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数据库网关DG
Solution

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Document conventions

Style	Description	Example
 Danger	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.
 Warning	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.
 Notice	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.
 Note	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.
<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>

Table of Contents

1. Use Data Management and Database Gateway to manage on-p...	05
2. Use DTS and DG to migrate, synchronize, or subscribe to on-p...	11
3. Use Database Backup and Database Gateway to manage on-pr...	13

1. Use Data Management and Database Gateway to manage on-premises databases or databases hosted on third-party clouds

Database Gateway (DG) allows you to connect on-premises databases or databases that are hosted on third-party clouds to Alibaba Cloud services. You do not need to use public IP addresses to establish connections. This prevents the security risks of using public IP connections. In Data Management (DMS), you can use Database Gateway to register on-premises databases or databases that are hosted on third-party clouds. You can then manage these databases.

Context

You can connect an on-premises database or a database that is hosted on a third-party cloud to Alibaba Cloud by using one of the following methods. However, each of these methods has limits:

- Use a leased line, a VPN gateway, or a smart access gateway: This method is not suitable for individual users due to high costs.
- Open the service port of the database to the Internet: This method causes potential security risks.
- Use a user-created proxy to forward service requests: This method requires high technology costs and does not ensure high stability.

To resolve the preceding issues, DMS allows you to use Database Gateway to register on-premises databases or databases that are hosted on third-party clouds. You do not need to use the public IP addresses of the databases to establish connections. Database Gateway also encrypts data transmission. For more information about Database Gateway, see [What is Database Gateway?](#)

Procedure

1. Log on to the [Database Gateway console](#). In the upper-left corner, select the region where the database is deployed. The default region is China (Hangzhou). Then, click **Create Gateway**.
2. In the Create Gateway dialog box, specify the gateway name and the note. Then, click **Next step**.

Create Gateway

1 Create Gateway — 2 Install Gateway — 3 Adding a Database

*Gateway Name:

Please enter a name for the gateway

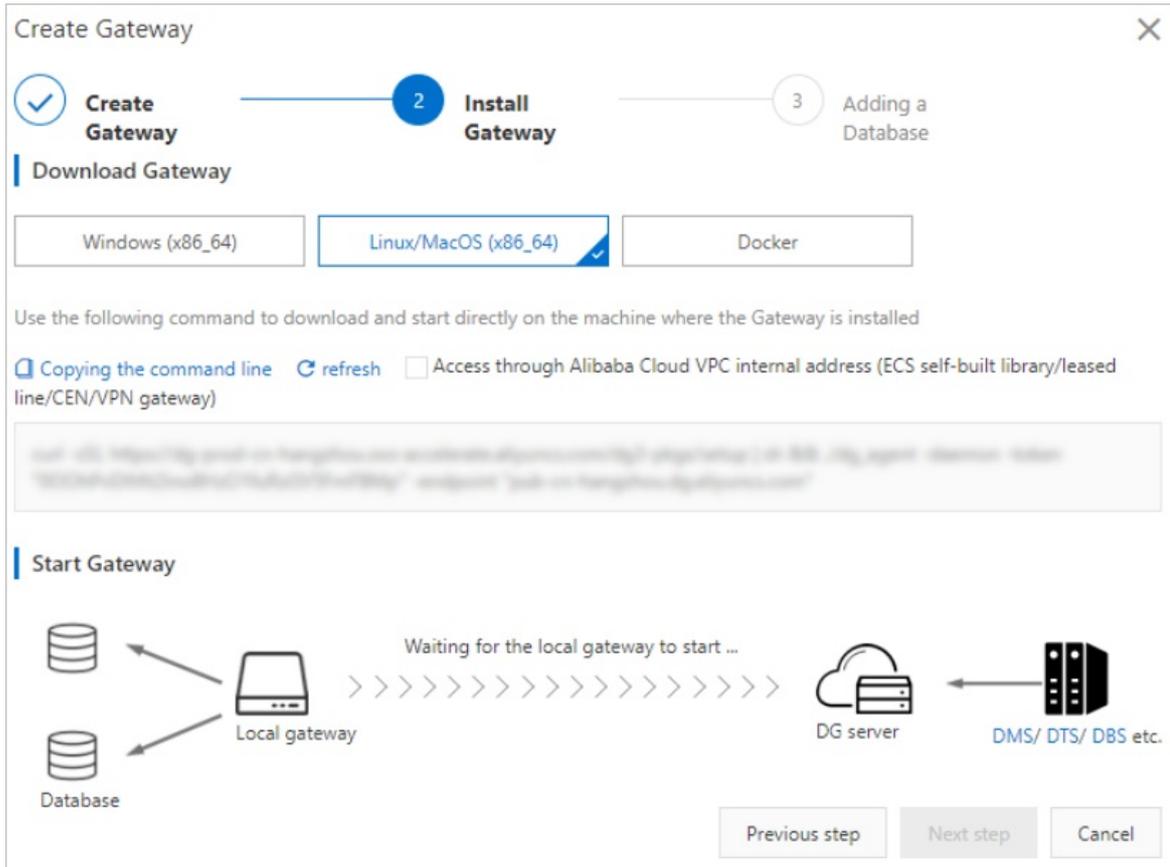
Note:

Describe the purpose of the gateway (not required) ...

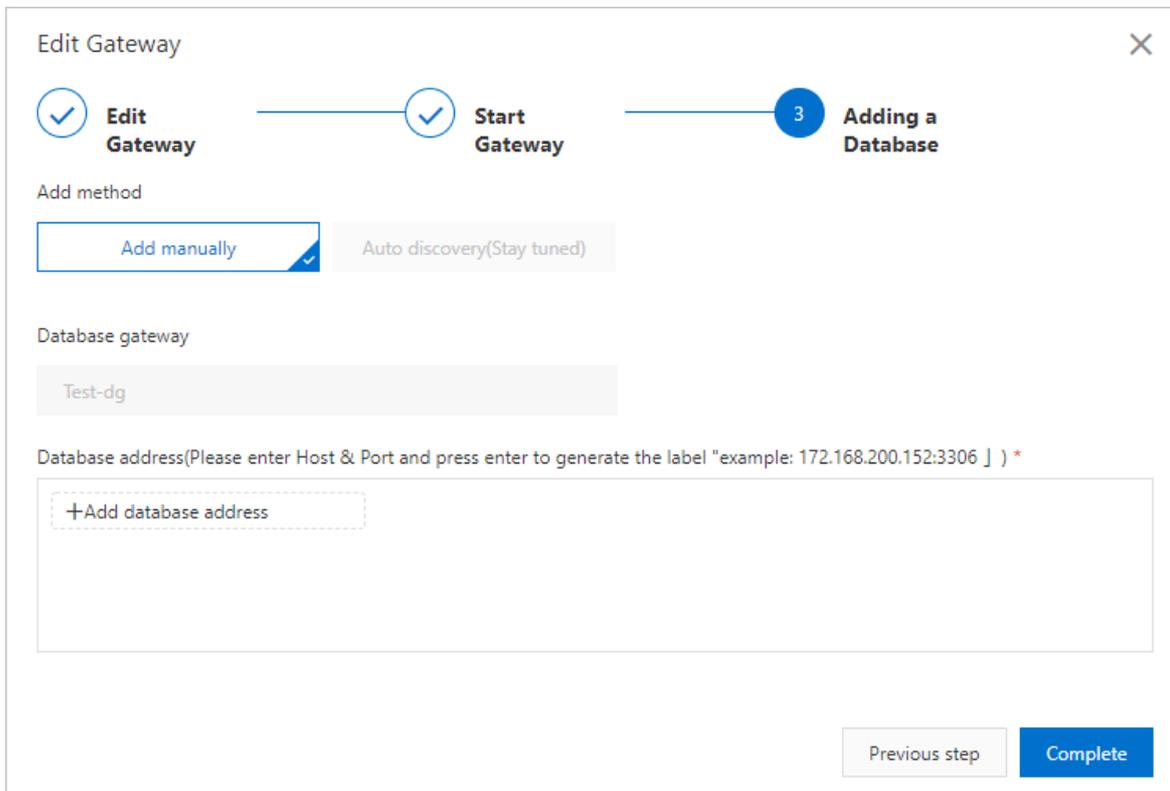
Next step Cancel

3. Install the gateway. Select an installation package based on the type of your operating system. If you use the Windows operating system, click **Download gateway**. If you use other operating systems, copy and paste the command line to the machine where the gateway is to be installed. Then, press Enter to run the command. If the local gateway is started as expected, you are automatically redirected to the Adding a Database page. You can also click **Next step**.

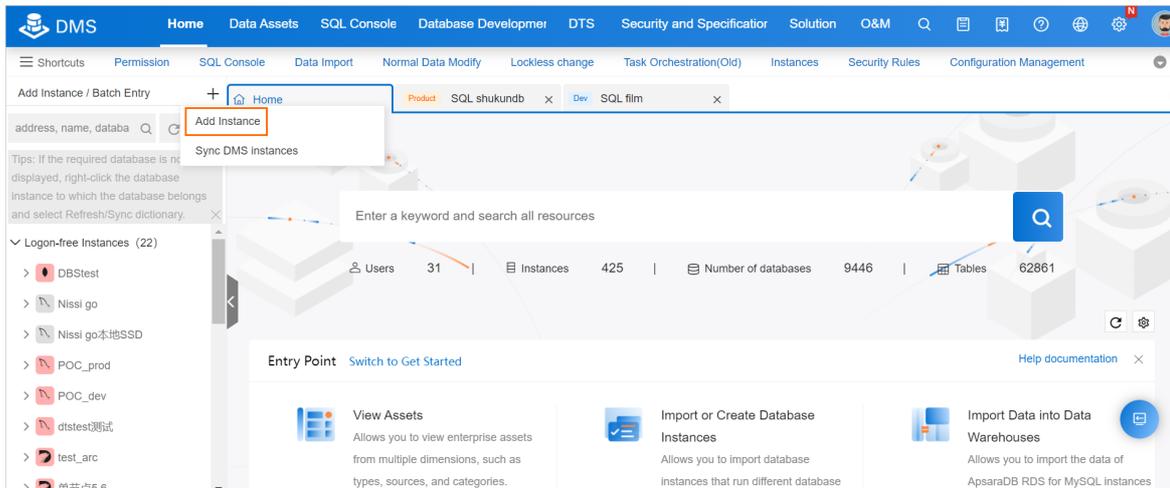
- Note** Database Gateway is available for free. You must make sure that the machine where the gateway program is deployed meets the following requirements:
- The machine can connect to the database that is to be accessed. If the machine and the database are deployed in the same internal network, the network latency is reduced.
 - The machine can access the Internet. No public IP address is required. The service port does not need to be open to the Internet. The machine does not need to be accessed by the Internet.



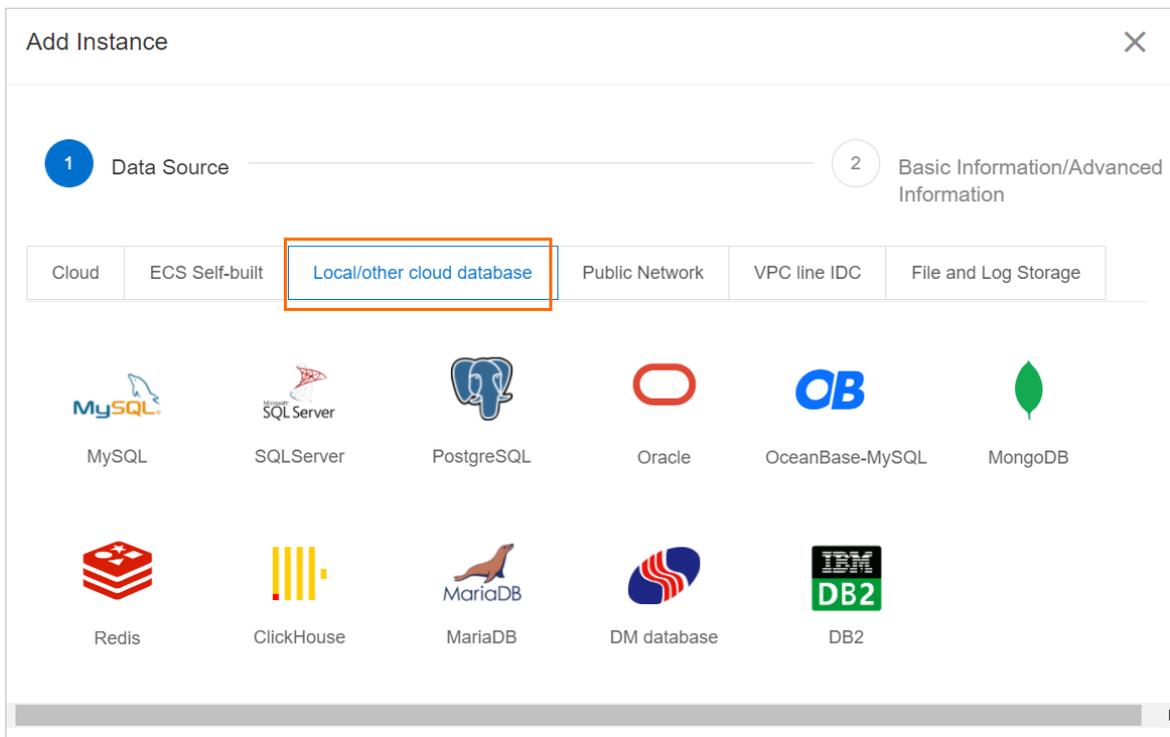
- 4. Add a database. You can click **Add database address** to add a database to the gateway. Alternatively, you can add a database later. For more information about how to add a database, see [Add databases](#).



5. Log on to the **DMS** console. In the upper-left corner of the page, click **Add instance**.



6. In the **Add instance** dialog box, click **Local/other cloud database**. Then, select a database type.



7. In the **Add instance** dialog box, specify the instance information based on the descriptions in the following table.

Tab name	Parameter name	Description
	Data source	The source of the database instance. In this example, the Local/other cloud database option is selected.
	Database type	The type of the database instance.

Tab name	Parameter name	Description
Basic Information	Instance Area	The region where the database gateway is deployed.
	Gateway ID	The ID of the database gateway. If you have not created database gateways, click Click here to add a database gateway to create a database gateway.
	Database address	The internal endpoint of the database.
	Port	The service port of the database.
	Database account	The username that you use to log on to the database.
	Database password	The password of the username for the database.
	Control Mode	The control mode for the database. For more information, see .
Advanced information	Environment type	The type of the environment where the database is deployed.
	Instance Name	The custom name of the instance.
	Enable DSQL	Specifies whether to enable the cross-database query feature.
	OnlineDDL	Specifies whether to enable the feature of changing schemas without locking tables.
	DBA	The database administrator who handles subsequent processes, such as the process of applying for permissions.
	query timeout(s)	The security policy: If a query statement is not fully executed within the specified period, the statement is terminated in the SQL window. This ensures database security.

Tab name	Parameter name	Description
	export timeout(s)	The security policy: If an export statement is not fully executed within the specified period, the statement is terminated in the SQL window. This ensures database security.

- In the lower-left corner of the dialog box, click **Test connection** and wait until the connection passes the test.

 **Note** If the connection fails the test, check the instance information that you specify.

- Click **Submit**. Now your on-premises database or database hosted on a third-party cloud has been registered in DMS. In the instance list in the left-side navigation pane of the DMS console, you can view and manage your database.

2. Use DTS and DG to migrate, synchronize, or subscribe to on-premises databases or databases hosted on a third-party cloud

This topic describes how to use Database Gateway (DG) to connect an external database to Alibaba Cloud. DG is a gateway service that connects external databases to Alibaba Cloud at a low cost. You can connect on-premises databases or databases hosted on a third-party cloud to Alibaba Cloud through DG. After you use DG to connect an external database to Alibaba Cloud, you can specify the external database as the source or destination database when you create a migration, synchronization, or subscription task in Data Transmission Service (DTS).

Context

Typically, you can use one of the following methods to connect an external database to Alibaba Cloud. However, each method has limits.

- Use an Express Connect circuit, a VPN gateway, or a smart access gateway. This method is not suitable for individual users because of high expenses.
- Expose the service port of the database to the Internet. This method poses potential risks to data security.
- Use a self-managed proxy to forward service requests. This method compromises service stability and requires technical expertise.

DG allows you to connect external databases to Alibaba Cloud without the need to expose the endpoints of these databases to the Internet. After you connect external databases to Alibaba Cloud through DG, you can find them in Data Management (DMS). DG also encrypts data transmission and supports simple configurations that do not require firewalls. For more information, see [What is Database Gateway?](#).

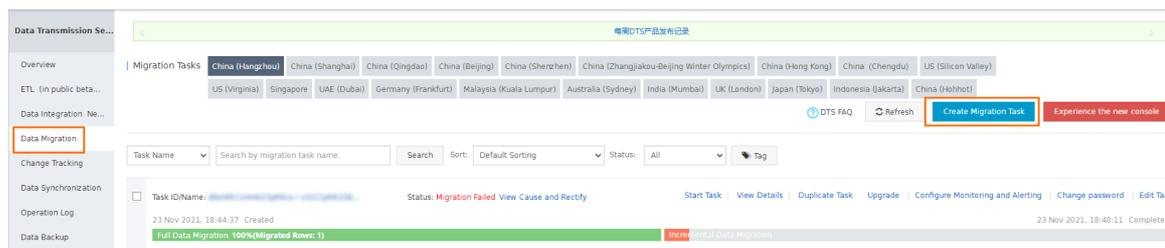
Procedure

1. Create a database gateway. For more information, see [Create a database gateway](#).
2. Add the external database that you want to connect to Alibaba Cloud. For more information, see [Add databases](#).

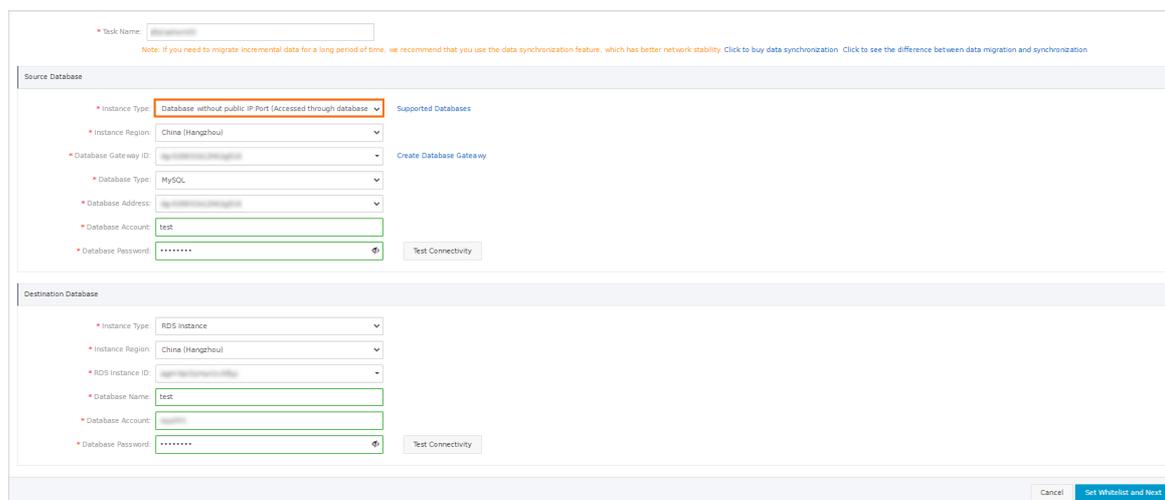
DG is free of charge. However, you must make sure that the following requirements are met when you use DG:

- The server where the database gateway is deployed has Internet access. You do not need to expose the service port to the Internet. To support stable and fast data transmission, make sure that the public bandwidth of the database gateway for outbound data transfer is 10 Mbit/s or higher.
 - The server where the database gateway is deployed can connect to the external database. If you require a lower network latency, deploy the server and external database in the same internal network.
3. In the following steps, a migration task created in DTS is used as an example. Log on to the [DTS console](#). In the left-side navigation pane, click **Data Migration**. On the page that appears, click

Create Migration Task in the upper-right corner.



4. In the Create Migration Task wizard, specify the database information. To specify an external database as the source or destination database, select **Database without public IP:Port (Accessed through database gateway)** from the Instance Type drop-down list in the Source Database or Destination Database section, and then select the endpoint of the external database.



Note If you select **Database without public IP:Port (Accessed through database gateway)** as the instance type when you create a data migration task, the source and destination databases must be deployed in the same region.

5. After you specify the database information, click **Test Connectivity** to verify the connectivity. Then, click **Set Whitelist and Next** in the lower-right corner to proceed with the migration type and advanced settings.

3. Use Database Backup and Database Gateway to manage on-premises databases or databases on third-party clouds

Database Backup allows you to use Database Gateway to back up on-premises databases or private databases on third-party clouds to Alibaba Cloud. You can connect your databases to Alibaba Cloud at a low cost in a few simple steps. Then, you can specify a database that is connected to a database gateway as the source database when you configure a backup schedule of the logical backup mode. This topic describes how to use Database Gateway to back up on-premises databases or private databases on third-party clouds to Alibaba Cloud.

Context

You can connect an on-premises database or a database that is hosted on a third-party cloud to Alibaba Cloud by using one of the following methods. However, each method has limits.

- Use a dedicated connection, a VPN gateway, or a smart access gateway. This method is not suitable for individual users because of high costs.
- Use the service port of the database over the Internet. This method causes potential security risks.
- Use a user-created proxy to forward service requests. This method provides low stability and requires that you can create a proxy.

For more information about Database Gateway, see [What is Database Gateway?](#)

Procedure

1. Create a database gateway. For more information, see [Create a database gateway](#).
2. Add a database that you want to connect to Alibaba Cloud. For more information, see [Add databases](#).

When you use the Database Gateway service, no fees are charged. Make sure that the following requirements are met:

- The server where the database gateway is installed can access the Internet. The service port of the server does not need to be open to the Internet. To ensure stable data transmission over channels, the outbound public bandwidth must be at least 10 Mbit/s.
 - The server where the database gateway is installed can connect to the database. If the server and the database are deployed in the same internal network, the network latency is minimal.
3. Configure a backup schedule in the Database Backup console. For more information, see [Configure a backup schedule](#).

Set Database Location to **No public network IP: Port's self-built database (accessed through the database gateway)**. This allows you to specify the database that is connected to the database gateway as the source database.

Source Database

* Instance Type: Database without public IP:Port (Accessed through database gateway) DTS support type

* Instance Region: China (Hangzhou)

* Database Gateway ID: Create Database Gateway

* Database Type: MySQL

* Database Address: IP:3306

* Database Account:

* Database Password: Test Connectivity

Note If you select **No public network IP: Port's self-built database (accessed through the database gateway)**, cross-region backup is not supported. The source database instance must be in the same region as the Object Storage Service (OSS) bucket where the backup data is stored.