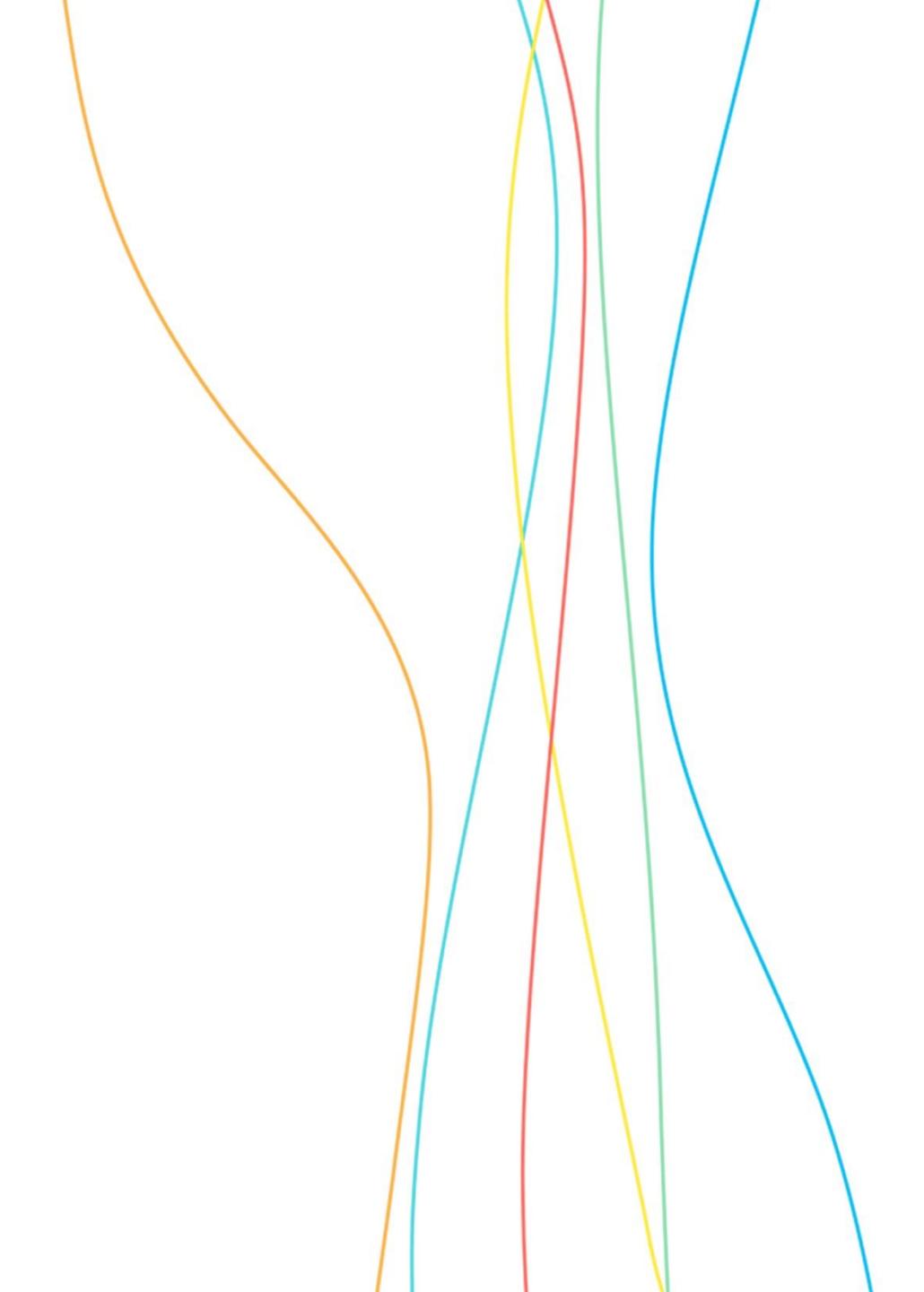
I. Now, let's start to access your application by access from internet to your public ip address.





Looking For An Answer?

BACKGROUND



| Contact | Email | Role |
|-----------------------|-------------------------|-----------------------|
| TAN CHIN KHOON | ck.tan@huawei.com | Professional Services |
| Yiam Kar Kar | yiam.kar.kar@huawei.com | Professional Services |
| Aphiwat Kitkitiwiriya | aphiwat.ki@huawei.com | Solution Architect |



1. GitHub Source Code HOLs DevCloud [ref: <https://github.com/hwcloud-apac-pso/hwcloud-apac-devcloud>]

Thank you.

把数字世界带入每个人、每个家庭、
每个组织，构建万物互联的智能世界。
Bring digital to every person, home and
organization for a fully connected,
intelligent world.

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