

ALIBABA CLOUD

Alibaba Cloud

数据库网关DG
User Guide

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 Alibaba Cloud

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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.Before you begin	05
2.Create a database gateway	06
3.Add databases	08
4.Modify a database gateway	10
5.Stop a gateway	11
6.Add a node	12
7.Create high-availability clusters of on-premises agents	13
8.Connect to Database Gateway by using Express Connect, VPN ...	16
9.Connect applications to on-premises databases or third-party c...	19

1.Before you begin

This topic describes the tasks that you must complete before you can use Database Gateway.

Procedure

1. Check whether you have an Alibaba Cloud account. Skip this step if you already have an Alibaba Cloud account.
2. Make sure that the instance where you want to install the database gateway agent has Internet access. The resource consumption of Database Gateway is low. Therefore, we recommend that you use an instance with 1 core and 2 GB of memory, and make sure that the instance supports Windows, Linux, and macOS.
3. Log on to the [Database Gateway console](#) with your Alibaba Cloud account.

 **Note** You can also use the SDK or API of Database Gateway to complete all of the operations that you can perform in the console.

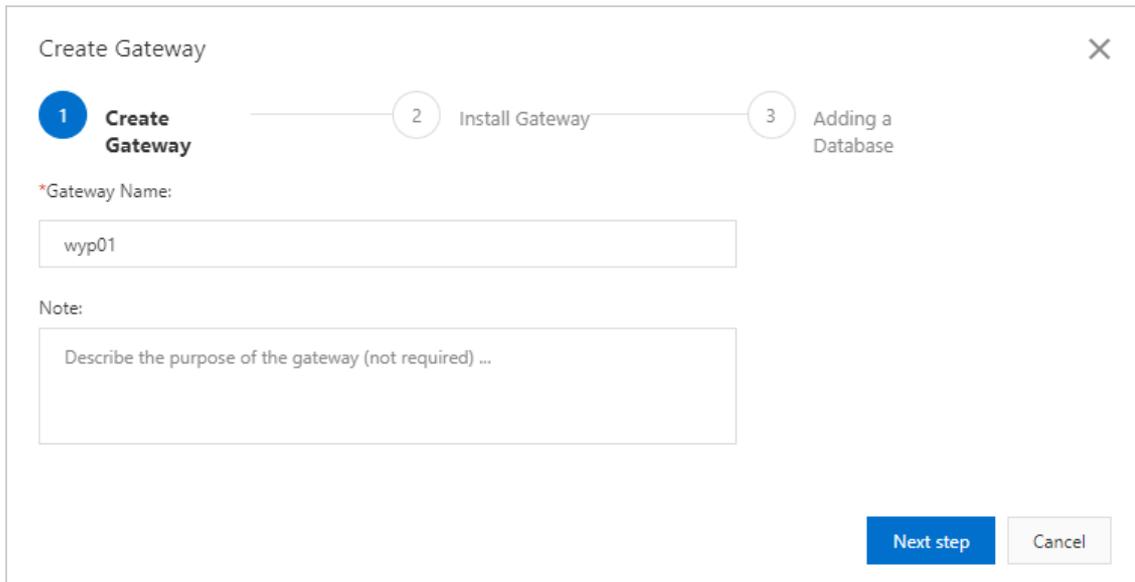
4. If this is the first time you use Database Gateway, make sure that you have read and understand the terms of service, and then click **Activate Now**. The system prompts that Database Gateway is activated. Then, click **Console**.

2. Create a database gateway

This topic describes how to create a database gateway by using the Database Gateway console.

Procedure

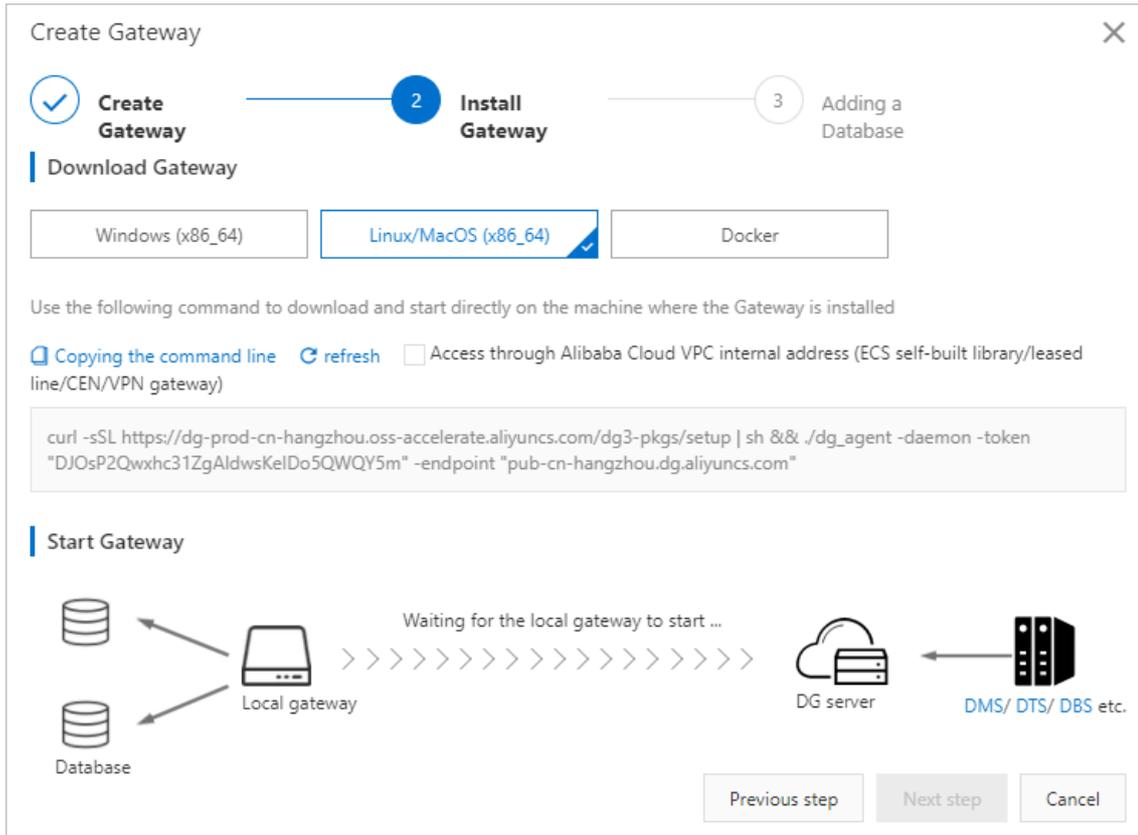
1. Log on to the [Database Gateway console](#) and click **Create Gateway**.
2. On the Create Gateway wizard page, enter the name and description of the database gateway, and then click **Next step**.



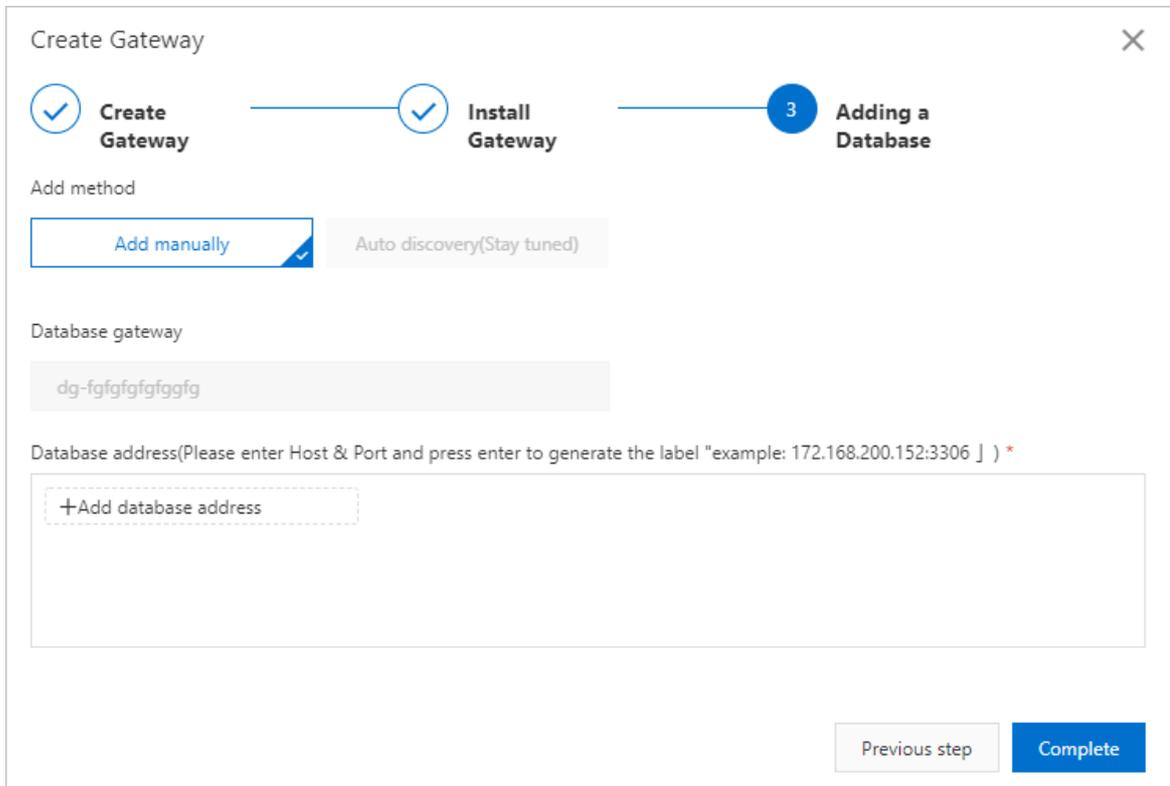
The screenshot shows a 'Create Gateway' wizard window. At the top, there is a progress bar with three steps: '1 Create Gateway' (highlighted in blue), '2 Install Gateway', and '3 Adding a Database'. Below the progress bar, the 'Gateway Name' field is filled with 'wyp01'. The 'Note' field contains the text 'Describe the purpose of the gateway (not required) ...'. At the bottom right, there are two buttons: 'Next step' and 'Cancel'.

3. Install the Database Gateway agent. To install the Database Gateway agent, select the appropriate installation package based on the operating system. If you use the Windows operating system, click **Download gateway**. If you use other operating systems, copy and paste the command to the instance where you want to install the Database Gateway agent. Then, press Enter to run the command. If the Database Gateway agent is launched, you are proceeded to the Adding a Database wizard page. You can also click **Next step** to navigate to this page.

For more information about the requirements on using Database Gateway, see [Before you begin](#).



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



3.Add databases

This topic describes how to add databases to Database Gateway. After a local gateway is started, you can add databases. Multiple databases can be added to a local gateway.

Procedure

1. Open the **Adding a Database** dialog box.

You can use either of the following methods:

- o When creating a database gateway, perform the **Add a local database** step and click **Adding a Database**. For information about how to create a database gateway, see [Create a database gateway](#).
- o Log on to the console. In the left-side navigation pane, click **Gateway List** to go to the **Gateway List** page. Click the ID of a gateway in the Running state. On the Details page, click **Adding a Database**.
- o Log on to the console. In the left-side navigation pane, click **Database Information** to go to the **Database Information** page. Click **Adding a Database**.

Note In this case, select a database gateway from the drop-down list.

The screenshot shows a dialog box titled "Adding a Database". It contains the following fields and controls:

- *Database gateway**: A dropdown menu.
- Database type**: A dropdown menu with "MySQL" selected.
- *Host**: A text input field.
- *Port**: A text input field with "3306" entered.
- Description**: A large text area.
- Buttons**: "OK" and "Cancel" buttons at the bottom right.

2. Configure the parameters.

Parameter	Description
Database gateway	The name of the gateway.
Database address	The internal endpoint to access the database through the host where the gateway is located.

Parameter	Description
Port	The port to access the database through the host where the gateway is located.
Description	The description of the database.

3. Click **OK**.

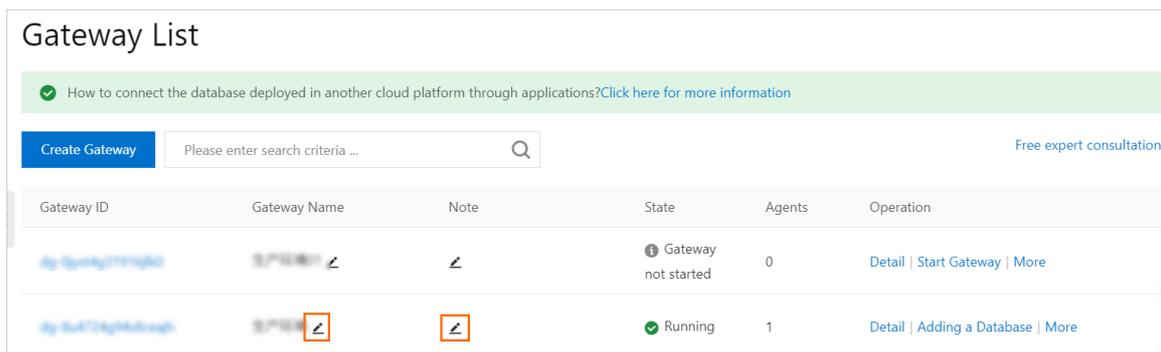
After a database is added, you can modify or delete the database.

4. Modify a database gateway

This topic describes how to change the name and the description of a database gateway in the Database Gateway console.

Procedure

1. Log on to the Database Gateway console and go to the **Gateway List** page.
2. Find the gateway that you want to modify. To change the gateway name, click the Edit icon in the Gateway Name column. To change the description, click the Edit icon in the Note column.



Gateway List

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Create Gateway [Free expert consultation.](#)

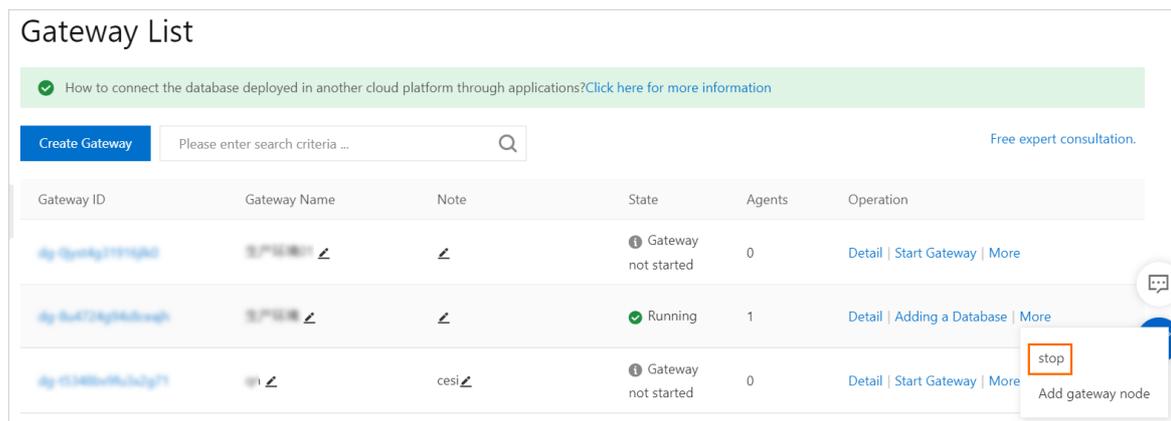
Gateway ID	Gateway Name	Note	State	Agents	Operation
dg-xxxxx	网关名称 		 Gateway not started	0	Detail Start Gateway More
dg-yyyyy	网关名称 		 Running	1	Detail Adding a Database More

5.Stop a gateway

This topic describes how to stop a gateway in the console.

Procedure

1. Log on to the [Database Gateway console](#).
2. In the left-side navigation pane, click **Gateway List**.
3. On the right side of the page that appears, move the pointer over the **More** button in the **Operation** column that corresponds to the gateway. Then, click **Stop**.



6.Add a node

Procedure

1. Log on to the [Database Gateway console](#).
2. In the left-side navigation pane, click **Gateway List**.
3. In the **Operation** column for the gateway that you want to manage, click **Detail**.

Gateway List

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Gateway ID	Gateway Name	Note	State	Agents	Operation
dg-1234567890123456	网关名称		Gateway not started	0	Detail Start Gateway More
dg-1234567890123456	网关名称		Running	1	Detail Adding a Database More

4. On the **Gateway details** page, click **Add gateway node**. You can select a download method 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 node is to be added. Then, press Enter to run the command.

Add gateway node

Download Gateway

Windows (x86_64) | Linux/MacOS (x86_64) | Docker

Download gateway After downloading directly, install it on your own network machine Access through Alibaba Cloud VPC internal address (ECS self-built library/leased line/CEN/VPN gateway)

Double-click the downloaded executable file and enter the Endpoint of the Access Gateway on the page: [Copy](#)

Finally, you need to enter a random verification code for security (15 minutes validity period): [Copy](#) [refresh](#)

Start Gateway

Waiting to add gateway node... current network joint points: 1

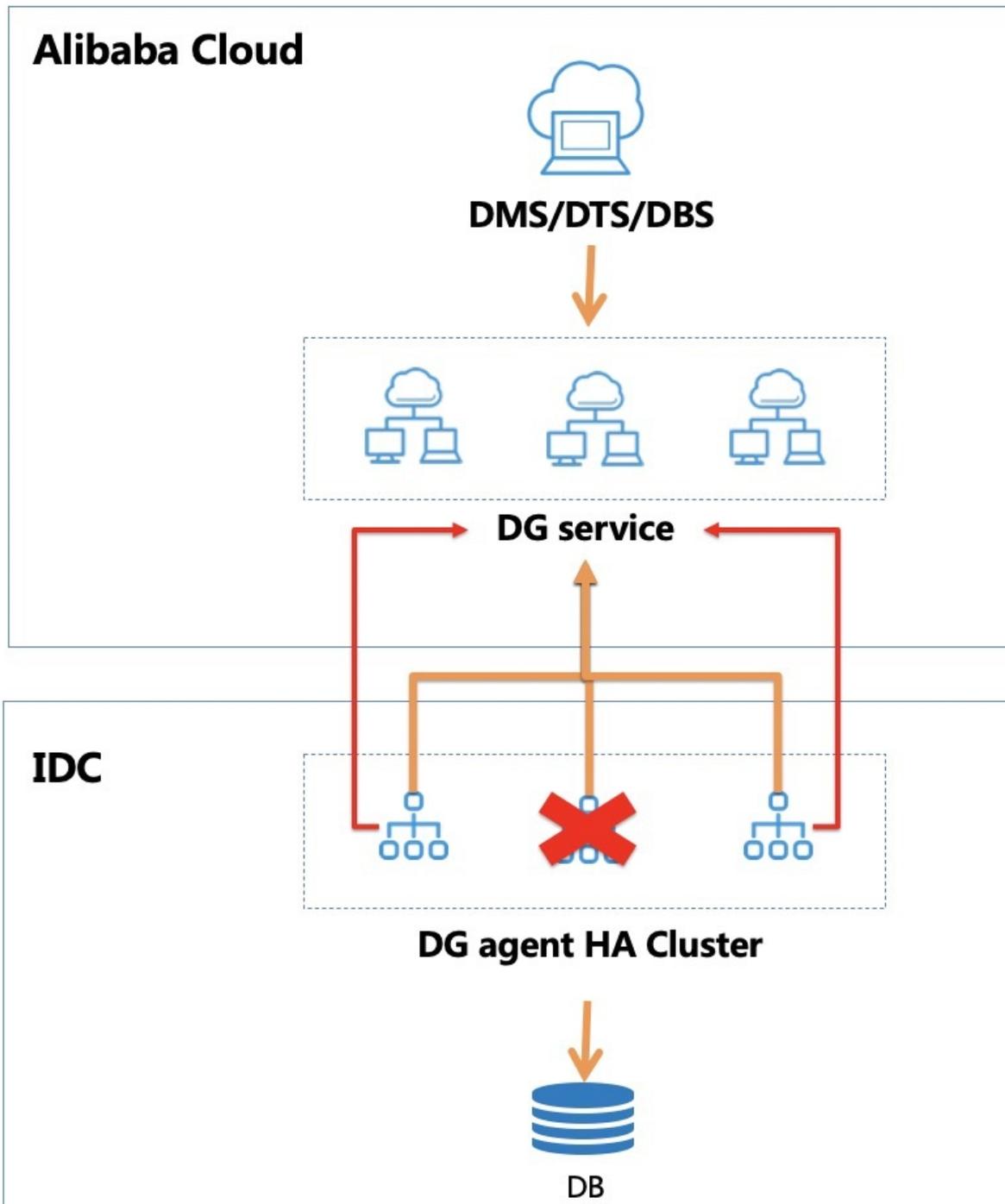
Database Gateway node cluster DG server DMS/ DTS/ DBS etc.

[Complete](#)

7. Create high-availability clusters of on-premises agents

Background information

Database Gateway allows you to deploy high-availability clusters of on-premises Database Gateway agents. You can deploy agent applications on different on-premises servers. The deployed agents automatically form high-availability clusters to improve link reliability. If some Database Gateway agents become unavailable, the Database Gateway server automatically switches the links from the faulty agents to other available agents to ensure high availability.



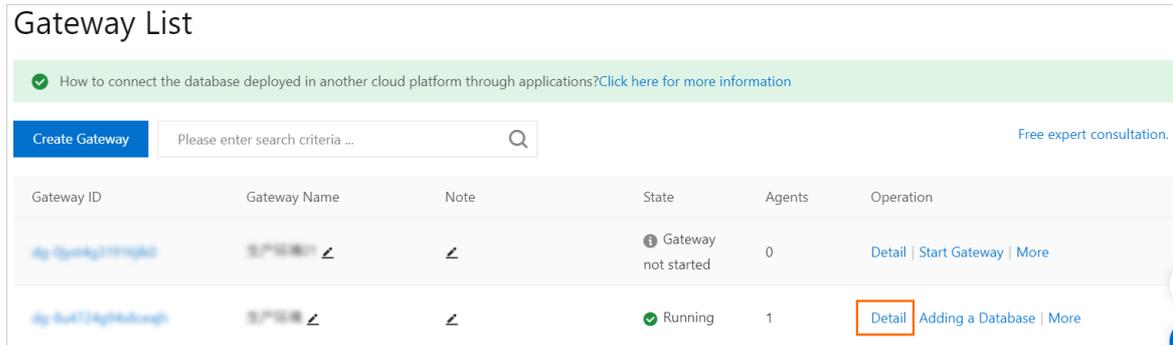
Prerequisites

The Database Gateway service is activated and at least one Database Gateway agent is started. For more information, see [Create a database gateway](#).

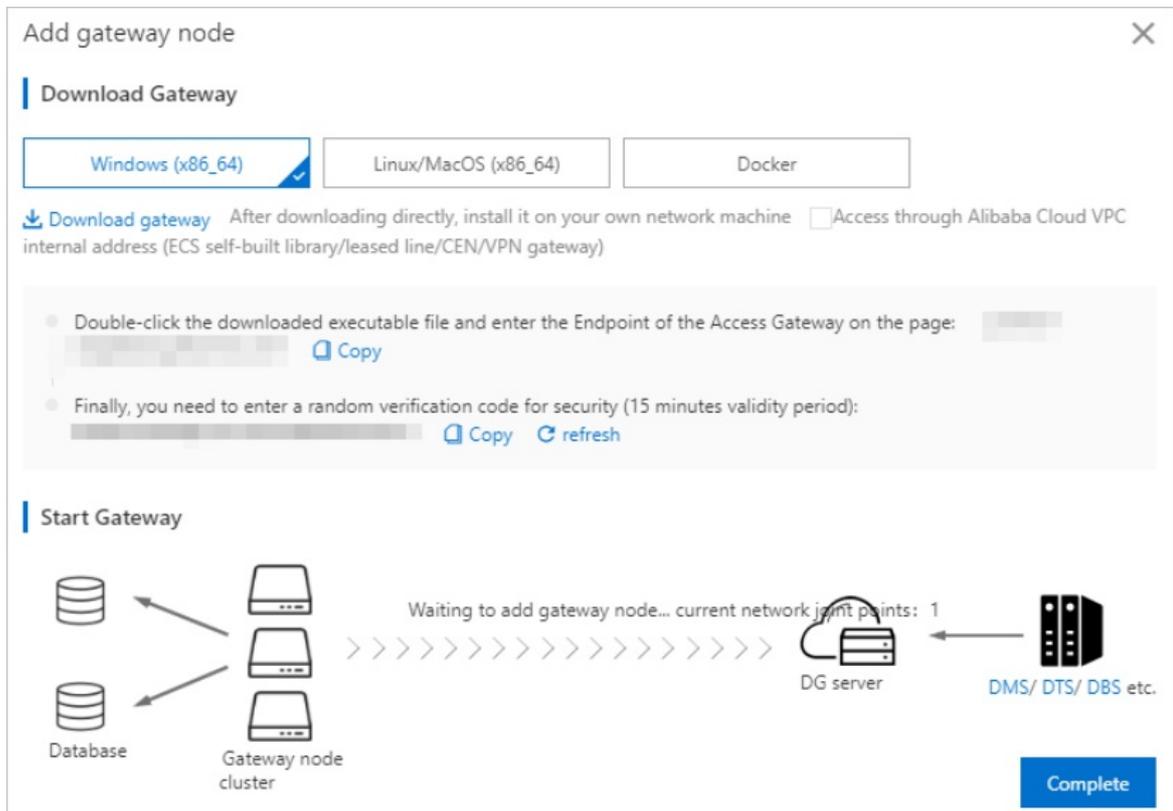
Procedure

1. Log on to the [Database Gateway console](#).
2. In the left-side navigation pane, click **Gateway List**.

- Find the gateway for which you want to add a gateway node to ensure high availability. Then, click **Detail** in the Operation column for the gateway.



- On the Gateway details page, click **Add gateway node**.
- Select an installation method based on 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 node is to be added, and press Enter to run the command.



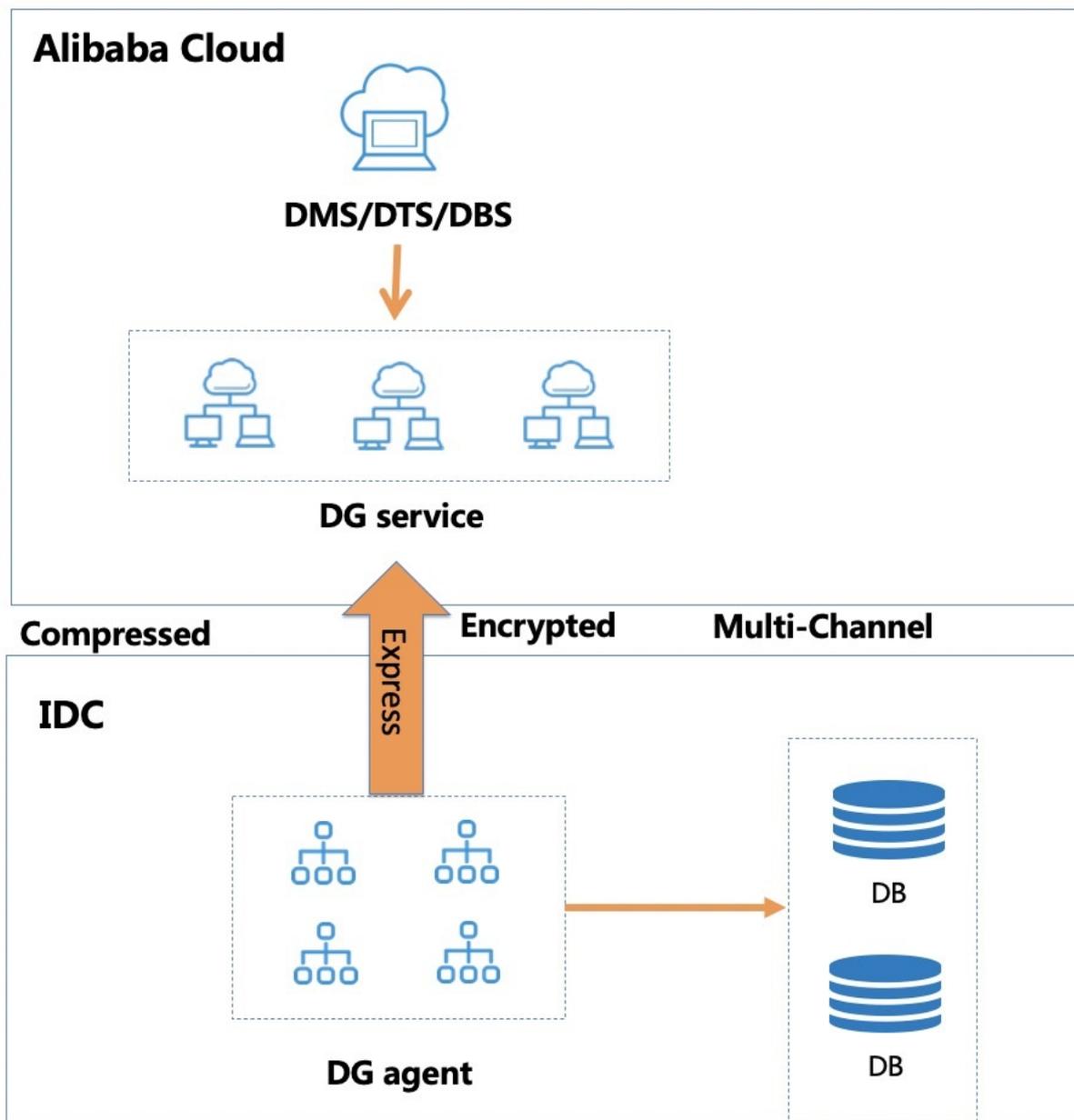
- On the Gateway details page, view the information about the added gateway node.

8.Connect to Database Gateway by using Express Connect, VPN Gateway, or CEN

Background information

Express Connect circuits are used in Express Connect to connect on-premises databases to the cloud. You must configure a whitelist for the on-premises databases. If you want to connect on-premises databases to cloud services, you must add the CIDR blocks of the cloud services to the whitelists of the databases. The examples of the cloud services include Data Management (DMS), Data Transmission Service (DTS), and Database Backup Service (DBS). If the CIDR blocks change, you must update the configurations of the database whitelists. This results in high operations and maintenance (O&M) costs.

Database Gateway simplifies the configurations of the database whitelists. You need only to add the on-premises Database Gateway agent to the database whitelists. In this case, if the CIDR blocks of a cloud service change, you do not need to update the configurations of the database whitelists. If the on-premises databases are connected to the cloud over Express Connect circuits, the Database Gateway agent reuses the Express Connect circuits. This method provides a higher network quality than that in the scenario where the connections are established over the Internet.

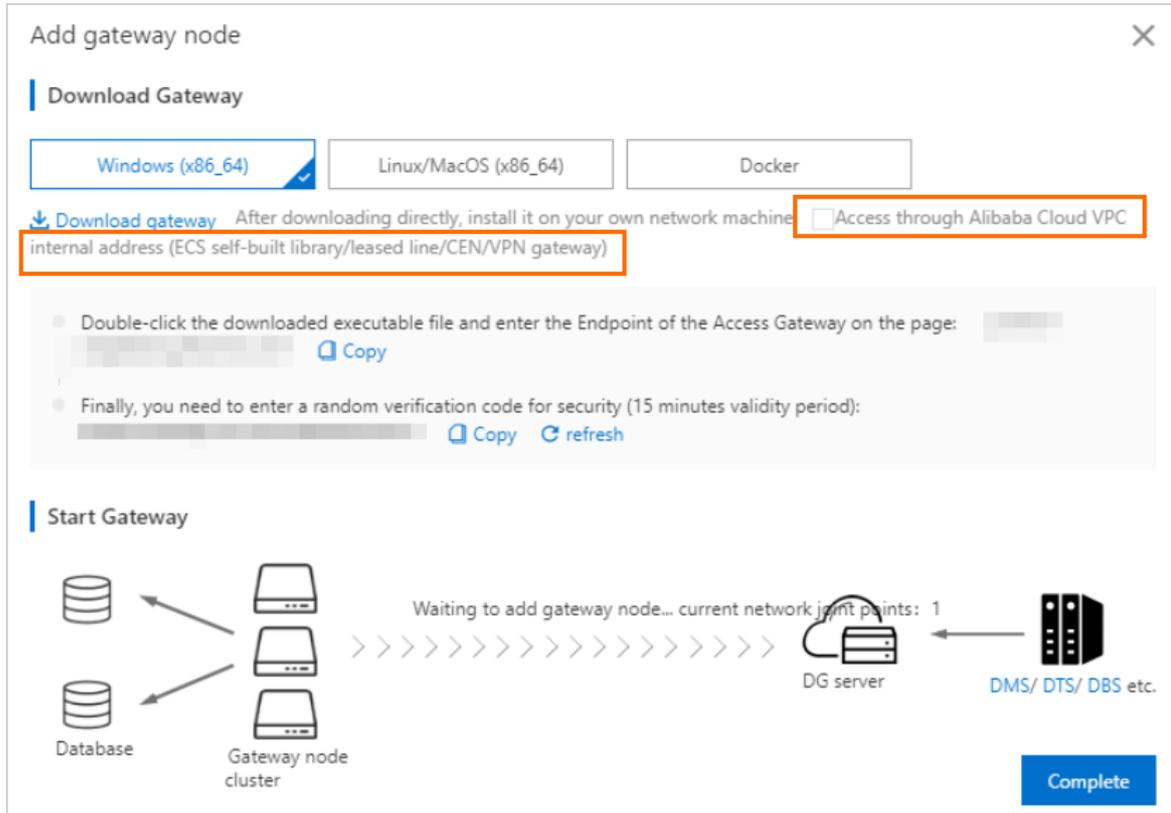


Prerequisites

1. The Alibaba Cloud Database Gateway service is activated. For more information, see **Preparations**.
2. The Express Connect, VPN Gateway, or Cloud Enterprise Network (CEN) service is configured as required.

Procedure

1. When you create a database gateway, select **Using Express/CEN/VPN Gateway to access**. For more information about how to create a database gateway, see **Create a database gateway**.



2. Specify the IP address of the host and the port number for the on-premises database. Then, click **Complete**.

9. Connect applications to on-premises databases or third-party cloud databases

Database Gateway allows you to connect cloud services such as Data Management (DMS), Data Transmission Service (DTS), and Database Backup (DBS) to on-premises databases or third-party cloud databases. Database Gateway also enables database access points. This way, you can connect the applications that are deployed on ECS instances to on-premises databases or third-party cloud databases through a database access point.

- Use DMS to manage on-premises databases or third-party cloud databases.
- Use DTS to migrate on-premises databases or third-party cloud databases.
- Use DBS to migrate on-premises databases or third-party cloud databases.

Introduction to database access points

Database Gateway provides database access points that can map the endpoints of on-premises databases or third-party cloud databases to the VPC endpoints on Alibaba Cloud. This way, the applications in the VPC can directly connect to the original databases through the VPC endpoints.

Assume that the endpoint of your on-premises database is 10.1.2.3:3306. Your applications deployed on Alibaba Cloud cannot directly connect to the database because the networks between the on-premises database and Alibaba Cloud are not interconnected. However, Database Gateway can create a mapping by using a database access point and generate the VPC endpoint 172.6.7.8:5432. This way, the applications in the cloud can connect to the database through the endpoint 172.6.7.8:5432.

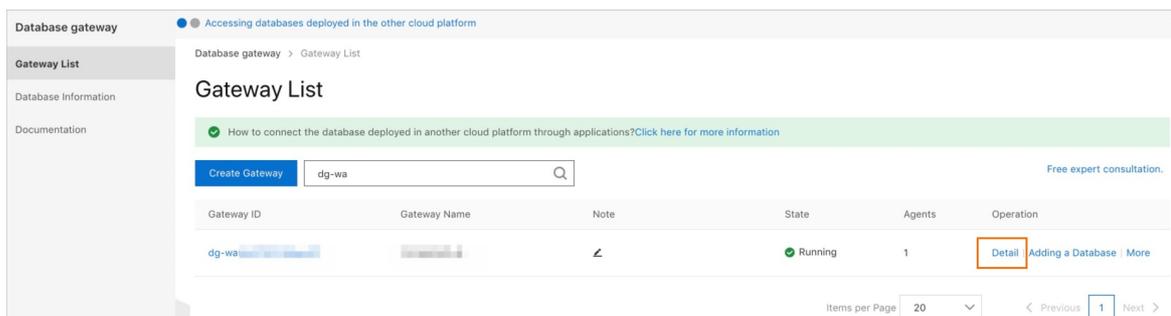
Database access points free you from the technical details of cloud networking, on-premises networking, and cross-cloud networking. This way, the applications deployed on ECS instances can connect to databases in other network environments. This meets your requirements in hybrid cloud scenarios, such as online applications, offline analysis, and data migration.

Prerequisites

- A local agent is started and a database is added. For more information, see [Quick Start](#).
- A VPC and a vSwitch are created in the same region where Database Gateway is deployed.

Procedure

1. Log on to the [Database Gateway console](#).
2. In the left-side navigation pane, click [Gateway List](#).



3. Go to the page that displays the details about the added database. On the page that appears, click **Create a database access point** in the **Operation** column.
4. Select the **VPC ID** and the **vSwitch** that you want to use, and click **OK**. Then, you can use the VPC endpoint to connect to the database.
5. Log on to an ECS instance that is connected to the VPC and test whether the displayed VPC endpoint is valid. If the connection is successful, you can use methods such as the Java Database Connectivity (JDBC) method to connect to on-premises databases or third-party cloud databases.