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DB2 database

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Best Practices for System Performance.

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5.3 IBM DB2 Database

Notes:

- Because all functionality is based on database performance, the database should be a key focus for performance tuning. TRIRIGA recommends that the database server be **co-located** on the same subnet as the application and process servers.
- For this reason, cloud database offerings such as IBM's DB2 on Cloud Service are **not** recommended for adequate performance. However, hosting the **entire** TRIRIGA infrastructure in the cloud where the TRIRIGA infrastructure is hosted on the **same** subnet is a viable configuration for good performance.
- Always check the [IBM TRIRIGA Support and Compatibility Matrix](#) for the latest database versions and fix packs supported. Performance issues where the database server is **not co-located** with the application and process servers are **not** supported.

5.3.1 IBM DB2 Database Server Tuning

Starting with IBM TRIRIGA Application Platform 3.5.1, the use of a DB2 back-end database is supported using DB2 10.5. The DB2 configuration is done automatically if you use the TRIRIGA provided scripts to configure your instance and database. For more information, see the [3.5.3 Installation and Implementation Guide](#). Specifically, the following settings are recommended.

Use the following DB2 registry settings:

```
db2set DB2_COMPATIBILITY_VECTOR=ORA
db2set DB2_DEFERRED_PREPARE_SEMANTICS=YES
db2set DB2_ATS_ENABLE=YES
db2set DB2_USE_ALTERNATE_PAGE_CLEANING=ON
```

Use the following DB2 database manager settings:

```
db2 update dbm cfg using RQRIOBLK 65535
```

The database must be created with PAGESIZE=32K.

The following DB2 database configuration settings are required:

- › SSO
- › Styling
- › System Sizing
- › TDI
- › Web Graphics
- › Workflow
- › Release Notes
- › Media Library
- › Best Practices
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```
db2 update db cfg for <dbname> using STMT_CONC OFF
db2 update db cfg for <dbname> using LOCKTIMEOUT 30
```

The following DB2 database configuration settings are recommended:

```
db2 update db cfg for <dbname> using LOGPRIMARY 23
db2 update db cfg for <dbname> using LOGFILSIZ 32768
db2 update db cfg for <dbname> using LOGSECOND 12
db2 update db cfg for <dbname> using LOGBUFSZ 8192
db2 update db cfg for <dbname> using CATALOGCACHE_SZ 2048
```

The database must be configured with the UTF-8 code set and CODEUNITS32 string unit if you need to support multibyte characters.

```
db2 update db cfg for <dbname> using string_units CODEUNITS32
```

In general, TRIRIGA does **not** recommend turning on automatic maintenance settings, such as **AUTO_MAINT**, **AUTO_TBL_MAINT**, **AUTO_RUNSTATS**, and **AUTO_STMT_STATS**. Instead, schedule database maintenance activities during regular maintenance windows to avoid adversely affecting end-user performance.

To help the query optimizer select an efficient access plan, you must specify the **REOPT(ONCE)** bind option when you run queries. When the **REOPT(ONCE)** bind option is used, the query optimizer selects the access plan the first time that the query is run. Each subsequent time that the query is run, the access plan is reused. To specify the **REOPT(ONCE)** bind option, run the following command:

```
db2 bind '<db2home>/bnd/db2clipk.bnd' collection NULLIDR1
```

The user ID created for TRIRIGA to access the database must have **DBADM**, **SECADM**, **ACCESSCTRL**, and **DATAACCESS** privileges for the database. For assistance in performing DB2 administration tasks, see the [DB2 product documentation](#).

a. DB2 Automatic Buffer Pool Size and Auto Extends

To avoid a performance issue on DB2, ensure that the database is set to use an **automatic** buffer pool instead of a static size.

To manually change the database settings, perform the following steps:

Step 1. In IBM Data Studio, log in as the TRIRIGA user to the database or instance used by TRIRIGA.

Step 2. Run the following SQL:

```
> select AUTOMATIC FROM TABLE(MON_GET_BUFFERPOOL(' ', -2)) where upper(bp_name) =
'TRIRIGABUFFERPOOL'
```

- a. If the return value is 0, then continue to Step 3.
- b. If the return value is 1, then the buffer pool is already set to **automatic**, and you are done.

Step 3. Stop the application servers pointing to the DB2 database.

Step 4. Run the following SQL in IBM Data Studio:

```
> alter bufferpool TRIRIGABUFFERPOOL immediate size AUTOMATIC
```

Step 5. Run the original SQL **select** to make sure the return value is now 1.

Step 6. Start and stop the DB2 instance used by TRIRIGA:

- a. For Windows, from the DB2 Command Window - Administrator, logged in as the DB2 administrator user (typically, this is db2admin) where **XXXXXX** is the name of the instance used by TRIRIGA:

```
> set db2instance=XXXXXX
> db2stop force
> db2start
```

- b. For Linux, from a shell window, logged in as the TRIRIGA instance user:

```
> db2stop force
> db2start
```

Step 7. Restart the application servers pointing to the DB2 database.

b. DB2 Diagnostic Log

Monitor the DB2 diagnostic log for errors and watch its size to ensure that it doesn't grow large enough to cause issues with storage space. For details on configuring DB2 to use rotating DB2 diagnostic log files, see [DB2 diagnostic \(db2diag\) log files](#).

5.3.2 IBM DB2 Application Platform Indexes

The following performance tuning indexes can be added to DB2 databases that are running TRIRIGA Platform 3.5.x. These recommended DB2 performance tuning indexes are the result of iterative performance tuning cycles and collaboration with the TRIRIGA development team. The indexes listed here are **not** included in the TRIRIGA base product unless otherwise stated.

These indexes provide significant performance improvements when measured against a broad performance test workload. While TRIRIGA recommends adding these indexes to the DB2 database platform, performance gains might vary depending on an array of factors including application usage, load patterns, hardware sizing, application, database server configuration, and so on. DB2 database administrators should monitor databases for efficient index usage to determine the overall impact produced by applying the recommended indexes, and to determine additional indexes that will improve performance based on situational and data composition needs.

```
CREATE INDEX PERF01_T_TRISPACEALLOCATIONFACT ON T_TRISPACEALLOCATIONFACT
(TRICAPTUREPERIODTXOBJID ASC, TRIFACTALLOCMOVESNU ASC, TRIFACTALLOCWORKERSNU ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRISPACEALLOCATIONFACT');
CALL SYSPROC.admin_cmd('runstats on table T_TRISPACEALLOCATIONFACT WITH distribution and
sampled detailed index PERF01_T_TRISPACEALLOCATIONFACT');
```

```
CREATE INDEX PERF02_T_TRISPACEALLOCATIONFACT ON T_TRISPACEALLOCATIONFACT
(TRICAPTUREPERIODTXOBJID ASC, TRIDIMWORKPOINTFLAGLI ASC, TRIFACTALLOCAREAIMPNU ASC,
TRIFACTALLOCWORKPOINTS ASC, TRIDIMSPACECLASSTXOBJID ASC, TRIDIMLOCATIONTXOBJID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRISPACEALLOCATIONFACT');
CALL SYSPROC.admin_cmd('runstats on table T_TRISPACEALLOCATIONFACT WITH distribution and
sampled detailed index PERF02_T_TRISPACEALLOCATIONFACT');
```

```
CREATE INDEX PERF01_T_TRIPEOPLE ON T_TRIPEOPLE
(TRIRECORDNAMESY ASC, SPEC_ID DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIPEOPLE');
CALL SYSPROC.admin_cmd('runstats on table T_TRIPEOPLE WITH distribution and sampled detailed
index PERF01_T_TRIPEOPLE');
```

```
CREATE INDEX PERF01_T_TRICOSTCODE ON T_TRICOSTCODE
(SYS_PROJECTID ASC, TRISTATUSCL ASC, SYS_OBJECTID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRICOSTCODE');
CALL SYSPROC.admin_cmd('runstats on table T_TRICOSTCODE WITH distribution and sampled detailed
index PERF01_T_TRICOSTCODE');
```

```

CREATE INDEX PERF01_T_TRISPACE ON T_TRISPACE
(TRIPARENTPROPERTYTXOBJID ASC, TRIIDTX ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED
STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRISPACE');
CALL SYSPROC.admin_cmd('runstats on table T_TRISPACE WITH distribution and sampled detailed
index PERF01_T_TRISPACE');

CREATE UNIQUE INDEX PERF01_T_TRISPACECLASSCURRENT ON T_TRISPACECLASSCURRENT
(SPEC_ID ASC) INCLUDE (TRINAMETX) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRISPACECLASSCURRENT');
CALL SYSPROC.admin_cmd('runstats on table T_TRISPACECLASSCURRENT WITH distribution and sampled
detailed index PERF01_T_TRISPACECLASSCURRENT');

CREATE INDEX PERF02_T_TRIPEOPLE ON T_TRIPEOPLE
(SYS_GUID ASC, UPPER(triLastNameTX) ASC, SYS_OBJECTID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIPEOPLE');
CALL SYSPROC.admin_cmd('runstats on table T_TRIPEOPLE WITH distribution and sampled detailed
index PERF02_T_TRIPEOPLE');

CREATE INDEX PERF01_T_ORGANIZATION ON T_ORGANIZATION
(SYS_GUID ASC, UPPER(triNameTX) ASC, SYS_OBJECTID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_ORGANIZATION');
CALL SYSPROC.admin_cmd('runstats on table T_ORGANIZATION WITH distribution and sampled detailed
index PERF01_T_ORGANIZATION');

CREATE INDEX PERF03_T_TRIWORKTASK ON T_TRIWORKTASK
(SYS_GUID ASC, UPPER(triNameTX) ASC, SYS_OBJECTID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIWORKTASK');
CALL SYSPROC.admin_cmd('runstats on table T_TRIWORKTASK WITH distribution and sampled detailed
index PERF03_T_TRIWORKTASK');

```

5.3.3 Reserve Indexes for DB2

Any implementation of **Reserve** should be tuned to include appropriate indexes for performance improvement. The following indexes were identified to help increase performance dramatically for reserve queries by the TRIRIGA performance team on DB2, but you should review and tune for your specific implementation.

The following performance tuning indexes can be added to DB2 databases that are running TRIRIGA Platform 3.5.x. These recommended DB2 performance tuning indexes are the result of iterative performance tuning cycles and collaboration with the TRIRIGA development team. The indexes listed here are **not** included in the TRIRIGA base product unless otherwise stated.

These indexes provide significant performance improvements when measured against a broad performance test workload. While TRIRIGA recommends adding these indexes to the DB2 database platform, performance gains might vary depending on an array of factors including application usage, load patterns, hardware sizing, application, database server configuration, and so on. DB2 database administrators should monitor databases for efficient index usage to determine the overall impact produced by applying the recommended indexes, and to determine additional indexes that will improve performance based on situational and data composition needs.

```

CREATE INDEX "PERF01_TRIRESERVATIONINSTANCE" ON "T_TRIRESERVATIONINSTANCE"
(triPlannedStartDT,SYS_OBJECTID,SYS_GUID,SYS_PROJECTID,triStatusCL) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIRESERVATIONINSTANCE');
CALL SYSPROC.admin_cmd('runstats on table T_TRIRESERVATIONINSTANCE WITH distribution and
sampled detailed index PERF01_TRIRESERVATIONINSTANCE');

CREATE INDEX "PERF01_TRIRESERVATIONRESOURCE" ON "T_TRIRESERVATIONRESOURCE"
(SPEC_ID,SYS_OBJECTID,triResourceTypeLI,SYS_PROJECTID) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIRESERVATIONRESOURCE');
CALL SYSPROC.admin_cmd('runstats on table T_TRIRESERVATIONRESOURCE WITH distribution and
sampled detailed index PERF01_TRIRESERVATIONRESOURCE');

CREATE INDEX "PERF03_TRIPEOPLE" ON "T_TRIPEOPLE" (SPEC_ID,SYS_OBJECTID) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIPEOPLE');
CALL SYSPROC.admin_cmd('runstats on table T_TRIPEOPLE WITH distribution and sampled detailed
index PERF03_TRIPEOPLE');

CREATE INDEX "PERF01_MYPROFILE" ON "T_MYPROFILE" (SPEC_ID,SYS_OBJECTID,triRecordIdSY) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_MYPROFILE');
CALL SYSPROC.admin_cmd('runstats on table T_MYPROFILE WITH distribution and sampled detailed
index PERF01_MYPROFILE');

CREATE INDEX "PERF01_TRIRESERVATIONDEF" ON "T_TRIRESERVATIONDEFINITION"
(SPEC_ID,SYS_OBJECTID,SYS_GUID,SYS_PROJECTID) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED
STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIRESERVATIONDEFINITION');
CALL SYSPROC.admin_cmd('runstats on table T_TRIRESERVATIONDEFINITION WITH distribution and
sampled detailed index PERF01_TRIRESERVATIONDEF');

CREATE INDEX "PERF01_TRIROLE" ON "T_TRIROLE" (SPEC_ID,triNameTX) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRIROLE');
CALL SYSPROC.admin_cmd('runstats on table T_TRIROLE WITH distribution and sampled detailed
index PERF01_TRIROLE');

CREATE INDEX "PERF01_TRICONTACTROLE" ON "T_TRICONTACTROLE"
(SPEC_ID,SYS_OBJECTID,ClassifiedByRoleSysKey) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED
STATISTICS;
CALL SYSPROC.admin_cmd('reorg table T_TRICONTACTROLE');

```

```
CALL SYSPROC.admin_cmd('runstats on table T_TRICONTRACTROLE WITH distribution and sampled
detailed index PERF01_TRICONTRACTROLE');
```

5.3.4 Lease Indexes for DB2

Any implementation of **Lease Management** and **Lease Accounting** should be tuned to include appropriate indexes for performance improvement. The following indexes were identified to help increase performance dramatically for lease queries by the TRIRIGA performance team on DB2, but you should review and tune for your specific implementation.

The following performance tuning indexes can be added to DB2 databases that are running TRIRIGA Platform 3.6.x. These recommended DB2 performance tuning indexes are the result of iterative performance tuning cycles and collaboration with the TRIRIGA development team. The indexes listed here are **not** included in the TRIRIGA base product unless otherwise stated.

These indexes provide significant performance improvements when measured against a broad performance test workload. While TRIRIGA recommends adding these indexes to the DB2 database platform, performance gains might vary depending on an array of factors including application usage, load patterns, hardware sizing, application, database server configuration, and so on. DB2 database administrators should monitor databases for efficient index usage to determine the overall impact produced by applying the recommended indexes, and to determine additional indexes that will improve performance based on situational and data composition needs.

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
CREATE INDEX TRIDATA.PERF1804101535060 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE UNIQUE INDEX TRIDATA.PERF1804101535230 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (TRIAccountingTypeELI, SYS_GUID, TRIDUEDA, TRIEXPECTEDEXPENSENU,
TRIEXPCTEDAMOUNTNU, TRIEXPECTEDACCRUALNU, TRIPAYMENTTYPECLOBJID, TRIPAYMENTTYPECL,
TRISTATUSCLOBJID, TRISTATUSCL, TRICURRENCYUO, SYS_TYPE1, TRIUSERMESSAGEFLAGTX,
SYS_OBJECTID) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804101544190 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC, SPEC_ID
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804101551040 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC, SPEC_ID
ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804201552470 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC,
ENDDATETIME ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804201553110 ON TRIDATA.T_SCHEDULEDEVENTS (EVENTSTATUS ASC,
SYS_OBJECTID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804201629100 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC,
STARTDATETIME ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221912280 ON TRIDATA.T_TRIPLANNEDSPACE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221916070 ON TRIDATA.T_TRIPLANNEDFLOOR (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221918070 ON TRIDATA.T_TRISPACE (SYS_TYPE1 ASC, SYS_GUID ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221919560 ON TRIDATA.T_TRIFLOOR (SYS_TYPE1 ASC, SYS_GUID ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221921350 ON TRIDATA.T_TRIINSTALLATION (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID
ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221923250 ON TRIDATA.T_TRIBUILDING (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID
ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221925140 ON TRIDATA.T_TRIVERTICALSHAFT (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804221928490 ON TRIDATA.T_TRIPROPERTY (SYS_GUID ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, TRICITYTX ASC, TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SPEC_ID ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

```
CREATE INDEX TRIDATA.PERF1804222031340 ON TRIDATA.T_TRIPLANNEDSPACE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC,
TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
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CREATE INDEX TRIDATA.PERF1804222035120 ON TRIDATA.T_TRIPLANNEDFLOOR (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC,
TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
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CREATE INDEX TRIDATA.PERF1804222037150 ON TRIDATA.T_TRISPACE (SYS_TYPE1 ASC, TRISTATUSCL ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
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CREATE INDEX TRIDATA.PERF1804222038500 ON TRIDATA.T_TRIFLOOR (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC,
TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
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CREATE INDEX TRIDATA.PERF1804222040390 ON TRIDATA.T_TRIINSTALLATION (SYS_PROJECTID ASC,
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SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC,
TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1804222042280 ON TRIDATA.T_TRIBUILDING (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC,
TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1804222044170 ON TRIDATA.T_TRIVERTICALSHAFT (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC,
TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1804222047510 ON TRIDATA.T_TRIPROPERTY (SYS_GUID ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC,
TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1804222208420 ON TRIDATA.T_TRILEASECLAUSE (SPEC_ID ASC)
INCLUDE (SYS_GUID, TRICLAUSESECTIONCATEGO, TRICLAUSETYPECL, SYS_OBJECTID, SYS_TYPE1,
TRIDESCRPTIONTX, TRIPAGETX, TRISECTIONTX, TRIGRANTEDINLEASECLOBJID, TRIGRANTEDINLEASECL,
TRICLAUSETYPECLOBJID, TRICLAUSESECTIONCATEGOOBJID, TRIUSERMESSAGEFLAGTX) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1804222214470 ON TRIDATA.T_TRILEASECLAUSE (SPEC_ID ASC)
INCLUDE (SYS_GUID, SYS_OBJECTID, SYS_TYPE1, TRIDESCRPTIONTX, TRIPAGETX, TRISECTIONTX,
TRIGRANTEDINLEASECLOBJID, TRIGRANTEDINLEASECL, TRICLAUSETYPECLOBJID, TRICLAUSETYPECL,
TRICLAUSESECTIONCATEGOOBJID, TRIUSERMESSAGEFLAGTX, TRICLAUSESECTIONCATEGO) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1804232123170 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (SYS_PROJECTID, ISPAYMENTFORSYSKEY, SYS_OBJECTID, TRICURRENCYUO,
TRIPAYMENTTYPECLOBJID, TRIPAYMENTTYPECL, TRIEXPECTEDAMOUNTNU, TRIACTUALAMOUNTNU,
TRISTATUSCLOBJID, TRISTATUSCL, SYS_TYPE1, SYS_GUID) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1804232356320 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (SYS_PROJECTID, ISPAYMENTFORSYSKEY, SYS_OBJECTID, TRICURRENCYUO,
TRIPAYMENTTYPECLOBJID, TRIPAYMENTTYPECL, TRIEXPECTEDAMOUNTNU, TRIACTUALAMOUNTNU,
TRISTATUSCLOBJID, TRISTATUSCL, SYS_TYPE1, SYS_GUID) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1804232356370 ON TRIDATA.T_TRIREALESTATECONTRACT (SPEC_ID ASC)
INCLUDE (TRINAMETX) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX PERF35.PERF_GETPAYMENTS ON PERF35.T_TRIPAYMENTLINEITEM (TRIPROCESSPERIODCL ASC,
TRISTATUSCL ASC, TRIACCOUNTINGTYPELI ASC, TRIPAYPROCESSEDMODELI ASC, SYS_GUID ASC,
SYS_OBJECTID ASC, TRIDUEDA ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072214360 ON TRIDATA.T_TRIPLANNEDSPACE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX
ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC,
SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072216250 ON TRIDATA.T_TRILAND (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX
ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072218140 ON TRIDATA.T_TRIPLANNEDFLOOR (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX
ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC,
SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072221430 ON TRIDATA.T_TRISPACE (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072223320 ON TRIDATA.T_TRIFLOOR (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072223410 ON TRIDATA.T_TRIINSTALLATION (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072227100 ON TRIDATA.T_TRIBUILDING (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072227190 ON TRIDATA.T_TRIVERTICALSHAFT (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072229080 ON TRIDATA.T_TRIPROPERTY (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX

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ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072230570 ON TRIDATA.T_LOCATION (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX
ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072232460 ON TRIDATA.T_TRIPROPOSEDSITE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072238300 ON TRIDATA.T_TRILAND (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRISTATEPROVTX ASC,
TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072243510 ON TRIDATA.T_TRISPACE (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRIFORMLABELSY
ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072245400 ON TRIDATA.T_TRIFLOOR (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRIFORMLABELSY
ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072245490 ON TRIDATA.T_TRIINSTALLATION (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072249210 ON TRIDATA.T_TRIBUILDING (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC,
TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072251210 ON TRIDATA.T_TRIPROPERTY (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072253120 ON TRIDATA.T_LOCATION (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRISTATEPROVTX ASC,
TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072255030 ON TRIDATA.T_TRIPROPOSEDSITE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072327310 ON TRIDATA.T_TRIPEOPLE (SYS_GUID ASC, SYS_OBJECTID
ASC, PRIMARYORGANIZATIONSYSKEY ASC, TRITITLETX ASC, TRISTATUSCL ASC, TRIEMAILTX ASC,
TRIWORKPHONETX ASC, TRIWORKFAXTX ASC, TRINAMETX ASC, TRIUSERMESSAGEFLAGTX ASC,
SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1806072328180 ON TRIDATA.T_ORGANIZATION (SPEC_ID ASC) INCLUDE
(TRIPATHTX) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080059310 ON TRIDATA.T_TRILEASEABSTRACT (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GUID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080101330 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_GUID ASC,
SYS_PROJECTID ASC, TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC,
TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SPEC_ID
ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080101410 ON TRIDATA.T_TRIPURCHASEREQUISITION (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080103340 ON TRIDATA.T_TRISTANDARDCONTRACT (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080105280 ON TRIDATA.T_TRIASSETLEASE (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC, TRISTATUSCL ASC,
SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID
ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080107220 ON TRIDATA.T_TRIWARRANTY (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080111080 ON TRIDATA.T_TRIPURCHASEORDER (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080113010 ON TRIDATA.T_TRISPACEUSEAGREEMENT (SYS_PROJECTID ASC,

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TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080116470 ON TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER (SYS_PROJECTID
ASC, TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080120340 ON TRIDATA.T_TRIPRIMECONTRACT (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080122280 ON TRIDATA.T_TR_STAND_CONTR_CHAN_ORD (SYS_PROJECTID
ASC, TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080124220 ON TRIDATA.T_TRICONTRACT (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC, TRISTATUSCL ASC,
SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID
ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080126160 ON TRIDATA.T_CSTDEFAULTRETENTION (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC, TRISTATUSCL ASC,
SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID
ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080128380 ON TRIDATA.REP_TEMPLATE_HDR (REP_NAME ASC,
OBJECT_TEMPLATE_ID ASC, CLASS_TYPE_ID ASC, REP_TEMPLATE_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806080129090 ON TRIDATA.MODULE_ASSOCIATION (ASS_BO_ID ASC,
DEPENDENT_FLAG ASC, CASCADE_READ_ONLY ASC, REV_ASSOCIATION_VERB ASC,
PROJ_CONTAINMENT_DISABLED ASC, ASSOCIATION_VERB ASC, SOURCE_BO_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806071659590 ON TRIDATA.T_TRIAPPROVAL (TRIRECORDIDSY ASC, SYS_GUID
ASC, TRILINKEDBUSINESSOBJ ASC, TRILINKEDRECORDTX ASC, TRISUBMITTEDBYTX ASC, TRISTATUSCL
ASC, SYS_OBJECTID ASC, SPEC_ID ASC, SYS_TYPE1 ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806071724280 ON TRIDATA.T_ORGANIZATION (SYS_GUID ASC, SYS_OBJECTID
ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC,
TRINAMETX ASC, TRIIDTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1
ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806071721520 ON TRIDATA.T_TRICITY (SYS_OBJECTID ASC, TRIPATHSY ASC,
SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1806071724500 ON TRIDATA.T_ORGANIZATION (SPEC_ID ASC) INCLUDE
(SYS_OBJECTID, TRIPATHSY) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1806071945040 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (TRISUMMARYTYPECL, TRISTATUSCL, TRIACCOUNTINGTYPELI, TRIDUEDA, SYS_OBJECTID,
TRICURRENCYUO, SYS_GUID, SYS_TYPE1, TRIEXPECTEDTOTALNU, TRISTATUSCLOBJID,
TRIEXPECTEDAMOUNTNU, TRIPAYMENTTYPEPCLOBJID, TRIPAYMENTTYPECL) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1806071948000 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (TRISUMMARYTYPECL, TRISTATUSCL, TRIACCOUNTINGTYPELI, SYS_OBJECTID, TRICURRENCYUO,
SYS_GUID, SYS_TYPE1, TRISTATUSCLOBJID, TRIACTUALAMOUNTNU, TRIPAYMENTTYPEPCLOBJID,
TRIPAYMENTTYPECL) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806071623390 ON TRIDATA.UI_TARGET (PRIMARY_OBJECT_ID ASC,
UI_TARGET_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806071623470 ON TRIDATA.NAV_ITEM (UI_TARGET_ID ASC, NAV_ITEM_ID
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072038510 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_GUID ASC,
SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRICONTRACTSTATUSCLOBJID ASC, TRICONTRACTSTATUSCL ASC,
TRIAREAUO ASC, TRICOUNTRYTX ASC, TRISTATEPROVTX ASC, TRICITYTX ASC, TRIIMAGEIM ASC,
TRICONTRACTRENTABLENU ASC, TRIEXPIRATIONDA ASC, TRINAMETX ASC, TRISTATUSCL ASC,
TRIUSERMESSAGEFLAGTX ASC, TRIIDTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072042370 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_OBJECTSTATE
ASC, SYS_GUID ASC, SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRICONTRACTSTATUSCLOBJID ASC,
TRICONTRACTSTATUSCL ASC, TRIAREAUO ASC, TRICOUNTRYTX ASC, TRISTATEPROVTX ASC, TRICITYTX
ASC, TRIIMAGEIM ASC, TRICONTRACTRENTABLENU ASC, TRIEXPIRATIONDA ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072102530 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_OBJECTSTATE
ASC, SYS_GUID ASC, SYS_PROJECTID ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072106180 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_GUID ASC,
SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072109460 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_OBJECTSTATE
ASC, SYS_GUID ASC, SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRINAMETX ASC,
SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072121060 ON TRIDATA.T_TRIPEOPLE (TRIRECORDNAMETX ASC, SPEC_ID
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072126500 ON TRIDATA.T_TRIINVOICE (SYS_PROJECTID ASC, SYS_GUID
ASC, SYS_OBJECTID ASC, TRIDATEDA ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC,

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TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID
ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072131470 ON TRIDATA.T_TRILEASEABSTRACT (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLABEL2 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072132150 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLAB ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072132430 ON TRIDATA.T_TRIPURCHASEREQUISITION (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLAB ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072132450 ON TRIDATA.T_TRISTANDARDCONTRACT (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072133130 ON TRIDATA.T_TRIASSETLEASE (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072134090 ON TRIDATA.T_TRIBLANKETPURCHASEORDER (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072135310 ON TRIDATA.T_TRISPACEUSEAGREEMENT (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLAB ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072136010 ON TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER (SYS_OBJECTID
ASC, TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072136570 ON TRIDATA.T_TRIPRIMECONTRACT (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072137530 ON TRIDATA.T_TRICONTRACT (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072138210 ON TRIDATA.T_CSTDEFAULTRETENTION (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLABEL1 ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072130330 ON TRIDATA.T_TRIREINVOICE (SYS_GUID ASC, SYS_OBJECTID
ASC, HASCONTRACTSYSKEY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL
ASC, TRIIDTX ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED
STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1806072138490 ON TRIDATA.T_TRIREALESTATECONTRACT (SPEC_ID ASC)
INCLUDE (TRINAMETX, TRIIDTX) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1806072141080 ON TRIDATA.T_TRICONTACTROLE (SPEC_ID ASC)
INCLUDE (SYS_OBJECTID, TRISTATUSCL) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE UNIQUE INDEX TRIDATA.PERF1806072141250 ON TRIDATA.T_TRISTANDARDCONTRACT (SPEC_ID ASC)
INCLUDE (SYS_GUID, TRIIDTX, TRINAMETX, TRITOORGANIZATIONTXOBJID, TRISTATUSCL,
TRISTATUSCLOBJID, TRIPENDINGCHANGESROL, TRICOMMITMENTORIGINA, TRICURRENCYUO,
TRITOORGANIZATIONTX, SYS_TYPE1, TRICOMMITMENTCHANGES, SYS_OBJECTID) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806072144040 ON TRIDATA.T_TRIPURCHASEORDER (SYS_GUID ASC,
SYS_OBJECTID ASC, TRICURRENCYUO ASC, SYS_TYPE1 ASC, TRISTATUSCLOBJID ASC,
TRILINEITEMTOTALNU ASC, TRIVENDORCOMPANYLOOKOBJID ASC, TRIVENDORCOMPANYLOOK ASC, TRINAMETX
ASC, TRIIDTX ASC, SPEC_ID ASC, TRISTATUSCL ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1808180010570 ON TRIDATA.T_TRIJOURNALENTY (TRISTATUSCL ASC,
SYS_OBJECTID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1808180017030 ON TRIDATA.WF_EVENT (AGENT_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1808180017130 ON TRIDATA.WF_EVENT (AGENT_ID ASC, BO_ID DESC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1808180022250 ON TRIDATA.T_TRIJOURNALENTY (SYS_OBJECTID ASC, SPEC_ID
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

CREATE INDEX TRIDATA.PERF1806112022490 ON TRIDATA.APP_OBJECT_PERMISSION (GROUP_ID ASC,
COMPANY_ID ASC, SERVICE_ID ASC, APPLICATION_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_LOCATION FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_LOCATIONGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIBUILDING FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIBUILDINGGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSTALLATION FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIINSTAGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRILAND FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRILANDGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDFLOOR FOR SAMPLED DETAILED INDEX

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TRIDATA.IDX_SYS_T_TRIPLANNGUID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDSPACE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPLANNGUID5;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROPOSEDSITE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPROPOGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIVERTICALSHAFT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIVERTIGUID1;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRILEASECLAUSE FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRILEASECLAUSE;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPAYMENTLINEITEM FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIPAYMENTLINEITEM;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIREALESTATECONTRACT;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPAYMENTLINEITEM FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIPAYMENTLINEITEM;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIREALESTATECONTRACT;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_LOCATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_LOCATIONOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRILAND FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRILANDOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROPOSEDSITE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIPROPOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISPACE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRISPACEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIVERTICALSHAFT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIVERTICALSHAFT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSTALLATION FOR SAMPLED DETAILED INDEX
TRIDATA.P_TRIINSTALLATION;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDFLOOR FOR SAMPLED DETAILED INDEX
TRIDATA.P_TRIPLANNEDFLOOR;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDSPACE FOR SAMPLED DETAILED INDEX
TRIDATA.P_TRIPLANNEDSPACE;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSTALLATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIINSTAGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDFLOOR FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIPLANNGUID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDSPACE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIPLANNGUID5;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIVERTICALSHAFT FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIVERTIGUID1;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPEOPLE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPEOPLEGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPEOPLE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPEOPLEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX TRIDATA.PK_ORGANIZATION;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICOUNTRY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRICOUNTRYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSURANCE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIINSUROBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRILEASEABSTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRILEASEOBJECTID3;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROUREMENTCARD FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPROCUOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPURCHOBJECTID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPURCHASEREQUISITION FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPURCHOBJECTID3;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISPACEUSEAGREEMENT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRISPACEOBJECTID26;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISTANDARDCONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRISTANDOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISTATE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRISTATEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIWARRANTY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIWARRANTYOBJECTID1;
-- COMMIT WORK;
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-- RUNSTATS ON TABLE TRIDATA.T_TR_STAND_CONTR_CHAN_ORD FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TR_STANDOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PERF01_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIASSETLEASE FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIASSETLEASE;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIBLANKETPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIBLANKETPURCHASEORDER;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICONTRACT FOR SAMPLED DETAILED INDEX TRIDATA.PK_TRICONTRACT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIPRIMECONTRACT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIPRIMECONTRACTCHANGEORDER;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_CSTDEFAULTRETENTION FOR SAMPLED DETAILED INDEX
TRIDATA.P_CSTDEFAULTRETENTION;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_TRIAPPROVAL FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIAPPROVALGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIAPPROVAL FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIAPPROVALOBJECTID1;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_ORGANIZAOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX TRIDATA.PK_ORGANIZATION;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIREALEGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIREALEOBJECTID1;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIREALEGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIREALEOBJECTID1;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIREALEGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIREALEOBJECTID1;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINVOICE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIINVOICEGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINVOICE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIINVOICEOBJECTID1;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.IDX03_IBS_SPEC_ASSIGN;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_CSTDEFAULTRETENTION FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_CSTDEFAUGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIASSETLEASE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIASSETLEASEGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIBLANKETPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIBLANKOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRICONTRACTGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPRIMEGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPRIMEGUIID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIREALESTATECONTRACT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREINVOICE FOR SAMPLED DETAILED INDEX TRIDATA.PK_TRIREINVOICE;
-- COMMIT WORK;
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-- RUNSTATS ON TABLE TRIDATA.T_TRICONTACTROLE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF01_TRICONTACTROLE;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISTANDARDCONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRISTANDARDCONTRACT;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.ASS_CTYP_TMPL_SPID;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPURCHOBJECTID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICONTACTROLE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF01_TRICONTACTROLE;
-- COMMIT WORK;

-- RUNSTATS ON TABLE TRIDATA.APP_OBJECT_PERMISSION FOR SAMPLED DETAILED INDEX
TRIDATA.PK_APP_OBJECT_PERMISSION;
-- COMMIT WORK;

```

5.3.5 Internal Lease Benchmark Findings

a. Performance Benchmark Index Objectives

Lease Management and **Lease Accounting** performance testing occurred using a database that was loaded with approximately 17,000 lease abstracts and 24,000 leases with other large amounts of portfolio data to represent a large customer deployment of the lease application. The performance test indexes were applied to the data-load and benchmark-test environments to improve overall throughput and response times as a result of this project.

b. Performance Environments

The performance environments consist of 3 basic hardware components based on the [3.7 Advanced System Configuration](#) example. The performance benchmark test was conducted by using a specific configuration of this environment.

- **Application servers:** The application servers are where the majority of the business logic is performed. Application server processes are CPU-intensive and require sufficient RAM (memory). The application tier consists of Java Server Pages (JSP) and Java classes. The J2EE application servers provide a JSP container, a database connection pool, and transaction management services. Application servers are the physical manifestation of the application (middleware) tier.
- **Process servers:** The process servers are configured almost exactly like application servers, but users do not log onto these servers. They handle the asynchronous workflow requests that are queued from users or by the IBM TRIRIGA software. Process servers are the physical manifestation of the application (middleware) tier.
- **Database server:** The database server runs the database processes. The database is where data is stored. Today's major databases use SQL (Structured Query Language) to store and retrieve data. The application tier communicates with the database tier via JDBC connection pools. It is the physical manifestation of the database tier.

b.1 Data-Load Hardware Environment

The following values describe the data-load hardware environment. With this configuration, the resource utilization bottlenecks were eliminated to load lease batches of at least **1000 leases** at a time.

- **Database Server:**
 - # of vCPUs: 64 virtual CPUs
 - CPU: Intel® Xeon® CPU E5-2686 v4 @ 2.3 GHz
 - Storage: SAN attached
 - Memory: 488 GB
 - NIC: 1 GBit/sec
 - OS: CentOS Linux 7.4, 64-bit
 - Database: DB2 Enterprise Database Server 11.1.2.2, 64-bit
- **Application Server (VM 1 of 1):**
 - # of vCPUs: 4 virtual CPUs
 - CPU: Intel® Xeon® CPU E5-2686 v4 @ 2.3 GHz
 - Memory: 32 GB
 - OS: CentOS Linux 7.4, 64-bit
 - Application Server: WebSphere Liberty Profile (TRIRIGA embedded)
 - Java Version: Oracle Java 1.8.0_162
 - JVM Heap Size: 4096 MB
 - # of JVMs: 1
 - Usage: Front-end access only
- **Process Server (VM 1 of 3):**
 - # of vCPUs: 36 virtual CPUs
 - CPU: Intel® Xeon® Platinum 8124M CPU @ 3.0 GHz
 - Memory: 72 GB
 - OS: CentOS Linux 7.4, 64-bit
 - Application Server: WebSphere Liberty Profile (TRIRIGA embedded)
 - Java Version: Oracle Java 1.8.0_162
 - JVM Heap Size: 6144 MB
 - # of JVMs: 1
 - Usage: Non-PM data loads (restricted to single user)
- **Process Server (VM 2 of 3):**
 - # of vCPUs: 72 virtual CPUs
 - CPU: Intel® Xeon® Platinum 8124M CPU @ 3.0 GHz
 - Memory: 144 GB
 - OS: CentOS Linux 7.4, 64-bit
 - Application Server: WebSphere Liberty Profile (TRIRIGA embedded)
 - Java Version: Oracle Java 1.8.0_162
 - JVM Heap Size: 6144 MB
 - # of JVMs: 1
 - Usage: Lease data loader (restricted to data-load user and SCHEVENT user)
- **Process Server (VM 3 of 3):**
 - # of vCPUs: 72 virtual CPUs
 - CPU: Intel® Xeon® Platinum 8124M CPU @ 3.0 GHz
 - Memory: 144 GB
 - OS: CentOS Linux 7.4, 64-bit
 - Application Server: WebSphere Liberty Profile (TRIRIGA embedded)
 - Java Version: Oracle Java 1.8.0_162
 - JVM Heap Size: 6144 MB
 - # of JVMs: 1
 - Usage: System workflow processing (restricted to system user)

b.2 Multi-User Benchmark Test Environment

The following values describe the multi-user benchmark-test hardware environment.

- **Database Server:**

- o # of vCPUs: 64 virtual CPUs
- o CPU: Intel® Xeon® CPU E5-2686 v4 @ 2.3 GHz
- o Storage: SAN attached
- o Memory: 488 GB
- o NIC: 1 GBit/sec
- o OS: CentOS Linux 7.4, 64-bit
- o Database: DB2 Enterprise Database Server 11.1.2.2, 64-bit
- **Application Servers (VMs):**
 - o # of vCPUs: 16 virtual CPUs
 - o CPU: Intel® Xeon® Platinum 8124M CPU @ 3.0 GHz
 - o Memory: 32 GB
 - o OS: CentOS Linux 7.4, 64-bit
 - o Application Server: WebSphere Application Server 8.5.5.12
 - o Java Version: IBM Java 1.8.0 SR4 FP5, 64-bit
 - o JVM Heap Size: 4096 MB
 - o # of VMs: 2
 - o JVMs per VM: 1
- **Process and BIRT/Integration Servers (VMs):**
 - o # of vCPUs: 36 virtual CPUs
 - o CPU: Intel® Xeon® CPU E5-2686 v4 @ 2.3 GHz
 - o Memory: 72 GB
 - o OS: CentOS Linux 7.4, 64-bit
 - o Application Server: WebSphere Application Server 8.5.5.12
 - o Java Version: IBM Java 1.8.0 SR4 FP5, 64-bit
 - o JVM Heap Size: 6144 MB
 - o # of VMs: 2
 - o JVMs per VM: 1

b.3 Software Environment

The following values show the software versions used for both the data-load and multi-user benchmark-test environments.

- **Software Environment:**
 - o IBM TRIRIGA 10.5.3.2
 - o IBM TRIRIGA Application Platform 3.5.3.4

b.4 Key Configurations

IBM TRIRIGA uses out-of-the-box settings as well as settings from our performance best practices.

The following settings and values identify the **key tuning and configuration** for the performance test environments. The settings in **blue** were modified from best practices to achieve a balance between response times and resource utilization.

b.4.1 IBM DB2 Database Server

For more information, see the above section **5.3.1 IBM DB2 Database Server Tuning**.

- **Registry Settings:**
 - o DB2_COMPATIBILITY_VECTOR: ORA
 - o DB2_DEFERRED_PREPARE_SEMANTICS: YES
 - o DB2_ATS_ENABLE: YES
 - o DB2_USE_ALTERNATE_PAGE_CLEANING: ON
- **DBM Configuration:**
 - o RQRIOBLK: 65535
 - o AGENT_STACK_SZ: 1024
- **DB Configuration:**
 - o STMT_CONC: OFF
 - o LOCKTIMEOUT: 30
 - o LOGPRIMARY: 64
 - o LOGFILSIZ: 65535
 - o LOGSECOND: 48
 - o LOGBUFSZ: 8192
 - o CATALOGCACHE_SZ: 2048
 - o STRING_UNITS: CODEUNITS32
- **Other Settings:**
 - o db2 bind '<db2home>/bnd/db2clipk.bnd' collection NULLIDR1: REOPT(ONCE)
 - o Bufferpool Size: AUTOMATIC

b.4.2 IBM WebSphere Application Server

For more information, see the section **6 Application Server Tuning**.

- **Initial Heap Size:**
 - o For Single-User Manual Test Environment: 4096M
 - o For Process and BIRT/Integration Servers: 6144M
- **Maximum Heap Size:**
 - o For Single-User Manual Test Environment: 4096M
 - o For Process and BIRT/Integration Servers: 6144M
- **Generic JVM Arguments:**
 - o For Data-Load Environment:
 - Dfile.encoding=UTF-8
 - Djava.awt.headless=true
 - Dlog4j.configuration=file:/home/tririga/<install_dir>/config/log4j.xml
 - Djava.net.preferIPv4Stack=true
 - server
 - XX:+HeapDumpOnOutOfMemoryError
 - XX:+UseConcMarkSweepGC
 - XX:+DisableExplicitGC
 - XX:NewSize=415M
 - XX:SurvivorRatio=16
 - o For Multi-User Benchmark Test Environment:
 - Dfile.encoding=UTF-8
 - Djava.util.Arrays.useLegacyMergeSort=true
 - Xjit:exclude={org/mozilla/javascript/UintMap.rehashTable*}
 - Xgc:classUnloadingKickoffThreshold=6500
- **DB Connection Pool:**
 - o Minimum Connections: 10
 - o Maximum Connections: 100
- **Default Thread Pool (For Single-User Manual Test Environment Only):**
 - o Minimum Size: 20
 - o Maximum Size: 50
 - o Thread Inactivity Timeout: 30000
- **WebContainer Thread Pool (For Single-User Manual Test Environment Only):**
 - o Minimum Size: 120
 - o Maximum Size: 120

- o Thread Inactivity Timeout: 60000
- **Data Source Custom Properties:**
 - o webSphereDefaultIsolationLevel: 2
 - o jdbcCollection: NULLIDR1

b.4.3 Operating System

For more information, see the section [4 Operating System Configuration](#).

The following changes were applied to the application and process servers involved in the test:

- net.ipv4.ip_local_port_range = 32768 61000

The following ulimit changes were applied to all servers involved in the test:

- Open files 131072
- Max user processes 8192

b.4.4 IBM TRIRIGA Platform

For more information on tuning and configuring the TRIRIGAWEB.properties file, see the section [7 IBM TRIRIGA Tuning](#).

For Data-Load Environment:

- **Application Servers:**
 - o WF_INSTANCE_SAVE: ERRORS_ONLY
 - o BIRT_MEMORY_USAGE_LIMIT: 35
- **Lease Load Process Servers:**
 - o WFAgentMaxThreads: 64
 - o WF_AGENT_MAX_ACTIVE_PER_USER: 64
 - o WF_INSTANCE_SAVE: ERRORS_ONLY
 - o BIRT_MEMORY_USAGE_LIMIT: 35
- **Other Data Process Server:**
 - o WFAgentMaxThreads: 32
 - o WF_AGENT_MAX_ACTIVE_PER_USER: 32
 - o WF_INSTANCE_SAVE: ERRORS_ONLY
 - o BIRT_MEMORY_USAGE_LIMIT: 35

For Multi-User Benchmark Test Environment:

- **Application Servers:**
 - o WF_INSTANCE_SAVE: ERRORS_ONLY
 - o BIRT_MEMORY_USAGE_LIMIT: 35
- **Workflow Process Servers:**
 - o WFAgentMaxThreads: 64
 - o WF_AGENT_MAX_ACTIVE_PER_USER: 16
 - o WF_INSTANCE_SAVE: ERRORS_ONLY
 - o BIRT_MEMORY_USAGE_LIMIT: 35
- **BIRT & Additional-Agents Process Server:**
 - o WFAgentMaxThreads: 64
 - o WF_AGENT_MAX_ACTIVE_PER_USER: 16
 - o WF_INSTANCE_SAVE: ERRORS_ONLY
 - o BIRT_MEMORY_USAGE_LIMIT: 35

c. Performance Test Indexes

The following sections summarize the test-index methodology and the results of the tests.

c.1 Data-Load Indexes

During the initial phases of the Lease data loading, DB2 snapshots were taken to identify long-running SQL statements. These were then analyzed with the **DB2 SQL Advisor**, and appropriate indexes were created as outlined below.

Notes:

- Since the internal Lease data loader also uses the out-of-the-box workflows for Generate Schedules, Accounting Review, and Activation, the following indexes probably also apply to the individual test cases in the **single-user** manual test. However, since these indexes were applied first for data loading, they weren't discovered during single-user manual testing. These indexes should be considered even for **non-data-load** environments.
- Between adding the indexes and increasing the resources on the data-load environment as outlined below, resource utilization issues were eliminated for data-load batches up to **1000 leases**. Note that batches larger than 1000 leases were not yet attempted, but are planned. In general, Lease data is now loading as follows:
 - o 5-Year Simple Leases: 200 per hour
 - o 10-Year Simple Leases: 100 per hour
 - o 5-Year Complex Leases: 100 per hour
 - o 10-Year Complex Leases: 50 per hour

Query 1:

```
SELECT T1.triUserMessageFlagTX AS T1_1017, T1.triAccountingTypeLI AS T1_1059,
T1.triPaymentTypeCL AS T1_1091, T1.triPaymentTypeCLObjId AS T1_1091_OBJID, T1.triDueDA AS
T1_1089, T1.triExpectedAccrualNU AS T1_1167, T1.triExpectedAmountNU AS T1_1088,
T1.triExpectedExpenseNU AS T1_1168, T1.triStatusCL AS T1_1023, T1.triStatusCLObjId AS
T1_1023_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS
T1_SPEC_ID, T1.triCurrencyUO AS T1_1143 FROM T_TRIPAYMENTLINEITEM T1 WHERE T1.SYS_GUID = ? AND
( T1.triAccountingTypeLI = ? AND UPPER(T1.triPaymentTypeCL) LIKE ? AND (T1.triStatusCL != ? OR
T1.triStatusCL IS NULL) ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE
SPEC_ID IN (SELECT T1.SPEC_ID AS T1_SPEC_ID FROM T_TRIREALESTATECONTRACT T1 WHERE
T1.SYS_PROJECTID = ? AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE
SPEC_ID = ?) AND T1.SYS_OBJECTID > ?)) AND T1.SYS_OBJECTID > ?

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1]
CREATE INDEX TRIDATA.PERF1804101535060 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2]
CREATE UNIQUE INDEX TRIDATA.PERF1804101535230 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (TRIAccountingTypeLI, SYS_GUID, TRIDUEDA, TRIExpectedExpenseNU,
TRIExpectedAmountNU, TRIExpectedAccrualNU, TRIPaymentTypeCLObjId, TRIPaymentTypeCL,
TRISTATUSCLObjId, TRISTATUSCL, TRICurrencyUO, SYS_TYPE1, TRIUSERMESSAGEFLAGTX,
SYS_OBJECTID) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

Query 2:

```
SELECT T1.StartDatetime AS T1_1006, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID,
T1.SPEC_ID AS T1_SPEC_ID FROM T_SCHEDULEDEVENTS T1 WHERE T1.SPEC_ID IN (?,?,?,?,?,?,?,?,?,
?,?,?,?,?,?,?,?,?,
?,?,?,?,?,?,?,?,?,
?,?,?,?,?,?,?,?,?,
?,?,?,?,?,?,?,?,?) AND T1.SYS_OBJECTID > ? ORDER BY CASE WHEN T1.StartDatetime is
NULL THEN 1 ELSE 0 END, T1.StartDatetime DESC;
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====  
-- index[1]  
CREATE INDEX TRIDATA.PERF1804101544190 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC, SPEC_ID  
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;  
-- index[2]  
CREATE INDEX TRIDATA.PERF1804101551040 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC, SPEC_ID  
ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;
```

Queries 3 & 4:

```
SELECT T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID  
FROM T_SCHEDULEDEVENTS T1 WHERE T1.EventStatus = ? AND T1.EndDatetime <= ? AND T1.SYS_OBJECTID  
> ? ORDER BY T1.StartDatetime
```

```
SELECT T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID  
FROM T_SCHEDULEDEVENTS T1 WHERE T1.EventStatus = ? AND T1.StartDatetime <= ? AND  
T1.SYS_OBJECTID > ? ORDER BY T1.StartDatetime;
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1]  
CREATE INDEX TRIDATA.PERF1804201552470 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC,  
ENDDATETIME ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;  
-- index[2]  
CREATE INDEX TRIDATA.PERF1804201553110 ON TRIDATA.T_SCHEDULEDEVENTS (EVENTSTATUS ASC,  
SYS_OBJECTID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;  
-- index[3]  
CREATE INDEX TRIDATA.PERF1804201629100 ON TRIDATA.T_SCHEDULEDEVENTS (SYS_OBJECTID ASC,  
STARTDATETIME ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;
```

c.2 Single-User Manual Test Indexes

Steps were performed manually with the [Performance Analyzer](#) which was activated for SQL logging. After **long-running** SQLs (i.e. running more than 1 second) were identified, those were analyzed using the **DB2 SQL Advisor** and recommended indexes were applied. If the Analyzer recommended indexes, but the improvement was <10%, those indexes were **not** applied and were not included below.

In addition, any recommended indexes against the **IBS_SPEC** and **IBS_SPEC_ASSIGNMENTS** tables were **not** applied as past experience shows that indexes against these tables can actually be detrimental to overall system performance, especially under load.

Notes:

- In an environment where **customizations** were done, the recommended indexes listed below might need to be modified to account for custom fields and specific database statistics in the database.
- Customers should identify the corresponding SQLs in their environment and use **DB2 SQL Analyzer** to verify the recommended indexes appropriate for their specific environment.

c.2.1 Lease Abstract

Query 1:

```
SELECT T1.triUserMessageFlagTX AS T1_1049, T1.triNameTX AS T1_1045, T1.triFormLabelSY AS  
T1_1058, T1.triCityTX AS T1_1136, T1.triStateProvTX AS T1_1134, T1.triCountryTX AS T1_1133,  
T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID FROM  
M_LOCATION T1 WHERE T1.SYS_TYPE1 IN (10002586,10002100) AND T1.SYS_GUID IN  
(10002954,10003156,10018036,10019061) AND T1.SYS_PROJECTID = 1 AND ( T1.triStatusCL !=  
'Retired' OR T1.triStatusCL IS NULL) AND (T1.triStatusCL != 'Upload Error' OR T1.triStatusCL IS  
NULL) ) AND T1.SYS_OBJECTID > 0 ORDER BY T1.triNameTX, T1.triFormLabelSY, T1.triCityTX,  
T1.triStateProvTX;
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1]  
CREATE INDEX TRIDATA.PERF1804221912280 ON TRIDATA.T_TRIPLANNEDSPACE (SYS_PROJECTID ASC,  
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL  
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED  
DETAILED STATISTICS;  
COMMIT WORK;  
-- index[2]  
CREATE INDEX TRIDATA.PERF1804221916070 ON TRIDATA.T_TRIPLANNEDFLOOR (SYS_PROJECTID ASC,  
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL  
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED  
DETAILED STATISTICS;  
COMMIT WORK;  
-- index[3]  
CREATE INDEX TRIDATA.PERF1804221918070 ON TRIDATA.T_TRISPACE (SYS_TYPE1 ASC, SYS_GUID ASC)  
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;  
-- index[4]  
CREATE INDEX TRIDATA.PERF1804221919560 ON TRIDATA.T_TRIFLOOR (SYS_TYPE1 ASC, SYS_GUID ASC)  
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;  
-- index[5]  
CREATE INDEX TRIDATA.PERF1804221921350 ON TRIDATA.T_TRIINSTALLATION (SYS_PROJECTID ASC,  
SYS_OBJECTID ASC, TRICITYTX ASC, TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC,  
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID  
ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;  
-- index[6]  
CREATE INDEX TRIDATA.PERF1804221923250 ON TRIDATA.T_TRIBUILDING (SYS_PROJECTID ASC,  
SYS_OBJECTID ASC, TRICITYTX ASC, TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC,  
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID  
ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;  
-- index[7]  
CREATE INDEX TRIDATA.PERF1804221925140 ON TRIDATA.T_TRIVERTICALSHAFT (SYS_PROJECTID ASC,  
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL  
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED  
DETAILED STATISTICS;  
COMMIT WORK;  
-- index[8]  
CREATE INDEX TRIDATA.PERF1804221928490 ON TRIDATA.T_TRIPROPERTY (SYS_GUID ASC, SYS_PROJECTID  
ASC, SYS_OBJECTID ASC, TRICITYTX ASC, TRISTATEPROVTX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC,  
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SPEC_ID ASC)  
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;  
COMMIT WORK;
```

Query 2:

```
SELECT T1.triUserMessageFlagTX AS T1_1049, T1.triNameTX AS T1_1045, T1.triIdTX AS T1_1044,  
T1.triParentPropertyTX AS T1_1081, T1.triParentBuildingTX AS T1_1075, T1.triParentFloorTX AS  
T1_1080, T1.triFormLabelSY AS T1_1058, T1.triStatusCL AS T1_1046, T1.triStatusCLObjId AS  
T1_1046_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS  
T1_SPEC_ID FROM M_LOCATION T1 WHERE T1.SYS_TYPE1 IN
```

```
(10002585,10002873,10002586,10002100,10002582) AND T1.SYS_GUID IN
(10002954,10003153,10003156,10018036,10019061,10003142) AND T1.SYS_PROJECTID = 1 AND (
(T1.triStatusCL != 'Retired' OR T1.triStatusCL IS NULL) AND(T1.triStatusCL != 'Upload Error' OR
T1.triStatusCL IS NULL) ) AND T1.SYS_OBJECTID > 0 ORDER BY T1.triNameTX, T1.triIdTX;
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 0.009MB
```

```
CREATE INDEX TRIDATA.PERF1804222031340 ON TRIDATA.T_TRIPLANNEDSPACE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDING TX ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAG TX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC,
TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[2], 0.009MB
```

```
CREATE INDEX TRIDATA.PERF1804222035120 ON TRIDATA.T_TRIPLANNEDFLOOR (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDING TX ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAG TX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC,
TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[3], 0.212MB
```

```
CREATE INDEX TRIDATA.PERF1804222037150 ON TRIDATA.T_TRISPACE (SYS_TYPE1 ASC, TRISTATUSCL ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[4], 3.806MB
```

```
CREATE INDEX TRIDATA.PERF1804222038500 ON TRIDATA.T_TRIFLOOR (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTY TX ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDING TX ASC,
TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAG TX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC,
TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[5], 0.009MB
```

```
CREATE INDEX TRIDATA.PERF1804222040390 ON TRIDATA.T_TRIINSTALLATION (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTY TX ASC, TRIPARENTFLOOR TX ASC,
TRIPARENTBUILDING TX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAG TX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[6], 3.837MB
```

```
CREATE INDEX TRIDATA.PERF1804222042280 ON TRIDATA.T_TRIBUILDING (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTY TX ASC, TRIPARENTFLOOR TX ASC,
TRIPARENTBUILDING TX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAG TX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[7], 0.009MB
```

```
CREATE INDEX TRIDATA.PERF1804222044170 ON TRIDATA.T_TRIVERTICALSHAFT (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTY TX ASC, TRIPARENTFLOOR TX ASC,
TRIPARENTBUILDING TX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAG TX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[8], 0.259MB
```

```
CREATE INDEX TRIDATA.PERF1804222047510 ON TRIDATA.T_TRIPROPERTY (SYS_GUID ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTY TX ASC, TRIPARENTFLOOR TX ASC,
TRIPARENTBUILDING TX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAG TX ASC, TRISTATUSCLOBJID
ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- RECOMMENDED EXISTING INDEXES
```

```
-- =====
```

```
-- RUNSTATS ON TABLE TRIDATA.T_LOCATION FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_LOCATIONGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIBUILDING FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIBUILDINGGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSTALLATION FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIINSTAGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRILAND FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRILANDGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDFLOOR FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIPLANNGUID2;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDSPACE FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIPLANNGUID5;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROPOSEDSITE FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIPROPOGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIVERTICALSHAFT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIVERTIGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRISPACE FOR SAMPLED DETAILED INDEX TRIDATA.PERF1804221918070;
```

```
-- COMMIT WORK;
```

c.2.2 Generate Schedules

Query 1:

```
SELECT T1.triUserMessageFlagTX AS T1_1005, T1.triClauseSectionCatego AS T1_1296,
T1.triClauseSectionCategoObjId AS T1_1296_OBJID, T1.triClauseTypeCL AS T1_1095,
T1.triClauseTypeCLObjId AS T1_1095_OBJID, T1.triGrantedInLeaseCL AS T1_1304,
T1.triGrantedInLeaseCLObjId AS T1_1304_OBJID, T1.triSectionTX AS T1_1067, T1.triPageTX AS
T1_1301, T1.triDescriptionTX AS T1_1026, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS
T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID FROM T_TRILEASECLAUSE T1 WHERE T1.SYS_GUID = 10011868
AND ( (T1.triClauseSectionCatego NOT IN ('Rights','Landlord Rights','Tenant Rights') OR
T1.triClauseSectionCatego IS NULL) ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM
IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID = 69786165 AND ASS_TYPE = 'Has Covenant Clause') AND
T1.SYS_OBJECTID > 0 ORDER BY T1.triClauseSectionCatego, T1.triClauseTypeCL;
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 6.036MB
```

```
CREATE UNIQUE INDEX TRIDATA.PERF1804222208420 ON TRIDATA.T_TRILEASECLAUSE (SPEC_ID ASC)
INCLUDE (SYS_GUID, TRICLAUSESECTIONCATEGO, TRICLAUSETYPECL, SYS_OBJECTID, SYS_TYPE1,
TRIDESCRPTIONTX, TRIPAGETX, TRISECTIONTX, TRIGRANTEDINLEASECLOBJID, TRIGRANTEDINLEASECL,
TRICLAUSETYPECLOBJID, TRICLAUSESECTIONCATEGOOBJID, TRIUSERMESSAGEFLAGTX) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[2], 6.036MB
```

```
CREATE UNIQUE INDEX TRIDATA.PERF1804222214470 ON TRIDATA.T_TRILEASECLAUSE (SPEC_ID ASC)
INCLUDE (SYS_GUID, SYS_OBJECTID, SYS_TYPE1, TRIDESCRPTIONTX, TRIPAGETX, TRISECTIONTX,
TRIGRANTEDINLEASECLOBJID, TRIGRANTEDINLEASECL, TRICLAUSETYPECLOBJID, TRICLAUSETYPECL,
TRICLAUSESECTIONCATEGOOBJID, TRIUSERMESSAGEFLAGTX, TRICLAUSESECTIONCATEGO) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- RECOMMENDED EXISTING INDEXES
```

```
-- =====
```

```

--RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRILEASECLAUSE FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRILEASECLAUSE;
-- COMMIT WORK;

```

c.2.3 Activate Lease

No SQLs over 1 second.

Notes:

- Indexes were applied for data loading that may have improved lease schedule creation, accounting review, and lease activation.

c.2.4 Amend & Extend Lease

No SQLs over 1 second.

c.2.5 Revise Lease Contract Data

Query 1:

```

SELECT T1.triPaymentTypeCL AS T1_1091, T1.triPaymentTypeClobjId AS T1_1091_OBJID,
T1.triStatusCL AS T1_1023, T1.triStatusClobjId AS T1_1023_OBJID, T1.triExpectedAmountNU AS
T1_1088, T1.triActualAmountNU AS T1_1061, T2.triNameTX AS T2_1154_SID_1_7, T1.SYS_TYPE1 AS
T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triCurrencyUO AS
T1_1143 FROM T_TRIPAYMENTLINEITEM T1 LEFT OUTER JOIN T_TRIREALESTATECONTRACT T2 ON
T1.IsPaymentForSysKey = T2.SPEC_ID WHERE T1.SYS_PROJECTID = 1 AND T1.SPEC_ID IN (SELECT
ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID = 66152947 AND ASS_TYPE = 'Has Payment')
AND T1.SYS_OBJECTID > 0;

```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 49.942MB
```

```

CREATE UNIQUE INDEX TRIDATA.PERF1804232123170 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (SYS_PROJECTID, ISPAYMENTFORSYSKEY, SYS_OBJECTID, TRICURRENCYUO,
TRIPAYMENTTYPECLOBJID, TRIPAYMENTTYPECL, TRIEXPECTEDAMOUNTNU, TRIACTUALAMOUNTNU,
TRISTATUSCLOBJID, TRISTATUSCL, SYS_TYPE1, SYS_GUID) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;

```

```
COMMIT WORK;
```

```
-- RECOMMENDED EXISTING INDEXES
```

```
-- =====
```

```
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIPAYMENTLINEITEM FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PK_TRIPAYMENTLINEITEM;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PK_TRIREALESTATECONTRACT;
```

```
-- COMMIT WORK;
```

c.2.6 Revise Lease Accounting Data

Query 1:

```

SELECT T1.triPaymentTypeCL AS T1_1091, T1.triPaymentTypeClobjId AS T1_1091_OBJID,
T1.triStatusCL AS T1_1023, T1.triStatusClobjId AS T1_1023_OBJID, T1.triExpectedAmountNU AS
T1_1088, T1.triActualAmountNU AS T1_1061, T2.triNameTX AS T2_1154_SID_1_7, T1.SYS_TYPE1 AS
T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triCurrencyUO AS
T1_1143 FROM T_TRIPAYMENTLINEITEM T1 LEFT OUTER JOIN T_TRIREALESTATECONTRACT T2 ON
T1.IsPaymentForSysKey = T2.SPEC_ID WHERE T1.SYS_PROJECTID = 1 AND T1.SPEC_ID IN (SELECT
ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID = 66152951 AND ASS_TYPE = 'Has Payment')
AND T1.SYS_OBJECTID > 0;

```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 49.942MB
```

```

CREATE UNIQUE INDEX TRIDATA.PERF1804232356320 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (SYS_PROJECTID, ISPAYMENTFORSYSKEY, SYS_OBJECTID, TRICURRENCYUO,
TRIPAYMENTTYPECLOBJID, TRIPAYMENTTYPECL, TRIEXPECTEDAMOUNTNU, TRIACTUALAMOUNTNU,
TRISTATUSCLOBJID, TRISTATUSCL, SYS_TYPE1, SYS_GUID) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;

```

```
COMMIT WORK;
```

```
-- index[2], 0.079MB
```

```

CREATE UNIQUE INDEX TRIDATA.PERF1804232356370 ON TRIDATA.T_TRIREALESTATECONTRACT (SPEC_ID ASC)
INCLUDE (TRINAMETX) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;

```

```
COMMIT WORK;
```

```
-- RECOMMENDED EXISTING INDEXES
```

```
-- =====
```

```
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIPAYMENTLINEITEM FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PK_TRIPAYMENTLINEITEM;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PK_TRIREALESTATECONTRACT;
```

```
-- COMMIT WORK;
```

c.2.7 Expire Lease

No SQLs over 1 second.

c.2.8 Get Payment

Query 1:

```

SELECT T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SPEC_ID AS T1_SPEC_ID FROM T_TRIPAYMENTLINEITEM T1 LEFT
OUTER JOIN T_TRIREALESTATECONTRACT T2 ON T1.IsPaymentForSysKey = T2.SPEC_ID WHERE T1.SYS_GUID
= ? AND ( T1.triStatusCL = ? AND T1.triAccountingTypeLI = ? AND T1.triPayProcessedModeLI = ? )
AND T1.triProcessPeriodCL = ? AND T1.triDueDA < ? AND T1.SYS_OBJECTID > ? ORDER BY
T2.triNameTX, T1.triDueDA, T1.triPaymentTypeCL, T1.triExpectedTotalNU;

```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 230.341MB
```

```

CREATE INDEX PERF35.PERF_GETPAYMENTS ON PERF35.T_TRIPAYMENTLINEITEM (TRIPROCESSPERIODCL ASC,
TRISTATUSCL ASC, TRIACCOUNTINGTYPELI ASC, TRIPAYPROCESSEDMODELI ASC, SYS_GUID ASC,
SYS_OBJECTID ASC, TRIDUEDA ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;

```

```
COMMIT WORK;
```

```
-- RECOMMENDED EXISTING INDEXES
```

```
-- =====
```

```
-- RUNSTATS ON TABLE TRIDATA.T_SCHEDULEDEVENTS FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PERF1804201552470;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_SCHEDULEDEVENTS FOR SAMPLED DETAILED INDEX
```



```
TRIDATA.PERF1804201629100;
-- COMMIT WORK;
```

c.3 Multi-User Benchmark Test Indexes

DB2 snapshots were taken to identify **long-running** (i.e. running more than 1 second) and/or **expensive** (i.e. CPU utilization) SQLs. Those were analyzed using the **DB2 SQL Advisor** and recommended indexes were applied. If the Analyzer recommended indexes, but the improvement was <10%, those indexes were **not** applied and were not included below.

In addition, any recommended indexes against the **IBS_SPEC** and **IBS_SPEC_ASSIGNMENTS** tables were **not** applied as past experience shows that indexes against these tables can actually be detrimental to overall system performance, especially under load.

Notes:

- In an environment where **customizations** were done, the recommended indexes listed below might need to be modified to account for custom fields and specific database statistics in the database.
- It is highly recommended for customers to identify the corresponding SQLs in their environment and use **DB2 SQL Analyzer** to verify the recommended indexes appropriate for their specific environment.

c.3.1 Lease Abstract Draft

Queries 1, 2, & 3:

```
SELECT T1.triUserMessageFlagTX AS T1_1049, T1.triNameTX AS T1_1045, T1.triIdTX AS T1_1044,
T1.triParentPropertyTX AS T1_1081, T1.triParentBuildingTX AS T1_1075, T1.triParentFloorTX AS
T1_1080, T1.triFormLabelSY AS T1_1058, T1.triStatusCL AS T1_1046, T1.triStatusClobjId AS
T1_1046_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS
T1_SPEC_ID FROM M_LOCATION T1 WHERE T1.SYS_TYPE1 IN (?, ?, ?, ?, ?) AND T1.SYS_GUID IN
(?, ?, ?, ?, ?) AND T1.SYS_PROJECTID = ? AND ( (T1.triStatusCL != ? OR T1.triStatusCL IS NULL)
AND (T1.triStatusCL != ? OR T1.triStatusCL IS NULL) ) AND T1.SYS_OBJECTID > ? AND
(T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY like '\Organizations\MyCompany9\%')) OR
T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like '\Organizations\External
Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID
> 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or TRIPATHSY like '\Organizations\Focus
Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select
SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and (TRIPATHSY = '\Geography\North
America\United States' or TRIPATHSY like '\Geography\North America\United States\%')) OR
T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triNameTX, T1.triIdTX;
```

```
SELECT T1.triUserMessageFlagTX AS T1_1049, T1.triNameTX AS T1_1045, T1.triFormLabelSY AS
T1_1058, T1.triCityTX AS T1_1136, T1.triStateProvTX AS T1_1134, T1.triCountryTX AS T1_1133,
T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID FROM
M_LOCATION T1 WHERE T1.SYS_TYPE1 IN (?, ?) AND T1.SYS_GUID IN (?, ?, ?, ?) AND T1.SYS_PROJECTID =
? AND ( (T1.triStatusCL != ? OR T1.triStatusCL IS NULL) AND (T1.triStatusCL != ? OR
T1.triStatusCL IS NULL) ) AND T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID
from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\MyCompany9' or
TRIPATHSY like '\Organizations\MyCompany9\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from
T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\External Companies' or
TRIPATHSY like '\Organizations\External Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select
SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\Focus
Corporation' or TRIPATHSY like '\Organizations\Focus Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS
NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0
and (TRIPATHSY = '\Geography\North America\United States' or TRIPATHSY like '\Geography\North
America\United States\%')) OR T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triNameTX,
T1.triFormLabelSY, T1.triCityTX, T1.triStateProvTX;
```

```
SELECT T1.triUserMessageFlagTX AS T1_1049, T1.triNameTX AS T1_1045, T1.triIdTX AS T1_1044,
T1.triParentPropertyTX AS T1_1081, T1.triParentBuildingTX AS T1_1075, T1.triParentFloorTX AS
T1_1080, T1.triFormLabelSY AS T1_1058, T1.triStatusCL AS T1_1046, T1.triStatusClobjId AS
T1_1046_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS
T1_SPEC_ID FROM M_LOCATION T1 WHERE T1.SYS_TYPE1 IN (?, ?, ?, ?, ?) AND T1.SYS_GUID IN
(?, ?, ?, ?, ?) AND T1.SYS_PROJECTID = ? AND ( (T1.triStatusCL != ? OR T1.triStatusCL IS NULL)
AND (T1.triStatusCL != ? OR T1.triStatusCL IS NULL) ) AND UPPER(T1.triParentPropertyTX) LIKE ?
AND T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where
SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY like
'\Organizations\MyCompany9\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION
where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like
'\Organizations\External Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from
T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or
TRIPATHSY like '\Organizations\Focus Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND
(T1.SYS_GEOGRAPHYNAMEOBJID IN (select SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Geography\North America\United States' or TRIPATHSY like '\Geography\North
America\United States\%')) OR T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triNameTX,
T1.triIdTX;
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 0.009MB
```

```
CREATE INDEX TRIDATA.PERF1806072214360 ON TRIDATA.T TRIPLANNEDSPACE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX
ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC,
SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[2], 0.013MB
```

```
CREATE INDEX TRIDATA.PERF1806072216250 ON TRIDATA.T TRILAND (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX
ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[3], 0.009MB
```

```
CREATE INDEX TRIDATA.PERF1806072218140 ON TRIDATA.T TRIPLANNEDFLOOR (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX
ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GUID ASC,
SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[4], 0.224MB
```

```
CREATE INDEX TRIDATA.PERF1806072221430 ON TRIDATA.T TRISPACE (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[5], 0.114MB
```

```
CREATE INDEX TRIDATA.PERF1806072223320 ON TRIDATA.T TRIFLOOR (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[6], 0.009MB
```

```
CREATE INDEX TRIDATA.PERF1806072223410 ON TRIDATA.T TRIINSTALLATION (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOORTX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```

-- index[7], 0.106MB
CREATE INDEX TRIDATA.PERF1806072227100 ON TRIDATA.T TRIBUILDING (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[8], 0.009MB
CREATE INDEX TRIDATA.PERF1806072227190 ON TRIDATA.T TRIVERTICALSHAFT (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[9], 0.298MB
CREATE INDEX TRIDATA.PERF1806072229080 ON TRIDATA.T TRIPROPERTY (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[10], 0.013MB
CREATE INDEX TRIDATA.PERF1806072230570 ON TRIDATA.T LOCATION (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, TRIPARENTPROPERTYTX
ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[11], 0.013MB
CREATE INDEX TRIDATA.PERF1806072232460 ON TRIDATA.T TRIPROPOSEDSITE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC,
TRIPARENTPROPERTYTX ASC, TRIPARENTFLOOR TX ASC, TRIPARENTBUILDINGTX ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[12], 0.013MB
CREATE INDEX TRIDATA.PERF1806072238300 ON TRIDATA.T TRILAND (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRISTATEPROV TX ASC,
TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
-- index[13], 0.216MB
CREATE INDEX TRIDATA.PERF1806072243510 ON TRIDATA.T TRISPACE (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRIFORMLABELSY
ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[14], 0.110MB
CREATE INDEX TRIDATA.PERF1806072245400 ON TRIDATA.T TRIFLOOR (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRIFORMLABELSY
ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC)
ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[15], 0.009MB
CREATE INDEX TRIDATA.PERF1806072245490 ON TRIDATA.T TRIINSTALLATION (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROV TX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[16], 0.106MB
CREATE INDEX TRIDATA.PERF1806072249210 ON TRIDATA.T TRIBUILDING (SYS_TYPE1 ASC, SYS_PROJECTID
ASC, SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROV TX ASC, TRICOUNTRYTX ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC,
TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[17], 0.239MB
CREATE INDEX TRIDATA.PERF1806072251210 ON TRIDATA.T TRIPROPERTY (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROV TX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[18], 0.013MB
CREATE INDEX TRIDATA.PERF1806072253120 ON TRIDATA.T LOCATION (SYS_PROJECTID ASC, SYS_OBJECTID
ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, TRISTATEPROV TX ASC,
TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL
ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
-- index[19], 0.013MB
CREATE INDEX TRIDATA.PERF1806072255030 ON TRIDATA.T TRIPROPOSEDSITE (SYS_PROJECTID ASC,
SYS_OBJECTID ASC, TRICITYTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
TRISTATEPROV TX ASC, TRICOUNTRYTX ASC, SYS_TYPE1 ASC, TRIFORMLABELSY ASC,
TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCL ASC, TRINAMETX ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_TRISPACE FOR SAMPLED DETAILED INDEX TRIDATA.PERF1804221918070;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIBUILDING FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1804221923250;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROPERTY FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1804221928490;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISPACE FOR SAMPLED DETAILED INDEX TRIDATA.PERF1804222037150;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIFLOOR FOR SAMPLED DETAILED INDEX TRIDATA.PERF1804222038500;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_LOCATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_LOCATIONOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRILAND FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRILANDOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROPOSEDSITE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIPROPOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISPACE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRISPACEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICITY FOR SAMPLED DETAILED INDEX TRIDATA.PERF1806071721520;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1806071724500;
-- COMMIT WORK;

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-- RUNSTATS ON TABLE TRIDATA.T_TRIVERTICALSHAFT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIVERTICALSHAFT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSTALLATION FOR SAMPLED DETAILED INDEX
TRIDATA.P_TRIINSTALLATION;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDFLOOR FOR SAMPLED DETAILED INDEX
TRIDATA.P_TRIPLANNEDFLOOR;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDSPACE FOR SAMPLED DETAILED INDEX
TRIDATA.P_TRIPLANNEDSPACE;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSTALLATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIINSTAGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDFLOOR FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIPLANNGUID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPLANNEDSPACE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIPLANNGUID5;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIVERTICALSHAFT FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_SYS_T_TRIVERTIGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIBUILDING FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1804222042280;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROPERTY FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1804222047510;
-- COMMIT WORK;

```

Query 4:

```

SELECT T1.triUserMessageFlagTX AS T1_1145, T1.triNameTX AS T1_1156, T1.triTitleTX AS T1_1314,
T2.triPathTX AS T2_1354_SID_1_71, T1.triWorkPhoneTX AS T1_1214, T1.triWorkFaxTX AS T1_1213,
T1.triEmailTX AS T1_1216, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID,
T1.SPEC_ID AS T1_SPEC_ID FROM T_TRIPEOPLE T1 LEFT OUTER JOIN T_ORGANIZATION T2 ON
T1.PrimaryOrganizationSysKey = T2.SPEC_ID WHERE T1.SYS_GUID IN (?,?,?) AND ( (T1.triStatusCL
!= ? OR T1.triStatusCL IS NULL) ) AND UPPER(T1.triNameTX) LIKE ? AND T1.SYS_OBJECTID > ? AND
(T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY like '\Organizations\MyCompany9\%')) OR
T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like '\Organizations\External
Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID
> 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or TRIPATHSY like '\Organizations\Focus
Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select
SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and (TRIPATHSY = '\Geography\North
America\United States' or TRIPATHSY like '\Geography\North America\United States\%')) OR
T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triNameTX, T1.triTitleTX, T2.triPathTX,
T1.triWorkPhoneTX;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.189MB
CREATE INDEX TRIDATA.PERF1806072327310 ON TRIDATA.T_TRIPEOPLE (SYS_GUID ASC, SYS_OBJECTID
ASC, PRIMARYORGANIZATIONSYSKEY ASC, TRITITLETX ASC, TRISTATUSCL ASC, TRIEMAILTX ASC,
TRIWORKPHONETX ASC, TRIWORKFAXTX ASC, TRINAMETX ASC, TRIUSERMESSAGEFLAGTX ASC,
SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE
SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2], 6.634MB
CREATE UNIQUE INDEX TRIDATA.PERF1806072328180 ON TRIDATA.T_ORGANIZATION (SPEC_ID ASC) INCLUDE
(TRIPATHTX) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPEOPLE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPEOPLEGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPEOPLE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPEOPLEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICITY FOR SAMPLED DETAILED INDEX TRIDATA.PERF1806071721520;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1806071724500;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX TRIDATA.PK_ORGANIZATION;
-- COMMIT WORK;

```

c.3.2 Generate Rent Schedule

Query 1:

```

SELECT T1.triExpirationYearQuart AS T1_1369, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS
T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID FROM M_TRICONTRACT T1 WHERE T1.SYS_TYPE1 IN (?,?) AND
T1.SYS_GUID IN (?,?) AND T1.SYS_PROJECTID = ? AND ( (T1.triStatusCL NOT IN
('Expired','History','Draft','Terminated','Retired','Upload Error') OR T1.triStatusCL IS NULL)
AND T1.triExpirationDA != ? and T1.triExpirationDA IS NOT NULL AND T1.triExpirationDA != ? AND
T1.triExpirationDA <= ? ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE
SPEC_ID IN (?,?)) AND T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from
T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY
like '\Organizations\MyCompany9\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from
T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\External Companies' or
TRIPATHSY like '\Organizations\External Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select
SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\Focus
Corporation' or TRIPATHSY like '\Organizations\Focus Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS
NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0
and (TRIPATHSY = '\Geography\North America\United States' or TRIPATHSY like '\Geography\North
America\United States\%')) OR T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY
T1.triExpirationYearQuart;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.017MB
CREATE INDEX TRIDATA.PERF1806080059310 ON TRIDATA.T_TRILEASEABSTRACT (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GUID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2], 0.032MB
CREATE INDEX TRIDATA.PERF1806080101330 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_GUID ASC,
SYS_PROJECTID ASC, TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC,
TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SPEC_ID
ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[3], 0.181MB
CREATE INDEX TRIDATA.PERF1806080101410 ON TRIDATA.T_TRIPURCHASEREQUISITION (SYS_PROJECTID ASC,
TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS

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COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[4], 0.017MB
CREATE INDEX TRIDATA.PERF1806080103340 ON TRIDATA.T_TRISTANDARDCONTRACT (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
  SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[5], 0.009MB
CREATE INDEX TRIDATA.PERF1806080105280 ON TRIDATA.T_TRIASSETLEASE (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC, TRISTATUSCL ASC,
  SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID
  ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[6], 0.013MB
CREATE INDEX TRIDATA.PERF1806080107220 ON TRIDATA.T_TRIWARRANTY (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
  SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[7], 0.013MB
CREATE INDEX TRIDATA.PERF1806080111080 ON TRIDATA.T_TRIPURCHASEORDER (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
  SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[8], 0.032MB
CREATE INDEX TRIDATA.PERF1806080113010 ON TRIDATA.T_TRISPACEUSEAGREEMENT (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
  SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[9], 0.009MB
CREATE INDEX TRIDATA.PERF1806080116470 ON TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER (SYS_PROJECTID
  ASC, TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
  SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[10], 0.009MB
CREATE INDEX TRIDATA.PERF1806080120340 ON TRIDATA.T_TRIPRIMECONTRACT (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
  SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[11], 0.013MB
CREATE INDEX TRIDATA.PERF1806080122280 ON TRIDATA.T_TR_STAND_CONTR_CHAN_ORD (SYS_PROJECTID
  ASC, TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
  SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[12], 0.009MB
CREATE INDEX TRIDATA.PERF1806080124220 ON TRIDATA.T_TRICONTRACT (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC, TRISTATUSCL ASC,
  SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID
  ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[13], 0.009MB
CREATE INDEX TRIDATA.PERF1806080126160 ON TRIDATA.T_CSTDEFAULTRETENTION (SYS_PROJECTID ASC,
  TRIEXPIRATIONDA ASC, SYS_OBJECTID ASC, TRIEXPIRATIONYEARQUART ASC, TRISTATUSCL ASC,
  SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SYS_GUIDID ASC, SPEC_ID
  ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1806072106180;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICOUNTRY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRICOUNTRYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINSURANCE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIINSUROBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRILEASEABSTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRILEASEOBJECTID3;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPROUREMENTCARD FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPROCUOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPURCHOBJECTID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPURCHASEREQUISITION FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPURCHOBJECTID3;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISPACEUSEAGREEMENT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRISPACEOBJECTID26;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISTANDARDCONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRISTANDOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISTATE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRISTATEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIWARRANTY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIWARRANTYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TR_STAND_CONTR_CHAN_ORD FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TR_STANDOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PERF01_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICITY FOR SAMPLED DETAILED INDEX TRIDATA.PERF1806071721520;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1806071724500;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIASSETLEASE FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIASSETLEASE;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIBLANKETPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIBLANKETPURCHASEORDER;
-- COMMIT WORK;

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-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACT FOR SAMPLED DETAILED INDEX TRIDATA.PK_TRICONTRACT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACT FOR SAMPLED DETAILED INDEX TRIDATA.PK_TRIPRIMECONTRACT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER FOR SAMPLED DETAILED INDEX TRIDATA.PK_TRIPRIMECONTRACTCHANGEORDER;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_CSTDEFAULTRETENTION FOR SAMPLED DETAILED INDEX TRIDATA.P_CSTDEFAULTRETENTION;
-- COMMIT WORK;

```

Query 2:

```

SELECT REP_TEMPLATE_ID from REP_TEMPLATE_HDR where CLASS_TYPE_ID=? and OBJECT_TEMPLATE_ID=? and REP_NAME=?;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.204MB
CREATE INDEX TRIDATA.PERF1806080128380 ON TRIDATA.REP_TEMPLATE_HDR (REP_NAME ASC, OBJECT_TEMPLATE_ID ASC, CLASS_TYPE_ID ASC, REP_TEMPLATE_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
None

```

Query 3:

```

SELECT SOURCE_BO_ID, ASSOCIATION_VERB, PROJ_CONTAINMENT_DISABLED, REV_ASSOCIATION_VERB FROM MODULE_ASSOCIATION WHERE ASS_BO_ID=? AND DEPENDENT_FLAG=? AND CASCADE_READ_ONLY=?;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.325MB
CREATE INDEX TRIDATA.PERF1806080129090 ON TRIDATA.MODULE_ASSOCIATION (ASS_BO_ID ASC, DEPENDENT_FLAG ASC, CASCADE_READ_ONLY ASC, REV_ASSOCIATION_VERB ASC, PROJ_CONTAINMENT_DISABLED ASC, ASSOCIATION_VERB ASC, SOURCE_BO_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
None

```

c.3.3 Activate Lease

Query 1:

```

SELECT T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SPEC_ID AS T1_SPEC_ID FROM T_TRIAPPROVAL T1 WHERE T1.SYS_GUIDID = ? AND T1.triRecordIdSY = ? AND T1.SYS_OBJECTID > ? ORDER BY T1.triLinkedBusinessObj, T1.triLinkedRecordTX, T1.triSubmittedByTX, T1.triStatusCL;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 25.528MB
CREATE INDEX TRIDATA.PERF1806071659590 ON TRIDATA.T_TRIAPPROVAL (TRIRECORDIDSY ASC, SYS_GUIDID ASC, TRILINKEDBUSINESSOBJ ASC, TRILINKEDRECORDTX ASC, TRISUBMITTEDBYTX ASC, TRISTATUSCL ASC, SYS_OBJECTID ASC, SPEC_ID ASC, SYS_TYPE1 ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_TRIAPPROVAL FOR SAMPLED DETAILED INDEX TRIDATA.IDX_SYS_T_TRIAPPROVALGUIID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIAPPROVAL FOR SAMPLED DETAILED INDEX TRIDATA.IDX_SYS_T_TRIAPPROVALOBJECTID1;
-- COMMIT WORK;

```

c.3.4 Complete Lease Abstract

No long-running or expensive SQLs.

c.3.5 Amend Lease

Query 1:

```

SELECT T1.triUserMessageFlagTX AS T1_1102, T1.triNameTX AS T1_1098, T1.triIdTX AS T1_1097, T1.triFormLabelsY AS T1_1111, T1.triStatusCL AS T1_1099, T1.triStatusCLOBJID AS T1_1099_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUIDID AS T1_SYS_GUIDID, T1.SPEC_ID AS T1_SPEC_ID FROM T_ORGANIZATION T1 WHERE T1.SYS_GUIDID IN (?, ?, ?, ?, ?, ?, ?) AND T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY like '\Organizations\MyCompany9\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like '\Organizations\External Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or TRIPATHSY like '\Organizations\Focus Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and (TRIPATHSY = '\Geography\North America\United States' or TRIPATHSY like '\Geography\North America\United States\%')) OR T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triNameTX, T1.triIdTX, T1.triStatusCL;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.392MB
CREATE INDEX TRIDATA.PERF1806071724280 ON TRIDATA.T_ORGANIZATION (SYS_GUIDID ASC, SYS_OBJECTID ASC, TRIFORMLABELSY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2], 0.013MB
CREATE INDEX TRIDATA.PERF1806071721520 ON TRIDATA.T_TRICITY (SYS_OBJECTID ASC, TRIPATHSY ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[3], 0.384MB
CREATE UNIQUE INDEX TRIDATA.PERF1806071724500 ON TRIDATA.T_ORGANIZATION (SPEC_ID ASC) INCLUDE (SYS_OBJECTID, TRIPATHSY) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX TRIDATA.IDX_SYS_T_ORGANIZAOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX TRIDATA.PK_ORGANIZATION;
-- COMMIT WORK;

```

c.3.6 Lease Accounting Review

No long-running or expensive SQLs.

c.3.7 Revise Lease Contract Data

Query 1:

```
SELECT T1.triPaymentTypeCL AS T1_1091, T1.triPaymentTypeCObjId AS T1_1091_OBJID,
T1.triAccountingTypeLI AS T1_1059, T1.triExpectedAmountNU AS T1_1088, T1.triStatusCL AS
T1_1023, T1.triStatusCObjId AS T1_1023_OBJID, T1.triExpectedTotalNU AS T1_1169, T1.SYS_TYPE1
AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triCurrencyUO AS
T1_1143 FROM T_TRIPAYMENTLINEITEM T1 WHERE ( T1.triAccountingTypeLI = ? AND T1.triStatusCL = ?
AND T1.triSummaryTypeCL = ? AND T1.triDueDA <= ? ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM
IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID = ? AND ASS_TYPE = ?) AND T1.SYS_OBJECTID > ?;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 8.517MB
CREATE UNIQUE INDEX TRIDATA.PERF1806071945040 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (TRISUMMARYTYPECL, TRISTATUSCL, TRIACCOUNTINGTYPELI, TRIDUEDA, SYS_OBJECTID,
TRICURRENCYUO, SYS_GUID, SYS_TYPE1, TRIEXPECTEDTOTALNU, TRISTATUSCLOBJID,
TRIEEXPECTEDAMOUNTNU, TRIPAYMENTTYPECLOBJID, TRIPAYMENTTYPECL) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_TRIPAYMENTLINEITEM FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1804232123170;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
```

Query 2:

```
SELECT T1.triPaymentTypeCL AS T1_1091, T1.triPaymentTypeCObjId AS T1_1091_OBJID,
T1.triAccountingTypeLI AS T1_1059, T1.triActualAmountNU AS T1_1061, T1.triStatusCL AS T1_1023,
T1.triStatusCObjId AS T1_1023_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS
T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triCurrencyUO AS T1_1143 FROM T_TRIPAYMENTLINEITEM
T1 WHERE ( T1.triAccountingTypeLI = ? AND T1.triStatusCL = ? AND T1.triSummaryTypeCL = ? ) AND
T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID = ? AND ASS_TYPE = ?)
AND T1.SYS_OBJECTID > ?;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 8.517MB
CREATE UNIQUE INDEX TRIDATA.PERF1806071948000 ON TRIDATA.T_TRIPAYMENTLINEITEM (SPEC_ID ASC)
INCLUDE (TRISUMMARYTYPECL, TRISTATUSCL, TRIACCOUNTINGTYPELI, SYS_OBJECTID, TRICURRENCYUO,
SYS_GUID, SYS_TYPE1, TRISTATUSCLOBJID, TRIACTUALAMOUNTNU, TRIPAYMENTTYPECLOBJID,
TRIPAYMENTTYPECL) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_TRIPAYMENTLINEITEM FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1804232123170;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
```

c.3.8 Revise Lease Accounting Data

Query 1:

```
SELECT NAV_ITEM_ID FROM NAV_ITEM WHERE UI_TARGET_ID IN (SELECT UI_TARGET_ID FROM UI_TARGET
WHERE PRIMARY_OBJECT_ID = ?);

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.021MB
CREATE INDEX TRIDATA.PERF1806071623390 ON TRIDATA.UI_TARGET (PRIMARY_OBJECT_ID ASC,
UI_TARGET_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2], 0.017MB
CREATE INDEX TRIDATA.PERF1806071623470 ON TRIDATA.NAV_ITEM (UI_TARGET_ID ASC, NAV_ITEM_ID
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

c.3.9 Expire Lease

Query 1:

```
SELECT T1.triUserMessageFlagTX AS T1_1161, T1.triImageIM AS T1_1293, T1.triIdTX AS T1_1153,
T1.triNameTX AS T1_1163, T1.triCityTX AS T1_1795, T1.triStateProvTX AS T1_1798, T1.triCountryTX
AS T1_1884, T1.triExpirationDA AS T1_1172, T1.triContractRentableNU AS T1_1251,
T1.triContractStatusCL AS T1_2052, T1.triContractStatusCObjId AS T1_2052_OBJID, T1.SYS_TYPE1
AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triAreaUO AS
T1_1891 FROM T_TRIREALESTATECONTRACT T1 WHERE T1.SYS_GUID = ? AND T1.SYS_PROJECTID = ? AND (
(T1.triStatusCL NOT IN ('Retired', 'Upload Error', 'History', 'Deleted', 'Terminated', 'Expired') OR
T1.triStatusCL IS NULL) ) AND T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID
from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\MyCompany9' or
TRIPATHSY like '\Organizations\MyCompany9\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from
T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\External Companies' or
TRIPATHSY like '\Organizations\External Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select
SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\Focus
Corporation' or TRIPATHSY like '\Organizations\Focus Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS
NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0
and (TRIPATHSY = '\Geography\North America\United States' or TRIPATHSY like '\Geography\North
America\United States\%')) OR T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triNameTX,
T1.triCityTX, T1.triStateProvTX;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 1.892MB
CREATE INDEX TRIDATA.PERF1806072038510 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_GUID ASC,
SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRICONTRACTSTATUSCLOBJID ASC, TRICONTRACTSTATUSCL ASC,
TRIAEUO ASC, TRICOUNTRYTX ASC, TRISTATEPROVTX ASC, TRICITYTX ASC, TRIMAGEIM ASC,
TRICONTRACTRENTABLENU ASC, TRIEXPIRATIONDA ASC, TRINAMETX ASC, TRISTATUSCL ASC,
TRUSERMESSAGEFLAGTX ASC, TRIIDTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC,
SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIREALEGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIREALEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICITY FOR SAMPLED DETAILED INDEX TRIDATA.PERF1806071721520;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1806071724500;
-- COMMIT WORK;
```

Query 2:

```
SELECT T1.triImageIM AS T1_1293, T1.triIdTX AS T1_1153, T1.triNameTX AS T1_1163, T1.triCityTX
AS T1_1795, T1.triStateProvTX AS T1_1798, T1.triCountryTX AS T1_1884, T1.triExpirationDA AS
T1_1172, T1.triContractRentableNU AS T1_1251, T1.triContractStatusCL AS T1_2052,
T1.triContractStatusCLObjId AS T1_2052_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS
T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triAreaUO AS T1_1891 FROM T_TRIREALESTATECONTRACT T1
WHERE T1.SYS_OBJECTSTATE = ? AND T1.SYS_GUID = ? AND T1.SYS_PROJECTID = ? AND T1.SYS_OBJECTID
> ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY like '\Organizations\MyCompany9\%')) OR
T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like '\Organizations\External
Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID
> 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or TRIPATHSY like '\Organizations\Focus
Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select
SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and (TRIPATHSY = '\Geography\North
America\United States' or TRIPATHSY like '\Geography\North America\United States\%')) OR
T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triNameTX, T1.triCityTX, T1.triStateProvTX;
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 1.892MB
```

```
CREATE INDEX TRIDATA.PERF1806072042370 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_OBJECTSTATE
ASC, SYS_GUID ASC, SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRICONTRACTSTATUSCLOBJID ASC,
TRICONTRACTSTATUSCL ASC, TRIAREAUO ASC, TRICOUNTRYTX ASC, TRISTATEPROVTX ASC, TRICITYTX
ASC, TRIIMAGEIM ASC, TRICONTRACTRENTABLENU ASC, TRIEXPIRATIONDA ASC, TRINAMETX ASC, TRIIDTX
ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- RECOMMENDED EXISTING INDEXES
```

```
-- =====
```

```
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIREALEGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIREALEOBJECTID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRICITY FOR SAMPLED DETAILED INDEX TRIDATA.PERF1806071721520;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.PERF1806071724500;
```

```
-- COMMIT WORK;
```

Queries 3, 4, & 5:

```
SELECT COUNT(1) FROM T_TRIREALESTATECONTRACT T1 WHERE T1.SYS_OBJECTSTATE = ? AND T1.SYS_GUID =
? AND T1.SYS_PROJECTID = ? AND T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID
from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\MyCompany9' or
TRIPATHSY like '\Organizations\MyCompany9\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from
T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\External Companies' or
TRIPATHSY like '\Organizations\External Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select
SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\Focus
Corporation' or TRIPATHSY like '\Organizations\Focus Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS
NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0
and (TRIPATHSY = '\Geography\North America\United States' or TRIPATHSY like '\Geography\North
America\United States\%')) OR T1.SYS_GEOGRAPHYNAMEOBJID IS NULL);
```

```
SELECT COUNT(1) FROM T_TRIREALESTATECONTRACT T1 WHERE T1.SYS_GUID = ? AND T1.SYS_PROJECTID = ?
AND ( (T1.triStatusCL NOT IN ('Retired','Upload Error','History','Deleted','Terminated',
'Expired') OR T1.triStatusCL IS NULL) ) AND T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN
(select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY =
'\Organizations\MyCompany9' or TRIPATHSY like '\Organizations\MyCompany9\%')) OR
T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like '\Organizations\External
Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID
> 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or TRIPATHSY like '\Organizations\Focus
Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select
SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and (TRIPATHSY = '\Geography\North
America\United States' or TRIPATHSY like '\Geography\North America\United States\%')) OR
T1.SYS_GEOGRAPHYNAMEOBJID IS NULL);
```

```
SELECT COUNT(1) FROM T_TRIREALESTATECONTRACT T1 WHERE T1.SYS_OBJECTSTATE = ? AND T1.SYS_GUID =
? AND T1.SYS_PROJECTID = ? AND UPPER(T1.triNameTX) LIKE ? AND T1.SYS_OBJECTID > ? AND
(T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY like '\Organizations\MyCompany9\%')) OR
T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like '\Organizations\External
Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where SYS_OBJECTID
> 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or TRIPATHSY like '\Organizations\Focus
Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND (T1.SYS_GEOGRAPHYNAMEOBJID IN (select
SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and (TRIPATHSY = '\Geography\North
America\United States' or TRIPATHSY like '\Geography\North America\United States\%')) OR
T1.SYS_GEOGRAPHYNAMEOBJID IS NULL);
```

```
-- LIST OF RECOMMENDED INDEXES
```

```
-- =====
```

```
-- index[1], 0.560MB
```

```
CREATE INDEX TRIDATA.PERF1806072102530 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_OBJECTSTATE
ASC, SYS_GUID ASC, SYS_PROJECTID ASC, SYS_OBJECTID ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[2], 0.521MB
```

```
CREATE INDEX TRIDATA.PERF1806072106180 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_GUID ASC,
SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRISTATUSCL ASC, SYS_GEOGRAPHYNAMEOBJID ASC,
SYS_ORGNAMEOBJID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- index[3], 1.036MB
```

```
CREATE INDEX TRIDATA.PERF1806072109460 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_OBJECTSTATE
ASC, SYS_GUID ASC, SYS_PROJECTID ASC, SYS_OBJECTID ASC, TRINAMETX ASC,
SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
```

```
COMMIT WORK;
```

```
-- RECOMMENDED EXISTING INDEXES
```

```
-- =====
```

```
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIREALEGUID1;
```

```
-- COMMIT WORK;
```

```
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
```

```
TRIDATA.IDX_SYS_T_TRIREALEOBJECTID1;
```

```
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICITY FOR SAMPLED DETAILED INDEX TRIDATA.PERF1806071721520;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1806071724500;
-- COMMIT WORK;
```

c.3.10 Period Close (including Journal Entries)

Query 1:

```
SELECT SPEC_ID FROM M_TRIPEOPLE WHERE triRecordNameTX = ?;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 1.985MB
CREATE INDEX TRIDATA.PERF1806072121060 ON TRIDATA.T_TRIPEOPLE (TRIRecordNameTX ASC, SPEC_ID
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
None
```

Query 2:

```
SELECT T1.triUserMessageFlagTX AS T1_1111, T1.triIdTX AS T1_1094, T1.triDateDA AS T1_1168,
T1.triNameTX AS T1_1096, T1.triStatusCL AS T1_1109, T1.triStatusCLObjId AS T1_1109_OBJID,
T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID FROM
T_TRIINVOICE T1 WHERE T1.SYS_GUID = ? AND T1.SYS_PROJECTID = ? AND ( (T1.triStatusCL NOT IN
('Retired','Upload Error','Template','History','Deleted') OR T1.triStatusCL IS NULL) ) AND
T1.SYS_OBJECTID > ? AND (T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION where
SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\MyCompany9' or TRIPATHSY like
'\Organizations\MyCompany9\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from T_ORGANIZATION
where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\External Companies' or TRIPATHSY like
'\Organizations\External Companies\%')) OR T1.SYS_ORGNAMEOBJID IN (select SPEC_ID from
T_ORGANIZATION where SYS_OBJECTID > 0 and (TRIPATHSY = '\Organizations\Focus Corporation' or
TRIPATHSY like '\Organizations\Focus Corporation\%')) OR T1.SYS_ORGNAMEOBJID IS NULL) AND
(T1.SYS_GEOGRAPHYNAMEOBJID IN (select SPEC_ID from M_GEOGRAPHY where SYS_OBJECTID > 0 and
(TRIPATHSY = '\Geography\North America\United States' or TRIPATHSY like '\Geography\North
America\United States\%')) OR T1.SYS_GEOGRAPHYNAMEOBJID IS NULL) ORDER BY T1.triIdTX,
T1.triDateDA, T1.triNameTX, T1.triStatusCL;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 1.825MB
CREATE INDEX TRIDATA.PERF1806072126500 ON TRIDATA.T_TRIINVOICE (SYS_PROJECTID ASC, SYS_GUID
ASC, SYS_OBJECTID ASC, TRIDATEDA ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC,
TRISTATUSCL ASC, TRINAMETX ASC, TRIIDTX ASC, SYS_GEOGRAPHYNAMEOBJID ASC, SYS_ORGNAMEOBJID
ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_GEOGRAPHY FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_GEOGRAPHYOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINVOICE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIINVOICEGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIINVOICE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIINVOICEOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICITY FOR SAMPLED DETAILED INDEX TRIDATA.PERF1806071721520;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_ORGANIZATION FOR SAMPLED DETAILED INDEX
TRIDATA.PERF1806071724500;
-- COMMIT WORK;
```

Query 3:

```
SELECT T1.triUserMessageFlagTX AS T1_1111, T1.triIdTX AS T1_1094, T3.triIdTX AS
T3_1359_SID_1_31, T3.triNameTX AS T3_1357_SID_1_31, T2.triBusinessObjectLab AS T2_1150,
T1.triStatusCL AS T1_1109, T1.triStatusCLObjId AS T1_1109_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1,
T1.SYS_GUID AS T1_SYS_GUID, T2.SPEC_ID AS T2_SPEC_ID, T2.SYS_TYPE1 AS T2_SYS_TYPE1,
T1.SPEC_ID AS T1_SPEC_ID FROM T_TRIINVOICE T1 LEFT OUTER JOIN IBS_SPEC_ASSIGNMENTS T4 ON
T1.SPEC_ID = T4.SPEC_ID AND T4.ASS_SPEC_CLASS_TYPE = ? LEFT OUTER JOIN M_TRICONTRACT T2 ON
T4.ASS_SPEC_ID = T2.SPEC_ID AND T2.SYS_OBJECTID > 0 AND T2.SYS_TYPE1 IN
(?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?) LEFT OUTER JOIN T_TRIREALESTATECONTRACT T3 ON
T1.HasContractSysKey = T3.SPEC_ID WHERE T1.SYS_GUID IN (?, ?) AND ( (T1.triStatusCL NOT IN
('Retired','Upload Error','Template','History','Deleted') OR T1.triStatusCL IS NULL) ) AND
T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID = ?) AND
T1.SYS_OBJECTID > ? ORDER BY T1.triIdTX;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.091MB
CREATE INDEX TRIDATA.PERF1806072131470 ON TRIDATA.T_TRILEASEABSTRACT (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLAB2 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2], 0.231MB
CREATE INDEX TRIDATA.PERF1806072132150 ON TRIDATA.T_TRIREALESTATECONTRACT (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLAB ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[3], 0.056MB
CREATE INDEX TRIDATA.PERF1806072132430 ON TRIDATA.T_TRIPURCHASEREQUISITION (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLAB ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[4], 0.013MB
CREATE INDEX TRIDATA.PERF1806072132450 ON TRIDATA.T_TRISTANDARDCONTRACT (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
-- index[5], 0.009MB
CREATE INDEX TRIDATA.PERF1806072133130 ON TRIDATA.T_TRIASSETLEASE (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
-- index[6], 0.013MB
CREATE INDEX TRIDATA.PERF1806072134090 ON TRIDATA.T_TRIBLANKETPURCHASEORDER (SYS_OBJECTID ASC,
TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
-- index[7], 0.017MB
CREATE INDEX TRIDATA.PERF1806072135310 ON TRIDATA.T_TRISPACEUSEAGREEMENT (SYS_TYPE1 ASC,
SYS_OBJECTID ASC, TRIBUSINESSOBJECTLAB ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[8], 0.009MB
CREATE INDEX TRIDATA.PERF1806072136010 ON TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER (SYS_OBJECTID
ASC, TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
```



```

SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[9], 0.009MB
CREATE INDEX TRIDATA.PERF1806072136570 ON TRIDATA.T_TRIPRIMECONTRACT (SYS_OBJECTID ASC,
  TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
  DETAILED STATISTICS;
COMMIT WORK;
-- index[10], 0.009MB
CREATE INDEX TRIDATA.PERF1806072137530 ON TRIDATA.T_TRICONTRACT (SYS_OBJECTID ASC,
  TRIBUSINESSOBJECTLAB ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
  DETAILED STATISTICS;
COMMIT WORK;
-- index[11], 0.009MB
CREATE INDEX TRIDATA.PERF1806072138210 ON TRIDATA.T_CSTDEFAULTRETENTION (SYS_OBJECTID ASC,
  TRIBUSINESSOBJECTLABEL1 ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT
  SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[12], 0.044MB
CREATE INDEX TRIDATA.PERF1806072130330 ON TRIDATA.T_TRIREINVOICE (SYS_GUID ASC, SYS_OBJECTID
  ASC, HASCONTRACTSYSKEY ASC, TRIUSERMESSAGEFLAGTX ASC, TRISTATUSCLOBJID ASC, TRISTATUSCL
  ASC, TRIIDTX ASC, SYS_TYPE1 ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED
  STATISTICS;
COMMIT WORK;
-- index[13], 0.669MB
CREATE UNIQUE INDEX TRIDATA.PERF1806072138490 ON TRIDATA.T_TRIREALESTATECONTRACT (SPEC_ID ASC)
  INCLUDE (TRINAMETX, TRIIDTX) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.IDX03_IBS_SPEC_ASSIGN;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_CSTDEFAULTRETENTION FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_CSTDEFAUGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIASSETLEASE FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIASSETLEASEGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIBLANKETPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIBLANKOBJECTID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRICONTRACTGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPRIMEGUID1;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPRIMECONTRACTCHANGEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPRIMEGUID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PERF_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREALESTATECONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRIREALESTATECONTRACT;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIREINVOICE FOR SAMPLED DETAILED INDEX TRIDATA.PK_TRIREINVOICE;
-- COMMIT WORK;

```

Query 4:

```

SELECT T1.triIdTX AS T1_1153, T1.triNameTX AS T1_1163, T1.triToOrganizationTX AS T1_1326,
T1.triToOrganizationTXObjId AS T1_1326_OBJID, T1.triCommitmentOrigina AS T1_1165,
T1.triPendingChangesRol AS T1_1176, T1.triCommitmentChanges AS T1_1164, T1.triStatusCL AS
T1_1162, T1.triStatusCLObjId AS T1_1162_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS
T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triCurrencyUO AS T1_1309 FROM T_TRISTANDARDCONTRACT
T1 WHERE T1.SYS_GUID = ? AND ( (T1.triStatusCL NOT IN ('Retired','Upload Error','Template',
'History','Deleted') OR T1.triStatusCL IS NULL) ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM
IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID IN (SELECT T1.SPEC_ID AS T1_SPEC_ID FROM T_TRICONTRACTROLE T1
WHERE ( (T1.triStatusCL NOT IN ('Template','History','Retired','Deleted','Upload Error') OR
T1.triStatusCL IS NULL) ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE
SPEC_ID IN (?,?) AND ASS_TYPE = ?) AND T1.SYS_OBJECTID > ?) AND ASS_TYPE = ?) AND
T1.SYS_OBJECTID > ? ORDER BY T1.triIdTX, T1.triNameTX, T1.triToOrganizationTX;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 1.200MB
CREATE UNIQUE INDEX TRIDATA.PERF1806072141080 ON TRIDATA.T_TRICONTRACTROLE (SPEC_ID ASC)
  INCLUDE (SYS_OBJECTID, TRISTATUSCL) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2], 0.013MB
CREATE UNIQUE INDEX TRIDATA.PERF1806072141250 ON TRIDATA.T_TRISTANDARDCONTRACT (SPEC_ID ASC)
  INCLUDE (SYS_GUID, TRIIDTX, TRINAMETX, TRITOORGANIZATIONTXOBJID, TRISTATUSCL,
  TRISTATUSCLOBJID, TRIPENDINGCHANGESROL, TRICOMMITMENTORIGINA, TRICURRENCYUO,
  TRITOORGANIZATIONTX, SYS_TYPE1, TRICOMMITMENTCHANGES, SYS_OBJECTID) ALLOW REVERSE SCANS
  COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;

-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.T_TRICONTRACTROLE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF01_TRICONTRACTROLE;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.PK_IBS_SPEC_ASSIGNMENTS;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRISTANDARDCONTRACT FOR SAMPLED DETAILED INDEX
TRIDATA.PK_TRISTANDARDCONTRACT;
-- COMMIT WORK;

```

Query 5:

```

SELECT T1.triIdTX AS T1_1153, T1.triNameTX AS T1_1163, T1.triVendorCompanyLook AS T1_1408,
T1.triVendorCompanyLookObjId AS T1_1408_OBJID, T1.triLineItemTotalNU AS T1_1463, T1.triStatusCL
AS T1_1162, T1.triStatusCLObjId AS T1_1162_OBJID, T1.SYS_TYPE1 AS T1_SYS_TYPE1, T1.SYS_GUID AS
T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID, T1.triCurrencyUO AS T1_1367 FROM T_TRIPURCHASEORDER T1
WHERE T1.SYS_GUID = ? AND ( (T1.triStatusCL NOT IN ('Retired','Upload Error','Template',
'History','Deleted') OR T1.triStatusCL IS NULL) ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM
IBS_SPEC_ASSIGNMENTS WHERE SPEC_ID IN (SELECT T1.SPEC_ID AS T1_SPEC_ID FROM T_TRICONTRACTROLE T1
WHERE ( (T1.triStatusCL NOT IN ('Template','History','Retired','Deleted','Upload Error') OR
T1.triStatusCL IS NULL) ) AND T1.SPEC_ID IN (SELECT ASS_SPEC_ID FROM IBS_SPEC_ASSIGNMENTS WHERE
SPEC_ID IN (?,?) AND ASS_TYPE = ?) AND T1.SYS_OBJECTID > ?) AND ASS_TYPE = ?) AND
T1.SYS_OBJECTID > ? ORDER BY T1.triIdTX, T1.triNameTX, T1.triVendorCompanyLook;

-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.013MB
CREATE INDEX TRIDATA.PERF1806072144040 ON TRIDATA.T_TRIPURCHASEORDER (SYS_GUID ASC,
  SYS_OBJECTID ASC, TRICURRENCYUO ASC, SYS_TYPE1 ASC, TRISTATUSCLOBJID ASC,
  TRILINEITEMTOTALNU ASC, TRIVENDORCOMPANYLOOKOBJID ASC, TRIVENDORCOMPANYLOOK ASC, TRINAMETX
  ASC, TRIIDTX ASC, SPEC_ID ASC, TRISTATUSCL ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
  DETAILED STATISTICS;
COMMIT WORK;

```

```
-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.IBS_SPEC_ASSIGNMENTS FOR SAMPLED DETAILED INDEX
TRIDATA.ASS_CTYP_TMPL_SPID;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRIPURCHASEORDER FOR SAMPLED DETAILED INDEX
TRIDATA.IDX_SYS_T_TRIPURCHOBJECTID2;
-- COMMIT WORK;
-- RUNSTATS ON TABLE TRIDATA.T_TRICONTACTROLE FOR SAMPLED DETAILED INDEX
TRIDATA.PERF01_TRICONTACTROLE;
-- COMMIT WORK;
```

Query 6:

```
SELECT T1.triStatusCL AS T1_1054, T1.triStatusCObjId AS T1_1054_OBJID, T1.SYS_TYPE1 AS
T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID FROM T_TRIJOURNALENTY T1
WHERE T1.SYS_OBJECTID >= ? AND T1.SPEC_ID IN (?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,
?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,
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?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,
?)
AND T1.triStatusCL = ?;
```

```
-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.118MB
CREATE INDEX TRIDATA.PERF1808180010570 ON TRIDATA.T_TRIJOURNALENTY (TRISTATUSCL ASC,
SYS_OBJECTID ASC, SPEC_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

Query 7:

```
SELECT MIN(INSTANCE_ID) AS INSTANCE_ID, WFE.BO_ID, WFE.USER_ID FROM WF_EVENT WFE WHERE
WFE.AGENT_ID = -1 AND NOT EXISTS (SELECT 'X' FROM WF_EVENT WFE2 WHERE WFE2.AGENT_ID > -1 AND
WFE2.BO_ID = WFE.BO_ID) AND WFE.USER_ID NOT IN (?,?) GROUP BY WFE.BO_ID, WFE.USER_ID ORDER BY
1;
```

```
-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 0.118MB
CREATE INDEX TRIDATA.PERF1808180017030 ON TRIDATA.WF_EVENT (AGENT_ID ASC) ALLOW REVERSE SCANS
COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
-- index[2], 0.649MB
CREATE INDEX TRIDATA.PERF1808180017130 ON TRIDATA.WF_EVENT (AGENT_ID ASC, BO_ID DESC) ALLOW
REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

Query 8:

```
SELECT T1.triStatusCL AS T1_1054, T1.triStatusCObjId AS T1_1054_OBJID, T1.SYS_TYPE1 AS
T1_SYS_TYPE1, T1.SYS_GUID AS T1_SYS_GUID, T1.SPEC_ID AS T1_SPEC_ID FROM T_TRIJOURNALENTY T1
WHERE T1.SYS_OBJECTID >= ? AND T1.SPEC_ID IN (?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,
?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,
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?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,
?) AND T1.triStatusCL = ?;
```

```
-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 3.259MB
CREATE INDEX TRIDATA.PERF1808180022250 ON TRIDATA.T_TRIJOURNALENTY (SYS_OBJECTID ASC, SPEC_ID
DESC) ALLOW REVERSE SCANS COLLECT SAMPLED DETAILED STATISTICS;
COMMIT WORK;
```

c.3.11 Finance Lease Cash-Flow Disclosure Report

Query 1:

```
SELECT distinct APPLICATION ID from APP_OBJECT_PERMISSION where company_id = ?
and APPLICATION_ID in (-1,22021,6,7,8,9,10,11,13,15,16,23825,17,18,19,20,21,25,26,27,28,
23325,29,23326,30,23327,31,23328,32,23329,35,20004,37,20006,39,20007,20519,20008,40,22825,
20010,20011,44,45,20013,46,20015,48,49,50,22323,22324,53,22325,54,57,58,60,61,24125,23625,
23626,20819,20820,23125,22623,20319,22624,22625,22626,23925,21119,23425,20619,20620,22925,
20621,22926,22423,20119,20120,20121,20124,20125,24225,24226,23725,23225,22723,20419,22724,
22725,22730,22731,22223,22224,24025,21219,23527,20719,23025,23026,22523) and GROUP_ID in
(-1,0,89666588,89669132,89665760,89667300) and service_id > 1;
```

```
-- LIST OF RECOMMENDED INDEXES
-- =====
-- index[1], 1.415MB
CREATE INDEX TRIDATA.PERF1806112022490 ON TRIDATA.APP_OBJECT_PERMISSION (GROUP_ID ASC,
COMPANY_ID ASC, SERVICE_ID ASC, APPLICATION_ID ASC) ALLOW REVERSE SCANS COLLECT SAMPLED
DETAILED STATISTICS;
COMMIT WORK;
-- RECOMMENDED EXISTING INDEXES
-- =====
-- RUNSTATS ON TABLE TRIDATA.APP_OBJECT_PERMISSION FOR SAMPLED DETAILED INDEX
TRIDATA.PK_APP_OBJECT_PERMISSION;
-- COMMIT WORK;
```

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