CodeArts Artifact

Service Overview

Issue 01

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Security Declaration

Vulnerability

Huawei's regulations on product vulnerability management are subject to "Vul. Response Process". For details about the policy, see the following website:https://www.huawei.com/en/psirt/vul-response-process For enterprise customers who need to obtain vulnerability information, visit:https://securitybulletin.huawei.com/enterprise/en/security-advisory

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1 What Is CodeArts Artifact?

Service Overview

CodeArts Artifact helps software development enterprises manage the software release process in a standardized, visualized, and traceable way.

CodeArts Artifact focuses on and manages the staging **software packages** (usually built by or packed from the **source code**) and their lifecycle metadata. The metadata includes basic attributes such as the name and size, repository addresses, build tasks, creators, and build time.

The management of **software packages** and their attributes is the basis of release management. **Figure 1-1** shows the common software development process.

Figure 1-1 Software development process
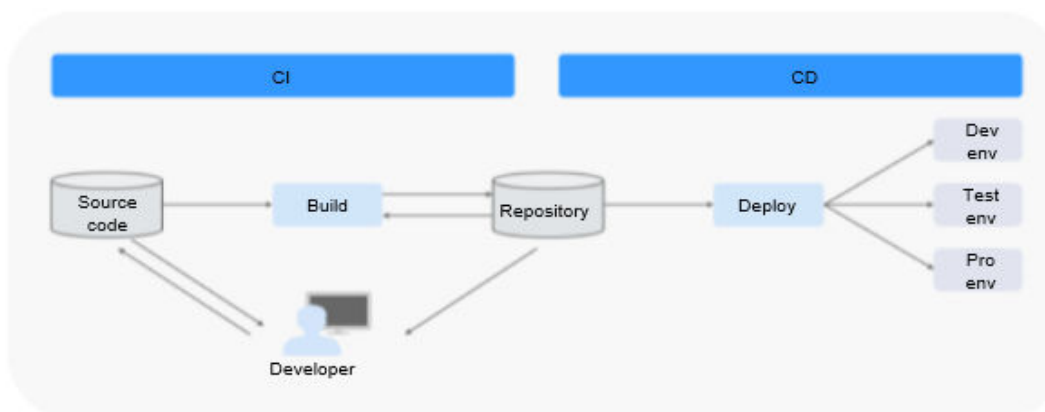
Repository is a collection of software artifacts and is used to manage software packages generated during software development. It is an important link between continuous integration and delivery. Operations such as release review, tracing, and security control of software packages are usually performed in the repository.

CodeArts Artifact provides the following two types of repositories:

- Release repo

  A release repo can store any software packages and tools in any formats.

Build artifacts can be archived to the release repo. You can view and manage the archived software packages and their lifecycle attributes. These software packages are used for deployment.

- Self-hosted repo

    A self-hosted repo manages private component packages (such as Maven) corresponding to various development languages.

    Different development language components vary in the archive format (for example, the Maven component needs to be archived in **GAV** format). CodeArts Artifact manages private development language components and shares them with other developers in an enterprise or team.

What Functions Does CodeArts Artifact Provide?

Table 1-1 Release repo functions

Function	Description
Managing software packages	You can upload, download, search for, and delete software packages. Folders can also be created for better management.
Querying software package attributes	You can view the software package lifecycle attributes in the release repo. The lifecycle attributes include basic information (such as the name, size, and checksum), build information (such as the build task, build time, and source code repository).
Uploading software packages to the release repo using CodeArts Build	The release repo integrates CodeArts Build. Through configuration, all software packages generated by CodeArts Build can be automatically uploaded to the release repo for archiving.
CodeArts Deploy	Software packages stored in the release repo can be used by CodeArts Deploy.
Package view and build view	You can view a software package in the package view (storage directory structure) or build view (build task and pipeline).

Table 1-2 Self-hosted repo functions

Function	Description
Managing private components	You can upload, download, delete, and search for private components.

Function	Description
Releasing components to the self-hosted repo using CodeArts Build	In a build task, you can configure build artifacts to be directly released to the self-hosted repo.
Connecting the local development environment	You can generate a configuration file in one click. After the generated file is configured in the local development tool, you can directly connect the local development environment to the private component packages in the self-hosted repo. For example, you can use command lines to upload and download components in the self-hosted repo.
Repository access control	By setting user roles in repositories, administrator can restrict operation permissions of users.

2 Product Advantages

CodeArts Artifact enriches artifact repository management in common languages by offering artifact lifecycle management, efficient viewing and search. It will keep providing customers with comprehensive, efficient, and trusted artifact management.

Self-managed, Secure, and Ultimate-performance Artifact Repository for Service Continuity

CodeArts Artifact is developed based on the cloud native architecture to resolve service continuity issues caused by external uncontrollable factors. CodeArts Artifact has the following features:

– Security: CodeArts Artifact provides multi-dimensional and fine-grained permission control to meet access control requirements of different roles in an enterprise. It uses the cloud native architecture for physical isolation to reduce the risk of malicious artifact theft.

– Traceability: records user operations.

– Reliability: CodeArts Artifact supports dual-AZ DR and cross-region DR, API traffic limiting and degradation, service dependency and isolation, and service fault detection. These features allow a 99.99% SLA.

– Speed: CodeArts Artifact provides cache acceleration for popular files, incremental upload and download, and full use of cache acceleration advantages for large and small files to improve the build speed, break through the underlying storage bandwidth limit, and implement high-speed concurrent transmission in the same region. Compared with similar open source products, CodeArts Artifact upload performance is improved by 5 times and the download performance by 10 times.

Supporting over 10 Repo Types to Meet Various Needs

CodeArts Artifact supports more than 10 mainstream artifact types in Generic, Maven, npm, Go, PyPI, RPM, Debian, Conan, NuGet, and more, meeting the requirements of embedded, web, and mobile application development scenarios. It can seamlessly integrate with on-premises builds, deployment tools, and CI/CD on

the cloud. CodeArts Artifact also provides artifact and metadata integrity verification capabilities. It supports fine-grained control and version-based package locking permissions to ensure the integrity of software release tests and comprehensively protect enterprise artifact security.

Searching for Artifacts by File Name and Checksum and Precisely Locating Them Among Hundreds of Millions of Artifacts in Seconds

CodeArts Artifact has powerful search capabilities by using Huawei's data engine. In a few seconds, you can search artifacts quickly from tens of billions of artifact files from multiple dimensions.

It covers multiple artifact types, such as Maven, npm, Go, PyPI, RPM, Debian, Conan and NuGet. You can search for and locate artifacts in seconds by file name or hash information (MD5, SHA1, SHA256, and SHA512). Based on this, CodeArts Artifact also supports efficient query associating hundreds of millions of metadata and SBOM to quickly trace artifact files. Compared with similar open-source products, CodeArts Artifact improves the search performance by 20 times.

3 Constraints

Table 3-1 describes the constraints on CodeArts Artifact.

Table 3-1 Constraints

Category	Item	Limit
Browser	Type	The following browsers are supported: ● Chrome: The latest three stable versions are supported and tested. ● Firefox: The latest three stable versions are supported and tested. ● Microsoft Edge: Windows 10 uses Microsoft Edge by default. The latest three stable versions are supported and tested. ● Internet Explorer is no longer supported and tested. **Chrome and Firefox are recommended.**
Resolution	Resolution	(Recommended) 1280 x 1024 or higher
Constraints on a release repo	Maximum size of a file uploaded on the console	2GB
	Maximum size of a file uploaded by a build task	5 GB
Constraints on a self-hosted repo	Total storage capacity	1 TB
	Maximum size of a file uploaded on the console	Maven/npm/PyPI/Go/RPM/Debian: 100MB NuGet: 20 MB

Category	Item	Limit
	Maximum size of a file uploaded by a build task	300 MB