# Teradata Vantage™ - Advanced SQL Engine Release Definition

Release 17.00, 17.05

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| Safety type | Description |
|---|---|
| *NOTICE* | Indicates a situation which, if not avoided, could result in damage to property, such as to equipment or data, but not related to personal injury. |
| CAUTION | Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury. |
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# Introduction

Teradata Vantage™ is our flagship analytic platform offering, which evolved from our industry-leading Teradata® Database. Until references in content are updated to reflect this change, the term Teradata Database is synonymous with Teradata Vantage.

Teradata Advanced SQL Engine (SQL Engine) is the core of Teradata Vantage, based on our best-of-breed Teradata Database processing capability. Advanced SQL Engine refers to the ability to run advanced analytic functions beyond that of standard SQL.

## Understanding This Release

This *Release Definition* applies to Advanced SQL Engine Release 17.00.

Before you install or upgrade to this release of SQL Engine, read the following publications:

- *Teradata Vantage™ - Advanced SQL Engine Release Definition*, B035-1725, which provides information about basic system requirements. If you are upgrading from an older Teradata® Database release, read the *Release Definition* for every intervening release. Prior to Vantage 1.1.1, review *Teradata Vantage™ - NewSQL Engine Release Definition, B035-1725.*

- *Teradata Vantage™ - Advanced SQL Engine Release Summary*, B035-1098, which describes the new features in a release. If you are upgrading from an older release of Teradata Database, you should also read the *Release Summary* for every intervening release to understand how the features in the latest release differ from your current version.

## Additional Information

| Link | Description |
|---|---|
| https://docs.teradata.com | Vantage documentation (HTML) |
| https://support.teradata.com/ | One stop source for Teradata community support, software downloads, and product information.<br>Log in for customer access to:<br>• Community support<br>• Software updates<br>• Knowledge articles |
| https://www.teradata.com/University/Overview | Teradata University |
| https://developer.teradata.com/ | Public downloads (also available from the customer portal) |
| https://community.teradata.com/ | Link to Teradata community (also available from the customer portal) |

# Software and Hardware Requirements

## *Supported Software and Hardware*

| Supported | Description |
|---|---|
| **Software Compatibility** | See Knowledge Article KB0033995, available at https://support.teradata.com (log in before you search for it). |
| **Hardware Platforms** | See Knowledge Article KB0027406, available at https://support.teradata.com (log in before you search for it). |
| **Cloud Platforms** | • Public Cloud: Teradata Vantage on AWS, Teradata Vantage on Azure, Teradata Vantage on Google Cloud<br>• Private Cloud: Teradata Vantage on VMware |
| **External Object Store** | • Amazon S3, Microsoft Azure Blob storage, Azure Data Lake Storage Gen 2, and Google Cloud Storage |
| **Teradata Vantage** | Teradata Vantage includes analytic functions, preferred tools and languages, and support for multiple data types:<br>• Languages include SQL, R, and Python.<br>• Workbenches and tools include Teradata Studio, Teradata AppCenter, Jupyter, and RStudio.<br>• Data support includes relational, spatial, temporal, XML, JSON, Avro, and time-series formats. |
| **Compilers** | Installation of a C++ compiler is required on at least one database node configured with a PE vproc. C++ compilers are included with each Vantage release as part of the operating system software disks. |
| **Additional Disk Space for Trace Files** | The Write Ahead Logging (WAL) feature requires 5 MB per AMP of disk space for File System trace files. For example, if there are 10 AMPs per node, then trace files would require 50 MB per node of additional disk space, located in /var/opt/teradata/tdtemp. |
| **Backup, Archive, and Restore (BAR)** | **Supported BAR Software and Compatibility Matrix**<br><br>For information on backup and restore software versions and version compatibilities, see *Teradata® DSA Release Definition*, B035-3154 at https://docs.teradata.com. |
| **Teradata Tools and Utilities (TTU)** | For detailed information on the full range of tools and utilities and the individual Teradata client product versions compatible with the current release of SQL Engine, search for *Teradata Tools and Utilities 17.00 Supported Platforms and Product Versions,* B035-3119 at https://docs.teradata.com. |

## *Software Maintenance Schedule*

Purchasers of SQL Engine software are entitled to a period of continuing support after initial installation or upgrade.

### SQL Engine Maintenance Roadmap

The Maintenance Release Roadmap shows the detailed code-level remedy and support for each SQL Engine version.

- Customers with active Service Agreements can find the Maintenance Release Roadmap at https://support.teradata.com.

- Customers without support agreements should contact their sales or support team.

# Node Memory Recommendations

For best performance, Teradata recommends that each node has at least the minimum recommended RAM. See https://support.teradata.com for node memory recommendations.

When upgrading to Release 17.00.xx, several factors can cause some systems, especially large ones, to require additional memory.

The general guidelines for memory follow; however, memory requirements are workload-dependent, so your system's actual memory requirements may differ.

**General Guidelines**:

- Teradata recommends a minimum of 4 GB memory per vproc to achieve the most value and performance from SQL Engine 17.00. The absolute minimum requirement is 2 GB memory per vproc (including AMP, PE, TVS, and GTW).
- Some SQL Engine features require 512 GB per node; for example, Teradata In-Memory Optimizations.
- Additional memory consumed is based on the size of system, AMPs per node, AWT, and feature use.

**Note:** The maximum amount of memory allowed per node may be increased between database releases. Always double-check what the maximum memory amount is for your platform.

This release can run on a system with the recommended minimum RAM, but performance may not be optimal, depending on the system configuration and the SQL Engine features you use. You should also factor in the following to determine the optimal memory configuration:

- Workload
- Memory-consuming features
- Performance requirements
- Cost of memory

## Memory-Consuming Features

These features may require more memory for optimum system performance:

- 1 MB Perm and Response Rows
- In-Memory Enhancements
- AVRO DATASET
- Multiple Count Distinct Performance
- Queryable Column Information on Views
- XSLT_SHRED_BATCH
- Partial Online Reconfiguration
- SLES 11
- SLES 12
- PPI and Multivalue Compression
- Join Index, Hash-Join, Stored Procedures, and 128K Data Blocks
- Cylinder Read

- In-Memory Optimizations
- BSON and UBSON
- Columnar Primary AMP/Primary Index
- SQL Interface for Ferret SHOWBLOCKS
- Parameterized Query Logging
- JSON Data Type
- 3D Geospatial
- Scripting and Language Support
- DBQL – Show Parameters
- 1 MB Phase 2
- Script Table Operators
- QueryGrid: Teradata Database-to-Hadoop
- Auto Stats Enhancements
- Data Stream Architecture
- Extended Object Naming
- Geospatial Indexing
- Incremental Planning and Execution
- Teradata Intelligent Memory
- Teradata XML
- 1 MB Data Block
- 1 MB Spool Row
- 128K Parser Tree Segments
- Teradata Columnar
- LOBs and UDFs
- 1 MB Response Buffer
- Larger than 1 MB Plan Cache
- External Stored Procedures
- Table Functions
- Array INSERT
- Java Stored Procedures
- Online Archive Memory Enhancements
- More than 80 AWTs per AMP
- Expanded Table Header
- Geospatial Data Type
- Increased Join/Subquery Limits
- Teradata Virtual Storage
- Tunable UDF Memory Limit
- Algorithmic Compression and Block Level Compression
- XML DBQL Logging
- Global and Persistent Data (GLOP)
- Large Cylinder with Cylinder Read
- More Than 20 AMPs/Vprocs per Node (All Releases)
- Temporal DBS Support
- Native Object Store

# Reserved Words

Teradata Vantage reserved words cannot be used as identifiers to name host variables, correlations, local variables in stored procedures, objects (such as databases, tables, columns, or stored procedures), or parameters (such as macro or stored procedure parameters).

New reserved words for this release are listed in the “Restricted Words” appendix in *Teradata Vantage™ - Advanced SQL Engine Release Summary*, B035-1098, available at https://docs.teradata.com.

# Software and Hardware Restrictions

## *Obsolete, Deprecated, and Unsupported Tools, Utilities, Options, Record Types, and Other Software*

| Utility | Final Release that Contains this Feature | Replacement Feature, if any | Additional Information |
|---|---|---|---|
| Amazon Web Services (AWS) | TD 16.20 | | |
| DBS Check tool (dbschk) | TTU 15.0<br>TD 15.10 | Mailbox Check (mboxchk) tool; see the man page for information | |
| dbscontrol obsolete fields | This utility is still supported. | | Obsolete DBS Control fields include:<br>• DisplacementOnOverlap<br>• MDS Is Enabled |
| dbscsp | TD 12.00 | | The dbscsp tool, used only on MP-RAS systems, is no longer supported. The executable /usr/ntos/bin/dbgcsp now links to fdlcsp instead of dbscsp. |
| DULTAPE | TD 16.00 | You can continue to use DUL. | |
| ExecR table operator | | | Unavailable by default to users of Teradata Vantage delivered as-a-service, such as on AWS and Azure. Contact your Teradata account representative to have it enabled. |
| gdoviewer | Removed prior to TD 12.00 | | |
| gtwcontrol | This utility is still supported. | | Removed -b option. Deprecated logons are no longer allowed. |
| HP-UX Itanium and IBM Mainframe z/Linux (RedHat and SUSE) | TTU 16.10 | | |
| ITEQ, HUT CNS | TD 15.00 | | |
| Meta Data Services (MDS) | TD 15.00 | | |
| OLE DB Provider for Teradata | TTU 15.0<br>TD 15.10 | Use Microsoft's OLE DB Provider for ODBC and Teradata ODBC Driver products together | |
| PMON | TD 13.10 | Teradata Viewpoint | |

| Utility | Final Release that Contains this Feature | Replacement Feature, if any | Additional Information |
|---|---|---|---|
| Priority Scheduler | TD 12.00 | | Priority scheduler functions must be controlled through Teradata Viewpoint, Workload Designer portlet |
| rcvmanager | | | F7 help is not available. |
| Replication Services | TD 14.10 | | Teradata Replication Services (Teradata to Teradata replication) was discontinued for new sales as of August 2011. Aligned with that discontinuation, no further enhancements have been made since the TRS 13.10 release. TRS 13.10 has been certified with Teradata DB 14.00 and 14.10 versions but with no new feature support and for existing customers only. Teradata Unity™ is the replacement for TRS.<br><br>**Note**: Replication from third-party solutions to Teradata is still supported by Oracle GoldenGate. |
| rssmon | TD 13.00 | | rssmon utility (Resource Sampling System Monitor) ran only on MP-RAS systems. It is obsolete now that Teradata Database is no longer supported on MP-RAS. |
| SCRIPT table operator | | | Unavailable by default to users of Teradata Vantage delivered as-a-service, such as on AWS and Azure. Contact your Teradata account representative to have it enabled. |
| SLES 10 | TD 15.10 | Later versions of SLES, depending on your release. | |
| SQL Assistant | TTU 16.20<br>TD 16.00 | Teradata Studio and Teradata Studio Express | |
| tdgsspkgrm | TD 15.10 | | |
| tdgssversion | TD 16.00 | | |
| tdssearch | TD 13.00 | | Due to limited functionality, tdssearch has been replaced by ldapsearch, which is included with Teradata Database 13.10 and later. |
| Teradata Administrator | TTU 15.10<br>TD 15.10 | Replaced by Teradata Studio | |
| Teradata Archive/Recovery Utility (ARC) | TTU 16.20 | Teradata Data Stream Architecture (DSA) or Teradata Data Stream Utility (DSU) | |
| Teradata Administration Workstation (TD AWS) | TTU 16.20 | | |

| Utility | Final Release that Contains this Feature | Replacement Feature, if any | Additional Information |
|---|---|---|---|
| Teradata Data Mart Edition | TTU 15.0<br>TD 15.10 | Teradata Database is no longer natively supported on 3rd party SMP computers running specific versions of SUSE Linux. The replacement product is Teradata Virtual Machine Edition (TVME). Please refer to the *Order and Configuration Information* document for TVME. | |
| Teradata Dynamic Workload Manager | TD 13.00 | TASM, controlled by Teradata Viewpoint | |
| Teradata IDE-Plugin for Eclipse | TTU 16.00 | | |
| Teradata Index Wizard | TTU 16.20 | | |
| Teradata Workload Analyzer (TWA) | TTU 16.20 | | |
| Teradata Manager | TD 13.00 | Teradata Viewpoint | |
| Teradata Method 1 (TD1), NTLM, NTLMC, and KRB5C | TD 16.00 | | These authentication mechanisms must be manually enabled to use them in Release 16.00. |
| Teradata Monitor | TTU 15.0<br>TD 15.10 | A set of Teradata table functions embedded in the database | |
| Teradata Multitool | TD 13.10 | Command line utilities, such as Database Window | |
| Teradata Preprocessor2 (PP2) for C and COBOL<br>• Network Platforms (Windows, Linux, Unix) | TTU 16.20 | ODBC | |
| Teradata Query Director | TD 13.10 | Teradata Unity | |
| Teradata Query Scheduler (TQS) | TD 16.00 | | |
| Teradata Statistics Wizard (TSWIZ) | TTU 14.10<br>TD 15.00 | Teradata Viewpoint Statistics Manager | |
| Teradata Visual Explain (VEComp) | TTU 16.20<br>TD 16.00 | Visual Explain App in Teradata App Center | |

| Utility | Final Release that Contains this Feature | Replacement Feature, if any | Additional Information |
|---|---|---|---|
| Transparency Series/Application Programming Interface (TS/API) (mainframe) | TTU 15.0<br>TD 15.10 | An SQL query tool, such as Teradata Studio | Capped at supporting Query Management Facility (QMF) 9.1. |
| vpacd | TD 12.00 | | |
| Windows Vista | TTU 16.10 | | |
| DIGEST-MD5 | | Use simple binding with TLS protection | |
| Blowfish | | See the list of algorithms in TdgssLibraryConfigFile.xml | |

# TDGSS Single Mechanism to Log-On (TDNEGO) Unity Support

Unity does not support TDNEGO. Teradata recommends disabling TDNEGO on Unity servers. For more information, see *Teradata Vantage™ - Security Administration*, B035-1100.

# 1 MB Perm and Response Rows

This feature is not supported on Small Cylinder systems (such as systems using a maximum cylinder size of 3872 sectors or approximately 1.9 MB).

# Compatibility Views

Compatibility views convert the native variable-length Unicode object names into 30 bytes of either Latin or Kanji1.This can cause loss of information by truncation or inability to convert object names longer than 30 characters into Latin or Kanji1. Characters that cannot be converted are replaced by the substitution character, which is 0x1A for both Latin and Kanji1.

As with all character data, when object names are returned to the user, they are converted to the session character set. This conversion can produce loss of information if the characters in the object name cannot be converted to the session character set or exceed the export width for the character data. Teradata recommends using Unicode views. For more information, see *Teradata Vantage™ - Data Dictionary*, B035-1092.

# Deprecated KANJI1 Character Set

KANJI1 support is deprecated. KANJI1 is not allowed as a default character set; the system changes the KANJI1 default character set to the UNICODE character set. Creation of new KANJI1 objects is highly restricted. Although many KANJI1 queries and applications may continue to operate, sites using KANJI1 should convert to another character set as soon as possible.

# Security-Related Restrictions

### Custom Authentication Mechanisms

A custom authentication mechanism is a user authentication mechanism that is above and beyond the mechanisms that are provided with SQL Engine:

1. Teradata Method 2
2. KRB5 (Kerberos authentication)
3. LDAP
4. SPNEGO (used for Kerberos authentication for logons from Windows .NET clients)
5. TDNEGO

If additional information is required, customers should contact their Teradata representative.

# System-Level Software Restrictions

- JRE 1.8 must be installed on the database server prior to installing SQL Engine 17.00.
- Only one instance of Teradata Vantage is supported on a system.
- Teradata Tools and Utilities, including utilities on mainframes, must be installed at or upgraded to Teradata Tools and Utilities 17.00 to use all SQL Engine 17.00 features and functions.
- For additional restrictions, dependencies, and performance considerations when running Vantage applications, see Running Teradata Vantage with Other Applications.
- Backup and restore management utilities are not provided as part of Teradata Vantage but are available as separate products. For more information, see Supported BAR Software.
- A maximum of 1,200 concurrent LAN-connected sessions are allowed per node.
- The maximum number of sessions for mainframe clients is 120 x the number of configured Parsing Engines (PEs) for each TDP (Logical Host ID).

# Analytic Functions

Unicode is not supported for the nPath® and Attribution functions on SQL Engine.

# C++ and Java UDFs, UDMs, UDTs, or External Stored Procedures

- Customers using Vantage delivered as-a-service (such as Teradata Vantage on AWS and Teradata Vantage on Azure), cannot create their own C++ and Java UDFs, UDMs, UDTs, or External Stored Procedures.

# Changes in System Behavior

## *Default Feature Status*

The following features are disabled by default in this release:

- COUNT DISTINCT Performance Improvement
- In-Memory Outer Hash Join Optimization
- UNION ALL Optimization
- Queryable Column Information on Views

In previous releases, some features were enabled by default and others were manually enabled, depending on whether the Vantage system had a fresh installation (sysinit) or an upgrade.

Vantage 1.1 and later features do not require a sysinit to be enabled. Features in earlier releases that required a sysinit still require a sysinit (see Release 15.10 *Release Definition*, B035-1725).

As of Release 17.00, Feature Use Log (FUL) is automatically enabled with Default Logging for all license tiers, for both sysinit and upgrade. The syntax to enable or disable FUL is still supported but will be a no-op because FUL is now always logged whenever default logging is enabled.

| Feature | License Tiers | Upgrade<br>Sysinit | Effects and Comments |
|---|---|---|---|
| OVERRIDE ON ERROR | **n/a** | **Upgrade:** Enabled<br><br>**Sysinit:** Enabled | OVERRIDE ON ERROR has become the default when creating tables. If a user names an invalid map when creating a table, the system uses the default map for the user, role, or profile instead. If there is no default map for the user, role, or profile, the system default map is used. |
| Always Fallback | **n/a** | **Upgrade:** Disabled<br><br>**Sysinit:** Enabled | Fallback behavior and defaults have become platform specific. Newer platforms now always use fallback, even if you specify NO FALLBACK. Older platforms that upgrade to this release still allow the NO FALLBACK option, and the default is NO FALLBACK for CREATE TABLE, ALTER TABLE, CREATE JOIN INDEX, CREATE HASH INDEX, CREATE DATABASE, MODIFY DATABASE, CREATE USER, and MODIFY USER requests. |
| In-Memory Optimization | **Developer:** Not Applicable<br>**Base:** Not Applicable<br>**Advanced:** Not offered<br>**Enterprise:** Included | **Upgrade:** Disabled<br><br>**Sysinit:** Disabled | In-Memory Optimization is enabled when the appropriate license and memory are purchased.<br><br>To enable, contact Teradata Support Center. |

| Feature | License Tiers | Upgrade<br>Sysinit | Effects and Comments |
|---|---|---|---|
| Temporal | **Developer:** Included<br>**Base:** Included<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Disabled<br><br>**Sysinit:** Disabled | To enable, contact Teradata Support Center.<br><br>**Note**: After Temporal is enabled, it cannot be disabled. |
| Teradata Secure Zones | **Developer:** Included<br>**Base:** Included<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Disabled<br><br>**Sysinit:** Disabled | Teradata Secure Zones must be enabled to get full functionality.<br><br>To enable, contact Teradata Support Center. |
| Teradata Database MAPS Architecture (MAPS) | **Developer:** Not Applicable<br>**Base:** Included<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Disabled<br><br>**Sysinit:**<br>Enabled | This feature is:<br>• Enabled for new installations<br>• Disabled by default on upgraded systems<br>To enable, contact Teradata Support Center. After this feature is enabled backdown is not supported.<br><br>**Note**: When MAPS is enabled, you must use DSA for archive/recovery operations. For more information about DSA, see *Teradata Data Stream Architecture (DSA) User Guide*, B035-3150. |
| Adaptive Optimization | **Developer:** Includes IPE<br>**Base:** Includes IPE<br>**Advanced:** Includes IPE<br>**Enterprise:** Includes Enhanced IPE | **Upgrade:** Enabled for Enterprise<br><br>**Sysinit:** Enabled for Enterprise | Enhanced IPE provides:<br>• Noncorrelated subqueries with small results sets<br>• Single-row query blocks<br>• Derived table or view produces zero rows or a single row<br>• Spooled subqueries with smaller result sets<br>• Advanced rewrites based on results feedback |
| Block loads between Row Level Security (RLS) tables and non-RLS tables | **Developer:** Included<br>**Base:** Included<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Disabled<br><br>**Sysinit:** Disabled | To enable, contact Teradata Support Center. |
| IN-list Rewrite | **Developer:** Included<br>**Base:** Included<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Enabled<br><br>**Sysinit:** Enabled | To disable this feature, use DBS Control fields. For more information, see *Utilities*, B035-1102. |
| TASM I/O Usage Event | **Developer:** Not Applicable<br>**Base:** Not Applicable<br>**Advanced:** Not Applicable<br>**Enterprise:** Included | **Upgrade:** Disabled<br><br>**Sysinit:** Disabled | To enable, contact Teradata Support Center.<br><br>For more information, see *Teradata Vantage™ - Workload Management User Guide*, B035-1197, or *Teradata Viewpoint User Guide*, B035-2206. |
| Workload Management | **Developer:** Not Applicable<br>**Base:** Not Applicable<br>**Advanced:** TIWM | **Upgrade:**<br>Disabled<br><br>**Sysinit:** | To enable, contact Teradata Support Center.<br><br>The appropriate license must be purchased first. |

| Feature | License Tiers | Upgrade Sysinit | Effects and Comments |
|---|---|---|---|
| | **Enterprise:** TASM | Disabled | |
| Intelligent Memory (TIM) | **Developer:** Not Applicable<br>**Base:** Not Applicable<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Disabled<br><br>**Sysinit:** Disabled | TIM is enabled when the appropriate license and memory are purchased.<br><br>To enable, contact Teradata Support Center. |
| TVS (Hybrid Storage) | **Developer:** Not Applicable<br>**Base:** Not Applicable<br>**Advanced:** Not Applicable<br>**Enterprise:** Included | **Upgrade:** Enabled<br><br>**Sysinit:** Enabled | TVS (Hybrid Storage) is enabled by default when using the hybrid storage system. |
| Concurrent Query Limit | **Developer:** 2<br>**Base:** 15<br>**Advanced:** None<br>**Enterprise:** None | **Upgrade:** Enabled<br><br>**Sysinit:** Enabled | Appropriate license must be purchased first. |
| Function Mapping | **Developer:** Included<br>**Base:** Included<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Enabled<br><br>**Sysinit:** Enabled | Function mapping simplifies executing functions on foreign servers. |
| Teradata Analytic Functions | **Developer:** Included<br>**Base:** Included<br>**Advanced:** Included<br>**Enterprise:** Included | **Upgrade:** Enabled<br><br>**Sysinit:** Enabled | Some scoring and predictive analytical functions are executed natively on Advanced SQL Engine. For details see *Teradata Vantage™ - Advanced SQL Engine Analytic Functions*, B035-1206. |
| Default DBQL Algorithm | Not Applicable | **Upgrade:** Enabled<br><br>**Sysinit:** Enabled | Default DBQL algorithm changed from Alg 1 to Alg 3. |

Default enabling may cause changes in system behavior compared with previous releases. Even after enabling, some features may require additional configuration.

# *Amazon S3 Paths*

Amazon changed the S3 bucket path from a path-style model to a virtual-hosted model. Buckets created prior to 9/30/2020 will continue to work with either style of path. After 9/30/2020, new buckets must be created with virtual-hosted style paths.

For example:

**Path style**: `/s3/s3.amazonaws.com/`*`YOUR-BUCKET`*`/CSVDATA/`
**Virtual-hosted style**: `/s3/`*`YOUR-BUCKET`*`.s3.amazonaws.com/CSVDATA/`

The following documentation is updated to use S3 virtual-hosted paths:

- *Teradata Vantage™ - Native Object Store Getting Started Guide,* B035-1214
- *Teradata Vantage™ - SQL Data Definition Language, Syntax and Examples,* B035-1144

- *Teradata Vantage™ - SQL Data Manipulation Language,* B035-1146
- *Teradata Vantage™ - SQL Operators and User-Defined Functions,* B035-1210

# DBQL Algorithm 3 is the New Default Logging Mode

The Database Query Log (DBQL) is enhanced for Advanced SQL Engine 17.00 with more complete and accurate logging. DBQL now uses Algorithm 3 by default, which includes collecting statistics on aborted and parallel steps, and results in more accurate resource usage statistics. Upgraded systems that were not previously using Algorithm 3 will not use Algorithm 3 until explicitly configured to do so. See BEGIN QUERY LOGGING MODE and REPLACE QUERY LOGGING MODE in *Teradata Vantage™ - SQL Data Definition Language Syntax and Examples*, B035-1144.

# DBQL_AWTDPS_CacheMaximum Field Moved to Performance Section of DBS Control

The DBQL_AWTDPS_CacheMaximum DBS control field has moved from the internal DBS Control section to the Performance section.

# DIGEST-MD5 Authentication Protocol

The DIGEST-MD5 authentication protocol used by LDAP is deprecated. Teradata strongly recommends you stop using DIGEST-MD5, and instead use simple binding with TLS protection.

# Feature Use Logging is Enabled When Default Logging is Enabled

As of Release 17.00, Feature Use Log (FUL) is automatically enabled with Default Logging for all license tiers, for both sysinit and upgrade. The syntax to enable or disable FUL is still supported but will be a no-op because FUL is now always logged whenever default logging is enabled.

# LDAP Service Password Change No Longer Requires System Restart

The new LdapServicePasswordFile property lets you change the LDAP service password without restarting the system. If you use this new property, the system ignores the LdapServicePassword and LdapServicePasswordProtected properties and reads passwords only from the password file. In the password file, you must encrypt passwords, using the tdspasswd command-line utility.

# Installation, Upgrade, Migration, and Backdown (IUMB)

Teradata supports customer-performed maintenance and patch upgrades. Contact your sales or customer support representative for questions.

For changes in behavior that impact upgrade or migration, see Changes in System Behavior.

## Supported IUMB Operations

This release supports the following IUMB operations:

- Installation of this release on all supported platforms and operating systems.
- Migration from Advanced SQL Engine 15.00 and later. Migrations from previous releases require an intermediate migration.
- Upgrade to this release from the releases shown in Knowledge Article IDA00108C82, available at https://support.teradata.com (you must log in before you can search for it).

If your current version is not listed as an approved upgrade starting version, you must first upgrade to an approved starting version before upgrading to this release. Contact the Teradata Support Center for details. For information on upgrades from older releases, see Upgrading from Older Releases.

## About Returning to an Older Release

Backing down is not supported. There is no automated way to reverse the upgrade process and move to a previous release.

## IUMB Planning

- Upgrade scripts and the upgrade estimator tool are available in the PUTTools package. Always get the latest version. For all IUMB change controls obtain PUTTools, see Parallel Upgrade Utility (PUT) and PUTTools.

- https://support.teradata.com provides access to copies of other items required for IUMB procedures such as:
  - The certified list of software packages for each supported version, including recently updated versions of software packages.
  - Required application and operating system software patches, firmware, drivers, service packs and hotfixes.

- You must upgrade your Teradata client software to at least the minimum supported release before or at the same time as you upgrade to this release.

- Some features are enabled by default during a sysinit when upgrading or migrating and may affect system behavior. To see if the current release is affected, see Default Feature Status.

### Upgrading Teradata Temporal Tables

Teradata originally introduced support for creating and manipulating temporal tables before an ANSI/ISO standard had been developed. Consequently, the original Teradata Temporal Tables and SQL syntax do not conform to the ANSI standard. If you upgrade from a Teradata Database release prior to 15.00 and you were using Teradata Temporal Tables, you can choose either to continue using them or convert to using ANSI standard temporal tables and syntax.

For more information on the differences and ramifications:

- See the "DBS Control" coverage in *Teradata Vantage™ - Database Utilities*, B035-1102, and review the description of the Temporal Behavior DBS Control field.
- See the "ANSI Temporal Tables" coverage in *Teradata Vantage™ - Temporal Table Support*, B035-1182.

### Parallel Upgrade Utility (PUT) and PUTTools

Use PUT to install or upgrade Vantage and other software, as well as install and configure SQL Engine.

All PUT packages are available from the Teradata Customer portal. Teradata recommends that you download and install the latest versions of PUT and PUTTools:

1. Go to https://support.teradata.com.
2. Log in.
3. Go to **Downloads** and then **Database and Applications**.
4. Select **Parallel Upgrade Tool (PUT)** if it is not already selected.
5. Enter your site ID if it is not already entered.
6. Click **Submit**.
   The list that appears includes both PUT and PUTTools.
7. Select PUTTools to download it.

You can download *Parallel Upgrade Tool (PUT) Reference*, B035-5716, from https://docs.teradata.com.

## *Replacing Unsupported Operating Systems*

If your system runs on an unsupported OS (MP-RAS, SLES 9, SLES 10, or Windows), you must replace it with a supported version of SLES before upgrading or migrating to Teradata Database 14.10 or higher. For more information, see Supported Software and Hardware.

**Note:** Installation of SLES 11 or SLES 12 changes the workload management options available on the system.

# System Performance

## Performance Regressions

Any regressions that Teradata identifies, either by further testing or in field-deployed systems, are fixed as soon as possible. To find out the latest information about performance regressions that have been identified for the new release and how they may affect your system, see https://support.teradata.com.

## Running Vantage with Other Applications

Running third-party applications on Teradata systems is not recommended. See KB0015626 on https://support.teradata.com for details.

# Limitations

## *Teradata Unity*

For Vantage SQL and Teradata Unity compatibility and other considerations, please refer to the Teradata Unity Compatibility Matrix available at Teradata Documentation.