

CodeArts Check

User Guide

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1 Process

Background

CodeArts Check is a cloud-based service that check code. With years of experience in automatic static check and enterprise application, CodeArts Check provides rich check services on code style, common quality, cyber security risk, and other elements. It also includes comprehensive check reports, convenient bug handling, and many other efficient, easy-to-use functions for enterprises to effectively improve code quality.

Procedure

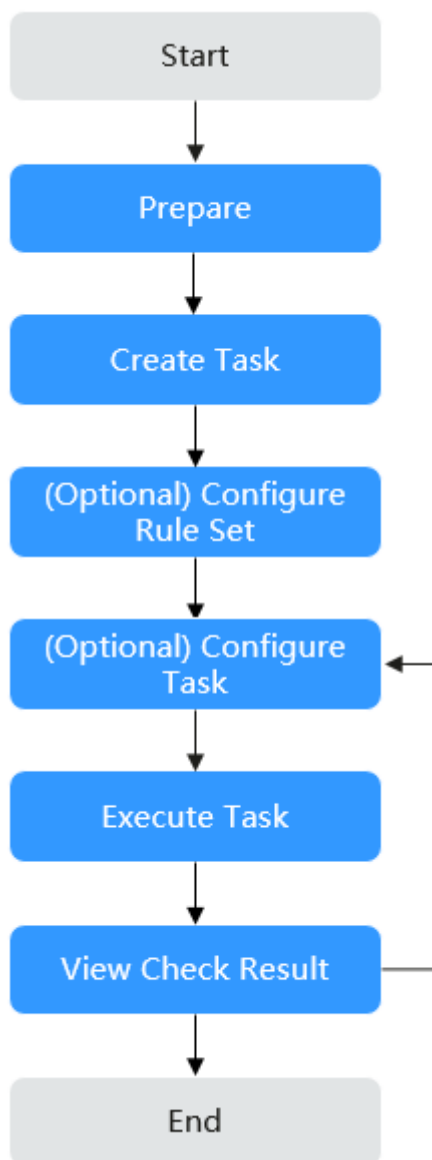


Table 1-1 Process description

N o.	Process	Description
1	3 Preparing	Before running a code check task, complete preparations such as creating a project.
2	4 Creating Tasks	Create different types of code check tasks.

No.	Process	Description
3	5 (Optional) Configuring Rule Sets	Add, copy, modify, delete, or export custom rule sets as required.
4	6 (Optional) Configuring Tasks	Modify or configure existing check tasks.
5	7 Executing Tasks	Perform a check task to identify issues in the source code.
6	8 Viewing Check Results	View the check results and fix code issues after a code check task is complete.

2 Roles and Permissions

Table 2-1 describes the default role permissions of CodeArts Check users to manage resources (such as tasks and rule sets) in a project.

Table 2-1 Default role permissions in CodeArts Check

Role	Code Check Task	Rule Set	Rule	Issue
Project creator	<ul style="list-style-type: none"> • Create, view, delete, execute, and modify tasks of all members in a project. 	Create, delete, and modify personal rule sets; view and use others' rule sets.	View	<ul style="list-style-type: none"> • View an issue list. • Export an issue list. • View issue details. • Create an issue ticket. • Handle issues.
Project manager				
Developer	<ul style="list-style-type: none"> • Create, view, execute, modify, and delete personal tasks. • Have permissions to view, execute, and modify others' tasks in the same code repository. 			
Test manager	<ul style="list-style-type: none"> • Have no permissions to create or view tasks. 	Create, delete, and modify personal rule sets, and view others' rule sets.		-
Tester				-
Participant				-
Viewer				-

Role	Code Check Task	Rule Set	Rule	Issue
O&M manager				-

3 Preparing

Before creating a code check task, perform the following operations:

- [Accessing the CodeArts Check Page](#)
- [Creating a Project](#)
- [Creating a Code Repository](#) (for Repo source code)
- [Creating a Service Endpoint](#) (for Git code source)

Accessing the CodeArts Check Page

You can access CodeArts Check from a project or the homepage.

- **From a project**
 - a. On the **CodeArts** homepage, click a target project name. The project details page is displayed.
 - b. Choose **Code > Check**.
- **From the homepage**

On the CodeArts homepage, choose **Services > Check**.

Creating a Project

Create a project in CodeArts Req. For details, see [Creating a Project](#).

Skip this step if a project has been created.

Creating a Code Repository

[Create a code repository](#) in CodeArts Repo.

Skip this step if a code repository has been created.

Creating a Service Endpoint

Create a service endpoint first if you select Git code source when creating a code check task. For details, see [Service Endpoints](#).

Skip this step if a service endpoint has been created.

4 Creating Tasks

[4.1 Creating a Task to Check Code from Repo](#)

[4.2 Creating a Task to Check Code from Git](#)

4.1 Creating a Task to Check Code from Repo

Prerequisite

You have completed the preparations described in [3 Preparing](#).

NOTE

- If you select **Automatically create Check task** when creating a cloud repository in CodeArts Repo, you can view the check task of the repository in the code check task list after the repository is created.
- This section describes how to create a task to check code from CodeArts Repo, if you do not select **Automatically create Check task** when creating a cloud repository in CodeArts Repo.

Procedure

The following example describes how to create a code check task by accessing the CodeArts Check page [from a project](#).

Step 1 On the **Check** page, click **Create Task**.

Step 2 On the displayed page, select the Repo code source.

Step 3 Click **New** in the **Operation** column of a created code repository.

You can also click **Create Repository** to create a code repository.

Step 4 On the displayed **View Task Details** page, click **Start Check** to run the check task. After the check task is complete, you can view the check result.

----End

4.2 Creating a Task to Check Code from Git

Prerequisite

You have completed the preparations described in [3 Preparing](#).

Procedure

The following example describes how to create a code check task by accessing the CodeArts Check page [from a project](#).

Step 1 On the **Check** page, click **Create Task**.

Step 2 On the displayed page, select the **Git** code source.

Step 3 Configure the **Endpoint**, **Repository**, **Branch**, and **Language**.

Click **Manage** on the right of **Endpoint** to access the **Service Endpoints** page, and create a service endpoint linking to Git. For details, see [Creating a Service Endpoint](#).

Step 4 Click **OK**. On the displayed **View Task Details** page, click **Start Check** to run the check task. After the check task is complete, you can view the check result.

----End

5 (Optional) Configuring Rule Sets

[5.1 CodeArts Check Rule Set](#)

[5.2 Adding a Custom Code Check Rule Set](#)

[5.3 Deleting a Custom Code Check Rule Set](#)

[5.4 Modifying a Custom Rule Set](#)

[5.5 Exporting a Rule Set](#)

[5.6 Viewing Rule Details](#)

5.1 CodeArts Check Rule Set

CodeArts Check supports rule sets in Java, C++, PHP, C#, JavaScript, TypeScript, HTML, CSS, Go, and Python by default, and each language corresponds to multiple rule sets. System rule sets are listed in [Table 5-1](#).

Table 5-1 System rule sets

Language	System Rule Set	Extension of Scannable File
C++	<ul style="list-style-type: none">• Critical Criterion Set• General Criterion Set• Comprehensive Criterion Set	.c/.cc/.cpp/.cxx/.cp/.c+ +/.inc/.inl/.mm/.h/.hh/.hpp/.h xx/.h++
Java	<ul style="list-style-type: none">• Critical Criterion Set• General Criterion Set• Comprehensive Criterion Set	.java
Go	<ul style="list-style-type: none">• General Criterion Set• Comprehensive Criterion Set	.go

Language	System Rule Set	Extension of Scannable File
Python	<ul style="list-style-type: none"> • Critical Criterion Set • General Criterion Set 	.py
JavaScript	<ul style="list-style-type: none"> • Critical Criterion Set • General Criterion Set • Comprehensive Criterion Set 	.js/.jsx
C#	<ul style="list-style-type: none"> • Critical Criterion Set • General Criterion Set • Comprehensive Criterion Set 	.cs
TypeScript	<ul style="list-style-type: none"> • Critical Criterion Set • General Criterion Set • Comprehensive Criterion Set 	.ts/.tsx
CSS	<ul style="list-style-type: none"> • General Criterion Set 	.css
HTML	<ul style="list-style-type: none"> • General Criterion Set 	.html
PHP	<ul style="list-style-type: none"> • Critical Criterion Set • General Criterion Set 	.php


Accessing Rule Sets




Step 1 On the CodeArts homepage, choose **Services > Check**.

Step 2 On the displayed page, click the **Rule Sets** tab.

You can add, modify, copy, delete, view, configure, or export rule sets as required. For details, see [Table 5-2](#).

Table 5-2 Rule set operation description

Operation	Description
Add a rule set	On the Rule Sets tab page, click Create Rule Set to customize a rule set. For details, see 5.2 Adding a Custom Code Check Rule Set .
Configure a rule set	Click  in the Operation column of the target rule set to access Configure Rule Sets page. You can select rules and set issue levels on the displayed page.

Operation	Description
Modify the basic information of a rule set	On the Configure Rule Sets page, click Modify Basic Info . You can modify the rule set name and description. For details, see 5.4 Modifying a Custom Rule Set .
Copy a rule set	Click  in the Operation column of the target rule set. In the displayed dialog box, set a rule set name to copy the rule set. NOTE A rule set name must be unique.
Default rule set (under a project)	On the project details page, choose Code > Check > Rule Sets . On the displayed page, click  in the row where the rule set is located and select Default Set to set it as the default check rule set of a check task in the project.
Delete a rule set	Click  in the row where the rule set is located and choose Delete Set . For details, see 5.3 Deleting a Custom Code Check Rule Set . NOTE You cannot delete system rule sets, rule sets not created by yourself and rule sets in use.
View a rule set	You can click a rule set name to view its details.
Configure a rule set	Go to a check details page, click the Settings tab, choose Rule Sets , select a created rule set, and set it as the check rule set for the task. For details, see 6.3 Configuring a Rule Set .
Export a rule set	Go to the Configure Rule Sets page of a rule set and click Export to export all its rules. For details, see 5.5 Exporting a Rule Set .

----End

5.2 Adding a Custom Code Check Rule Set

- In addition to system rule sets, you can customize rule sets.
- At least one rule must be set for each rule set template.

Prerequisite

A rule set can be configured with only one language.

Procedure

Step 1 Go to the [Task page](#) and click the **Rule Sets** tab.

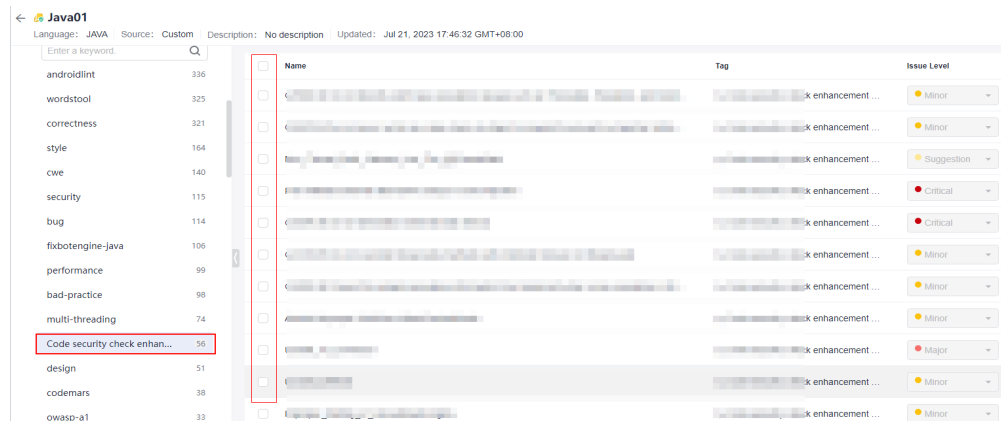
Step 2 Click **Create Rule Set**. In the displayed **Create Rule Set** dialog box, enter a rule set name and select a language.


(Optional) You can also copy an existing rule set by selecting it from the drop-down list.

Step 3 Click **OK**.

Step 4 Select rule names, set issue levels as required, and click **Save** in the upper right corner.

The following uses a code security check enhancement package of a Java rule set as an example:



Step 5 Go to the **View Task Details** page, click **Settings** tab, and choose **Rule Sets**. On the displayed page, click  in the row where **Languages Included** is located to re-obtain the code repository language, enable the target language, and select the configured custom rule set. For details, see [6.3 Configuring a Rule Set](#).

Step 6 Click **Start Check** to run the check task based on the custom rule set.

----End

5.3 Deleting a Custom Code Check Rule Set

You cannot delete a custom check rule set associated with a code check. After deleting the code check task that uses the rule set or associating the code check task with another rule set, you can delete the custom rule set.

Procedure

Step 1 Go to the [Task page](#) and click the **Rule Sets** tab.

Step 2 If the check rule set you want to delete is in use, delete the code check task that uses this rule set or associate the code check task with another rule set.

Step 3 Click  in the row where the rule set is located and choose **Delete Set**.

NOTE

- Only a creator can delete the created rule set.
- System rule sets and rule sets in use cannot be deleted.

----End

5.4 Modifying a Custom Rule Set

You can modify the basic information of a custom rule set, including the rule set name and description.

Prerequisites

- System rule sets cannot be modified.
- Only a creator can modify the created rule set.

Procedure

- Step 1** Go to the [Task page](#) and click the **Rule Sets** tab.
- Step 2** Select a language in the search box to filter rule sets.
- Step 3** Click a rule set name and enter the rule set details page.
- Step 4** Click **Modify Basic Info**.
- Step 5** Modify the rule set name or description, and click **OK**.

NOTE

The **Language** cannot be modified.

----End

5.5 Exporting a Rule Set

You can download a rule set to view details.

Procedure

- Step 1** Go to the [Task page](#) and click the **Rule Sets** tab.
- Step 2** Select a language in the search box to filter rule sets.
- Step 3** Click a rule set name and enter the rule set details page.
- Step 4** Click **Export**.

----End

5.6 Viewing Rule Details

Rule details include the issue levels, compliant and noncompliant examples, and fix suggestions.

Procedure: Method 1

- Step 1** Go to the [Task page](#) and click the **Rules** tab.

Step 2 On the **Rules** page, select different languages and the corresponding rule details are displayed.

----End

Procedure: Method 2

Step 1 Go to the [Task page](#) and click the **Rule Sets** tab.

Step 2 On the **Rule Sets** page, click the rule set name or the number of rules.

Step 3 On the displayed page, click a rule name. The corresponding rule details are displayed.

----End

6 (Optional) Configuring Tasks

- [6.1 Overview](#)
- [6.2 Configuring Basic Info](#)
- [6.3 Configuring a Rule Set](#)
- [6.4 Configuring Excluded Files](#)
- [6.5 Configuring Quality Gate](#)
- [6.6 Configuring Execution Plans](#)
- [6.7 Enabling and Disabling Notifications](#)
- [6.8 Configuring Check Modes](#)
- [6.9 Configuring an Automatic Check Task for Branch Merge](#)
- [6.10 Configuring an Automatic Check Task Executed upon Code Commit](#)

6.1 Overview

You can modify or configure existing check tasks. For details about how to configure a task, see [Table 6-1](#).

Table 6-1 Configuring a code check task

Configuration Item	Operation Description
Basic Info	Modify the task name and default branch, and delete the task. For details, see 6.2 Configuring Basic Info .
Rule Sets	Re-enable code check rule sets as required. For details, see 6.3 Configuring a Rule Set .
Excluded Files	See 6.4 Configuring Excluded Files .
Quality Gate	See 6.5 Configuring Quality Gate .

Configuration Item	Operation Description
Execution Plans	See 6.6 Configuring Execution Plans .
Notifications	See 6.7 Enabling and Disabling Notifications .
Check Modes	See 6.8 Configuring Check Modes .
Integration Services	See 6.9 Configuring an Automatic Check Task for Branch Merge and 6.10 Configuring an Automatic Check Task Executed upon Code Commit .

6.2 Configuring Basic Info

You can set the basic information about a task as required, such as the task name and default branch, and also can delete the check task.

NOTE

A project creator, or project administrator can modify or delete a check task. For details, see [2 Roles and Permissions](#).

Modifying the Name and Default Branch of a Check Task


Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings** > **Basic Info**, and modify the task name and default branch.

----End

Deleting a Check Task

- **Deleting from the task page**

Step 1 Go to the [Task page](#) and click  in the **Operation** column of the target code check task.

Step 2 Select  from the drop-down list.

Step 3 In the **Delete Task** dialog box, enter the task name.

Step 4 Click **OK**.

----End

- **Deleting from the task settings page**

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings** > **Basic Info**.

Step 3 Click **Delete Task**. On the displayed dialog box, enter the task name.

Step 4 Click **OK**.

----End

6.3 Configuring a Rule Set

You can change code check rule sets as required. The new rule set takes effect in the next check.

NOTICE

Rule sets of multiple languages cannot be used to check a task at the same time. Example: C# rule sets cannot be applied with other language rule sets to check a task.


Procedure

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Rule Sets**.

Step 3 In the **Languages Included** area, enable the target language. In the **Enable Rule Set** area, click the rule set which you want to change.

NOTE

- When you access **Rule Sets** page for the first time, you need to click  in the row where **Languages Included** is located to re-obtain the rule sets.
- For details about how to add a new rule set, see [5.2 Adding a Custom Code Check Rule Set](#). After the rule set is added, refresh the page to obtain the rule set.

Step 4 In the displayed dialog box, click **OK** to change the language rule set.

Step 5 (Optional) To configure extended parameters for the selected rule set, click **Check Parameter**, configure extended parameter, enable the configuration function, and click **OK**.

NOTE

To use a code security enhancement package, you need to configure check parameters.

----End

6.4 Configuring Excluded Files

You can configure the file scope by task.

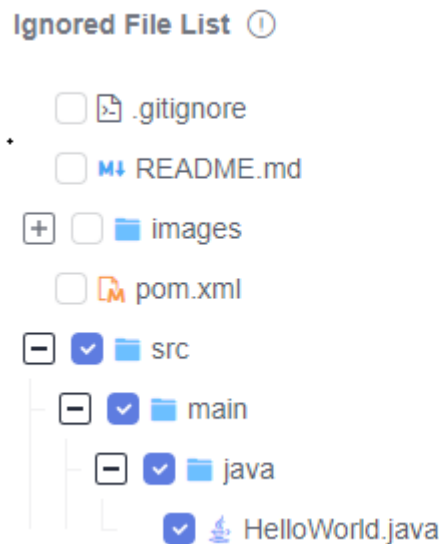
- If you do not specify a file path, all code of the selected repository branch is checked.
- If you specify a file path, the files in the specified path are ignored during a check.

Procedure

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Excluded Files**.

Step 3 In the **Ignored File List** area, select the file paths that do not need to be checked.



Step 4 Run the code check task. The files in the selected paths will not be checked.

----End

6.5 Configuring Quality Gate

Set the threshold based on the quality requirements to check whether the project is ready for production.

Quality gate can be set at the tenant, project, and task levels in a descending order of precedence. The navigation paths are as follows:

- Tenant level: Go to the CodeArts Check homepage, and choose **Config Center**. The **Quality Gate** details are displayed by default.
- Project level: Go to the project details page, and choose **Code > Check > Config Center > Quality Gate**.
- Task level: Go to the CodeArts Check details page, and choose **Settings > Quality Gate**. This section uses a task-level quality gate as an example to describe how to configure a quality gate.

NOTE

[Notification settings](#) are supported at the project level and task level.

Procedure

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Quality Gate**.

Step 3 In the **Quality Gate** area, enable gate items and set thresholds based on quality requirements.

Item	Operator	Threshold	Enable
Critical	≤	5	<input checked="" type="checkbox"/>
Major	≤	0	<input checked="" type="checkbox"/>
Minor	≤	0	<input checked="" type="checkbox"/>
Suggestion	≤	0	<input checked="" type="checkbox"/>

Save

Step 4 Click **Save**.

You can click **Start Check** and view the check results.

If the issues of a gate item exceed the corresponding thresholds for a gate, **Failed** is displayed in the **Task-level Gate Result** area of the **Overview** tab page.

----End

6.6 Configuring Execution Plans

You can set the execution plans of a code check task as required to periodically execute the check task for the default branch.

NOTE

- It is advised to configure this for tasks in non-pipeline mode.
- The interval on the current day must be longer than 5 minutes.

Procedure

Step 1 Go to the **Task page**. In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Execution Plans**.

Step 3 Enable **Scheduled Check** and set the automatic execution time.

You can configure a day or time segment in a week to execute a check task.

Step 4 Click **Save**.

----End

6.7 Enabling and Disabling Notifications

You can set notification modes for the code check task event types as required.

- Event type: check task completed, task deletion, and quality gate failure
- Notification mode: event notice and email

For example, when the code gate failed, you can configure the notification modes, recipient roles, and custom members. In this way, a notification is sent to the task executor, configured recipient roles, and custom members. Otherwise, a notification is only sent to the task executor.

The notification can be configured at the project level or task level. The navigation paths are as follows:

- Project level: On the project details page, choose **Code > Check > Config Center > Notifications**.
- Task level: Go to the check details page and choose **Settings > Notifications**. This section uses the task-level notification settings as an example to describe how to enable and disable notifications.

Procedure

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Notifications**.

Step 3 Enable or disable the notification of an event type as required.

- If **Notify** is enabled, event notices will be sent to specific members of current project.
- If **Email** is enabled, emails will be sent to specific members of current project.

----End

6.8 Configuring Check Modes

You can set check modes and checked catalogs as required to improve the check efficiency.

NOTICE

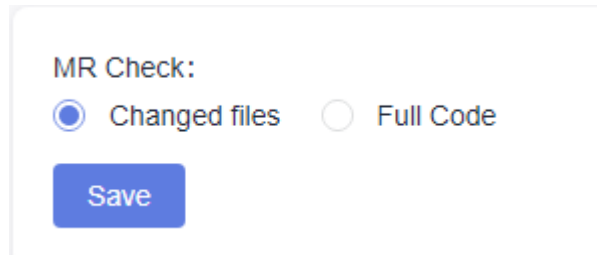
Neither C# nor the secbrella engine supports merge requests.

Configuring Check Modes

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Check Modes**.

Step 3 In the **MR Check** area, select **Changed Files** or **Full Code**. By default, **Changed Files** is selected.



Step 4 Click **Save**.

----End

Configuring Checked Catalogs

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Check Modes**.

Step 3 Configure catalogs to be checked.

You can specify certain directories to be checked in the code repository.

- By default, all codes in the code repository are checked.
- If you specify one or more directories, the files in the specified directories are checked.

NOTE

You can specify multiple directories by separating them with commas (,). For example:

- To check the **dir1** and **dir2** directories, enter **dir1,dir2**.
- To check **dir3** in the **dir1** directory, enter **dir1/dir3**.

Step 4 Click **Save**.

----End

6.9 Configuring an Automatic Check Task for Branch Merge

If branch merging exists in CodeArts Repo, you can configure an automatic check task and generate a subtask. That is, if branch merging exists in a code repository, a new code check subtask is generated.


Procedure

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the displayed **View Task Details** page, click **Settings > Integration Services > CodeArts Repo**.


Step 3 Determine whether to select **MR Status** (MR indicates merge requests). If you select it, the automatic check of code review is enabled.

Step 4 If a branch is merged in the code repository of the task, a code check job is automatically generated.

1. Access **View Task Details** page.
2. Click  and create a merge request in CodeArts Repo.

 **NOTE**

Based on the **Check Modes** you selected, the changed files or full code will be checked after the branch is merged.

3. Click  **master** ▾. You can view all historical records of MR-triggered code check in the drop-down list.

----End

6.10 Configuring an Automatic Check Task Executed upon Code Commit

When code is successfully committed in CodeArts Repo, you can set an automatic check task in CodeArts Check.

Procedure

- Step 1** Go to the **Task page**. In the task list, click a task name.
- Step 2** On the displayed **View Task Details** page, click **Settings > Integration Services**.
- Step 3** In the **Continuous Integration** area, select **Executed upon code submission**.

 **NOTE**

This function applies only to branches with created tasks.

- Step 4** Click **Save**.

----End

7 Executing Tasks

[7.1 Executing a Check Task](#)

[7.2 Configuring Multi-Branch Check](#)

7.1 Executing a Check Task

You can perform a check task to identify issues in the source code in time.

You can use either of the following methods to check code:

- Manual execution: For details, see [Procedure](#).
- Scheduled execution: Configure [Execution Plans](#) for a code check task.

Prerequisite

You have [created a code check task](#).

Procedure

Step 1 Go to the [Task page](#) and click **Execute immediately** in the **Last Check** column of the target code check task.

NOTE

If the code check task has been executed, click  in the row where the task is located to execute the task again.

You can also click the task name. On the displayed **View Task Details** page, click **Start Check**.



Step 2 Wait until the task is complete as prompted. For details, see [Viewing Check Details](#).

----End

7.2 Configuring Multi-Branch Check

On the **View Task Details** page, you can switch between **Checked Branches** and **Unchecked Branches**.

Procedure

- Step 1** Go to the [Task page](#). In the task list, click a task name.
- Step 2** On the **View Task Details** page, the **Overview** tab page is displayed by default. You can click  **master** ▼ to switch among different branches.
- Step 3** After switching to the target branch, click  .

----End

8 Viewing Check Results

[8.1 Viewing Check Details](#)

[8.2 Viewing Code Issues](#)

[8.3 Viewing Code Metrics](#)

[8.4 Viewing Check Logs](#)

8.1 Viewing Check Details

Check details include overview, issues, metrics, logs, and settings.

Prerequisite

You have **created** and **executed** a code check task.

Viewing Check Details

Step 1 Go to the **Task page** and search for the target task.

NOTE

You can view the status of the check task in the **Issue** column of the code check task list.

- **New:** new issues that need to be solved after the code check task is executed.
- **Unsolved:** issues that have not been solved after the code check task is executed.
- **Solved:** issues that have been solved after the code check task is executed.

Step 2 Click the task name to view the check details.

- **Overview:** For details, see [Viewing Task Overview](#).
- **Issues:** View and fix code issues. For details, see [8.2 Viewing Code Issues](#).
- **Metrics:** View the cyclomatic complexity and duplicates of code. For details, see [Fixing Code Cyclomatic Complexity Issues](#) and [Fixing Code Duplicates Issues](#).
- **Logs:** View check logs. For details, see [8.4 Viewing Check Logs](#).

- **Settings:** For details, see [Overview](#).

----End

Viewing Task Overview

After a check task is complete, the check result is displayed.

On the **View Task Details** page, the **Overview** tab page is displayed by default. You can view the task overview information.

8.2 Viewing Code Issues

After executing a code check task, you can modify the status of the code issues and transfer the owner in the issue list.

Procedure


- Step 1** Go to the [Task page](#). In the task list, click a task name.
- Step 2** On the displayed **View Task Details** page, click **Issues** tab. For details, see [Table 8-1](#).
- Step 3** In the **Filters** area on the left, you can filter issues by criteria and select one or multiple issues in the right area for separate, batch, or full operations.
 - Click **Owner** to submit the issue to another owner.
 - If an issue does not need to be modified, change the issue status to **Ignore Issue**.
 - Click **View Context**. On the **Context** page, you can modify the issue status, transfer the owner, and click  to modify the code based on **Help**.
 - Click **Create Ticket** to submit the service ticket.

Table 8-1 Code issue description

Operation	Description
Issue Level	Includes Critical, Major, Minor, and Suggestion .
Issue Status	Includes Pending, Resolved, Ignored, and Fixed .
Check Time	Includes New and Inventory issues. NOTE You can set the start time of new issues by choosing Settings > Advanced . Issues found after that time are new.
Language	Statistics are collected by programming language.
Rule	Statistics are collected based on matched rules so that users can fix the same type of issues at a time.
User Tag	Statistics are collected by user tag of rules.

Operation	Description
Owner	Statistics are collected by assigned issue owner. NOTE During check, new issues are automatically assigned to the last committer of the faulty code line when you enable Accurate Matching of Issue Owners .
CWE	Statistics are collected by security rule name.
File	Search for code issues by source file.
Export All	Choose All Change > Export All to export all filtered code issues.
Change Statuses	Change the status of all code issues to Resolved or Ignore Issue . NOTE If the number of code issues is 0, this button is not displayed.
Change Owners	Transfer all code issues to other owners.
Handle specified issues in batches	Select the target issues and click Batch Transfer Owner, Modify problem status in batches , or Export .

----End

8.3 Viewing Code Metrics


Code metrics reflect the quality of committed code, helping you detect and fix issues in a timely manner and improving R&D efficiency.

- **Cyclomatic Complexity**: Measures code complexity. You can determine the logic complexity and modify the code based on the cyclomatic complexity, facilitating subsequent maintenance.
- **Duplicates**: Evaluates code quality risks. You can modify the redundant code to improve the code quality.

NOTE

Code cyclomatic complexity is not supported for Shell.

Fixing Code Cyclomatic Complexity Issues

- Step 1** Go to the [Task page](#). In the task list, click a task name.
- Step 2** On the **View Task Details** page, click the **Metrics** tab to view the cyclomatic complexity and duplicates of the completed check task.
- Step 3** Click a file name to go to the file details page.
- Step 4** Click  to view and modify the source code of the file.


```
worker/src/main/java/worker/Worker.java
1 package worker;
2
3 import redis.clients.jedis.Jedis;
4 import redis.clients.jedis.exceptions.JedisConnectionException;
5 import java.sql.*;
6 import org.json.JSONObject;
7
8 class Worker {
9     public static void main(String[] args) {
10         try {
11             Jedis redis = connectToRedis("redis");
12             Connection dbConn = connectToDB("db");
13
14             System.err.println("Watching vote queue");
15
16             while (true) {
17                 String voteJSON = redis.blpop(0, "votes").get(1);
18                 JSONObject voteData = new JSONObject(voteJSON);
19                 String voterID = voteData.getString("voter_id");
20                 String vote = voteData.getString("vote");
21
22                 System.err.printf("Processing vote for '%s' by '%s'\n", vote, voterID);
23                 updateVote(dbConn, voterID, vote);
24             }
25         }
26     }
27 }
```

----End

Fixing Code Duplicates Issues

Step 1 Go to the [Task page](#). In the task list, click a task name.

Step 2 On the **View Task Details** page, click the **Metrics** tab to view **Duplicates** of the completed check task.

Step 3 Click a file name to go to the file details page.

The vertical bars on the left of the file details page identify duplicated code blocks. If you click a vertical bar, the list of files that contain the same code blocks is displayed.

```

319 // hyear is just approximate, it may need adjustment up or down by 1.
320 if (daysSinceJan0101 < absDays) {
321     hyear--;
322     absDays -= daysInYear;
323 }
324 else if (daysSinceJan0101 === absDays) {
325     hyear--;
326     absDays = this.daysToYear(hyear);
327 }
328 else {
329     if (daysSinceJan0101 > (absDays + daysInYear)) {
330
331         Duplicated By
332         result/views/app-assets/js/core/libraries/jquery_ui/globalize/cultures/globalize.culture.a...
333         Lines: 309 - 382
334         result/views/app-assets/js/core/libraries/jquery_ui/globalize/cultures/globalize.culture.a...
335         Lines: 309 - 382
336         result/views/app-assets/js/core/libraries/jquery_ui/globalize/cultures/globalize.culture.a...
337         Lines: 92 - 165
338         result/views/app-assets/js/core/libraries/jquery_ui/globalize/cultures/globalize.culture.a...
339
340         hmonth++;
341     }
342     hmonth--;
343     hday = daysIntoYear - this.monthDays[hmonth];
344     return [hyear, hmonth, hday];
345 },
346 daysToYear: function(year) {
347     // calculates how many days since Jan 1, 0001
348     var yearsToYear30 = Math.floor((year - 1) / 30) * 30,
349         yearsInto30 = year - yearsToYear30 - 1,
350         days = Math.floor((yearsToYear30 * 10631) / 30) + 227013;
    
```

Click a file name to compare the duplicated code blocks of the two files.

Step 4 Click to view and modify the source code of the file.

----End

8.4 Viewing Check Logs

After executing a code check task, you can view the code check results in check logs.

Procedure

- Step 1** Go to the [Task page](#). In the task list, click a task name.
- Step 2** On the **View Task Details** page, click the **Logs** tab. Log details include **Step**, **Check Parameter**, and others.

----End