## Domain Name Service

# Getting Started

**Issue** 01

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HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

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# Contents



# 1 Before You Start

DNS provides a set of functions for different scenarios.

## When DNS Is Required

You can select a function based on **Table 1-1** to suit your network scenario.

**Table 1-1** Scenarios where DNS is required

| Function | Scenario | Reference |
| --- | --- | --- |
| Public domain name resolution | Domain names are mapped to the public IP addresses of web servers or web applications on the Internet so that end users are routed to your website or application. | **Routing Internet Traffic to a Website** |
| Private domain name resolution | Domain names are mapped to the private IP addresses within VPCs for accessing cloud resources or cloud services over a private network. | **Configuring Private Domain Name Resolution for ECSs** |
| Reverse resolution | PTR records map EIPs to domain names and are often used by email servers against spammers. | **Configuring a PTR Record for an Email Server** |

## Signing Up with Huawei Cloud and Completing Real-Name Authentication

You must have an account to access the DNS console. If you do not have an account, create one first.

1. Sign up for a HUAWEI ID.

   For details, see **Signing Up for a HUAWEI ID and Enabling Huawei Cloud Services**.

2. Complete real-name authentication.

   For details, see **Real-Name Authentication**.

   If you have enabled Huawei Cloud services and completed real-name authentication, skip this step.

# 2 Routing Internet Traffic to a Website

## Scenarios

After you register a domain name and set up a website, you can configure record sets to map the domain name to the public IP address of the web server so that end users can use the domain name to access your website over the Internet.

For example, you have already set up a website on a web server with a public IPv4 address bound. To allow end users to access your website using domain name example.com and its subdomain www.example.com, you need to:

- Add an A record set that maps domain name example.com to the public IP address of the web server.
- Add an A record set that maps subdomain www.example.com to the public IP address of the web server.

NOTE

You only need to obtain the domain name and the public IP address of the web server. Configuring record sets for the domain name is irrelevant to the account and location of the domain name registrar and of the web server.

## Preparations

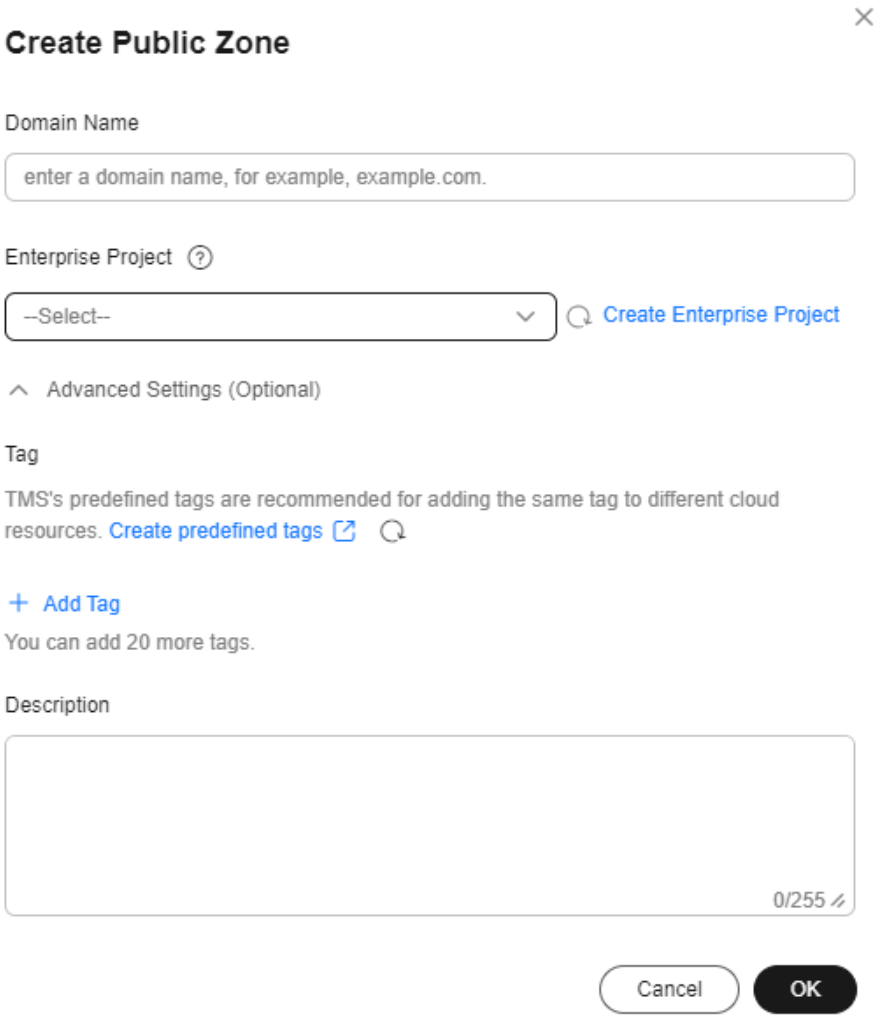
- Obtain the public IP address of the website server.
  - If your website server is an ECS, log in to the **ECS console** to obtain the public IP address of the ECS.
  - If your website server is not an ECS, contact your server provider to obtain the public IP address.
- **Ensure that the domain name is normal.**

  You have queried the domain name status from the domain name registrar or a third-party platform and confirmed that the domain name is in a normal status.

## Step 1: Create a Public Zone

1. Go to the **Public Zones** page.
2. In the upper right corner of the page, click **Create Public Zone** to host the domain name to the DNS service.




## Step 2: Confirm and Change the DNS Servers of the Domain Name

The DNS service provides authoritative DNS servers for domain resolution.

After you create a public zone, an NS record set is generated, which specifies the DNS servers provided by the DNS service.

If DNS server addresses of the domain name are not those in the NS record set, the DNS service will not be able to resolve the domain name. You must change the DNS server addresses of the domain name in the registrar's system.

**NOTE**

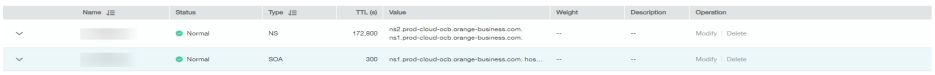
Generally, the changes to DNS servers will take effect within 48 hours, but the time may vary depending on the domain name registrar's cache duration.

**Query the DNS server addresses provided by the DNS service.**

1. Go to the **Public Zones** page.
2. In the public zone list, locate the public zone you created and click **Manage Record Sets** in the **Operation** column.

Locate the NS record set and view the DNS server addresses in the **Value** column.




**Change the DNS server addresses.**

Log in to the domain name registrar's website and change the DNS server addresses to those provided by the DNS service. Refer to the domain name registrar's documentation for detailed operations.

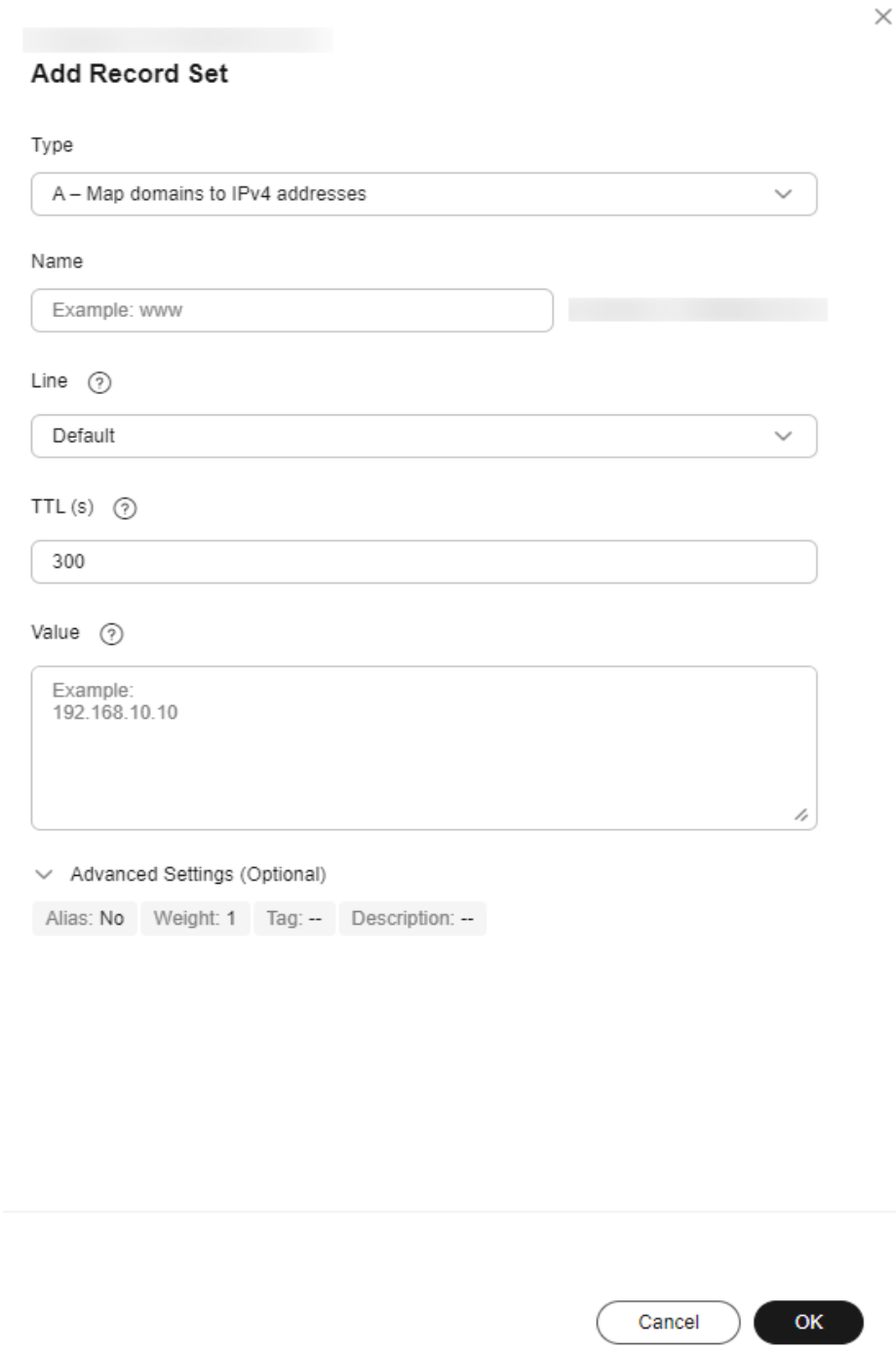
## Step 3: Add an A Record Set for the Domain Name

Add an A record set to the created public zone to allow access to your website using example.com.

1. On the **Public Zones** page, locate the public zone you created and click the domain name (example.com).
2. In the upper right corner of the page, click **Add Record Set**.
3. Configure the parameters as follows:
   - **Type**: Retain the default setting **A – Map domains to IPv4 addresses**.
   - **Name**: Leave this parameter blank. This is a record set for the domain name, which is example.com.
   - **Value**: Enter the EIP of your web server.

   Retain the default values for other parameters.




4. Click **OK**.

   View the added record set in the list. If the status of the record set is **Normal**, the record set has been added.

## Step 4: Add an A Record Set for a Subdomain

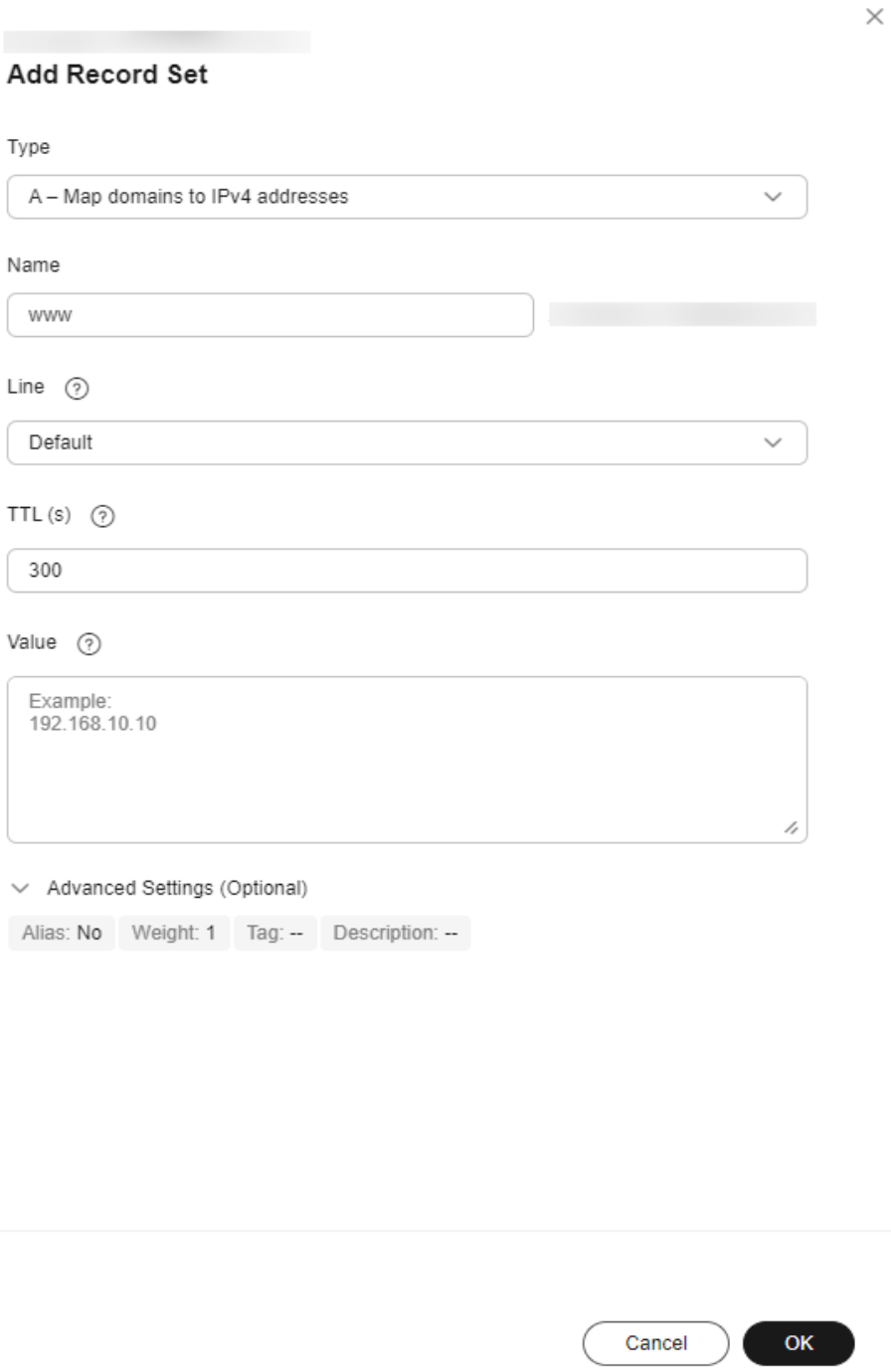
Add another A record set to the created public zone to allow access to your website using www.example.com.

1. On the **Public Zones** page, locate the public zone you created and click the domain name (example.com).

2. In the upper right corner of the page, click **Add Record Set**.
3. Configure the parameters as follows:
   - **Type**: Retain the default setting **A – Map domains to IPv4 addresses**.
   - **Name**: Set it to **www**, which means that this is a record set for the www.example.com subdomain.
   - **Value**: Enter the EIP of your web server.

   Retain the default values for other parameters.




4. Click **OK**.

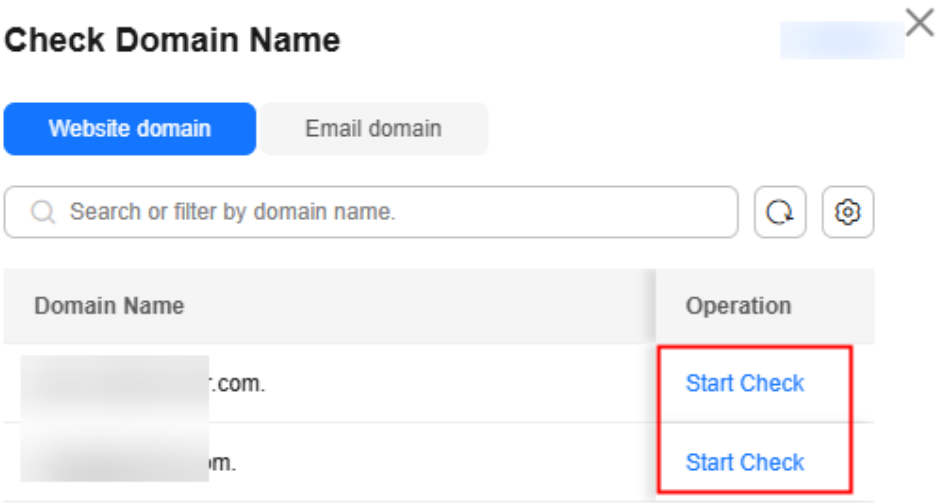
View the added record set in the list. If the status of the record set is **Normal**, the record set has been added.

## Step 5: Check Whether the Record Sets Are Active

## (Recommended) Checking a Domain Name

1. On the **Public Zones** page, locate the target public zone and click **Check Domain Name** in the **Operation** column.


2. On the **Check Domain Name** page, locate the domain name and click **Start Check** in the **Operation** column.




3. View the results and rectify the fault (if any) following the provided suggestion.

## Running Nslookup to Check a Record Set

1. On your local host, click the search icon and enter **cmd** to open the CLI.
2. Run the **nslookup -qt=a** *Domain name* command to check whether the record set takes effect.

   Example: **nslookup -qt=a example.com**

   If the displayed IP address is the same as that configured in the record set, the record set taken effect.

# 3 Configuring Private Domain Name Resolution for ECSs

## Scenarios

If you have deployed ECSs and other cloud services in a VPC, you can configure private domain names for the ECSs so that they can communicate with each other or access the cloud services over a private network.

This section uses ECSs as an example to describe how to create a private zone and add a record set to it.

## Preparations

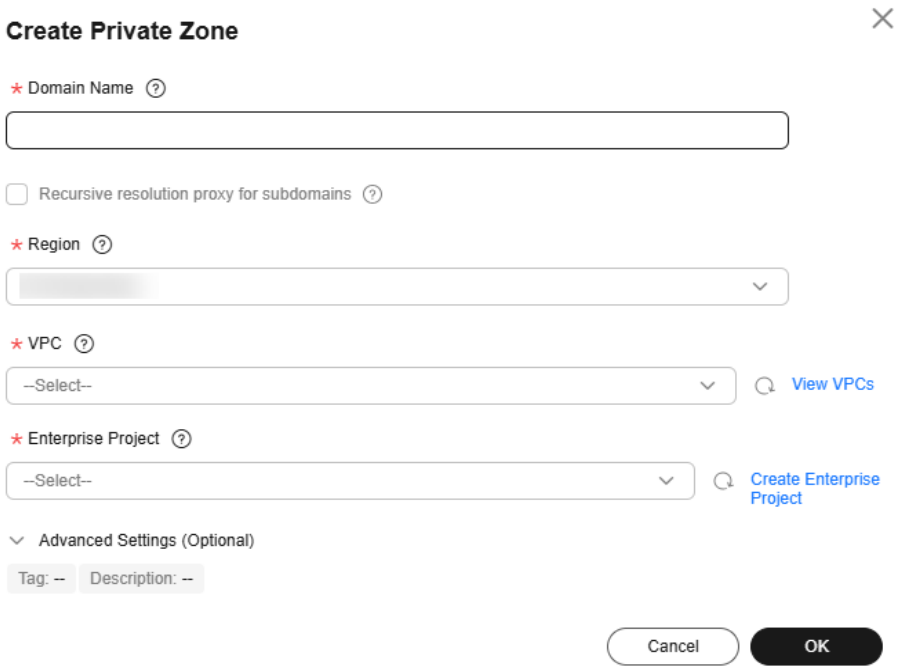
This section uses a Huawei Cloud ECS as an example. Before configuring private domain name resolution, log in to the **ECS console** to check the private IP address of your ECS.

## Step 1: Create a Private Zone

Before using a private domain name (for example, example.com) to access an ECS, you need to create a private zone.

1. Go to the **Private Zones** page.
2. Click  in the upper left corner and select the desired region and project.
3. In the upper right corner of the page, click **Create Private Zone**.
4. On the **Create Private Zone** page, set parameters as instructed.

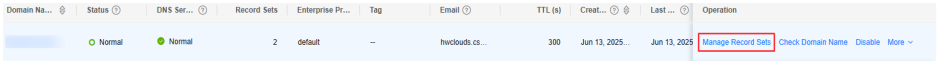



5. Click **OK**.

## Step 2: Add an A Record Set

Add an A record set for the created private zone.

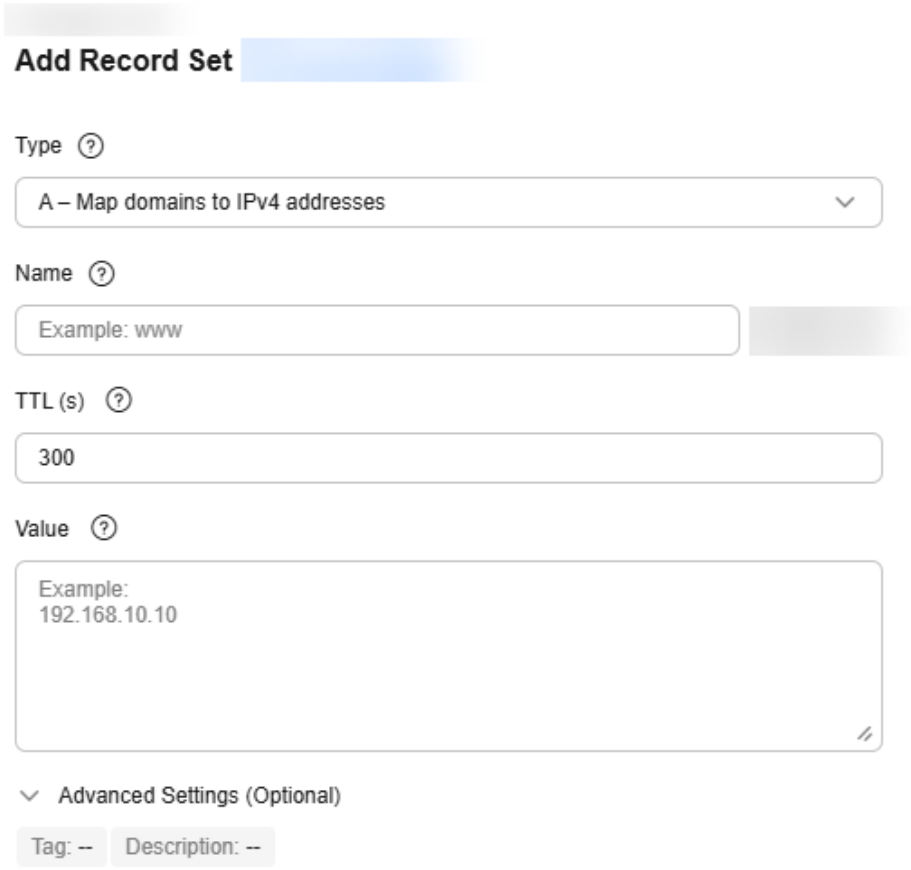
1. In the private zone list, click **Manage Record Sets** in the Operation column of the target private zone.




2. On the **Record Sets** tab, click **Add Record Set**.
3. Configure the parameters as follows:
   - **Name**: Leave it blank.
   - **Type**: Select **A – Map domains to IPv4 addresses**.
   - **Value**: Enter the private IP address of the ECS.

   Retain the default values of other parameters.




4. Click **OK**.
5. Switch back to the **Record Sets** tab.

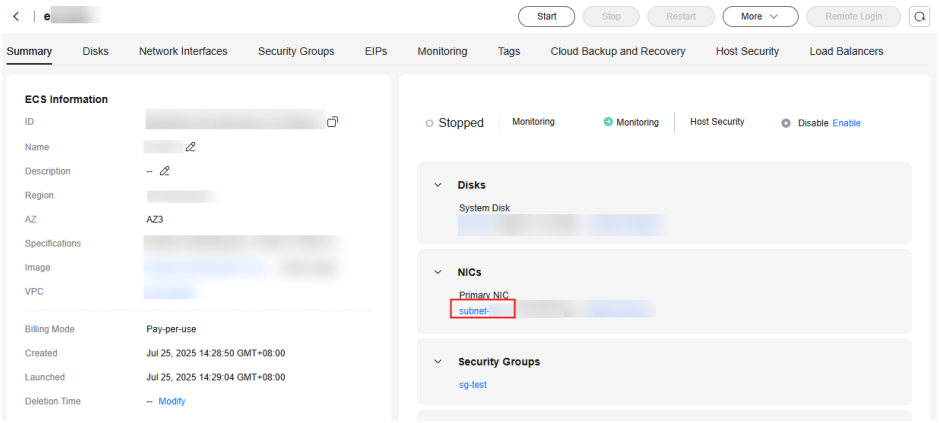
   The added record set is in the **Normal** state.

## Step 3: Change the DNS Servers for the VPC Subnet

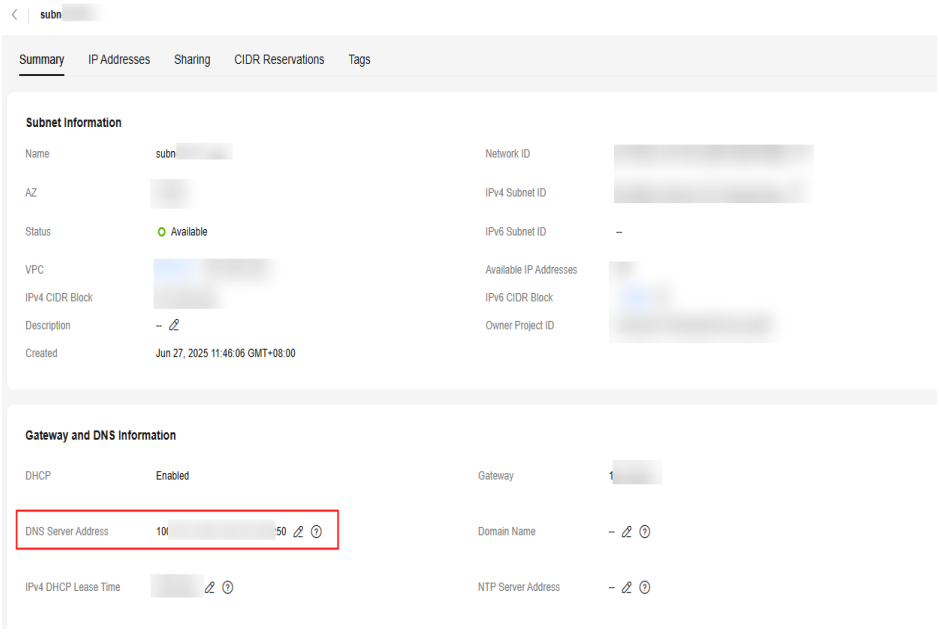
To make the private zone and its record sets take effect in a VPC, ensure that the VPC subnets associated with the ECS use the private DNS server addresses provided by the DNS service.

1. View the DNS server addresses for the VPC subnet associated with the ECS.
   a. Go to the **ECS list** page.
   b. In the ECS list, click the name of the target ECS.
   c. On the **Summary** tab of the ECS details page, click the name of the VPC subnet associated with the ECS NIC.

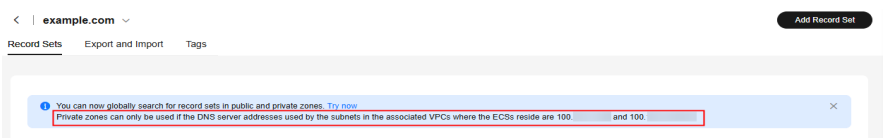



d. In the **Gateway and DNS Information** area, view the DNS server addresses used by the ECS.




2. View the private DNS server addresses provided by the DNS service.
   - Method 1 (recommended): View the private DNS server addresses on the management console.
     i. Go to the **Private Zones** page.
     ii. Click  in the upper left corner and select the desired region and project.
     iii. In the private zone list, locate the private zone and click the domain name.

     View the private DNS server addresses on the top of the record set list.




   - Method 2: View the private DNS server addresses for each region by referring to **What Are Huawei Cloud Private DNS Server Addresses?**

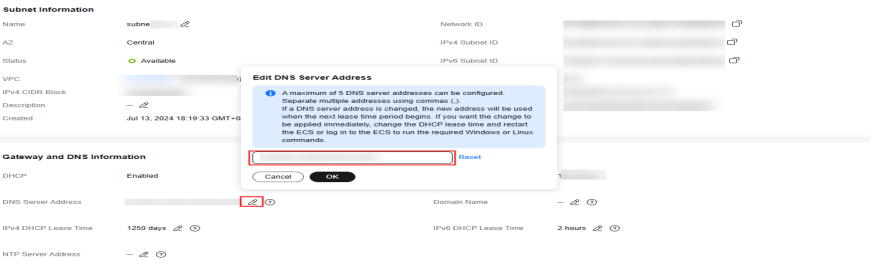
  

Check whether the private DNS server addresses are the same as the DNS server addresses for the VPC subnet obtained in **1**. If they are different, go to **3**.

3. Change the DNS server addresses for the VPC subnet.

   Return to the VPC subnet summary page in **1.d** and click  next to **DNS Server Address**.

   Change the DNS server address of the VPC subnet to the private DNS server address of Huawei Cloud as instructed.

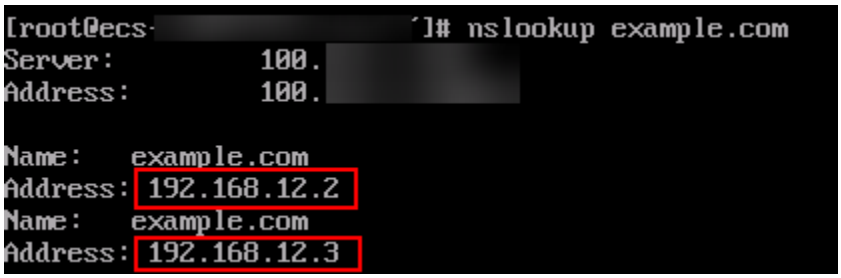



## Step 4: Check Whether the Record Set Takes Effect

Log in to the ECS and run **nslookup** *domain name*.

Example: **nslookup example.com**

As shown in the following figure, when the displayed IP address is the same as the IP address configured in the A record set, the record set has taken effect.



# 4 Configuring a PTR Record for an Email Server

## Scenarios

PTR records are used to resolve IP addresses to domain names to prove credibility of email servers. To avoid being tracked, most spam senders use email servers whose IP addresses are dynamically allocated or not mapped to registered domain names. If you want to keep the spam out of your recipients' inbox, add a PTR record to map the email server IP addresses to domain names. In this way, the email recipients can know whether the email server is trustworthy or not.

If you use an ECS as an email server, configure a PTR record to map the EIP of the ECS to the domain name.

This following are operations for you to add a PTR record for a cloud resource, such as ECS.

## Constraints

- You can only create PTR records for IP addresses with a 32-bit subnet mask.
- Only one PTR record can be created for an EIP.
- An EIP can be mapped to no more than 10 domain names.

## Procedure

1. Go to the **PTR Records** page.
2. Click  in the upper left corner and select the desired region and project.
3. Click **Create PTR Record** and configure the following parameters.

   Retain the default values for other parameters. For details, see **Creating a PTR Record**.

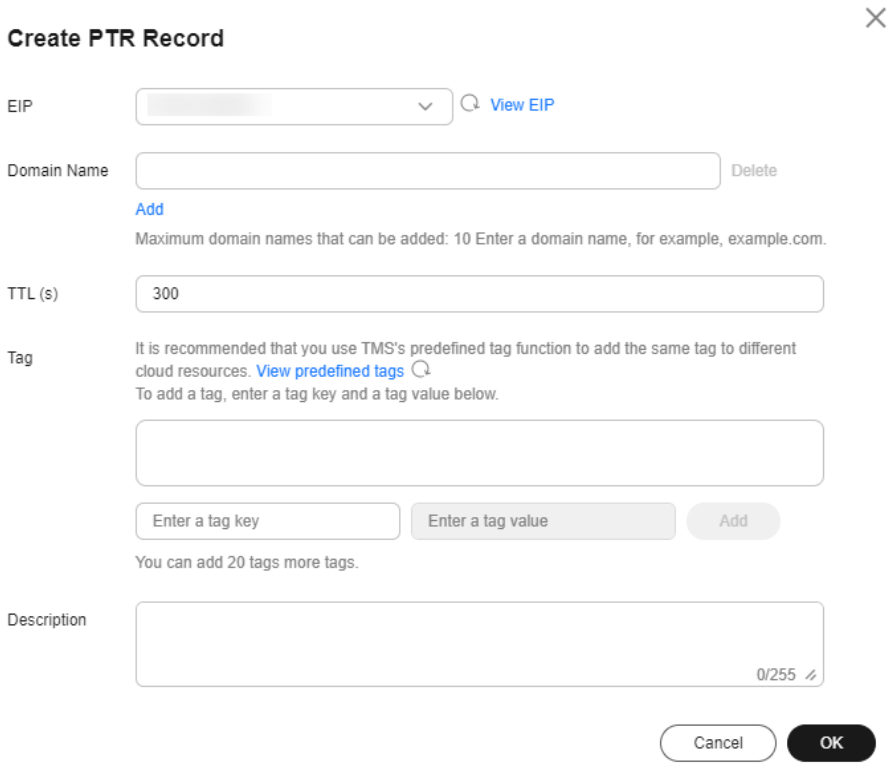



**Table 4-1** Parameters for creating a PTR record

| Parameter | Example | Description |
| --- | --- | --- |
| EIP | XX.XX.XX.XX | EIP of the cloud resource, for example, an ECS.<br>You can select an EIP from the drop-down list. |
| Domain Name | example.com | Domain name mapped to the EIP. |
| TTL (s) | 300 | Cache duration of the PTR record, in seconds<br>Default value: 300 |
| Tag | example_key1<br>example_value1 | A tag that will be added to classify and identify the PTR record. |
| Description | The description of the PTR record. | Supplementary information about the PTR record.<br>The description can contain a maximum of 255 characters. |

4. Click **OK**.

   You can view the created PTR record on the **PTR Records** page.

> **NOTE**
>
> If a domain name needs to be mapped to multiple EIPs, you need to create a PTR record for each EIP.

5. In the DOS window of your local PC that has been connected to the Internet, check whether the PTR record takes effect.
   a. Press **Win+R** to open the **Run** dialog box, enter **cmd**, and press **Enter**.
   b. Run the following command in the DOS window:
      ```
      nslookup -qt=ptr [IP address]
      ```