

Document Database Service

Product Notices

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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 Cycle

- High-risk vulnerabilities
Document Database Service (DDS) fixes vulnerabilities within one month after the community detects them and releases fixing solutions. The fixing policies are the same as those of the community.
- Other vulnerabilities
Upgrade versions to fix other vulnerabilities.

Fixing Statement

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

2 Product Notices

2.1 [Notice] Starting OBT for DDS 4.4 on February 2, 2023

Huawei Cloud will start open beta testing (OBT) for Document Database Service (DDS) 4.4 on February 2, 2023.

OBT Time and Regions

- Regions CN North-Beijing4, CN East-Shanghai1, CN South-Guangzhou, and AP-Bangkok from February 2, 2023
- Other regions from April 1, 2023

How to Apply for a Trial

To apply for a trial, you can log in to the DDS console, click **Buy DB Instance**, set **Billing Mode** to **Pay-per-use**, **Region** to **CN North-Beijing4**, **CN East-Shanghai1**, **CN South-Guangzhou**, or **AP-Bangkok**, and **Compatible MongoDB Version** to **4.4**. Configure other parameters based on your requirements, click **Next**, and then click **Submit**.

NOTE

[Huawei Cloud Service Level Agreement](#) is not guaranteed for DDS instances during the OBT.

Constraints

The following features are not supported during the OBT. You can use them only after DDS 4.4 is put into commercial use.

- Buying yearly/monthly instances
- Removing nodes from a replica set instance
- By default, the number of vCPUs for a single instance during the OBT cannot exceed 50. To apply for larger specifications, [submit a service ticket](#) or call us at +86-4000-955-988 or +86-950-808.

- One IAM user can create only one OBT instance in a region. To increase the OBT instance quota, [submit a service ticket](#) or call us at +86-4000-955-988 or +86-950-808.

2.2 [Notice] Specifications with CPU-Memory Ratio of 1:8 Will Be Available for x86-Powered Enhanced II Replica Set Instances and Cluster Shards on February 15, 2023

From February 15, 2023, DDS will provide the specifications with CPU-memory ratio of 1:8 for x86-powered enhanced II replica set instances and cluster shards.

Specifications

Table 2-1 Replica set instances

Architecture	Nodes	CPU Type	Specification Type	vCPUs & Memory
Replica set	Three	x86	Enhanced II	2 vCPUs, 16 GB
Replica set	Three	x86	Enhanced II	4 vCPUs, 32 GB
Replica set	Three	x86	Enhanced II	8 vCPUs, 64 GB
Replica set	Three	x86	Enhanced II	16 vCPUs, 128 GB
Replica set	Three	x86	Enhanced II	32 vCPUs, 256 GB
Replica set	Five	x86	Enhanced II	2 vCPUs, 16 GB
Replica set	Five	x86	Enhanced II	4 vCPUs, 32 GB
Replica set	Five	x86	Enhanced II	8 vCPUs, 64 GB
Replica set	Five	x86	Enhanced II	16 vCPUs, 128 GB
Replica set	Five	x86	Enhanced II	32 vCPUs, 256 GB
Replica set	Seven	x86	Enhanced II	2 vCPUs, 16 GB

Architecture	Nodes	CPU Type	Specification Type	vCPUs & Memory
Replica set	Seven	x86	Enhanced II	4 vCPUs, 32 GB
Replica set	Seven	x86	Enhanced II	8 vCPUs, 64 GB
Replica set	Seven	x86	Enhanced II	16 vCPUs, 128 GB
Replica set	Seven	x86	Enhanced II	32 vCPUs, 256 GB

Table 2-2 Cluster instances

Architecture	Component	CPU Type	Specification Type	vCPUs & Memory
Cluster	shard	x86	Enhanced II	2 vCPUs, 16 GB
Cluster	shard	x86	Enhanced II	4 vCPUs, 32 GB
Cluster	shard	x86	Enhanced II	8 vCPUs, 64 GB
Cluster	shard	x86	Enhanced II	16 vCPUs, 128 GB
Cluster	shard	x86	Enhanced II	32 vCPUs, 256 GB

Releasing Time and Regions

- Regions CN-Hong Kong, AP-Singapore, and AP-Bangkok from February 15, 2023
- Other regions soon

Impacts

To meet your higher requirements on memory, you can select the specifications with CPU-memory ratio of 1:8.

2.3 [Notice] DDS 4.4 OBT Invitation

Dear customer,

- Huawei Cloud has launched free open beta testing (OBT) for Document Database Service (DDS) 4.4 since February 2, 2023.
- This version is available for OBT in all regions.
- DDS 4.4 is compatible with new features of MongoDB 4.4, including mutable shard keys, hedged reads, default read and write concerns, and compound hashed shard keys. For details, see [What's New in DDS 4.4?](#)
- Compared with self-managed MongoDB databases, DDS is more flexible and allows you to customize instance configurations and required duration. All Huawei Cloud services run in secure and reliable data centers to better protect user data and maintain service stability. If you encounter any problem, contact Huawei Cloud technical support.

Quick Start


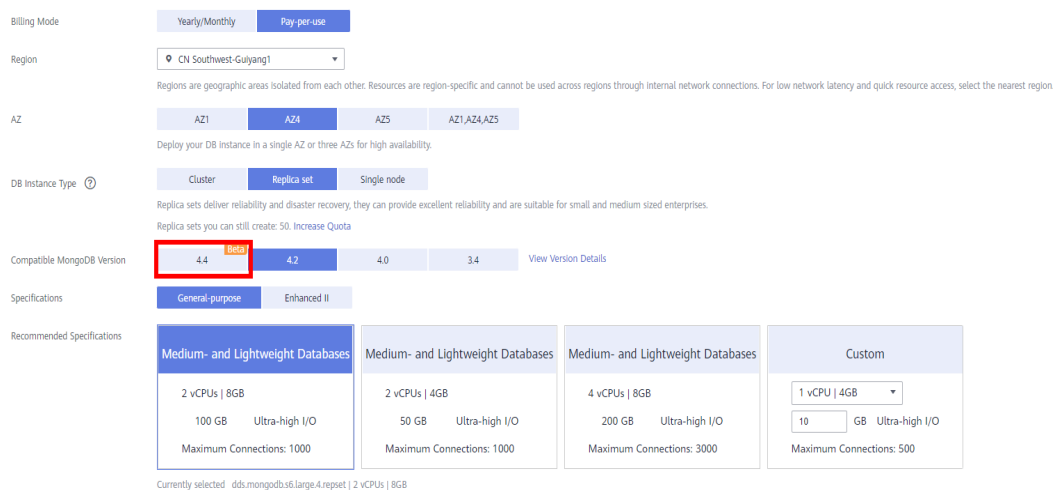
- Step 1** Open the [Huawei Cloud official website](#).
- Step 2** Click **Console** in the upper right corner of the page and log in to the Huawei Cloud management console using your Huawei ID.
- Step 3** Click  in the upper left corner of the page and choose **Databases > Document Database Service**.
- Step 4** In the upper right corner of the page, click **Buy DB Instance**.
- Step 5** Select your region and set **Compatible MongoDB Version to 4.4**. Set other configuration items as required. For details, see [Quick Config](#) and [Custom Config](#).

Figure 2-1 Configuration information



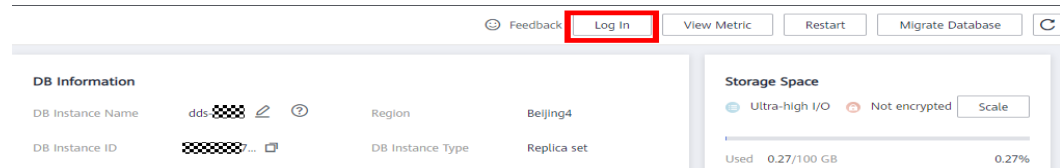
The screenshot displays the configuration interface for Document Database Service. Key elements include:

- Billing Mode:** Yearly/Monthly (selected), Pay-per-use.
- Region:** CN Southwest-Guylang.
- AZ:** AZ1, AZ4 (selected), AZ5, AZ1,AZ4,AZ5.
- DB Instance Type:** Cluster, Replica set (selected), Single node.
- Compatible MongoDB Version:** 4.4 (Beta, highlighted), 4.2, 4.0, 3.4.
- Specifications:** General-purpose (selected), Enhanced II.
- Recommended Specifications:**
 - Medium- and Lightweight Databases (selected): 2 vCPUs | 8GB, 100 GB Ultra-high I/O, Maximum Connections: 1000.
 - Medium- and Lightweight Databases: 2 vCPUs | 4GB, 50 GB Ultra-high I/O, Maximum Connections: 1000.
 - Medium- and Lightweight Databases: 4 vCPUs | 8GB, 200 GB Ultra-high I/O, Maximum Connections: 3000.
 - Custom: 1 vCPU | 4GB, 10 GB Ultra-high I/O, Maximum Connections: 500.

Currently selected: dds.mongodb.s6.large-4-repset | 2 vCPUs | 8GB

- Step 6** Click **Next** to create a DB instance for free.
- Step 7** After the instance is created, click its name on the **Instances** page and click **Log In**. You can log in to the instance through DAS. For details, see [DAS User Guide](#). For details about other connection methods, see [Connection Methods](#).

Figure 2-2 Logging in to a DB instance



----End

Notice on OBT

[Huawei Cloud Service Level Agreement](#) is not guaranteed for DDS instances during the OBT.

- Disclaimer
You shall understand and agree that although the OBT service assures service availability and reliability, Huawei Cloud does not commit itself to the availability or reliability of any services during free trials. Huawei Cloud does not assume any responsibilities for your work or results generated by OBT services.
- Feedback
Huawei Cloud is willing to cooperate with you to solve problems and is committed to continuously improving service quality. In the event of any problems, you can call the customer service telephone number available at our official website to report faults and receive technical support.

Recommendations

- What Is DDS?
Huawei Cloud Document Database Service (DDS) is compatible with MongoDB and provides functions such as security audit, multi-account management, and point-in-time backup and restoration. It supports cluster, replica set, and single-node deployment architectures. For details, see [What Is DDS?](#)
- What's New in DDS 4.4?
DDS 4.4 enhances existing capabilities and improves availability. The new features are as follows:
 - Mutable Shard Keys
In DDS 4.2, you can change the shard key value, but you must migrate data across shards based on distributed transactions. This will increase performance overheads and is unable to prevent jumbo chunks and query hotspots. In DDS 4.4, you can run the **refineCollectionShardKey** command to add one or more suffix fields to an existing shard key to improve the distribution of existing data on chunks. The **refineCollectionShardKey** command has low performance overheads because this command does not involve any data migration.
 - Hedged Reads
To shorten the response time, DDS 4.4 provides the hedged read feature. In a sharded cluster, the mongos nodes route a read request from a client to multiple replica set nodes of a shard and return results from the first respondent to the client.

- Compound Hashed Shard Keys
 - In versions earlier than DDS 4.4, you can specify only the hash key with a single field. This may lead to uneven data distribution in collections across data shards.
 - DDS 4.4 supports compound hashed indexes. You can specify a single hashed field in compound indexes as the prefix or suffix field.
 - The flexible compound hashed indexes have many advantages and simplify the database table design. For example, a collection uses a monotonically increasing value as the shard key. Data from the latest access request is also written to the same shard, which results in a large shard and uneven distribution of data across shards.
 - For more information about new features, see [DDS 4.4 Function Overview](#).
 - For details about DDS features and MongoDB compatibility, see [Compatibility Details](#).

2.4 [Product Discontinuation Notice] Huawei Cloud Document Database Service (DDS) Single Node Instances Will Be Discontinued on July 15, 2023

Discontinuation Date

On July 15, 2023, Huawei Cloud will discontinue the sale of DDS single node instances.

Scope

All regions

Impacts

- After the sale is discontinued, DDS single node instances will no longer be available for purchase.
- If you have already purchased such instances, you can still use them normally. However, to obtain higher performance, you are advised to use Data Replication Service (DRS) to upgrade single node instances to replica set instances. For details, see [From MongoDB to DDS](#).
- If you have any questions or suggestions, please [submit a service ticket](#) or call us at +86-4000-955-988 or +86-950-808.

FAQ

What Can I Use as an Alternative to DDS Single Node Instances After the Sale Is Discontinued?

- Use DDS replica set instances (first choice).

- If you do need a single node instance, create one by referring to the official documentation of MongoDB Community Edition (second choice).

2.5 [Notice] Huawei Cloud DDS 4.4 Will Be Released Commercially on Oct 08, 2023

Bulletin Content

Dear customer,

On October 08, 2023, Huawei Cloud will commercially release Document Database Service (DDS) version 4.4. It is estimated that the commercial use of DDS 4.4 will be completed in all regions within two weeks. For more information about the price details, see the Price Calculator page at <https://www.huaweicloud.com/intl/en-us/pricing/index.html#/dds>.

Impacts

After DDS 4.4 is put into commercial use, it will no longer be provided for free. To avoid generating any unexpected expenditures, if you do not want to continue using DDS commercially, delete your DB instances in a timely manner.

3 Version Description

3.1 Version Information

Document Database Service (DDS) is a MongoDB-compatible cloud database service that is secure, high available, and reliable. It provides DB instance creation, scaling, disaster recovery, backup, restoration, monitoring, and alarm reporting functions with just a few clicks on the DDS console.

Release Notes

DDS is compatible with community versions 3.4, 4.0, 4.2, and 4.4. For details, see [Mapping Between DDS Versions and Community Versions](#).

Lifecycle Planning of DDS Versions

NOTE

- A bulletin will be released before a version reaches EOM/EOS. You can use [Data Replication Service \(DRS\)](#) to switch the version to a later version before the EOS.
- End of Marketing (EOM): indicates that the sale of this version is stopped.
- End of Service & Support (EOS): indicates that the service of this version is stopped. You are advised to use the engine of the latest version when running jobs. After this date, Huawei Cloud will no longer provide any technical support for the software version.

Table 3-1 DDS version lifecycle planning

Version	Status	Planned EOM Time	Planned EOS Time
Enhanced Edition 3.4	Unavailable	-	-
3.2	Unavailable	-	-
3.4	Commercial use	June 2023	June 2025
4.0	Commercial use	April 2025	April 2027

Version	Status	Planned EOM Time	Planned EOS Time
4.2	Commercial use	April 2026	April 2028
4.4	Commercial use	April 2027	April 2029

3.2 DDS 4.4 Function Overview

Document Database Service (DDS) is an easy-to-use MongoDB-compatible database service that is secure, highly available, reliable, and scalable. It provides DB instance creation, scaling, disaster recovery, backup, restoration, monitoring, and alarm reporting functions with just a few clicks on the DDS console. Huawei Cloud has launched open beta testing (OBT) for Document Database Service (DDS) 4.4 since February 2, 2023. DDS 4.4 is an enhanced version to resolve customers' pain points. For details about feature changes, see [Compatibility Details](#).

Mutable Shard Keys

In a DDS sharded cluster, a good [shard key](#) is critical because it determines whether a sharded cluster has good scalability under a specified workload. When using DDS, even if you select an appropriate shard key, there may be jumbo chunks due to workload changes, or service traffic may be sent to a single shard.

In DDS 4.2, you can change the shard key value, but you must migrate data across shards based on distributed transactions. This will increase performance overheads and is unable to prevent jumbo chunks and query hotpots. In DDS 4.4, you can run the [refineCollectionShardKey](#) command to add one or more suffix fields to an existing shard key to improve the distribution of existing data on chunks. The [refineCollectionShardKey](#) command has low performance overheads because this command does not involve any data migration. A shard key must be supported by an index. You must create an index that supports the new shard key before you run the [refineCollectionShardKey](#) command.

The following operations demonstrate how to use mutable shard keys on a DDS 4.4 cluster instance:

1. Run the [shardCollection](#) command to perform range-based sharding on the **coll** collection in the **test** database based on the *customer_id* field.

```
use admin
db.adminCommand({
  shardCollection: "test.coll",
  key: { "customer_id": 1 }
})
```

2. To change the shard key of the **coll** collection to **{"customer_id": 1, "order_id": 1}**, create an index.

```
use test
db.coll.createIndex({
  "customer_id": 1,
  "order_id": 1
})
```

3. Run the **refineCollectionShardKey** command to add *order_id* as a suffix field to change the shard key. (You can run the **sh.status()** command to verify the change.)

```
use admin
db.adminCommand( {
  refineCollectionShardKey: "test.coll",
  key: { customer_id: 1, order_id: 1 }
} )
```

Hedged Reads

Page response speed affects user experience and is closely related to economic benefits. If a page takes more than 3 seconds to load, most visitors will leave the page. To solve this problem, DDS 4.4 provides the hedged read feature. In a sharded cluster, the mongos nodes route a read request from a client to multiple replica set nodes of a shard and return results from the first respondent to the client.

The hedged read feature is enabled for specific operations using the **Read Preference** parameter.

- If you set the **Read Preference** parameter to **nearest**, the hedged read feature is enabled by default.
- If you set the **Read Preference** parameter to **primary**, the hedged read feature is not supported.
- If you set the **Read Preference** parameter to a value other than **nearest** or **primary**, you must set the **hedgeOptions** parameter to **true** to enable the hedged read feature.

Example:

```
db.collection.find({}).readPref(
  "secondary",           // mode
  [ { "usage": "read" }, { } ], // tag
  { enabled: true }      // hedgeOptions
)
```

Default Read and Write Concerns

In versions earlier than DDS 4.4, if you do not specify **readConcern** or **writeConcern** for a specific operation, the default value is used. For example, the default value of **readConcern** is **local**, and the default value of **writeConcern** is **{w: 1}**. These default values cannot be changed. If you want to ensure strong data consistencies and set **writeConcern** for all insert operations to **{w: majority}** and **readConcern** for all read operations to **majority**, you must specify this configuration in all DDS access code.

In DDS 4.4, you can run the **setDefaultRWConcern** command to specify the global default **readConcern** and **writeConcern**. Example:

```
db.adminCommand({
  "setDefaultRWConcern" : 1,
  "defaultWriteConcern" : {
    "w" : "majority"
  },
  "defaultReadConcern" : { "level" : "majority" }
})
```

You can also run the `getDefaultRWConcern` command to obtain the current default values of `readConcern` and `writeConcern`.

Compound Hashed Shard Keys

In versions earlier than DDS 4.4, you can specify only the hash key with a single field. This may lead to uneven data distribution in collections across data shards.

DDS 4.4 supports compound hashed indexes. You can specify a single hashed field in compound indexes as the prefix or suffix field.

Example:

```
sh.shardCollection(  
  "test.coll",  
  { "fieldA" : 1, "fieldB" : 1, "fieldC" : "hashed" } // suffix field  
)  
  
sh.shardCollection(  
  "test.coll",  
  { "_id" : "hashed", "fieldA" : 1}           // prefix field  
)
```

The flexible compound hashed indexes have many advantages and simplify the database table design. For example, a collection uses a monotonically increasing value as the shard key. Data from the latest access request is also written to the same shard, which results in a large shard and uneven distribution of data across shards. If compound hashed shard keys are not supported, you must compute the hash value of a single field, store the hash value in a special field of a document as the index value, and then use the range-based sharding feature to specify the index value as your shard key.

In DDS 4.4, you need only to specify the field as hashed index. This simplifies the business logic.

Other Usability Enhancements

1. Jumbo chunks are automatically balanced.
In earlier versions, jumbo chunks can be eliminated only by manually migrating chunks. In DDS 4.4, jumbo chunks can be automatically migrated and balanced. This function is performed in the background, reducing unnecessary alarms and relieving the pressure of O&M personnel.
2. Distributed transactions allow the size of a single document to exceed 16 MB.
In earlier versions, when you attempt to insert a document larger than 16 MB or update an existing document in a way that makes it larger than 16 MB, the DDS server returns an error. In DDS 4.4, this restriction is removed for distributed transactions to better meet actual service requirements.
3. The projection function is enhanced.
DDS 4.4 is fully compatible with the new projection syntax and usage of MongoDB 4.4. For example:
 - In projection, aggregation syntax is supported, for example, using aggregation operators.
 - In projection, data is encoded in JSON format and nested to map specified fields.

- In projection, the **\$** character can be used to specify a specific index subelement for a mapped array element.
4. The **allowDiskUse** option is added to the **find** command.
- In versions earlier than DDS 4.4, if the memory usage for sort operations exceeds the limit, the query operations with blocked sorting will fail. In DDS 4.4, when **allowDiskUse** is set to **true**, the **find** command uses temporary files on the disk to support the non-indexed sorting operations that exceed the memory usage limit 100 MB.

Example:

```
db.coll.find({"location" : "unit12" })  
  .sort({"time" : 1})  
  .allowDiskUse()
```

Summary

DDS 4.4 enhances existing capabilities and improves usability. For more information about other optimizations than the preceding features, see [Compatibility Details](#).

4 Product Release Notes

4.1 Kernel Version Description

This section describes the kernel version updates of Document Database Service (DDS). This **upgrade** does not affect any functions or APIs.

Table 4-1 DDS 4.4 version updates

Version	Date	Description
4.4	May 2024	<ul style="list-style-type: none"> Optimized the CPU usage of changeStream. Resolved the problem that backup errors may occur when tables are deleted during backup. Added the effectiveUsers field to the query result of the db.currentOp() command. Supported mongo exporter.
	April 2024	<ul style="list-style-type: none"> Supported sharded tables for \$lookup. Supported \$startAfter for changeStream. Optimized the performance of distributed transactions in shard primary/standby switchover scenarios.
	March 2024	Resolved the problem that fields output by setWindowFields are missing.
	February 2024	<ul style="list-style-type: none"> Optimized the read performance of changeStream. Optimized the performance of clearing expired oplog data. Resolved the problem that geoNear is not displayed when explain() is executed.

Version	Date	Description
	January 2024	Resolved the problem that there is a possibility that regular expression matching fails.
	December 2023	<ul style="list-style-type: none"> Optimized the performance of querying a single document. Restricted the permission to run a risky <code>reIndex</code> command.
	November 2023	Resolved the problem that the command output is not displayed on the memory monitoring page after a command is executed.
	October 2023	<ul style="list-style-type: none"> Optimized the method for obtaining locks by running the <code>ServerStatus</code> command. Resolved the problem that there is a possibility that a secondary node fails to be promoted.
	September 2023	<ul style="list-style-type: none"> Supported index and collection creation in multi-document transactions. Supported <code>autosplit</code> setting for a single collection. Fixed the bug that the performance is inconsistent with that of MongoDB 4.4 when you create sparse indexes and set <code>find to null</code>.
	August 2023	<ul style="list-style-type: none"> Added the capability for proactively limiting the number of connections. Added the compatibility with Parallel Change Stream. Fixed the bug that aggregation commands can still be executed on cluster instances when read and write operations are disabled. Optimized the method for capturing slow query logs.
	July 2023	<ul style="list-style-type: none"> Optimized the compression algorithm of the storage engine. Automatically routed the <code>CreateIndex</code> command to the primary node for execution. Optimized the passive compact synchronization logic.

Version	Date	Description
	May 2023	Added totalTimeProcessingMicros , processingMethod , totalTimeTruncatingMicros and truncateCount to oplogTruncation in serverStatus .
	April 2023	Optimized the transaction execution logic.
	March 2023	<ul style="list-style-type: none"> Added automatic storage failover. Supported the defaultReadWriteConcern for replica set instances. Supported Point-In-Time Recovery (PITR) for cluster instances.
	January 2023	<ul style="list-style-type: none"> Optimized the tcmalloc memory management policy. Supported distributed large transactions.
	November 2022	<ul style="list-style-type: none"> Added the compound hash index. Added the mutable shard key values. Added the compatibility with mirrored reads.

Table 4-2 DDS 4.2 version updates

Version	Date	Description
4.2	May 2024	<ul style="list-style-type: none"> Optimized the CPU usage of changeStream. Added the effectiveUsers field to the query result of the db.currentOp() command. Supported mongo exporter.
	April 2024	Optimized the performance of distributed transactions in shard primary/standby switchover scenarios.
	March 2024	Supported the startAfter feature.
	February 2024	<ul style="list-style-type: none"> Optimized the read performance of changeStream. Optimized the performance of clearing expired oplog data. Resolved the problem that geoNear is not displayed when explain() is executed.

Version	Date	Description
	January 2024	Resolved the problem that there is a possibility that regular expression matching fails.
	December 2023	<ul style="list-style-type: none"> Optimized the performance of querying a single document. Restricted the permission to run a risky <code>reIndex</code> command.
	November 2023	Resolved the problem that the command output is not displayed on the memory monitoring page after a command is executed.
	October 2023	<ul style="list-style-type: none"> Optimized the method for obtaining locks by running the <code>ServerStatus</code> command. Resolved the problem that there is a possibility that a secondary node fails to be promoted.
	September 2023	<ul style="list-style-type: none"> Supported index and collection creation in multi-document transactions. Supported <code>autosplit</code> setting for a single collection.
	August 2023	<ul style="list-style-type: none"> Added the capability for proactively limiting the number of connections. Fixed the bug that certain sessions are occasionally killed when there are locks. Optimized the method for capturing slow query logs.
	July 2023	<ul style="list-style-type: none"> Optimized the compression algorithm of the storage engine. Automatically routed the <code>CreateIndex</code> command to the primary node for execution. Optimized the passive compact synchronization logic. Fixed the bug that the system session table occasionally fails to be updated due to the MongoDB open-source community vulnerability SERVER-39044.
	June 2023	<ul style="list-style-type: none"> Optimized the performance of the <code>update</code> operation on a 10 KB document in a replica set. Fixed the SERVER-37408 vulnerability. Fixed the SERVER-39074 vulnerability.

Version	Date	Description
	May 2023	Resolved the writeConcern error code matching issue after a primary/standby switchover.
	April 2023	<ul style="list-style-type: none"> Optimized the transaction execution logic. Fixed the bug that the execution of dropIndexes() with specified parameters is inconsistent with that of MongoDB 4.2. Fixed the bug that the restart is slow when emrc is set to true and dirty cache increases.
	March 2023	<ul style="list-style-type: none"> Added automatic storage failover. Reduced the primary/secondary replication delay. Supported Point-In-Time Recovery (PITR) for cluster instances.
	January 2023	<ul style="list-style-type: none"> Supported distributed large transactions. Fixed the SERVER-42518 vulnerability. Fixed the SERVER-37686 vulnerability.
	November 2022	<ul style="list-style-type: none"> Fixed the bug that MongoDB Compass occasionally fails to be connected through SSL. Fixed the bug that the performance is inconsistent with that of MongoDB 4.2 when find is set to null.
	October 2022	<ul style="list-style-type: none"> Added index consistency check. Fixed the CVE-2020-7921 vulnerability.
	September 2022	<ul style="list-style-type: none"> Supported index creation in the background by default. Opened the replSetGetConfig command.
	June 2022	<ul style="list-style-type: none"> Supported the ZSTD compression algorithm. Supported the releaseFreeMemory command for mongos nodes.

Table 4-3 DDS 4.0 version updates

Version	Date	Description
4.0	May 2024	None
	April 2024	None

Version	Date	Description
	March 2024	None
	February 2024	Resolved the problem that geoNear is not displayed when explain() is executed.
	January 2024	Resolved the problem that there is a possibility that regular expression matching fails.
	December 2023	<ul style="list-style-type: none"> Optimized the performance of querying a single document. Restricted the permission to run a risky reIndex command.
	November 2023	None
	October 2023	<ul style="list-style-type: none"> Optimized the method for obtaining locks by running the ServerStatus command. Resolved the problem that there is a possibility that a secondary node fails to be promoted.
	September 2023	Optimized the resizeOplog logic.
	August 2023	<ul style="list-style-type: none"> Fixed the bug that aggregation commands can still be executed on cluster instances when read and write operations are disabled. Fixed the bug that certain sessions are occasionally killed when there are locks. Optimized the method for capturing slow query logs.
	July 2023	<ul style="list-style-type: none"> Automatically routed the CreateIndex command to the primary node for execution. Optimized the passive compact synchronization logic. Fixed the bug that the system session table occasionally fails to be updated due to the MongoDB open-source community vulnerability SERVER-39044. Fixed the bug that NotMaster is displayed when a cluster instance is connected using Robot 3T and readPreference is set to secondaryPreferred by default.

Version	Date	Description
	June 2023	<ul style="list-style-type: none"> • Provided the enableCheckPassword parameter to enable or disable password complexity check. • Optimized the index deletion procedure to improve efficiency.
	May 2023	<ul style="list-style-type: none"> • Fixed the SERVER-37408 vulnerability. • Fixed the SERVER-39074 vulnerability.
	April 2023	<ul style="list-style-type: none"> • Fixed the bug that the execution of dropIndexes() with specified parameters is inconsistent with that of MongoDB 4.2. • Fixed the bug that the restart is slow when emrc is set to true and dirty cache increases.
	March 2023	<ul style="list-style-type: none"> • Added automatic storage failover. • Fixed the CVE-2018-20805 vulnerability.
	January 2023	<ul style="list-style-type: none"> • Fixed the SERVER-42518 vulnerability. • Fixed the SERVER-37686 vulnerability.
	November 2022	Fixed the bug that MongoDB Compass occasionally fails to be connected through SSL.
	October 2022	<ul style="list-style-type: none"> • Added index consistency check. • Fixed the CVE-2020-7921 vulnerability.
	July 2022	<ul style="list-style-type: none"> • Supported index creation in the background by default. • Opened the replSetGetConfig command.
	June 2022	Supported the releaseFreeMemory command for mongos nodes.

Table 4-4 DDS 3.4 version updates

Version	Date	Description
3.4	May 2024	None
	April 2024	Optimized aggregate query and supported mapping adding for \$project.
	March 2024	None
	February 2024	None
	January 2024	None

Version	Date	Description
	December 2023	Restricted the permission to run a risky reindex command.
	November 2023	None
	October 2023	Optimized the method for obtaining locks by running the ServerStatus command.
	September 2023	Displayed detailed slow query log information.
	August 2023	<ul style="list-style-type: none"> Fixed the bug that aggregation commands can still be executed on cluster instances when read and write operations are disabled. Fixed the bug that certain sessions are occasionally killed when there are locks. Optimized the method for capturing slow query logs.
	July 2023	Synchronized ReleaseFreeMemory to version 3.4.
	May 2023	<ul style="list-style-type: none"> Fixed the SERVER-37408 vulnerability. Fixed the SERVER-39074 vulnerability.
	April 2023	Fixed the bug that the activeSession on the standby config node in a cluster is not updated in a timely manner.
	March 2023	<ul style="list-style-type: none"> Added automatic storage failover. Fixed the CVE-2018-20805 vulnerability.
	January 2023	<ul style="list-style-type: none"> Fixed the SERVER-42518 vulnerability. Fixed the SERVER-37686 vulnerability.
	October 2022	<ul style="list-style-type: none"> Fixed the CVE-2020-7921 vulnerability. Fixed the bug that the value of heapprofile is incorrect.
	July 2022	Resolved the weak password verification issue.
	June 2022	Supported mongos log anonymization.