

Relational Database Service

Product Bulletin

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Security Declaration

Vulnerability

Huawei's regulations on product vulnerability management are subject to the *Vul. Response Process*. For details about this process, visit the following web page:

<https://www.huawei.com/en/psirt/vul-response-process>

For vulnerability information, enterprise customers can visit the following web page:

<https://securitybulletin.huawei.com/enterprise/en/security-advisory>

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1 Vulnerability Notice

1.1 Vulnerability Fixing Policies

Vulnerability Fixing SLA

- High-risk vulnerabilities
After the MySQL community detects vulnerabilities and releases fixing solutions, RDS for MySQL analyzes all the vulnerabilities. If any high-risk vulnerability is identified, RDS for MySQL will proactively release warnings and upgrade the version within one month.
- Other vulnerabilities
Other vulnerabilities can be fixed through a normal upgrade.

Fixing Statement

To prevent customers from being exposed to unexpected risks, RDS does not provide other information about vulnerabilities except vulnerability background, details, technical analysis, affected functions/versions/scenarios, solutions, and reference information.

2 Product Notices

2.1 [Product Discontinuation Notice] RDS for PostgreSQL 10 and 11 Will Be Discontinued on July 1, 2024, 00:00:00 GMT+08:00

Notice Content

On July 1, 2024, 00:00:00 GMT+08:00, Huawei Cloud will discontinue the sale of RDS for PostgreSQL 10 and 11.

Scope

All regions

Impacts

After RDS for PostgreSQL 10 and 11 are discontinued, you cannot purchase DB instances of these two versions anymore. But previously purchased instances will still be usable. For more functions and better performance, you are advised to buy the latest available version.

FAQ

- Why Will RDS for PostgreSQL 10 and 11 Be Discontinued?
The PostgreSQL open-source community stopped maintaining PostgreSQL 10 and PostgreSQL 11 on November 10, 2022 and November 9, 2023, respectively.
- What Should I Do If I Need to Buy DB Instances After RDS for PostgreSQL 10 and 11 Are Discontinued?
You are advised to buy the latest available version.
- Will My DB Instances of RDS for PostgreSQL 10 and 11 Be Affected After These Two Versions Are Discontinued?
No. Previously purchased instances of these two versions are still usable.

2.2 [Offline Notice] RDS for PostgreSQL 9.5 and 9.6 Will Go Offline on July 1, 2024, 00:00:00 GMT+08:00

Notice Content

On July 1, 2024, 00:00:00 GMT+08:00, RDS for PostgreSQL 9.5 and 9.6 will go offline.

Scope

All regions

Impacts

After RDS for PostgreSQL 9.5 and 9.6 go offline, they will no longer be updated and the RDS for PostgreSQL SLA will no longer be valid for them.

FAQ

- **Why Will RDS for PostgreSQL 9.5 and 9.6 Be Brought Offline?**
The PostgreSQL open-source community stopped maintaining PostgreSQL 9.5 and PostgreSQL 9.6 on February 11, 2021 and November 11, 2021, respectively.
- **What Should I Do with My DB Instances of RDS for PostgreSQL 9.5 and 9.6 After These Two Versions Go Offline?**
You are advised to upgrade your instances to the latest version so that we can continue to provide you with high-quality services. For details about how to upgrade an instance, see [Major Version Upgrade](#) or [Migration Solution Overview](#).
- **What Should I Do If I Need to Buy DB Instances After RDS for PostgreSQL 9.5 and 9.6 Go Offline?**
You are advised to buy the latest available version.

3 Product Release Notes

3.1 RDS for MySQL Version Release Notes

3.1.1 RDS for MySQL Versioning Policy

RDS for MySQL extends the lifecycle of MySQL Community Edition. New versions are released during the extended period only to fix issues that severely affect the security and stability of DB instances. Huawei Cloud RDS for MySQL does not promise to fix all major security or stability issues because the MySQL community keeps security information confidential.

RDS for MySQL provides a fully managed database service by leveraging the open-source MySQL. This section describes the versioning policy of RDS for MySQL. When creating a DB instance or migrating data, you need to select a suitable version.

Table 3-1 lists the RDS for MySQL kernel lifecycles that Huawei Cloud supports. Huawei Cloud extends the lifecycles to reserve sufficient time for customers to upgrade major versions and migrate workloads.

 **NOTE**

Some time points in **Table 3-1** are estimated and will be adjusted before the lifecycle ends or RDS for MySQL ends its support.

Table 3-1 RDS for MySQL kernel lifecycles supported on Huawei Cloud

MySQL Version	Released by Community	End of Community Edition Lifecycle	Released by Huawei Cloud	End of Support Date Supported on Huawei Cloud
5.6	2013-02-05	2021-02-01	2017-03	2024-12-30
5.7	2015-10-21	2023-10-25	2018-03	2025-06-30
8.0	2018-09-14	2026-04	2019-02	-

3.1.2 RDS for MySQL Kernel Release History

This section describes the kernel version updates of RDS.

RDS for MySQL 8.0

Table 3-2 RDS for MySQL 8.0 version description

Date	Description
2023-03-15	<p>Updates in RDS for MySQL 8.0.25:</p> <ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> – The printing of oversized SQL audit logs was optimized. – The security of kernel log printing was enhanced. ● Issues resolved <ul style="list-style-type: none"> – Unexpected restarts due to concurrent DDL and DML operations on DB instances were resolved.
2022-09-09	<p>Updates in RDS for MySQL 8.0.25:</p> <ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> – Connection per thread was supported for killing sessions. – Constraints on memory were added for the Performance Schema. – The performance of SQL Explorer was optimized based on specific scenarios. – Database performance was optimized in specific scenarios when the value of internal_tmp_mem_storage_engine was set to MEMORY. – The compiler was upgraded to GCC 10.3. ● Issues resolved <ul style="list-style-type: none"> – Errors caused by writes to a temporary file were resolved. – Unexpected responses to Common Table Expression (CTE) queries were resolved. ● Security hardening <ul style="list-style-type: none"> – The following security vulnerabilities were fixed: CVE-2021-2417, CVE-2021-2339, CVE-2021-2425, CVE-2021-2426, CVE-2021-2427, CVE-2021-2424, CVE-2021-2383, CVE-2021-2384, and CVE-2021-2410.

Date	Description
2022-06-01	<ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - The kernel version was upgraded to 8.0.25. - SQL statement concurrency control was supported. - The compiler was upgraded to GCC 9.3. ● Issues resolved <ul style="list-style-type: none"> - Replication interruption caused by a single oversized binlog was resolved. - Inaccurate innodb_row_lock_current_waits statistics were fixed. - Unexpected restarts due to the use of BLOB fields were resolved. ● Security hardening <ul style="list-style-type: none"> - The following security vulnerabilities were fixed: CVE-2021-2307, CVE-2021-2180, and CVE-2021-2194.
2021-08-07	<ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - The static link library for the thread pool improved the performance. - Profile-Guided Optimization (PGO) was enabled. - The MySQL hash algorithm was optimized. - Remarks can be added to a database. - Protection from being modified by DDL was provided for the system database. - The innodb_total_tablespaces parameter was added to calculate the number of InnoDB tablespaces. - The InnoDB lock view was provided in information_schema. - The OpenSSL, jemalloc, and curl open-source components were upgraded. ● Issues resolved <ul style="list-style-type: none"> - The issue that XA transactions may restart abnormally after binlog rotation was resolved. - The issue that precompiled SQL statement types were not recorded by SQL Explorer was resolved. - Incorrect execution time statistics for FLUSH PRIVILEGES was resolved. - The issue that audit logs were incorrectly written into other files was resolved.

Date	Description
2021-04-13	<ul style="list-style-type: none"> ● The issue that XA transactions may be lost after unexpected database restart was resolved. ● The adaptive hash segmentation algorithm was optimized. ● The kernel version was upgraded to 8.0.21. ● Security hardening The following security vulnerabilities were fixed: CVE-2020-14697, CVE-2020-14680, CVE-2020-14678, CVE-2020-14663, CVE-2021-2020, CVE-2020-14619, CVE-2020-14591, CVE-2020-14576, and CVE-2020-14539.
2021-01-26	<ul style="list-style-type: none"> ● SQL statement concurrency control was optimized. ● Full SQL collection was optimized.
2020-12-31	<ul style="list-style-type: none"> ● Performance optimized The compiler was upgraded to GCC 9.
2020-12-01	<ul style="list-style-type: none"> ● Performance optimized The efficiency of collecting additional information about slow query logs was improved. ● Issues resolved The issue that replication on the standby DB instance might be interrupted during the rollback of distributed transactions was resolved.
2020-11-06	<ul style="list-style-type: none"> ● Issues resolved Timing error caused by gettimeofday in multiple threads was fixed.
2020-09-21	<ul style="list-style-type: none"> ● Disconnection details were recorded in error logs. ● Index hints were supported.
2020-08-03	<ul style="list-style-type: none"> ● The execution time and waiting time of large transactions were displayed. ● Independent connection control was used to manage users. ● SQL filter was used to restrict the execution frequency of SQL statements during peak hours. ● Kernel performance was optimized.
2020-06-19	<ul style="list-style-type: none"> ● The kernel version was upgraded to 8.0.20. ● Kernel performance was optimized.
2020-02-15	<ul style="list-style-type: none"> ● RDS for MySQL 8.0 was put into commercial use. ● The Huawei Cloud Kunpeng-powered Arm kernel version was released.
2019-12-15	<ul style="list-style-type: none"> ● The kernel version was upgraded to 8.0.17. ● The parallel index creation was 2.5 times faster.
2019-10-15	<p>The issue that the primary/standby replication was abnormal when SQL_MODE was set to PAD_CHAR_TO_FULL_LENGTH was resolved.</p>

Date	Description
2019-09-15	<ul style="list-style-type: none"> ● Thread pools were supported. ● OpenSSL was upgraded to 1.1.1a. ● The Common Type System (CTS) syntax create table xx select was supported. ● The memory usage and CPU time usage of user threads can be queried through show full processlist.

RDS for MySQL 5.7

Table 3-3 RDS for MySQL 5.7 version description

Date	Description
2023-06-28	<ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - The kernel version was upgraded to 5.7.41. - Compiler security options were added. ● Issues resolved <ul style="list-style-type: none"> - The replication exception that may occur when an index is added to a reference table and a foreign key is added to another table concurrently was rectified. - The replication exception that may occur when a child table is deleted after a foreign key table is deleted was rectified. ● Security hardening <ul style="list-style-type: none"> - The following security vulnerabilities were fixed: CVE-2023-21963, CVE-2022-32221, CVE-2023-21840, CVE-2022-2097, CVE-2022-21617, CVE-2022-21608, CVE-2022-21592, CVE-2022-21589, CVE-2022-1292, CVE-2022-27778, CVE-2018-25032, and CVE-2022-21515.

Date	Description
2022-09-09	<ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - The kernel version was upgraded to 5.7.38. - The compiler was upgraded to GCC 10.3. - Connection per thread was supported for killing sessions. - The threshold for slow query logs can be set based on the lock wait duration. - ALT security was hardened. ● Issues resolved <ul style="list-style-type: none"> - Recovery security of crashed XA transactions on the primary instance was enhanced. - Abnormal instance reboot when Database Proxy is enabled was resolved. - Abnormal reboot caused by failed memory request for plugins was resolved. ● Security hardening <ul style="list-style-type: none"> - The following security vulnerabilities were fixed: CVE-2022-21454, CVE-2022-21417, CVE-2022-21427, CVE-2022-21451, CVE-2022-21444, and CVE-2022-21460.
2022-06-01	<ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - The kernel version was upgraded to 5.7.37. - The compiler was upgraded to GCC 9.3. - The OpenSSL and curl open-source components were upgraded. ● Issues resolved <ul style="list-style-type: none"> - Replication interruption caused by a single oversized binlog was resolved. - Unexpected restarts caused by concurrent playback grants to the slave node were resolved. - Replication interruptions caused by hidden auto-increment keys were resolved. - Unexpected restarts during rollback of tables with virtual columns were resolved. - Unexpected restarts during recovery of encrypted tables were resolved. - Inaccurate Seconds Behind Master values in specific scenarios were resolved. ● Security hardening <ul style="list-style-type: none"> - The following security vulnerabilities were fixed: CVE-2022-21367, CVE-2022-21304, and CVE-2022-21344.

Date	Description
2022-01-26	<ul style="list-style-type: none">● New features and performance optimized<ul style="list-style-type: none">- Hidden auto-increment keys were supported.● Issues resolved<ul style="list-style-type: none">- Replication exceptions caused by repeated commitment of XA transactions were resolved.- Inaccurate innodb_row_lock_current_waits statistics were fixed.
2021-11-26	<ul style="list-style-type: none">● New features and performance optimized<ul style="list-style-type: none">- Restrictions on the length of a single record for SQL Explorer were removed.- Application Lossless and Transparent (ALT) Phase I was supported for RDS for MySQL.● Issues resolved<ul style="list-style-type: none">- Memory problems of the thread pool in extreme scenarios were resolved.- Occasional suspension of XA transaction playbacks on a standby node was resolved.

Date	Description
2021-08-07	<ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - The static link library for the thread pool improved the performance. - Profile-Guided Optimization (PGO) was enabled. - The MySQL hash algorithm was optimized. - Remarks can be added to a database. - Protection from being modified by DDL was provided for the system database. - I/O latency information can be queried in error logs. - Minidumps were supported. - The kernel version was upgraded to 5.7.33. - The OpenSSL, jemalloc, and curl open-source components were upgraded. ● Issues resolved <ul style="list-style-type: none"> - The issue that the replication on the standby node may be interrupted due to playback order preserving was resolved. - The issue that XA transactions may restart abnormally after binlog rotation was resolved. - The issue that precompiled SQL statement types may not be recorded by SQL Explorer was resolved. - Incorrect execution time statistics for FLUSH PRIVILEGES was resolved. - The issue that audit logs were incorrectly written into other files was resolved. ● Security hardening <p>The following security vulnerabilities were fixed: CVE-2021-2011, CVE-2021-2178, and CVE-2021-2202.</p>
2021-04-13	<ul style="list-style-type: none"> ● The issue that XA transactions may be lost after unexpected database restart was resolved. ● The adaptive hash segmentation algorithm was optimized. ● The kernel version was upgraded to 5.7.32.
2021-01-26	<ul style="list-style-type: none"> ● New features <p>The real client address can be displayed when proxy is used.</p> ● Issues resolved <p>Full SQL collection was optimized.</p> <p>The issue that revoking permissions might cause permission inconsistency between primary and standby DB instances was resolved.</p> <p>MySQL 8.0 optimizations on Instant Add Column was incorporated.</p>

Date	Description
2020-1 2-31	<ul style="list-style-type: none"> ● Performance optimized <ul style="list-style-type: none"> - The efficiency of collecting additional information about slow query logs was improved. - The compiler was upgraded to GCC 9. ● Issues resolved The issue that replication on the standby DB instance might be interrupted during the rollback of distributed transactions was resolved.
2020-1 2-01	The conflict frequency between fil_sys mutual exclusions was reduced.
2020-1 1-06	<ul style="list-style-type: none"> ● New features <ul style="list-style-type: none"> - The compiler was optimized. - The UTF-8 encoding efficiency was improved on non-Arm platforms. ● Issues resolved Timing error caused by gettimeofday in multiple threads was fixed.
2020-0 9-21	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.7.31. ● SQL filter was used to restrict the execution frequency of SQL statements during peak hours.
2020-0 8-03	<ul style="list-style-type: none"> ● Kernel performance was optimized. ● The recycle bin was supported. ● Issues that may occur during local disk data cleanup were resolved.
2020-0 7-09	<ul style="list-style-type: none"> ● Kernel performance was optimized. ● Users' operation history can be recorded in error logs. ● Distributed transaction stability was improved.
2020-0 6-30	<ul style="list-style-type: none"> ● Kernel performance was optimized. ● Local disk logs whose size exceeds the local disk capacity were stored on cloud disks. ● The buffer pool memory initialization module was optimized to improve the initialization efficiency. ● The thread security of some operations on Arm was improved.
2020-0 5-30	<ul style="list-style-type: none"> ● New features <ul style="list-style-type: none"> - Index hints were supported. - Full SQL logs can be captured. ● Issues resolved Occasional database connection failures were resolved.
2020-0 4-30	Kernel performance was optimized.

Date	Description
2020-03-30	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.7.29. ● Kernel performance was optimized. ● Threshold pools supported statistics on I/O waits.
2020-02-15	<ul style="list-style-type: none"> ● Replication dual-channel: A replication status channel was added to accurately determine the replication status when the primary database crashes, ensuring that transactions are not lost. ● Optimized ROW_IMAGE mode: The binlog size was reduced, and migration and SQL flashback were supported.
2019-12-15	<ul style="list-style-type: none"> ● The progress of adding columns or indexes can be obtained through information_schema.innodb_alter_table_progress. ● Long transactions: The transaction execution time Trx_Executed_Time can be obtained through show processlist. ● Online extension of the string field length: The VARCHAR field length was changed from COPY to INPLACE by default. ● Abundant InnoDB deadlock information: The complete onsite information when deadlock occurs at the InnoDB layer can be viewed through show engine innodb status.
2019-10-15	<ul style="list-style-type: none"> ● Performance optimized <ul style="list-style-type: none"> – The Huawei Cloud Kunpeng-powered Arm kernel version was released. ● New features <ul style="list-style-type: none"> – The kernel version was upgraded to 5.7.27. – Instant Add Column was supported. Columns are quickly added to a table without copying data and without occupying disk space and disk I/Os. Data can be updated in real time during peak hours. – Metadata lock (MDL) view was supported. The MDL information held or waited by the thread can be obtained through information_schema.metadata_lock_info.
2019-08-15	<p>For Jemalloc memory management, the glibc memory management module was replaced to reduce memory usage and improve memory allocation efficiency.</p>
2019-06-15	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.7.25.

Date	Description
2019-05-15	<ul style="list-style-type: none"> ● New features <ul style="list-style-type: none"> – When sync_binlog and innodb_flush_log_at_trx_commit are set to values other than 1, the crash-safe replication of the standby database is guaranteed. In sysbench high-concurrent write-only request scenarios, the replication delay between primary and standby DB instances is almost zero. ● Issues resolved <ul style="list-style-type: none"> – The issue that when relay_log_recovery was set to ON, the standby database could not be rebooted after being killed in certain scenarios was resolved. – The issue that the primary/standby replication was abnormal when SQL_MODE was set to PAD_CHAR_TO_FULL_LENGTH was resolved. – The issue that performance_schema statistics were repeatedly measured was resolved. – The issue that when ORDER BY queries were performed on tables related to information replication in Performance_schema, the return value was empty was resolved.
2019-01-15	<ul style="list-style-type: none"> ● The issue that data was inconsistent and data replication was interrupted after the flush operation was performed on read replicas was resolved. ● The issue that the replication thread of the standby database was suspended due to statements like REPAIR or OPTIMIZE was resolved.
2018-11-15	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.7.23. ● Temporary tables can be created or deleted in transactions when GTID is enabled. ● Table-level multi-threaded slaves (MTS) parallel playback was supported.
2018-07-15	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.7.22. ● Thread pools were supported. ● The Common Type System (CTS) syntax create table xx select was supported. ● Operator pushdown: The aggregation operator is pushed down to the storage engine layer to improve the execution speed of count() and sum(). ● Kill idle transactions: Transactions that have been idled for a long time are automatically killed after the timeout threshold is reached. ● The memory usage and CPU time usage of user threads can be queried through show full processlist.

RDS for MySQL 5.6

Table 3-4 RDS for MySQL 5.6 version description

Date	Description
2023-03-15	<p>Updates in RDS for MySQL 5.6.51:</p> <ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - The printing of oversized SQL audit logs was optimized. - The security of log printing was enhanced. ● Issues resolved <ul style="list-style-type: none"> - The replication exception that may occur when an index is added to a reference table and a foreign key is added to another table concurrently was rectified.
2022-09-09	<ul style="list-style-type: none"> ● New features and performance optimized <ul style="list-style-type: none"> - Connection per thread was supported for killing sessions. ● Issues resolved <ul style="list-style-type: none"> - Abnormal instance reboot when Database Proxy is enabled was resolved. - main.proxy_connect buffer overflow issues were resolved. - Abnormal reboot caused by failed memory request for plugins was resolved.
2022-06-01	<p>Inaccurate innodb_row_lock_current_waits statistics were fixed.</p>
2021-08-07	<ul style="list-style-type: none"> ● New features <ul style="list-style-type: none"> - Remarks can be added to a database. - Protection from being modified by DDL was provided for the system database. - The OpenSSL and jemalloc open-source components were upgraded. ● Issues resolved <ul style="list-style-type: none"> - The issue that the synchronization may be interrupted after password change was resolved. - The issue that audit logs were incorrectly written into other files was resolved.
2021-04-13	<ul style="list-style-type: none"> ● The issue that the replication on the standby node may be interrupted due to playback order preserving was resolved. ● The kernel version was upgraded to 5.6.51. ● Security hardening The vulnerability patches for MySQL 5.6 Community Edition are no longer released because the patches for this version are not released anymore.

Date	Description
2021-01-26	<ul style="list-style-type: none"> ● New features The real client address can be displayed when proxy is used. ● Issues resolved The issue that a syntax error was reported during the select 1 for update execution was resolved. Full SQL collection was optimized.
2020-12-31	SQL filter was reconstructed to improve usability.
2020-11-06	The kernel version was upgraded to 5.6.50.
2020-09-23	SQL filter was used to restrict the execution frequency of SQL statements during peak hours.
2020-08-03	The kernel version was upgraded to 5.6.49.
2020-07-09	<ul style="list-style-type: none"> ● Local disk logs whose size exceeds the local disk capacity were stored on cloud disks. ● Users' operation history can be recorded in error logs.
2020-05-30	The buffer pool memory initialization module was optimized to improve the initialization efficiency.
2020-04-30	Occasional database connection failures were resolved.
2020-03-30	<ul style="list-style-type: none"> ● Full SQL collection was supported. ● The compiler was upgraded to 7.3. ● The kernel version was upgraded to 5.6.47.
2020-02-15	<ul style="list-style-type: none"> ● Replication dual-channel: A replication status channel was added to accurately determine the replication status when the primary database crashes, ensuring that transactions are not lost. ● Optimized ROW_IMAGE mode: The binlog size was reduced, and migration and SQL flashback were supported.
2019-12-15	<ul style="list-style-type: none"> ● Long transactions: The transaction execution time Trx_Executed_Time can be obtained through show processlist. ● Online extension of the string field length: The VARCHAR field length was changed from COPY to INPLACE by default. ● Abundant InnoDB deadlock information: The complete onsite information when deadlock occurs at the InnoDB layer can be viewed through show engine innodb status.
2019-10-15	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.6.45. ● The memory usage and CPU time usage of user threads can be queried through show full processlist. ● Kill idle transactions: Transactions that have been idled for a long time are automatically killed after the timeout threshold is reached.

Date	Description
2019-08-15	For Jemalloc memory management, the glibc memory management module was replaced to reduce memory usage and improve memory allocation efficiency.
2019-06-15	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.6.43. ● The audit function was supported.
2019-05-15	<ul style="list-style-type: none"> ● The issue that the replication delay Seconds_Behind_Master was inaccurate in certain scenarios was resolved. ● The issue that the primary/standby replication was abnormal when SQL_MODE was set to PAD_CHAR_TO_FULL_LENGTH was resolved.
2019-01-15	<ul style="list-style-type: none"> ● The issue that data was inconsistent and data replication was interrupted after the flush operation was performed on read replicas was resolved. ● The issue that the replication thread of the standby database was suspended due to statements like REPAIR or OPTIMIZE was resolved. ● The issue that an error occurred on the grant select(column_name) statement replication threshold was resolved.
2018-11-15	<ul style="list-style-type: none"> ● The kernel version was upgraded to 5.6.41. ● Temporary tables can be created or deleted in transactions when GTID is enabled. ● Table-level multi-threaded slaves (MTS) parallel playback was supported.
2018-07-15	<ul style="list-style-type: none"> ● New features <ul style="list-style-type: none"> - The kernel version was upgraded to 5.6.40. - Thread pools were supported. - The Common Type System (CTS) syntax create table xx select was supported. ● Issues resolved <ul style="list-style-type: none"> - The issue that binlog and relay log names depended on the PID file names was resolved. - The issue that the empty relay_log_basename parameter value resulted in primary/standby replication failures was resolved. - The issue that the force index syntax became invalid in the group by xx order by xx limit n1,n2 scenario was resolved.

RDS for MariaDB Kernel Version Description

The kernel version of RDS for MariaDB is based on open-source MariaDB 10.5.16, which is a stable (GA) version of MariaDB. By optimizing the performance,

security, and storage engine, RDS for MariaDB is suitable for various applications and scenarios.

The following table lists the detailed information about RDS for MariaDB versions.

Table 3-5 RDS for MariaDB version description

Date	Description
2023-05-01	RDS for MariaDB was released for open beta testing (OBT). The kernel version was based on 10.5.16.

3.2 RDS for PostgreSQL Version Release Notes

3.2.1 RDS for PostgreSQL Versioning Policy

The PostgreSQL community releases a new major version containing new features about once a year. Each major version receives bug fixes and, if need be, security fixes that are released at least once every three months in what we call a "minor release." The PostgreSQL community supports a major version for five years after its initial release. After its five-year anniversary, a major version will have one last minor release containing any fixes and will be considered end-of-life (EOL) and no longer supported.

RDS for PostgreSQL provides cloud database services based on the PostgreSQL open-source community. This section describes the versioning policy of RDS for PostgreSQL. When creating a DB instance or migrating data, you need to select a suitable version.

Version Lifecycle

Table 3-6 Version lifecycle

PostgreSQL Version	Status	Released by Community	EOL by Community	Released by Huawei Cloud	EOM by Huawei Cloud	EOS by Huawei Cloud
15	Commercial use	October 2022	November 2027	September 2023	May 2028	November 2028
14	Commercial use	September 2021	November 2026	July 2022	May 2027	November 2027
13	Commercial use	September 2020	November 2025	April 2021	May 2026	November 2026
12	Commercial use	October 2019	November 2024	March 2020	May 2025	November 2025

PostgreSQL Version	Status	Released by Community	EOL by Community	Released by Huawei Cloud	EOM by Huawei Cloud	EOS by Huawei Cloud
11	Commercial use	October 2018	November 2023	January 2019	July 2024	November 2024
10	Commercial use	October 2017	November 2022	November 2018	July 2024	November 2024
9.6	EOM	September 2016	November 2021	February 2018	June 2023	July 2024
9.5	EOM	January 2016	February 2021	October 2017	June 2023	July 2024

Notes on RDS for PostgreSQL Enhanced Edition:

- RDS for PostgreSQL Enhanced Edition is developed from PostgreSQL 11. It is no longer sold.
- RDS for PostgreSQL Enhanced Edition was discontinued on October 15, 2022, 00:00 GMT+08:00..

NOTICE

Generally, RDS for PostgreSQL will stop providing support one year after the EOL of the community versions. If there is any change, this document will be modified. RDS for PostgreSQL periodically synchronizes vulnerability fixing from the PostgreSQL community. When there are new minor versions released, upgrade the minor version of your DB instance timely.

Phases of RDS for PostgreSQL Versions

- Open beta testing (OBT): You can experience the latest features from the RDS for PostgreSQL OBT version. However, Service Level Agreement (SLA) is not guaranteed because the stability of this version has not been completely verified.
- Commercial use: The commercial version of RDS for PostgreSQL has been fully verified and is stable and reliable. You can use this version in production environments while enjoying the SLA provided by RDS for PostgreSQL.
- End of service (EOS): After the EOS date of an RDS for PostgreSQL version, RDS for PostgreSQL does not support the creation of this version or provide technical support, including new feature updates, vulnerability or problem fixing, and patch installation. SLA is not guaranteed anymore.

RDS for PostgreSQL Version Numbers

RDS for PostgreSQL version numbers are the same as those in the PostgreSQL community, such as 12.6.

3.2.2 RDS for PostgreSQL Kernel Release History

The following table lists the release dates and updates of community versions supported by RDS for PostgreSQL.

Table 3-7 Kernel version release history

Released In	Supported Community Versions	Updates
2023-09	<ul style="list-style-type: none"> • 15.4 • 14.9 • 13.12 • 12.16 • 11.21 	<p>Main updates:</p> <ul style="list-style-type: none"> • Introduced PostgreSQL 15. • Synchronized the latest code in the community to fix security vulnerabilities such as CVE-2023-34917 and CVE-2023-39418 and functional problems. <p>More release notes:</p> <ul style="list-style-type: none"> • Release Notes on PostgreSQL 15.4 • Release Notes on PostgreSQL 14.9, 13.12, 12.16, and 11.21
2023-08	<ul style="list-style-type: none"> • 14.8 • 13.11 • 12.15 • 11.20 	<p>Main updates:</p> <ul style="list-style-type: none"> • Synchronized the latest code in the community to fix security vulnerabilities such as CVE-2023-2454 and CVE-2023-2455 and functional problems. <p>More release notes:</p> <ul style="list-style-type: none"> • Release Notes on PostgreSQL 14.8, 13.11, 12.15, and 11.20
2023-04	<ul style="list-style-type: none"> • 14.6 • 13.9 • 12.13 • 11.18 • 10.23 	<p>Main updates:</p> <ul style="list-style-type: none"> • Supported the pgl_ddl_deploy plugin. • Upgraded the zhparser plugin. <p>More information about plugins:</p> <ul style="list-style-type: none"> • Different kernel versions support different plugins. For details, see Supported Plugins.
2022-12	<ul style="list-style-type: none"> • 14.6 • 13.9 • 12.13 • 11.18 • 10.23 	<p>Main updates:</p> <ul style="list-style-type: none"> • Synchronized the latest code in the community to fix security vulnerabilities and functional problems. <p>More release notes:</p> <ul style="list-style-type: none"> • Release Notes on PostgreSQL 14.6, 13.9, 12.13, 11.18, and 10.23

Released In	Supported Community Versions	Updates
2022-07	<ul style="list-style-type: none"> • 14.4 • 13.7 • 12.11 • 11.16 • 10.21 	<p>Main updates:</p> <ul style="list-style-type: none"> • Introduced PostgreSQL 14. • Synchronized the latest code in the community to fix security vulnerabilities such as CVE-2022-1552 and functional problems. <p>More release notes:</p> <ul style="list-style-type: none"> • Release Notes on PostgreSQL 14.4 • Release Notes on PostgreSQL 13.7, 12.11, 11.16, and 10.21
2022-04	<ul style="list-style-type: none"> • 13.6 • 12.10 • 11.15 • 10.20 • 9.6.24 	<p>Main updates:</p> <ul style="list-style-type: none"> • Synchronized the latest code in the community to fix security vulnerabilities and functional problems. <p>More release notes:</p> <ul style="list-style-type: none"> • Release Notes on PostgreSQL 13.6, 12.10, 11.15, 10.20, and 9.6.24
2021-04	<ul style="list-style-type: none"> • 13.2 • 12.6 • 11.11 • 10.16 • 9.6.21 • 9.5.25 	<p>Main updates:</p> <ul style="list-style-type: none"> • Introduced PostgreSQL 13. • Synchronized the latest code in the community to fix security vulnerabilities and functional problems. • Supported failover slots. For details, see Failover Slot for Logical Subscriptions. <p>More release notes:</p> <ul style="list-style-type: none"> • Release Notes on PostgreSQL 13.2, 12.6, 11.11, 10.16, 9.6.21, and 9.5.25
2020-03	12.2	/
2019-12	9.5.19	/
2019-11	<ul style="list-style-type: none"> • 11.5 • 10.10 • 9.6.15 	/
2019-08	<ul style="list-style-type: none"> • 11.4 • 9.6.13 • 9.5.17 	/
2019-07	<ul style="list-style-type: none"> • 11.2 • 10.8 	/

Released In	Supported Community Versions	Updates
2019-06	9.5.15	/
2019-03	<ul style="list-style-type: none"> • 10.6 • 9.6.11 	/
2019-01	11.0	/
2018-11	10.3	/
2018-03	9.6.5	/
2018-02	9.6.3	/
2017-10	9.5.5	/

3.3 RDS for SQL Server Versioning Policy

RDS for SQL Server is reliable, secure, scalable, inexpensive, and easy to manage. It features high availability, data security, failover in seconds, and flexible backup. This section describes the versioning policy of RDS for SQL Server.

Table 3-8 Version lifecycle

Version	Status	Released by Huawei Cloud	EOM	EOS
SQL Server 2019	Commercial use	December 2021	December 2033	December 2035
SQL Server 2017	Commercial use	May 2020	December 2030	December 2032
SQL Server 2016	Commercial use	January 2018	December 2029	December 2031
SQL Server 2014	Commercial use	January 2018	December 2027	December 2029
SQL Server 2012	Commercial use	January 2018	December 2025	December 2027
SQL Server 2008 R2	Discontinued	January 2018	July 2021	December 2025

 **NOTE**

The versioning policy of RDS for SQL Server follows the Microsoft lifecycle policy. For details, click [here](#). If Microsoft stops maintaining a version, RDS for SQL Server will also gradually stop providing support for it.