

CodeArts Agent

Service Overview

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1 Huawei Cloud CodeArts Agent

Huawei Cloud CodeArts Agent is an AI-powered coding assistant. It combines IDE functionality, autonomous development, and code models to assist you with key tasks. It can generate project code from scratch, complete existing code, answer technical questions, and write unit test cases to improve development efficiency and enhance your coding experience.

Advantages

During development, you are often forced to grapple with escalating project complexities, tight deadlines, and uncompromising quality standards. CodeArts helps you tackle these key challenges through the following approaches:

1. High-performance AI-native coding

- Improved R&D efficiency: By combining developer input with autonomous Agent capabilities, CodeArts Agent generates code in real time to accelerate software development.
- Optimized resource usage: Code slicing and retrieval-augmented generation (RAG) provide fast, accurate responses. By trimming context precisely, CodeArts Agent reduces token consumption and lowers the cost of AI-assisted coding.

2. Flexible development with specifications compliance

CodeArts offers two autonomous development modes for seamless flexibility:

- Explore mode: A dynamic space where humans and machines unite. It lets you swiftly validate concepts and transform abstract visions into functional prototype code with ease.
- Standard mode: Rigorous coding specifications and robust security checks work seamlessly together, acting as vigilant gatekeepers to guarantee every line of generated code is secure, compliant, and effortlessly maintainable.

3. Deep insights into repos for fast and accurate code retrieval

- Deep insights into projects: Powered by its robust project-level knowledge base, CodeArts Agent analyzes code repositories in depth, using keyword recognition, semantic interpretation, and graph-based insights, enabling swift and pinpoint retrieval of repo knowledge.
- Precise intent recognition: Unlike general-purpose chatbots, CodeArts Agent excels at pinpointing developer needs based on project-specific

context, understanding the developer intent, delivering tailored responses and suggestions that align seamlessly with ongoing tasks.

4. **Full-stack, multi-tech stack, and cross-domain adaptation**

With support for major programming languages, databases, and full-stack frameworks, CodeArts Agent automatically handles syntax variations and aligns with engineering standards to efficiently generate clean, maintainable service code.

Application Scenarios

- **Rapid development of new projects**

You can get started and deliver projects faster by quickly generating the project framework, service code, and prototype based on the CodeArts Agent capabilities.

- **Developer-friendly code maintenance**

CodeArts Agent can parse the project codebase and identify semantics and service logic. Agents accelerate onboarding for legacy systems and streamline ongoing maintenance and iteration.

- **Smart coding and creative development**

CodeArts Agent helps with code writing, completion, and generation across all scenarios, adapting to multiple tech stacks and significantly reducing the repetitive coding work.

- **Code quality control**

Both the explore and standard modes balance development flexibility and compliance requirements. Built-in coding specifications and security monitoring ensure code security, compliance, and maintainability.

- **Debugging and bug fixes**

CodeArts Agent can intelligently analyze logs and code stacks to locate root cause issues. It will then provide a solution and automatically generate code to rectify the fault.

- **Co-creating and retaining knowledge assets**

CodeArts Agent helps accumulate project knowledge and unify coding standards, which accelerates employee onboarding and improves R&D collaboration efficiency.

2 Functions

This section describes the main functions of CodeArts Agent. **This service is available only in the CN-Hong Kong region.**

Project-Level Code Generation

- Powered by cross-file context, CodeArts Agent auto-generates code in multiple popular programming languages.
- By reading intent from line and function comments, it delivers real-time completions, creating a smoother coding experience.

For more information, see [Agent Chats](#).

Code Completion

- CodeArts Agent anticipates your programming goals by analyzing the surrounding code context within the editor and delivers intelligent and tailored code recommendations instantly.
- Code completion can be triggered either automatically or using shortcuts.

For more information, see [Code Generation](#).

R&D Intelligent Q&A

- CodeArts Agent delivers end-to-end (E2E) support for coding, testing, and release. It acts as a conversational sidekick that keeps your team in flow by bringing the right project knowledge when you need it. As the conversation continues, it maintains multi-turn context, cutting time-to-answer.
- It allows connection to your organization's technical documentations and code repositories, along with individual knowledge bases, to deliver answers tailored to your business needs.

For more information, see [Intelligent Q&A](#).

Unit Test Case Generation

The Unit Test is an end-to-end test case generation agent that provides core capabilities throughout the entire process, including test design, test case generation, and intelligent test case repair.

For more information, see [Unit Test \(Agent\)](#).

Code Repo Indexing

CodeArts Agent grasps code repo intricacies with precision, meticulously parsing and indexing them to enhance contextual comprehension and dramatically boost code retrieval precision.

For more information, see [Repository Index](#).

Code Explanation

CodeArts Agent walks you through complex code, breaking it down by function, purpose, application scenario, and main logic. The clear explanations help you quickly familiarize yourself with the codebase, enhancing information flows, and keeping the whole team in sync.

For more information, see [Intelligent Q&A](#).

Code Commenting

- CodeArts Agent analyzes the code's structure and logic, and then auto-generates meaningful comments to improve readability and reduce the effort needed to understand the code.
- With less time spent in manually commenting on the code, you have more time to focus on core logic. Down the line, maintenance and bug fixes become smoother and faster, boosting R&D efficiency across the board.

For more information, see [Intelligent Q&A](#).

Code Optimization

CodeArts Agent optimizes code across multiple major languages. It intelligently identifies potential code defects and suggests fixes, significantly enhancing code quality and security.

For more information, see [Intelligent Q&A](#).

Skills

Skills reshape an agent by eliminating traditional limitations. They allow an agent to move beyond just "thought processing" and engage in actual conversation. CodeArts Agent understands the given skills and executes tasks autonomously. It seamlessly translates interactive commands or service demands into tangible outcomes, bridging the gap between linguistic input and visual action for comprehensive solutions.

CodeArts Agent has a skill market, offering a rich variety of out-of-the-box standardized skills. You can invoke these skills without any manual configuration required, significantly reducing integration costs and improving code development efficiency.

For more details, see [Skills](#).

Hooks

With hooks, you can insert custom logic into key lifecycle nodes of the CodeArts Agent IDE and plugins to extend functionality without modifying existing code. Unlike prompts which rely on model understanding, hooks yield deterministic outcomes. Once an event is triggered, the designated script executes reliably and consistently, without being affected by model understanding discrepancies.

For more details, see [Hooks](#).

Slash Commands

Slash commands are an efficient way to interact with your agent. They allow you to quickly give the Agent instructions for common tasks within a conversation. CodeArts Agent comes preconfigured with some common commands. You can also create commands as needed.

For more details, see [Slash Commands](#).

Memory

Memory allows CodeArts Agent to adapt to how you work. The Agent will record your habits and preferences, such as your preferred answer style and language. Once enabled, the agent will learn your preferences based on your historical sessions and automatically apply these settings to subsequent conversations, providing you with a more tailored service experience.

For more details, see [Memory](#).

Checkpoints

CodeArts Agent checkpoints are automatic code snapshots that allow for rollbacks. The system automatically tracks code edits when the Agent is running. Every time the Agent prepares to modify code, the system will first automatically save the current code and dialog status, which enables quick cancellation, rollback, and historical version recovery. This function is useful for AI-assisted development scenarios that require quick trial-and-error, secure editing, and one-click rollback.

For more details, see [Checkpoints](#)

Multi-Session Management

In traditional development, project sessions must be executed one by one. Only one session can be executed at a time, which is inefficient. With the multi-session management function, the system can execute multiple sessions at the same time, improving the overall development efficiency.

For more details, see [Multi-Chat Management](#).

Sandbox

A sandbox is a clean runtime environment used to isolate high-risk operations and prevent unauthorized resource access. In a sandbox environment, risky commands require user confirmation before execution. In addition, sensitive directories can be

isolated to prevent data leaks. Sandboxes help you comply with security requirements of industries such as finance, healthcare, and government.

For more details, see [Sandbox](#).

3 Specifications

 NOTE

For better experience, you are advised to use CodeArts Agent with the specifications recommended in [Table 3-1](#).

Table 3-1 Specifications

Item	CodeArts Agent IDE/Visual Studio Code	JetBrains Series (PyCharm, IntelliJ IDEA, WebStorm, and CLion)	CodeArts Agent CLI
Number of concurrent AI Tasks	≤ 5 This quota is shared by all tools. The total number of concurrent AI tasks of a user in each tool cannot exceed the version limit.		
Concurrent active IDE windows	≤ 3	≤ 2	/
Total number of MCP servers	≤ 20	≤ 20	≤ 20
Number of concurrently enabled MCP servers	≤ 3	≤ 3	≤ 3
Size of a single code file in a project	≤ 1 MB (3,000 lines)	≤ 1 MB (3,000 lines)	≤ 1 MB (3,000 lines)

Item	CodeArts Agent IDE/Visual Studio Code	JetBrains Series (PyCharm, IntelliJ IDEA, WebStorm, and CLion)	CodeArts Agent CLI
Number of code lines read or edited at a time	≤ 5,000 lines	≤ 5,000 lines	≤ 3,000 lines
Total size of a project	≤ 1 GB	≤ 1 GB	≤ 500 MB
Total code lines in a single project	≤ 500,000 lines	≤ 500,000 lines	≤ 500,000 lines
Size of a single log file	≤ 20 MB	≤ 20 MB	≤ 20 MB
Number of log files that can be saved	≤ 500	≤ 500	≤ 50
Total size of data files	≤ 100 MB	≤ 100 MB	/
Total number of project files	≤ 10,000	≤ 10,000	≤ 3,000
Total number of code index files	≤ 100,000	≤ 100,000	/
Number of chats in a single project	≤ 30	≤ 30	≤ 30
Number of custom skills	≤ 50	≤ 50	≤ 50
Number of custom slash commands	≤ 10	≤ 10	≤ 10

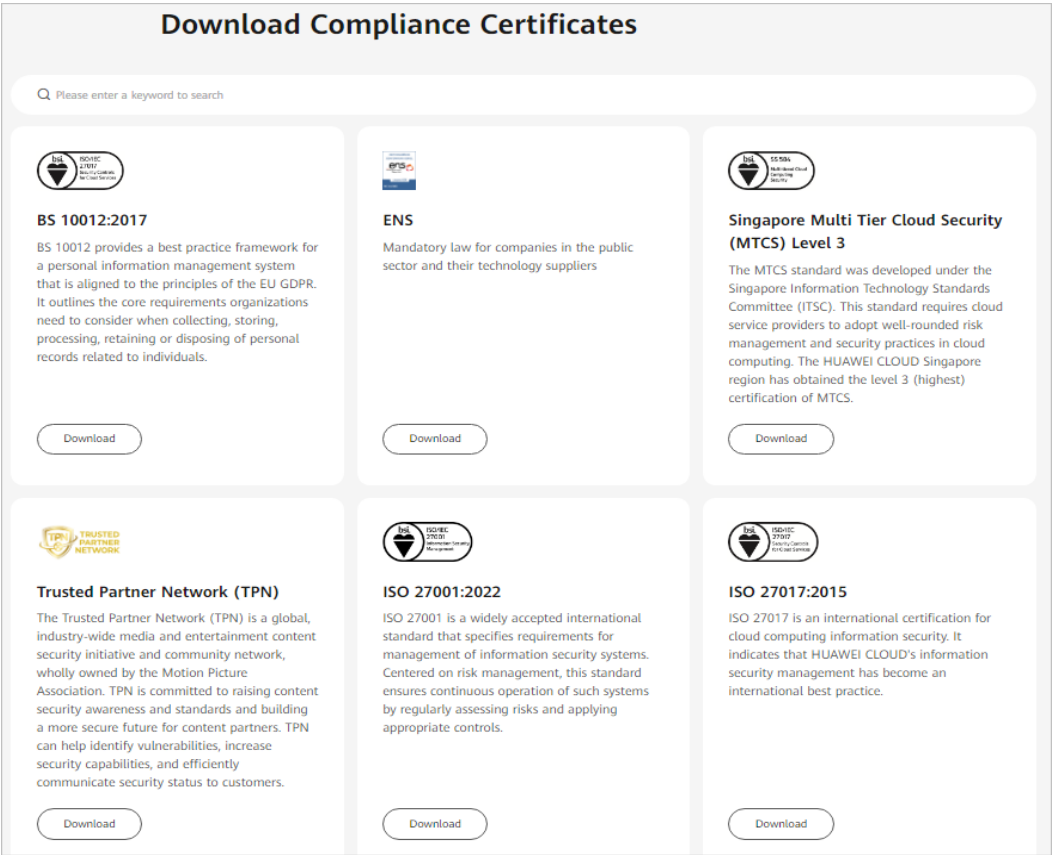
Item	CodeArts Agent IDE/Visual Studio Code	JetBrains Series (PyCharm, IntelliJ IDEA, WebStorm, and CLion)	CodeArts Agent CLI
Number of custom rules	≤ 50	≤ 50	/

4 Certificates

Compliance Certificates

Huawei Cloud services and platforms have obtained various security and compliance certifications from authoritative organizations, such as International Organization for Standardization (ISO). You can [download](#) them from the console.

Figure 4-1 Downloading compliance certificates



Resource Center

Huawei Cloud also provides the following resources to help users meet compliance requirements. For details, see [Resource Center](#).

Figure 4-2 Resource center

