CodeArts

User Guide

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1 Preparations

1.1 Configuring CodeArts Console Permissions

1.1.1 CodeArts Console Permissions

If you need to assign different permissions to employees in your enterprise to access your purchased CodeArts resources, IAM is a good choice for fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you secure access to your resources.

With IAM, you can use your account to create IAM users, and assign permissions to the users to control their access to specific resources. For example, some software developers in your enterprise need to use CodeArts resources but should not be allowed to perform any other high-risk operations, such as buying CodeArts resources. In this scenario, you can create IAM users for the software developers and grant them only the permissions required for viewing CodeArts resources.

If you do not require individual IAM users, skip this chapter.

IAM can be used free of charge. You pay only for the resources in your account. For more information about IAM, see **IAM Service Overview**.

CodeArts Console Permissions

By default, new IAM users do not have any permissions. You need to add them to one or more groups, and then add permissions policies or roles to these groups. The users inherit permissions from their groups and can then perform specified operations on cloud services.

CodeArts is a project-level service deployed and accessed in specific physical regions. To assign permissions to a user group, specify the scope as region-specific projects and select projects for the permissions to take effect. If **All projects** is selected, the permissions will take effect for the user group in all region-specific projects. When accessing CodeArts, the users need to switch to a region where they have been authorized.

CodeArts uses policies for fine-grained authorization.

- Policies: a type of fine-grained authorization mechanism that defines permissions required to perform operations on specific cloud resources under certain conditions. This mechanism allows for more flexible authorization. Policies allow you to meet requirements for more secure access control. For example, you can grant CodeArts users only the permissions for performing specific operations on the CodeArts console.

Table 1-1 lists all system permissions of CodeArts.

Table 1-1 System permissions of CodeArts

Policy	Description	Type
DevCloud Console FullAccess	Full permissions for the CodeArts console. Users with these permissions can buy CodeArts resources. **NOTE** If an IAM user wants to purchase CodeArts, they must also have one of the **BSS Administrator**, **BSS Finance**, and **BSS Operator** roles in addition to this policy.	System-defined policy
DevCloud Console ReadOnlyAccess	Full permissions for the CodeArts console. Users with these permissions can only view the usage of CodeArts resources.	System-defined policy

Table 1-2 lists the common operations supported by each system-defined policy of CodeArts. Select a proper policy as required.

Table 1-2 Common operations and system permissions

Console Operation	DevCloud Console FullAccess	DevCloud Console ReadOnlyAccess	Description
Check CodeArts Req resource usage	√	√	-
Subscribe to CodeArts Req with pay-per-use billing	√	×	Available soon
Unsubscribe from CodeArts Req with pay-per-use billing	√	×	Available soon
View CodeArts Req subscription records	√	√	Available soon
View CodeArts Req resources	√	√	-
Check CodeArts Repo resource usage	√	√	-
Subscribe to CodeArts Repo with pay-per-use billing	√	×	Available soon
Unsubscribe from CodeArts Repo with pay-per-use billing	√	×	Available soon
View CodeArts Repo subscription records	√	√	Available soon
View CodeArts Repo resources	√	√	-
Check CodeArts Check resource usage	√	√	-
Subscribe to CodeArts Check with pay-per-use billing	√	×	Available soon

Console Operation	DevCloud Console FullAccess	DevCloud Console ReadOnlyAccess	Description
Unsubscribe from CodeArts Check with pay-per-use billing	√	×	Available soon
View CodeArts Check subscription records	√	√	Available soon
View CodeArts Check resources	√	√	-
Check CodeArts Build resource usage	√	√	-
Subscribe to CodeArts Build with pay-per-use billing	√	×	Available soon
Unsubscribe from CodeArts Build with pay-per-use billing	√	×	Available soon
View CodeArts Build subscription records	√	√	Available soon
View CodeArts Build resources	√	√	-
Check CodeArts TestPlan – Test Management resource usage	√	√	-
Subscribe to CodeArts TestPlan – Test Management with pay-per-use billing	√	×	Available soon

Console Operation	DevCloud Console FullAccess	DevCloud Console ReadOnlyAccess	Description
Unsubscribe from CodeArts TestPlan – Test Management with pay-per-use billing	√	×	Available soon
View CodeArts TestPlan – Test Management subscription records	√	√	Available soon
View CodeArts TestPlan – Test Management resources	√	√	-
Subscribe to CodeArts TestPlan – APITest with pay-per-use billing	√	×	Available soon
Unsubscribe from CodeArts TestPlan – APITest with pay-per-use billing	√	×	Available soon
View CodeArts TestPlan – APITest subscription records	√	√	Available soon
View CodeArts TestPlan – APITest resources	√	√	-
Check CodeArts TestPlan – APITest resource usage	√	√	-
Check CodeArts Artifact resource usage	√	√	-
Subscribe to CodeArts Artifact with pay-per-use billing	√	×	Available soon

Console Operation	DevCloud Console FullAccess	DevCloud Console ReadOnlyAccess	Description
Unsubscribe from CodeArts Artifact with pay-per-use billing	√	×	Available soon
View CodeArts Artifact subscription records	√	√	Available soon
View CodeArts Artifact resources	√	√	-
Check CodeArts IDE Online resource usage	√	√	Available soon
Subscribe to CodeArts IDE Online with pay-per-use billing	√	×	Available soon
Unsubscribe from CodeArts IDE Online with pay-per-use billing	√	×	Available soon
View CodeArts IDE Online subscription records	√	√	Available soon
View CodeArts IDE Online resources	√	√	Available soon
Check CodeArts Classroom resource usage	√	√	Available soon
Subscribe to CodeArts Classroom with pay-per-use billing	√	×	Available soon
Unsubscribe from CodeArts Classroom with pay-per-use billing	√	×	Available soon

Console Operation	DevCloud Console FullAccess	DevCloud Console ReadOnlyAccess	Description
View CodeArts Classroom subscription records	√	√	Available soon
View CodeArts Classroom resources	√	√	Available soon
Buy the Agile and DevOps Training service	√	×	Available soon
View resources of the Agile and DevOps Training service	√	√	Available soon
Authorize an enterprise account	√	×	-
Cancel the authorization granted to an enterprise account	√	×	-
Accept or reject authorization to an enterprise account	√	×	-
View the authorization list	√	√	-
Purchase a pay-per-use package on the console	√	×	Available soon
View details of a pay-per-use package on the console	√	√	Available soon
Subscribe to a pay-per-use package	√	×	Available soon
Unsubscribe from a pay-per-use package	√	×	Available soon

Console Operation	DevCloud Console FullAccess	DevCloud Console ReadOnlyAccess	Description
View pay-per-use package subscription records	√	√	Available soon
Buy a CodeArts package	√	×	-
Change CodeArts package specifications	√	×	-
View CodeArts package resource details	√	√	-

The service names in permission policies may differ from those on the console. The mapping relationship between these names is shown in **Table 1-3**.

Table 1-3 Service name mapping

Service Name in Permission Policies	Service Name on the Console
DevCloud	CodeArts
ProjectMan	CodeArts Req
CodeHub	CodeArts Repo
CodeCheck	CodeArts Check
CloudBuild	CodeArts Build
CloudDeploy	CodeArts Deploy
CloudArtifact	CodeArts Artifact
CloudTest	CodeArts TestPlan
CloudPipeline	CodeArts Pipeline

1.1.2 Creating and Authorizing a User

You can use **Identity and Access Management** (IAM) to implement fine-grained permissions control for your CodeArts console. With IAM, you can:

- Use your account to create IAM users for employees based on the organizational structure of your enterprise. Each IAM user has their own security credentials for accessing CodeArts resources.

- Assign only the permissions required for users to perform a specific task.

If your account does not require individual IAM users, skip this section.

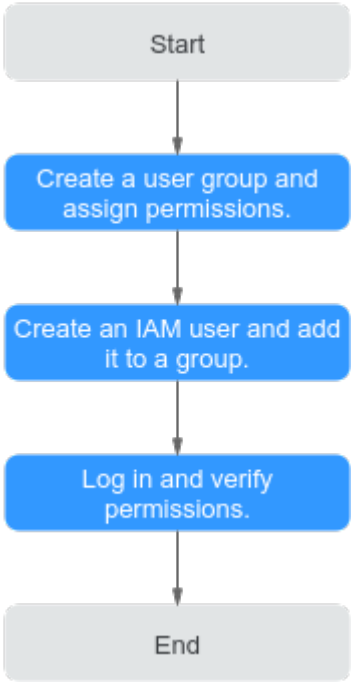
This section describes the procedure for granting permissions (see **Figure 1-1**).

Prerequisites

Learn about the permissions supported by CodeArts and choose permissions according to your requirements. For the permissions of other services, see **System Permissions**.

Process

Figure 1-1 Process for granting CodeArts console permissions



1. **Create a user group and assign permissions**.

   Create a user group on the IAM console, and attach the **DevCloud Console ReadOnlyAccess** policy to the group.

2. **Create an IAM user and add it to a group**.

   Create a user on the IAM console and add the user to the group created in **1**.

3. **Log in** and verify permissions.

   Log in to the console as the created user and switch to the region for which the user is authorized to verify permissions.

   Choose **CodeArts** in **Service List**, and then choose **Enterprise Account Authorization** in the navigation pane. Click **Authorize Enterprise Account**, and enter an account ID. If a message is displayed indicating that you cannot access the page, the **DevCloud Console ReadOnlyAccess** policy has already taken effect.

1.1.3 Custom Policies

You can customize policies to supplement system-defined policies of CodeArts.

You can create custom policies using one of the following methods:

- Visual editor: Select cloud services, actions, resources, and request conditions. You do not need to have knowledge of the policy syntax.
- JSON: Create a policy in the JSON format from scratch or based on an existing policy.

For details, see **Creating a Custom Policy**. This section provides examples of common custom policies in CodeArts.

CodeArts Custom Policy Examples

- Example 1: Authorize users to purchase CodeArts on the console

```
{
   "Version": "1.1",
   "Statement": [
      {
         "Effect": "Allow",
         "Action": [
            "
                devcloud:monthlyPackage:subscribe
             "
         ]
      }
   ]
}
```

- Example 2: Define actions for multiple services in a policy

  A custom policy can contain the actions of multiple services that are of the global or project-level type. The following is an example policy containing actions of multiple services:

```
{
    "Version": "1.1",
    "Statement": [
        {
            "Action": [
                "devcloud:*:listResourceDetail",
                "ecs:cloudServers:delete"
            ],
            "Effect": "Allow"
        }
    ]
}
```

1.2 Purchasing CodeArts

Before using CodeArts, you must buy a CodeArts package. CodeArts uses yearly/monthly billing, and provides the Free, Basic, Pro, and Enterprise editions packages to meet the requirements of different user scales. For details about these packages, see **Package Overview**.

If your CodeArts package does not meet your requirements, you can purchase **resource extensions** and **value-added features**.

Constraints

- You can purchase only one of the Free, Basic, Pro, and Enterprise Editions in the same region. After purchase, you can switch among them through modification as needed.
- Before purchasing a resource extension, purchase the CodeArts Basic or a higher edition package. Resource extensions are unavailable for the Free Edition.
- Before purchasing the CodeCheck enhanced package, purchase the CodeArts Pro or Enterprise Edition. This package is unavailable for the Free and Basic Editions.
- Resource extensions are unavailable in **AF-Johannesburg** and **AF-Cairo**.

Prerequisites

- Before purchasing CodeArts, **sign up for a HUAWEI ID and enable Huawei Cloud services**.
- Ensure that your account has sufficient balance, or the purchase may fail. For details, see **Topping Up an Account**.
- The group of your user account has been assigned the system-defined policy **DevCloud Console FullAccess** and the following fine-grained permissions. For details about how to assign permissions, see **Creating a User Group and Assigning Permissions**.
  - bss:order:view
  - bss:order:pay
  - bss:order:update

Purchasing a CodeArts Package

Step 1 Go to the **Buy CodeArts** page.

Step 2 Configure the CodeArts package parameters.

Table 1-4 Purchasing a CodeArts package

Parameter	Description
Region	The location of a physical data center where CodeArts resides. Select a region near you to ensure the lowest latency possible. The CodeArts package applies only in the region selected during purchase and cannot be used in other regions.
CodeArts Package	Select **Free**, **Basic**, **Pro**, or **Enterprise**.
Users	The number of users included in the CodeArts package. The Free Edition supports 50 users, and other editions support 5 to 9,999 users.
Required Duration	How long you will use the CodeArts package. The Free Edition is only available for 1 month, and other editions are available for 1 month to 3 years.

Parameter	Description
Auto-renew	This parameter is optional. Enable it as needed. Once enabled, the package will be automatically renewed when it expires. • Required duration in months: The package will renew for 1 month each time. The number of renewal times is unlimited. • Required duration in years: The package will renew for 1 year each time. The number of renewal times is unlimited. For details about auto-renewal, see **Auto-Renewal Rules**.

Step 3 If you select the Free Edition, click **Subscribe**.

If you select other editions, click **Next**.

Step 4 Confirm the order content. If you need to modify it, click **Previous**. If the content is correct, click **Pay**.

Step 5 Follow the prompts to complete the payment.

Check the package purchase record back on the CodeArts console.

----End

Purchasing a Resource Extension

Step 1 Go to the **Buy CodeArts Resource Extension** page.

Step 2 Select a region where you have purchased CodeArts Basic or a higher edition.

Step 3 Select the desired product, set parameters, and pay the order.

Check the resource extension purchase record back on the CodeArts console.

----End

The following sections describe the parameters for each resource extension.

Concurrency Extension

Table 1-5 Purchasing a concurrency extension

Parameter	Description
Product Type	Select **Build**, **Check**, **Pipeline**, or **Deploy**.

Parameter	Description
Executor Type	Available when **Product Type** is set to **Build**. Select **Built-in executor** or **Custom executor**. • For details about built-in executors, see **Build Concurrency Extension**. • For details about custom executors, see **Managing Agent Pools**.
Quantity	Available when **Product Type** is set to **Build**. Specify the number of executors you want to purchase. Range: 1–50.
Concurrency Number	Available when **Product Type** is set to **Check**, **Pipeline**, or **Deploy**. Specify the number of concurrent executions you want to extend for the selected service. Range: 1–100.
Required Duration	How long you want to use the concurrency extension. Range: 1 month to 3 years.
Auto-renew	This parameter is optional. Enable it as needed. Once enabled, the package will be automatically renewed when it expires. • Required duration in months: The package will renew for 1 month each time. The number of renewal times is unlimited. • Required duration in years: The package will renew for 1 year each time. The number of renewal times is unlimited. For details about auto-renewal, see **Auto-Renewal Rules**.

Storage Extension

Table 1-6 Purchasing a storage extension

Parameter	Description
Product Type	Select **CodeArts Artifact** or **CodeArts Repo**.
Storage (GB)	Available when **Product Type** is set to **Knowledge**, **CodeArts Artifact**, or **CodeArts Repo**. Specify the storage capacity you want to extend for the selected service. • **Knowledge** (or CodeArts Wiki): 10–1,000 GB • **CodeArts Artifact**: 10–10,000 GB • **CodeArts Repo**: 10–5,000 GB
Required Duration	How long you want to use the storage extension. Range: 1 month to 3 years.

Parameter	Description
Auto-renew	This parameter is optional. Enable it as needed. Once enabled, the package will be automatically renewed when it expires. • Required duration in months: The package will renew for 1 month each time. The number of renewal times is unlimited. • Required duration in years: The package will renew for 1 year each time. The number of renewal times is unlimited. For details about auto-renewal, see **Auto-Renewal Rules**.

Traffic Extension

Table 1-7 Purchasing a traffic extension

Parameter	Description
Product Type	Fixed at **Artifact download**.
Traffic (GB/month)	The amount of traffic for downloading artifacts over the public network. Range: 10–10,000 GB/month.
Required Duration	How long you want to use the traffic extension. Range: 1 month to 3 years.
Auto-renew	This parameter is optional. Enable it as needed. Once enabled, the package will be automatically renewed when it expires. • Required duration in months: The package will renew for 1 month each time. The number of renewal times is unlimited. • Required duration in years: The package will renew for 1 year each time. The number of renewal times is unlimited. For details about auto-renewal, see **Auto-Renewal Rules**.

Execution Duration Extension

Table 1-8 Purchasing an execution duration extension

Parameter	Description
Product Type	Fixed at **Pipeline extensions**.

Parameter	Description
Duration (min/month)	The duration for executing tasks (such as running Shell commands and uploading reports) that consume CodeArts Pipeline's built-in resources. Range: 100–100,000 minutes/month.
Required Duration	How long you want to use the execution duration extension. Range: 1 month to 3 years.
Auto-renew	This parameter is optional. Enable it as needed. Once enabled, the package will be automatically renewed when it expires. • Required duration in months: The package will renew for 1 month each time. The number of renewal times is unlimited. • Required duration in years: The package will renew for 1 year each time. The number of renewal times is unlimited. For details about auto-renewal, see **Auto-Renewal Rules**.

Purchasing a Value-Added Feature

Step 1 Go to the **Buy CodeArts Value-Added Feature** page.

Step 2 Configure the value-added feature parameters.

Step 3 Click **Next**.

Step 4 Confirm the order content. If you need to modify it, click **Previous**. If the content is correct, click **Pay**.

Step 5 Follow the prompts to complete the payment.

Check the value-added feature purchase record back on the CodeArts console.

----End

Helpful Links

- **Why Am I Seeing Message "Policy doesn't allow bss:order:update to be performed."?**
- **Where Can I Check the Usage Details of My CodeArts Package?**
- **How Do I Modify or Unsubscribe from My CodeArts Package?**

1.3 Creating a CodeArts Project

A project consists of a series of coordinated and controlled activities in a certain process. The objective of a project is to meet specific requirements under specific time and resource restrictions.

In CodeArts, projects are the basis for using various services, allowing you to manage requirements, code, and artifacts, check and build code, and deploy and test applications.

For more information about projects, see **Project**.

Constraints

- Each account can create a maximum of 100,000 projects (including programs) in a single region.
- Each IAM user in an account can create a maximum of 10,000 projects (including programs) in a single region.
- IPD projects can be created only in the **AP-Singapore** region.

Procedure

Step	Description
Step 1: Set Project Creators	To create projects, IAM users must be granted the **project creator** permission by an administrator. To authorize IAM users, the administrator must have the **Tenant Administrator** role. For details about how to grant the **Tenant Administrator** role to a user, see **Creating a User Group and Assigning Permissions**.
Step 2: Create a Project	Create a project. Ensure that you have the **Project Creator** permission.
Step 3: Edit a Project	Users modify the project's basic information and menus as needed. To do this, they must have the **DevUC** > **project** > **edit** permission in the CodeArts project. For details, see **How Do I Check and Obtain Required Project Permissions?**

Step 1: Set Project Creators

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Choose **General** > **Project Creators**.

Two options are available:

- **All members can create projects**: All IAM users in your account can create projects.

- **Set some members to be able to create projects**: Toggle on or off the **Status** switch for each IAM user. IAM users with the switch in the state cannot create projects.

Step 4 Configure permissions for each user as required. When a success message shows up, the setting is complete.

----End

Step 2: Create a Project

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click  , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 On the CodeArts homepage, click **Create** > **Create Project** and select a template.

If you have not joined any project yet, the message "Start by creating a project or program." is displayed. Select a template on the **Project** tab.

Step 3 Set the project information and click **OK**.

Table 1-9 Creating a project

Parameter	Description
Work Item Template	Available when you select the **Scrum** template. Select a Scrum project work item template. For details about work item templates, see **Configuring Common Settings for a Scrum Project**.
Name	The name of the CodeArts project. Enter 1–128 characters. Letters, digits, and special characters are supported. The name must be unique.
Work Configuration Data	Available when the **IPD-System Device**, **IPD-Self-Operated Software/Cloud Service**, or **IPD-Standalone Software** template is selected. Determine whether to reuse the work configuration data of another project of the same type. The data includes all settings except **Import/Export** and **Basic Configuration** > **Work Configuration Data**. This parameter is optional. Configure it as needed. For details about work configuration data, see: • **Configuring Common Settings for an IPD-System Device Project** • **Configuring Common Settings for an IPD-Standalone Software Project**

Parameter	Description
Code	The code of the CodeArts project. Enter a maximum of 200 characters. Digits, letters, hyphens (-), and underscores (_) are supported. This parameter is optional. Configure it as needed.
Description	Describe the CodeArts project. Enter a maximum of 1,024 characters. This parameter is optional. Configure it as needed.

After the project is created, the Req service page is automatically displayed.

----End

Step 3: Edit a Project

Table 1-10 Editing a project

Operation	Procedure
Modifying basic project information	1. Go to the target project, and choose **Settings** > **General** > **Basic Information** from the navigation pane. 2. Modify the project name, code, and description as needed, and click **Save**. The modified information is displayed.
Transferring the project creator	1. Go to the target project, and choose **Settings** > **General** > **Basic Information** from the navigation pane. 2. Select the member to transfer the project to from the **Creator** drop-down list, and click **Save**. The new creator is displayed.
Archiving a project	**WARNING** Archived projects are read-only to all members. Members cannot add, delete, or modify work items in these projects. If they need to do so, unarchive the projects first. Scrum and Kanban projects can be archived. 1. Go to the target project, and choose **Settings** > **General** > **Basic Information** from the navigation pane. 2. Click **Archive**. Then the button changes to **Unarchive**.

Operation	Procedure
Deleting a project	**WARNING** • Deleting a project will also delete its code repositories, check tasks, build tasks, and test cases. • The deletion cannot be undone. Exercise caution when performing this operation. 1. Go to the target project, and choose **Settings** > **General** > **Basic Information** from the navigation pane. 2. Click **Delete Project**, enter the project name, and click **Delete**. The deleted project is no longer displayed on the homepage.
Managing service menus	1. Go to the target project, and choose **Settings** > **General** > **Services** from the navigation pane. 2. Select the menus to display. Refresh the page. The updated menus are displayed in the navigation pane.

Helpful Links

- For details about CodeArts-based project development, see **Developing an E-mall Project with CodeArts**

1.4 Creating a CodeArts Program

A program is a group of interrelated projects/subprograms that are placed together for a common goal. The projects/subprograms collaborate with each other and are centrally managed to achieve more benefits.

Constraints

- IPD-system device and IPD-standalone software programs are supported. To use programs, purchase CodeArts Pro or Enterprise Edition.
- A program can only contain projects and lower-level programs of the same type.
- A program can contain up to five levels.
- A program can contain up to 500 subnodes.
- Programs can be created only in the **AP-Singapore** region.

Procedure

Step	Description
Step 1: Set Program Permissions	To create programs, IAM users must be granted the **program creation** permission by an administrator. To authorize IAM users, the administrator must have the **Tenant Administrator** role. For details about how to grant the **Tenant Administrator** role to a user, see **Creating a User Group and Assigning Permissions**.
Step 2: Create a Program	Create a program. Ensure that you have the **program creation** permission.
Step 3: Manage Project Levels	Manage the program levels. Ensure that you have the **program maintenance** permission.

Step 1: Set Program Permissions

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Choose **General** > **Program Permissions**.

Two options are available:

- **All members can create and maintain programs**: All IAM users in your account can create programs and maintain program levels.
- **Only specified members can create or maintain programs**: Only IAM users for whom you have enabled **Create** and **Maintain** can perform the relevant operations.

Step 4 Configure permissions for users as needed.

----End

Step 2: Create a Program

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 On the CodeArts homepage, click **Create** > **Create Program** and select a template.

If you have not joined any project yet, the message "Start by creating a project or program." is displayed. Select a template on the **Programs** tab.

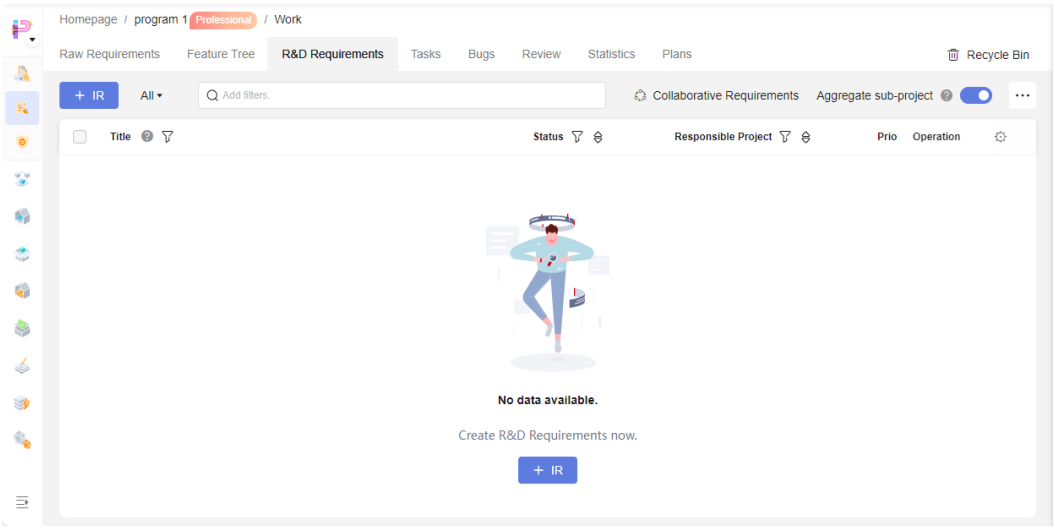
Step 3 Set the program information and click **OK**.

Table 1-11 Creating a program

Parameter	Description
Name	The name of the CodeArts program. Enter 1–128 characters. Letters, digits, and special characters are supported. The name must be unique.
Work Configuration Data	Determine whether to reuse the work configuration data of a project of the same type. The data does not include the settings in **Import/Export** and **Basic Configuration** > **Work Configuration Data**. This parameter is optional. Configure it as needed. For more information about work configuration data, see: • **Configuring Common Settings for an IPD-System Device Project** • **Configuring Common Settings for an IPD-Standalone Software Project**
Code	The code of the CodeArts program. Enter a maximum of 200 characters. Digits, letters, hyphens (-), and underscores (_) are supported. This parameter is optional. Configure it as needed.
Description	Describe the CodeArts program. Enter a maximum of 1,024 characters. This parameter is optional. Configure it as needed.

After the program is created, the Req service page is automatically displayed.

Figure 1-2 Program created



----End

Step 3: Manage Project Levels

The following procedure is only for managing program levels. To modify basic program information or delete a program, see **Step 3: Edit a Project**.

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 On the **All** tab, click to switch to the list mode.

Step 3 Locate the target program or project in the list, click ••• in the **Operation** column, and perform the operations listed in the table below as needed.

Figure 1-3 Managing program levels

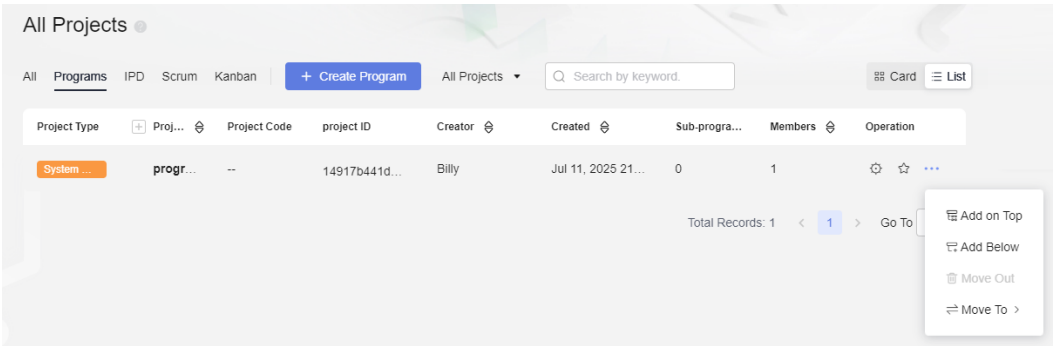


Table 1-12 Managing program levels

Operation	Procedure
Adding a project/ program on top	Click **Add on Top**. In the displayed dialog box, select a program you want to make as a parent, and click **OK**. After the operation is successful, the list is refreshed. The program is displayed above the selected program.
Adding a project/ program below	Click **Add Below**. In the displayed dialog box, select a program you want to make as a child, and click **OK**. After the operation is successful, the list is refreshed. The program is displayed under the selected project or program.
Moving a project/ program out	Click **Move Out**. Then click **OK**. After the operation is successful, the list is refreshed. The project or program as well as the program's lower-level projects and programs are no longer displayed in the original program. For example, assume program B is under program A and program C is under program B. When program B is removed from program A, program C will also be removed but will still be under program B.

----End

Helpful Links

- After configuring a program, you can manage requirements in it. For details, see **Managing Program Requirements**.

1.5 Adding Project Members

1.5.1 Introduction

CodeArts allows you to add members to a project using multiple methods.

Table 1-13 Add project members

Method	Scenario
Importing IAM Users from Your Account	You can create multiple IAM users in your account, and then add them as project members in CodeArts.
Importing Users from Another Project	If your account has multiple projects, you can import members of one project to another.
Inviting Users from Another Account	If your team collaborates with another team on a project, you can use either team's account to create a project, and invite users from the other team to join the project. Ensure that both teams have HUAWEI IDs.

Method	Scenario
Importing Users from an Agency	When your enterprise needs to manage and access resources in multiple accounts, you can create users using IAM Identity Center, and add these users as CodeArts project members.
Inviting Users by Link	Members in a CodeArts project can invite users by sharing a project QR code or link. The invited users apply to join the project through the QR code or link. They become project members after their applications are approved by the project administrator.

1.5.2 Importing IAM Users from Your Account

You can create multiple IAM users in your account, and then add them as project members in CodeArts.

Procedure

Step	Description
Step 1: Create IAM Users	Create IAM users in your account. Ensure that you have the **Tenant Administrator** role. If you already have IAM users, skip this step. For details about how to grant the **Tenant Administrator** role to a user, see **Creating a User Group and Assigning Permissions**.
Step 2: Import IAM Users from Your Account	Add IAM users as project members. Ensure that you have the **DevUC** > **project-role** > **userconfig** permission. **How Do I Check and Obtain Required Project Permissions?**
Step 3: Manage Project Members	Change a member's role or remove a user as needed. Ensure that you have the **DevUC** > **project-role** > **userconfig** permission.

Step 1: Create IAM Users

Step 1 Log in to the **Log in the IAM console**.

Step 2 Choose **Users** from the navigation pane, and click **Create User** in the upper right.

Step 3 Configure the user information. For details about the parameters, see **Creating an IAM User**.

----End

Step 2: Import IAM Users from Your Account

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 Choose **Settings** > **Members** from the navigation pane. The member management page is displayed.

Step 4 Click the **Member View** tab, click **Add Members**, and select **From My Account**.

Step 5 In the displayed dialog box, select the target IAM users, and click **Next**.

Step 6 Configure roles and member groups, and click **Save**.

Figure 1-4 Adding users from your account

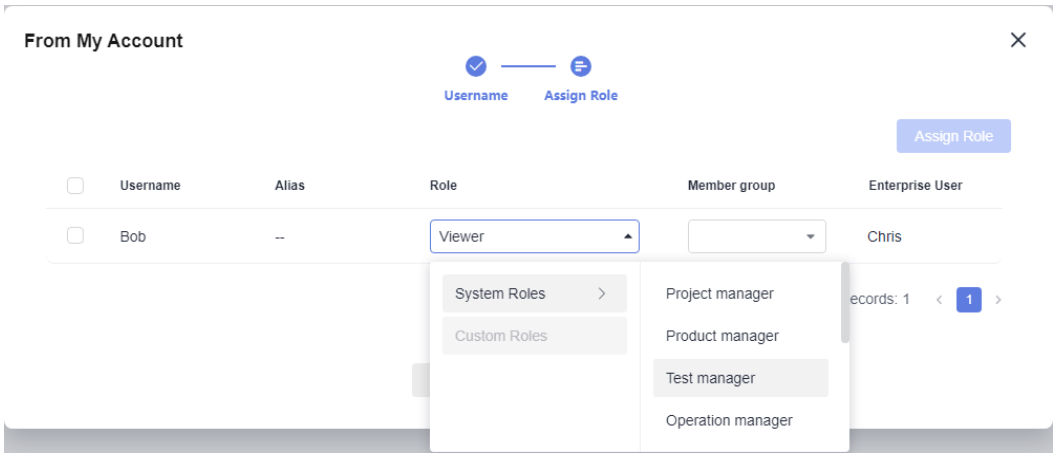


Table 1-14 Setting a role

Parameter	Description
Role	The role of a user in the CodeArts project. The default role is **Viewer**. You can select a system role or a custom role. • System roles include project manager, product manager, test manager, system engineer, committer, developer, tester, participant, and viewer. For details about the system roles in CodeArts projects, see **built-in project roles in CodeArts**. • For details about how to create a custom role, see **Managing Custom Project Roles**.

Parameter	Description
Member Groups	The group to which the user belongs in CodeArts. For details about how to create a member group, see **Step 3: Manage Project Members**. This parameter is optional. Configure it as needed.

The new members are displayed in the list.

----End

Step 3: Manage Project Members

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 Choose **Settings** > **Members** from the navigation pane. The member management page is displayed.

Step 4 Perform the operations listed in the table below as needed.

Figure 1-5 Managing project members

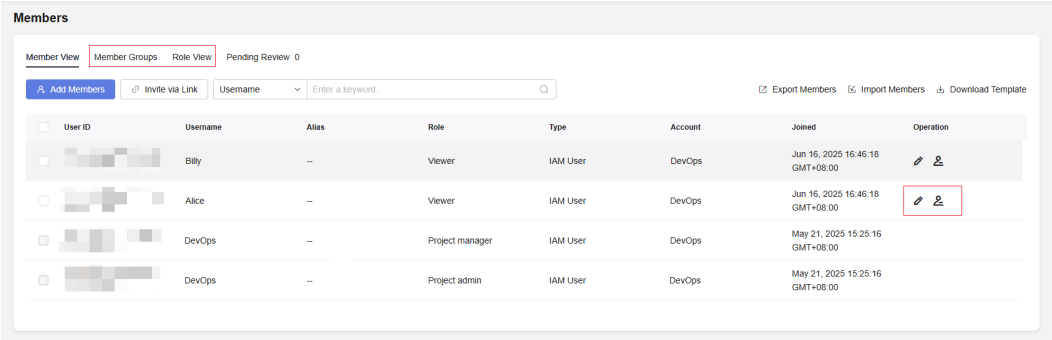


Table 1-15 Managing project members

Operation	Procedure
Changing member roles	• Changing the role of a single member 1. On the **Member View** tab, locate the target member and click in the **Operation** column. 2. Select the desired role and click **OK**. The new role is displayed in the list. • Changing the roles of multiple members 1. On the **Member View** tab, select the members you want to modify, and click **Edit** at the bottom of the page. 2. In the displayed dialog box, confirm the operation and click **OK**. 3. Select a role and click **OK**. The new role of the modified members is displayed.
Removing members	• Removing a single member 1. On the **Member View** tab, locate the target member and click in the **Operation** column. 2. In the displayed dialog box, confirm the operation and click **OK**. The removed member is no longer displayed in the list. • Removing multiple members 1. On the **Member View** tab, select the members you want to remove, and click **Remove** at the bottom of the page. 2. In the displayed dialog box, confirm the operation and click **OK**. **NOTE** This operation only removes the users from the project. To delete the users, see **Deleting an IAM User**.
Exporting members	On the **Member View** tab, click **Export Members**.

Operation	Procedure
Grouping members	1. On the **Member Groups** tab, click **Create Member Group**. 2. Configure the following information and click **Save**. – **Member Group Name**: Enter a maximum of 30 characters. Letters, digits, and underscores (_) are supported. – **Description**: Enter a maximum of 256 characters. Letters, digits, spaces, commas (,), periods (.), parentheses (()), and brackets ([]) are supported. The new member group is displayed in the list. 3. Click in the **Operation** column. 4. On the **Members** tab, click **Add Member**. 5. Select project members and click **Save**.
Viewing project members by role	On the **Role View** tab, click a role name. The members with this role in the project are displayed.

----End

Helpful Links

- **Why Can't an IAM User See Any CodeArts Projects After Login?**
- **How Do I Transfer Permissions as a Project Administrator and Leave the Project?**
- **Will the Tasks Created by a Project Member Be Deleted After the Member Leaves the Project?**
- **Will a New User with the Same Name as a Deleted User Inherit Their Permissions and Tasks?**

1.5.3 Importing Users from Another Project

If your account has multiple projects, you can import members of one project to another.

This section uses projects X and Y as an example. You can add the members of project X to project Y.

Procedure

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

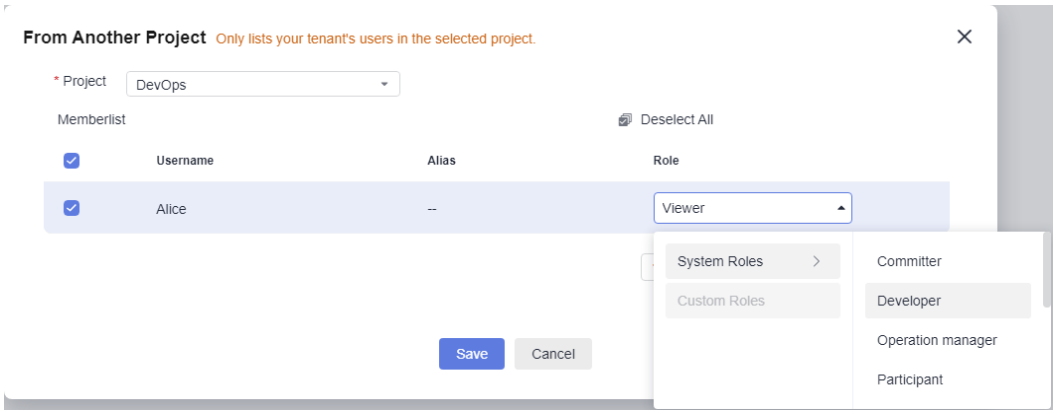
Step 3 In the navigation pane, choose **Settings** > **Members**.

Step 4 Click the **Member View** tab, click **Add Members**, and select **From Another Project**.

Step 5 In the displayed dialog box, select a project from the **Project** drop-down list. Members of the selected project are displayed.

Step 6 Select users, select a role from the **Role** drop-down list for each user, and click **Save**.

Figure 1-6 Importing users from another project



The new members are displayed in the list.

----End

Helpful Links

- For details about the system roles in CodeArts projects, see **built-in project roles in CodeArts**.
- For details about how to edit and delete members, see **Step 3: Manage Project Members**.
- For details about how to configure permissions for each role in CodeArts, see **Modifying Project Role Permissions**.

1.5.4 Inviting Users from Another Account

If your team collaborates with another team on a project, you can use either team's account to create a project, and invite users from the other team to join the project. Ensure that both teams have HUAWEI IDs.

- There are two accounts: A and B. Account A created CodeArts project X and wants to invite account B's user to join project X.
- The operations in this section will be performed on the CodeArts console and homepage.
  - CodeArts console: Account A authorizes account B. Account B then accepts the authorization.

  - CodeArts homepage: Account A goes to project X and adds a user of account B.
- CodeArts allows you to invite the following users from other accounts to join your project:
  - IAM users: created in IAM
  - IAM Identity Center users: created in **IAM Identity Center**

Constraints

The authorized account (B) and authorizing account (A) must be from the same site.

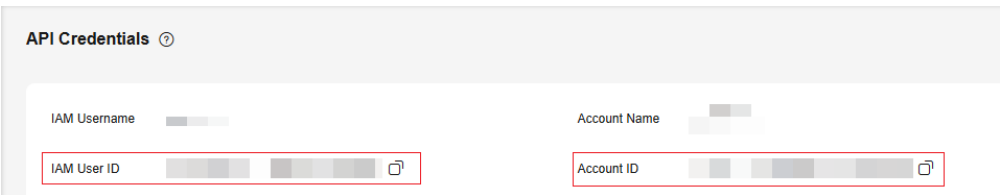
Procedure

Step	Description
Preparations	A user of account B obtains their account ID and IAM user ID.
Step 1: Authorize an Enterprise Account on the CodeArts Console	A user of account A authorizes account B. The user must be granted the **Tenant Administrator** role or the **DevCloud Console FullAccess** policy. For details about how to grant the **Tenant Administrator** role or the **DevCloud Console FullAccess** policy to a user, see **Creating a User Group and Assigning Permissions**.
Step 2: Accept an Authorization from Another Enterprise Account on the CodeArts Console	A user of account B accepts the authorization of account A. The user must be granted the **Tenant Administrator** role or the **DevCloud Console FullAccess** policy.
Step 3: Invite a User from Another Enterprise to a CodeArts Project	A user of account A adds account B's user to project X. Account A's user must have the **DevUC** > **project-role** > **userconfig** permission. For details, see **How Do I Check and Obtain Required Project Permissions?**

Preparations

- Obtain the account ID and IAM user ID of the user you want to invite. For details, see **API Credentials**.

Figure 1-7 API Credentials



- Before you can invite an IAM Identity Center user of account B to join your project, account B needs to perform the following operations:

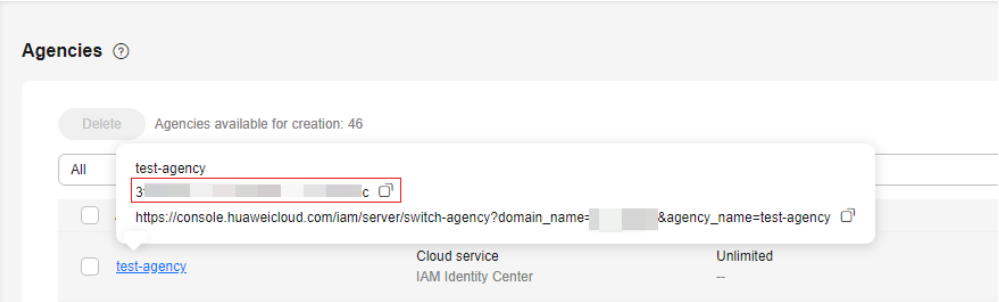
  a. **Create a user**

  b. **Create a permission set**

  c. **Associate the user and permission set with the account**

  After completing the preceding operations, account B goes to the IAM console. On the **Agencies** page, account B will see an agency whose delegated party is the **IAM Identity Center** cloud service. Account B obtains the agency ID.

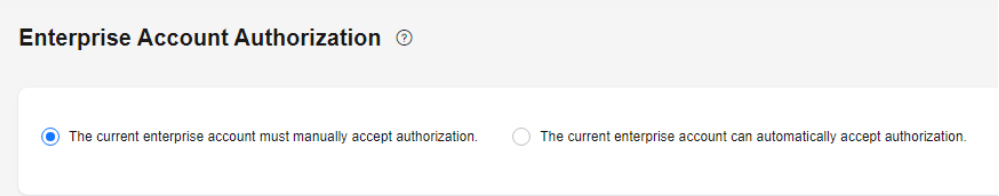
  Figure 1-8 Obtaining an agency ID

- Invited accounts can choose to accept authorizations automatically or manually on the **Enterprise Account Authorization** page of the CodeArts console.

  This section describes how to manually accept an authorization. To accept authorizations automatically, skip **Step 2: Accept an Authorization from Another Enterprise Account on the CodeArts Console**.

  Figure 1-9 Authorization mode

Step 1: Authorize an Enterprise Account on the CodeArts Console

This step is performed by account A.

Step 1 Log in to the **CodeArts console**, click , and select a region.

Step 2 In the navigation pane, choose **Enterprise Account Authorization**.

Step 3 Click the **Granted Authorizations** tab, and then click **Authorize Enterprise Account**.

Step 4 In the displayed dialog box, enter the account ID obtained in **Preparations**, and click **Authorize**.

A new record is displayed in the list.

Figure 1-10 Inviting an enterprise account

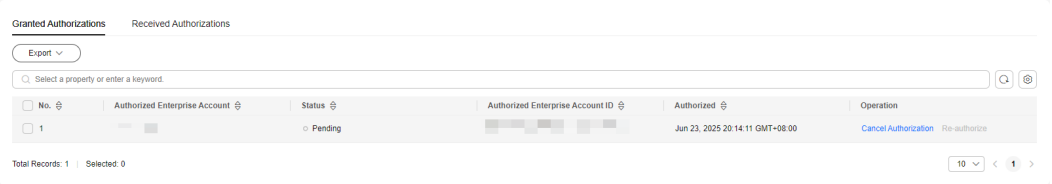


Table 1-16 Authorization status description

Status	Description
Pending	The authorization is neither accepted nor rejected and is pending processing by the authorized account. After the operation described in **Step 2: Accept an Authorization from Another Enterprise Account on the CodeArts Console** is completed, the status changes to **Enabled** or **Rejected**.
Enabled	The authorization has been accepted. To revoke the authorization, click **Cancel Authorization**. Then the invitation is removed from the list. This operation cannot be undone.
Rejected	The authorization has been rejected. To invite the account again, click **Re-authorize**. Then the status changes to **Pending**.

----End

Step 2: Accept an Authorization from Another Enterprise Account on the CodeArts Console

This step is performed by account B.

Step 1 Log in to the **CodeArts console**, click , and select a region.

Step 2 In the navigation pane, choose **Enterprise Account Authorization**.

Step 3 Click the **Received Authorizations** tab. The received authorization is in the **Pending** state.

Step 4 Accept or reject the authorization.

- **Accept**: In the displayed dialog box, click **OK**. The status changes to **Enabled**.
  To delete the invitation, click **Remove**. This operation cannot be undone.
- **Reject**: In the displayed dialog box, click **OK**. The status changes to **Rejected**.

----End

Step 3: Invite a User from Another Enterprise to a CodeArts Project

This step is performed by account A.

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **Members**.

Step 4 Click the **Member View** tab, and choose **Add Members** > **From Another Account**.

Step 5 In the displayed dialog box, select the account of the users to invite, specify the invitation mode, enter the ID, and click **Invite**.

- **User ID**: For inviting IAM users. Enter the IAM user ID obtained in **Preparations**.
- **Agency ID**: For inviting IAM Identity Center users. Enter the agency ID obtained in **Preparations**.

----End

Helpful Links

- For details about the system roles in CodeArts projects, see **built-in project roles in CodeArts**.
- For details about how to edit and delete members, see **Step 3: Manage Project Members**.
- For details about how to configure permissions for each role in CodeArts, see **Modifying Project Role Permissions**.

1.5.5 Importing Users from an Agency

When your enterprise needs to manage and access resources in multiple accounts, you can create users using IAM Identity Center, and add these users as CodeArts project members.

Procedure

Step	Description
Step 1: Create an Agency	Create an agency in IAM Identity Center.
Step 2: Import Users from the Agency	Import users from the agency as project members. Ensure that you have the **DevUC** > **project-role** > **userconfig** permission. **How Do I Check and Obtain Required Project Permissions?**

Step 1: Create an Agency

Step 1 **Create a user**.

Step 2 **Create a permission set**.

Step 3 **Associate the user and permission set with your account**.

----End

Step 2: Import Users from the Agency

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

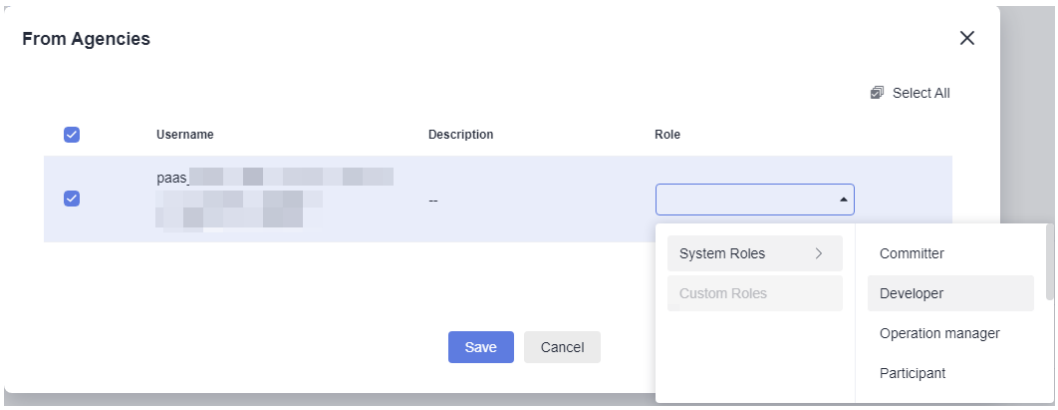
Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **Members**.

Step 4 Click the **Member View** tab, choose **Add Members**, and select **From Agencies**.

Step 5 In the displayed dialog box, select users, specify a role for each user, and click **Save**.

Figure 1-11 Importing users from an agency



The new members are displayed in the list.

----End

Helpful Links

- For details about the system roles in CodeArts projects, see **built-in project roles in CodeArts**.
- For details about how to edit and delete members, see **Step 3: Manage Project Members**.

- For details about how to configure permissions for each role in CodeArts, see **Modifying Project Role Permissions**.

1.5.6 Inviting Users by Link

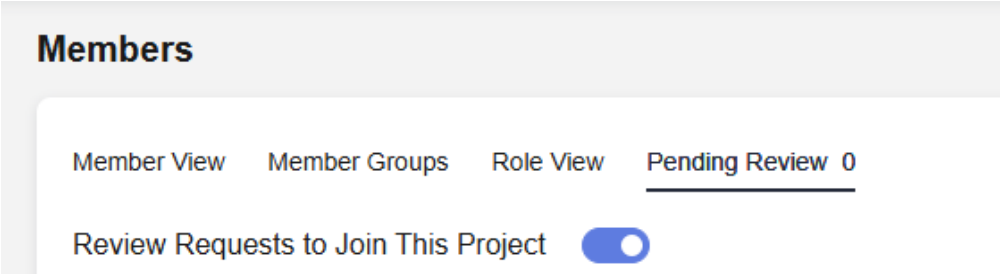
Members in a CodeArts project can invite users by sharing a project QR code or link. The invited users apply to join the project through the QR code or link. They become project members after their applications are approved by the project administrator.

Prerequisites

- The invited users can log in to Huawei Cloud.
- If the invited users belong to other accounts, the accounts must have accepted your authorization. For details, see **Inviting Users from Another Account**.
- The project administrator can enable or disable **Review Requests to Join This Project** on the **Members** > **Pending Review** page.

  In this section, this option is enabled. If it is disabled, skip **Step 3: Review an Application for Joining a Project**.

Figure 1-12 Review settings



Procedure

Step	Description
Step 1: Share an Invitation QR Code or Link	A project member shares the invitation QR code or link with users they want to invite.
Step 2: Apply to Join a Project	The invited users scan the QR code or open the link to apply to join the project.
Step 3: Review an Application for Joining a Project	Another project member reviews the applications. The member must have the **DevUC** > **project-role** > **userconfig** permission. **How Do I Check and Obtain Required Project Permissions?**

Step 1: Share an Invitation QR Code or Link

This operation is performed by an inviter.

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

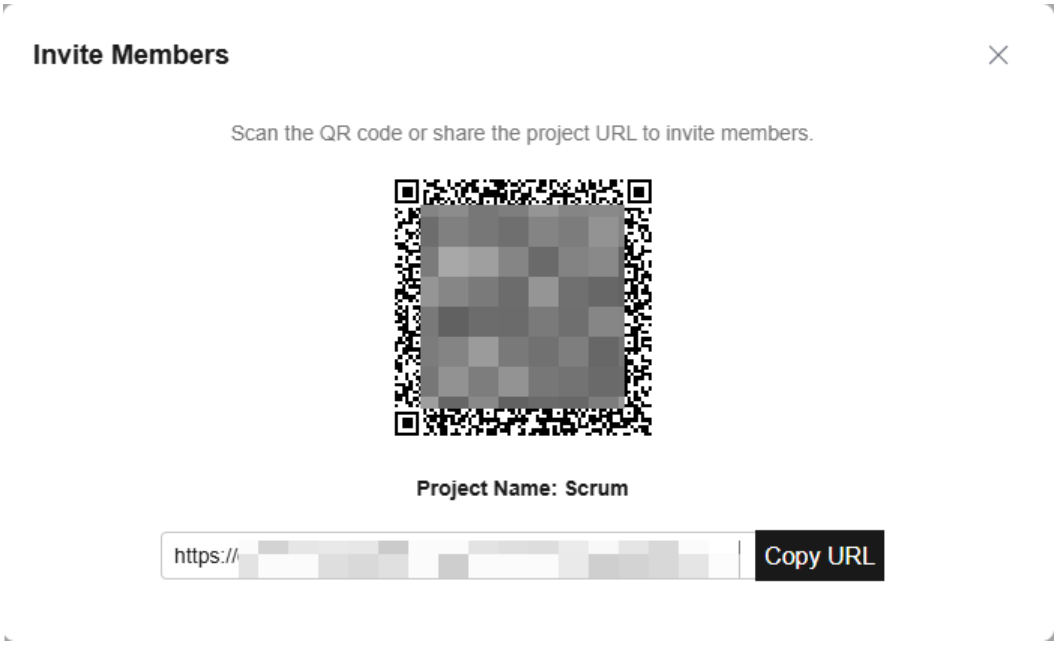
Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **Members**.

Step 4 Click the **Member View** tab, and then click **Invite via Link**.

Step 5 Share the QR code or link in the dialog box with the users you want to invite.

Figure 1-13 Inviting members



----End

Step 2: Apply to Join a Project

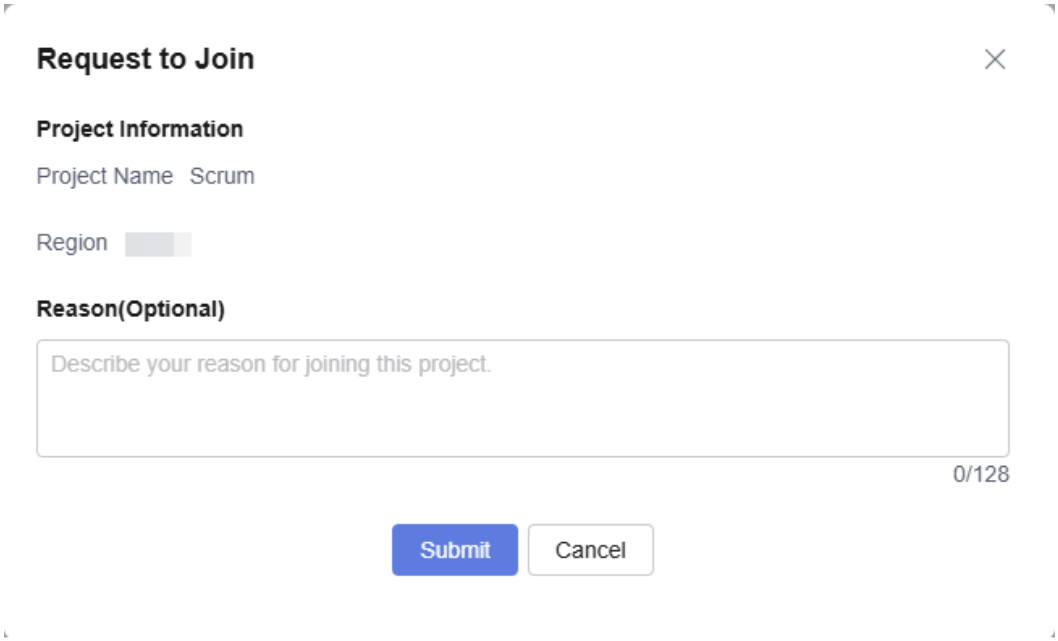
This operation is performed by an invitee.

Step 1 Visit the shared link or scan the QR code.

Step 2 On the displayed web page, enter your login information to log in to CodeArts.

Step 3 Enter the reason for joining the project (optional, 1 to 128 characters) and click **Submit**.

Figure 1-14 Joining a project



After the application is submitted, the message "The application has been submitted and is waiting for approval." is displayed.

The page is updated as follows according to the review result in **Step 3: Review an Application for Joining a Project**:

- If the application is approved, you become a member of the project, and the project page is automatically displayed.
- If the application is rejected, refresh the page, and you can try again.

----End

Step 3: Review an Application for Joining a Project

This operation is performed by an inviter.

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name.

Step 3 In the navigation pane, choose **Settings** > **Members**.

Step 4 Click the **Pending Review** tab. The application list is displayed.

Step 5 Click **Approve** or **Reject**.

Approved users are displayed on the **Member View** tab.

----End

Helpful Links

- For details about the system roles in CodeArts projects, see **built-in project roles in CodeArts**.
- For details about how to edit and delete members, see **Step 3: Manage Project Members**.
- For details about how to configure permissions for each role in CodeArts, see **Modifying Project Role Permissions**.

1.6 Managing CodeArts Project Role Permissions

1.6.1 Modifying Project Role Permissions

CodeArts provides role-based permissions management.

New users do not have any permissions assigned by default. The project administrator needs to first add them to the project and then assigns them roles.

After authorization, the users can perform specified operations on cloud services based on the permissions they have been assigned.

Constraints

- The permissions of the **project administrator** role cannot be edited.
- The general (DevUC) permissions of the **project manager** role cannot be edited.

Prerequisites

You must have the **DevUC** > **project-role** > **userconfig** permission. For details, see **How Do I Check and Obtain Required Project Permissions?**

Modifying Permissions of a System Role

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 Choose **Settings** > **Permissions** from the navigation pane. The permissions management page is displayed.

Step 4 In the role list, click the name of a desired role.

Step 5 Click a service name. The role's permissions for the service are displayed.

Step 6 Click **Edit**, modify the permissions, and click **Save**.

Check the updated permissions.

----End

Helpful Links

- For details about the system roles in CodeArts projects, see **built-in project roles in CodeArts**.
- For details about the default permissions of system roles for each service, see:
  - **Default Role Permissions for CodeArts Req**
  - **Default Role Permissions for CodeArts Repo**
  - **Default Role Permissions for CodeArts Check**
  - **Default Role Permissions for CodeArts Build**
  - **Default Role Permissions for Release Repos**
  - **Default Role Permissions for Self-hosted Repos**
  - **Default Role Permissions for CodeArts Deploy**
  - **Default Role Permissions for CodeArts Pipeline**
  - **Default Role Permissions for CodeArts TestPlan**

1.6.2 Managing Custom Project Roles

If the built-in **system roles** of CodeArts do not meet your requirements, you can create custom ones with necessary permissions.

Constraints

You can create up to 500 custom roles for each project.

Prerequisites

You must have the **DevUC** > **project-role** > **userconfig** permission. For details, see **How Do I Check and Obtain Required Project Permissions?**

Creating a Role

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name.

Step 3 Choose **Settings** > **Permissions** from the navigation pane. The permissions management page is displayed.

Step 4 Click **Create Role**. In the displayed dialog box, configure the role information and click **OK**.

Figure 1-15 Creating a role

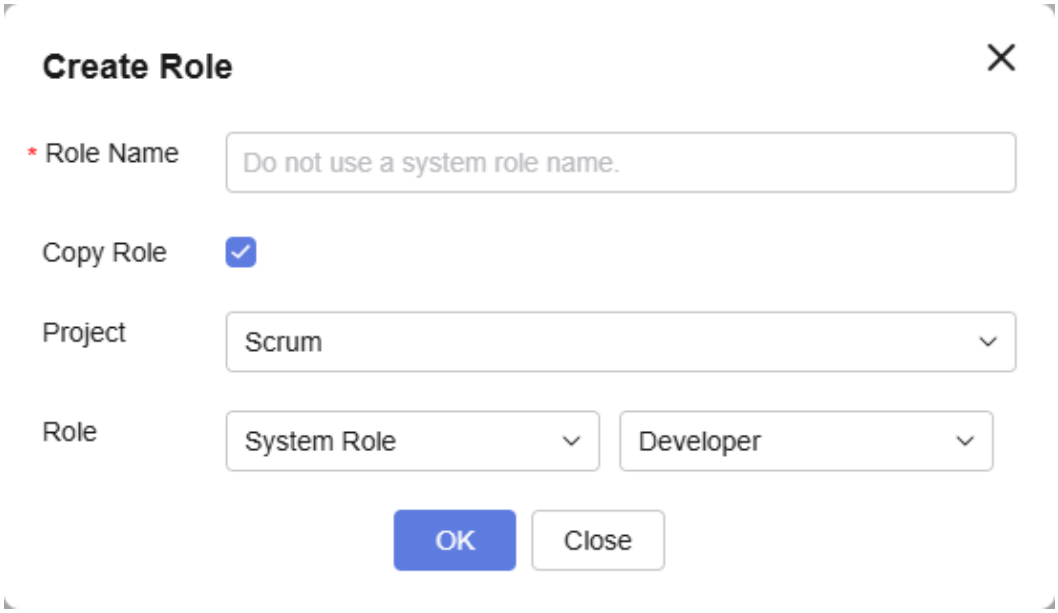


Table 1-17 Creating a role

Parameter	Description
Role Name	The name of the custom role. Do not use a system role name. Enter a maximum of 30 characters. Letters, digits, spaces, and the following special characters are supported: () [] - _ ~. & <> {}
Copy Role	Copy permissions from an existing role in a project of the same type. This parameter is optional. Enable it as needed. Once enabled, select a project and role from the drop-down lists. • **Project**: Select a project of the same type as your current project. • **Role**: Select any role in the project from which you want to copy permissions.

Check the new role under **Custom Role**.

----End

Managing Custom Roles

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name.

Step 3 Choose **Settings** > **Permissions** from the navigation pane. The permissions management page is displayed.

Step 4 Perform the operations listed in the table below as needed.

Operation	Description
Editing a role's permissions	1. Click a role name and service name. The role's permissions for the service are displayed. 2. Click **Edit**, modify the permissions, and click **Save**. Check the updated permissions.
Modifying a role name	1. Click ⋮ next to a role name and choose **Modify Role Name**. 2. Enter a new name and click **OK**. The updated role name is displayed.
Deleting a role	**WARNING** The deletion cannot be undone. Exercise caution when performing this operation. 1. Click ⋮ next to a role name and choose **Delete Role**. 2. Enter **YES** and click **OK**. The role is no longer displayed on the page.

----End

1.6.3 Managing Project Permission Templates

In CodeArts, you can simplify setting up project role permissions by reusing a permission template.

Constraints

- Each account can create up to 20 permission templates in a single region.
- Permission templates can be reused only between projects of the same type.
- Changes to a permission template will not affect the projects that use the template.

Creating a Permission Template

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name.

Step 3 In the navigation pane, choose **Settings** > **Permissions**.

Step 4 Click **Save as Template**.

Step 5 In the displayed dialog box, enter a template name and description, and click **OK**.

Figure 1-16 Saving as a template

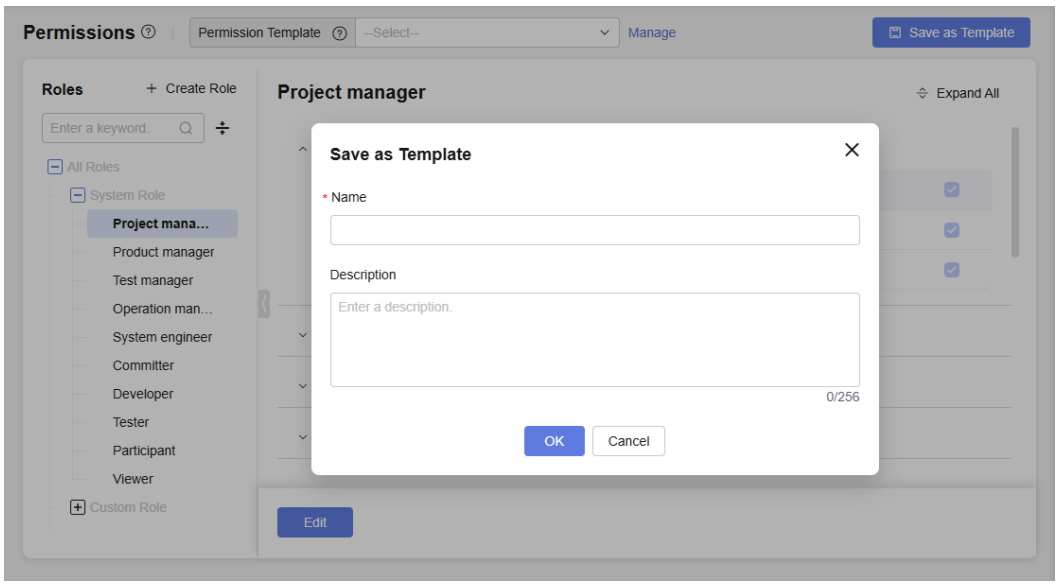


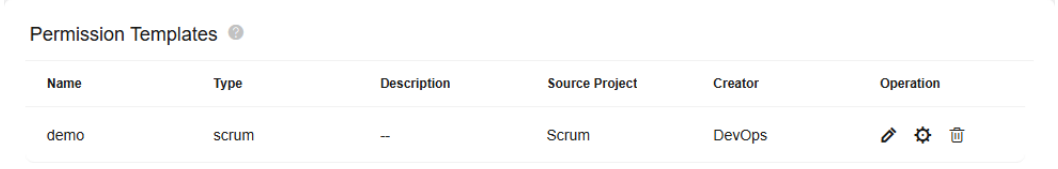
Table 1-18 Saving as a template

Parameter	Description
Name	The name of the permission template. Enter a maximum of 64 characters. Letters and digits are supported.
Description	Describe the permission template. Enter a maximum of 256 characters. Letters, digits, spaces, commas (,), periods (.), parentheses (()), and brackets ([]) are supported. This parameter is optional. Configure it as needed.

Step 6 Click the username on the top navigation bar and choose **All Account Settings**.

Step 7 Choose **General** > **Permission Template**. The saved permission template is displayed, as shown in the following figure.

Figure 1-17 Permission template list



----End

Using a Permission Template in a Project

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

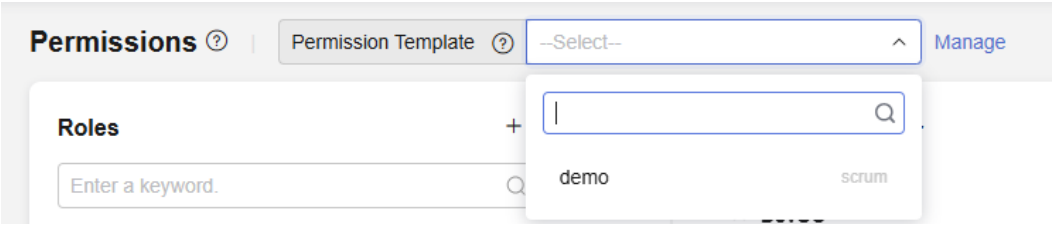
   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name.

Step 3 In the navigation pane, choose **Settings** > **Permissions**.

Step 4 Click the permission template drop-down list and select a template.

Figure 1-18 Applying a template



Step 5 Click **OK**.

Check the updated role permissions.

----End

Managing a Permission Template

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Choose **General** > **Permission Template**. The saved permission template is displayed.

Step 4 Locate the target template and perform the operations listed in the table below as needed.

Table 1-19 Managing a permission template

Operation	Description
Modifying the permission template	Click in the **Operation** column. In the displayed dialog box, modify the template name and description, and click **OK**. The modified template information is displayed in the list.
Configuring the permission template	Click in the **Operation** column. Configure permissions for each role, and click **Save**. Check the updated permissions.
Deleting the permission template	**WARNING** The deletion cannot be undone. Exercise caution when performing this operation. Click in the **Operation** column. In the displayed dialog box, confirm the operation, and click **OK**. The deleted template is no longer displayed in the list.

----End

1.7 Managing Project Notifications

1.7.1 Setting System Messages

Scenario

CodeArts sends a system message to the specified recipients when any of the following events occurs.

Table 1-20 Event types

Service	Event Type		Recipient
CodeArts Check	Check task	• Task completed • Gate check failed	• Executed by • Creator
		Task deleted	• Operator • Creator
CodeArts Deploy	Application	• Application deployed • Deploy application failed • Application updated • Application deleted	• Creator • Executed by • Favorited by

Service	Event Type		Recipient
CodeArts Pipeline	Pipeline	• Pipeline deleted • Execute pipeline failed • Pipeline executed • Pipeline updated	• Creator • Executed by • Favorited by

Constraints

This function is now available in the **AP-Singapore** region.

Prerequisites

You have created a CodeArts project, and your role in the project is **Project Administrator** or **Project Manager**.

Procedure

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

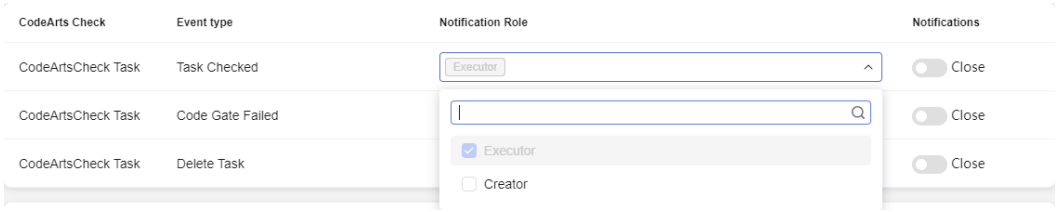
Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Notifications**.

Step 4 Click the **System Message** tab.

Step 5 Specify recipients for each event type and determine whether to enable notifications.

Figure 1-19 Configuring system message notifications (Check tasks are used as an example.)



The updated configuration is displayed.

----End

1.7.2 Setting Email Notifications

Scenario

CodeArts sends an email to the specified recipients when any of the following events occurs.

The recipients will receive emails only if they have enabled **Email Notifications** and set a valid email address on the **This Account Settings** > **Notifications** page.

Table 1-21 Event types

Service	Event Type		Recipient
CodeArts Check	Check task	• Task completed • Gate check failed	• Executed by • Creator
		Task deleted	• Operator • Creator
CodeArts Deploy	Application	• Application deployed • Deploy application failed • Application updated • Application deleted	• Creator • Executed by • Favorited by
CodeArts Pipeline	Pipeline	• Pipeline deleted • Execute pipeline failed • Pipeline executed • Pipeline updated	• Creator • Executed by • Favorited by

Constraints

This function is now available in the **AP-Singapore** region.

Prerequisites

You have created a CodeArts project, and your role in the project is **Project Administrator** or **Project Manager**.

Procedure

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.

2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

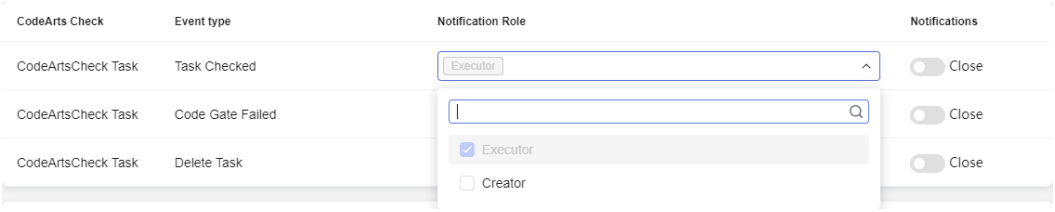
Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Notifications**.

Step 4 Click the **Email** tab.

Step 5 Specify recipients for each event type and determine whether to enable notifications.

Figure 1-20 Configuring email notifications (Check tasks are used as an example.)



The updated configuration is displayed.

----End

1.7.3 Setting WeCom Subscriptions

Scenario

When any of the following events occurs, CodeArts sends a message through HTTP to the WeCom group that has subscribed to the event.

Table 1-22 Event types

Service	Event Type		Notification Content
CodeArts Check	Check task	Completed • All • Gate check passed • Gate check failed	• Check result • Gate check result • Issues • Redirect URL • Executed by • Completion time
CodeArts Deploy	Application	• Application deployed • Deploy application failed • Deploy stopped	• Application name • Execution result • Execution ID • Executed by • Execution time • Project name

Service	Event Type		Notification Content
CodeArts Pipeline	Pipeline	• Completed • Failed • Paused • Suspended • Ignored	• Pipeline name • Pipeline execution description • Executed by • Trigger • Project name • Execution time • Running status

Constraints

This function is now available in the **AP-Singapore** region.

Prerequisites

You have created a CodeArts project, and your role in the project is **Project Administrator** or **Project Manager**.

Procedure

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Notifications**.

Step 4 Click the **WeCom** tab.

Step 5 Configure the parameters and click **OK**.

Figure 1-21 Configuring WeCom notifications (Check tasks are used as an example.)

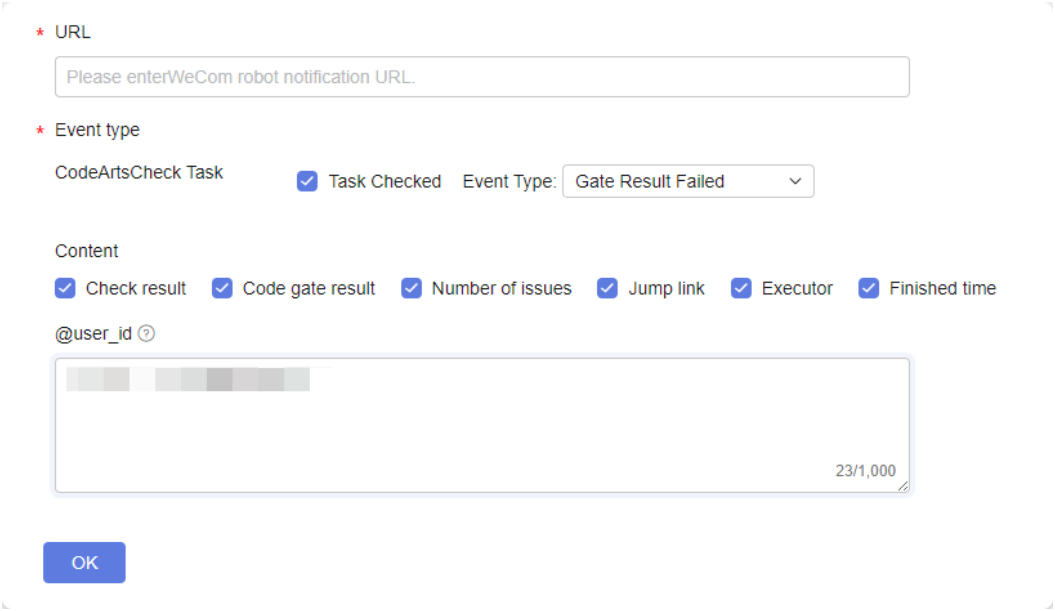


Table 1-23 Setting WeCom subscriptions

Parameter	Description
URL	The webhook URL of your WeCom group robot. Start with **http://** or **https://**. The URL cannot exceed 256 characters. For details about how to obtain the webhook URL of your WeCom group robot, see section "How to set group robot" in the WeCom Help Center. (The section name is subject to updates of the WeCom Help Center.)
Event Types	Event types that can trigger a WeCom notification. For details about the supported event types, see **Table 1-22**.
Notification Content	Content of the WeCom notification. For details about the configurable content, see **Table 1-22**. This parameter is optional. Configure it as needed.
@user_id	WeCom user IDs of the members you want to mention. Separate the IDs with semicolons (;). The total IDs cannot exceed 1,000 characters. Digits, letters, semicolons (;), periods (.), hyphens (-), underscores (_), and at signs (@) are supported. This parameter is optional. Configure it as needed.

The updated configuration is displayed.

----End

1.7.4 Setting DingTalk Subscriptions

Scenario

When any of the following events occurs, CodeArts sends a message through HTTP to the DingTalk group that has subscribed to the event.

Table 1-24 Event types

Service	Event Type		Notification Content
CodeArts Req	Raw requirement (RR)	• Create/Submit • Edit • Delete • Change • Update status • Comment	• Requirement name • Requirement ID • Operator • Operation time
	System feature (SF)	• Create • Edit • Delete • Change • Baseline/ Unbaseline • Update status • Comment	
	R&D requirement (IR/SR/AR)	• Create • Edit • Delete • Change • Baseline/ Unbaseline • Move • Comment • Update status	
	Task	• Create • Edit • Delete • Comment • Update status	

Service	Event Type		Notification Content
	Bug	• Create/Submit • Edit • Delete • Move • Update status • Comment	
	Review	• Submit • Transfer to others • Cancel/Reject • Change object reviewed • Change object decision-making completed • Review or decision-making completed • Delete • Comment	
CodeArts Check	Check task	Completed • All • Gate check passed • Gate check failed	• Check result • Gate check result • Issues • Redirect URL • Executed by • Completion time
CodeArts Deploy	Application	• Application deployed • Deploy application failed • Deploy stopped	• Application name • Execution result • Execution ID • Executed by • Execution time • Project name
CodeArts Pipeline	Pipeline	• Completed • Failed • Paused • Suspended • Ignored	• Pipeline name • Pipeline execution description • Executed by • Trigger • Project name • Execution time • Running status

Constraints

- This function is now available in the **AP-Singapore** region.
- CodeArts Req configuration is only available for IPD projects.

Prerequisites

You have created a CodeArts project, and your role in the project is **Project Administrator** or **Project Manager**.

Procedure

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Notifications**.

Step 4 Click the **DingTalk** tab.

Step 5 Configure the parameters and click **OK**.

Figure 1-22 Configuring DingTalk notifications (Check tasks are used as an example.)

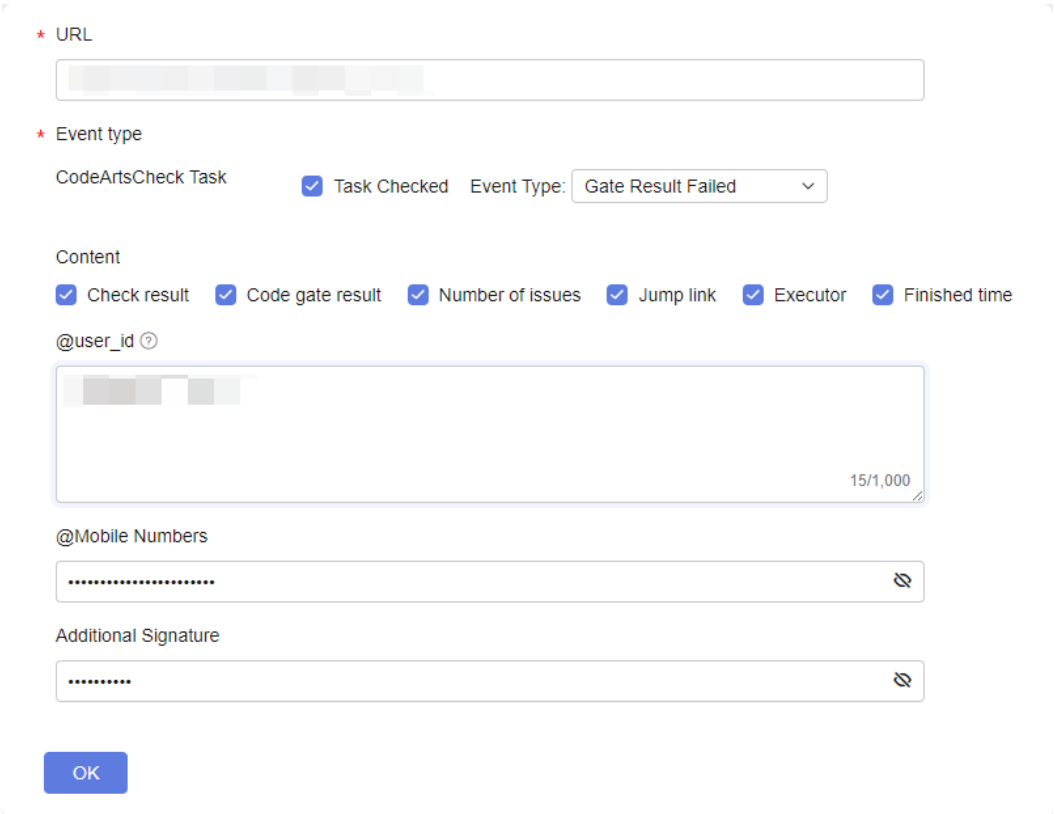


Table 1-25 Setting DingTalk subscriptions

Parameter	Description
URL	The webhook URL of your DingTalk robot. Start with **http://** or **https://**. The URL cannot exceed 256 characters.
Event Types	Event types that can trigger a DingTalk notification. For details about the supported event types, see **Table 1-24**.
Notification Content	Content of the DingTalk notification. For details about the configurable content, see **Table 1-24**. This parameter is optional. Configure it as needed.
@user_id	DingTalk user IDs of the members you want to mention. Separate the IDs with semicolons (;). The total IDs cannot exceed 1,000 characters. Digits, letters, semicolons (;), periods (.), hyphens (-), underscores (_), and at signs (@) are supported. This parameter is optional. Configure it as needed.
@Mobile Numbers	Mobile numbers of the members you want to mention. Separate mobile numbers with semicolons (;). The total mobile numbers cannot exceed 1,000 characters. Digits and semicolons (;) are supported.
Secret	If your DingTalk robot has enabled signature-based encryption in security settings, enter the signing secret with a maximum of 2,000 characters.

The updated configuration is displayed.

----End

1.7.5 Setting Feishu Subscriptions

Scenario

When any of the following events occurs, CodeArts sends a message through HTTP to the Feishu group that has subscribed to the event.

Table 1-26 Event types

Service	Event Type		Notification Content
CodeArts Req	Raw requirement	• Create/Submit • Edit • Delete • Change • Update status • Comment	• Requirement name • Requirement ID • Operator • Operation time
	System feature (SF)	• Create • Edit • Delete • Change • Baseline/ Unbaseline • Update status • Comment	
	R&D requirement (IR/SR/AR)	• Create • Edit • Delete • Change • Baseline/ Unbaseline • Move • Comment • Update status	
	Task	• Create • Edit • Delete • Comment • Update status	
	Bug	• Create/Submit • Edit • Delete • Move • Update status • Comment	

Service	Event Type		Notification Content
	Review	• Submit • Transfer to others • Cancel/Reject • Change object reviewed • Change object decision-making completed • Review or decision-making completed • Delete • Comment	
CodeArts Check	Check task	Completed • All • Gate check passed • Gate check failed	• Check result • Gate check result • Issues • Redirect URL • Executed by • Completion time
CodeArts Deploy	Application	• Application deployed • Deploy application failed • Deploy stopped	• Application name • Execution result • Execution ID • Executed by • Execution time • Project name
CodeArts Pipeline	Pipeline	• Completed • Failed • Paused • Suspended • Ignored	• Pipeline name • Pipeline execution description • Executed by • Trigger • Project name • Execution time • Running status

Constraints

- This function is now available in the **AP-Singapore** region.
- CodeArts Req configuration is only available for IPD projects.

Prerequisites

You have created a CodeArts project, and your role in the project is **Project Administrator** or **Project Manager**.

Procedure

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Notifications**.

Step 4 Click the **Feishu** tab.

Step 5 Configure the parameters and click **OK**.

Figure 1-23 Configuring Feishu notifications (Check tasks are used as an example.)

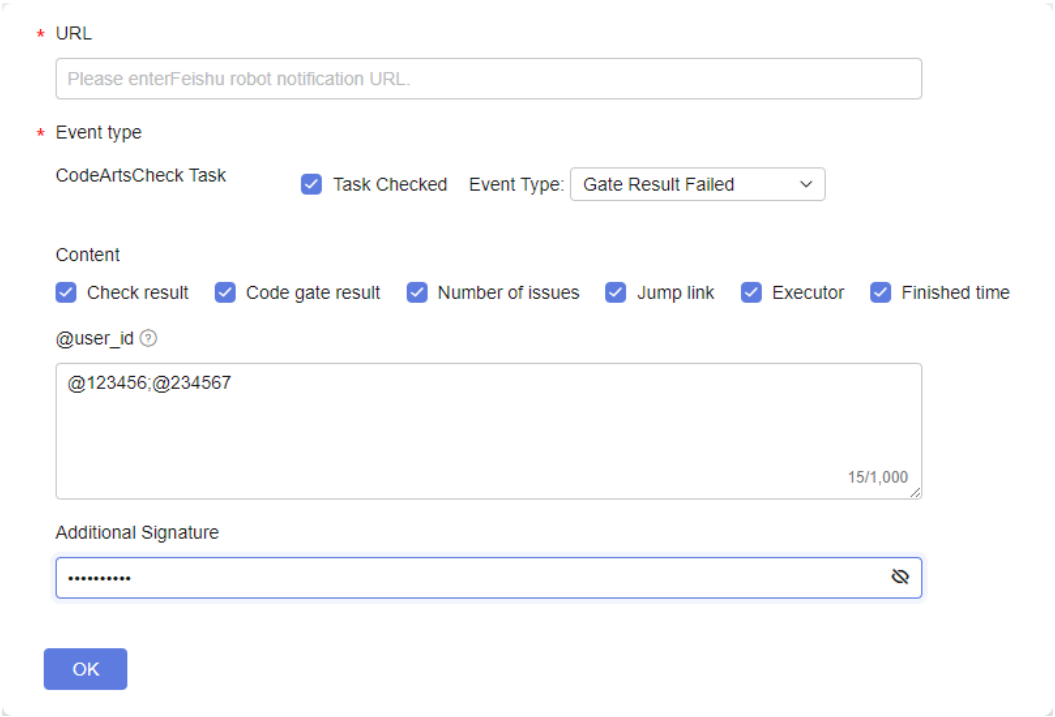


Table 1-27 Setting Feishu subscriptions

Parameter	Description
URL	Enter the webhook URL of your Feishu robot, and start with **http://** or **https://**. The URL cannot exceed 256 characters. For details about how to obtain the webhook URL of your Feishu robot, see section "Custom bot usage guide" in the Feishu Open Platform Help Center. (The section name is subject to updates of the Feishu Help Center.)
Event types	Event types that can trigger a Feishu notification. For details about the supported event types, see **Table 1-26**.
Notification Content	Content of the Feishu notification. For details about the configurable content, see **Table 1-26**. This parameter is optional. Configure it as needed.
@user_id	Feishu user IDs of the members you want to mention. Separate the IDs with semicolons (;). The total IDs cannot exceed 1,000 characters. Digits, letters, semicolons (;), periods (.), hyphens (-), underscores (_), and at signs (@) are supported. This parameter is optional. Configure it as needed.
Secret	If your Feishu robot has enabled signature-based encryption in security settings, enter the signing secret with a maximum of 2,000 characters. For details about how to obtain the signing secret of your Feishu robot, see section "Custom bot usage guide" in the Feishu Open Platform Help Center. (The section name is subject to updates of the Feishu Help Center.)

The updated configuration is displayed.

----End

1.7.6 Setting Generic Webhook Subscriptions

Scenario

CodeArts allows you to customize notifications to send user operation events to a third-party platform through HTTP.

The following table lists the supported services and event types.

Table 1-28 Event types

Service	Event Type	
CodeArts Req	Raw requirement	• Create/Submit • Edit • Delete • Change • Update status • Comment
	System feature (SF)	• Create • Edit • Delete • Change • Baseline/Unbaseline • Update status • Comment
	R&D requirement (IR/SR/AR)	• Create • Edit • Delete • Change • Baseline/Unbaseline • Move • Comment • Update status
	Task	• Create • Edit • Delete • Comment • Update status
	Bug	• Create/Submit • Edit • Delete • Move • Update status • Comment

Service	Event Type	
	Review	• Submit • Transfer to others • Cancel/Reject • Change object reviewed • Change object decision-making completed • Review or decision-making completed • Delete • Comment
CodeArts Check	Check task	Completed • All • Gate check passed • Gate check failed
CodeArts Deploy	Application	• Application deployed • Deploy application failed • Deploy stopped
CodeArts Pipeline	Pipeline	• Completed • Failed • Paused • Suspended • Ignored

Constraints

- This function is now available in the **AP-Singapore** region.
- This function is supported only by IPD projects.

Prerequisites

You have created a CodeArts project, and your role in the project is **Project Administrator** or **Project Manager**.

Creating a Webhook

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Notifications**.

Step 4 Click the **Generic Webhook** tab.

Step 5 Select a service for which you want to configure notifications, and click **New Webhook Subscription**.

Step 6 Configure the parameters and click **OK**.

Table 1-29 Creating a webhook

Parameter	Description
Name	The name of a generic webhook.
URL	URL of the HTTP server that will receive requests. Currently, only POST requests can be received.
Event Types	Event types that can trigger a generic webhook notification. For details about the supported event types, see **Table 1-28**.
HTTP Request Headers	HTTP request headers of the generic webhook notification. This parameter is optional. Configure it as needed. HTTP request headers are part of the HTTP protocol. When an event occurs, the service sends an HTTP request to the configured URL, along with any necessary HTTP request headers like those for authentication. Generally, an HTTP request header is in format "key: value", for example, **Content-Type: application/json**. Multiple request headers can be included in a single request, with each header on its own line. Each line should contain only one request header. A single request header is max. 100 characters. Up to 20 request headers are allowed. For more information about HTTP request headers, see **HTTP documentation**.
Custom Template	Set the request body with parameters enclosed in "${}". For example, **${eventName}**. For details about the available parameters, see **Event Data Structure**.

The new webhook subscription is displayed.

----End

Event Data Structure

- CodeArts Req

Table 1-30 Dynamic parameters of CodeArts Req

Dynamic Parameter	Description
${project.id}	Project ID
${project.url}	Project URL
${issue.id}	Work item ID
${issue.title}	Work item title
${issue.url}	Work item URL
${operator.username}	Operator username
${operator.id}	Operator ID
${review.id}	Review ID
${review.title}	Review title
${review.url}	Review URL
${operation}	Event name
${event.id}	Event ID
${event.time}	Event time

- CodeArts Check

```
{
   "eventName": "Check completed",  // Event name
"eventCode": "taskExecuteCompleted", // Event code
   "project": {
      "id": "", // Project ID
      "url": "" // Code check project URL
   },
   "task" : {
   "id": "", // Task ID
   "name": "", // Task name
   "gitUrl": "",  // Repo URL
   "creator": ""  // Task creator
   },
   "job": {
   "id": "", // Execution ID
   "startTime": "", // Task execution start time
   "finishTime": "", // Task execution end time
   "status": "",  // Task status (successful, failed, or stopped)
   "gateResult": "", // Gate check result (passed or failed)
   "executor": "", // User who executed the task
   "url": "" // Execution record redirect link
   },
   "issues": {
   "critical": "", // Number of critical issues
   "major": "", // Number of major issues
   "minor": "", // Number of minor issues
   "suggestion": "" // Number of suggestions
   }
}
```

- CodeArts Deploy

Event Name	Event Code
Application deployed	success
Deploy application failed	failure
Deploy stopped	stop

```
{
  "eventName": "Application deployed",  // Event name
  "eventCode": "success",  // Event code
  "taskName": "", // Application name
  "projectName": "", // Project name
  "result": "", // Execution result
  "sort": "", // Execution ID
  "startUser": "", // Executed by
    "startTime": "", // Execution time
    "link":""// Deployment details link
}
```

- CodeArts Pipeline

  CodeArts Pipeline parameters are referenced using "*${pipeline.parameter-name}*", for example, **${pipeline.pipeline_id}** for referencing a pipeline ID.

  The parameters that can be referenced are as follows:

```
{
    "pipeline": {
        "pipeline_id": "", // Pipeline ID
      "run_number": "", // Pipeline execution ID
      "project_id": "", // ID of the project that the pipeline belongs to
        "run_id": "", // Pipeline execution ID
      "timestamp": "", // Pipeline execution timestamp
      "trigger_type": "", // Pipeline trigger type
      "name": "" // Pipeline name
    }
}
```

1.8 Managing Agent Pools

1.8.1 Creating an Agent Pool

Scenario

You can use built-in or custom executors to perform check, build, deployment, pipeline, and API test tasks in CodeArts.

Agent pools are used to connect custom executors. You can add your own execution resources to an agent pool so that you can use them to execute tasks. Agent pools help improve efficiency and remove dependency on public execution resources.

Creating an Agent Pool

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.

2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Choose **Agent Management** > **Agent Pool**.

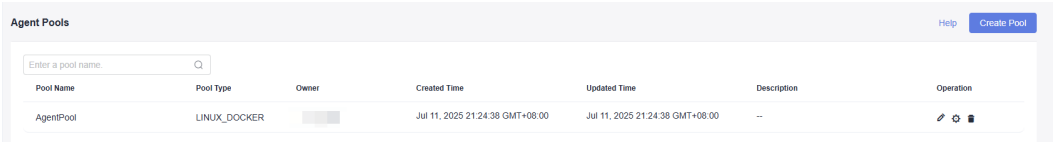
Step 4 Click **Create Pool**, configure the agent pool, and click **Save**.

Table 1-31 Creating an agent pool

Parameter	Description
Pool Name	The name of the agent pool. Enter a maximum of 50 characters. Digits, letters, periods (.), underscores (_), and hyphens (-) are supported.
Pool Type	Supported pool types: • **LINUX**: Tasks are executed on a Linux VM. • **LINUX_DOCKER**: A Linux Docker container is started and tasks are executed in the container. • **WINDOWS**: Tasks are executed on a Windows VM. • **MAC**: Tasks are executed on a macOS VM.
Description	Describe the agent pool. Enter a maximum of 1,024 characters. This parameter is optional. Configure it as needed.
This pool can be used by all users of the current account.	This parameter is optional. Enable it as needed. If this parameter is selected, all users of the current account can use the pool.

A new record is displayed in the list.

Figure 1-24 Agent pool list



----End

Managing an Agent Pool

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.

2. Click **Go to Workspace**.

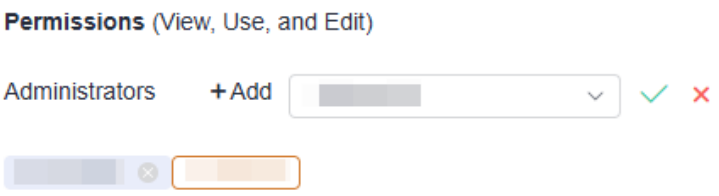
   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

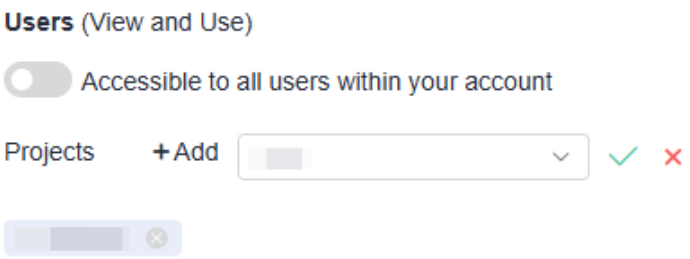
Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Choose **Agent Management** > **Agent Pool**.

Step 4 Locate the agent pool you want to manage, and perform the operations listed in the table below as needed.

Table 1-32 Managing an agent pool

Operation	Description
Modifying agent pool basic information	Click in the **Operation** column. In the displayed dialog box, modify the pool name and description, and click **Save**. The modified agent pool information is displayed in the list.
Setting pool administrators	1. Click in the **Operation** column. The **Permissions** tab is displayed. 2. Set administrators as needed. – Click **Add** next to **Administrators**, select users from the drop-down list, and click . – To remove the administrator role of a user, click next to the username. The modified administrators are displayed. **Figure 1-25** Setting administrators 

Operation	Description
Setting pool users	1. Click ⚙ in the **Operation** column. The **Permissions** tab is displayed. 2. Set users as needed. – Click the switch to set all users in your account as users of the agent pool. – Click **Add** next to **Projects**, select a project name from the drop-down list box, and click ✓ to set all members in the selected project as agent pool users. – To cancel the authorization for members in a project, click ⊗ next to the project name. The modified information is displayed. **Figure 1-26** Setting pool users 
Deleting the agent pool	**WARNING** The deletion cannot be undone. Exercise caution when performing this operation. Click 🗑 in the **Operation** column. In the displayed dialog box, click **Yes**. The deleted agent pool is no longer displayed in the list.
Setting notification rules	1. In the agent pool list, click the name of the target pool to go to the agent list page. 2. Click the **Notifications** tab. Enable or disable notifications for the following event types: – Create agent – Delete agent – Disable agent – Enable agent – Bring agent offline – Bring agent online The modified notification rules are displayed.

----End

1.8.2 Creating an Agent

Scenario

An agent is installed on a host and registered with CodeArts. It is used as a custom executor for code check and build tasks.

Agent pools support custom executors running the following OSs.

Table 1-33 Supported OSs for custom executors

OS	Version
CentOS	6.3, 6.5, 6.8, 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 8.0, 8.1, 8.2
Debian	8.2.0, 8.8.0, 9.0.0, 10.0.0
EulerOS	2.0, 2.2, 2.3, 2.5
Ubuntu	14.04, 16.04, 18.04, 20.04, 22.04
Windows	2012 R2, 2016, 2019, 7, 10
KylinOS	V10 SP1
Union TechOS	Server 20 (1050e)
OpenEuler	20.03
AlmaLinux	9.0
CentOS Stream	9
Mac OS	10.7 or later

Constraints

- Install only one agent on a host. If multiple agents are installed, some of them may go offline during task execution.
- Each agent executes only one task at a time.
- To ensure successful installation, do not use temporary AK/SK.
- For LINUX_DOCKER agent pools, disable Security-Enhanced Linux (SELinux) on their hosts to allow container startup.

  To disable the feature, perform the following steps:

  a. Log in to the target host and run the following command to open the configuration file:
  ```
  vi /etc/selinux/config
  ```
  b. Change **SELINUX=enforcing** to **SELINUX=permissive** or **SELINUX=disabled**.
  c. Save the changes.
  d. Run the following command to apply the changes.
  ```
  sudo setenforce 0
  ```


Prerequisites

- An agent pool has been created. For details, see **Creating an Agent Pool**.
- You must be an agent pool owner or administrator.

  If you create an agent as an IAM Identity Center user (**a user created in the IAM Identity Center**), use the AK/SK of an IAM user who has at least the administrator permission.
- You have a host that meets the following requirements:
  - Specifications: 4 vCPUs | 8 GiB or above, disk space > 80 GiB
  - The host can access the public network.
- CodeArts automatically installs Java, Git, and Docker on Linux hosts. You can also manually install them using the **root** account.

  For details about the installation methods, visit the official websites of **Java**, **Git**, and **Docker**.
- If your host OS is Windows or macOS, install Java 8 and Git on the server using a system administrator account.

  If your host OS is Windows, install Java 8 (64-bit).

Creating an Agent

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

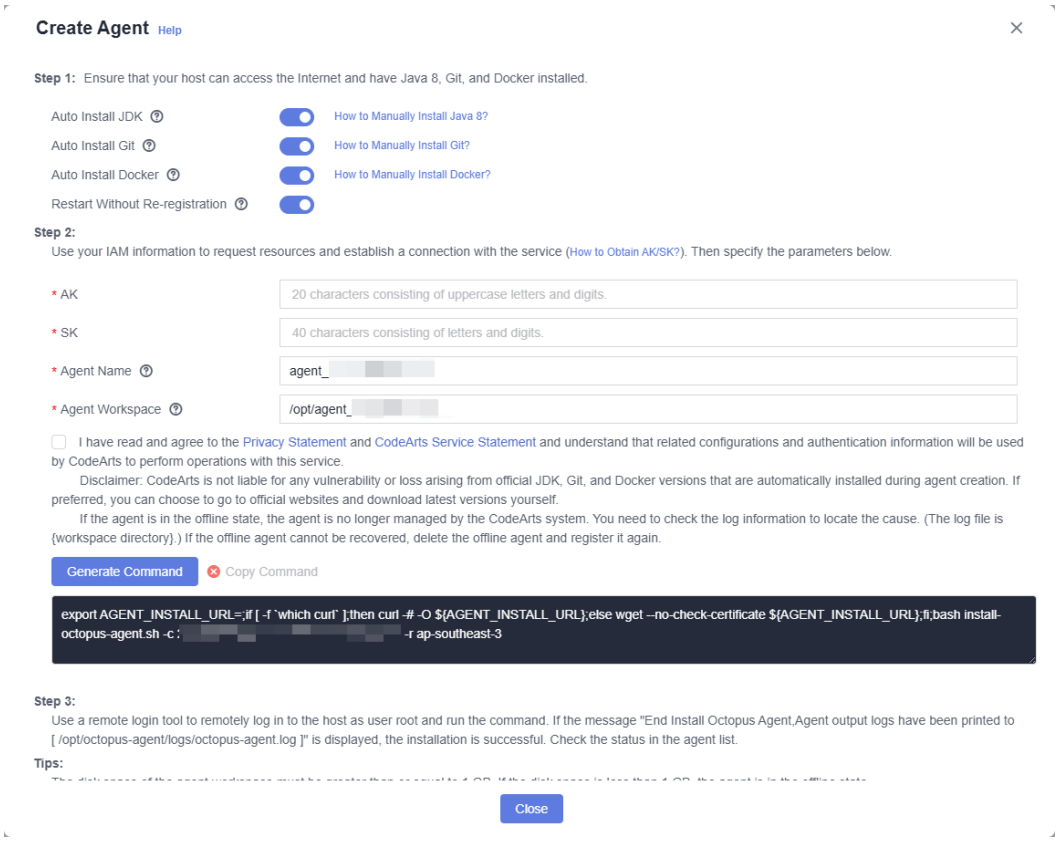
Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Choose **Agent Management** > **Agent Pool**.

Step 4 Find the target agent pool in the agent pool list and click its name to display the **Agents** tab.

Step 5 Click **Create Agent**.

Figure 1-27 Creating an agent



Step 6 Configure parameters as required.

Table 1-34 Creating an agent

Parameter	Description
Auto Install JDK	Available when the agent pool type is **LINUX** or **LINUX_DOCKER**, and enabled by default. This parameter is optional. Configure it as needed. Once enabled, CodeArts will automatically install JDK on the host.
Auto Install Git	Available when the agent pool type is **LINUX** or **LINUX_DOCKER**, and enabled by default. This parameter is optional. Configure it as needed. Once enabled, CodeArts will automatically install Git on the host.
Install Docker automatically	Available when the agent pool type is **LINUX** or **LINUX_DOCKER**. Enabled by default when the agent pool type is **LINUX_DOCKER**. This parameter is optional. Configure it as needed. Once enabled, CodeArts will install Docker on the host and register and start the Docker service.

Parameter	Description
Restart Without Re-registration	Available when the agent pool type is **LINUX** or **LINUX_DOCKER**. Once enabled, the agent process will be automatically registered as a Linux system service. It will automatically resume and does not need to be created again when the host is restarted.
AK	Your access key ID (AK). For details, see **Obtaining an AK/SK**.
SK	Your secret access key (SK). For details, see **Obtaining an AK/SK**.
Agent Name	Agents with the same name cannot be installed on the same host. To facilitate management, it is recommended that the name be clear and associated with the agent IP address, such as **10.10.10.10-agent-01**.
Agent Workspace	The working directory where the agent runs and executes tasks on the host. Different agents on the same host cannot use the same agent workspace. Example: • Linux: **/opt/cloud/agent01** • Windows: **C:/opt/cloud/agent01** • macOS: **/opt/cloud/agent01**

Step 7 Click the checkbox under **Agent Workspace**.

Step 8 Click **Generate Command**. The command for installing the agent is automatically generated in the command box.

Step 9 Click **Copy Command**.

Step 10 Log in to the host and run the copied installation command.

- Linux host: Log in using the **root** account and then run the installation command.
- Windows host: Log in as the administrator, open Git Bash, and then run the installation command.
- macOS host: Log in using the **root** account and then run the installation command.

If the following message is displayed, the installation is complete.

Figure 1-28 Response returned after installation

```
[2022-07-04 16:52:57] [INFO] End Install Octopus Agent,Agent output logs have been printed to [ /op
t/octopus-agent/logs/octopus-agent.log ]
```

Step 11 Return to the **Agents** page.

Refresh the page after 10 to 30 seconds. If the status becomes **Idle**, the installation is successful.

NOTE

There are five agent statuses:

- **Running**: The agent is running tasks. Agents in this state cannot be deleted.
- **Idle**: The agent is connected but not running any task.
- **Disabled**: The agent is connected but cannot run tasks.
- **Offline**: The agent is disconnected. Log in to reconnect it, or delete it if it is no longer needed.
- **Deleting**: The agent is being deleted.

----End

Managing Agents

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Choose **Agent Management** > **Agent Pool**.

Step 4 Find the target agent pool in the agent pool list and click its name to display the **Agents** tab.

Step 5 Locate the target agent and perform the operations listed in the table below as needed.

Table 1-35 Managing agents

Operation	Description
Enabling/ Disabling an agent	• Click in the **Operation** column to disable the agent. After the agent is disabled, the **Status** column changes to **Disabled**. • Click in the **Operation** column to enable the agent. After the agent is enabled, the **Status** column changes to **Idle**.

Operation	Description
Deleting an agent	**WARNING** • The deletion cannot be undone. Exercise caution when performing this operation. • If you have enabled **Restart Without Re-registration** when creating an agent, the agent will be automatically re-registered once the host is restarted. To avoid this, log in to the host and run the uninstallation command before deleting the agent. • Deleting a single agent: On the **Agents** tab, click  in the **Operation** column of the target agent to delete it. • Deleting multiple agents: On the **Agents** tab, select the target agents and click **Batch Delete**.

----End

1.9 Creating Service Endpoints

Scenario

A service endpoint is an extension of CodeArts. It enables CodeArts to connect to third-party services.

For example, when your CodeArts tasks need to obtain project source code from a third-party GitHub repository or need to run with Jenkins, you can create an endpoint to connect to each service.

The following table lists the endpoints supported by CodeArts.

Table 1-36 Service endpoints

Type	Scenario
Docker repository	Connect to a third-party Docker image repository. After the connection is successful, CodeArts Deploy can obtain Docker images from the repository.
Jenkins	Connect to a third-party Jenkins service. After the connection is successful, pipelines can call and execute the tasks in the Jenkins service.
Kubernetes	Connect to a Kubernetes cluster. After the connection is successful, you can deploy applications to the relevant Kubernetes cluster.
Nexus repository	Connect to a third-party private Maven repository. After the connection is successful, build tasks can obtain the file information of the repository.

Type	Scenario
Git repository	Connect to a third-party Git repository. After the connection is successful, CodeArts Pipeline and CodeArts Build can obtain the branch information of the repository.
GitHub	Connect to a GitHub account. After the connection is successful, CodeArts Pipeline and CodeArts Build can obtain the repository and branch information of the account.
IAM user	Delegate your AK/SK to an IAM user so that the user can obtain a token to perform tasks that require higher permissions.
CodeArts Repo HTTPS	Authorize CodeArts to download code, create branches, merge branches, and commit code in CodeArts Repo repositories. Currently, it is used for change-triggered pipelines and related extensions.
GitLab	Connect to a GitLab repository. After the connection is successful, CodeArts Pipeline and CodeArts Build can obtain the branch information of the repository.
Bitbucket	Connect to a Bitbucket account. After the connection is successful, CodeArts Pipeline and CodeArts Build can obtain the repository and branch information of the account.
AGC	Connect to AppGallery Connect (AGC) APIs. After the connection is successful, pipelines can use the service.

Prerequisites

- You must have the **DevMarket** > **Endpoint** > **create** permission to create service endpoints. For details, see **How Do I Check and Obtain Required Project Permissions?**
- The third-party service to connect can be accessed from the public network without restrictions.
- Jenkins, Nexus repository, and GitHub service endpoints cannot be created in the **LA-Santiago** region.
- Jenkins and Nexus repository service endpoints cannot be created in the **TR-Istanbul** area.
- Bitbucket service endpoints can be created only in the **AP-Singapore** region.

Creating a Service Endpoint

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.

2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Service Endpoints**.

Step 4 Click **Create Endpoint** and select an endpoint type from the drop-down list.

Step 5 In the displayed dialog box, configure the service endpoint.

The new endpoint is displayed.

----End

The tables below describe the parameters for configuring different types of service endpoints.

Docker Repository

Table 1-37 Creating a Docker repository service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Repository Address	The address of the Docker repository to connect. HTTP and HTTPS addresses are supported.
Username	The username of this Docker repository.
Password	The password of this Docker repository.

Jenkins

Table 1-38 Creating a Jenkins service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Server URL	The address of the Jenkins service to connect. The address can be in format "**http://***ip*:*Port*" or "**https://***ip*:*Port*".
Username	The username of this Jenkins service.
Password	The password of this Jenkins service.

Kubernetes

Table 1-39 Creating a Kubernetes service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Kubernetes URL	The server address of the cluster to connect. Obtain it by searching for **server** in the cluster configuration file **kubeconfig.json**.
Kubeconfig	The configuration of this cluster. You can enter all the content of the **kubeconfig.json** file.

Nexus Repository

Table 1-40 Creating a Nexus repository service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Repository URL	The address of the Nexus repository to connect. HTTP and HTTPS addresses are supported.
Username	The username of this Nexus repository.
Password	The password of this Nexus repository.

Git Repository

Table 1-41 Creating a Git service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Git Repository URL	The HTTPS address of the Git repository to connect. For example, **https ://*.*.*.*/ user/repo.git**.
Username	The username of this Git repository. This parameter is optional. Configure it as needed.

Parameter	Description
Password or Access Token	The password or access token of this Git repository. This parameter is optional. Configure it as needed.

GitHub

Table 1-42 Creating a GitHub service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Authentication Mode	Two authentication modes are supported: • **OAuth**: After clicking **Authorize and Confirm**, log in to GitHub for manual authorization. • **Access token**: Enter your access token obtained in GitHub. For details, visit the **GitHub official website**.

IAM User

Table 1-43 Creating an IAM user service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Access Key Id	The AK of the IAM user to connect. Obtain it from the **My Credentials** page. For details, see **Access Keys**.
Secret Access Key	The SK of the IAM user to connect. Obtain it from the **My Credentials** page. For details, see **Access Keys**.

CodeArts Repo HTTPS

Table 1-44 Creating a CodeArts Repo HTTPS service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.

Parameter	Description
CodeArts Repo URL	The HTTPS address of the CodeArts Repo repository to connect. Go to the target repository, and click **Clone/Download**. Click **Clone with HTTPS**, and obtain the repository address.
Username	The HTTPS username of this CodeArts Repo repository. Format: *Tenant name*/*IAM username*. Click the username  on the top navigation bar and choose **This Account Settings**. Obtain the username on the **Repo** > **HTTPS Password** page.
Password	The HTTPS password of this CodeArts Repo repository. Enter a maximum of 300 characters. Click the username  on the top navigation bar and choose **This Account Settings**. Obtain the password on the **Repo** > **HTTPS Password** page.

GitLab

Table 1-45 Creating a GitLab repository service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
GitLab URL	The HTTPS address of the GitLab repository to connect.
Username	The username of this GitLab repository. This parameter is optional. Configure it as needed.
Access Token	The access token of the GitLab repository. For details about how to obtain the access token, visit the **GitLab official website**. This parameter is optional. Configure it as needed.

Bitbucket

Table 1-46 Creating a Bitbucket repository service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
Username	Bitbucket username. To obtain the username, log in to Bitbucket, and obtain the value of **Username** on the **Account settings** page.
Password	Bitbucket password. To obtain the password, log in to Bitbucket, and create a password on the **App passwords** page, with the **Read** permission selected under both **Account** and **Projects**.

AGC

Table 1-47 Creating an AGC service endpoint

Parameter	Description
Service Endpoint Name	The name of the service endpoint. Enter a maximum of 256 characters. Letters, digits, hyphens (-), underscores (_), periods (.), and spaces are supported.
client_id	The ID of the AppGallery Connect (AGC) API client to connect. For details about how to obtain the client ID, visit the **AppGallery Connect official website**.
client_secret	The secret of the AGC API client to connect. For details about how to obtain the client secret, visit the **AppGallery Connect official website**.

Managing a Service Endpoint

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the target project name to go to the project.

Step 3 In the navigation pane, choose **Settings** > **General** > **Service Endpoints**.

Step 4 Locate the service endpoint you want to manage, and perform the operations listed in the table below as needed.

Table 1-48 Managing a service endpoint

Operation	Description
Edit	Click **Edit**. In the displayed dialog box, edit the parameters and click **Save**. The modified information is displayed.
Delete	**WARNING** The deletion cannot be undone. Exercise caution when performing this operation. Click **Delete**. In the displayed dialog box, click **OK**. The deleted service endpoint is no longer displayed in the list.

----End

1.10 Personal Management

1.10.1 Managing Display Settings

CodeArts provides four themes (infinite, impression, deep, and galaxy) and four layouts (classic, modern, waterfall, and wide).

You can change the display settings based on your preferences. The changes only take effect for your account.

Step 1 Go to the CodeArts homepage.

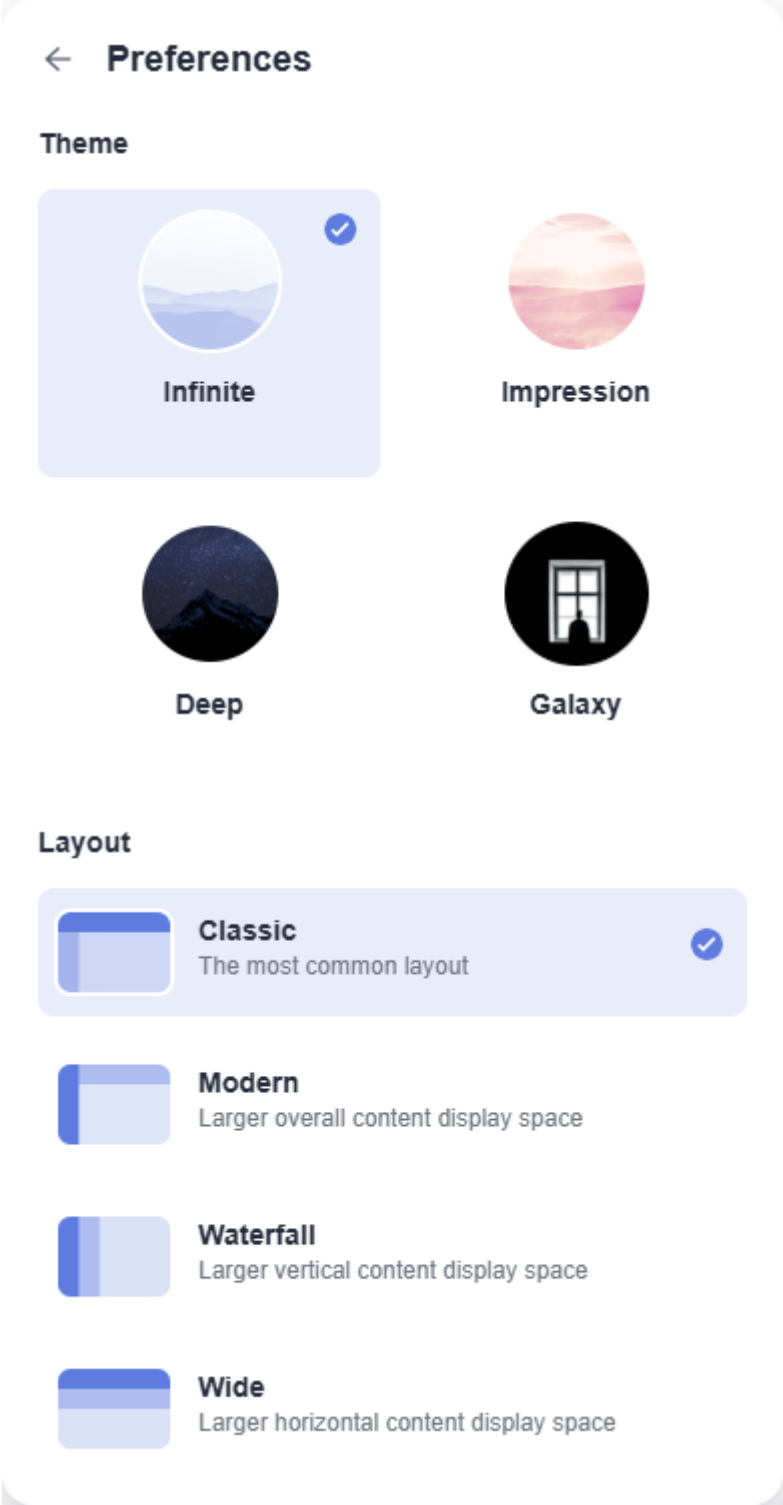
1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **Preferences**.

Step 3 Select the desired theme and layout.

Figure 1-29 Preferences



----End

1.10.2 Modifying Your Alias

In CodeArts, the owner of each task displays as a member's username by default. If a member has set an alias, the alias is displayed instead.

You can modify your alias. The new alias will be visible to all members in your CodeArts project.

Prerequisites

Your administrator has disabled the **Disable Custom Alias** option. For details, see **Managing Alias Settings**.

Modifying Personal Alias

Step 1 Go to the CodeArts homepage.

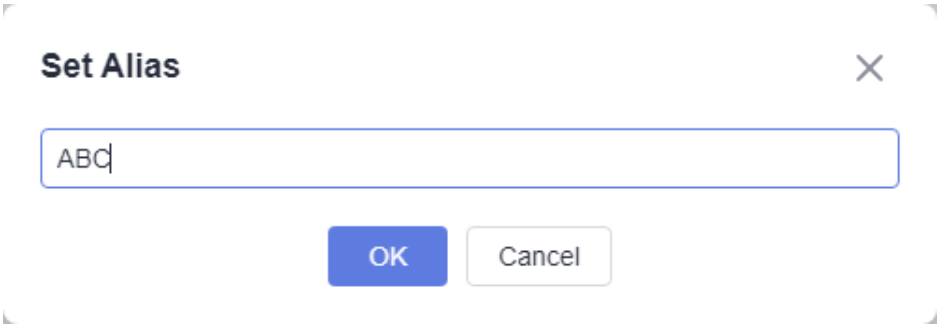
1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and click next to the username.

Step 3 In the displayed dialog box, enter an alias with a maximum of 30 characters, and click **OK**.

Figure 1-30 Setting an alias



Refresh the page. The new alias is displayed in the upper-right corner.

----End

1.10.3 Setting Notification Receiving Rules

CodeArts allows you to configure notification rules for each individual service and determine whether to receive notifications by email.

Setting Notification Rules

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 On the top navigation bar, click  and choose **This Account Settings**. The **Notifications** page is displayed.

Step 3 Complete the configuration by referring to the table below.

Table 1-49 Setting rules for receiving notifications

Operation	Procedure
Setting do-not-disturb time period	1. Toggle the **Do-Not-Disturb** switch. 2. Click **Edit Settings**. In the displayed dialog box, set the start time and end time, and click **OK**. The updated period is displayed.
Enabling/ Disabling notifications	Click **Enable** or **Disable**.
Modifying the email address for receiving notifications	1. Click **Edit Settings** next to the email address. The **Security Settings** page is displayed. 2. Click **Change**, verify your identity, and change your email address as prompted. The **Notifications** page is displayed, showing the new email address.

----End

Helpful Links

For details about how to configure notifications for each service, see:

- **Configuring CodeArts Req Notifications**
- **Configuring CodeArts Repo Notifications**
- **Configuring CodeArts Check Notifications**
- **Configuring CodeArts Build Notifications**
- **Configuring CodeArts Deploy Notifications**
- **Configuring CodeArts Pipeline Notifications**
- **Configuring CodeArts TestPlan Notifications**

1.10.4 Managing Personal Workspaces

CodeArts provides the workspace feature for managing work.

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click  , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Choose **Workspace** on the top navigation bar, and view and edit the information described in the table below.

Table 1-50 Workspace page

Tab	Description
My Work Items	Displays the work items for which you are the handler in joined Scrum and IPD projects. Click a work item title to view the details.
My Files	Displays all files you have uploaded. Click a file name to preview the content. If a file is encrypted or has too many pages, download it to view the content.
My Wikis	Displays all entries created in all projects that you have joined. Click an entry title to view the details.
My Tests	Displays all test cases for which you are the handler in all joined projects. Click a case ID to view the details.

----End

1.11 Tenant Management

1.11.1 Managing Tenant Space Members and Permissions

Scenario

The tenant space encompasses all the configurations in **All Account Settings**.

The tenant space offers three roles.

Table 1-51 Tenant space roles

Role Name	Description
Tenant space owner	The tenant account owner, who has full permissions for the **All Account Settings** page. The DevUC permissions for the tenant space cannot be edited for this role.
Tenant space admin	Has edit permissions for the **All Account Settings** page. The DevUC permissions for the tenant space can be edited for this role.

Role Name	Description
Tenant space user	Has view permissions for the **All Account Settings** page. The DevUC permissions for the tenant space can be edited for this role.

Adding Members

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Go to the **General** > **Members** page, click **Add Members**, and select **From My Account**.

Step 4 In the displayed dialog box, select the target IAM users, and click **Next**.

Step 5 Assign a role to each user and click **Save**.

The added members are displayed in the list.

----End

Importing Members

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Go to the **General** > **Tenant Space Members** page, and click **Download Template**.

Step 4 Open the template, add the users you want to import, and save the file.

Table 1-52 Editing the template

Parameter	Description
User ID	The ID of an IAM user to import. Obtain this IAM user ID on the user's **My Credentials** page. For details, see **API Credentials**.
Username	The username of the user. This parameter is optional. Configure it as needed.
Alias	The alias of the user. This parameter is optional. Configure it as needed.
Role	Assign a role to the user. Enter **Tenant space admin** or **Tenant space user**.
Enterprise Account	The name of the account to which the user belongs. This parameter is optional. Configure it as needed.
Enterprise ID	The ID of the account to which the user belongs. Obtain this account ID on the user's **My Credentials** page. For details, see **API Credentials**. This parameter is required when you import users from other accounts. Leave it blank when you import users from your own account.

Step 5 Return to the **Tenant Space Members** page, click **Import Members**, and select the file saved in **Step 4**.

The imported members are displayed in the list.

----End

Managing Tenant Space Role Permissions

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Go to the **General** > **Tenant Space Permissions** page, and click the target role in the role list.

Click **Edit**, modify the permissions, and click **Save**.

The edited permissions are displayed.

----End

1.11.2 Managing Projects and Members

Scenario

In CodeArts, only the members of a project can view the project details, such as work items, test cases, and build and deployment tasks. If an IAM user does not add the administrator as a member when creating a project, the project will be invisible to the administrator after they log in to the homepage.

The administrator can view all the projects and members under their account on the **Projects and Members** page and perform necessary operations there.

Viewing Projects and Members

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

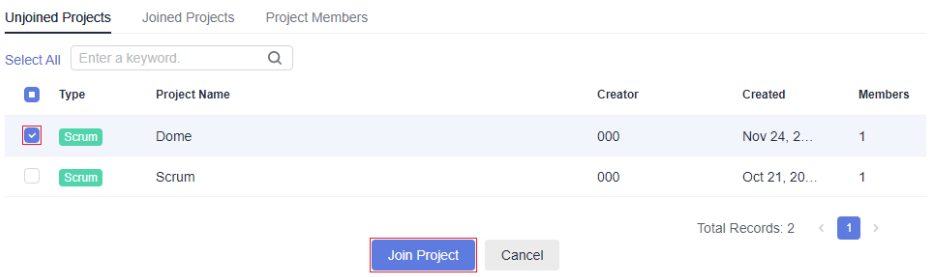
Step 3 Choose **General** > **Projects and Members**.

Step 4 Select the desired tab.

- On the **Unjoined Projects** tab, view the projects created by IAM users who have not added the administrator as a member.

  To view details of projects, select them and click **Join Project**.

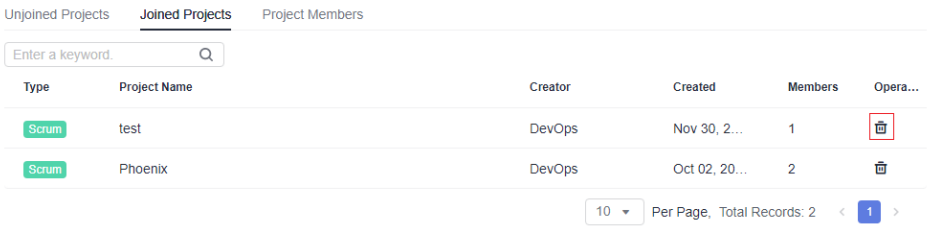
  Figure 1-31 Unjoined Projects tab



- On the **Joined Projects** tab, view the projects where you are a member.

  To delete a project, click in the same row.

  Figure 1-32 Joined Projects tab

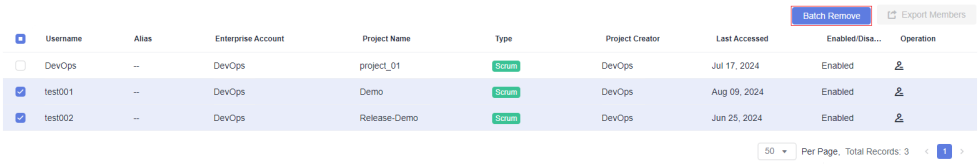


- On the **Project Members** tab, view all projects (both joined and unjoined) and the members of each project.

  To remove a member from a project, click .

  To remove multiple members, select them and click **Batch Remove**.

  Figure 1-33 Project Members

----End

1.11.3 Managing Alias Settings

Administrators can determine whether to allow IAM users to modify their aliases, and can also set aliases for them.

Constraints

This function is not available in the following regions:

- AP-Singapore
- LA-Sao Paulo1
- LA-Mexico City2

Modifying Alias Settings

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

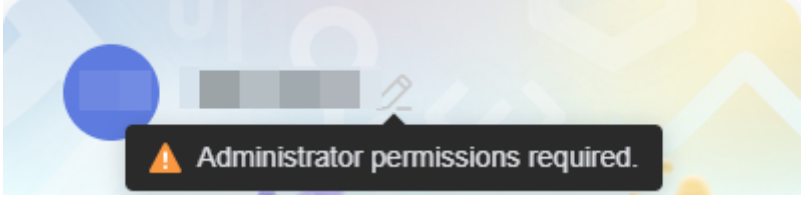
Step 2 Click the username on the top navigation bar and choose **All Account Settings**.

Step 3 Go to the **General** > **Global Settings** page, and toggle on or off **Disable Custom Alias** as needed.

Step 4 Refresh the page, click the username, and click next to the username.

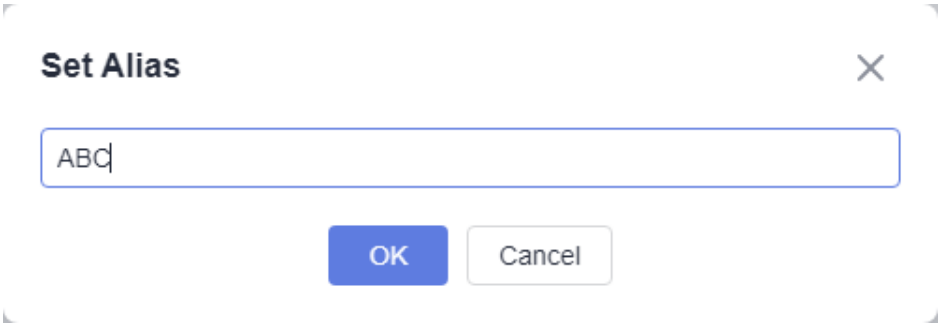
- If is toggled on, the system prompts that editing is not allowed.

  Figure 1-34 Alias setting disabled

- If is toggled off, the **Set Alias** dialog box is displayed.

  Figure 1-35 Setting an alias

----End

1.11.4 Managing Watermark Settings

CodeArts provides the watermark settings. You can set a watermark for CodeArts Req, CodeArts TestPlan, and other services to protect your sensitive information.

Constraints

This function is not available in the following regions:

- AP-Singapore
- LA-Sao Paulo1
- LA-Mexico City2

Enabling/Disabling Watermarks

Step 1 Go to the CodeArts homepage.

1. Log in to the **CodeArts console**, click  , and select a region where you have enabled CodeArts.
2. Click **Go to Workspace**.

   If your account uses the old billing mode (see **Old Billing Modes**), click **Access Service**.

Step 2 Click the username  on the top navigation bar and choose **All Account Settings**.

Step 3 Go to the **General** > **Global Settings** page, and enable or disable watermarking as needed.

Go to the relevant service, and check whether the watermark settings take effect.

----End

