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智能接入网关

Smart Access Gateway APP

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# Document conventions

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

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# 1.Introduction to Smart Access Gateway APP

Smart Access Gateway (SAG) APP enables terminals such as mobile phones and personal computers to connect private networks to Alibaba Cloud through dial-up connections. This solution is suitable for scenarios such as office automation and remote operations and maintenance (O&M).

To use SAG APP, follow the procedure as shown in the following figure:

□

## 2. Billing and pricing of SAG APP

Smart Access Gateway (SAG) APP is billed based on the number of client accounts. By default, each client account has a 5 GB data transfer plan. After the 5 GB data transfer plan is exhausted, you can select the subscription or pay-as-you-go billing method for the exceeded data usage.


### Billing

SAG APP is billed based on the following rules:

- SAG APP is billed based on the number of client accounts and a tiered pricing strategy. For more information, see [Pricing of the 5 GB data transfer plan \(USD/client account/month\)](#).

Assume that the number of client accounts is  $n$ :

- If  $n > 100$ , fees per month:  $(n-100) \times 5.42 + 100 \times 6.96$ . Unit: USD.
- If  $n \leq 100$ , fees per month:  $n \times 6.96$ . Unit: USD.
- After the 5 GB data transfer plan is exhausted, you can purchase a monthly subscription of data transfer plan for the exceeded data usage.
  - You can select the specification of the subscription as needed. The validity period of a subscription is one month. For more information, see [Pricing of the subscription \(USD/subscription\)](#).
  - A subscription is shared by all the SAG APP instances and client accounts under the Alibaba Cloud account that purchased the subscription.

 **Note** Currently, subscription data transfer plans are not supported in the Dubai region.

- After the 5 GB or subscription data transfer plan is exhausted, the exceeded data usage is billed based on the pay-as-you-go billing method on a daily basis. For more information, see [Unit price of the exceeded data usage \(USD/GB\)](#).
- The 5 GB data transfer plan provided to each client account cannot be shared.
- 5 GB refers to the upper limit of the data transferred from external networks to Alibaba Cloud, or from Alibaba Cloud to external networks.
- The 5 GB data transfer plan or subscription is effective only within the month when the data transfer plan or the subscription is issued.

The following table describes the pricing of SAG APP.

### Pricing of the 5 GB data transfer plan (USD/client account/month)

The number of client accounts	Mainland China	Outside mainland China and Dubai	Dubai
5~100	6.96	6.96	18.57
101~1000	5.42	5.42	15.48

### Pricing of the subscription (USD/subscription)

Specification (GB)	Mainland China	Outside mainland China and Dubai
10	26	26
50	123	123
128	288	288
512	1149	1149
1024	2154	2154
5120	10193	10193
10240	19381	19381
51200	92310	92310

### Unit price of the exceeded data usage (USD/GB)

Unit price of the exceeded data usage	Mainland China	Outside mainland China and Dubai	Dubai
Unit price of the exceeded data usage	3.10	3.10	10.83

### The states of an SAG APP instance

The following table describes different states of an SAG APP instance.

State	Description
Notifications before expiration	14 days, 12 days, and 8 days before the SAG APP instance expires, you will receive notifications.
Expired	15 days after the SAG APP instance expires, it stops running, You cannot use the SAG APP instance when it stops running.
Notifications before release	14 days after the SAG APP instance stops running, you receive notifications that the SAG APP instance will be released.
Released	15 days after the SAG APP instance stops running, it will be released and the configurations will be deleted and cannot be restored.
Notifications before payment overdue	6 days before the payment is overdue, you receive notifications that the SAG APP instance will be locked due to the overdue payment.

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State	Description
Locked	When the payment is overdue, the SAG APP instance is locked and unavailable.



## 3. Start a SAG APP free trial

Alibaba Cloud is offering free trials of Smart Access Gateway (SAG) APP. This topic describes how to claim a free client account and use SAG APP.

### Prerequisites

A Virtual Private Cloud (VPC) network is created. For more information, see [Create a VPC](#).

### Context

The scenario in the following figure is used as an example. A company has deployed application services in a VPC network in the China (Hangzhou) region. The employees access resources deployed in the VPC network from the private network of the company. To facilitate the management of resources on Alibaba Cloud and streamline O&M, the company plans to use SAG APP to allow administrators to remotely access the resources through fast and secure connections from the private network.



### Configuration procedure



#### Step 1: Claim a free client account

You can log on to the SAG console and claim a free client account of SAG APP.

1. Log on to the [SAG console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the pop-up advertisement that offers free client accounts, click **Claim**. After you claim a client account, the system automatically creates a free SAG APP instance based on the following specification:
  - Number of client accounts: 1.
  - Data transfer plan per account: 5 GB per month.
  - Bandwidth: 2 Mbit/s.
  - Validity period: 1 year.



#### Step 2: Configure the SAG APP instance

After the SAG APP instance is created, you must configure it. You can follow the Quick Configuration wizard to specify CIDR blocks of clients, create client accounts, and view information about how to download and install the SAG app. After the SAG APP instance is configured, clients added to it can quickly and securely access resources on Alibaba Cloud.

1. Click **Configure Now** to open the **Quick Configuration wizard**.
2. On the **Network Configuration wizard** page, you can associate the SAG APP instance with a Cloud Connect Network (CCN) instance and specify the CIDR blocks of clients.



- **CCN Instance ID/Name:** You can select one of the following options to associate the SAG


APP instance with a CCN instance. **Create CCN** is selected in this example.

CCN is an important component of SAG. After an SAG APP instance is associated with a CCN instance, clients associated with the SAG APP instance can communicate with networks attached to the CCN instance. For more information, see [Introduction to CCN](#).

- **Existing CCN:** If you have created CCN instances, you can select an existing CCN instance from the drop-down list.
- **Create CCN:** If you have not created a CCN instance, enter an instance name. The system then creates a CCN instance in the current region and automatically associates the CCN instance with the SAG APP instance.

The name must be 2 to 100 characters in length, and can contain digits, underscores (\_), and hyphens (-). It must start with a letter or Chinese character.

- **(Optional) Standby and Active DNS:** This parameter is optional. The active and standby DNS servers that the clients use to connect to Alibaba Cloud. After you configure the DNS servers, the system automatically synchronizes the DNS settings to the clients. Ignore this parameter in this example.

 **Note**

- If the clients use PrivateZone to connect to Alibaba Cloud, set the DNS server addresses to 100.100.2.136 and 100.100.2.138. For more information about PrivateZone, see [What is PrivateZone](#)
- Android and macOS operating systems require 2.1.1 or later versions of the SAG app for receiving DNS settings. For more information about how to install the SAG app, see [Install SAG APP](#).

- **Private CIDR Block:** Specify the private CIDR blocks that the clients use to connect to Alibaba Cloud. When a client connects to Alibaba Cloud, an IP address within the specified CIDR block is assigned to the client. Make sure that the private CIDR blocks do not overlap with each other. 192.168.1.0/24 is used in this example.

You can click **Add Private CIDR Block** to add more private CIDR blocks. You can add a maximum of five private CIDR blocks.

3. Configure a CEN instance. You can associate the CCN instance with a Cloud Enterprise Network (CEN) instance to enable communication between networks attached to the CCN instance and resources associated with the CEN instance. For more information, see [What is Cloud Enterprise Network](#).
  - i. Click **Associate with a CEN (Optional)** to associate the CCN instance with a CEN instance. This step is optional. If you do not need to associate the CCN instance with a CEN instance, click **Skip**.

- ii. You can select one of the following options to associate the CCN instance with a CEN instance to enable communication between the clients and cloud resources. **Create CEN** is selected in this example.


- **Existing CEN:** If you have already created CEN instances, you can select an existing CEN instance from the drop-down list.
- **Create CEN:** If you have not created a CEN instance, enter an instance name. The system then creates a CEN instance and automatically associates it with the CCN instance.

The name must be 2 to 100 characters in length, and can contain digits, underscores (\_), and hyphens (-). It must start with a letter or Chinese character.

- iii. Attach the VPC network to the CEN instance to enable communication between the clients and resources on Alibaba Cloud. For more information, see [Attach networks](#).
4. Create a client account. After you set up network connections, you must create client accounts to allow users to log on to the SAG app and access the private network.

- i. Click **Next: Create a client account** to create a client account.

- **Username:** optional. The username must be 7 to 33 characters in length, and can contain underscores (\_), at signs (@), periods (.), and hyphens (-). It must start with a digit or letter.


 **Note** When you create a client account, if you specify only the email address, the system automatically generates a username and password. The specified email address is used as the username.

- **Email Address:** This parameter required. The email address of the user. The username and password are sent to the specified email address.

The email address must be 2 to 64 characters in length, and can contain letters, digits, underscores (\_), periods (.), and hyphens (-). It must contain an at sign (@).

- **Static IP:**

- If you enable this feature, you must configure the IP address of the client. The client uses the specified IP address to connect to Alibaba Cloud.

 **Note** The specified IP address must fall into the CIDR block of the private network.

- If you disable this feature, an IP address within the CIDR block of the private network is assigned to the client. Each connection to Alibaba Cloud uses a different IP address.
- **Set Maximum Bandwidth:** Specify the maximum bandwidth for the current client account. The default value is used in this example.  
You can set the maximum bandwidth to 1 to 2,000 Kbit/s. The maximum bandwidth is set to 2,000 Kbit/s by default.
- **Set Password:** optional. The password that is used to log on to the SAG app.  
The password must be 8 to 32 characters in length, and can contain underscores (\_) and hyphens (-). It must start with a letter or digit.

- ii. Click **OK**.

5. Connect the client to Alibaba Cloud. After you create the client account, you must download and install the SAG app on your mobile device. The SAG app allows devices to access resources on Alibaba Cloud through private networks.

- i. After you create the client account, click **Download Now** to go to the page that provides instructions on how to download and install the SAG app. For more information, see [Install SAG APP](#).
- ii. After you download and install the SAG app on your device, you can log on to the SAG app with your username and password, and then connect to the private network. This allows you to access resources on Alibaba Cloud. For more information, see [Connect to Alibaba Cloud](#).

### Step 3: Configure a security group rule

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After you configure the SAG APP instance, you must also configure the security group of the Elastic Compute Service (ECS) instance that you want to access. Configure a security group rule that allows the clients to access resources on Alibaba Cloud.

1. Log on to the [ECS console](#).
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select the region where the target ECS instance is deployed.
4. Find the ECS instance deployed in the target VPC network and choose **More > Network and Security Group > Configure Security Group**.



5. Find the target security group, click **Add Rules** in the **Actions** column, and then click **Add Security Group Rule**.
6. Configure a security group rule that allows the clients to access resources on Alibaba Cloud. The following figure shows how to configure a security group rule. Set **Authorization Object** to the CIDR block of the private network. 192.168.1.0/24 is used in this example. For more information, see [Add security group rules](#).



7. After the security rule is configured, the client can access resources on Alibaba Cloud.

## 4. Get started with SAG APP

This topic describes how to configure a Smart Access Gateway (SAG) instance and establish secure and fast connections to Alibaba Cloud.

### Context

The scenario in the following figure is used as an example. A company has deployed application services on Alibaba Cloud. The employees access resource on Alibaba Cloud from the private network of the company. As the company develops, employees that work off-site need to remotely access resources on Alibaba Cloud. To meet such requirements, the company chooses to use SAG APP to enable the employees to quickly and securely connect to the private network. This solution allows the employees to remotely access resources on Alibaba Cloud at any time.



### Configuration procedure




#### Step 1: Purchase an SAG APP instance

You must purchase an SAG APP instance before you can use features of SAG APP. After you purchase an SAG APP instance, you can use it to manage networks and client accounts.

1. Log on to the [SAG console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. On the **Smart Access Gateway APP** page, click **Create SAG APP** and set the following parameters.



- **Region:** Select the area where SAG APP is used. **Mainland China** is selected in this example.
- **Number of Client Accounts:** Specify the number of client accounts that can be added to the SAG APP instance. Typically, you need to create an account for each user that needs to log on to the SAG app. The default value 10 is used in this example.

 **Note** An SAG APP instance supports 5 to 1,000 clients. Pricing is tiered and based on the number of client accounts. For more information, see [Billing and pricing of SAG APP](#).

- **Data Plan Per Account:** The amount of free data usage allocated to each account per month. The data transfer plan cannot be shared among different accounts. The data transfer plan remains effective only within the month. By default, a plan offers 5 GB of data usage.
- **Billing Method When Data Plan is Exhausted:** If the actual data usage of an account exceeds the data transfer plan, the amount that exceeds the data transfer plan is charged based on the pay-as-you-go billing method.
- **Subscription Duration:** The subscription duration of the data transfer plan for each account. SAG APP supports monthly subscriptions and auto renewal. One month is selected in this example.

4. Click **Buy Now** to confirm the order and complete the payment.

## Step 2: Set up network connections

After you purchase an SAG APP instance, you must set up network connections. In this step, you must specify the CIDR blocks of clients and associate the SAG APP instance with a Cloud Connect Network (CCN) instance.

CCN is an important component of SAG. After an SAG APP instance is associated with a CCN instance, all clients associated with the SAG APP instance can communicate with gateway devices associated with the CCN instance. For more information, see [Introduction to CCN](#).

1. On the **Smart Access Gateway APP** page, find the target instance and click **Quick Configuration** in the **Actions** column.
2. In the **Quick Configuration** wizard, set the required parameters.

- **CCN Instance ID/Name:** You can select one of the following options to associate the SAG APP instance with a CCN instance. **Create CCN** is selected in this example.
  - **Existing CCN:** If you have already created CCN instances, you can select an existing CCN instance from the drop-down list.
  - **Create CCN:** If you have not created a CCN instance, enter an instance name. The system then creates a CCN instance and automatically associates it with the SAG APP instance.

The name must be 2 to 100 characters in length, and can contain digits, underscores (\_), and hyphens (-). The name must start with a letter or a Chinese character.
- **(Optional) Standby and Active DNS:** optional. The active and standby DNS servers that the clients use to connect to the private network through SAG APP. After you configure the DNS servers in the SAG console, the system automatically synchronizes the DNS settings to the clients. Ignore this parameter in this example.

### Note

- If the clients use PrivateZone to connect to Alibaba Cloud, set the DNS server addresses to 100.100.2.136 and 100.100.2.138. For more information about PrivateZone, see [What is PrivateZone?](#)
- Android and macOS operating systems require 2.1.1 or later versions of the SAG app for receiving DNS settings. For more information about how to install the SAG app, see [Install SAG APP](#).

- **Private CIDR Block:** Specify the private CIDR blocks that the clients use to connect to Alibaba Cloud. When a client connects to Alibaba Cloud, an IP address within the specified CIDR block is assigned to the client. Make sure that the private CIDR blocks do not overlap with each other. 192.168.10.0/24 is used in this example.

You can click **Add Private CIDR Block** to add more private CIDR blocks. You can add a maximum of five private CIDR blocks.

## Step 3: Configure a CEN instance (optional)

You can associate the CCN instance with a Cloud Enterprise Network (CEN) instance to enable communication between networks attached to the CCN instance and resources associated with the CEN instance. For more information, see [What is Cloud Enterprise Network](#).

1. Click **Associate with a CEN (Optional)** to associate the CCN instance with a CEN instance. This step is optional. If you do not need to associate the CCN instance with a CEN instance, click **Skip**.
2. You can select one of the following options to associate the CCN instance with a CEN instance to enable communication between the clients and cloud resources. Existing CEN is selected in this example.

- **Existing CEN:** If you have already created CEN instances, you can select an existing CEN instance from the drop-down list.
- **Create CEN:** If you have not created a CEN instance, enter an instance name. The system then creates a CEN instance and automatically associates it with the CCN instance.

The name must be 2 to 100 characters in length, and can contain digits, underscores (\_), and hyphens (-). It must start with a letter or a Chinese character.

## Step 4: Create a client account

After you set up network connections, you must create client accounts to allow users to log on to the SAG app and access the private network.

1. Click **Next: Create a client account** to create a client account.

- **Username:** optional. The username must be 7 to 33 characters in length, and can contain underscores (\_), at signs (@), periods (.), and hyphens (-). It must start with a digit or a letter.

### Note


- The usernames of client accounts added to the same SAG APP instance must be unique.
- When you create a client account, if you specify only the email address, the system automatically generates a username and password. The specified email address is used as the username.

- **Email Address:** required. The email address of the user. The username and password are sent to the specified email address.

The email address must be 2 to 64 characters in length, and can contain letters, digits, underscores (\_), periods (.), and hyphens (-). It must contain an at sign (@).

- **Static IP:**

- If you enable this feature, you must configure the IP address of the client. The current client account uses the specified IP address to connect to Alibaba Cloud.

 **Note** The specified IP address must fall into the CIDR block of the private network.



- If you disable this feature, an IP address within the CIDR block of the private network is assigned to the client. Each connection to Alibaba Cloud uses a different IP address.
- **Set Maximum Bandwidth:** Specify the maximum bandwidth for the current client account. The default value is used in this example.  

You can set the maximum bandwidth to 1 to 2,000 Kbit/s. The maximum bandwidth is set to 2,000 Kbit/s by default.
- **Set Password:** optional. The password used to log on to the SAG app.  

The password must be 8 to 32 characters in length, and can contain underscores ( \_ ) and hyphens ( - ). It must start with a letter or digit.

2. Click OK.

## Step 5: Connect the client to Alibaba Cloud

After you create the client account, you must download and install the SAG app on your mobile terminal. The SAG app allows terminals to access resources on Alibaba Cloud through private networks.

1. After you create a client account, click **Download Now** to go to the page that provides instructions on how to download and install the SAG app. For more information, see [Install SAG APP](#).
2. After you download and install the SAG app on your terminal, you can log on to the SAG app with your username and password, and then connect to the private network. This allows you to access resources on Alibaba Cloud. For more information, see [Connect to Alibaba Cloud](#).

# 5. Administrator guide

## 5.1. Purchase an SAG app

Only an administrator can purchase a Smart Access Gateway (SAG) app. After you purchase an SAG app, an SAG instance is generated. The administrator can use the SAG instance to create client accounts.

### Procedure

1. Log on to the [Smart Access Gateway console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. On the **Smart Access Gateway APP** page, click **Create SAG APP**, and then set the required parameters as described in the following table.

Parameter	Description
Region	The region where the clients of the SAG app are located. If the clients are located in another region, we recommend that you purchase an instance in that region. Otherwise, the clients will directly connect to networks in the selected region.
Number of Client Accounts	Specify the number of client accounts that can be created for the SAG app. Typically, each employee that needs to log on to the SAG app requires an account.  <b>Note</b> Currently, SAG supports 5 to 1,000 clients. Pricing is tiered based on the number of accounts. For more information, see <a href="#">Software Billing</a> .
Data Plan Per Account	The amount of free data usage allocated to each account. The data plan cannot be shared among different accounts. The data plan remains effective for the current month only.  <b>Note</b> Currently, you can purchase only 5 GB for each account per month.
Billing Method When Billing Plan is Exhausted	If the actual data usage of an account exceeds the data plan, the amount that exceeds the data plan is charged based on the pay-as-you-go billing method.
Subscription Duration	The subscription duration of the data plan under each account. SAG supports monthly subscriptions and auto renewal.

4. Click **Buy Now**, confirm the order, and then settle the payment.


## 5.2. Set up network connections

After you purchase a Smart Access Gateway (SAG) APP instance, you must set up network connections between the SAG APP instance and Alibaba Cloud resources to enable clients to access resources on Alibaba Cloud.

### Procedure

1. Log on to the [SAG console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the top navigation bar, select the target region.
4. On the **Smart Access Gateway APP** page, find the target instance and click **Network Configuration** in the **Actions** column.
5. Set the following parameters.

Parameter	Description
Instance Name/ID	<p>Select the Cloud Connect Network (CCN) instance to be associated with the SAG instance. CCN is an important component of SAG. After an SAG APP instance is associated with a CCN instance, all clients associated with the SAG APP instance can communicate with gateway devices associated with the CCN instance. For more information, see <a href="#">Introduction to CCN</a>.</p> <p>Use one of the following methods to associate the SAG instance with a CCN instance:</p> <ul style="list-style-type: none"><li>◦ <b>Existing CCN:</b> If you have already created CCN instances in the selected area, you can select an existing CCN instance from the drop-down list.</li><li>◦ <b>Create CCN:</b> If you have not created a CCN instance, enter an instance name. The system then creates a CCN instance in the current area and automatically associates the CCN instance with the SAG APP instance.</li></ul> <p>The name must be 2 to 100 characters in length, and can contain digits, underscores (_), and hyphens (-). The name must start with a letter or a Chinese character.</p>

Parameter	Description
Standby and Active DNS	<p>Optional. The active and standby DNS servers that the clients use to connect to the private network. After you configure the DNS servers in the SAG console, the system automatically synchronizes the DNS settings to the clients.</p> <div style="background-color: #e6f2ff; padding: 10px; border: 1px solid #d9e1f2;"> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>○ If the clients use PrivateZone to connect to Alibaba Cloud, set the DNS server addresses to 100.100.2.136 and 100.100.2.138. For more information about PrivateZone, see <a href="#">What is PrivateZone?</a></li> <li>○ Android and macOS operating systems require 2.1.1 and later versions of the SAG app for receiving DNS settings. For more information about how to install the SAG app, see <a href="#">Install SAG APP</a>.</li> </ul> </div>
Private CIDR Block	<p>Specify the private CIDR blocks that the clients use to connect to Alibaba Cloud. When a client connects to Alibaba Cloud, an IP address within the specified CIDR block is assigned to the client. Make sure that the private CIDR blocks do not overlap with each other.</p> <p>You can click <b>Add Private CIDR Block</b> to add more private CIDR blocks. You can add a maximum of five private CIDR blocks.</p>

6. Click OK.



## 5.3. Create a client account

After you set up network connections, you can create client accounts and grant them permissions to log on to Smart Access Gateway (SAG) APP and access resources on Alibaba Cloud.

### Procedure

1. Log on to the [SAG console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the top navigation bar, select the target region.
4. On the **Smart Access Gateway APP** page, click the ID of the target SAG APP instance.
5. On the instance details page, click the **Client Accounts** tab.
6. Click **Create Client Account** and set the required parameters.

Parameter	Description
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Parameter	Description
Username	<p>Optional. The username must be 7 to 33 characters in length, and can contain underscores (_), at signs (@), periods (.), and hyphens (-). It must start with a digit or a letter.</p> <div style="background-color: #e6f2ff; padding: 10px; border: 1px solid #d9e1f2;"> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>○ The usernames of client accounts added to the same SAG APP instance must be unique.</li> <li>○ When you create a client account, if you specify only the email address, the system automatically generates a username and password. The specified email address is used as the username.</li> </ul> </div>
Email Address	<p>Required. The email address of the user. The username and password are sent to the specified email address.</p> <p>The email address must be 2 to 64 characters in length, and can contain letters, digits, underscores (_), periods (.), and hyphens (-). It must contain an at sign (@).</p>
Static IP	<ul style="list-style-type: none"> <li>○ If you enable this feature, you must configure the IP address of the client. The current client account uses the specified IP address to connect to Alibaba Cloud.</li> </ul> <div style="background-color: #e6f2ff; padding: 10px; border: 1px solid #d9e1f2;"> <p> <b>Note</b> The specified IP address must fall into the CIDR block of the private network.</p> </div> <ul style="list-style-type: none"> <li>○ If you disable this feature, an IP address within the CIDR block of the private network is assigned to the client. Each connection to Alibaba Cloud uses a different IP address.</li> </ul>
Set Maximum Bandwidth	<p>Specify the maximum bandwidth for the client account.</p> <p>You can set the maximum bandwidth to 1 to 2,000 Kbit/s. The maximum bandwidth is set to 2,000 Kbit/s by default.</p>
Set Password	<p>Optional. The password used to log on to the SAG app.</p> <p>The password must be 8 to 32 characters in length, and can contain underscores (_), at signs (@), periods (.), and hyphens (-). It must start with a letter or a digit.</p>

7. Click **OK** to create the client account. After the client account is created, the system automatically sends the SAG APP instance ID, username, password, and information about how to install the SAG app to the specified email address.

## 5.4. Configure roaming for clients

Smart Access Gateway (SAG) APP supports the roaming feature. Roaming allows clients to access private networks across areas. This way, you can remotely access resources on Alibaba Cloud at any time.


## Context

This feature enables employees that work off-site to remotely access the private networks of their companies. Roaming can replicate information about client accounts added to an SAG APP instance to SAG APP instances deployed in other areas. After the information is replicated, the clients can connect to Cloud Connect Network (CCN) instances in these areas and then connect to Alibaba Cloud. This way, the clients can access their private networks across areas.

Before you use the roaming feature, note the following limits:

- Within the same area, you cannot replicate information about client accounts among SAG APP instances.
- The CIDR blocks of the private networks attached to the source and destination SAG APP instances cannot overlap with each other.
- The client accounts from which information is replicated have not been added to the destination SAG APP instance.

## Procedure

1. Log on to the [SAG console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the top navigation bar, select the target area.
4. On the **Smart Access Gateway APP** page, click the ID of the target SAG APP instance.
5. Click the **Client Accounts** tab and find the target client account.
6. In the **Actions** column, choose  **Roaming**.
7. In the **Configure Roaming** dialog box that appears, set the following parameters.

Parameter	Description
Client Account	The username of the client account from which information is replicate to another SAG APP instance. The replicated client account uses the same username as the source client account.
Configure Roaming	Select the area where the destination SAG APP instance is deployed.
Associate with SAG Instance	Select the SAG APP instance to which you want to replicate the client account information.

8. Click **OK**.

## What's next

After the client account information is replicated to the specified SAG APP instance, you must enter the ID of the destination SAG APP instance when you log on to the SAG app. The replicated client account uses the same username and password as the source client account. For more information, see [Connect to Alibaba Cloud](#).

# 5.5. View the traffic monitoring data of an SAG APP instance

Administrators of a Smart Access Gateway (SAG) APP instance can view the traffic data of the SAG APP instance in the SAG console. The traffic data shows the bandwidth usage of the SAG APP instance.

## Procedure

1. Log on to the [SAG console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the top navigation bar, select the target region.
4. On the **Smart Access Gateway APP** page, find the target instance and click  in the **Monitoring** column.

5. On the **Monitoring** page, you can view different metrics of the SAG APP instance.

By default, the system displays metrics within the last one hour. You can select other time ranges from the **Time** drop-down list in the upper-left corner of the **Monitoring** page. Supported time ranges are 3 hours, 6 hours, and 12 hours. You can also specify a custom time range. The following table lists the metrics of an SAG APP instance.

Metric	Description
sag rxBytes	The amount of inbound traffic of the SAG APP instance. Default unit: byte. You can also set the unit to KB, MB, or GB.
sag txBytes	The amount of outbound traffic of the SAG APP instance. Default unit: byte. You can also set the unit to KB, MB, or GB.
sag rxBit/s	The inbound data transfer rate of the SAG APP instance. Unit: bit/s.
sag txBit/s	The outbound data transfer rate of the SAG APP instance. Unit: bit/s.
sag rxDropPackets	The inbound packet loss rate of the SAG APP instance. Unit: packet/min.
sag txDropPackets	The outbound packet loss rate of the SAG APP instance. Unit: packet/min.

Metric	Description
sag rxBytesHour	The amount of inbound data of the SAG APP instance per hour. Default unit: byte. You can also set the unit to KB, MB, or GB.
sag txBytesHour	The amount of outbound data of the SAG APP instance per hour. Default unit: byte. You can also set the unit to KB, MB, or GB.

## 5.6. Renew an instance

Renew an instance before the payment is overdue to avoid unnecessary troubles.

### Procedure

1. Log on to the **SAG console**.
2. In the left-side navigation pane, click **Smart Access Gateway APP** and find the target instance.
3. In the **Actions** column, click **Renew**.
4. Select a renewal duration and complete the payment.

## 5.7. Renewal and configuration modification

You can renew an SAG APP instance and upgrade or downgrade the specification. The new specification takes effect when the renewed subscription period starts.

### Procedure

1. Log on to the **SAG console**.
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. On the **Smart Access Gateway APP** page, find the target instance and click  in the **Actions** column.
4. Click **Renew and Modify Configuration**.
5. On the **Renew and Change Configuration** page, specify the **Number of Client Accounts** and **Subscription Duration**, select **Smart Access Gateway APP Terms of Service**, and then complete the payment.

 **Note** The number of client accounts must be a multiple of five.


## 5.8. Instance upgrades

This topic describes how to increase the number of client accounts.



## Procedure

1. Log on to the [SAG console](#).
2. In the top menu bar, select the region.
3. In the left-side navigation pane, click **Smart Access Gateway APP**.
4. On the **Smart Access Gateway APP** page, find the target instance and click  in the **Actions** column.
5. Click **Upgrade**.
6. On the **Upgrade/Downgrade** page, specify the **Number of Client Accounts**, select **Smart Access Gateway APP Terms of Service**, and then complete the payment.


 **Note** You can only increase the number of client accounts. The number must be a multiple of five.

## 5.9. Delete a client account

In the Smart Access Gateway (SAG) console, an administrator can delete clients that are no longer in use.

### Procedure

1. Log on to the [SAG console](#).
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the top navigation bar, select the target region.
4. On the **Smart Access Gateway APP** page, click the ID of the target SAG APP instance.
5. On the instance details page, click the **Client Accounts** tab.
6. Find the target client account and click **Remove** in the **Actions** column. In the message that appears, click **OK**.

 **Note** If the client account has already consumed data during the current billing cycle (a billing cycle equals one month), you cannot delete the client account. You can click **Disable** in the **Actions** columns first and then delete the client account in the next billing cycle.

# 6. End user guide

## 6.1. Install SAG APP

This topic describes how to install Smart Access Gateway (SAG) APP on client devices to access resources on Alibaba Cloud.

SAG APP supports Windows, macOS, Android, and iOS operating systems. The Linux operating system is not supported.

The following table lists the supported versions of each operating system and download methods.

Operating system	Supported version	Download and installation description
Windows	Supports Windows 7 and later (32-bit and 64-bit).	<p>To download SAG APP for Windows, click <a href="#">SAG APP for Windows</a>.</p> <p>After you download SAG APP, follow the steps supported by the operating system to install SAG APP.</p>
Android	Supports Android 5.0 to Android 9.0. Android 10.0 is to be supported soon.	<p>Scan the following QR code to download the SAG APP installation file through a browser.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>After you download SAG APP, follow the steps supported by the operating system to install SAG APP.</p>

Operating system	Supported version	Download and installation description
Mac	<ul style="list-style-type: none"> <li>• macOS 10.11.1 and later: You can download SAG APP from the App Store.</li> <li>• macOS 10.15.4 beta and later: You can download SAG APP without the App Store.</li> </ul>	<p>You can choose one of the following methods to download SAG APP for macOS:</p> <ul style="list-style-type: none"> <li>• To download SAG APP from the App Store, use the keyword "Aliyun" or "Aliyun Network Client" to search for the "Aliyun Network Client" application.</li> <li>• To download SAG APP without the App Store, click <a href="#">SAG APP for macOS</a>.</li> </ul> <p>After you download SAG APP, follow the steps supported by the operating system to install SAG APP.</p>
IOS	Supports iOS 9.0 and later.	<p>To download SAG APP from the App Store, use the keyword "Aliyun" or "Aliyun Network Client" to search for the "Aliyun Network Client" application.</p> <p>After you download SAG APP, follow the steps supported by the operating system to install SAG APP.</p>

## 6.2. Connect to Alibaba Cloud

This topic describes how to log on to Smart Access Gateway (SAG) APP and connect your private networks to Alibaba Cloud.

### Procedure

#### 1. Log on to SAG APP.

To log on to SAG APP, you must enter the SAG instance ID, username, and password.

You can find the preceding information in the email sent by the system.

#### 2. Click **CONNECT** to connect the device to Alibaba Cloud.

If the **Connected to Intranet** message appears, the device is connected to Alibaba Cloud.

□

## 7.FAQ

### 7.1. What can I do if I forget the password that is used to log on to the SAG app?

If a user forgets the password that is used to log on to the Smart Access Gateway (SAG) app, they must contact the administrator to reset the password. The following procedure shows how to reset passwords for users:

#### Procedure

1. Log on to the **SAG console**.
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the top navigation bar, select the target area.
4. On the **Smart Access Gateway APP** page, click the ID of the target SAG APP instance.
5. On the instance details page, click the **Client Accounts** tab and find the client account for which you want to reset the password.
6. In the **Actions** column, click **Reset Password**.
7. In the **Confirm Password Resetting** dialog box, select a method to reset the password and click **OK**.
  - **Random password:** The system generates a random password.
  - **Password:** You can specify a custom password.

The password must be 8 to 32 characters in length, and can contain underscores ( \_ ) and hyphens ( - ). It must start with a letter or a digit.

After the password is reset, the system sends the new password to the specified email address of the user.


### 7.2. How can I modify the maximum bandwidth?

If a user needs to modify the maximum bandwidth, they must contact the administrator. The following procedure shows how to modify the maximum bandwidth:

#### Procedure

1. Log on to the **Smart Access Gateway (SAG) console**.
2. In the left-side navigation pane, click **Smart Access Gateway APP**.
3. In the top navigation bar, select the target area.
4. On the **Smart Access Gateway APP** page, click the ID of the target SAG APP instance.
5. On the instance details page, click the **Client Accounts** tab and find the client account for which you want to modify the maximum bandwidth.
6. In the **Actions** column, click **Change Bandwidth**. In the **Change Bandwidth** pane, set the

maximum bandwidth.

 **Note** The maximum bandwidth is set to 2,000 Kbit/s by default. You can set it to 1 to 2,000 Kbit/s. If you need to increase the bandwidth to higher than 2,000 Kbit/s, **submit a ticket**.

7. Click **OK**.