

Alibaba Cloud Application Real-Time Monitoring Service

Application monitoring

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information 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.
	This warning information 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 restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid <i>Instance_ID</i></code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand slave}</code>

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1 Start monitoring Java applications

1.1 Install agent with regular method

1.2 Install agent with shortcut method

1.2.1 Install ARMS Agent for applications on ECS instances in one click

You can use ARMS to monitor the topology, API requests, abnormal and slow transactions, and SQL analysis of applications on ECS instances. This topic describes how to access applications on ECS instances with one click in the ARMS console.

Prerequisites

- You have [purchased an ECS instance](#) and deployed an application in the target region.

Procedure

1. Log on to the [ARMS console](#). In the left-side navigation pane, choose Application Monitoring > Applications.
2. On the Applications page that appears, click Create Application in the upper-right corner.
3. On the Create Application page that appears, click the Batch Install for ECS tab. When ARMS accesses the ECS instance for the first time, you need to grant ARMS the permission to access the ECS instance. Perform the following steps with the primary account:
 - a. In the dialog box that appears, click Go to RAM to Authorize.
 - b. On the Cloud Resource Access Authorization page, select `AliyunARMSAccessingECSRole` and then click Confirm Authorization Policy.
 - c. On the Sync ECS page, click Close.



Note:

If you want to access ECS applications through a custom monitoring job, synchronize the ECS instance according to [Manage ECS Data Source](#).

After performing authorization, go to the Batch Install for ECS tab page. All ECS instances under this primary account are displayed on the ECS Batch Install tab page.

4. On the Batch Install for ECS tab page, locate the row that contains the target ECS instance, and click Install Probe in the Actions column. In the Note dialog box that appears, click OK.

After ARMS Agent is installed on the ECS instance, ARMS Agent obtains all the processes that run on the ECS instance and displays the processes in the process list below the target ECS instance.



Note:

If processes that run on the ECS instance are incorrect after ARMS Agent is installed, click - and then + at the left of the ECS instance to refresh the page. If ARMS Agent cannot be installed, see [FAQ](#) for the solution.

5. After ARMS Agent is installed, in the following dialog box, locate the row that contains the target process, edit the application name, and then click Start Application Monitoring in the Actions column.



Note:

When the application names of multiple processes are the same, they appear as multiple instances under the same application monitoring job.

After one minute, if your application is displayed in the application list and has data reported, your application has been connected to ARMS.

Uninstall ARMS Agent

When you no longer need to monitor applications on an ECS instance, you can uninstall ARMS Agent from the ECS instance. After ARMS Agent is uninstalled, ARMS stops monitoring all the processes of the ECS instance. You can uninstall ARMS Agent as follows:

1. On the ECS instance in which ARMS Agent is installed, run the `java -l` command to view all the processes. In the results returned, locate `com . alibaba`

`. mw . arms . apm . supervisor . daemon . Daemon` and view the process number.

In this example, the process number is 62857.

```
→ ~ jps -l
62800 org.apache.catalina.startup.Bootstrap
62857 com.alibaba.mw.arms.apm.supervisor.daemon.Daemon
5411
62799 org.jetbrains.jps.cmdline.Launcher
67809 sun.tools.jps.Jps
```

2. Run the command `kill -9 process number`, for example, `kill -9 62857`.
3. Restart your application.

FAQ

What should I do when ARMS Agent cannot be installed?

1. Make sure that your ECS instance can access the ARMS Agent download link in the region of your instance.

Make sure that your ECS instance can access the Internet and download ARMS Agent on the One-click Access to Java Applications page.

```
# China ( Hangzhou )
http://arms-apm-hangzhou.oss-cn-hangzhou.aliyuncs.com/install.sh
# China ( Shanghai )
http://arms-apm-shanghai.oss-cn-shanghai.aliyuncs.com/install.sh
# China ( Qingdao )
http://arms-apm-qingdao.oss-cn-qingdao.aliyuncs.com/install.sh
# China ( Beijing )
http://arms-apm-beijing.oss-cn-beijing.aliyuncs.com/install.sh
# China ( Shenzhen )
http://arms-apm-shenzhen.oss-cn-shenzhen.aliyuncs.com/install.sh
# Singapore
http://arms-apm-ap-southeast.oss-ap-southeast-1.aliyuncs.com/cloud_ap-southeast-1/install.sh
```

2. Make sure that your ECS instance can access the ARMS console.

```
# Mainland China
https://arms.console.aliyun.com/
```

```
# Singapore
https://arms-ap-southeast-1.console.aliyun.com
```

3. Log on to the [ECS console](#) and check the following items.

- a. In the left-side navigation pane, choose Cloud Assistant.
- b. On the Cloud Assistant page that appears, enter the command `InstallJavaAgent` in the search box.



Note:

If no result is returned, contact Customer Services of ARMS.

- c. In the Tasks section, enter the ID of the command `InstallJavaAgent` in the search box. In the result that is returned, locate the row that contains the target record and click **View Results** in the **Actions** column to check whether the `InstallJavaAgent` command has run. If it has failed to run, troubleshoot the problem according to the execution result details. If the problem is caused because the ECS disk is full or ARMS Java Agent is not installed, you can clear the disk or install ARMS Java Agent to solve the problem. If you cannot solve the problem by yourself, send the detailed execution results to ARMS Customer Services.

References

- [Install ARMS Agent for applications on ECS instances with one click](#)

2 Start monitoring PHP applications

2.1 Install ARMS Agent for PHP applications

This topic describes how to connect PHP applications to ARMS.

Prerequisites

- Ports 8442, 8443, and 8883 in the security group of your machine have opened the inbound access permissions for TCP-based public networks. For more information about how to open the inbound access permissions of ECS instances, see [#unique_10](#).



Note:

In addition to applications on Alibaba Cloud ECS instances, applications on servers on the Internet can also access ARMS.

- Your third-party component or framework is listed in the [ARMS-compatible components and frameworks](#).

Connect ARMS PHP Agent

- Log on to the [ARMS console](#). In the left-side navigation pane, choose Application Monitoring > Applications.
- On the Applications page that appears, click Create Application in the upper-right corner.
- On the Create Application page that appears, select PHP in the Programming language section.
- Download ARMS PHP Agent by using either of the following methods. After ARMS PHP Agent is downloaded, click Next.
 - Method 1: Manually download ARMS PHP Agent. Click Click to Download to download the latest .zip file.
 - Method 2: Run the wget command to download the .zip file of ARMS PHP Agent of the corresponding region.

```
# China ( Hangzhou )
wget " http :// arms - apm - hangzhou . oss - cn - hangzhou .
aliyuncs . com / arms - php - agent . zip " - O arms - php -
agent . zip
```

```
# China ( Shanghai )
wget " http :// arms - apm - shanghai . oss - cn - shanghai .
aliyuncs . com / arms - php - agent . zip " - O arms - php -
agent . zip

# China ( Qingdao )
wget " http :// arms - apm - qingdao . oss - cn - qingdao .
aliyuncs . com / arms - php - agent . zip " - O arms - php -
agent . zip

# China ( Beijing )
wget " http :// arms - apm - beijing . oss - cn - beijing .
aliyuncs . com / arms - php - agent . zip " - O arms - php -
agent . zip

# China ( Shenzhen )
wget " http :// arms - apm - shenzhen . oss - cn - shenzhen .
aliyuncs . com / arms - php - agent . zip " - O arms - php -
agent . zip

# Singapore
wget " http :// arms - apm - ap - southeast . oss - ap - southeast
- 1 . aliyuncs . com / cloud_ap - southeast - 1 / arms - php -
agent . zip " - O arms - php - agent . zip

# AntCloud environmen t
wget " http :// arms - apm - hangzhou . oss - cn - hangzhou .
aliyuncs . com / finance / arms - php - agent . zip " - O arms -
php - agent . zip
```

5. On the **Install Probe** page, view and save the **LicenseKey**.

6. Switch to the directory of the installation package, and decompress the ARMS PHP Agent package to any working directory.

```
unzip arms - php - agent . zip /{ user . workspace }/
```



Note:

“{user.workspace}” is an example path. Replace it as needed.

7. Install and configure ARMS PHP Agent by using either of the following methods:

- Run the following command to install ARMS PHP Agent automatically:



Note:

Replace `< licenseKey >` with the actual **LicenseKey** and replace **PHP-Demo** with the name of your application. Application names in Chinese are not currently supported.

```
cd arms - php - agent
./ install . sh < licenseKey > PHP - Demo
```

- **Manually install ARMS PHP Agent.**
 - a. **Switch to the directory where the ARMS PHP Agent package is decompressed.**

```
cd arms - php - agent
```

- b. **Modify configuration items in the arms-agent.conf file.**

**Note:**

- Replace `< licenseKey >` with the actual LicenseKey.
- Replace PHP-Demo with the name of your application. Application names in Chinese are not supported currently.
- Replace `< arms - php - agent >` with the absolute path of the plugins directory of arms-php-agent after the package is decompressed.

```
LicenseKey =< licenseKey >  
AppName = PHP - Demo  
PluginRoot Dir =< arms - php - agent >
```

- c. **Run the following command to obtain the PHP extension installation directory:**

```
php -i | grep ^ extension_ dir
```

For example, if the following information is returned, the installation directory is `/usr/lib/php/extensions/no-debug-non-zts`

```
- 20160303 :
```

```
extension_ dir => /usr/lib/php/extensions/no  
- debug - non - zts - 20160303 => /usr/lib/php/  
extensions / no - debug - non - zts - 20160303
```

- d. **Copy arms.so and paste it to the preceding directory.**

```
sudo cp arms . so < php_extens ion_dir >
```

- e. **Run the following command to add a dynamic connection library path:**

```
sudo vi /etc/sysctl.conf .
```

- f. Add a line to the end of the file.

```
< php - agent - dir >/ lib
```

**Note:**

`< php - agent - dir >` is the absolute path after the ARMS PHP Agent package is decompressed.

- g. Run the following command to load the dynamic connection library:

```
sudo ldconfig
```

8. Set `php.ini`. Add the following information to the end of the file.

**Note:**

Replace `< php_extens ion_dir >` with the preceding PHP extension installation directory, which is `/ usr / lib64 / xxx` by default. Replace `< php - agent - dir >` with the absolute path of the ARMS PHP Agent directory after the ARMS PHP Agent package is decompressed. If you run a script to automatically install ARMS PHP Agent, replace the preceding variables as prompted.

```
[ arms ]
extension =< php_extens ion_dir >/ arms . so
arms . trace_exce ption = true
arms . config_ful l_name =/< php - agent - dir >/ arms - agent .
conf
```

9. Restart your PHP application.

After one minute, if your application is displayed in the application list and has data reported, your application has been connected to ARMS.

Uninstall ARMS PHP Agent

If you no longer need to use ARMS Agent to collect data, perform the following steps to uninstall it.

1. Delete the following four lines from `php.ini`:

```
[ arms ]
extension =< php_extens ion_dir >/ arms . so
arms . trace_exce ption = true
arms . config_ful l_name =/< php - agent - dir >/ arms - agent .
conf
```


2. Restart your PHP application.

3 Reference

3.1 ARMS-compatible components and frameworks

ARMS supports access from Java and PHP applications. This topic lists the third-party components and frameworks of Java and PHP applications that ARMS supports.

Java components and frameworks supported

Component	JDK 1.7	JDK 1.8
Dubbo	2.5.X+	2.5.X+
Google HTTP Client	1.10.X+	1.10.X+
HttpClient 3	3.X+	3.X+
HttpClient 4	4.X+	4.X+
JDK HTTP	1.7.X+	1.7.X+
Jetty	8.X+	8.X+
MyBatis	3.X+	3.X+
MySQL JDBC	5.0.X+	5.0.X+
Oracle JDBC	10.2.X+	10.2.X+
OKHttp	2.X+	2.X+
Redis	2.X+	2.X+
Spring Boot	1.3.X+	1.3.X+
Spring	4.X+	4.X+
Tomcat	7.X+	7.X+
Undertow	1.3X+	1.3X+
WebLogic	12.X+	12.X+
Memcached	2.8+	2.8+
GRPC-Java	1.15+	1.15+
Lettuce	4.0+	4.0+
MariaDB	1.3+	1.3
MongoDB	3.7+	3.7+
PostgreSQL JDBC	9.4+	9.4+

Component	JDK 1.7	JDK 1.8
Resin	3.0+	3.0+
SQL Server JDBC	6.4+	6.4+
Thrift	0.8+	0.8+

Components and frameworks not listed in the preceding list

If your development framework is not listed in the preceding list of Java components and frameworks supported by ARMS, you can configure a general filter to collect data. The procedure is as follows:

1. Introduce arms-sdk-1.7.0.jar to the program.

```
< dependency >
< groupId > com . alibaba . arms . apm </ groupId >
< artifactId > arms - sdk </ artifactId >
< version > 1 . 7 . 0 </ version >
</ dependency >
```



Note:

If you cannot obtain the pom.xml file, download [arms-sdk-1.7.0-SNAPSHOT.jar](#).

2. In web.xml, configure a filter for ARMS.

```
< filter >
< filter - name > EagleEyeFilter </ filter - name >
< filter - class > com . alibaba . arms . filter . EagleEyeFilter </ filter - class >
</ filter >
< filter - mapping >
< filter - name > EagleEyeFilter </ filter - name >
< url - pattern > /* </ url - pattern >
</ filter - mapping >
```

3. Install ARMS Agent for your Java application.

4. After making the configuration, restart your application to make the configuration take effect.

PHP components and frameworks supported

Item	Version requirement
PHP version	PHP 5.4, 5.5, 5.6, 7.0, 7.1, and 7.2 NTS
NGINX	php-fpm
Apache	apache2handler

Item	Version requirement
Runtime environment of ARMS PHP Agent	glibc-2.12 and later versions