

Alibaba Cloud

AnalyticDB for PostgreSQL Specifications and Pricing

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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.Instance specifications	05
2.Pricing	07
3.Expiration and overdue policy	08

1. Instance specifications

This topic provides an overview of the specifications supported by AnalyticDB for PostgreSQL so that you can determine the specifications of your instance.

Storage types

- **High-performance SSD:** provides good I/O capabilities and high analysis performance.
- **High-capacity HDD:** provides large storage capacity at a low cost.

Node specifications

Storage type	Number of cores per node	Memory	Available storage space	Description
High-performance SSD	1	8GB	80GB	These specifications are recommended for low-concurrency scenarios that require less than 5 concurrent queries and less than 32 nodes. These specifications are available for 2 to 128 nodes.
High-performance SSD	4	32GB	320GB	These specifications are recommended for high-performance SSD storage and available for 8 to 4,096 nodes.
High-capacity HDD	2	16GB	1TB	These specifications are recommended for low-concurrency scenarios that require less than 5 concurrent queries and less than 8 nodes. These specifications are available for 4 to 32 nodes.
High-capacity HDD	4	32GB	2TB	These specifications are recommended for high-capacity HDD storage and available for 8 to 4,096 nodes.

The number of nodes

An instance consists of multiple nodes. A single instance can have up to 4,096 nodes. In the Massively Parallel Processing (MPP) architecture, each node is a partition used to store and process a portion of data on the instance. You can add nodes to increase the storage capacity and maintain a stable query response time.

 **Note** For information about prices, see [Pricing](#).

Principles of selecting instance specifications

When you create or upgrade the specifications of an AnalyticDB for PostgreSQL instance, you must configure **Storage Type**, **Node Cores**, and **Node Num**. AnalyticDB for PostgreSQL also supports data storage to Object Storage Service (OSS) external tables. You can use gzip to compress data that is not needed for real-time computing and then upload it to OSS buckets to reduce storage costs.

- **Storage type**
 - If high performance is your primary concern, we recommend that you choose the SSD storage type.

- If large storage capacity is your primary concern, we recommend that you choose the HDD storage type.

- **The number of cores per node**

Each node stores and processes data from a partition of each user table. We recommend that you configure four cores for each node. The SSD configuration that supports one core per node is only suitable if the instance has at most 32 nodes and only processes a few concurrent queries. The HDD configuration that supports two cores per node is only suitable if the instance has at most eight nodes and only processes a few concurrent queries.

- **The number of nodes**

AnalyticDB for PostgreSQL uses the MPP architecture. This architecture enables the data processing capability of an instance to increase linearly in proportion with its number of nodes. However, the query response time remains constant when the data volume increases. You can determine the number of nodes the instance needs based on your business scenario and the volume of raw data.

Row-oriented storage and column-oriented storage

AnalyticDB for PostgreSQL supports two storage models: row-oriented storage and column-oriented storage. You can specify a storage model when you create a table.

- If you want to write data in real time or update data frequently by executing INSERT, UPDATE, and DELETE statements, we recommend that you choose row-oriented storage.


If you choose row-oriented storage, 1 TB of raw data requires approximately 1 TB of storage space. However, the indexes, logs, and temporary files generated during computing also occupy storage space. Therefore, we recommend that you reserve 2 TB of storage space for every 1 TB of raw data. To improve query performance, you can add nodes to increase available CPU and memory resources.

- In batch extract, transform, and load (ETL) scenarios, we recommend that you choose column-oriented storage because data is rarely updated by executing UPDATE and DELETE statements and most queries require aggregations and joins of table data based on a few columns.

Column-oriented storage supports a compression ratio of up to 1:2 to 1:5. For example, 1 TB of raw data is reduced to 0.5 TB or less after compression, which means that you only need to reserve 1 TB of storage space for user data.

Examples

If you want to process 5 TB of raw data with high performance to respond to more than 100 concurrent queries, we recommend that you choose the SSD storage type to support 4 cores per node and 32 nodes per instance. In this situation, a total of 10 TB of storage space is available for user data.

 **Note** Since August 23, 2019, the basic building block of an AnalyticDB for PostgreSQL instance has been changed from compute group to compute node. A compute group contains multiple partitions, whereas a compute node is equivalent to an MPP partition. This simplifies the definition of instance specifications and complies with cluster database naming conventions. For information about the mappings between compute groups and compute nodes, see [Mappings between compute node types and compute group types](#).

2.Pricing

For detailed information about pricing, please refer to [Product Pricing](#).

3.Expiration and overdue policy

If a Subscription instance expires or a Pay-As-You-Go instance is overdue, the instance will be locked for a period and then be released automatically. No data can be recovered after the instance is released.

Billing method	Status	Operation
Subscription	From the 1st day to the 7th day after the instance expires, the instance is locked and cannot be accessed.	Manually renew the instance, and the instance will immediately become normal.
	On the 7th day after the instance expires, the instance is released.	The data is completely deleted and cannot be recovered.
Pay-As-You-Go	<p>If you exceed the credit limit of your credit card to which your Alibaba Cloud account is bound, all the instances under this account will be in the status of overdue.</p> <p>On the 1st day after the instance is overdue, the instance works normally.</p> <p>From the 2nd day to the 7th day after the instance is overdue, the instance is locked and cannot be accessed.</p>	Recharge the Alibaba Cloud account and the instance will become normal immediately.
	On the 8th day after the instance is overdue, the instance is released.	The data is completely deleted and cannot be recovered.