RedisGraph 2.2 release notes

Requirements
RedisGraph v2.2.16 requires:
- Minimum Redis compatibility version (database): 5.0.7
- Minimum Redis Enterprise Software version (cluster): 6.0.8

v2.2.16 (April 2021)
This is a maintenance release for version 2.2.
Update urgency: Medium
Headlines:
- This release improves overall stability and provides fixes for issues found after the previous release.

Details:
- Enhancements:
  - #1610 Add module-level configuration for query timeouts
  - #1572 Remove query size limitation from parser
  - #1590 Improve reporting of runtime errors
  - #1596 Run bulk loader commands on a non-blocking thread

- Performance Improvements:
  - #1569 Avoid network overhead of emitting arrays with postponed length values

- Bugfixes:
  - #1573 Lock graph on building/deleting full-text indexes, fixing a bug in full-text index replication
  - #1618 Fix error in traversals of 3 or more possible relationship types

- Infrastructure:
  - #1557 Add automated performance benchmarks and regression testing
  - #1587, #1598 Create build artifacts for multiple environments

v2.2.14 (16 February 2021)
This is a maintenance release for version 2.2.
Update urgency: Medium
Headlines:
- This release improves overall stability and provides fixes for issues found after the previous release.

Details:
• Performance improvements:
  • #1565 Reserve a single thread for performing all write queries.
  • #1548, #1553, #1554 only perform SET property updates when property value is changed.
  • #1543 Enable O3 compiler optimizations on libcypher-parser.

• Bugfixes:
  • #1556 Avoid premature freeing of Records in create and update contexts.
  • #1541 Fix excessive memory consumption in OpApply.

v2.2.13 (16 February 2021)

This is a maintenance release for version 2.2.

Update urgency: Medium

Headlines:

• This release improves overall stability and provides fixes for issues found after the previous release.

Details:

• Minor enhancements:
  • #1490 Add support for startNode() and endNode() functions.
  • #1519 Add support for db.indexes() procedure.

• Performance improvements:
  • #1393 Use one unified cache for all RedisGraph worker threads.
  • #1498 Consider both filters and labels in selecting a traversal’s starting point.
  • #1468 Unify logic and error handling for aggregate and scalar functions.

• Bugfixes:
  • #1534 Outdated label information used when performing index scans.
  • #1532 Invalid optimization of IN [array] lookups when values are indexed.
  • #1524 Memory error in accessing complex values after CREATE operations.
  • #1523 Erroneous results when traversing over some transposed matrix sequences.
  • #1499 Erroneous results on variable-length traversals on repeatedly-transposed arrays.
  • #1504 Crash on certain constructions of 0-hop traversals.
  • #1495 Disallow access of properties that have not yet been created.
  • #1503 Only allow literal values as parameters.
  • #1496 Disallow assignment of complex data types to property values in MERGE contexts.
  • #1494 Disallow assignment of values to properties on deleted entities.

• Build:
  • #1524 Update test suite to run under Python 3.

v2.2.11 (20 December 2020)

This is a maintenance release for version 2.2.

Headlines:

This release introduces support for runtime configuration of the maximum number of results to be returned.

Details:
Features
- #1480 Introduce GRAPH.CONFIG SET/GET to allow result-set size to be configured at runtime.

v2.2.10 (20 December 2020)
This is a maintenance release for version 2.2.

Headlines:
This release improves overall stability and fixes an issue with backwards compatibility logic for indexing.

Details:

- Bugfixes:
  - #1475 Fix erroneous property update when using SET with an unindexed property followed by an indexed one.
  - #1473 Fix backwards compatibility issue in rebuilding and dropping exact-match and full-text indexes.

v2.2.9 (4 December 2020)
This is a maintenance release for version 2.2.

Headlines:
This release improves overall stability and provides fixes for issues found after the previous release.

Details:

- Performance improvements:
  - #1426 Improve load times of adjacency matrices that always have different source and destination nodes.

- Minor enhancements:
  - #1463 Remove all assertions from production builds.
  - #1442 NULL property values should be ignored in CREATE clauses and trigger errors in MERGE clauses.
  - #1429 Improve error handling of a number of invalid query constructions.
  - #1431 Traversal patterns are only allowed in MATCH, MERGE, CREATE, and WHERE contexts.

- Bugfixes:
  - #1429 Fix potential misapplications of WHERE filters.
  - #1460 RETURN clauses can only be followed by UNION clauses.
  - #1467 Disallow assignment of complex data types to property values.
  - #1437 Failed property updates on MERGE should be handled gracefully.
  - #1446 Fix errors in Cartesian Product filter placement.

v2.2 GA (November 2020)
This is the General Availability Release of RedisGraph 2.2 (v2.2.8)!

Headlines:

- Enhanced support for scaling reads
- OPTIONAL MATCH (Left outer join)
- Query cache: Improve performance by caching the query execution plan
- Tooling to increase developer experience

Details:
• Support for scaling reads

- #1054 Drastic reduction of memory consumption during replication (and Active-Passive). Break down a large graph into several portions, each accommodating a virtual key and distribute those for reconstruction at the replica end, by doing so we reduce memory consumption on the replica’s end.

• OPTIONAL MATCH support Unlike MATCH, which requires for a pattern to exist, OPTIONAL MATCH continues processing when the optional pattern doesn’t exist. We can easily compare OPTIONAL MATCH in Cypher to an outer join in SQL. It works just like a regular MATCH with the difference that if no matches are found, OPTIONAL MATCH will use a null for missing parts of the pattern.

• Query cache: Improve performance by caching the query execution plan

When executing parameterised queries, RedisGraph will cache the execution plan for increased performance. By caching query’s execution-plan, RedisGraph skips the parsing and execution-plan construction phase. Cache size can be configured at module load time. The default value is 25.

• Tooling to increase developer experience

Introduction of GRAPH.SLOWLOG command which returns the longest running queries. In addition #1274 introduces query timeouts with an optional query flag.

• Smaller features and enhancements:

- #1225 Only update index on change of relevant Node properties.
- #1229 RediSearch 1.8.2. (Dependency update)
- #1266, #1277 Add support for any () and all () functions in list comprehension.
- #877 Transpose matrices: maintain transpose relationship matrices such that we won’t have to compute the transpose of a matrix at run-time. This feature is on by default but can configured to reduce memory consumption.

• Small updates compared to RC7

- Minor enhancements:
  - #1365 Support array properties in bulk loader.
  - #1377 Adding a new procedure dbms.procedures that returns all the procedures in the system.
  - #1389 Allow property accesses on non-identifier entity references.

- Bug fixes:
  - #1406 Query validation should not check if procedure outputs have been defined.
  - #1382 Add graph version to graph context object, response with an error when client graph version mismatch.
  - #1361 Don’t migrate WITH filters into Merge and Apply operation scope.

Notes: This is the GA version of 2.2. The version inside Redis will be 20208 or 2.2.8 in semantic versioning. Since the version of a module in Redis is numeric, we could not add a GA flag.

Updated: December 14, 2021