

Application Performance Management 2.0

Getting Started

Issue 01
Date 2024-11-14



Copyright © Huawei Cloud Computing Technologies Co., Ltd. 2024. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Cloud Computing Technologies Co., Ltd.

Trademarks and Permissions



HUAWEI and other Huawei trademarks are the property of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei Cloud and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Contents

1 Enabling APM 2.0.....	1
2 Monitoring Java Applications.....	3
2.1 Connecting Agents.....	3
2.2 Manually Installing Agents for Java Applications.....	6
2.3 Installing Agents for the Java Applications Deployed in CCE Containers.....	8
2.4 Installing Agents on Applications Deployed Using CodeArts Deploy.....	9
2.5 Installing Agents on Docker Applications.....	12
3 Getting Started with Common Practices.....	17
4 Change History.....	18
A JavaAgent Download Addresses.....	19
B Access Addresses.....	21

1 Enabling APM 2.0

1. Register a [Huawei Cloud account](#) and complete [real-name authentication](#).
2. Enable APM 2.0.
 - a. Log in to the Huawei Cloud APM console.

NOTE

If you log in to the APM console for the first time, you can choose the free or enterprise edition. For more information, see [Edition Differences](#).


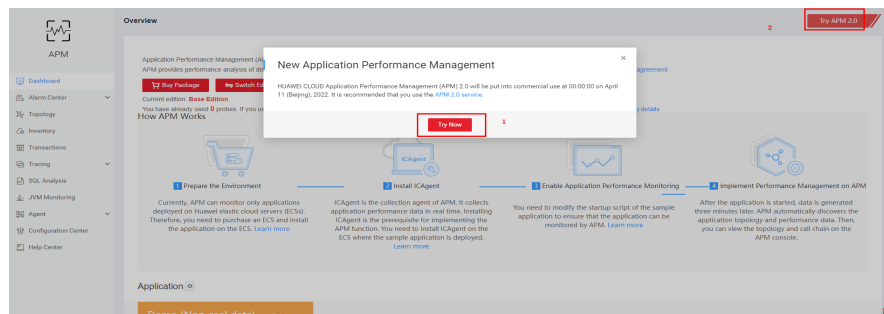
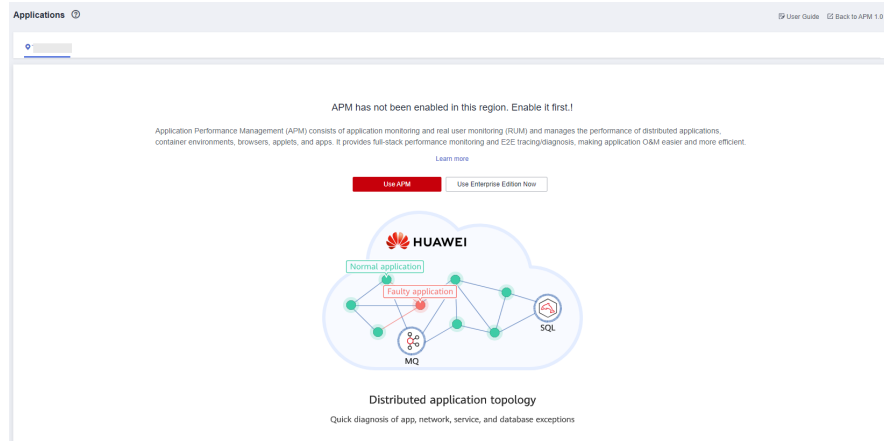
- b. Click  on the left and choose **Application > Application Performance Management**.

Figure 1-1 Experiencing APM 2.0



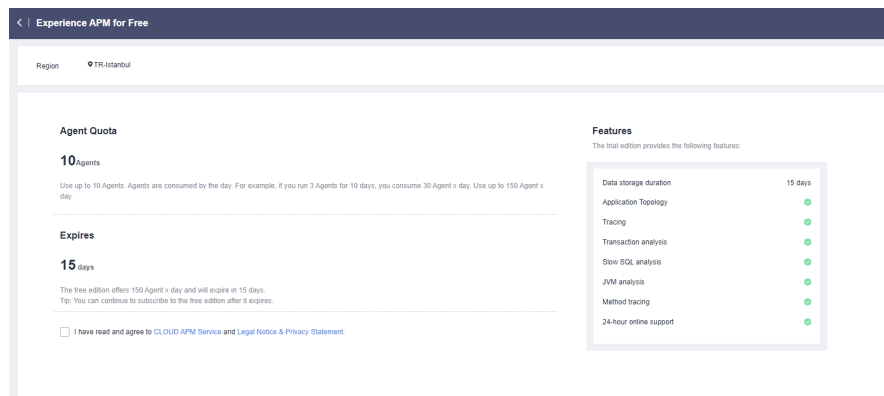
- c. In the **New Application Performance Management** dialog box, click **Try Now** or click **Try APM 2.0** in the upper right corner of the page. The APM 2.0 service page is displayed.

Figure 1-2 APM 2.0 homepage



- d. Click **Use APM**. Then you can experience APM for free.

Figure 1-3 Experiencing APM for free



- e. Read the **APM Service Agreement**, **Legal Notice**, and **Privacy Statement** and then select the checkbox to confirm that you have read them.
 - f. Click **Try Now**. You can use a maximum of 10 Agents for free.
3. Obtain the access key that is automatically created.
APM 2.0 uses AK/SK for signature verification. Only authorized accounts can report data.
- a. Log in to the APM 2.0 console.
 - b. In the navigation pane, choose **System Management > Access Keys**.
 - c. On the **Access Keys** page, view the access key that has been automatically created.

2 Monitoring Java Applications

2.1 Connecting Agents

Prerequisites

The network between your host and APM is normal.

You can run the **Telnet** command to check the network. For example, if you select region **CN-Hong Kong** and set **Code Source** to **Enhanced Agent**, log in to the host where the application is deployed and run the **telnet 100.125.6.106:41333** command to check the network connectivity. For details about access addresses in other regions, see [Access Addresses](#).

NOTICE

Java supports enhanced Agents.

Procedure


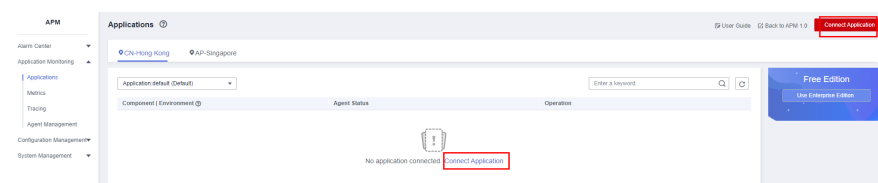
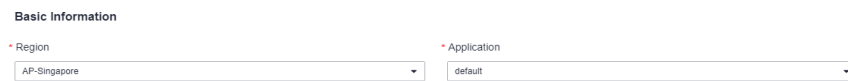
- Step 1** Log in to the management console.
- Step 2** Click  on the left and choose **Application > Application Performance Management**.
- Step 3** In the navigation pane, choose **Application Monitoring > Applications**.
- Step 4** On the displayed page, click **Connect Application**.

Figure 2-1 Connecting an application



Step 5 Select a region and application.

Figure 2-2 Basic information



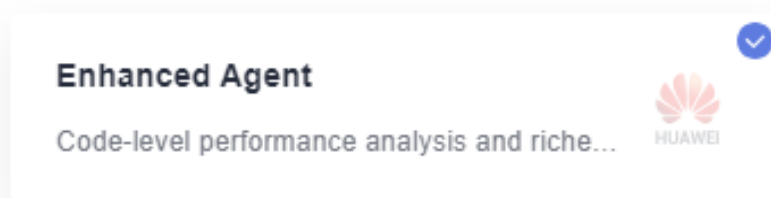
Step 6 Select **Enhanced Agent** for **Access Mode**.

Step 7 Select **Java** for **Backend Language**.

Figure 2-3 Access mode

Select Access Mode

* Access Mode



* Backend Language



Step 8 Select an access mode based on the application type and access data by following the instructions.

Figure 2-4 Data access

Data Access

Install JavaAgent

```
curl -k https://obs-apm2-ap-southeast-1.obs.ap-southeast-1.myhuaweicloud.com/apm_agent_install2.sh -o apm_agent_install.sh && bash apm_agent_install.sh -ak {APM_AK} -sk {APM_SK} -masteraddress https://... -obsaddress https://obs-apm2-ap-southeast-1.obs.ap-southeast-1.myhuaweicloud.com -version latest; history -cw; history -r
```

Note: Use the same account to start the application and run the installation command.

Restart Application

After the Agent is installed (about 1 minute), copy Java parameters to the startup command of your application and then restart it.
Startup command without Agent parameters:

```
java -jar test-2.0.0-SNAPSHOT.jar
```

Startup command with Agent parameters:

```
java -javaagent:/root/my-dir/apm-javaagent/apm-javaagent.jar=appName=my-service,env=dev,envTag=beta,business=mydemo,subBusiness=app -jar test-2.0.0-SNAPSHOT.jar
```

Parameter Command

```
-javaagent:{pwd}/apm-javaagent/apm-javaagent.jar=appName={appName},env={env},envTag={envTag},business={business},subBusiness={subBusiness},instanceName={instanceName}
```

Note: You can hover over variables to view more details.

Table 2-1 Parameter description

Parameter	Description	Mandatory
APM_AK APM_SK	AK and SK for installing JavaAgent. To obtain APM_AK and APM_SK , see Access Keys . CAUTION When you copy the command to install JavaAgent, delete {} when setting APM_AK and APM_SK . Example: curl -k https://javaagent.***.com/apm_agent_install2.sh -o apm_agent_install.sh && bash apm_agent_install.sh -ak * -sk * -masteraddress https://**** -obsaddress https://javaagent.***.com -version latest; history -cw; history -r	Yes
Probe Installation Path	Path for installing the Agent.	Yes
appName	Component name, which must start with a letter. A component can contain multiple environments. The names of components under an application must be unique. If there are duplicate names, use instanceName to distinguish them.	Yes
env	Name of an environment where an application is deployed. A program can be deployed in different environments (such as the test or live network environment). Each environment is deployed in one region and has a unique region attribute. If this parameter is blank, the default environment will be used.	No
envTag	Environment tag for filtering environments. Different environments may have the same tag. This parameter can be left blank.	No

Parameter	Description	Mandatory
business	Name of an application that already exists (a global concept). If this parameter is left blank, the automatically created application will be used.	No
subBusiness	Name of a sub-application (a global concept), which is similar to a folder. If it is left blank, resources will be mounted to the root application. There can be up to three layers of sub-applications. For example, for a/b/c , a , b , and c respectively represents a layer.	No
User Application	Name of a user application.	Yes

----End

Dynamically Configuring master.address and AK/SK

APM supports dynamic configuration of the master.address and AK/SK.

You can set the **APM_MASTER_ADDRESS**, **APM_ACCESS_KEY (apm-ak)**, and **APM_SECRET_KEY (apm-sk)** environment variables. For details about how to obtain the AK/SK, see [Manually Installing Agents for Java Applications](#). For details about how to obtain the master.address, see [Access Addresses](#).

NOTE

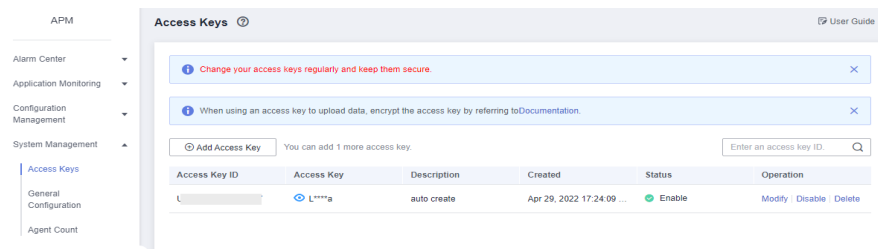
- If you set the AK/SK and master.address in both the JavaAgent configuration file and environment variables, your environment variable settings will take precedence.
- Agents later than 2.3.19 support dynamic configuration of master.address and AK/SK.

2.2 Manually Installing Agents for Java Applications

Prerequisites

- The network between your host and APM is normal.
You can run the **Telnet** command to check the network.
For example, if you select region **CN-Hong Kong** and set **Code Source** to **Enhanced Agent**, log in to the host where the application is deployed and run the **telnet 100.125.6.106:41333** command to check the network connectivity. For details about access addresses in other regions, see [Access Addresses](#). If the network is not connected, use a proxy instead.
- The AK/SK required for accessing JavaAgents have been obtained. To obtain them, log in to the APM console and choose **System Management > Access Keys** in the navigation pane.

Figure 2-5 Obtaining an AK/SK



Procedure

Step 1 Download **apm-javaagent** to any directory of your host. For the download address, see [JavaAgent Download Addresses](#).

Example command:

```
curl -O https://xxx/apm-javaagent-x.x.x.tar
```

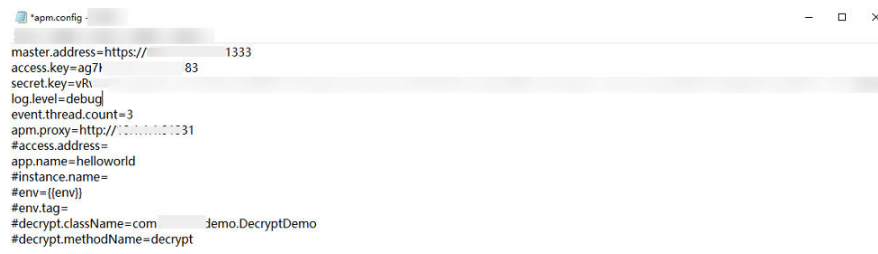
Step 2 Run the **tar** command to decompress the JavaAgent package.

Example command:

```
tar -xvf apm-javaagent-x.x.x.tar
```

Step 3 Modify the **apm.config** file in the JavaAgent package. Configure **master.address** by referring to [Access Addresses](#), and add the AK/SK to the configuration file, as shown in the following figure.

Figure 2-6 Adding the AK/SK



Step 4 Modify the startup script of the Java process.

Add the path of the **apm-javaagent.jar** package and the component name of the Java process to the end of the Java command in the service startup script.

Example of adding **-javaagent** parameters:

```
java -javaagent:/xxx/apm-javaagent/apm-
javaagent.jar=appName={appName}
```

If your enterprise has a large number of services, you can add more complex configurations. For example:

```
java -javaagent:/xxx/apm-javaagent/apm-
javaagent.jar=appName=myApp,env=myEnv,envTag=myTag,business=myBusin
ess,subBusiness=mySub
```

 NOTE

- The preceding parameters are built-in CMDB information of APM. For details, see [CMDB Management](#).
- Due to historical reasons, the metadata of APM startup parameters conflicts with some CMDB concepts. The following shows the details.

Generally, the startup parameter is set to `-javaagent:D:\javaagent-package\apm-javaagent.jar=appName=xxx,env=yyy,business=zzz,subBusiness=sss,envTag=xxx`. **appName** indicates a component, **business** indicates an application, **subBusiness** indicates a sub-application, and **envTag** indicates an environment tag.

If **business** is not set on the web page, the system reports an error when the JavaAgent is started. If other parameters (**subBusiness**, **appName**, **env**, and **envTag**) are not set, the system automatically creates them when the JavaAgent is started.

Component names are unique under an application.

Step 5 Redeploy the application.

----End

2.3 Installing Agents for the Java Applications Deployed in CCE Containers

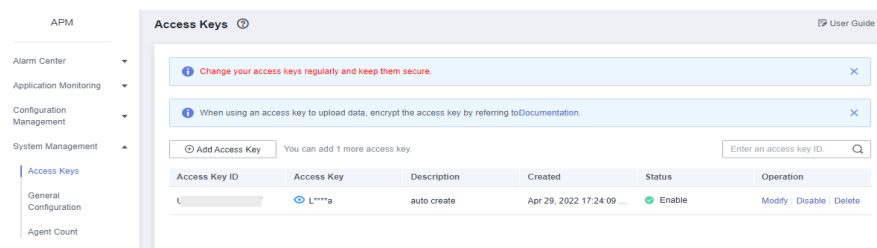
 NOTE

- You are advised to install self-developed Agents for the Java applications deployed in CCE containers.

Prerequisites

- The network between your host and APM is normal.
You can run the **Telnet** command to check the network.
For example, if you select region **CN-Hong Kong** and set **Code Source** to **Enhanced Agent**, log in to the host where the application is deployed and run the `telnet 100.125.6.106:41333` command to check the network connectivity. For details about access addresses in other regions, see [Access Addresses](#).
- For details, see [Regions and Endpoints](#).
- The AK/SK required for accessing JavaAgents have been obtained. To obtain them, log in to the APM console and choose **System Management > Access Keys** in the navigation pane.

Figure 2-7 Obtaining an AK/SK



Usage Instruction

APM only supports Java applications deployed on CCE. [Table 2-2](#) describes the parameters.

Table 2-2 Parameters for configuring performance management

Name	Description
Probe	Select a target probe. Options: Disable/APM 2.0 .
Probe Version	Version of the probe. You are advised to select a probe type based on the CPU architecture of the node where the workload is located.
Probe Upgrade Policy	Policy for the probe upgrade. The default value is Auto upgrade upon restart . <ul style="list-style-type: none">• Automatic upgrade upon restart: The system downloads the probe image each time the pod is restarted.• Manual upgrade: If a local image is available, it will be used. If no local image is available, the system downloads the probe image.
APM Environment	Enter an APM environment name. This parameter is optional.
APM App	Select an existing APM application.
Sub-app	Enter an APM sub-application. This parameter is optional.
Access Key	The system automatically obtains the APM key. For details, see Prerequisites .

For how to install Agents for Java applications deployed on the new CCE console, see [CCE User Guide](#).

2.4 Installing Agents on Applications Deployed Using CodeArts Deploy

Prerequisite

The network between your host and APM is normal.

You can run the **Telnet** command to check the network. For example, if you select region **CN-Hong Kong** and set **Code Source** to **Enhanced Agent**, log in to the host where the application is deployed and run the **telnet 100.125.6.106:41333** command to check the network connectivity. For details about access addresses in other regions, see [Access Addresses](#).

NOTICE

Java supports enhanced Agents.

Procedure

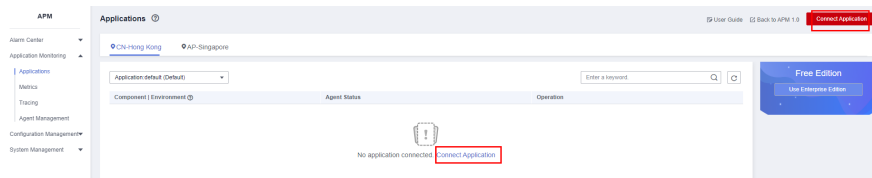
Step 1 Log in to the management console.

Step 2 Click  on the left and choose **Application > Application Performance Management**.

Step 3 In the navigation pane, choose **Application Monitoring > Applications**.

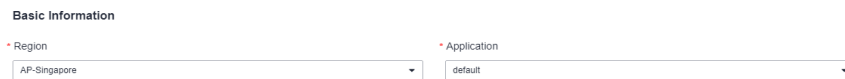
Step 4 On the displayed page, click **Connect Application**.

Figure 2-8 Connecting an application



Step 5 Select a region and application.

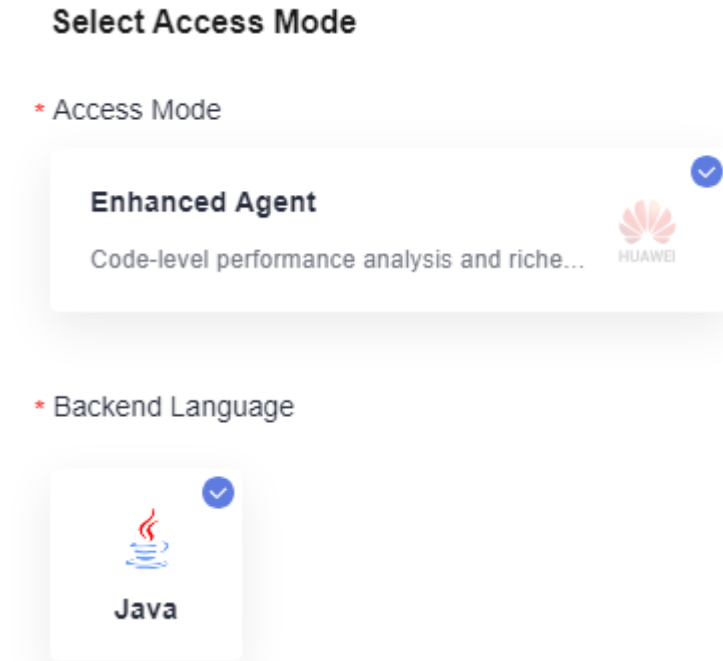
Figure 2-9 Basic information



Step 6 Select **Enhanced Agent** for **Code Source**.

Step 7 Select **Java** for **Backend Language**.

Figure 2-10 Access mode



Step 8 Select an access mode based on the application type and access data by following the instructions.

Figure 2-11 Data access

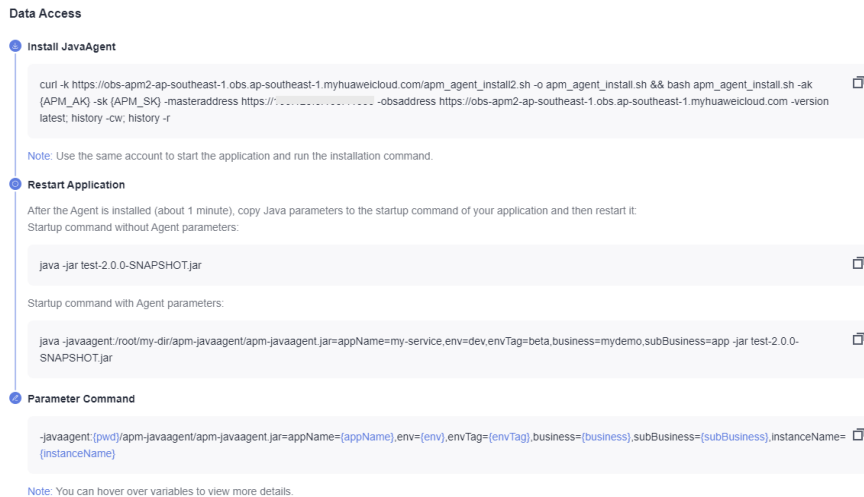


Table 2-3 Parameter description

Parameter	Description	Mandatory
pwd	Path where the apm-javaagent.jar package is located.	Yes

Parameter	Description	Mandatory
appName	Component name, which must start with a letter. A component can contain multiple environments. The names of components under an application must be unique. If there are duplicate names, use instanceName to distinguish them.	Yes
env	Name of an environment where an application is deployed. A program can be deployed in different environments (such as the test or live network environment). Each environment is deployed in one region and has a unique region attribute. If this parameter is blank, the default environment will be used.	No
envTag	Environment tag for filtering environments. Different environments may have the same tag. This parameter can be left blank.	No
business	Name of an application that already exists (a global concept). If this parameter is left blank, the automatically created application will be used.	No
subBusiness	Name of a sub-application (a global concept), which is similar to a folder. If it is left blank, resources will be mounted to the root application. There can be up to three layers of sub-applications. For example, for a/b/c , a , b , and c respectively represents a layer.	No
instanceName	Name of an instance, which is left blank by default. If an application has multiple instances deployed on a host, use this parameter to distinguish them. Generally, Java instances deployed on a host belong to different applications. An application rarely has identical instances.	No

Step 9 Access the CodeArts Deploy deployment task, edit the deployment action, add the step of running the **shell** command, and then add the **copied command**.

Step 10 Modify the deployment procedure, copy the startup parameter, and add the parameter to the Java command of the service startup script.

Step 11 Redeploy the application.

----End

2.5 Installing Agents on Docker Applications

Prerequisite

The network between your host and APM is normal.

You can run the **Telnet** command to check the network. For example, if you select region **CN-Hong Kong** and set **Code Source** to **Enhanced Agent**, log in to the host where the application is deployed and run the **telnet 100.125.6.106:41333**

command to check the network connectivity. For details about access addresses in other regions, see [Access Addresses](#).

NOTICE

Java supports enhanced Agents.

Procedure

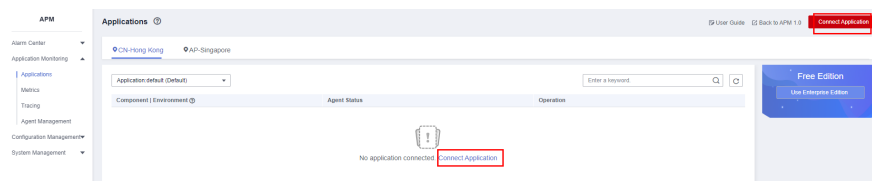
Step 1 Log in to the management console.

Step 2 Click  on the left and choose **Application > Application Performance Management**.

Step 3 In the navigation pane, choose **Application Monitoring > Applications**.

Step 4 On the displayed page, click **Connect Application**.

Figure 2-12 Connecting an application



Step 5 Select a region and application.

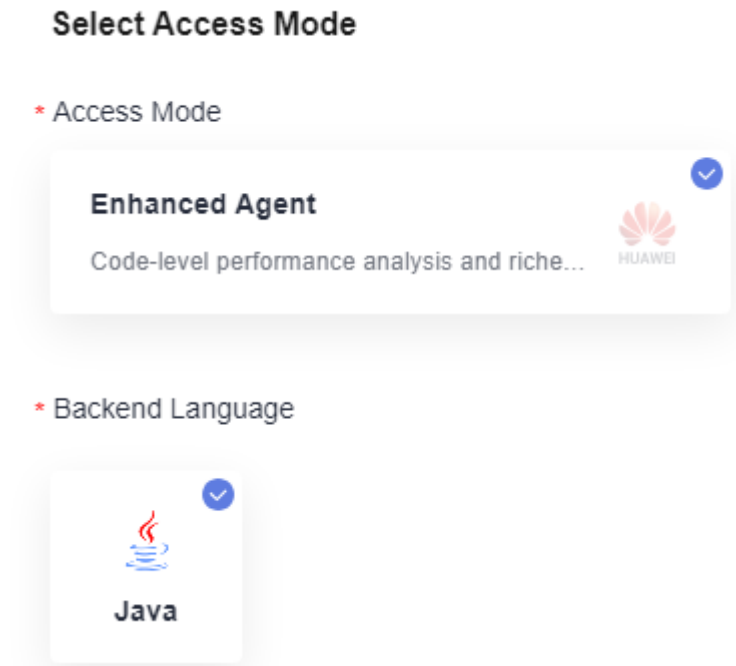
Figure 2-13 Basic information



Step 6 Select **Enhanced Agent** for **Access Mode**.

Step 7 Select **Java** for **Backend Language**.

Figure 2-14 Access mode



Step 8 Select an access mode based on the application type and access data by following the instructions.

Figure 2-15 Data access

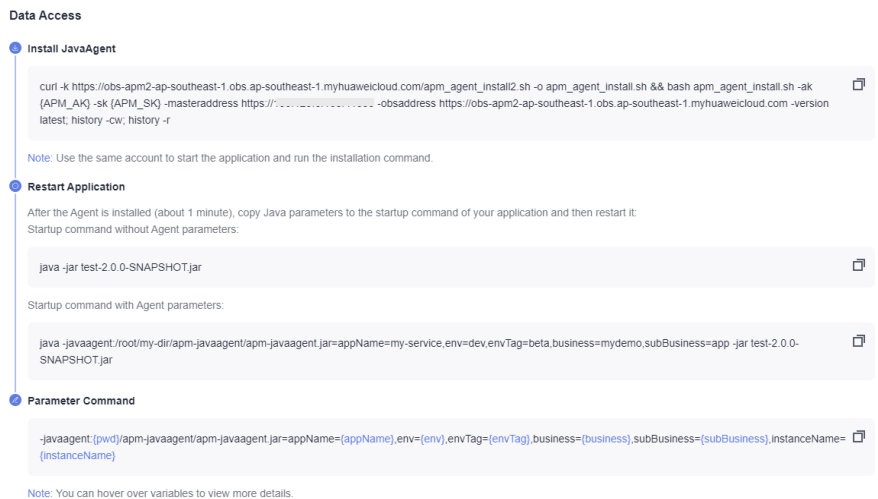


Table 2-4 Parameters

Parameter	Description	Mandatory
pwd	Path where the apm-javaagent.jar package is located.	Yes

Parameter	Description	Mandatory
appName	Component name, which must start with a letter. A component can contain multiple environments. The names of components under an application must be unique. If there are duplicate names, use instanceName to distinguish them.	Yes
env	Name of an environment where an application is deployed. A program can be deployed in different environments (such as the test or live network environment). Each environment is deployed in one region and has a unique region attribute. If this parameter is blank, the default environment will be used.	No
envTag	Environment tag for filtering environments. Different environments may have the same tag. This parameter can be left blank.	No
business	Name of an application that already exists (a global concept). If this parameter is left blank, the automatically created application will be used.	No
subBusiness	Name of a sub-application (a global concept), which is similar to a folder. If it is left blank, resources will be mounted to the root application. There can be up to three layers of sub-applications. For example, for a/b/c , a , b , and c respectively represents a layer.	No
instanceName	Name of an instance, which is left blank by default. If an application has multiple instances deployed on a host, use this parameter to distinguish them. Generally, Java instances deployed on a host belong to different applications. An application rarely has identical instances.	No

Step 9 Add the copied command to the Dockerfile file and add the **JAVA_TOOL_OPTIONS** environment variable.

```
RUN curl -k https://javaagent.obs.xx-xxx-x.xxxx.huawei.com/apm_agent_install2.sh -o apm_agent_install.sh
&& bash apm_agent_install.sh -ak {AK}-sk {SK} -masteraddress https://xxx.xx.xx:xxx -obsaddress https://
javaagent.obs.xx-xxx-x.xxxx.huawei.com -version latest
```

```
ENV JAVA_TOOL_OPTIONS=-javaagent:${PROJECT_DIR}/apm-javaagent/apm-javaagent.jar=appName=${
APP_NAME}
```

Step 10 Rebuild an image. The following is an example of the Dockerfile file.

```
FROM openjdk
RUN mkdir /opt/cloud
ENV PROJECT_DIR=/opt/cloud
ENV APP_NAME=hello
WORKDIR $PROJECT_DIR
ADD ${APP_NAME}.jar ${APP_NAME}.jar
RUN curl -k https://javaagent.obs.xx-xxx-x.xxxx.huawei.com/apm_agent_install2.sh -o apm_agent_install.sh
&& bash apm_agent_install.sh -ak {AK}-sk {SK} -masteraddress https://xxx.xx.xx:xxx -obsaddress https://
javaagent.obs.xx-xxx-x.xxxx.huawei.com -version latest
ENV JAVA_TOOL_OPTIONS=-javaagent:${PROJECT_DIR}/apm-javaagent/apm-javaagent.jar=appName=${
APP_NAME}
CMD ["bash", "-c", "java -jar ${APP_NAME}.jar" ]
```

Step 11 Redeploy the application.

----End

3 Getting Started with Common Practices

After learning about how to use APM to monitor applications, implement common practices as required.

This section describes common practices of APM, helping you better use it.

Table 3-1 Common practices

Practice	Description
Locating the Causes of Request Errors	<ul style="list-style-type: none">• Routine inspection of application metrics such as latency, throughput, and number of errors• Quick locating of error calls

4 Change History

Table 4-1 Change history

Released On	Description
2024-09-03	Updated the access addresses and JavaAgent download addresses, and added the AF-Johannesburg region.
2024-08-14	Updated the access addresses and JavaAgent download addresses, and added the ME-Riyadh region.
2023-06-30	Updated the access addresses and JavaAgent download addresses, and added the TR-Istanbul and LA-Mexico City2 regions.
2024-04-15	Advised users to install self-developed Agents for the Java applications deployed in CCE containers in Installing Agents for the Java Applications Deployed in CCE Containers .
2023-07-20	This issue is the first official release.

A JavaAgent Download Addresses

Region	Latest Version	Earlier Versions				
CN-Hong Kong	2.4.5 sha256:37b155626f46f3a8b19772e3fd6597ece92bb255fdffa21e3e9e1467cc009392	2.4.4 sha256:f60b55d646fe592c427143f1c8d8e8f277a647a3dd73dcdca43d7d37655ec573	2.4.3 sha256:73de7b49e148b102b74a6075c3d8b25e76f43d6144ec5aafe6ac190ab3c1ef0b	-	-	-
AP-Singapore	2.4.5 sha256:37b155626f46f3a8b19772e3fd6597ece92bb255fdffa21e3e9e1467cc009392	2.4.4 sha256:f60b55d646fe592c427143f1c8d8e8f277a647a3dd73dcdca43d7d37655ec573	2.4.3 sha256:73de7b49e148b102b74a6075c3d8b25e76f43d6144ec5aafe6ac190ab3c1ef0b	2.4.1 sha256:c31cd55ead0b2172eb694fe402242b09caeb67d7059aaf4060258633d9ade9f8	2.3.19 sha256:8755abcd541797ebf900f8f1767d62678b3cd57a6d8e045dcfb2f8c24885bfc	2.3.17 sha256:8893e89cd3174879232704828027fd636471525d6e5772ff77e3313f79a4b6b5

Region	Latest Version	Earlier Versions				
LA-Sao Paulo1	2.4.3 sha256:73de7b49e148b102b74a6075c3d8b25e76f43d6144ec5aafe6ac190ab3c1ef0b	-	-	-	-	-
TR-Istanbul	2.4.8 sha256:8893e89cd3174879232704828027fd636471525d6e5772ff77e3313f79a4b6b5	-	-	-	-	-
ME-Riyadh	2.4.8 sha256:029c57990339f2a9de418b4d19e6f7349106a630b7eae559abc9d6d9ea8776d7	-	-	-	-	-
AF-Johannesburg	2.4.8 sha256:029c57990339f2a9de418b4d19e6f7349106a630b7eae559abc9d6d9ea8776d7	-	-	-	-	-

B Access Addresses

Table B-1 Access addresses of Enhanced Agents

Region	Access Address
LA-Sao Paulo1	https://100.125.11.27:41333
CN-Hong Kong	https://100.125.6.106:41333
AP-Singapore	https://100.125.4.25:41333
LA-Mexico City2	https://100.125.2.18:41333
TR-Istanbul	https://100.125.8.18:41333
ME-Riyadh	https://100.125.250.39:41333
AF-Johannesburg	https://100.125.255.21:41333