

Alibaba Cloud Application Real-time Monitoring Service

Quick start

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Document conventions

Style	Description	Example
	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings > Network > Set network type.
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK.
Courier font	Courier font is used for commands.	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
{ } or {a b}	This format is used for a required value, where only one item can be selected.	switch {active stand}

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1 Activate ARMS

You can use Application Real-Time Monitoring Service (ARMS) only after activating ARMS on the Alibaba Cloud official website.

Prerequisites

You have registered an Alibaba Cloud account and completed real-name authentication.

Procedure

1. Go to the [ARMS product homepage](#).
2. Click **Log In** in the upper-right corner of the page.
3. On the **Login** page, enter your Alibaba Cloud username and password, and click **Sign In**.
4. On the product homepage, choose **Buy Now**. On the **Enable Service** page, select I agree with Application Real-Time Monitoring Service Agreement of Service, and click **Enable Now**.

2 Create an application monitoring job

Application monitoring of Application Real-Time Monitoring Service (ARMS) can automatically discover application topologies, discover and monitor application interfaces, and capture abnormal and slow transactions. To start monitoring applications, you need to first create an application monitoring job.

Background

Application monitoring of ARMS can monitor Java and PHP applications that run in multiple environments. This topic describes how to create an application monitoring job for a Java application that runs on an Elastic Compute Service (ECS) instance in Tomcat environment. In different application running environments, ARMS allows you to manually install the ARMS agent, install the ARMS agent with one click by using scripts, or automatically install the ARMS agent. However, to help you understand the general steps for creating an application monitoring job, this topic describes the procedure for manually installing the ARMS agent.

Prerequisites

- [Activate ARMS](#)
- Ports 8442, 8443, and 8883 in the security group of your server have enabled outbound access on the public network over TCP. This operation is not required within a Virtual Private Cloud (VPC). For more information about how to set security group rules, see [#unique_5](#).

Step 1: Obtain licenseKey.

Perform the following steps to obtain **licenseKey**, which will be used subsequently:

1. In the left-side navigation pane, choose **Application Monitoring > Monitoring Jobs**.
2. On top of the **Monitoring Jobs** page, select the target region, and click **Create Application** in the upper-right corner.
3. On the **Create Application** page, select the following items:
 - **Java**
 - **Default**
 - **Install Manually**
4. On the **Download Probe** tab, click **Next**.

5. On the **Install Probe** tab, copy the value of **LicenseKey**.

Step 2: Configure the Tomcat running environment

Perform the following steps to configure the Tomcat running environment and set required parameters in the configuration file:

1. Open the {TOMCAT_HOME}/bin/catalina.sh configuration file.



Note:

If your Tomcat version does not have the catalina.sh configuration file, find and open the {TOMCAT_HOME}/bin/setenv.sh configuration file.

2. Add the following configuration to the configuration file:



Note:

In the following sample code, replace **<licenseKey>** with your LicenseKey, and **<appName>** with your application name.

```
JAVA_OPTS="$JAVA_OPTS -javaagent:/workspace/ArmsAgent/arms-bootstrap-1.7.0-SNAPSHOT.jar -Darms.licenseKey=<licenseKey> -Darms.appName=<appName>"
```

Sample code: Configure the Tomcat running environment

Step 3: Install the ARMS agent for Java applications

Perform the following steps to install the ARMS agent for a Java application and collect the monitored data that you need:

1. Run the **wget** command to download the compressed package of the ARMS agent for Java applications.



Note:

The China (Hangzhou) region is used in this example. For the compressed package download links of the ARMS agent for Java applications in other regions, see [Install the ARMS agent for Java applications](#).

```
# China (Hangzhou)
```

```
wget "http://arms-apm-hangzhou.oss-cn-hangzhou.aliyuncs.com/ArmsAgent.zip" -O ArmsAgent.zip
```

2. Decompress the package of the ARMS agent for Java applications to the working directory. In this example, the working directory is workspace.

```
unzip ArmsAgent.zip -d /workspace/
```

Sample code: Install the ARMS agent for Java applications

Step 4: Restart Tomcat

1. Go to the {TOMCAT_HOME}/bin directory.
2. Restart Tomcat.

```
./startup.sh
```

Sample code: Restart Tomcat

Verification

After two or three minutes, log on to the ARMS console. In the left-side navigation pane, choose **Application Monitoring** > **Monitoring Jobs**. If your application named **<appName>** appears on the Monitoring Jobs page, the application monitoring job is successfully created.

More information

- [Install the ARMS agent in common mode](#)
- [Install the ARMS agent with one click](#)
- [#unique_6](#)

3 Create a dashboard for an application monitoring job

Application monitoring of Application Real-Time Monitoring Service (ARMS) helps you diagnose problems by using monitored data. To monitor real-time application status, for example, by displaying it on a screen, you can create a dashboard for the application monitoring job.

Prerequisites

You have created an application monitoring job in ARMS.

Procedure

1. Log on to the [ARMS console](#).
2. In the left-side navigation pane, choose **Dashboards**. On the **Dashboards** page, click **Create Dashboard** in the upper-right corner.
3. In the **Create Dashboard** dialog box, enter the dashboard name and click **OK**. For example, enter App Dashboard. A blank tab page is created automatically for this dashboard.
4. Click the pencil icon on the top of the tab page, enter the application name in the **Tab** dialog box, and then click **Save**. For example, enter Tomcat-Demo.
5. Add an application topology. In editing mode, choose **Interactive Control > APM Monitoring Topology** in the upper-right corner of the page. In the **APM Topology** dialog box, enter the topology name, select a dataset of the application monitoring job, and click **OK**.
6. (Optional) Drag the lower-right corner of a chart to resize it as needed. Drag the chart to change its position.
7. Add an APM monitoring chart. In editing mode, choose **Interactive Control > APM Monitoring Topology** in the upper-right corner of the page. In the **New Interactive Chart** dialog box, enter all required information, and click **OK**. For example, after selecting an application site, select **Interface Metric** from the **Type** drop-down list, select **All** from the **Dimension** drop-down list, and select **a.count** (invocation volume) from the **Metric** drop-down list.
8. Repeat these steps to add two more APM monitoring charts to count response time and errors, respectively. In the **New Interactive Chart** dialog box, select the same application

site, type, and dimension as in the previous step, but select **a.rt** (response time) and **.errcount** (error count) from the **Metric** drop-down list. The following figure shows the created dashboard.

9. (Optional) Click **+** on the top of the tab page to add a new tab page for another application, and follow the preceding steps to add more application monitoring charts.
10. In the editing mode, click **View Mode** in the upper-right corner, and then click **Full-screen**. The dashboard appears in full-screen mode.

**Note:**

To switch to the dark theme, choose **Theme > Dark** in the upper-right corner of the page.

4 Quickly create ARMS alerts

By creating alerts for monitoring jobs, you can actively detect exceptions. This topic describes how to create application monitoring alerts, browser monitoring alerts, and custom monitoring alerts by using an instance.

Make sure that you have created a monitoring job and an administrative contact group.

Create an application monitoring alert

To create an alert on Java Virtual Machine-Garbage Collections (JVM-GCs) in interval-valued comparison for an application monitoring job, perform the following steps:

1. Log on to the [ARMS console](#). In the left-side navigation pane, choose **Alerts > Alert Policies**.
2. On the **Alert Policies** page, choose **Create Alarm > Application Monitoring Alarm** in the upper-right corner.
3. In the **Create Alarm** dialog box, enter all required information and click **Save**.
 - a. Enter Alarm Name, for example, alert on JVM-GCs in interval-valued comparison.
 - b. In the **Application Site** field, select the monitoring job you created.
 - c. In the **Type** field, select the type of the monitoring metric, for example, JVM_Monitoring.
 - d. Set Dimension to Traverse.
 - e. Set Alarm Rules.
 - A. Select **Meet All of the Following Criteria**.
 - B. Edit an alert rule. For example, an alert is triggered when the value of N is 5 and the average value of JVM_FullGC increases by 100% compared with that in the previous hour.

**Note:**

To add another alert rule, click **+** on the right of **Alarm Rules**.

- f. Set Notification Mode. For example, select Email.
- g. Set Notification Receiver. In the **Contact Groups** box, click the name of a contact group. If the contact group appears in the **Selected Groups** box, the setting is successful.

Create a browser monitoring alert

To create a page metric alert on the JavaScript error rate and JavaScript error count, perform the following steps:

1. Log on to the ARMS console. In the left-side navigation pane, choose **Alerts > Alert Policies**.
2. On the **Alert Policies** page, choose **Create Alarm > Browser Monitoring Alarm** in the upper-right corner.
3. In the **Create Alarm** dialog box, enter all required information and click **Save**.
 - a. Enter Alarm Name, for example, page metric alert.
 - b. In the **Application Site** field, select the monitoring job you created.
 - c. In the **Type** field, select the type of the monitoring metric, for example, Page_Metric.
 - d. Set Dimension to Traverse.
 - e. Set Alarm Rules.
 - A. Select **Meet All of the Following Criteria**.
 - B. Edit an alert rule. For example, an alert is triggered when the value of N is 10 and the average value of JavaScript error rate is at least 20.
 - C. To add another alert rule, click **+** on the right of Alarm Rules. For example, an alert is triggered when the value of N is 10 and the JavaScript error count is at least 20.
 - f. Set Notification Mode. For example, select SMS and Email.
 - g. Set Notification Receiver. In the **Contact Groups** box, click the name of a contact group. If the contact group appears in the **Selected Groups** box, the setting succeeds.

Create a custom monitoring alert

To create a user access alert for a custom monitoring job, perform the following steps:

1. Log on to the ARMS console. In the left-side navigation pane, choose **Alerts > Alert Policies**.
2. On the **Alert Policies** page, choose **Create Alarm > Custom Monitoring Alarm** in the upper-right corner.

3. In the **Create Alarm** dialog box, enter all required information and click **Save**.
 - a. Enter Alarm Name, for example, user access notification.
 - b. Set Type to **Create Alarm Based On Existing Drilled-down Dataset**.
 - c. Set Alarm Variable Definition. Select a dataset for the a variable and set Drill-down Dimension to Traverse.

**Note:**

To define another alert variable, click + on the right of **Alarm Variable Definition**. In the text box that appears, define the b variable.

- d. Set Alarm Rules.
 - A. Select **Meet All of the Following Criteria**.
 - B. Edit an alert rule. For example, an alert is triggered when the value of N is 1 and the average number of ARMS agents that you created is at least 0.

**Note:**

You can also include a simple composite metric in the alert rule. For example, an alert is triggered when the value of N is 1 and the average value of dataset A/ dataset B is at least 5.

- e. Set Notification Mode. For example, select Email.
- f. Set Notification Receiver. In the **Contact Groups** box, click the name of a contact group. If the contact group appears in the **Selected Groups** box, the setting succeeds.