Oracle® AI Database Database Release Notes





Oracle Al Database Database Release Notes, 26ai

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Preface

This document describes last-minute features and changes that are not included in the Oracle Al Database Documentation Library for Oracle Al Database 26ai.

- Audience
- Related Resources

Audience

This document is relevant only to Oracle AI Database 26ai and documents new features, changes, unsupported products, preinstallation requirements, generic and platform-specific bug fixes, and known issues that are not included in the Oracle AI Database documentation library.

Related Resources

Refer to the following documentation for more information related to this release:

- http://docs.oracle.com/en/database/database.html
- For licensing information, refer to Oracle AI Database Licensing Information User Manual.
- Additional readme or release notes files also exist. Refer to <u>Other Readmes, Release</u> <u>Notes, or Installation Guides</u>.

Purpose of These Release Notes

More recent versions of some Oracle Al Database 26ai documentation may be available in either HTML or PDF format.

Updates to this release note document can occur after it is released. Check for updates to this document and view other Oracle documentation at:

http://docs.oracle.com/en/database/database.html

For licensing information, refer to Oracle AI Database Licensing Information User Manual.

Additional readme or release notes files also exist. Refer to the <u>Other Readmes</u>, <u>Release Notes</u>, or <u>Installation Guides</u>.

Issues Affecting All Platforms for Oracle Al Database 26ai

These topics contain last-minute features and changes that affect all platforms for Oracle Al Database 26ai.

- <u>Restrictions for Oracle Al Vector Search</u>
 The following are restrictions for Oracle Al Vector Search in Oracle Al Database 26ai.
- Restrictions for JavaScript Object Notation and JSON-Relational Duality Views
 The following are general restrictions for JavaScript Object Notation (JSON) and restrictions for JSON-relational duality views in Oracle AI Database 26ai.
- Property Graph Features That Work With Oracle AI Database 26ai
 Oracle Graph Server and Client Release 25.1 works with the following Property Graph features of Oracle AI Database 26ai.
- Unrestricted Bulk Transactions
 The following are restrictions for Unrestricted Bulk Transactions in Oracle AI Database
- Deprecated and Desupported Features for Oracle AI Database
 Oracle AI Database 26ai introduces behavior changes for your database in addition to new features.
- Other Readmes, Release Notes, or Installation Guides
 Refer to the following Oracle products and the location of their associated readme, release notes, or installation guide for additional information.

Restrictions for Oracle AI Vector Search

The following are restrictions for Oracle AI Vector Search in Oracle AI Database 26ai.

- The feature Open Neural Network Exchange (ONNX) is only supported on the x86-64 Linux and Linux for Arm (aarch64) platforms. ONNX is not supported on Microsoft Windows.
- To size the Vector Pool manually, use the VECTOR_MEMORY_SIZE initialization parameter. You can dynamically modify this parameter at the following levels:
 - At the multitenant container database (CDB) level, VECTOR_MEMORY_SIZE specifies the
 current size of the Vector Pool. Reducing the parameter value evicts vector usage that
 exceeds the new size.
 - At the pluggable database (PDB), level VECTOR_MEMORY_SIZE specifies the maximum Vector Pool usage allowed by a PDB. Reducing the parameter value evicts vector usage that exceeds the new quota.



① Note

When VECTOR_MEMORY_SIZE is set to 1 and sga_target is greater than 0 upon CDB initialization, HNSW index creation will automatically grow the vector memory pool to satisfy the new index. In this configuration, the PDB VECTOR_MEMORY_SIZE value will default to 0 and cannot be changed using the ALTER SYSTEM command.

Table-Level Support

- Truncate or move table operations are supported but will mark global vector indexes unusable.
- Partition management (PMOP) operations (for example, DROP, TRUNCATE, EXCHANGE, MERGE, MOVE, COALESCE, and SPLIT) are supported but will mark global vector indexes unusable.
- Adding a hash partition will also mark global vector indexes unusable. However, adding a range or list partition will not mark global vector indexes unusable.
- Vector columns are not supported either in or as the following:
 - * Index organized tables (IOTs) (neither as a primary key or as a non-key column)
 - Clusters or cluster tables
 - * Global temporary tables
 - * Blockchain tables
 - Immutable tables
 - * Partitioning and subpartitioning keys
 - Primary and foreign keys
 - Unique and check constraints
 - Default value
 - Modify column
 - * Manual segment space management (MSSM) tablespace (only a SYS user can create vectors as BasicFiles in MSSM tablespace)
 - Continuous Query Notification (CQN) queries
 - * Non-vector indexes such as B-tree, bitmap, reverse key, text, spatial indexes
- For local Inverted Flat File (IVF) indexes:
 - * ADD non-hash vector indexes are supported but will mark vector indexes unusable.
 - * All other PMOP operations are not supported and return an error when attempted.

Type-Level Support

Vector column specification does not support the following:

- Encryption clause
- SecureFiles storage clause

Query-Level Support

- The partition row-limiting clause does not use vector indexes.
- There is limited cost-based optimization support for vector indexes.
- SQL constructs with vector columns do not support the following:



- Distinct, Count Distinct
- * Order By, Group By
- * Join condition
- Comparison operators (for example, >, <, =)
- Index-Level Support
 - Vector indexes do not support the following:
 - External tables
 - * IOTs
 - Clusters or cluster tables
 - Global temporary tables
 - Blockchain tables
 - * Immutable tables
 - Materialized views
 - There is no support for the following:
 - Function-based vector index
 - * Alter index DDL for vector indexes
 - Online creation of vector indexes
- The latest python-oracledb, node-oracledb, JDBC, ODP.NET, and OCI drivers enable native binds.
 - All other SQL drivers need to use CLOBs or VARCHAR2 for binds and for vector definitions.
 - Oracle clients from release 19c and release 21c will see vectors as CLOBs.
- Integration with the following is not supported:
 - Vector indexes with transportable tablespaces are not supported with Oracle Data Pump.
 - Oracle Al Database Advanced Queuing
 - Oracle Al Database Gateways
- A maximum of 65535 dimensions is supported.
- Data redaction is not supported for the VECTOR data type. Specifically, you cannot:
 - Add a data redaction policy on a vector column.
 - Alter a table to modify a column to the VECTOR data type if the column has a redaction policy defined on it.



Restrictions for JavaScript Object Notation and JSON-Relational Duality Views

The following are general restrictions for JavaScript Object Notation (JSON) and restrictions for JSON-relational duality views in Oracle AI Database 26ai.

General Restrictions for JavaScript Object Notation (JSON)

JSON collection views are not supported in this release.

Restrictions for Oracle GoldenGate Replication of JSON-Relational Duality Views

- Direct loads (INSERT /*+APPEND*/) are downgraded to conventional or serial inserts.
- Oracle Data Pump EXPORT does not export the ENABLE LOGICAL REPLICATION clause in the CREATE DUALITY VIEW and ALTER DUALITY VIEW statements.
- Executing DBMS_METADATA.GET_DDL on a duality view does not show the ENABLE or DISABLE LOGICAL REPLICATION clause.
- On base tables of a duality view with replication enabled:
 - Oracle Data Pump direct path load is downgraded to conventional inserts.
 - Direct load (INSERT /*+APPEND*/) is downgraded to conventional or serial inserts.
 - Parallel DMLs (PDMLs) are downgraded to conventional inserts.
 - Bulk DDLs, like TRUNCATE TABLE and ALTER TABLE PARTITION, return an error.
- Logical replication cannot be enabled on a duality view that has generated fields or a subobject without an identifier (for example, primary key, unique key, identity column, or the field _id).

Restrictions for JSON-Relational Duality Views

- The following tables can only participate in a JSON-relational duality view using read-only generated fields:
 - System-partitioned tables
 - Partitioned-extended tables
 - Sharded tables
 - Views (except editioning views). Views include materialized views and duality views.
 - External tables
 - Hybrid partitioned tables
 - Global or private temporary tables
 - Remote tables (for example, tables over database links)
- Updates of duality views across database links are not supported.
- You cannot create a functional index, JSON search index, or JSON multivalue index on the DATA column of a duality view.
- The use of a JSON search index on the column of an underlying table is not supported.
- Virtual private database (VPD) and Oracle Real Application Security (RAS) on duality views are not supported.



- VPD on underlying tables are supported only if all statements (INSERT, UPDATE, DELETE, or SELECT) are included in the policy. However, when all statement types are not included in the VPD policy, there is no error returned but DML and query results may be unexpected or may fail.
- Transparent Sensitive Data Protection is not supported with duality views and underlying tables.
- Table columns of a duality view cannot be redacted if the redacted columns are part of the ETAG.
- Because JSON-relational duality views rely on JSON type, a 19c or earlier SQL*Plus client cannot be used for queries, DML or other SQL operations that use the DATA column which is of data type JSON.
- Duality views cannot be created on base tables with textual JSON columns (VC2/CLOB/BLOB with IS-JSON constraint) in the base table.
- The same subquery cannot be used multiple times to define nested JSON structures (object or array) in the same parent object.
- Fine-grained auditing policies are not supported with duality views.
- DML error logging is not supported with duality views.

Property Graph Features That Work With Oracle AI Database 26ai

Oracle Graph Server and Client Release 25.1 works with the following Property Graph features of Oracle AI Database 26ai.

- Native representation of graphs in Oracle Al Database.
- Support for the ISO/IEC SQL Property Graph Queries (SQL/PGQ) standard.
- Use JSON collections as a graph data source.
- Use Native Representation of Graphs in Oracle AI Database with Graph Tools.

See the topics <u>SQL Property Graphs</u> and <u>Visualizing GRAPH_TABLE Queries on SQL Property Graphs</u> in <u>Oracle AI Database Graph Developer's Guide for Property Graph</u>.

Unrestricted Bulk Transactions

The following are restrictions for Unrestricted Bulk Transactions in Oracle AI Database 26ai.

For this release, the Unrestricted Bulk Transactions feature is:

- Not compatible with In-Memory Undo (IMU). IMU is already disabled for Oracle RAC.
- Not compatible with distributed and clusterwide global transactions.

Deprecated and Desupported Features for Oracle AI Database

Oracle Al Database 26ai introduces behavior changes for your database in addition to new features.

Changes in behavior include deprecated and desupported initialization parameters, options, syntax, and the deprecation and desupport of features and components. For more information, see the *Oracle AI Database Upgrade Guide*.



Other Readmes, Release Notes, or Installation Guides

Refer to the following Oracle products and the location of their associated readme, release notes, or installation guide for additional information.

- Oracle APEX Release Notes
- Oracle APEX Installation Guide.

Issues Affecting Linux for Oracle AI Database 26ai

These topics contain last-minute features and changes for Linux for Oracle AI Database 26ai.

- Unsupported Products for Oracle AI Database 26ai
 This topic describes products or features that are unavailable for Oracle AI Database 26ai.
- <u>Product Support</u>
 This topic describes the supported products or features for Oracle AI Database 26ai.
- Known Issues and Bugs for Oracle Linux 8 and Red Hat Enterprise Linux 8
 This section contains information about issues related to Oracle Linux 8 and Red Hat Enterprise Linux 8:
- Open Bugs Affecting Linux
 This topic contains last-minute features and changes for Oracle AI Database 26ai.

Unsupported Products for Oracle AI Database 26ai

This topic describes products or features that are unavailable for Oracle Al Database 26ai.

- DBnest is not supported on Oracle Linux 8 with the Unbreakable Enterprise Kernel 7: 5.15.0-202.135.2.el8uek.x86_64 or later and Red Hat Enterprise Linux 8: 5.15.0-202.135.2.el8uek.x86_64 or later.
- DBnest is only supported on Linux cgroup v1. By default, Oracle Linux 8 with the Unbreakable Enterprise Kernel 7: 5.15.0-202.135.2.el8uek.x86_64 or later and Red Hat Enterprise Linux 8: 5.15.0-202.135.2.el8uek.x86_64 or later boot with cgroup v2.

Product Support

This topic describes the supported products or features for Oracle AI Database 26ai.

• For Oracle AI Database 26ai on Oracle Linux 9 Red Hat Compatible Kernel (RHCK), Oracle ASMLIB V3 is supported on kernel version 5.14.0-362.8.1.el9 3 or later only.

Known Issues and Bugs for Oracle Linux 8 and Red Hat Enterprise Linux 8

This section contains information about issues related to Oracle Linux 8 and Red Hat Enterprise Linux 8:

Bug 36756459



Bug 36756459

If you use Oracle Database Configuration Assistant (Oracle DBCA) with Oracle Data Guard to carry out a database move operation, then you must move the Data Guard Broker configuration files before starting your database move operation.

The default location for the DB_BROKER_CONFIG files is in the dbs directory in the earlier release Oracle Al Database Oracle home. When you use a database move operation to carry out a database move of database instances using Oracle Data Guard, you must move the DG_BROKER_CONFIG files to a mount point location outside of the earlier release Oracle home. Also ensure that the DG_BROKER_CONFIG_FILE parameters specify that location, instead of a location in the Oracle home.

Tasks Before Starting Your Database Move Operation using Oracle DBCA

To enable access to the DB_BROKER_CONFIG files during a rolling upgrade, you must complete the following tasks before starting the database move operation.

- Before you start the database move operation, set the Oracle Data Guard files
 DG_BROKER_CONFIG_FILE1 and DG_BROKER_CONFIG_FILE2 to a separate mount point on your
 server that is outside of the Oracle home path for either the source or target Oracle Al
 Database Oracle homes.
- Complete a successful database move operation of your earlier release Oracle home to the new Oracle AI Database release.

Open Bugs Affecting Linux

This topic contains last-minute features and changes for Oracle AI Database 26ai.

- Bug 36326543
- Bug 35517929
- Bug 37294692

Bug 36326543

On Oracle Linux 9.2, the listener fails to start due to issues with <code>getaddrinfo()</code> if the <code>/etc/hosts</code> has an entry in the order IPv4 and IPv6 addresses when the same host name and listener are configured with IPv6 address and <code>ip=v6</code> only.

Workaround

Change the order of the address in the /etc/hosts entry with IPv6 first and then IPv4.

Bug 35517929

Static linking demos fail during compilation on Oracle Al Database 26ai on Oracle Linux 9 and Red Hat Enterprise Linux 9.

Workaround:

Oracle Al Database 26ai supports only Dynamic linking demos on Oracle Linux 9 and Red Hat Enterprise Linux 9.



Bug 37294692

On Oracle AI Database 26ai, Release Update 23.6, failed vector index builds are cleaned up inline with subsequent CREATE INDEX.

Workaround

Run the alter system set _vector_index_cleanup_inline"=false; command to set the underscore parameter _vector_index_cleanup_inline to FALSE before starting a rolling upgrade of Oracle AI Database 26ai, Release Update 23.6 to Oracle Database AI 26ai, Release Update 23.7.

Related Topics

My Oracle Support note 3076046.1

Issues Affecting Microsoft Windows for Oracle Al Database 26ai

These topics contain last-minute features and changes for Microsoft Windows for Oracle Al Database 26ai and Oracle Instant Client 26ai.

Known Issues and Bugs Affecting Oracle Instant Client 26ai for Microsoft Windows
 The following section contains information about a known issue affecting Oracle Instant Client 26ai for Microsoft Windows.

Known Issues and Bugs Affecting Oracle Instant Client 26ai for Microsoft Windows

The following section contains information about a known issue affecting Oracle Instant Client 26ai for Microsoft Windows.

Unzip Issue with Windows Oracle Instant Client Package

Unzip Issue with Windows Oracle Instant Client Package

The unzip -t operation on the Windows Oracle Instant Client 26ai package results in an error.

Workaround

Do not use unzip -t. Use unzip <windows_pkg_name> instead.

Issues Affecting Microsoft Windows for Oracle Al Database 26ai Free

These topics contain last-minute features and changes for Microsoft Windows for Oracle Al Database 26ai Free.

Known Issues and Bugs Affecting Oracle AI Database 26ai Free for Microsoft Windows
 The following section contains information about a known issue affecting Oracle AI
 Database 26ai Free for Microsoft Windows.

Known Issues and Bugs Affecting Oracle AI Database 26ai Free for Microsoft Windows

The following section contains information about a known issue affecting Oracle AI Database 26ai Free for Microsoft Windows.

Bug 35706665

Bug 35706665

Upgrading from Oracle Database 21c XE to Oracle Al Database 26ai Free may detect one or more invalid objects.

Workaround

Ignore these invalid objects and proceed with the upgrade.

Issues Affecting Oracle Instant Client 26ai for macOS (ARM64)

This topic contains last-minute features and changes for Oracle Instant Client 26ai for macOS (ARM64).

- <u>Unsupported Features and Components</u>
 The following features or components are not supported on Apple macOS (ARM64):
- Known Issues and Bugs Affecting Oracle Instant Client 26ai for macOS (ARM64)
 The following section contains information about a known issue affecting Oracle Instant Client 26ai for Apple macOS (ARM64).

Unsupported Features and Components

The following features or components are not supported on Apple macOS (ARM64):

- Pro*FORTRAN
- Pro*COBOL
- Oracle Al Database 26ai Vector Operations

Known Issues and Bugs Affecting Oracle Instant Client 26ai for macOS (ARM64)

The following section contains information about a known issue affecting Oracle Instant Client 26ai for Apple macOS (ARM64).

Advanced Queuing Operations Error

Advanced Queuing Operations Error

During Advanced Queuing (AQ) operations you might encounter the following error:

ORA-24912: Listener Thread failed

Workaround

Add the en0 inet IP address and host name to the /etc/hosts file: IP_address host_name.

You can obtain the en0 inet IP address by running the ipconfig getifaddr en0 command in the terminal.

You can obtain the host name by running the hostname -f command in the terminal.