CodeArts Build

Getting Started

Issue	01
Date	2023-11-15

HUAWEI TECHNOLOGIES CO., LTD.

Security Declaration

Vulnerability

Huawei's regulations on product vulnerability management are subject to the *Vul. Response Process.* For details about this process, visit the following web page:
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Contents

1 Building with Ant and Uploading the Package to a Release Repo (x86, Preset Image, GUI)

In this section, you use CodeArts Build to build a project with Ant on a x86 server and upload the resulting software package to a release repo. These steps will be carried out through a graphical user interface (GUI).

Prerequisites

- You have registered with Huawei Cloud and completed real-name authentication. If you do not have a HUAWEI ID yet, follow these steps to create one:
  a. Visit **Huawei Cloud official website**.
  b. Click **Sign Up** and create your account as instructed.
     Once your account is created, the system automatically redirects you to your personal information page.
  c. Complete individual or enterprise real-name authentication. For details, see **Real-Name Authentication**.
- You have enabled CodeArts Free Edition. If not, enable it by referring to **Purchasing a CodeArts Package**.

Creating a CodeArts Repo Repository

Step 1 **Log in to the Huawei Cloud console** with your Huawei Cloud account.

Step 2 Click ☰ in the upper left corner and choose **Developer Services** > **CodeArts Build** from the service list.

Step 3 Click **Access Service**. The homepage of CodeArts Build is displayed. On the navigation bar, click **Homepage**.

Step 4 Click **Create Project**, and select the **Scrum** template. Set the project name to **Scrum01** and keep the default values for other parameters. Click **OK** to access the project.

Step 5 In the navigation pane, choose **Code** > **Repo**.

Step 6 On the displayed page, click **New Repository**. Select **Template**, and click **Next**.

Step 7 You will then be redirected to the **Create Template Repository** page. In the **Select Repository Template** stage, search for **Java Ant Demo** and select the template. Click **Next**.

Step 8 Set **Repository Name** to **Repo01** and keep the default values for other parameters. Click **OK**.

----End

Creating a Build Task

Step 1 In the navigation pane, choose **CICD** > **Build**.

Step 2 Click **Create Task**. The **Basic Information** page is displayed.

Step 3 Configure the following parameters and click **Next**.

Table 1-1 Basic information

Parameter	Description
Name	Assign a custom name to the build task, for example, **BuildTask01**.
Code Source	Select **Repo** to pull the code hosted in a CodeArts Repo repository for your build.
Repository	Select **Repo01**, the code repository created in section **"Creating a CodeArts Repo Repository"**.
Default Branch	Keep the default value **master**.
Description	Optional. Enter additional information to describe the build task.

Step 4 Select the **Ant** template and click **OK** to create the build task. Then you will be redirected to the page for configuring build actions.

Step 5 On the **Build Actions** page, keep the default settings and click **Save**.

----End

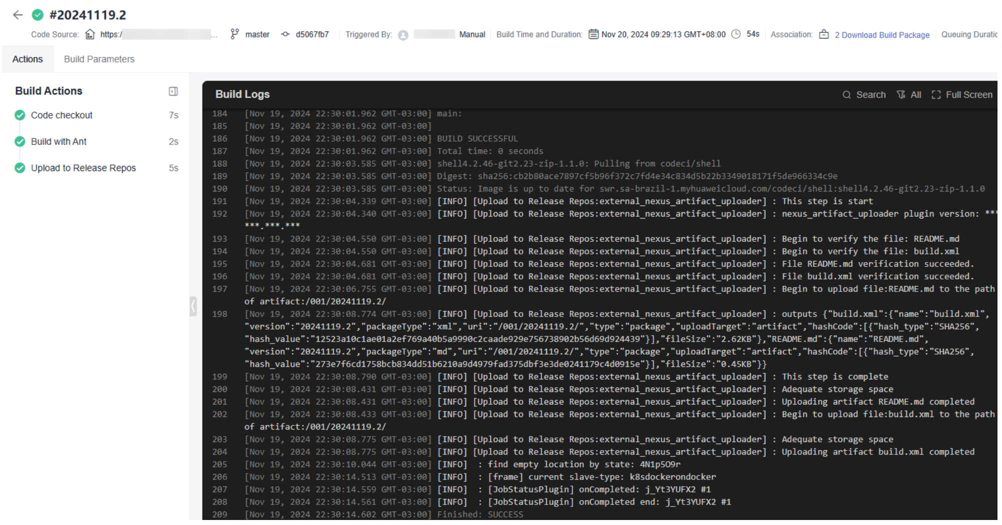
Running the Build Task

Step 1 Click the name of the build task.

Step 2 On the displayed **Build History** page, click **Run** to start the build task. In the displayed dialog box, click **Confirm**.

- The page shown in **Figure 1-1** displays a successful run of the task.

Figure 1-1 Build success



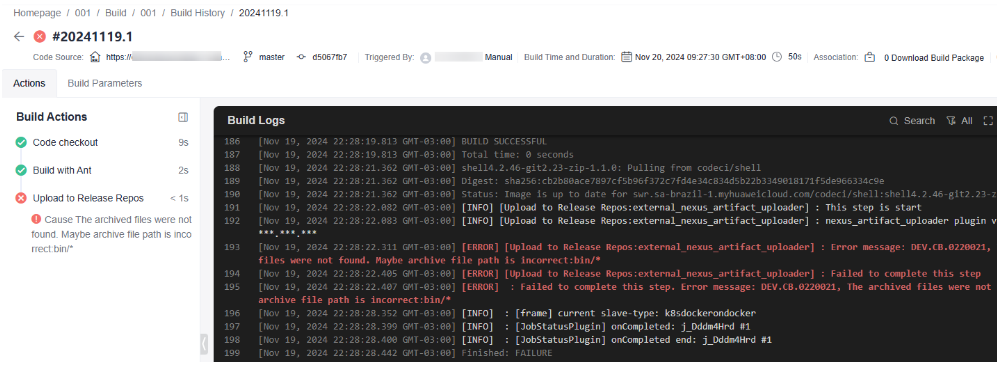
#20241119.2

Code Source: https:/[redacted]... master d5067fb7 Triggered By: [redacted] Manual Build Time and Duration: Nov 20, 2024 09:29:13 GMT+08:00 54s Association: 2 Download Build Package Queuing Duratic

```
[Nov 19, 2024 22:30:01.962 GMT-03:00] main:
[Nov 19, 2024 22:30:01.962 GMT-03:00]
[Nov 19, 2024 22:30:01.962 GMT-03:00] BUILD SUCCESSFUL
[Nov 19, 2024 22:30:01.962 GMT-03:00] Total time: 0 seconds
[Nov 19, 2024 22:30:03.585 GMT-03:00] shell4.2.46-git2.23-zip-1.1.0: Pulling from codeci/shell
[Nov 19, 2024 22:30:03.585 GMT-03:00] Digest: sha256:cb2b80ace7897cf5b96f372c7fd4e34c834d5b22b3349018171f5de966334c9e
[Nov 19, 2024 22:30:03.585 GMT-03:00] Status: Image is up to date for swr.sa-brazil-1.myhuaweicloud.com/codeci/shell:shell4.2.46-git2.23-zip-1.1.0
[Nov 19, 2024 22:30:04.339 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : This step is start
[Nov 19, 2024 22:30:04.340 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : nexus_artifact_uploader plugin version: ***
***.***.***
[Nov 19, 2024 22:30:04.550 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Begin to verify the file: README.md
[Nov 19, 2024 22:30:04.550 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Begin to verify the file: build.xml
[Nov 19, 2024 22:30:04.681 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : File README.md verification succeeded.
[Nov 19, 2024 22:30:04.681 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : File build.xml verification succeeded.
[Nov 19, 2024 22:30:06.755 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Begin to upload file:README.md to the path
of artifact:/001/20241119.2/
[Nov 19, 2024 22:30:08.774 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : outputs {"build.xml":{"name":"build.xml",
"version":"20241119.2","packageType":"xml","uri":"/001/20241119.2/","type":"package","uploadTarget":"artifact","hashCode":[{"hash_type":"SHA256",
"hash_value":"12523a10c1ae01a2ef769a40b5a9990c2caade929e756738902b56d69d924439"}],"fileSize":"2.62KB"},"README.md":{"name":"README.md",
"version":"20241119.2","packageType":"md","uri":"/001/20241119.2/","type":"package","uploadTarget":"artifact","hashCode":[{"hash_type":"SHA256",
"hash_value":"273e7f6cd1758bcb834dd51b6210a9d4979fad375dbf3e3de0241179c4d0915e"}],"fileSize":"0.45KB"}}
[Nov 19, 2024 22:30:08.790 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : This step is complete
[Nov 19, 2024 22:30:08.431 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Adequate storage space
[Nov 19, 2024 22:30:08.431 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Uploading artifact README.md completed
[Nov 19, 2024 22:30:08.433 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Begin to upload file:build.xml to the path
of artifact:/001/20241119.2/
[Nov 19, 2024 22:30:08.775 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Adequate storage space
[Nov 19, 2024 22:30:08.775 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : Uploading artifact build.xml completed
[Nov 19, 2024 22:30:10.044 GMT-03:00] [INFO]  : find empty location by state: 4N1p5O9r
[Nov 19, 2024 22:30:14.513 GMT-03:00] [INFO]  : [frame] current slave-type: k8sdockerondocker
[Nov 19, 2024 22:30:14.559 GMT-03:00] [INFO]  : [JobStatusPlugin] onCompleted: j_Yt3YUFX2 #1
[Nov 19, 2024 22:30:14.561 GMT-03:00] [INFO]  : [JobStatusPlugin] onCompleted end: j_Yt3YUFX2 #1
[Nov 19, 2024 22:30:14.602 GMT-03:00] Finished: SUCCESS
```

- If the task fails, troubleshoot the issue by reviewing the prompt or analyzing the logs.

Figure 1-2 Build failure



Homepage / 001 / Build / 001 / Build History / 20241119.1

#20241119.1

Code Source: https://[redacted]... master d5067fb7 Triggered By: [redacted] Manual Build Time and Duration: Nov 20, 2024 09:27:30 GMT+08:00 50s Association: 0 Download Build Package

Cause The archived files were not found. Maybe archive file path is incorrect:bin/*

```
[Nov 19, 2024 22:28:19.813 GMT-03:00] BUILD SUCCESSFUL
[Nov 19, 2024 22:28:19.813 GMT-03:00] Total time: 0 seconds
[Nov 19, 2024 22:28:21.362 GMT-03:00] shell4.2.46-git2.23-zip-1.1.0: Pulling from codeci/shell
[Nov 19, 2024 22:28:21.362 GMT-03:00] Digest: sha256:cb2b80ace7897cf5b96f372c7fd4e34c834d5b22b3349018171f5de966334c9e
[Nov 19, 2024 22:28:21.362 GMT-03:00] Status: Image is up to date for swr.sa-brazil-1.myhuaweicloud.com/codeci/shell:shell4.2.46-git2.23-z
[Nov 19, 2024 22:28:22.082 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : This step is start
[Nov 19, 2024 22:28:22.083 GMT-03:00] [INFO] [Upload to Release Repos:external_nexus_artifact_uploader] : nexus_artifact_uploader plugin v
***.***.***
[Nov 19, 2024 22:28:22.311 GMT-03:00] [ERROR] [Upload to Release Repos:external_nexus_artifact_uploader] : Error message: DEV.CB.0220021,
files were not found. Maybe archive file path is incorrect:bin/*
[Nov 19, 2024 22:28:22.405 GMT-03:00] [ERROR] [Upload to Release Repos:external_nexus_artifact_uploader] : Failed to complete this step
[Nov 19, 2024 22:28:22.407 GMT-03:00] [ERROR]  : Failed to complete this step. Error message: DEV.CB.0220021, The archived files were not
archive file path is incorrect:bin/*
[Nov 19, 2024 22:28:28.352 GMT-03:00] [INFO]  : [frame] current slave-type: k8sdockerondocker
[Nov 19, 2024 22:28:28.399 GMT-03:00] [INFO]  : [JobStatusPlugin] onCompleted: j_Dddm4Hrd #1
[Nov 19, 2024 22:28:28.400 GMT-03:00] [INFO]  : [JobStatusPlugin] onCompleted end: j_Dddm4Hrd #1
[Nov 19, 2024 22:28:28.442 GMT-03:00] Finished: FAILURE
```

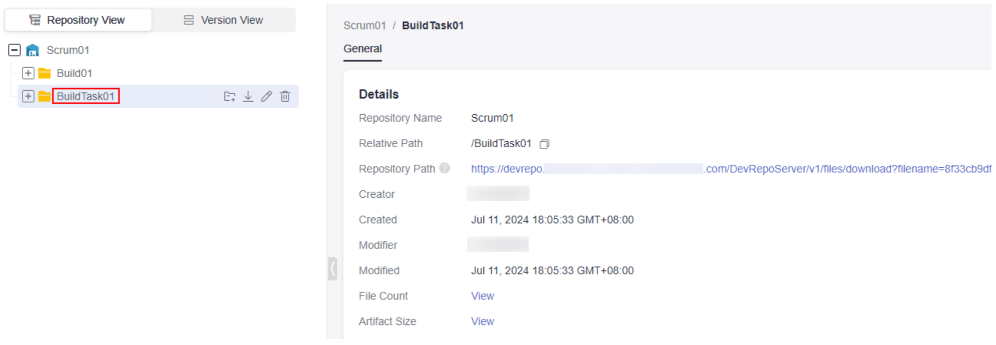
----End

Viewing the Build Results

Step 1 In the navigation pane, choose **Artifact** > **Release Repos**.

Step 2 On the displayed page, find the folder that shares the same name as the build task (the name you specify when **creating a build task**), as shown in **Figure 1-3**. The software package can be found within this folder.

Figure 1-3 Checking the software package



Details

Repository Name	Scrum01
Relative Path	/BuildTask01
Repository Path	https://devrepo. .com/DevRepoServer/v1/files/download?filename=8f33cb9df
Creator	
Created	Jul 11, 2024 18:05:33 GMT+08:00
Modifier	
Modified	Jul 11, 2024 18:05:33 GMT+08:00
File Count	View
Artifact Size	View

----End

Clearing Resources

To avoid unnecessary charges, you are advised to release the following resources once your builds are finished.

- In CodeArts Repo: Delete code repositories.
- In the release repo: Delete software packages and **clear the recycle bin** by referring to *CodeArts Artifact User Guide* > "Release Repo (New Version)" > "Managing the Recycle Bin".

NOTICE

Released resources cannot be recovered. Exercise caution when performing these operations.

2 Building with CMake and Uploading the Package to a Release Repo (Arm, Preset Image, GUI)

In this section, you use CodeArts Build to build a project with CMake in an Arm environment and upload the resulting software package to a release repo.

Prerequisites

- You have registered with Huawei Cloud and completed real-name authentication. If you do not have a HUAWEI ID yet, follow these steps to create one:
  a. Visit **Huawei Cloud official website**.
  b. Click **Sign Up** and create your account as instructed.
     Once your account is created, the system automatically redirects you to your personal information page.
  c. Complete individual or enterprise real-name authentication. For details, see **Real-Name Authentication**.
- You have enabled CodeArts Free Edition. If not, enable it by referring to **Purchasing a CodeArts Package**.

Creating a CodeArts Repo Repository

Step 1 **Log in to the Huawei Cloud console** with your Huawei Cloud account.

Step 2 Click ☰ in the upper left corner and choose **Developer Services** > **CodeArts Build** from the service list.

Step 3 Click **Access Service**. The homepage of CodeArts Build is displayed. On the navigation bar, click **Homepage**.

Step 4 Click **Create Project**, and select the **Scrum** template. Set the project name to **Scrum01** and keep the default values for other parameters. Click **OK** to access the project.

Step 5 In the navigation pane, choose **Code** > **Repo**.

Step 6 On the displayed page, click **New Repository**. Select **Template**, and click **Next**.

Step 7 You will then be redirected to the **Create Template Repository** page. In the **Select Repository Template** stage, search for **Cpp Demo** and select the template. Click **Next**.

Step 8 Set **Repository Name** to **Repo01** and keep the default values for other parameters. Click **OK**.

----End

Creating a Build Task

Step 1 In the navigation pane, choose **CICD** > **Build**.

Step 2 Click **Create Task**. The **Basic Information** page is displayed.

Step 3 Configure the following parameters and click **Next**.

Table 2-1 Basic information

Parameter	Description
Name	Assign a custom name to the build task, for example, **BuildTask01**.
Code Source	Select **Repo**.
Repository	Select **Repo01**, the code repository created in section **"Creating a CodeArts Repo Repository"**.
Default Branch	Keep the default value **master**.
Description	Optional. Enter additional information to describe the build task.

Step 4 Select the **CMake** template.

Step 5 Click **OK**. On the displayed **Build Actions** page, set **Environment** to **Arm (Kunpeng)**, retain default settings for other build actions, and click **Save**.

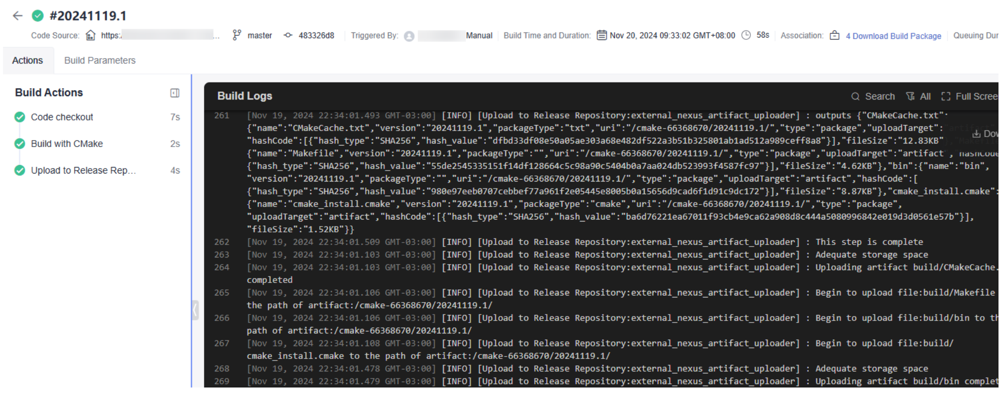
----End

Running the Build Task

Step 1 Click the name of the build task.

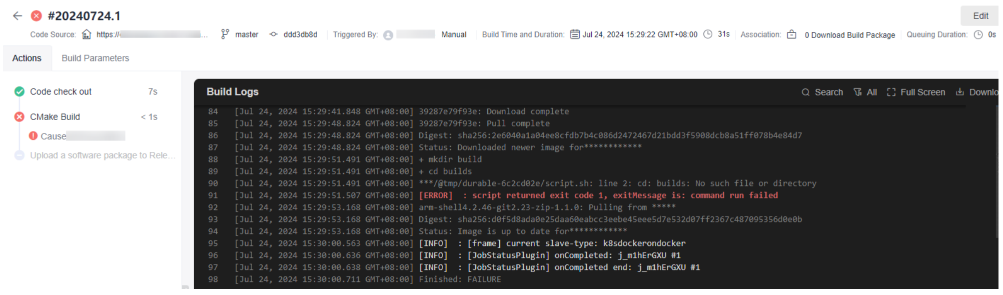
Step 2 On the displayed **Build History** page, click **Run** to start the build task.

- The following page displays a successful run of the task.



```
[Nov 19, 2024 22:34:01.493 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : outputs {"CMakeCache.txt":
{"name":"CMakeCache.txt","version":"20241119.1","packageType":"txt","uri":"/cmake-66368670/20241119.1/","type":"package","uploadTarget":
"hashCode":[{"hash_type":"SHA256","hash_value":"dfbd33df08e50a05ae303a68e482df522a3b51b325801ab1ad512a989ceff8a8"}],"fileSize":"12.83KB"
{"name":"Makefile","version":"20241119.1","packageType":"","uri":"/cmake-66368670/20241119.1/","type":"package","uploadTarget":"artifact",
{"hash_type":"SHA256","hash_value":"55de2545335151f14df128664c5c98a90c5404b0a7aa024db523993f4587fc97"}],"fileSize":"4.62KB"},"bin":{"name":"bin",
"version":"20241119.1","packageType":"","uri":"/cmake-66368670/20241119.1/","type":"package","uploadTarget":"artifact","hashCode":[
{"hash_type":"SHA256","hash_value":"980e97eeb0707cebbef77a961f2e05445e8005b0a15656d9cad6f1d91c9dc172"}],"fileSize":"8.87KB"},"cmake_install.cmake":
{"name":"cmake_install.cmake","version":"20241119.1","packageType":"cmake","uri":"/cmake-66368670/20241119.1/","type":"package",
"uploadTarget":"artifact","hashCode":[{"hash_type":"SHA256","hash_value":"ba6d76221ea67011f93cb4e9ca62a908d8c444a5080996842e019d3d0561e57b"}],
"fileSize":"1.52KB"}}
[Nov 19, 2024 22:34:01.509 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : This step is complete
[Nov 19, 2024 22:34:01.103 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : Adequate storage space
[Nov 19, 2024 22:34:01.103 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : Uploading artifact build/CMakeCache.
completed
[Nov 19, 2024 22:34:01.106 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : Begin to upload file:build/Makefile
the path of artifact:/cmake-66368670/20241119.1/
[Nov 19, 2024 22:34:01.106 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : Begin to upload file:build/bin to th
path of artifact:/cmake-66368670/20241119.1/
[Nov 19, 2024 22:34:01.108 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : Begin to upload file:build/
cmake_install.cmake to the path of artifact:/cmake-66368670/20241119.1/
[Nov 19, 2024 22:34:01.478 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : Adequate storage space
[Nov 19, 2024 22:34:01.479 GMT-03:00] [INFO] [Upload to Release Repository:external_nexus_artifact_uploader] : Uploading artifact build/bin complet
```

- If the task fails, troubleshoot the issue by reviewing the prompt or analyzing the logs.



```
[Jul 24, 2024 15:29:41.848 GMT+08:00] 39287e79f93e: Download complete
[Jul 24, 2024 15:29:48.824 GMT+08:00] 39287e79f93e: Pull complete
[Jul 24, 2024 15:29:48.824 GMT+08:00] Digest: sha256:2e6040a1a04ee8cfdb7b4c086d2472467d21bdd3f5908dcb8a51ff078b4e84d7
[Jul 24, 2024 15:29:48.824 GMT+08:00] Status: Downloaded newer image for************
[Jul 24, 2024 15:29:51.491 GMT+08:00] + mkdir build
[Jul 24, 2024 15:29:51.491 GMT+08:00] + cd builds
[Jul 24, 2024 15:29:51.491 GMT+08:00] ***/@tmp/durable-6c2cd02e/script.sh: line 2: cd: builds: No such file or directory
[Jul 24, 2024 15:29:51.507 GMT+08:00] [ERROR]  : script returned exit code 1, exitMessage is: command run failed
[Jul 24, 2024 15:29:53.168 GMT+08:00] arm-shell4.2.46-git2.23-zip-1.1.0: Pulling from *****
[Jul 24, 2024 15:29:53.168 GMT+08:00] Digest: sha256:d0f5d8ada0e25daa60eabcc3eebe45eee5d7e532d07ff2367c487095356d0e0b
[Jul 24, 2024 15:29:53.168 GMT+08:00] Status: Image is up to date for************
[Jul 24, 2024 15:30:00.563 GMT+08:00] [INFO]  : [frame] current slave-type: k8sdockerondocker
[Jul 24, 2024 15:30:00.636 GMT+08:00] [INFO]  : [JobStatusPlugin] onCompleted: j_m1hErGXU #1
[Jul 24, 2024 15:30:00.638 GMT+08:00] [INFO]  : [JobStatusPlugin] onCompleted end: j_m1hErGXU #1
[Jul 24, 2024 15:30:00.711 GMT+08:00] Finished: FAILURE
```

----End

Viewing the Build Results

Step 1 In the navigation pane, choose **Artifact** > **Release Repos**.

Step 2 On the displayed page, find the folder that shares the same name as the build task (the name you specify when **creating a build task**). The software package can be found within this folder.

----End

3 Building with Maven, Uploading the Software Package, and Pushing the Image (x86, Preset Image, Code)

CodeArts Build allows you to define your build as code using YAML. Your configurations, such as build environments, parameters, commands, and actions, reside in a YAML file (named **build.yml** in this practice). After creating this file, add it along with the source code to a code repository. The file will be used as a script by the system to run a build, making the process traceable, recoverable, secure, and reliable.

In this section, you define your Maven build as code, build your project using the x86 server and the preset image, upload the resulting software package to the release repo, and push the image to SoftWare Repository for Container (SWR).

Prerequisites

- You have registered with Huawei Cloud and completed real-name authentication. If you do not have a HUAWEI ID yet, follow these steps to create one:
  a. Visit **Huawei Cloud official website**.
  b. Click **Sign Up** and create your account as instructed.
     Once your account is created, the system automatically redirects you to your personal information page.
  c. Complete individual or enterprise real-name authentication. For details, see **Real-Name Authentication**.
- You have enabled CodeArts Free Edition. If not, enable it by referring to **Purchasing a CodeArts Package**.
- You have created an organization in SWR. If no organization is available, create one by referring to **Creating an Organization**.

Preparing a Project

Step 1 **Log in to the Huawei Cloud console** with your Huawei Cloud account.

Step 2 Click ☰ in the upper left corner and choose **Developer Services** > **CodeArts Build** from the service list.

Step 3 Click **Access Service**. The homepage of CodeArts Build is displayed. On the navigation bar, click **Homepage**.

Step 4 Click **Create Project**, and select the **Scrum** template. Set the project name to **Scrum01** and keep the default values for other parameters. Click **OK** to access the project.

----End

Creating a CodeArts Repo Repository

Step 1 In the navigation pane, choose **Code** > **Repo**.

Step 2 On the displayed page, click **New Repository**. Select **Common**, and click **Next**.

Step 3 Set parameters according to **Table 3-1** and click **OK**.

Table 3-1 Creating a code repository

Parameter	Description
Repository Name	Assign a custom name to the code repository, for example, **maven_yml_build**. ● The name starts with a digit, letter, or underscore (_). ● The name can contain periods (.) and hyphens (-). ● The name cannot end with **.git**, **.atom**, or a period (.).
Description	(Optional) Enter additional information to describe the code repository. Max. 2,000 characters.
.gitignore Programming Language	Select the appropriate programming language, such as **Java**, for the **.gitignore** file.
Initial Settings	Select all. ● **Allow project members to access the repository**: Select this option to auto-assign a project manager as the repository administrator, and a developer as a common repository member. Once these roles are added to the project, they will be automatically synced with existing repositories. ● **Generate README**: Select this option to create a README file where you can add details about the project's architecture and purpose, similar to a repository-wide comment. ● **Automatically create check task (free of charge)**: Select this option to auto-generate a code check task for the repository upon creation. The check task will appear in the check task list.
Visibility	Select **Private** to make the repository visible only to its members. These members can access the repository and commit code.

----End

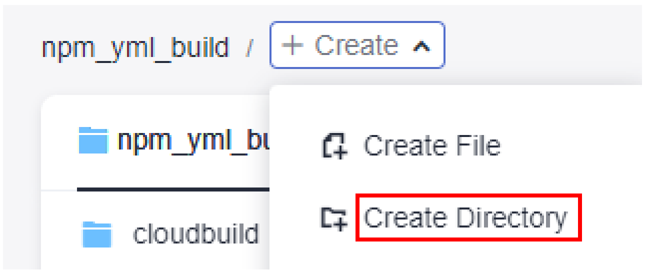
Creating a build.yml File

Step 1 In the navigation pane, choose **Code** > **Repo**.

Step 2 Click the name of the code repository you created (see **Creating a CodeArts Repo Repository**).

Step 3 Click **Create** and select **Create Directory** from the drop-down list, as shown in **Figure 3-1**.

Figure 3-1 Creating a directory



Step 4 Set parameters according to **Table 3-2** and click **OK**.

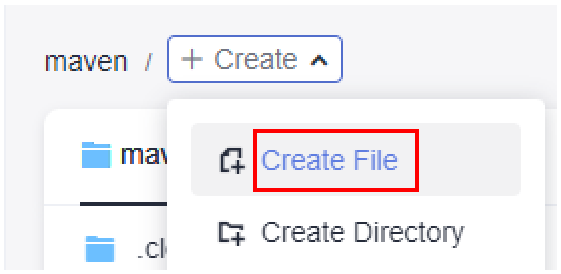
Table 3-2 Creating a directory

Parameter	Description
Directory Name	Assign a custom name to the code directory, for example, **.cloudbuild**. Use 1 to 100 characters, including letters, digits, slashes (/), underscores (_), hyphens (-), and periods (.).
Commit Message	Describe the files within the directory. Use 1 to 2,000 characters.

Step 5 Click the name of the directory created in **Step 4**.

Step 6 Click **Create** and select **Create File** from the drop-down list, as shown in **Figure 3-2**.

Figure 3-2 Creating a file



Step 7 Name the file **build.yml** and copy the following code to the file:

```
# The YAML provided is a default template that can be edited as needed.
---
version: 2.0
steps:
  BUILD:
  - maven:
      image: cloudbuild@maven3.5.3-jdk8-open
      inputs:
        settings:
          public_repos:
            - https://mirrors.huawei.com/maven
        cache: true # Determine whether to enable caching.
        command: mvn package -Dmaven.test.failure.ignore=true -U -e -X -B
  - upload_artifact:
      inputs:
        path: "**/target/*.?ar"
  - build_image:
      inputs:
        organization: codeci_gray # Organization name
        image_name: maven_demo # Image name
        image_tag: 1.0 # Image tag
        dockerfile_path: ./Dockerfile
```

Step 8 Click **OK**.

----End

Creating a Java File

Step 1 Create a directory named **src/main/java** by referring to **Step 4**.

Step 2 Create a file named **HelloWorld.java** in the **src/main/java** directory by referring to **Step 6** and **Step 7**. The code in the file is as follows:

```
/**
 * Hello world
 *
 */

public class HelloWorld {

  public static void main(String[] args) {
    System.out.println("Hello World!");
  }

}
```

Step 3 Click **OK**.

----End

Creating a Dockerfile

Step 1 In the root directory, create a file named **Dockerfile** by following **Step 6** and **Step 7**. The code in the file is as follows:

```
FROM swr.regionid.myhuaweicloud.com/codeci/special_base_image:centos7-base-1.0.2-in
MAINTAINER <devcloud@demo.com>
USER root
RUN mkdir /demo
COPY ./target/server-1.0.jar /demo/app.jar
```

Step 2 Click **OK**.

----End

Creating a pom.xml File

Step 1 In the root directory, create a file named **pom.xml** by following **Step 6** and **Step 7**. The code in the file is as follows:

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-
v4_0_0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>com.huawei.demo</groupId>
  <artifactId>server</artifactId>
  <packaging>jar</packaging>
  <version>1.0</version>
  <name>server</name>
  <url>http://maven.apache.org</url>
  <dependencies>
    <dependency>
        <groupId>junit</groupId>
        <artifactId>junit</artifactId>
        <version>3.8.1</version>
        <scope>test</scope>
    </dependency>
  </dependencies>


  <build>
    <pluginManagement>
      <plugins>
        <plugin>
          <groupId>org.apache.maven.plugins</groupId>
          <artifactId>maven-jar-plugin</artifactId>
          <version>2.6</version>
          <configuration>
            <archive>
              <manifest>
                <addClasspath>true</addClasspath>
              </manifest>
              <manifestEntries>
                <Main-Class>
                  HelloWorld
                </Main-Class>
              </manifestEntries>
            </archive>
          </configuration>
        </plugin>
      </plugins>
    </pluginManagement>
  </build>
</project>
```

Step 2 Click **OK**.

----End

Creating a Build Task

Step 1 In the navigation pane, choose **CICD** > **Build**.

Step 2 Click **Create Task**. On the displayed page, set parameters according to **Table 3-3**. Then, click **Next**.

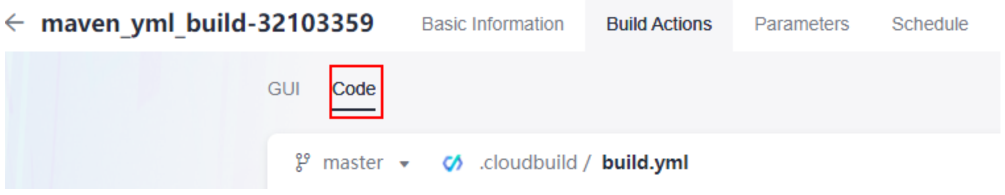
Table 3-3 Basic information

Parameter	Description
Name	Assign a custom name to the build task, for example, **maven_yml_build**.
Code Source	Select **Repo**.
Repository	Select **Repo01**, the code repository created in section **"Creating a CodeArts Repo Repository"**.
Default Branch	Select the branch created in section **"Creating a CodeArts Repo Repository"**. Keep the default value **master**.

Step 3 Select **Blank Template** and click **OK**. The **Build Actions** page is displayed.

Step 4 Click the **Code** tab. Then you can view the imported build script, as shown in **Figure 3-3**.

Figure 3-3 Code tab



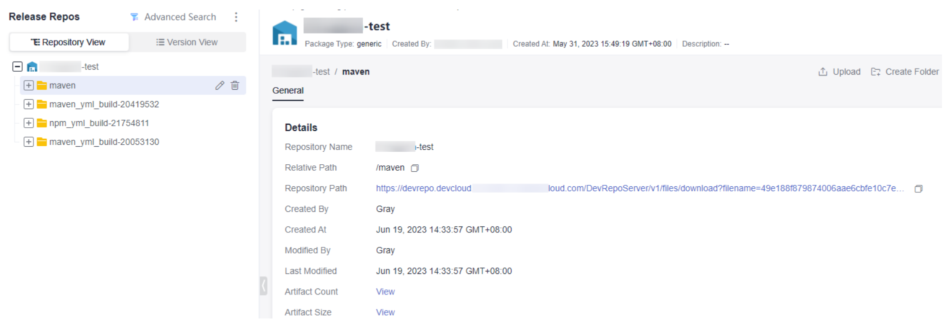
Step 5 Click **Save and Run**.

----End

Viewing and Verifying the Build Results

- Checking the uploaded the software package
  a. In the navigation pane, choose **Artifact** > **Release Repos**.
  b. On the displayed page, find the folder that shares the same name as the build task (the name you specify when **creating a build task**), as shown in **Figure 3-4**. The software package can be found within this folder.

Figure 3-4 Checking the software package



Package Type: generic | Created By: [redacted] | Created At: May 31, 2023 15:49:19 GMT+08:00 | Description: --

Details

Repository Name	[redacted]-test
Relative Path	/maven
Repository Path	https://devrepo.devcloud[redacted]loud.com/DevRepoServer/v1/files/download?filename=49e188f879874006aae6cbfe10c7e...
Created By	Gray
Created At	Jun 19, 2023 14:33:57 GMT+08:00
Modified By	Gray
Last Modified	Jun 19, 2023 14:33:57 GMT+08:00
Artifact Count	View
Artifact Size	View

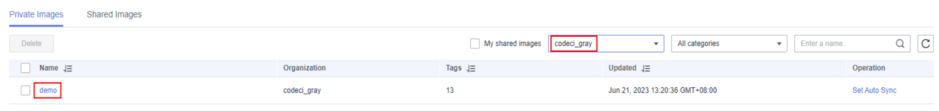
- Checking the pushed image

a. Go to the **SWR** console.

b. In the navigation pane, choose **My Images**. In the search box, select **Organization** as the filter field, and type the organization name (**codeci_gray** is used in this example) you configure when **creating a build.yml file**.

c. In the filtered results, click the image name (**maven_demo** is used in this example) you configure when **creating a build.yml file**, as shown in **Figure 3-5**.

Figure 3-5 Filtering images



Name	Organization	Tags	Updated	Operation
demo	codeci_gray	13	Jun 21, 2023 13:20:36 GMT+08:00	Set Auto Sync

4 Common Practices for Beginners

After enabling CodeArts Build, you can use it in different service scenarios.

This section describes common build practices.

Build on GUI

Practice	Description
Creating a Custom Image via Maven Build (Built-in Executors, GUI)	Use CodeArts Build to build a Maven project, to create a Docker image from the resulting build package and push the image to SWR.