Alibaba Cloud

ApsaraDB for RDS
Promotions and Notifications

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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 `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

Table of Contents

1.Release notes

This topic describes the release notes of ApsaraDB RDS, including features and document updates.

February 2021

Database engine	Feature	Description	Release date	References
PostgreSQL	Major version upgrade	An instance can be upgraded to a later major version.	2021-02-08	Upgrade the major version of an ApsaraDB RDS for PostgreSQL instance

December 2020

Database engine	Feature	Description	Release date	References
PostgreSQL	PostgreSQL 13	PostgreSQL 13 is supported for the RDS Basic and High-availability Editions.	2020-12-29	Create an ApsaraDB RDS for PostgreSQL instance
MySQL	Enhanced SSD support for Basic Edition	Enhanced SSDs are supported for RDS instances that run the RDS Basic Edition.	2020-12-15	Create an ApsaraDB RDS for MySQL instance
MySQL	Capacity expansion support for enhanced SSDs	The storage capacity of an RDS instance that runs the RDS High-availability Edition with enhanced SSDs can be expanded to 32,000 GB at most.	2020-12-15	Create an ApsaraDB RDS for MySQL instance

November 2020

Database engine	Feature	Description	Release date	References
SQL Server	Database engine version upgrade	The data of an RDS instance can be restored to an existing instance that runs a higher SQL Server version.	2020-11-18	Restore the data of an ApsaraDB RDS for SQL Server instance
PostgreSQL	AliPG	The minor AliPG version is updated to 20201130.	2020-11-16	AliPG 小版本 Release Notes

Database engine	Feature	Description	Release date	References
PostgreSQL	Spatio-temporal database engine	The Ganos version is upgraded to 3.2.	2020-11-16	Release notes of Ganos

October 2020

Database engine	Feature	Description	Release date	References
SQL Server	Cross-region backup	The cross-region backup feature is supported. This feature replicates backup files from an RDS instance to a different region than the RDS instance. These cross-region data backup files can be used to monitor and restore the RDS instance.	2020-10-23	Back up an ApsaraDB RDS for SQL Server instance across regions

September 2020

Database engine	Feature	Description	Release date	References
SQL Server	Cloud streaming migration	The migration of data from an on-premises or ECS-hosted SQL Server database to an RDS instance is supported. This is implemented by using Alibaba Cloud Data Backup (DBS).	2020-09-10	Restore SQL Server backup data to the cloud
PostgreSQL	Spatio-temporal database engine	Version 3.0 of Ganos is released.	2020-09-09	Overview
MySQL	AliSQL	The minor AliSQL version 20200831 is released. In this version, start global transaction identifiers (GTIDs) and end GTIDs are introduced to the mysqlbinlog plug-in. The concurrency control (CCL) mechanism is optimized to better determine how transactions wait and concurrently run. In addition, various log sequence numbers (LSNs) in the redo log file are supported.	2020-09-09	AliSQL 小版本 Release Notes

Database engine	Feature	Description	Release date	References
PostgreSQL	AliPG	The minor AliPG version 20200830 is released. In this version, the Ganos plug-in is upgraded to Version 3.0. In addition, the sql_firewall and TimescaleD plug-ins are supported.	2020-09-09	AliPG 小版本 Release Notes
All	Alibaba Cloud Resource Access Management (RAM) user authorization	The authorization of permissions on RDS instances to RAM users is supported. This is implemented by using RAM.	2020-09-08	Authorize a RAM user to manage ApsaraDB for RDS instances
PostgreSQL	HyperLogLog (HLL) plug-in	The recommendation of content to a user based on the preferences of the user is supported. This is implemented by using the HLL plug-in.	2020-09-07	User preference recommendati on system

August 2020

Database engine	Feature	Description	Release date	References
MySQL	Dedicated proxy	The dedicated proxy service is supported. You can create, modify, and delete the proxy endpoints of RDS instances.	2020-08-20	什么是数据库代理
MySQL	Transparent data encryption (TDE)	TDE is supported for RDS instances that run MySQL 8.0 on RDS High-availability Edition with local SSDs.	2020-08-12	设置透明数据加密TDE

July 2020

Database engine	Feature	Description	Release date	References

Database engine	Feature	Description	Release date	References
MySQL	Single-digit second backup	The single-digit second backup feature is supported for RDS instances that use enhanced SSDs. You can enable this feature on the Backup Settings tab of the Backup and Restoration page in the ApsaraDB RDS console. If this feature is enabled, a backup task can be completed within seconds. This feature is suitable for urgent backup requirements. For example, you can enable this feature if you need to back up your RDS instance before an emergency release.	2020-07-28	Automatic and manual backups
SQL Server	Account creation	The creation of an account named Sa is supported. You can connect applications to RDS instances by using this account.	2020-07-22	Create an account for an RDS SQL Server instancy
PostgreSQL	New instance type	A total of 17 new instance types that provide 2 to 104 CPU cores are supported for RDS instances that run the RDS High-availability Edition with standard or enhanced SSDs.	2020-07-20	Primary instance types

June 2020

Database engine	Feature	Description	Release date	References
MySQL	Online expansion of storage capacity	Online expansion of storage capacity is supported for RDS instances that run MySQL 5.7 or 8.0 with standard or enhanced SSDs. The expansion requires about 5 minutes.	2020-06-19	Change the specifications of an ApsaraDB RDS for MySQL instance
MySQL	Maximum username length	The maximum username length is increased to 32 characters. This applies to RDS instances that run MySQL 5.7 or 8.0.	2020-06-16	创建账号
SQL Server	User-created domain	RDS instances can be connected to user-created domains.	2020-06-12	Connect an ApsaraDB RDS for SQL Server instance to a user-created domain

Database engine	Feature	Description	Release date	References
SQL Server	Storage type	The storage types of RDS instances can be changed from standard SSDs to enhanced SSDs across zones.	2020-06-11	Change the specifications of an ApsaraDB RDS for SQL Server instance

May 2020

Database engine	Feature	Description	Release date	References
MySQL	Update of the minor engine version	The selection of a policy that is used to update the minor engine version is supported. This applies when you create an RDS instance.	2020-05-15	Create an ApsaraDB RDS for MySQL instance
MySQL	Database- and table-level restoration	The efficiency of database- and table-level restoration is increased by four times.	2020-05-12	Restore individual databases and tables of an ApsaraDB RDS for MySQL instance
SQL Server	Storage type	The storage types of RDS instances can be changed from standard SSDs to enhanced SSDs.	2020-05-07	Change the specifications of an ApsaraDB RDS for SQL Server instance

April 2020

Database engine	Feature	Description	Release date	References
MySQL	Cross-region restoration	The restoration of data from a cross-region backup file to an existing RDS instance is supported.	2020-04-24	Restore the data of an ApsaraDB RDS for MySQL instance across regions
MySQL	Memory management	Custom memory management is supported.	2020-04-22	Memory management on an ApsaraDB RDS for MySQL instance

Database engine	Feature	Description	Release date	References
All	Billing method	The billing method can be changed from subscription to pay-as-you-go.	2020-04-21	Switch an ApsaraDB RDS for MySQL instance from subscription to pay-as-you-go
MySQL	Dedicated proxy	Custom proxy endpoints are supported for the dedicated proxy service.	2020-04-15	什么是数据库代理
PostgreSQL	Plug-in	The HLL, smlar, and tds_fdw plug-ins are supported.	2020-04-21	支持插件列表
MySQL	Data restoration	Auto-renewal is supported for new RDS instances to which you restore data.	2020-04-14	Restore the data of an ApsaraDB RDS for MySQL instance
SQL Server	New version	SQL Server 2008 R2 is supported for RDS instances that use standard or enhanced SSDs.	2020-04-10	Create an ApsaraDB RDS for SQL Server instance
MySQL	Secure Sockets Layer (SSL) encryption	SSL encryption is supported for RDS instances that run MySQL 5.7 or 8.0 on RDS Enterprise Edition.	2020-04-09	Configure SSL encryption on an ApsaraDB RDS for MySQL instance
PostgreSQL	Foreign table	Both foreign SQL Server and Sybase tables are supported.	2020-04-03	N/A
MySQL	Database- and table-level restoration	The restoration of individual databases and tables is supported for RDS instances that run MySQL 8.0.	2020-04-01	Restore individual databases and tables of an ApsaraDB RDS for MySQL instance

March 2020

Database engine	Feature	Description	Release date	References
MySQL	Dedicated proxy	The upgrade from shared proxy to dedicated proxy is supported.	2020-03-20	什么是数据库代理

Database engine	Feature	Description	Release date	References
MySQL	Dedicated cluster	Dedicated clusters (formerly known as host groups) are supported for RDS instances that run MySQL 5.6.	2020-03-18	Dedicated cluster
MySQL	Dedicated proxy	The dedicated proxy service is supported for RDS instances that run MySQL 5.6 on RDS High-availability Edition with local SSDs.	2020-03-13	什么是数据库代理
PostgreSQL	Multi-zone deployment	Multi-zone deployment is supported for RDS instances that run the RDS High-availability Edition with standard or enhanced SSDs.	2020-03-08	Create an ApsaraDB RDS for PostgreSQL instance
MySQL	Alert rule	Alert rules are optimized to support one-minute alert intervals and more metrics.	2020-03-02	Configure an alert rule for an ApsaraDB RDS for MySQL instance

February 2020

Database engine	Feature	Description	Release date	References
MySQL	Enterprise Edition	The RDS Enterprise Edition is supported for RDS instances that run MySQL 5.7 or 8.0 in all regions.	2020-02-28	Enterprise Edition
SQL Server	New version	SQL Server 2019 SE Beta is supported.	2020-02-28	Create an ApsaraDB RDS for SQL Server instance
MySQL	Zone of the primary instance	Single-zone deployment and multi-zone deployment are supported. You can specify a zone for the primary RDS instance, and ApsaraDB RDS assigns a zone for the secondary RDS instance.	2020-02-27	Create an ApsaraDB RDS for MySQL instance
MySQL	Long term backup	The long term backup feature is supported. This feature allows you to retain backup files for a long term.	2020-02-26	Automatic and manual backups

Database engine	Feature	Description	Release date	References
SQL Server	Disk Encryption	The encryption of standard and enhanced SSDs based on Bring Your Own Keys (BYOKs) is supported when multi-zone deployment is adopted.	2020-02-26	Configure disk encryption for an ApsaraDB RDS for SQL Server instance
SQL Server	Database Management	Database management is supported for RDS instances that run SQL Server 2017 EE.	2020-02-25	Create a database on an ApsaraDB RDS for SQL Server instance
PostgreSQL	Reserved connection	The reservation for a specific number of connections is supported for superuser accounts. You can log on to an RDS instance and troubleshoot issues by using these accounts even if the number of established connections to the RDS instance reaches the upper limit.	2020-02-22	AliPG 小版本 Release Notes
PostgreSQL	plv8	PLV8 2.3.13 is provided for PostgreSQL 12 to compile stored procedures and functions.	2020-02-22	N/A
MySQL	Storage type	Two new storage options are provided on the ApsaraDB RDS buy page: ESSD PL2 and ESSD PL3.	2020-02-21	Storage types
PostgreSQL	SQL translation	The translation of SQL statements from the Oracle syntax to the PostgreSQL syntax is supported.	2020-02-14	SQL translation
PostgreSQL	wal2json plug-in	The wal2json plug-in is provided for PostgreSQL 12 to support logical subscriptions.	2020-02-14	Use the wal2json plug-in
MySQL	Edition change	The RDS edition can be changed from Enterprise to High-availability. This applies to RDS instances that run MySQL 5.6.	2020-02-13	Change the specifications of an ApsaraDB RDS for MySQL instance

Database engine	Feature	Description	Release date	References
MySQL	Number of ECS security groups	The number of ECS security groups allowed per RDS instance is increased from 1 to 10.	2020-02-04	Configure an IP address whitelist for an ApsaraDB RDS for MySQL instance

January 2020

Database engine	Feature	Description	Release date	References
MySQL	X-Engine	The X-Engine storage engine that is developed by Alibaba Cloud is provided. X-Engine can compress a large volume of data at a significantly high compression ratio in online transaction processing (OLTP) scenarios.	2020-01-15	X-Engine overview
MySQL	Dedicated cluster monitoring	The monitoring of physical machines in dedicated clusters is supported. You can view monitoring information and configure alert rules.	2020-01-15	View host details
MySQL	System parameter template	Two system parameter templates are provided: one for high availability and the other for high performance.	2020-01-14	Use a parameter template to manage parameters
PostgreSQL	pg_cron plug-in	The pg_cron plug-in is released for PostgreSQL 11 to configure scheduled tasks.	2020-01-14	Use the pg_cron plug-in to configure scheduled tasks
PostgreSQL	plv8	PLV8 2.3.13 is provided for PostgreSQL 11 to compile stored procedures and functions.	2020-01-14	N/A
PostgreSQL	log_fdw plug-in	The log_fdw plug-in is provided for PostgreSQL 11 to query logs in real time.	2020-01-14	Use the log_fdw plug-in
PostgreSQL	wal2json plug-in	The wal2json plug-in is provided for PostgreSQL 12 to support logical subscriptions.	2020-01-14	Use the wal2json plug-in

Database engine	Feature	Description	Release date	References
MySQL	Performance insight	The performance insight feature is supported for the High-availability Edition and Enterprise Edition.	2020-01-09	Performance insight
MySQL	TDE	TDE with BYOKs is supported for RDS instances that run MySQL 5.7 on RDS High-availability Edition with local SSDs.	2020-01-07	设置透明数据加密TDE
PostgreSQL	Enhanced SSD PL	Two new protection levels (PLs) of enhanced SSDs are provided on the ApsaraDB RDS buy page: ESSD PL2 and ESSD PL3. This applies to RDS instances that run PostgreSQL 10 on RDS High-availability Edition.	2020-01-07	Create an ApsaraDB RDS for PostgreSQL instance

December 2019

Database engine	Feature	Description	Release date	References
PostgreSQL	pg_roaringbit map plug-in	The pg_roaringbitmap plug-in is provided for PostgreSQL 12 to spot user profiles in real time.	2019-12-31	Use the roaringbitmap plug-in
PostgreSQL	Monitoring and alerting	Monitoring and alerting are supported for RDS instances that use standard or enhanced SSDs.	2019-12-31	Set the monitoring frequency of an ApsaraDB RDS for PostgreSQL instance
MySQL	Dedicated proxy	The dedicated proxy service is supported for RDS instances that run MySQL 5.7 or 8.0 on RDS Enterprise Edition.	2019-12-25	什么是数据库代理
MySQL	Enterprise Edition	The RDS Enterprise Edition is supported for RDS instances that run MySQL 8.0.	2019-12-24	Create an ApsaraDB RDS for MySQL instance

Database engine	Feature	Description	Release date	References
MySQL	Dedicated cluster	ECS Bare Metal Instance that is based on the SHENLONG architecture is supported for dedicated clusters. You can create RDS instances that use enhanced SSDs in these dedicated clusters.	2019-12-19	添加主机
PostgreSQL	New version	The RDS Basic Edition is supported for RDS instances that run PostgreSQL 12.	2019-12-17	Create an ApsaraDB RDS for PostgreSQL instance
PostgreSQL	SSL	SSL encryption can be enabled and disabled in the ApsaraDB RDS console. This applies to RDS instances that use standard or enhanced SSDs.	2019-12-17	Configure data encryption for an ApsaraDB RDS for PostgreSQL instance
PostgreSQL	vSwitch change	Changes to vSwitches are supported. This applies to RDS instances that use standard or enhanced SSDs.	2019-12-17	Switch to a new VSwitch for an RDS PostgreSQL instance
PostgreSQL	Service account authorization	The authorization of a temporary service account is supported in the ApsaraDB RDS console. This service account is used by Alibaba Cloud technical support to troubleshoot instance issues.	2019-12-17	Authorize the service account of an RDS PostgreSQL instance
MySQL	Dedicated proxy	The dedicated proxy service is supported for RDS instances that run MySQL 5.7 or 8.0 on RDS High-availability Edition with standard or enhanced SSDs.	2019-12-17	什么是数据库代理

November 2019

Database engine	Feature	Description	Release date	References
MySQL	New instance type	General-purpose instance types are supported for RDS instances that run MySQL 5.7 on RDS Enterprise Edition.	2019-11-24	Primary instance types

Database engine	Feature	Description	Release date	References
MySQL	SQL Explorer	The SQL Explorer feature is supported for RDS instances that run MySQL 5.7 on RDS Enterprise Edition.	2019-11-21	Use the SQL Explorer feature on an ApsaraDB RDS for MySQL instance
MySQL	Read-only instance	Read-only instances are supported for RDS instances that run MySQL 5.7 on RDS Enterprise Edition.	2019-11-19	Create a read-only ApsaraDB RDS for MySQL instance
MySQL	New instance type	New instance types that provide 12, 24, 52, and 104 CPU cores are introduced to RDS instances that run the RDS High-availability Edition with standard or enhanced SSDs.	2019-11-15	Primary instance types
PostgreSQL	Data reads and writes on foreign MySQL tables	The mysql_fdw plug-in is provided for RDS instances that run PostgreSQL 10 with standard or enhanced SSDs. This allows you to directly perform read and write operations on ApsaraDB RDS for MySQL instances or self-managed MySQL databases.	2019-11-13	Use mysql_fdw to read and write data to a MySQL database
MySQL	New instance type	A new instance type that provides one CPU core and 1 GB of memory is introduced to RDS instances that run MySQL 8.0 on RDS Basic Edition.	2019-11-12	Primary instance types

October 2019

Database engine	Feature	Description	Release date	References
MySQL	Dedicated proxy	The dedicated proxy service is provided for RDS instances that run MySQL 5.7 on RDS High-availability Edition with local SSDs. This service provides the read/write splitting and short-lived connection optimization features.	2019-10-28	什么是数据库代理

Database engine	Feature	Description	Release date	References
PostgreSQL	Removal of binding relationships between storage capacity sizes and instance types	The binding relationships between storage capacity sizes and instance types are removed. You can purchase any amount of storage capacity for the selected instance type. This reduces the costs of storage- and compute-intensive workloads.	2019-10-24	Primary instance types
PostgreSQL	Data reads and writes on foreign PostgreSQL tables	The dblink and postgres_fdw plug-ins are provided for RDS instances that run PostgreSQL 11 with standard or enhanced SSDs. These plug-ins allow you to manage tables across instances.	2019-10-24	Use the dblink and postgre_fdw plug-ins for cross-database operations
PostgreSQL	Up to 32-TB storage capacity	The maximum storage capacity is increased. The limit is 6 TB for RDS instances that run the RDS Basic Edition and for those that run the RDS High-availability Edition with local or standard SSDs. The limit is 32 TB for RDS instances that run the RDS High-availability Edition with enhanced SSDs.	2019-10-24	Primary instance types
PostgreSQL	PostgreSQL 11	PostgreSQL 11 is supported.	2019-10-24	Create an ApsaraDB RDS for PostgreSQL instance
SQL Server	SQL Server 2017 SE	SQL Server 2017 SE is supported. ApsaraDB RDS now covers all the SQL Server versions within the range of 2012 to 2017 in various editions.	2019-10-18	Features of ApsaraDB RDS instances that run different SQL Server versions and RDS editions

Database engine	Feature	Description	Release date	References
SQL Server	ESSD PL2 and ESSD PL3	Enhanced SSDs of PL2 and PL3 are released in all regions in mainland China. An enhanced SSD of PL 3 delivers 20 times more input/output operations per second (IOPS) and 11 times more throughput than an enhanced SSD of PL1. You can use enhanced SSDs of PL2 or PL3 to handle a large number of concurrent I/O requests at stable read and write latencies.	2019-10-17	Storage types
MySQL	Dedicated proxy	The dedicated proxy service is provided for RDS instances that run MySQL 8.0 on RDS High-availability Edition with local SSDs. This service provides the read/write splitting and short-lived connection optimization features.	2019-10-15	什么是数据库代理
MySQL	Price adjustment	The prices of RDS instances with standard or enhanced SSDs are reduced by up to 50%.	2019-10-15	Pricing, billable items, and billing methods
SQL Server	Multi-zone deployment	Multi-zone deployment is supported for RDS instances that span zones A and C in the China (Zhangjiakou) region.	2019-10-10	Create an ApsaraDB RDS for SQL Server instance

September 2019

Database engine	Feature	Description	Release date	References
MySQL	Storage capacity range adjustment	The storage capacity range is adjusted for RDS instances that use local SSDs. The adjustment applies to the dedicated instance family.	2019-09-18	Primary instance types
MySQL	Upgrade from Basic Edition to High-availability Edition	The upgrade from the RDS Basic Edition to the RDS High-availability Edition is supported.	2019-09-15	Change the specifications of an ApsaraDB RDS for MySQL instance

Database engine	Feature	Description	Release date	References
MySQL	New instance type	A new instance type that provides 90 CPU cores and 720 GB of memory is introduced. The new instance type applies to the dedicated host instance family.	2019-09-15	Primary instance types
All	New buy page	A new ApsaraDB RDS buy page is released.	2019-09-12	Create an ApsaraDB RDS for MySQL instance
MySQL	VPC change	Changes to virtual private clouds (VPCs) are supported.	2019-09-12	Switch an ApsaraDB RDS for MySQL instance to a new VPC and a new vSwitch
PostgreSQL	Data encryption	SSL encryption and disk encryption are supported. These encryption features can work together to better protect your data.	2019-09-04	Configure data encryption for an ApsaraDB RDS for PostgreSQL instance

August 2019

Database engine	Feature	Description	Release date	References
MySQL	Parameter templates	Parameter templates are provided. You can manage a number of instance parameters at the same time by using a parameter template.	2019-08-27	Use a parameter template to manage parameters
MySQL	Disabling SSL encryption	The disabling of SSL encryption is supported.	2019-08-23	Configure SSL encryption on an ApsaraDB RDS for MySQL instance

Database engine	Feature	Description	Release date	References
MySQL	Temporary disabling of automatic failover	The temporary disabling of automatic failover for up to one week is supported.	2019-08-22	Perform a manual or automatic switchover of services between a primary ApsaraDB RDS for MySQL instance and its secondary instance
MySQL	Database- and table-level backup and restoration	Backup and restoration at the database and table levels are supported for RDS instances that run MySQL 5.6 or 5.7.	2019-08-20	Restore individual databases and tables of an ApsaraDB RDS for MySQL instance
MySQL	Instance rebuilding from the recycle bin	The rebuilding of subscription RDS instances from the recycle bin is supported. This applies when the RDS instances are locked due to overdue payments.	2019-08-16	实例回收站
MySQL	Cross-region backup	The cross-region backup feature is supported. You can back up an RDS instance and store the backup data to a region where that instance does not reside.	2019-08-13	Back up an ApsaraDB RDS for MySQL instance across regions
MySQL	SQL Explorer	The time range to query logs in the SQL Explorer feature is refined to 24 hours or less.	2019-08-08	Use the SQL Explorer feature on an ApsaraDB RDS for MySQL instance
MySQL	SQL Explorer	The SQL Explorer feature is supported for RDS instances that run MySQL 5.7 on RDS High-availability Edition with standard or enhanced SSDs. This feature logs all the SQL statements that are executed.	2019-08-01	Use the SQL Explorer feature on an ApsaraDB RDS for MySQL instance

July 2019

Database engine	Feature	Description	Release date	References
MySQL	TDE	TDE with BYOKs is supported for RDS instances that run MySQL 5.6.	2019-07-30	设置透明数据加密TDE
MySQL	VPC endpoint change	Changes to endpoints are supported for RDS instances that reside in VPCs.	2019-07-29	Configure endpoints
MySQL	Up to 16-TB storage capacity	The maximum storage capacity is increased. The limit is up to 16 TB for RDS instances that run MySQL 5.7 or 8.0 on RDS High-availability Edition with enhanced SSDs.	2019-07-29	Primary instance types
SQL Server	SQL Server 2016 EE Basic	SQL Server 2016 EE Basic is supported for dedicated RDS instances.	2019-07-25	Create an ApsaraDB RDS for SQL Server instance
All	Five-year subscription	Five-year subscription is supported for RDS instances that run MySQL, SQL Server, PPAS, PostgreSQL, or MariaDB.	2019-07-20	Create an ApsaraDB RDS for MySQL instance
SQL Server	Upgrade from Basic Edition to High-availability Edition	The upgrade from the RDS Basic Edition to the RDS High-availability Edition is supported. You can perform the upgrade on the Basic Information page of the ApsaraDB RDS console.	2019-07-17	Upgrade an ApsaraDB RDS for SQL Server instance from Basic Edition to High-availability Edition

Promotions and Notifications·[Notic
e] New physical backup file format
phased in for some ApsaraDB RDS fo
r MySQL instances

ApsaraDB for RDS

2.[Notice] New physical backup file format phased in for some ApsaraDB RDS for MySQL instances

Description

Since January 20, 2021, a new file format, _xb.qp, is **phased in** to increase the speed of physical backups. This new file format is supported only for ApsaraDB RDS for MySQL instances for which the Restore Individual Database/Table feature is enabled.

> ⑦ Note
>
> - The previously used file format _qp.xb is phased out.
>
> - Existing _qp.xb files are not converted into _xb.qp files.
>
> - The Restore Individual Database/Table feature is supported only for RDS instances that run MySQL 8.0, 5.7, or 5.6 on RDS High-availability Edition with local SSDs.
>
> - You can log on to the ApsaraDB RDS console and go to the **Backup Settings** tab on the **Backup and Restoration** page to view the status of the Restore Individual Database/Table feature or enable this feature.

Suggestions

- If the Restore Individual Database/Table feature is enabled, you must decompress the downloaded physical backup file based on the file format.

  - If the downloaded physical backup file is in the _xb.qp format, run the following command to decompress the file:

    ```
    qpress -do  <The name of the downloaded physical backup file> | xbstream -x -v -C /home/mysql/data
    ```

  - If the downloaded physical backup file is in the _qp.xb format, run the following commands to decompress the file:

    ```
    ## Unpack the downloaded physical backup file.
    cat <The name of the downloaded physical backup file> | xbstream -x -v -C /home/mysql/data
    ## Decompress the downloaded physical backup file. This command applies if your RDS instance runs MySQL 5.6 or 5.7.
    innobackupex --decompress --remove-original /home/mysql/data
    ## Decompress the downloaded physical backup file. This command applies if your RDS instance runs MySQL 8.0.
    xtrabackup --decompress --remove-original --target-dir=/home/mysql/data
    ```

    > ⑦ Note   In the preceding commands, /home/mysql/data is an example path.

  For more information, see Restore the data of an ApsaraDB RDS for MySQL instance from a physical backup file to a self-managed MySQL database.

- If the Restore Individual Database/Table feature is disabled, we recommend that you enable this feature. After the new file format _xb.qp is applied, the speed at which you can back up the data of

ApsaraDB for RDS

Promotions and Notifications·[Notic e] New physical backup file format phased in for some ApsaraDB RDS fo r MySQL instances

your RDS instance is increased.

3.[Notice] End of updates and maintenance for the shared proxy service

On April 1, 2021, Alibaba Cloud will stop the updates and maintenance for the shared proxy service of ApsaraDB RDS for MySQL. After this date, Alibaba Cloud will provide only technical support for the shared proxy service. If you no longer use the shared proxy service (namely, you no longer use the read/write splitting feature), you can disable the shared proxy service. If you still use the shared proxy service, we recommend that you upgrade your primary RDS instance from shared proxy to dedicated proxy at your earliest opportunity.

Database proxies reside between your database system and your application. All the requests from your application are sent to the database proxies. Then, the database proxies route the requests to the primary and read-only RDS instances of your database system based on the read weights of these instances. This is used to implement read/write splitting and reduce the loads on the primary RDS instance. For more information, see What are dedicated proxies? ApsaraDB RDS for MySQL provides two types of database proxies: dedicated proxies and shared proxies. In contrast with shared proxies, dedicated proxies are easy to use and maintain, and provide high availability and high performance. In addition, dedicated proxies support advanced features, such as transaction splitting and connection pool.

Effective date

April 1, 2021

Affected instances

This notice applies to all primary RDS instances on which shared proxies are enabled. These instances run MySQL 5.6 or run MySQL 5.7 on RDS High-availability Edition with local SSDs.

You can go to the **Database Proxy** page of your primary RDS instance and check for the **Read/Write Splitting (Shared)** tab. If the tab is available, shared proxies are enabled on the instance.

Reasons

A shared proxy serves more than one primary RDS instance, and these instances may belong to different users. This decreases the stability of your database service due to potential resource competition and isolation issues. Therefore, we recommend that you upgrade your primary RDS instance from shared proxy to dedicated proxy. Dedicated proxies outperform shared proxies. For more information about the benefits of dedicated proxies, see the "Benefits" section of this topic.

Impacts

- Alibaba Cloud provides updates and maintenance for dedicated proxies. However, Alibaba Cloud will no longer provide updates and maintenance for shared proxies.
- The stability of shared proxies will not be guaranteed in the service level agreement (SLA).

Suggestions

ApsaraDB for RDS

Promotions and Notifications·[Notic
e] End of updates and maintenance
for the shared proxy service

We recommend that you upgrade your primary RDS instance from shared proxy to dedicated proxy before April 1, 2021. For more information, see Upgrade an ApsaraDB RDS for MySQL instance from shared proxy to dedicated proxy.

Fees

Dedicated proxies are charged. If you upgrade your primary RDS instance from shared proxy to dedicated proxy before April 1, 2021, a discount is available. This discount specifies that you do not need to pay for the dedicated proxies within the lifecycle of the instance. For more information about the required fees, see Billing for dedicated proxies. For more information about the discount, see Upgrade an ApsaraDB RDS for MySQL instance from shared proxy to dedicated proxy.

> ⑦ **Note** If you renew your primary RDS instance after you upgrade the instance from shared proxy to dedicated proxy, the lifecycle of the instance is extended. However, the discount is still applied based on the expiration date at the time of the upgrade.

Benefits

The following table describes the benefits of dedicated proxies over shared proxies.

Category	Shared proxy	Dedicated proxy
Queries per second (QPS)	The QPS cannot be guaranteed. The maximum QPS is 1,000. You cannot increase the QPS by scaling out resources.	The QPS is stable. Each dedicated proxy supports up to 20,000 QPS. In addition, you can increase the QPS by adding dedicated proxies. A maximum of 60 dedicated proxies can be enabled for each primary RDS instance.
Stability	A number of primary RDS instances that belong to different users compete for resources.	Each primary RDS instance has its own dedicated proxies and does not need to compete with other primary RDS instances for resources.
Availability	Each shared proxy works in the single-node architecture. If a shared proxy becomes faulty, it is disconnected.	Each dedicated proxy works in the high-availability architecture. This ensures the availability of your database service.
Monitoring	Monitoring is not supported.	You can monitor the CPU utilization of dedicated proxies to identify proxy resource bottlenecks.
Read/write splitting	The read/write splitting feature is supported.	The read/write splitting feature is supported.

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e] End of updates and maintenance
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Category	Shared proxy	Dedicated proxy
Read/write splitting endpoint	The read/write splitting endpoint is supported. After the read/write splitting feature is disabled, the read/write splitting endpoint is immediately released. In this case, you must modify the endpoint configuration on your application.	The read/write splitting endpoint is supported. To implement read/write splitting by using a dedicated proxy endpoint, you need only to add the dedicated proxy endpoint to your application. If you enable or disable the read/write splitting feature, you do not need to modify the endpoint configuration on your application. The dedicated proxy endpoint remains valid unless you disable the dedicated proxy service.
Advanced features	None.	The following advanced features are provided: • Connection pool: If an abnormally large number of connections are established or short-lived connections over PHP are frequently established, you can use this feature to mitigate the heavy loads on your primary RDS instance. For more information, see Set the connection pool type of an ApsaraDB RDS for MySQL instance. • Transaction splitting: This feature allows ApsaraDB RDS to route the read requests prior to write operations within a transaction to the read-only RDS instances. This reduces the loads on your primary RDS instance. For more information, see Enable the transaction splitting feature for an ApsaraDB RDS for MySQL instance. • SSL encryption: This feature allows ApsaraDB RDS to encrypt the data that is destined for the dedicated proxy endpoint. This ensures the security of the data in transit. For more information, see Configure SSL encryption for a dedicated proxy endpoint on an ApsaraDB RDS for MySQL instance.

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Promotions and Notifications·[Notic
e] End of software maintenance for
ApsaraDB RDS instances that run My
SQL 5.5

4.[Notice] End of software maintenance for ApsaraDB RDS instances that run MySQL 5.5

Since March 1, 2021, Alibaba Cloud no longer provides updates and maintenance for ApsaraDB RDS instances that run MySQL 5.5. Only technical support is provided. If your RDS instance runs MySQL 5.5, we recommend that you upgrade the instance to a later MySQL version at your earliest opportunity.

Effective date

March 1, 2021

Reason

The open source MySQL community no longer provides updates and maintenance for MySQL 5.5.

Impact

We recommend that you purchase RDS instances that run MySQL 5.5. You can also continue using your existing RDS instances that run MySQL 5.5. For example, you can renew these existing RDS instances or upgrade their MySQL versions. However, Alibaba Cloud no longer provides updates and maintenance for the minor engine versions of MySQL 5.5. Only technical support is provided.

Suggestions

If your RDS instance runs MySQL 5.5, we recommend that you upgrade the instance to MySQL 5.6 or later. This allows you to avoid the known vulnerabilities and issues that may occur in MySQL 5.5. The following two upgrade paths are provided:

- Upgrade from MySQL 5.5 to MySQL 5.6. For more information, see Upgrade the major engine version of an ApsaraDB RDS for MySQL instance.

- Upgrade from MySQL 5.5 to MySQL 5.7 or 8.0. You must create an RDS instance that runs MySQL 5.7 or 8.0. Then, you must migrate the data of your existing RDS instance to the new RDS instance by using Data Transmission Service (DTS). For more information, see Create an ApsaraDB RDS for MySQL instance and Migrate data between ApsaraDB RDS for MySQL instances.

> ⑦ Note   After the migration is complete, observe your workloads on the new RDS instance. If your workloads run as normal on the new RDS instance, you can release or unsubscribe from your existing RDS instance. For more information, see 释放实例.

5.[Notice] Extension of software maintenance for ApsaraDB RDS instances that run MySQL 5.6

Since February 5, 2021, the open source MySQL community no longer provides updates and maintenance for MySQL5.6. However, Alibaba Cloud continues providing updates and maintenance for ApsaraDB RDS instances that run MySQL 5.6. The updates and maintenance that are provided by Alibaba Cloud ends on February 5, 2024.

Extension expiration date

February 5, 2024

Reason

Open source MySQL 5.6 enters the end-of-life (EOL) status on February 5, 2021.

Suggestions

We recommend that you purchase RDS instances that run MySQL 5.7 or 8.0. However, you can still purchase RDS instances that run MySQL 5.6. You can also continue using your existing RDS instances that run MySQL 5.6. The ApsaraDB RDS team continues providing updates and maintenance for these instances.

If your RDS instance runs MySQL 5.6, we recommend that you upgrade the instance to MySQL 5.7 or 8.0 before February 5, 2024. To perform the upgrade, you must create an RDS instance that runs MySQL 5.7 or 8.0. Then, you must migrate the data of your existing RDS instance to the new RDS instance by using Data Transmission Service (DTS). For more information, see Create an ApsaraDB RDS for MySQL instance and Migrate data between ApsaraDB RDS for MySQL instances.

> ⑦ **Note** After the migration is complete, observe your workloads on the new RDS instance. If your workloads run as normal on the new RDS instance, you can release or unsubscribe from your existing RDS instance. For more information, see 释放实例.

6.[Notice] End of service for ApsaraDB RDS for PPAS starting from May 1, 2021

Alibaba Cloud will stop the service provision of ApsaraDB RDS for PPAS from May 1, 2021. We recommend that you migrate your workloads to PolarDB-O. PolarDB-O is highly compatible with Oracle syntax. It provides all of the same features that you can use in ApsaraDB RDS for PPAS. In addition, PolarDB-O provides high elasticity and includes a mechanism that supports data writes to one node and data reads from multiple nodes.

Effective date

May 1, 2021

Affected product

ApsaraDB RDS for PPAS

Description

- On May 01, 2021, Alibaba Cloud will stop the provision of purchase, upgrade, and renewal services to ApsaraDB RDS for PPAS instances.
- On November 1, 2021, Alibaba Cloud will stop the provision of after-sales services to ApsaraDB RDS for PPAS instances.
- On May 1, 2022, Alibaba Cloud will stop the provision of all services to ApsaraDB RDS for PPAS instances. All of the existing ApsaraDB RDS for PPAS instances will be taken offline.

> ⑦ Note   Before May 1, 2021, you can still purchase, upgrade, and renew ApsaraDB for RDS PPAS instances in the Alibaba Cloud Management Console. However, you must make sure that the renewed subscription period does not extend beyond May 1, 2021.

Suggestions

If you are using ApsaraDB RDS for PPAS, we recommend that you migrate your data from ApsaraDB RDS for PPAS to PolarDB-O by using Data Transmission Service (DTS). For more information about DTS, see What is Data Transmission Service? For more information about how to migrate data by using DTS, see Migrate data from an ApsaraDB RDS for PPAS database to a PolarDB-O cluster.

PolarDB-O is a next-generation relational database that is developed by Alibaba Cloud. It is highly compatible with Oracle syntax and adopts a compute-storage separation architecture that reduces storage and expansion costs. PolarDB-O allows you to expand the storage capacity to up to 100 TB and scale out an individual cluster to up to 16 nodes. It also allows you to upgrade or downgrade specifications in minutes, recover from faults in seconds, ensure global data consistency, and back up data in minutes. These features make PolarDB-O suitable in various scenarios. For more information, see Overview.

Promotions and Notifications·[Notic e] End of the provision of free snaps hot backups to ApsaraDB RDS for Po stgreSQL instances with standard or enhanced SSDs

ApsaraDB for RDS

7.[Notice] End of the provision of free snapshot backups to ApsaraDB RDS for PostgreSQL instances with standard or enhanced SSDs

Starting from September 20, 2020, Alibaba Cloud charges you for snapshot backups. The charges are based on the pay-as-you-go billing method. In addition, promotional discounts are issued based on a predefined schedule. This applies to ApsaraDB RDS for PostgreSQL instances with standard or enhanced SSDs.

Effective date

September 20, 2020

Billing

You are charged at an hourly rate for snapshot backups based on the pay-as-you-go billing method. For more information, see Pricing of Snapshot Backups for ApsaraDB RDS for PostgreSQL Instances.

Promotional discounts

- If your RDS instance uses standard or enhanced SSDs, you are offered a free quota for backup storage. The free quota is equal to 200% of the purchased storage capacity.
- The price of backup storage used for snapshot backups is about 75% lower when standard or enhanced SSDs are used than when local SSDs are used.

References

- 备份PostgreSQL数据
- View the free quota for backup storage of an ApsaraDB RDS for PostgreSQL instance

8.[Notice] Migration of ApsaraDB for RDS instances

Alibaba Cloud upgrades the hardware and networks in some of its ApsaraDB for RDS data centers to increase performance and stability. You can migrate your RDS instance to another zone by using the ApsaraDB for RDS console as instructed below.

Deadline

We recommend that you complete the migration of your RDS instance by January 24, 2020.

> ⑦ **Note** If you cannot complete the migration before this deadline, your business still can operate uninterrupted. For more information, see FAQ.

Application scope

If your RDS instance meets the following requirements, we recommend that you migrate it during off-peak hours at the earliest opportunity:

- It runs one of the following database engine versions and RDS editions:
  - MySQL 8.0 (with local SSDs)
  - MySQL 5.7 (with local SSDs)
  - MySQL 5.6
  - MySQL 5.5
  - SQL Server 2008 R2
  - PostgreSQL 10 High-availability Edition (with local SSDs)
  - PostgreSQL 9.4
  - PPAS

- It resides in one of the following **source zones**.

  > ⑦ **Note** The following table lists source zones and their recommended destination zones. The hardware and networks in the recommended destination zones offer better performance and stability to your RDS instance.

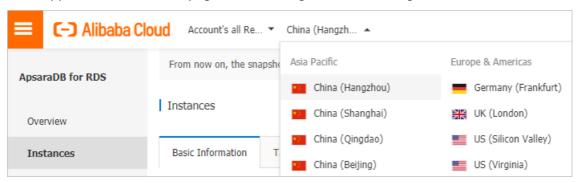 | Source zone | Recommended destination zone |
  | --- | --- |
  | Zone C in China (Hangzhou) | Zone I in China (Hangzhou) |
  | Zone D in China (Hangzhou) | Zone I in China (Hangzhou) |
  | Zone B+Zone C in China (Hangzhou) | Zone H+Zone I in China (Hangzhou) |
  | Zone B in China (Beijing) | Zone H in China (Beijing) |

> ⑦ **Note** Multi-zone deployment indicates that the primary and secondary instances reside in different zones to provide zone-level disaster tolerance.
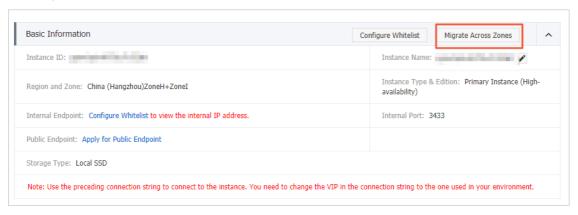
Impact

- There will be a brief 30-second disconnection during the migration. Make sure that your application is configured to reconnect to the primary instance after it is disconnected.

- After you change the VPC and VSwitch of your RDS instance, its virtual IP addresses (VIPs) also change. We recommend that you use an endpoint to connect your application and RDS instance. For more information, see Configure endpoints for an RDS for MySQL instance.

- The VIP changes temporarily interrupt the connection with Alibaba Cloud DRDS. You must update the endpoint information of your RDS instance in the DRDS console immediately after you change its VPC and VSwitch.

- The VIP changes temporarily interrupt the connections with Alibaba Cloud Data Management Service (DMS) and Data Transmission Service (DTS). The connections are automatically restored to normal.

- After the migration, data can only be read from the original RDS instance. However, your application still may connect to the original RDS instance by using the connection information cached in the domain name server (DNS). You must clear the cache on the DNS immediately after the migration is complete.

Procedure

1. Log on to the ApsaraDB for RDS console.

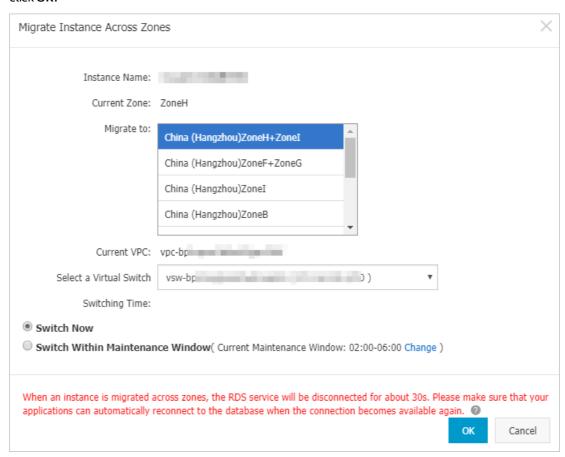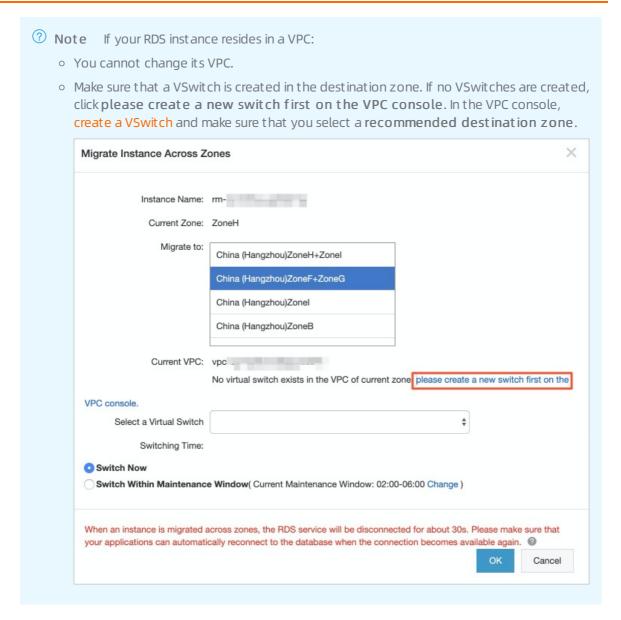2. In the upper-left corner of the page, select the region where the target RDS instance resides.

3. Find the target RDS instance and click its ID.

4. Click **Migrate Across Zones**.

5. In the dialog box that appears, specify the destination zone, VSwitch, and switching time, and then

click **OK**.

> [!NOTE]
> **Note**   If your RDS instance resides in a VPC:
> - You cannot change its VPC.
> - Make sure that a VSwitch is created in the destination zone. If no VSwitches are created, click **please create a new switch first on the VPC console**. In the VPC console, **create a VSwitch** and make sure that you select a **recommended destination zone**.

FAQ

- What happens if I do not migrate my RDS instance?

  Your business remains available even if you do not migrate your RDS instance. However, for better performance and stability, we recommend that you migrate your RDS instance to a recommended destination zone.

- If I cannot migrate my RDS instance by January 24, 2020, do I need to migrate it later?

  Yes, you still need to migrate your RDS instance if you cannot migrate it now. If your RDS instance resides in Zone B in China (Beijing), Zone C in China (Hangzhou), or Zone D in China (Hangzhou) that requires hardware and network upgrades, Alibaba Cloud notifies you of the current O&M events. You can schedule your migration plan based on these events by using the ApsaraDB for RDS console. There will be a brief 30-second disconnection during the migration. Make sure that your application is configured to reconnect to the primary instance after it is disconnected. For more information, see Impact.

- After I migrate my RDS instance, do I need to migrate its peer ECS instance that resides in the same zone?

According to the overall cross-zone migration plan of Alibaba Cloud, you must migrate both your RDS instance and its peer ECS instance from the same zone. For more information about how to migrate an ECS instance across zones, visit Alibaba Cloud physical server migration and upgrade notice.

- Do I have to migrate my RDS instance to a recommended destination zone from the preceding table?

  No, you can migrate your RDS instance to another zone not specified in the table.

- Can I migrate my RDS instance back to its source zone after the upgrade is complete?

  Yes, you can migrate your RDS instance back to its source zone after the upgrade is complete.

- Why am I unable to select the source zone of my RDS instance when I create a VSwitch?

  The **source zone** of your RDS instance receives hardware and network upgrades. Therefore, you cannot create a VSwitch in it. When you create a VSwitch, select a **recommended destination zone**.

Promotions and Notifications·[Notic
e] The storage engine was switched
from TokuDB to InnoDB

ApsaraDB for RDS

9.[Notice] The storage engine was switched from TokuDB to InnoDB

ApsaraDB RDS MySQL has terminated its support for the TokuDB engine since August 1, 2019. This topic describes how to switch the storage engine from TokuDB to InnoDB.

Background information

Percona no longer provides support for TokuDB, leading to bugs that cannot be fixed and can cause business losses in extreme cases. Because of this, ApsaraDB RDS MySQL has terminated its support for the TokuDB engine since August 1, 2019. Direct engine switching will block DML operations and affect concurrency. Therefore, we recommend that you evaluate your business as soon as possible and use one of the following solutions to switch your storage engine:
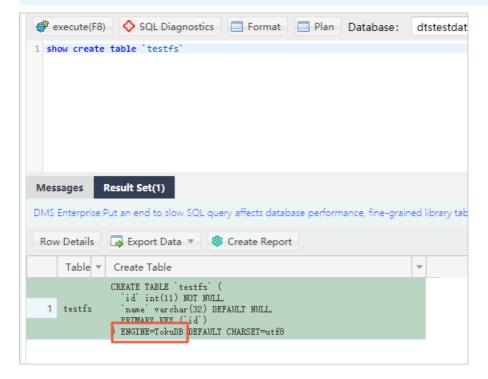
TokuDB go-offline date

August 1, 2019

Application scope

Instances that use the TokuDB storage engine

> ⓘ **Note**   You can use the show engines: command to view the current default engine of an instance, or use the Show create table <table name>; command to view the storage engine of a table.

Precautions

- After the storage engine is switched, space usage increases. The space to be reserved is approximately twice the capacity of TokuDB tables during parallel operations. Pay attention to the

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space usage during operations.

- After the storage engine is switched, CPU usage decreases but IOPS increases when the same data volume is read. This is because data pages are not compressed.

- During full database migration, the endpoint needs to be switched. Perform this operation during off-peak hours.

- If the database version is changed during full database migration, we recommend that you test the compatibility in advance.

Solution recommendations

- If the table size in an instance is less than 100 MB, and short-term blocking is acceptable, you can use solution 1 to lock tables for a short period of time and avoid various tool configuration processes.

- If the table size in an instance is larger than 5 GB, we recommend that you use solution 2 or 3.

- If all tables in an instance need to be migrated to the InnoDB engine, we recommend that you use solution 3 or 4.

- After all tables are migrated to the InnoDB engine, set the **default_storage_engine** parameter to **InnoDB**.

Solution 1

This solution migrates tables to InnoDB in the most straightforward way. However, DML operations may be blocked during the entire process and it takes a long time to migrate large tables.

Procedure

1. Log on to an RDS MySQL instance through DMS.

2. In the top navigation bar, choose **SQL Operations > SQL Window**.

3. Run the following command:

   Alter table test.testfs engine innodb

   ```
   【Execute: (1)】
   Alter table mysqltest.testfs engine innodb
   Success, Time Consumed: [13ms.]
   ```

Solution 2

This solution uses a third-party tool to migrate tables. Many third-party tools, such as pt-osc developed by Percona and gh-ost developed by Github, support online DDL. gh-ost is used here as an example to describe the migration process. For more information, see gh-ost.

Principle

The principle of how gh-ost migrates a table is as follows: gh-ost creates a temporary table that has the same schema as the original table and incrementally copies data from the original table to the temporary table. After all data is copied to the temporary table, gh-ost reads binary logs through a simulated slave process and synchronizes table changes from the original table to the temporary table in real time. Finally, gh-ost renames the tables to complete the cutover during off-peak hours. This solution puts a heavy load on the I/O performance during initial full data synchronization. However, you can modify parameters to limit I/O.

- Advantages: gh-ost gives you greater control over the synchronization process.

- Disadvantages: Each table needs to be synchronized using commands. If a large number of tables exist, the operations are cumbersome.

Parameters

Parameter	Description
--initially-drop-old-table	Checks and deletes an existing table.
--initially-drop-ghost-table	Checks and deletes an existing ghost table.
--aliyun-rds	Executes table migration on ApsaraDB for RDS.
--assume-rbr	Sets gh-ost to read binary logs in Row Based Replication (RBR) format.
--allow-on-master	Runs gh-ost on the primary database.
--assume-master-host	Specifies the endpoint of the primary database.
--user	Specifies the name of the database account.
--password	Specifies the database password.
--host	Specifies the endpoint of the database, which must be the same as that of the primary database.
--database	Specifies the name of the database.
--table	Specifies the name of the ghost table.
--alter	Alters the ghost table.
--chunk-size	Specifies the number of rows submitted by batch.
--postpone-cut-over-flag-file	Specifies the file used to postpone the cutover process. If you delete the file at a specified time, tables will be swapped immediately.
--panic-flag-file	Specifies the file used to stop the ghost process. After this file is generated, the ghost process stops immediately.
--serve-socket-file	Receives interactive commands.
--execute	Directly executes table migration and swapping.

Prerequisites

- gh-ost is installed on your local host or ECS instance.
- The IP address of the local host or ECS instance is added to the IP address whitelist of your ApsaraDB for RDS instance.
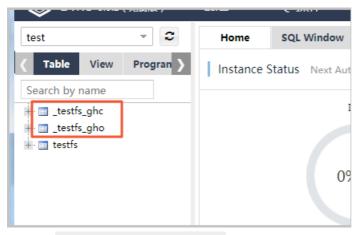
Procedure

1. Run the following command on the local host or ECS instance to perform a cutover and wait until the cutover is completed:

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```
gh-ost --user="test01" --password="Test123456" --host="rm-bpxxxxx.mysql.rds.aliyuncs.com" --datab
ase="test" --table="testfs" --alter="engine=innodb" --initially-drop-old-table --initially-drop-ghost-tabl
e --aliyun-rds --assume-rbr --allow-on-master --assume-master-host="rm-bpxxxxx.mysql.rds.aliyuncs.c
om" --chunk-size=500 --postpone-cut-over-flag-file="/tmp/ghostpost.postpone" --panic-flag-file="/tmp
/stop.flag" --serve-socket-file="/tmp/ghost.sock" --execute
```

```
2019/06/13 17:22:51 binlogsyncer.go:79: [info] create BinlogSyncer with config {999
2019/06/13 17:22:51 binlogsyncer.go:246: [info] begin to sync binlog from position
2019/06/13 17:22:51 binlogsyncer.go:139: [info] register slave for master server rm
2019/06/13 17:22:51 binlogsyncer.go:573: [info] rotate to (mysql-bin.000014, 241268
# Migrating `test`.`testfs`; Ghost table is `test`.`_testfs_gho`
# Migrating                          rds.aliyuncs.com:3306; inspecting
# Migration started at Thu Jun 13 17:22:50 +0800 2019
# chunk-size: 500; max-lag-millis: 1500ms; dml-batch-size: 10; max-load: ; critical
# throttle-additional-flag-file: /tmp/gh-ost.throttle
# postpone-cut-over-flag-file: /tmp/ghostpost.postpone [set]
# panic-flag-file: /tmp/stop.flag
# Serving on unix socket: /tmp/ghost.sock
Copy: 0/100000 0.0%; Applied: 0; Backlog: 0/1000; Time: 0s(total), 0s(copy); stream
Copy: 0/100000 0.0%; Applied: 0; Backlog: 0/1000; Time: 1s(total), 1s(copy); stream
Copy: 1500/100000 1.5%; Applied: 0; Backlog: 0/1000; Time: 2s(total), 2s(copy); str
Copy: 3000/100000 3.0%; Applied: 0; Backlog: 0/1000; Time: 3s(total), 3s(copy); str
Copy: 5500/100000 5.5%; Applied: 0; Backlog: 0/1000; Time: 4s(total), 4s(copy); str
Copy: 7500/100000 7.5%; Applied: 0; Backlog: 0/1000; Time: 5s(total), 5s(copy); str
Copy: 9000/100000 9.0%; Applied: 0; Backlog: 0/1000; Time: 6s(total), 6s(copy); str
Copy: 10500/100000 10.5%; Applied: 0; Backlog: 0/1000; Time: 7s(total), 7s(copy); s
Copy: 13500/100000 13.5%; Applied: 0; Backlog: 0/1000; Time: 8s(total), 8s(copy); s
Copy: 15500/100000 15.5%; Applied: 0; Backlog: 0/1000; Time: 9s(total), 9s(copy); s
Copy: 17500/100000 17.5%; Applied: 0; Backlog: 0/1000; Time: 10s(total), 10s(copy);
```

2. Log on to an RDS MySQL instance through DMS.

3. In the left side, temporary tables ending with _gho and _ghc are displayed.

4. Run the `rm/tmp/ghostpost.postpone` command to start table swapping. The results are as follows:

```
Copy: 100000/100000 100.0%; Applied: 0; Backlog: 0/1000; Time: 9m0s(total), 56s(copy); streamer: mysql-bin.000015:520562237;
Copy: 100000/100000 100.0%; Applied: 0; Backlog: 0/1000; Time: 9m30s(total), 56s(copy); streamer: mysql-bin.000015:520674422;
# Migrating `test`.`testfs`; Ghost table is `test`.`_testfs_gho`
# Migrating                mysql.rds.aliyuncs.com:3306; inspecting                         mysql.rds.aliyuncs.com:3306
# Migration started at Thu Jun 13 17:22:50 +0800 2019
# chunk-size: 500; max-lag-millis: 1500ms; dml-batch-size: 10; max-load: ; critical-load: ; nice-ratio: 0.000000
# throttle-additional-flag-file: /tmp/gh-ost.throttle
# postpone-cut-over-flag-file: /tmp/ghostpost.postpone
# panic-flag-file: /tmp/stop.flag
# Serving on unix socket: /tmp/ghost.sock
Copy: 100000/100000 100.0%; Applied: 0; Backlog: 0/1000; Time: 9m31s(total), 56s(copy); streamer: mysql-bin.000015:520681377;
2019/06/13 17:32:23 binlogsyncer.go:107: [info] syncer is closing...
2019/06/13 17:32:23 binlogstreamer.go:47: [error] close sync with err: sync is been closing...
2019/06/13 17:32:23 binlogsyncer.go:122: [info] syncer is closed
```

> ⑦ **Note**   Ignore the displayed error. The cutover has been completed.

5. Check the tables and verify the data.

> ⑦ **Note**   Verify that the data is correct and then delete the _ del table.

```
【Execute: (1)】

Alter table mysqltest.testfs engine innodb

Success, Time Consumed: [13ms.]
```

Solution 3

This solution uses Alibaba Cloud Data Transmission Service (DTS) to synchronize data from an original table to a temporary table in real time, and then locks the original table and renames the tables during off-peak hours. This solution can migrate a large number of tables simultaneously.

Procedure

1. Log on to an RDS MySQL instance through DMS.

2. In the top navigation bar, choose **SQL Operations > SQL Window**.

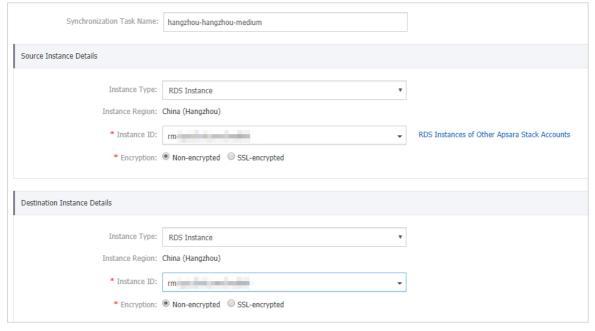3. Run the following command to create a temporary table:

```
CREATE TABLE `testfs_tmp` (
 `id` int(11) NOT NULL AUTO_INCREMENT,
 `vc` varchar(8000) DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=innodb DEFAULT CHARSET=utf8
```
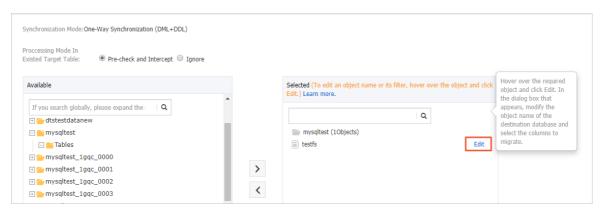
4. Purchase DTS instances.

> ⑦ **Note**   DTS instances are charged. For more information, see Data Transmission Service Pricing.

5. In the left-side navigation pane of the DTS console, click **Data Synchronization**.

6. Find the purchased DTS instance and click **Configure Synchronization Channel** in the Actions column.
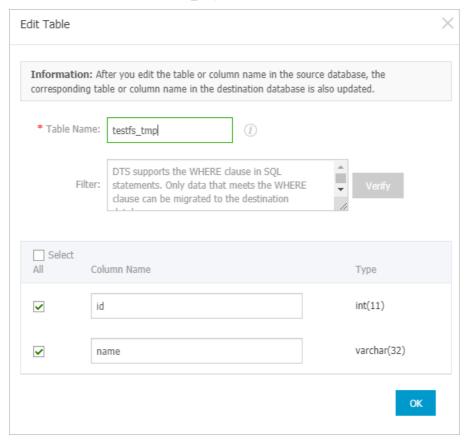
7. Configure the following parameters.

Category	Parameter	Description
Source Instance Details	Instance Type	Select **RDS Instance**.
	Instance ID	Select the RDS instance for which you want to switch the storage engine.
	Encryption	Select **Non-encrypted** or **SSL-encrypted**. To select **SSL-encrypted**, you must enable SSL Encryption. Enabling SSL Encryption will significantly increase CPU consumption.
Destination Instance Details	Instance Type	Select **RDS Instance**.
	Instance ID	Select the RDS instance for which you want to switch the storage engine.
	Encryption	Select **Non-encrypted** or **SSL-encrypted**. To select **SSL-encrypted**, you must enable SSL Encryption. Enabling SSL Encryption will significantly increase CPU consumption.

8. Click **Set Whitelist and Next**.

9. Wait until synchronization accounts are created. Then, click **Next**.

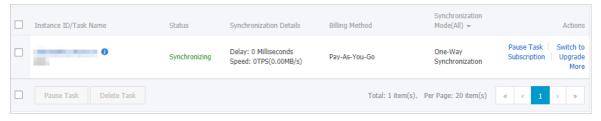10. Move the testfs table on the left to the right and click **Edit**.

Promotions and Notifications·[Notic
e] The storage engine was switched
from TokuDB to InnoDB

ApsaraDB for RDS

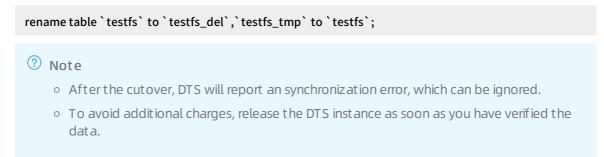11. Set **Database Name** to testfs_tmp, and click **OK**.

12. Click **Next**.

13. Select **Initial Full Data Synchronization** and click **Precheck**.

14. Wait until the precheck is completed, and click **Close**.

15. The wait time for data synchronization is 0 ms.

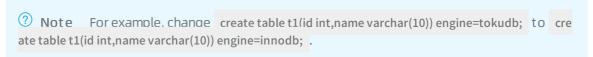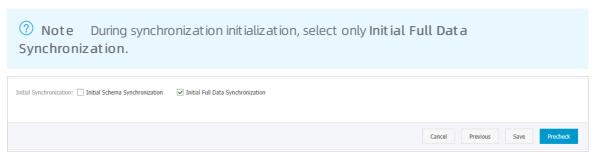16. Run the command to rename tables in the SQL window of DMS:

```
rename table `testfs` to `testfs_del`,`testfs_tmp` to `testfs`;
```

> ? **Note**
> ○ After the cutover, DTS will report an synchronization error, which can be ignored.
> ○ To avoid additional charges, release the DTS instance as soon as you have verified the data.

Solution 4

This solution uses DTS to synchronize data from a database instance to a new instance. This solution applies to instances that require instance upgrade or can accept a relatively long service downtime.

Procedure

1. Export all schema scripts from the source instance, and delete or modify the engine part in the scripts.

> ? **Note** For example, change `create table t1(id int,name varchar(10)) engine=tokudb;` to `create table t1(id int,name varchar(10)) engine=innodb;`.

2. Create an RDS instance, and use the modified scripts to create databases and tables.

3. Use DTS to migrate data from the source instance to a new instance. For more information, see Create a real-time synchronization task between RDS instances.

> ? **Note** During synchronization initialization, select only **Initial Full Data Synchronization**.

4. After confirming that there are no synchronization delays, switch the application connection address to the endpoint of the new instance.

10.[Notice] End of discounts for dedicated proxies on ApsaraDB RDS for MySQL instances

The provision of the first enabled dedicated proxy free of charge is ended on August 31, 2020. Since September 1, 2020, you are charged for every dedicated proxy that you enable on your RDS instance. The processing capabilities of dedicated proxies are enhanced. In normal cases, each dedicated proxy can process up to 20,000 requests per second.

Effective date

August 31, 2020

Description

- The provision of the first dedicated proxy free of charge is ended. You are now charged for every dedicated proxy that you enable on your RDS instance.

- The processing capabilities of dedicated proxies are enhanced. In normal cases, each dedicated proxy can process up to 20,000 requests per second.

> ⑦ **Note**   The discounts that are provided for the upgrade from shared proxy to dedicated proxy remain unchanged. For more information, see Upgrade an ApsaraDB RDS for MySQL instance from shared proxy to dedicated proxy.

Billing

Dedicated proxies are billed on a pay-as-you-go basis. For more information about the prices, see What are dedicated proxies?

Introduction to dedicated proxies

Database proxies reside between your database system and your application. They receive requests from your application and then route the requests to the primary and read-only RDS instances in your database system. Dedicated proxies are easy to use and maintain, and provide high availability and high performance. In addition, dedicated proxies provide advanced features, such as automatic read/write splitting, transaction splitting, and connection pool.

Dedicated proxies use independent proxy computing resources. Therefore, dedicated proxies have the following benefits over shared proxies:

- Dedicated proxies provide higher stability.

- Dedicated proxies provide higher isolation.

- Dedicated proxies provide higher performance. In most cases, each dedicated proxy can process up to 20,000 requests per second.

- Dedicated proxies support scaling. You can increase the number of dedicated proxies based on your business requirements. For more information, see Adjust the number of dedicated proxies for an ApsaraDB RDS for MySQL instance.

- Dedicated proxies support performance monitoring. The monitoring data provides a reference for you to adjust the number of dedicated proxies. For more information, see View the monitoring data

of dedicated proxies for an ApsaraDB RDS for MySQL instance.

- A unified dedicated proxy endpoint is used to connect to all the enabled dedicated proxies. You do not need to frequently update the endpoint configuration on your application. This reduces maintenance costs. For more information, see Create a proxy endpoint for a dedicated proxy. The dedicated proxy endpoint that you are using remains connected unless you release the proxy instance. For example, you may enable the read/write splitting feature during peak hours, and then release the read-only RDS instances and disable the feature after peak hours. In these cases, you do not need to update the endpoint configuration on your application because the dedicated proxy endpoint that you are using is still connected.

- Dedicated proxies support automatic read/write splitting. This reduces maintenance costs. For more information, see Configure read/write splitting for an ApsaraDB RDS for MySQL instance. In normal cases, after the read-only RDS instances are created, you must manually add the endpoints of the primary and read-only RDS instances to your application to implement read/write splitting. If you enable dedicated proxies, you need to add only a unified dedicated proxy endpoint to your application. This way, all the requests from your application are sent to the dedicated proxy endpoint. Then, the dedicated proxy endpoint routes read requests to the read-only RDS instances and write requests to the primary RDS instance based on the read weights of these instances. You do not need to modify the configuration data on your application even if you create more read-only RDS instances or if you delete existing read-only RDS instances.

- Dedicated proxies support more advanced features, such as connection pool and transaction splitting. For more information, see Connection pool and Transaction splitting.

For more information, see 什么是数据库代理

11.[Important] RDS network link upgrade

To ensure stability and high performance, we recommend that you upgrade the network connection mode of your ApsaraDB for RDS instance from the safe mode (database proxy mode) to the high-performance mode (standard mode).

Potential risks of not performing the upgrade

If you do not perform the upgrade, network jitter may occur when you attempt to access resources. This causes interruptions to your business. To ensure stability, we recommend that you perform the upgrade as soon as possible.
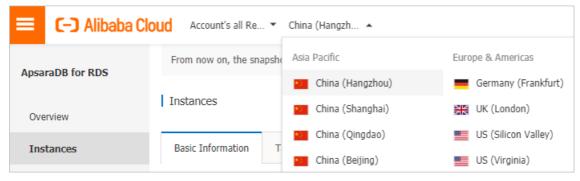
Benefits of the upgrade

- Your RDS instance is more stable.

- The average response time decreases by 20%, and the performance of your RDS instance increases.

Instances that need to be upgraded

You must upgrade the network connection modes of all your RDS instances that run MySQL, PostgreSQL, PPAS, or HybridDB for PostgreSQL engines in safe mode (database proxy mode) with read/write splitting disabled. To check whether an RDS instance is in safe mode, follow these steps:

1. Log on to the ApsaraDB for RDS console.

2. In the top navigation bar, select the region where the target RDS instance resides.

3. Find the target RDS instance and click its ID.

4. In the left-side navigation pane, click Database Connection. In the Database Connection section of the Instance Connection tab, check the setting of **Database Proxy (Safe Mode)**.

   - If the mode is **Disabled**, you do not need to upgrade the network connection mode of the RDS instance.

   - If the mode is **Enabled**, you must upgrade the network connection mode of the RDS instance.

> ⑦ Note
>
> ▪ If the RDS instance runs MySQL with read/write splitting enabled, see Upgrade an
> ApsaraDB RDS for MySQL instance from shared proxy to dedicated proxy.
>
> ▪ If the RDS instance is a primary instance to which read-only instances are attached,
> you only need to upgrade the network connection mode of the RDS instance. The
> system automatically upgrades the network connection modes of the read-only
> instances.

Impacts of the upgrade

- While you perform the upgrade, there may be a 30-second brief disconnection. Make sure that your
  application is configured to automatically reconnect to your RDS instance.

- In database proxy mode, the multi-statement function is enabled at the protocol layer by default. If
  the multi-statement function is disabled after the upgrade and you execute multiple SQL
  statements, the system reports SQL statement execution errors. We recommend that you check and
  add connection parameters before the upgrade. For example, add the allowMultiQueries parameter
  in the JDBC API as follows:

```
dbc:mysql:///test? allowMultiQueries=true
```

Method 1 to perform the upgrade

1. Navigate to the **Database Connection** page in the ApsaraDB for RDS console and click **Switch
   Access Mode**.

2. In the dialog box that appears, click **Confirm** to disable the database proxy mode.

3. Verify that your database services are properly running.

   > ⑦ Note   Do not skip this step.

Method 2 to perform the upgrade

> ⑦ Note   This method is suitable only for some RDS instances.

1. Navigate to the **Database Proxy** page in the ApsaraDB for RDS console and click the slider next to
   Database Proxy (Safe Mode).

2. In the dialog box that appears, click **Confirm** to disable the database proxy mode.

3. Verify that your database services are properly running.

   > ⑦ Note   Do not skip this step.

FAQ

1. How do I determine whether I need to upgrade the network connection mode of my RDS instance?

   For more information, see the "Instances that need to be upgrade" section.

2. Why am I unable to upgrade the network connection mode of my RDS instance?

If read/write splitting is enabled, you cannot upgrade the network connection mode of your RDS instance. An upgrade solution is under development for RDS instances that have read/write splitting enabled.

3. Which configuration data do I need to modify on my application after the upgrade?

While you upgrade the network connection mode, there may be a 30-second brief disconnection. You must configure your application to automatically reconnect to your RDS instance. If no automatic reconnection mechanism is configured, you may need to manually restart services. After the upgrade, the endpoints and IP addresses of your RDS instance remain unchanged. You do not need to update this information on your application.

4. Can I switch the network connection mode of my RDS instance to the safe mode (database proxy mode)?

Yes, you can switch the network connection mode of your RDS instance to the safe mode (database proxy mode). However, you do not need to do so. The safe mode is suitable for communication over both the Internet and an internal network. These types of communication are also supported by the high-performance mode (standard mode).

5. If my RDS instance is attached with read-only instances, do I need to upgrade the network connection mode of each read-only instance separately?

No, you only need to upgrade the network connection of your RDS instance. The system automatically upgrades the network connection modes of the attached read-only instances.