

IBM UTILITIES IN DB2 12



(This article is part of our [Db2 Guide](#). Use the right-hand menu to navigate.)

BACKUP SYSTEM

```
. -FULL-----
>>-BACKUP SYSTEM--+-----+-----+-----+-----+----->
      '-DATA ONLY-'  +-ESTABLISH INCREMENTAL-+
                        '-END INCREMENTAL-----'

>+-----+-----+-----+-----+-----+-----+----->
  +--ALTERNATE_CP (copy-pool)--+-----+-----+-----+-----+
                                     '-DBBSG(stogroup)-'  '-LGBSG(stogroup-'
>+-----+-----+-----+-----+-----+-----+-----><
+--FORCE-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+-----+
FORCE-' | '-DUMPNONLY--+-----+-----+-----+-----+-----+-----+
TOKEN- (X'byte-string')' '- dumpclass-spec -' dumpclass-spec: >--DUMPCCLASS-(-
-dc1---)-----+-----+-----+-----+-----+-----+----->< |-dc2-|
                |-dc3-|
                |-dc4-|
                |-dc5-|
```

CATMAINT

```

>>-CATMAINT-UPDATE----->
               |                               |
               ' -LEVEL-( -- catalog-level--) -- '

>----->
      |
      |     .----- . |
      |     V                               | |
+---SCHEMA---SWITCH(schema_name,new_schema_name)---+
      |     .----- . |
      |     V                               | |
      ' -OWNER-FROM- ( -- owner_name-- )-TO ROLE----- '

>----->>
      |     .----- . | | | _UTILX_ BASIC_____ |
      |     V                               | |           | _EXTENDED_ |
      ' -VCAT---SWITCH(vcat_name,new_vcat_name)---+-- '           | _RESET___ |

```

CHECK DATA

```

               .----- . |
               V                               |

>>-CHECK--DATA-----table-space-spec----->
                               ' -PART--integer- ' .
                                               . -- SHRLEVEL - REFERENCE - .

>----->
      | -INCLUDE -XML -TABLESPACES-+-- -ALL- - | ' -CLONE- ' ' -- SHRLEVEL - -CHANGE- - '
              | -xml -spec- |
              . -SCOPE - -PENDING----- .

>-drain-spec----->
      ' -SCOPE- -+ -AUXONLY-+-- '
              +-ALL-----+
              ' -REFONLY- '
              . -AUXERROR - -REPORT----- .

>----->
      ' -AUXERROR - -INVALIDATE - - - '
      . -LOBERROR - -REPORT----- . . -XMLERROR - -REPORT----- .

>----->
      ' -LOBERROR - -INVALIDATE- ' ' -XMLERROR - -INVALIDATE- '

>----->
      |
      |     .----- . |
      |     V                               | |
      ' -FOR- -EXCEPTION-----IN--table-name1--USE--table-name2---+-- '
      . -DELETE - -NO----- . . -EXCEPTIONS - -0----- .

>----->
      |     . -LOG - -YES- | ' -EXCEPTIONS - -integer- '

```

```
'-DELETE--YES--+-----+'
            '-LOG--NO--'
.-ERRDNN--SYSERR-.
>+----->
'-ERRDNN--ddname-'
.-WORKDDN--SYSUT1--,--SYSUT2-----.
>+----->
'-WORKDDN--+--ddname1--,--ddname2-----+'
        |          .-,--SYSUT2-. |
        +--ddname1--+-----++
        | .-SYSUT1-.          |
        '+-----+-- , --ddname2-'
>+----->
        |          .-SYSPUNCH-. |  '-SORTDEVT--device-type-'
        '-PUNCHDDN--+--ddname---+'
>+----->
'-SORTNUM--integer-'
```

CHECK INDEX

```
>>-CHECK--INDEX----->
>+--LIST--listdef-name-----+>
+-(-index-name+-----+)-+
|                '-PART-integer-'               |
'- (ALL) -TABLESPACE+-----+ table-space-name+-----+-'
                '-database-name.-'               '-PART-integer'
                .-SHRLEVEL--REFERENCE-.
>+----->
'-CLONE-'  '-SHRLEVEL--CHANGE----'
.-DRAIN_WAIT--IRLMRWT value-. .-RETRY--UTIMOUT value-.
>+----->
'-DRAIN_WAIT--integer-----' '-RETRY--integer-----'
                .-WORKDDN--SYSUT1-.
>+----->
'-RETRY_DELAY--integer-'  '-WORKDDN--ddname-'
>+----->
'-SORTDEVT--device-type-'  '-SORTNUM--integer-'
>+----->
'-PARALLEL--num-subtasks-'
```

CHECK LOB

```
                .-SHRLEVEL--REFERENCE-.
>>-CHECK--LOB--lob-table-space-spec----->
```

```

                                '-SHRLEVEL--CHANGE----'
                    .-EXCEPTIONS--0-----,
>--drain-spec-+-----+-----+-----+-----+----->
                    '-EXCEPTIONS--integer-'
>+-----+-----+-----+-----+----->
  |           .-SYSPUNCH-. | '-SORTDEVT--device-type-'
  '-PUNCHDDN--+ddname---+'
>+-----+-----+-----+-----+----->
  '-SORTNUM--integer-'

```

Lob-table-space-spec:

```

>-TABLESPACE-+-----+lob-table-space-name-+-----+----->
                '-database-name-'                '-CLONE-'

```

drain-spec:

```

    .-DRAIN_WAIT--IRLMRWT value-. .-RETRY--UTIMOUT value-.
>+-----+-----+-----+-----+-----
+>
  '-DRAIN_WAIT--integer-----' '-RETRY--integer-----' '-RETRY_DELAY-int-'

```

COPY

```

                                .-FULL--YES-----,
>>+--LIST--listdef-name--| data-set-spec |+-----+-----
-----+----->
  |                                +-FULL--NO-----+
  |                                '-| changelimit-spec |-'
  |
  | .-----+-----+-----+-----+-----
-----+-----+
  | V                                .-FULL--YES-----, .DSNUM--ALL-----,
  |                                '-| changelimit-spec |-'
  |
  | '----+table-space-spec-+-----+-----+-----+-----+-----
+--data-set-spec-+'
        '-index-name-spec-'    +-FULL--NO-----+ |                                |
        '-| changelimit-spec |-' '-DSNUM--integer-----'
>+-----+-----+-----+-----+-----+-----
->
  '-PARALLEL-+-----+-----+-----+-----+-----+-----'
            '-(num-objects)-' '-TAPEUNITS--(--num-tape-units--)-'

```


'-creator-id.-'

From-copy-spec:

```
.-FROMLASTCOPY-----,
>>+-----+-----><
+-FROMLASTFULLCOPY-----+ +
FROMLASTINCRCOPY-----+ +
FROMLASTFLASHCOPY-----+ '-
FROMCOPY-----dsn--+-----+ '-
FROMVOLUME--+CATALOG-----+ '-volser--+-----+ '-
FROMSEQNO--n-' Data-set-spec >>+COPYDDN(+ddname1-----+--+)-+
-----+----->< | |
'-,ddname-' | '-RECOVERYDDN(+ddname3-----+--+)-' |
| '-,ddname2-----' | '-
,ddname4-' | |
| | '-,ddname4-----
-----' |
'-RECOVERYDDN(-|ddname3-----+--+)------
-----'
| '-,ddname4-' |
'-ddname4-----'
```

DIAGNOSE

```
>>-DIAGNOSE--+diagnose statement+-----
->< '-END-----' Diagnose-statement: >>+-----+-----
----->
| .-,-----, |
| V | |
'-TYPE(---integer-+-)-'
>+-----+-----+-----
->
'-ALLDUMPS+-----+-----'
| .-,-----, |
| V | |
'-(-X'abend-code'-+-)-'
>+-----+-----+-----
->
'-NODUMPS+-----+-----'
| .-,-----, |
| V | |
'-(-X'abend-code'-+-)-'
>+-----+-----+-----+-----+-----+-----
->< '-display statement-' '-wait statement-' '-abend statement-' Display-
```

```

statement: >>-DISPLAY-----
----->
>>+-OBD+-----+table-space-name+-----+-----+-----+
->< | '-database-name.-' +-ALL-----+ '-CLONE-' | | +-TABLES--+ | | '-
INDEXES-' | +-SYSUTIL-----
---+ +-MEPL-----+ +
AVAILABLE-----+ '-DBET+
DATABASE--database-name-----+-----+-----+ '-TABLESPACE+
-----+table-space-name+ '-CLONE-' | '-database-name.-' | '-INDEX--
index-name-----' Wait-statement: .-----
-----, V | >>-WAIT----+MESSAGE--message-id--+
-----+-----+----->< | '-INSTANCE--integer-' | '-
TRACEID--+X'trace-id'+-----+-----+ '-integer-----' '-INSTANCE-
-integer-' Abend-statement: >>-ABEND--+MESSAGE--message-id--+
-----+-----+----->< | '-INSTANCE--integer-'
| '-NODUMP-'
      '-TRACEID--+X'trace-id'+-----+-----+
          '-integer-----' '-INSTANCE--integer-'

```

EXEC SQL

```

>>-EXEC--SQL--+declare-cursor-spec-----+--ENDEXEC-----
->< '-non-select dynamic SQL statement-' Declare-cursor-spec: >>-DECLARE--
cursor-name--CURSOR--FOR--select-statement-----><

```

LISTDEF

```

          .-----,
          V           |
>>-LISTDEF--list-name-----list-options-----
->

```

List-options:

```

>>+INCLUDE+-----+LIST-ref-list+-----+-----+
+>
  'EXCLUDE' |           | '-init-obj-spec-' 'CLONED--+YES--+''-RI-' +-ALL--+
           '-type-spec-'           '-NO--'           +-BASE+
                                           +-LOB+
                                           '-XML-'

```

```

      .-DEFINED YES-.
>>+-----+-----+-----+
->
      +-DEFINED NO--+ +-HISTORY+
      '-DEFINED ALL-' '-ARCHIVE-'
>>+-----+-----+-----+

```

```

->< '-BASIC--+-NO--+-' '-EXTENDED--+-NO--+-' '-YES-' '-YES-' Init-obj-spec
>>-+DATABASE--database-name-+-----+-----+-----+-----+-----+-----+
->< +-table-space-spec-----+ '-PARTLEVEL--+------+' +-index-space-spec-----
-----+ '-(n)-' +-table-spec-----+ +-index-spec-----+ Table-
space-spec: TABLESPACE--+------+--table-space-name-----
----->< '-database-name.-' Index-space-spec: >>-INDEXSPACE--+------
-----+--index-space-name----->< '-database-name.-'
Table-spec: >>-TABLE--+------+--table-name-----
----->< '-creator-id.-' Index-space: >>-INDEX--+------+--index-
name----->< '-creator-id.-'

```

LOAD

```

      .-DATA-.      .-INDDN--SYSREC-----,
>>-LOAD--+------+--+-----+-----+-----+-----+-----+-----+----->
      +-INDDN--ddname-----+ '-PREFORMAT-'
      +-INCURSOR--cursor-name-+
                                     .-PRESORTED--NO--.
>--+-----+-----+-----+-----+-----+-----+-----+-----+----->
      |           .-1-----, | '-PRESORTED--YES-'
      '-COPYDICTIONARY--+-integer-+-'
>--+-----+-----+-----+-----+-----+-----+-----+-----+----->
      '-PARALLEL--+------+' '-ROWFORMAT--+-BRF-+-'
      '-(num-subtasks)-'           '-RRF-'
>--+-----+-----+-----+-----+-----+-----+-----+-----+----->
      '-RBALRSN_CONVERSION--+-NONE-----+'
      +-BASIC-----+
      '-EXTENDED-'
>--+-----+-----+-----+-----+-----+-----+-----+-----+----->
      '-KEEPDICTIONARY-' '-REUSE-'
      .-LOG--YES-----,
>--+-----+-----+-----+-----+-----+-----+-----+-----+----->
      '-LOG--NO--+------+'
      '-NOCOPYPEND-'
      (1)
      .-SORTKEYS--0-----,           .-FLOAT(S390)-.
>--+-----+-----+-----+-----+-----+-----+-----+-----+----->
      +-SORTKEYS--NO-----+           '-FLOAT(IEEE)-'
      '-SORTKEYS--integer-'

```



```

.-EBCDIC-.
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
+-ASCII---+ |          .,-----, | '-NOSUBS-'
'-UNICODE-' |          V          | |
              '-CCSID(---integer+-)-'

.-ENFORCE-CONSTRAINTS-. .-ERRDDN--SYSERR-.
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-ENFORCE--NO-----' '-ERRDDN--ddname-'

.-MAPDDN--SYSMAP-. .-DISCARDN--SYSDISC-.
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-MAPDDN--ddname-' '-DISCARDN--ddname--'

.-DISCARDS--0-----,
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-DISCARDS--integer-' '-SORTDEVT--device-type-'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-SORTNUM--integer-'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-CONTINUEIF(start+-----+)=--X'byte-string'-----+-'
              '-:end-'      '-character-string'-'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-IGNORE(WHEN)-' '-| decfloat-spec |-'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-| override-spec |-'

.-INDEXDEFER--NONE-----,
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-INDEXDEFER--NPI+-----+-'
              '-ALL-'      '-NONUNIQUE-'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-IMPLICIT_TZ--'timezone-string'-'

V          |
>----| INTO-TABLE-spec |----->< Resume-
spec: .-RESUME--NO-. .-SHRLEVEL-NONE-. >>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->< | '-REPLACE-' 'copy-spec' '-stats-'
| | .-BACKOUT--NO-----, .-SHRLEVEL--NONE---, | '-RESUME--YES--+'-----
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----' | .-YES-. | '-SHRLEVEL--CHANGE-' '-
BACKOUT--+'-----+-' Labelled-duration-expression >>+-----CURRENT_DATE-----

```

```

-----+----->
' -CURRENT_TIMESTAMP--+-'
        '-WITH TIME ZONE-'

.-----+-----,
V                                           I
>-----+ + -+- constant--+-YEAR-----+----->< '- - -' +
YEARS-----+ + MONTH-----+ + MONTHS-----+ + DAY-----+ + DAYS-----
-----+ + HOUR-----+ + HOURS-----+ + MINUTE-----+ + MINUTES-----+ +
SECOND-----+ + SECONDS-----+ + MICROSECOND--+ + MICROSECONDS-- Workddn-
spec: . -WORKDDN(SYSUT1, SORTOUT)----- , >>+-----
-----+----->
' -WORKDDN--+- (ddname1, ddname2)-----+-'
        |           .-, SORTOUT-. |
        +- (ddname1+-+-----+-) +-
        | .-SYSUT1-. |
        '- (-+-----+-, ddname2)--'

Copy-spec:
>>+-----+----->
|           .- (SYSCOPY)----- . |
' -COPYDDN--+-'
        +- (ddname1+-+-----+-) +-
        |           '-, ddname2-' |
        '- (, ddname2)-----'

>+-----+----->< '-
RECOVERYDDN(ddname3+-+-----+-) -' '-, ddname4-' Flashcopy-spec: .-
FLASHCOPY--NO----- , >>+-----
-----+----->< '- FLASHCOPY--+-
YES-----+-----+-' '-CONSISTENT-' '-
FCCOPYDDN--(--template-name--)-' Stats-spec: >>-STATISTICS--+-
-----+----->
        '-| stat-table-spec |-' '-| stat-index-spec |-'

.-REPORT--NO-- .-UPDATE--ALL-----
>+-----+----->
' -REPORT--YES-' '-UPDATE--+-ACCESSPATH--+'
        +-SPACE-----+
        +-NONE-----+

.-INVALIDATECACHE-NO--
>+-----+----->
' -INVALIDATECACHE YES-' '-HISTORY--+-ALL-----+-'
        +-ACCESSPATH--
        +-SPACE-----+
        '-NONE-----'

```



```

-----+ +-INTERNAL-----
-----+ | .-COLDEL--','-----
CHARDEL--'"----- .-DECPT--'.'---- | +-DELIMITED--+-----+-----+
-----+-----+ | '-COLDEL--coldel-' '-CHARDEL--chardel-'
'-DECPT--decpt-' | '-SPANNED--+YES+-----
-----' '-NO--' Decfloat-spec: >--+-----
-----+----->
'-DECFLOAT_ROUNDMODE--+ROUND_CEILING---+-'
      +-ROUND_DOWN-----+
      +-ROUND_FLOOR-----+
      +-ROUND_HALF_DOWN--+
      +-ROUND_HALF_EVEN--+
      +-ROUND_HALF_UP---+
      '-ROUND_UP-----'

```

Override-spec:

```

      V-----
>>-OVERRIDE--(-----+SYSTEMPERIOD-----+----)----->< +-
IDENTITY-----+ +-TRANSID-----+ '-NONDETERMINISTIC-' INTO-TABLE-spec:
>>-INTO--TABLE-table-name--+-----+-----+-----+----->
      'PERIODOVERRIDE-' '-TRANSIDOVERRIDE-'
      .-IGNOREFIELDS--NO--.
>+-----+----->
      '-IGNOREFIELDS--YES-'

>+-----+-----
-----+>
      |                                     .-INDDN -SYSREC-----
----- |
      '-PART-integer--+-----+--resume-spec--+-----+-----
-----+'
      'PREFORMAT-'                                     +-INDDN-ddname+-----
-----++
DISCARDN-ddname-' |                                     |
      'INCURSOR--cursor-name-----
-----'
>+-----+-----+-----+-----+-----+-----+-----+-----
----->
      '-NUMRECS-integer-' '-WHEN--SQL/DS='table-name'-----+-'
      '-field selection criterion-'

>+-----+-----+-----+-----+-----+-----+-----+-----
----->< | .,-----, | | V | | '-(---field specification+)-'
>+-----+-----+-----+-----+-----+-----+-----+-----
->< | .,-----, | | V | | '-(---field specification+)-'
Resume-spec: .-RESUME--NO-----, >>--+-----+-----+-----+-----
-----+----->

```

```
       |           '-REPLACE--+-----+--+-----+' |
       |           '-REUSE-' '-copy-spec-' |
'-RESUME--YES-----'
```

```
>--+-----+----->< '-
KEEPDICTIONARY-' Field selection criterion: >>+field-name-----+====+-
X'byte-string'----->< '-(start+-----+)-' + 'character-
string'+ '-:end-' +G'graphic-string'+ +N'graphic-string'+ Field
specification: >>-field-name-spec----->
```

```
>+-----+-----
----->
+-CHAR--+-----+-----
-----+
| +-BIT-(length)-strip-spec-----+
|
| +-CCSID 1208-strip-spec-----+
|
| +-MIXED--strip-spec-----+
|
| +-BLOBF--+-----+--+-----+-----+
|
| | '-PRESERVE WHITESPACE-' '-BINARYXML-' |
|
| +-CLOBF--+-----+--+-----+--+-----+--+
|
| | '-MIXED-' '-PRESERVE WHITESPACE-' '-CCSID 1208-' |
|
| '-DBCLOBF--+-----+--+-----+-----'
```

```
|
| '-PRESERVE WHITESPACE-' '-CCSID 1200-'
|
+-VARCHAR--+-----+-----+
strip-spec+
| +-BIT-----+
|
| +-CCSID 1208-----+
|
| +-MIXED-----+
|
| +-BLOBF--+-----+--+-----+-----+
|
| | '-PRESERVE WHITESPACE-' '-BINARYXML-' |
|
| +-CLOBF--+-----+--+-----+--+
|
| | '+-----+--+-----+-----'
```

```

|
|           |           '-MIXED-' '-PRESERVE WHITESPACE-' '-CCSID 1208-'
|
|           '-DBCLOBF'+-----+-----+-----+-----'
|
|           '-PRESERVE WHITESPACE-' '-CCSID 1200-'
|
+-GRAPHIC+-----+-----+strip-spec+-----+-----+
-----+
|           '-EXTERNAL-' '-(length)-'           '-CCSID 1200-'
|
+-VARGRAPHIC--strip-spec--+-----+-----+-----+-----+
-----+
|           '-CCSID 1200-'
|
+-SMALLINT-----+-----+-----+-----+-----+
-----+
+-INTEGER+-----+-----+-----+-----+-----+
-----+
|           '-EXTERNAL'+-----+-----+-----+-----+
|
|           .-(length)-'
|
+-BIGINT-----+-----+-----+-----+-----+
-----+
+-BINARY+-----+strip-spec-----+-----+-----+-----+
-----+
|           '-(length)-'
|
+-+VARBINARY-----+strip-spec-----+-----+-----+-----+
-----+
| '-BINARY VARYING-'
|
+-decimal-spec-----+-----+-----+-----+-----+
-----+
+-FLOAT+-----+-----+-----+-----+-----+
-----+
|           '-EXTERNAL-' '-(length)-'
|
+-DATE--EXTERNAL--+-----+-----+-----+-----+-----+
-----+
|           '-(+-length-----+)-'
|
|           '-date-format-'
|
+-TIME--EXTERNAL--+-----+-----+-----+-----+-----+
-----+

```

```

|          '-(--length-----+)-'
|
|          '-timestamp-format-'
|
+-TIMESTAMP-WITH-TIME-ZONE--EXTERNAL--+-----+-----+
-----+
|          '-(length)-'
|
+-ROWID-----+
-----+
+-BLOB-----+
-----+
+-CLOB-----+-----+-----+
-----+
|          '-MIXED--+-----+-'
|
|          '-CCSID 1208-'
|
+-DBCLOB-----+-----+-----+
-----+
|          '-CCSID 1208-'
|
|          .-(34)-----,
|
+-DECFLOAT-----+-----+-----+
-----+
|          +--(16)-----+
|
|          '-EXTERNAL--+-----+-'
|
|          '-(length)-'
|
'-XML-----+-----+-----+-----+
-----+
          '-PRESERVE WHITESPACE-' '-BINARYXML-'

>-----+-----+-----+-----+-----+-----+-----+----->< +-NULLIF--
field selection criterion----+ '-DEFAULTIF--field selection criterion-' Field
name spec: >>-field-name--+-----+-----+-----+-----+-----+-----+
-->< +-POSITION(start+-----+)------+ | '-:end-' | '-CONSTANT(--+
'string'-----+)-' +-X'hex-string'-----+ +-integer-----+ +-CURRENT
DATE-----+ +-CURRENT TIME-----+ +-CURRENT TIMESTAMP+ '-NULL-----'
Strip-spec: >>+-----+-----+-----+-----+-----+-----+-----+
----->
|          .-BOTH ----, |
'-STRIP-----+-----+-----+-----+-----+-----+-----+-----'

```

```

+-TRAILING--+ |                (1) |
+-LEADING--'  +- 'strip-char'-----+
              +-X'strip-char'-----'

```

```

>+-----+----->< '-
TRUNCATE-' Decimal-spec: .-PACKED-----, >>-DECIMAL-+-
-----+----->< +-ZONED-----
-----+
      '-EXTERNAL-+------+-'
              |           .-,0----- |
              '-(length-+------+)-'
              '-,scale-'

```

MERGECOPY

```

>>-MERGECOPY-----
->
>+--LIST--listdef-name-----+
->
  |                                                    .-DSNUM--ALL----- |
  '-TABLESPACE-----+-----+table-space-name-----+-'
    '-database-name.-'         '-DSNUM--integer-'
    .-WORKDDN--SYSUT1-.
>+-----+-----+-----+-----+----->>
->
  '-CLONE-' ' -WORKDDN--ddname-'
    .-NEWCOPY--NO-.   .-COPYDDN--SYSCOPY-----
>+-----+-----+-----+-----+----->>
  |               +-COPYDDN(ddname1-----+)-+          |
  |               |                   '-,ddname2-'     |
  |               +-COPYDDN(,ddname2)-----+         |
  |               '-RECOVERYDDN(ddname3-----+)-'     |
  |               |                   ',ddname4'       |
  |               .-COPYDDN--SYSCOPY-----           |
  '-NEWCOPY-YES-+-----+-----+-----+-----+-'
    +-COPYDDN(ddname1-----+)-+ '-RECOVERYDDN(ddname3)'
    |                   ',ddname2-'   |                   ',ddname4'
    '-COPYDDN(,ddname2)-----+'

```

MODIFY RECOVERY

```

>>-MODIFY--RECOVERY----->
>+--LIST--listdef-name-----+>
  '-TABLESPACE-----+-----+table-space-name-'
    '-database-name.-'
    .-DSNUM--ALL-----

```



```

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-DSNUM--integer-' '-CLONE-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-DELETDS-' '-NOCOPYPEND-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----><
|          +-AGE--integer-+--+                               |
|          |          '-(*)-----' |                               |
|          '-DATE--integer-+-' |                               |
|          '-(*)-----' |                               |
'-RETAIN---+-LAST--(--integer-)------+-----'
          +-LOGLIMIT-----+
          '-GDGLIMIT+-----+'
                  +-LAST--(--integer--)-+
                  '-LOGLIMIT-----'

```

MODIFY STATISTICS

```

>>-MODIFY--STATISTICS----->
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
+-TABLESPACE--+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
|          ' -database-name.- ' |
+-INDEXSPACE--+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
|          ' -database-name.- ' |
'-INDEX--+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----'
          ' -creator-id.- '
>--DELETE--ALL-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----><
+-ACCESSPATH+ |          '-(*)-----' |
          '-SPACE-----' '-DATE--(integer)-+-'
                  '-(*)-----'

```

OPTIONS

```

>>-OPTIONS----->
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----><
| '-PREVIEW-' '-LISTDEFD-ddname-' '-TEMPLATEDD-ddname-' '-event-spec-' | +-
OFF-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
-key-value-----' Event-spec
.-ITEMERROR,HALT-. .-WARNING,RC4-. >>-EVENT--(--+-----+-----+-----+-----+-----+-----+
-----+-----)----->< '-ITEMERROR,SKIP-' '-,-' +-WARNING,RC0-+
          +-WARNING,RC8-'

```

QUIESCE

```

>>-QUIESCE----->
>--+LIST-listdef-name-----+>
  | .-----|
  | V-----|
  |----+TABLESPACE+-----+table-space-name+-----++-'
      |           '-database-name.-'           '-PART-integer-' ||
      |-TABLESPACESET+-----+-----+table-space-name-|
              '-TABLESPACE-' '-database-name.-'
              .-WRITE--YES-.
>--+-----+-----+-----+-----+-----+-----+-----+-----+-----+
->< '-CLONE-' '-WRITE--NO--'

```

REBUILD INDEX

```

>>-REBUILD-----
----->
          .,-----,
          V-----|
>--+INDEX--+-(-----creatorid.index-name-----+-----+-----)-----+
-----+>
  |      |          '-PART--integer-'      |
  |
  |      +- (ALL) --table-space-spec-----+
  |      '-LIST--listdef-name-----'
  |
  |          .,-----,
  |      V-----|
  |
  |      '-INDEXSPACE--+-(-----+-----+-----+-----+-----+-----+
  |      +-----) -+'
  |          |      '-database-name.-'      '-PART-integer-
  |          |      +- (ALL) --table-space-spec-----+
  |          |      '-LIST--listdef-name-----'
  |          |
  |          .-SHRLEVEL--REFERENCE-----,
>--+-----+-----+-----+-----+-----+-----+-----+-----+-----+
->
  '-SHRLEVEL--CHANGE--change-spec-'      '-CLONE-'

```



```
'-REPORT--YES-'
```

```
.-UPDATE-ALL-----,.-INVALIDATECACHE NO--.  
>+-----+-----+-----+-----+-----+-----+----->  
'-UPDATE--ACCESSPATH+' '-INVALIDATECACHE YES-'  
+SPACE ----+  
'-NONE-----'  
  
>+-----+-----+-----+-----+-----+-----+----->< '-  
HISTORY--ALL-----+ ' '-FORCEROLLUP--YES--+' +ACCESSPATH+ '-NO--' +  
SPACE -----+ '-NONE-----' Correlation-stats-spec: .-KEYCARD-----, >+-----  
-----+-----+-----+-----+-----+-----+----->
```

```
.-FREQVAL--NUMCOLS--1--COUNT--10-----.  
>+-----+-----+-----+-----+-----+-----+-----+----->  
| |-----+-----+-----+-----+-----+-----+-----+-----| |  
| V-----+-----+-----+-----+-----+-----+-----+-----| |  
'---FREQVAL--NUMCOLS--integer-----+-----+-----+-----+-----+-----+-----+-----'  
| |-----+-----+-----+-----+-----+-----+-----+-----| |  
'-COUNT--integer-----+-----+-----+-----+-----+-----+-----+-----'  
| |-----+-----+-----+-----+-----+-----+-----+-----| |  
'-LEAST-'
```

```
.-NUMCOLS--1--NUMQUANTILES--100-----.  
>--HISTOGRAM-------+-----+-----+-----+-----+-----+-----+----->< |  
. -NUMQUANTILES--100-----, |  
| -NUMCOLS--integer-----+-----+-----+-----+-----+-----+-----+-----'  
' -NUMQUANTILES--integer-'
```

RECOVER

```
>>-RECOVER-----  
->  
>+--+LIST-listdef-name-----+--list-options-spec-----  
->  
| | |-----+-----+-----+-----+-----+-----+-----+-----| | |  
| | V-----+-----+-----+-----+-----+-----+-----+-----| | |  
| '---object-----+-----+-----+-----+-----+-----+-----+-----'  
| '---DSNUM--integer-----'-----| | |  
| |-----+-----+-----+-----+-----+-----+-----+-----| | |  
+object-----+-----+-----+-----+-----+-----+-----+-----+-----+  
| '---DSNUM--integer-----'-----| | |  
'-object--PAGE--page-number-----+-----+-----+-----+-----+-----+-----+-----'  
| |-----+-----+-----+-----+-----+-----+-----+-----| | |  
'-CONTINUE-'  
| |-----+-----+-----+-----+-----+-----+-----+-----| | |  
. -LOGRANGES--YES-----, | | |
```

```

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
->< '-CLONE-' +-LOCALSITE----+ | | '-RECOVERYSITE-' '-LOGRANGES--NO-----'
Object: >>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
----->< | '-database-name-' | +-INDEXSPACE--+-----+-----+-----+-----+-----+-----
space-name+ | '-database-name-' | '-INDEX--+-----+-----+-----+-----+-----+-----
-----' '-creator-id-' List-options-spec: .-BACKOUT--NO----- .>>+-----
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
| | .-YES-. |
'-BACKOUT--+-----+-----+'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
| | .-VERIFYSET--YES-. .-ENFORCE--YES-. |
+-TORBA-X'byte-string'--+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| | '-VERIFYSET--NO--' '-ENFORCE--NO--' |
| | .-VERIFYSET--YES-. .-ENFORCE--YES-. |
'-TOLOGPOINT-X'byte-string'--+-----+-----+-----+-----+-----+-----+-----+-----+
'-VERIFYSET--NO--' '-ENFORCE--NO--'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----><
'-LOGONLY-----' Non-LOGONLY-options-spec: >>+-----+-----+-----+-----+-----+-----
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-REUSE-' '-CURRENTCOPYONLY-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-PARALLEL+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+'
'-(num-objects)-' '-TAPEUNITS--(--num-tape-units--)-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-RESTOREBEFORE--X'byte-string'-
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-FROMDUMP--+-----+-----+-----+-----+'
'-DUMPCLASS--(dcl)-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-FLASHCOPY_PPRCP--+NO-----+'
+PMNO--+
+PMPREF+
+PMREQ +
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-ALTERNATE_CP(copy-pool)-'

```

Recover-options-spec:

```
.-DSNUM--ALL-----.
```

```

>>-object+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
| | (1) |
'-DSNUM--integer-----'

```

```

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->< | '-
image-copy-spec-' | +-TOLASTCOPY--topcopy-options-spec-----+-----+-----+-----+-----+-----
----+ +-TOLASTFULLCOPY--topcopy-options-spec-----+-----+-----+-----+-----+-----+ 'ERROR-
-RANGE-----' Tocopy-options-spec .-ENFORCE--YES-. >>+-----+-----+-----+-----+-----+-----
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----

```

```

-->
'-REUSE-' '-CURRENTCOPYONLY-' '-ENFORCE--NO--'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-NOSYSCOPY--+-+-----+-'
      +-INLCOPY-+
      '-FCCOPY--'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
FLASHCOPY_PRCP--+-NO-----+-' +-PMNO---+ +-PMPREF-+ '-PMREQ -' Image-copy-
spec: >>-TOVOLUME-+-CATALOG-----+-----+-----+-----+----->< '-
vol-ser-+-+-----+-----+-'
              '-TOSEQNO--integer-'

```

REORG INDEX

```

>>-REORG--+-INDEX--LIST--listdef-name-+-+-----+-----+-----+-----+----->
      '-index-name-spec-----' '-REUSE-' '-CLONE-'

      .-SHRLEVEL NONE-----,

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-SHRLEVEL-+-REFERENCE--deadline-spec--drain-spec-----+-'
      '-CHANGE--deadline-spec--drain-spec--change-spec-'

      .-FASTSWITCH YES----,

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-FASTSWITCH NO-----'

      .-FORCE--NONE----,

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-LEAFDISTLIMIT-+-+-----+-----+-----+-' +-FORCE--READERS-+
      '-integer-' '-REPORTONLY-' '-FORCE--ALL----'

      .-UNLOAD--CONTINUE-----,

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-UNLOAD--+-PAUSE-----+-' '-stats-spec-----'
      '-ONLY-----'

      .-WORKDDN--(SYSUT1)-,

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-WORKDDN--(ddname)-' '-PREFORMAT-'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----><
| .-NO-----, | '-FLASHCOPY--+-YES-----+-----+-----+-' '-
CONSISTENT-' '-FCCOPYDDN(ddname)-' >+-----+-----+-----+-----+-----+-----+----->
----->< '-RBALRSN_CONVERSION--+-NONE-----+-' +-
BASIC----+ '-EXTENDED-' Index-name-spec >>+-----+-----+-----+-----+-----+----->
name-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->

```



```

> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
->
'-LOG--NO--'                                '-NOSYSREC-'
      .-AUTOESTSPACE YES-.
> --| copy-spec |-----+-----+-----+-----+-----+-----+-----+----->
->
      '-AUTOESTSPACE NO--'

.-SHRLEVEL NONE-----,
> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-SHRLEVEL--+-REFERENCE--| deadline-spec |--| drain-spec |-----+-->
      '-CHANGE-|deadline-spec|--|drain-spec|--|table-change-spec|--'

.-FASTSWITCH YES-.  .-AUX NO--.              .-FORCE--NONE----.
> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
'-FASTSWITCH NO--. -'AUX YES-'               +-FORCE--READERS-+
                                              '-FORCE--ALL-----'

> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
+-SORTNPSI--AUTO---+
+-SORTNPSI--YES----+
'-SORTNPSI--NO-----'

> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
->
|         .-10-----,                   .-10-----,                    |
'-OFFPOSTLIMIT--+------+-----+-----+-----+-----+-----+-----+-----+'
      '-integer-'                           '-integer-' '-REPORTONLY-'
.-UNLOAD--CONTINUE--.

> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
| |           (1) | '-KEEPDICTIONARY-' '-| statistics-spec |-' |
| '-UNLOAD--PAUSE-----' |
+-UNLOAD--ONLY-----+
'-UNLOAD--EXTERNAL-+------+-----+-----+-----+-----+'
      '-NOPAD-' | ..... |
| V                   | |
'---| FROM-TABLE-spec |+-'

.-PUNCHDDN--SYSPUNCH-.  .-DISCARDDBN--SYSDISC-.
> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
->
'-PUNCHDDN--ddname---' '-DISCARDDBN--ddname--'

> +-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
->
'-| reorg tablespace options |-'

```

```

> +-----+-----+
->
|                                     |
|                                     V                                     |
'-DISCARD-+-----+-----| FROM-TABLE-spec |+-'
                '-NOPAD-'
.-PARALLEL-0-----
> +-----+-----+
->
'-PARALLEL--(--num-subtasks--)-'

```

Copy-spec

```

.-COPYDDN(SYSCOPY)-----
>> +-----+-----+
->
'-COPYDDN(+--ddname1--+-----+--)-'
|                               '-,ddname2-' |
'-,ddname2-----'
> +-----+-----+
->
'-RECOVERDDN(ddname3+-----+--)-'
|                               '-,ddname4-' |
> +-----+-----+
->< | .-NO-----, | '-FLASHCOPY--+YES-+-----+-----+-----'
'-CONSISTENT-' '-FCCOPYDDN(ddname)-' Deadline-spec .-DEADLINE--NONE-----
-----, >>+-----+-----+
----->< '-DEADLINE--+timestamp-----+' '-
labeled-duration-expression-' Drain-spec >>+-----+-----+-----
-----+----->
'-DRAIN_WAIT--integer-'          '-RETRY--integer-'
                              .-TIMEOUT--TERM--
> +-----+-----+-----+-----+-----+-----+-----+----->
'-RETRY_DELAY--integer-'          '-TIMEOUT--ABEND-'
.-LOGRANGES--YES-.    .-DRAIN_ALLPARTS--NO--.
> +-----+-----+-----+-----+-----+-----+-----+----->
->
'-LOGRANGES--NO--'          '-DRAIN_ALLPARTS--YES-'
.-SWITCHTIME--NONE-----
> +-----+-----+-----+-----+-----+-----+-----+----->><
| .-NEWMAXRO--NONE----, | '-SWITCHTIME--+timestamp-----+-----+-----
-----+-----+' '-labeled-duration-expression-' '-NEWMAXRO--integer-'
Change-spec: .-MAXRO-----, .-DRAIN--ALL-----, >>+-----+-----

```

```

--+---+-----+-----+-----+-----+-----+-----+-----+----->
    '-MAXRO--+integer--'    '-DRAIN--WRITERS--'
        '-DEFER---'

    .-LONGLOG--CONTINUE--.    .-DELAY--1200-----.
>+---+-----+-----+-----+-----+-----+-----+-----+----->
    '-LONGLOG--+TERM--+ '    '-DELAY--integer--'
        '-DRAIN--'

Map-spec:
>>+---+-----+-----+-----+-----+-----+-----+-----+-----><
+-MAPPINGTABLE--table-name-----+ +-MAPPINGDATABASE--database-name- '
Labelled-duration-expression >>+---CURRENT_DATE-----
----->
    '-CURRENT_TIMESTAMP--+-----+-----'
        '-WITH TIME ZONE--'

    .----- .
    V                I
>+---+ -+-+---constant--+YEAR-----+-----+-----+-----><
+-YEARS-----+ +-MONTH-----+ +-MONTHS-----+ +-DAY-----+ +-DAYS---
-----+ +-HOUR-----+ +-HOURS-----+ +-MINUTE-----+ +-MINUTES-----+
+-SECOND-----+ +-SECONDS-----+ +-MICROSECOND--+ +-MICROSECONDS--+
Statistics-spec >>+---STATISTICS-----
----->
    .-TABLE--(--ALL--)-.

>+---+-----+-----+-----+-----+-----+-----+-----+-----
->
    |          '-SAMPLE--integer--'          |
    | .----- . |
    | V                | |
    '-TABLE--(--table-name--)--| table-stats-spec |+--'

    .-INDEX--(--ALL--)-.
>+---+-----+-----+-----+-----+-----+-----+-----+-----
->
    |          .,----- .          |
    |          V                | |
    '-INDEX--(----index-name--| correlation-stats-spec |+---)-'

    .-REPORT--NO--.    .-UPDATE--ALL-----.
>+---+-----+-----+-----+-----+-----+-----+-----
->
    '-REPORT--YES--'    '-UPDATE--+ACCESSPATH--+ '
                        +-SPACE-----+
                        '-NONE-----'

>+---+-----+-----+-----+-----+-----+-----+-----

```

```
->< '-HISTORY--++-ALL-----+' '-FORCEROLLUP--++-YES--+' '+ACCESSPATH--+' '-NO-
-' '+SPACE-----+' '-NONE-----' Stat-table-spec .-TABLE--(--ALL--)-. >>--+--+
-----+---+-----+---+-----+---+-----+---+-----+---+-----> | '-SAMPLE--
integer-' '-USE PROFILE-' | | .-----+-----+-----+-----+-----+-----
-----, | | V | | | '----TABLE--(--table-name--)-++-----+-----+-----+-----
-' '-| table-stats-spec |-' Table-stats-spec .-COLUMN--ALL-----+-----
. >>+-----+-----+-----+-----+-----+-----+-----+----->
      '-SAMPLE--integer-' | | | | .,-----, | |
                          | | | | V | | | | | | |
                          '-COLUMN--(---column-name---)-'

>+-----+-----+-----+-----+-----+-----+-----+-----+-----> | .,.-
-----+-----+-----+-----+-----+-----+-----+-----+-----| | | .,-----
. | | | V V | | | +---COLGROUP--(---column-name---)--| colgroup-stats-spec
|+++ '-USE PROFILE-----+-----+-----+-----+'
Colgroup-stats-spec: >>+-----+-----+-----+-----+-----+-----+-----+-----
----->
      '-FREQVAL--++-----+-----+-----+'
      | | | | | | | | .-MOST--. |
      '-COUNT--integer-----+-----+-----+'
      +---BOTH---+
      '-LEAST-'

>+-----+-----+-----+-----+-----+-----+-----+-----> | .-
NUMQUANTILES--100-----, | '-HISTOGRAM--++-----+-----+-----+' '-
NUMQUANTILES--integer-' Stat-index-spec .-INDEX--(--ALL--)-. >>--+--+-----
-----+---| correlation-stats-spec |-----+-----> | .,-----+-----+-----
-----+-----, | | V | | | '-INDEX--(---index-name--| correlation-stats-
spec |+---)-' Correlation-stats-spec: .-KEYCARD-----, >>+-----+-----+-----
-----+-----+-----+----->
      .-FREQVAL--NUMCOLS--1--COUNT--10-----+-----+-----+-----+-----,
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+----->
| .-----+-----+-----+-----+-----+-----+-----+-----, |
| V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
'---FREQVAL--NUMCOLS--integer--++-----+-----+-----+-----+-----+-----+'
      | | | | | | | | | | .-MOST--. |
      '-COUNT--integer-----+-----+-----+'
      +---BOTH---+
      '-LEAST-'

      .-NUMCOLS--1--NUMQUANTILES--100-----+-----+-----+-----+-----,
>--HISTOGRAM--++-----+-----+-----+-----+-----+-----+-----+----->
      | | | | | | | | .-NUMQUANTILES--100-----, |
      .-NUMCOLS--integer--++-----+-----+-----+-----+-----+-----+'
      '-NUMQUANTILES--integer-'
```

FROM-TABLE spec

```
>>-FROM--TABLE--table-name-----
->
>+-----+
->< '-WHEN--(--selection-condition-spec--)' Selection-condition spec >>+-
predicate----->
  '-selection condition-'
  .-----
  V                               I
>+-----+-----+-----><
'-+AND+--+predicate-----+' '-OR--' '-selection condition-'
Predicate >>+-basic predicate-----
----->< +BETWEEN predicate+ +IN predicate-----+ +LIKE predicate-----+
'-NULL predicate----' Basic predicate >>-column-name--+ = --+-----
----->
      +- <> +-
      +- > --+
      +- < --+ +- >= +-
      '- < = -' >--+constant-----+-----
----->< '-labeled-duration-expression-' Between predicate
>>-column-name--+-----+BETWEEN----->
      '-NOT-'
>--+constant-----+AND----->
  '-labeled-duration-expression-'
>--+constant-----+-----><
'-labeled-duration-expression-' IN predicate .,-----, V I >>-column-name-
+-----+IN--(--constant+)------>< '-NOT-' LIKE
predicate >>-column-name--+-----+LIKE--string-constant-----
----->
      '-NOT-'
>+-----+-----+-----><
'-ESCAPE--string-constant-' NULL predicate >>-column-name--IS--+-----+NULL-
----->< '-NOT-' Reorg tablespace options
.-UNLDDN--SYSREC-. >>+-----+-----+-----+-----+-----
----->
  '-UNLDDN--ddname-' '-SORTDEVT--device-type-'
>+-----+-----+-----+-----+----->
  '-SORTNUM--integer-' '-PREFORMAT-' '-ROWFORMAT--BRF-'
                                     I-RRF-I
>+-----+-----+-----><
'-RBALRSN_CONVERSION--NONE-----+'
      +-BASIC-----+
      '-EXTENDED-'
```

REPAIR

```
>>-REPAIR----->
>+-----+
| .-OBJECT-. .-LOG--YES-. V |
++-----++-----++-----++-----+set statement+++++
| ' -LOG--NO--' | ' -locate block--' | |
| ' -dbd-statement-----' |
+-level-id statement-----+
+-versions statement-----+
' -catalog statement-----+
>+-----+-----><
'-CLONE-' Level-id statement >>-LEVELID-----
----->
>+-+TABLESPACE-----+table-space-name-----+----->
| ' -database-name.-' |
' -index-name-spec-----'
>+-----+-----><
'-PART--integer-' Versions statement >>-VERSIONS-----
----->
>+-+TABLESPACE-----+table-space-name-----+-----><
| ' -database-name.-' | ' -index-name-spec-----'
Catalog statement >>-CATALOG--TABLESPACE-----+table-space-
name----->
' -database-name.-'
>+-----+----->
'-TEST-'
```

Index-name spec

```
>>-+INDEX-----+index-name-----+-----><
| ' -creator-id.-' | ' -INDEXSPACE-----+index-space-name-' ' -
database-name.-' Set statement >>-SET-----
----->
```

```
>+ |table-space-spec|+-----+-----+NOCOPYPEND-----+-----
-----+----->< | ' -PART--integer-' +-NORCVRPEND-----+ | | +-NOCHECKPEND-----+
| | +-NOAUXWARN-----+ | | +-NOAUXCHKP-----+ | | +-NOAREORPENDSTAR--+ | |
+-NOAREORPEND-----+ | | +-PRO-----+ | | +-NOPRO-----+ | ' +-
INDEX-----+(index-name-----+-----)-----+-----+NOCOPYPEND-----+'
| | ' -PART--integer-' | | +-NORCVRPEND-----+ | ' -(--ALL--)--| table-space-
spec |-' | +-NORBDPEND-----+ ' -INDEXSPACE-----+-----+index-space+---
-----+)-+-NOCHECKPEND-----+ | ' -database.-' ' -PART-int' | +-
NOAREORPENDSTAR--+ ' -(--ALL--)--table-space-spec-----+' +-NOAREORPEND---
--+ +-RBDPEND-----+ ' -PSRBDPEND-----' Table-space-spec: >>-TABLESPACE--
+-----+table-space-name----->< ' -database-
```

name.-'

REPORT

```
>>-REPORT----->
                                     .-INDEX NONE-.
>+-RECOVERY+-TABLESPACE+LIST-listdef-name---+-----+-----><
| | '-tablespace-name-spec' '-INDEX ALL-' | 'info' | | '-index-list-spec-----
-----' | '-TABLESPACESET-----+---table-space-
name-spec---+-----+--' '-TABLESPACE-' '-SHOWSNS-' Index-list-spec >>+-
INDEXSPACE---+-----+-----+index-space-name+----->< | |
'-database-name.-' | | | '-LIST-listdef-name-----' | '-INDEX--
+-----+-----+index-name+-----' | '-creator-id.-' | '-LIST--
listdef-name-----' Info-options .-DSNUM--ALL----- . >>+-----+--
+-----+-----+----->
    '-DSNUM--integer-' '-CURRENT-' '-SUMMARY-'
                                     .-ARCHLOG--1-----,
>+-----+-----+-----+-----+-----><
'-LOCALSITE-' '-RECOVERYSITE-' '-ARCHLOG--++2---+-' '-ALL-' Table-space-name-
spec >>+-----+-----+-----table-space-name-----
--->< '-database-name.-'
```

RESTORE SYSTEM

```
>>-RESTORE SYSTEM----->
>--+| non-LOGONLY spec |-----+----->< '-
LOGONLY--+-----+-----+-----+----->< '-
+-----+-----+-----+-----+----->< '-
-SYSVALUEDDN(ddname)-' Non-LOGONLY spec >>+-----+
----->
    '-ALTERNATE_CP(copy-pool)-'
>+-----+-----+----->
    '-RESTOREBEFORE-- X'byte-string'-'
>+-----+-----+-----+----->
+-FROMDUMP+-----+-----+-----+-----+-----+-----+
|           '-DUMPCLASS-(dcl)-''-RSA-(key-label)-''-TAPEUNITS+-----+-'
|                                           'units' |
'-FLASHCOPY_PPRCP--+NO-----+-----+-----+-----'
          +-PMNO---+
          +-PMPREF+
          '-PMREQ -'
```

RUNSTATS

```
>>-RUNSTATS--TABLESPACE--+-| listdef-spec |-----+----->
      '-| table-space-spec |-'

      .-| statistics-spec |-.
>--+-----+----->< '-|
reset-spec |-----' Listdef-spec .-INVALIDATECACHE NO--. >>-LIST--listdef-
name--+-----+----->< '-INVALIDATECACHE
YES-' Table-space-spec >>--+-----+-----table-space-name-----
----->
      '-database-name.-'

>--+-----+----->
      |                .-FORCEROLLUP--NO--. |
      '-PART--integer--+-----+-----'
                '-FORCEROLLUP--YES-'

      .-INVALIDATECACHE NO--.
>--+-----+----->< '-
INVALIDATECACHE YES-' Statistics-spec >>--+-----+-----
----->
      |                .-(ALL)-.                |
+TABLE-----+-----+--| all-tables-spec |-----+
      | .-,-----, |
      | V                | |
      '---TABLE-----table-name--| named-tables-spec |+-'

>--+-----+----->
      '-+-INDEX-----(--ALL--)--| correlation-stats-spec |-----+--'
      +-INDEX--(--*-----)--| correlation-stats-spec |-----+
      |                .-,-----, |
      |                V                | |
      '-INDEX--(----index-name--| correlation-stats-spec |+---)-'
                .-REGISTER--YES-.
      .-SHRLEVEL--CHANGE --+-----+--.
      |                '-REGISTER--NO--' | .-REPORT--NO--.
>--+-----+-----+----->
      '-SHRLEVEL--REFERENCE-----' '-REPORT--YES-'

      .-UPDATE--ALL-----,
>--+-----+-----+-----| history-spec |----->
      '---UPDATE--+-ACCESSPATH+---'
                +-SPACE-----+
                '-NONE-----'

>--+-----+----->< '-SORTDEVT-
```



```

-device-type- ' All-tables-spec >>---+ | sample-spec |---+-----
-+-+----->< | '-| use-profile-spec |-' | '-DELETE PROFILE-----
-----' Named-tables-spec >>---+ | sample-spec |-----+ | column-
spec |---+-----+-----+>< | | '-| colgroup-spec |-' | | | | |
| '----| use-profile-spec |-----' | +-| column-spec |---+-----
-----+-----+-----+-----+ | '-| colgroup-spec |-' | | | |
'-| set-profile-spec |-----' | | | '-DELETE PROFILE-----
-----' Sample-spec >>---+-----
-----+>< | .25-----, | +-SAMPLE---+-----
+-----+ | '-integer-' | | .-AUTO-----
-----, | '-TABLESAMPLE SYSTEM---+numeric-literal---+-----+
' '-REPEATABLE-integer-' Use-profile-spec >>---USE PROFILE-----
-----+----->< '-INCLUDE---+ (NPI)---+ '-NPI---' Column-spec:
.-COLUMN--(--ALL--)------, >>---+-----
+----->
| .,-----, |
| V | |
'-COLUMN--(--column-name-----+--)-'

>---+-----+----->< '-SORTNUM--
integer-' Colgroup-spec: .-----
----, | .,-----, | V V | | >>---COLGROUP--(--column-name---+---|
colgroup-stats-spec |--->< Colgroup-stats-spec: >>---+-----
-----+----->
'-FREQVAL +-----+-'
| .-MOST--. |
'-COUNT--integer-----+-----+-'
+-BOTH--+
'-LEAST-'

>---+-----+----->< | .-
NUMQUANTILES--100-----, | '-HISTOGRAM---+-----+-' '-
NUMQUANTILES--integer-' Correlation-stats-spec: >>---+-----+-----
----->
'-KEYCARD-----'

,-----,
V .-FREQVAL -NUMCOLS--1--COUNT--10--MOST-----, |
>---+-----+-----+----->
'-FREQVAL -NUMCOLS--integer-----+-----+-'
| .-MOST--. |
'-COUNT--integer-----+-----+-'
+-BOTH--+
'-LEAST-'

,-----,
V |

```



```

'-DECFLOAT_ROUNDMODE-+-ROUND_CEILING---' '-IMPLICIT_TZ-timezone-string-'
      +-ROUND_DOWN-----+
      +-ROUND_FLOOR-----+
      +-ROUND_HALF_DOWN-+
      +-ROUND_HALF_EVEN-+
      +-ROUND_HALF_UP---+
      +-ROUND_UP-----+
>+-----+
->
  '-IMPLICIT_TZ--'timezone-string'- '
  .-PARALLEL--0-----,
>+-----+
->< '-PARALLEL-num-subtasks-' From-table spec >>-FROM--TABLE--table-name-----
----->
  .-HEADER--OBID-----,
>+-----+
->
  '-HEADER--+-NONE-----+- '
      '-CONST--+-'string'-----+- '
      '-X'hex-string'- '
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
->
  '-SAMPLE--decimal-' '-LIMIT--integer-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
->
  | .,-----, |
  | V          | |
  '-(---field-specification+-)-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
->< '-WHEN--(selection-condition)-' Field spec .-POSITION(*)-----, >>-field-
name--+------+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
      '-POSITION(start)-'
>+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+><
+-CHAR-+------+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ | '-
(length)-' +-TRUNCATE-----+ | | '-+-BLOBF---+-
template-name---+-----+-----+ | | +-CLOBF---+ '-BINARYXML-' | | '-DBCLOBF-' |
+-VARCHAR-+------+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ | '-
(length)-' +-strip-spec-----+ | | '-+-BLOBF---+-
template-name-+------+-----+ | | +-CLOBF---+ '-BINARYXML-' | | '-DBCLOBF-' |
+-GRAPHIC-+------+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ | '-
EXTERNAL-' '-(length)-' '-TRUNCATE-' | +-VARGRAPHIC-+------+strip-spec--
-----+ | '-(length)-' | +-SMALLINT-----
-----+ +INTEGER-+------+-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+ | '-EXTERNAL-+------+-' | | '-(length)-' |
+-BIGINT-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ +-BINARY-
+------+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ | '-(length)-' '-
TRUNCATE-' | +-+-VARBINARY-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

```

--+ | '-BINARY VARYING-' | +-strip-spec-----
-----+ | .-PACKED---. | +-DECIMAL--+-----+--+-----
-----+-----+ | +-ZONED-----+ | .-,0-----. | | | '-EXTERNAL-' '-
(length)-+-----+)-' | | '-,scale-' | +-FLOAT+-----+-----+-----
-----+ | '-EXTERNAL-' '-(length)-' | +-DOUBLE-----
-----+ +-REAL-----
-----+ +-DATE--EXTERNAL--+-----+-----
-----+ | '-(length)-' | +-TIME--EXTERNAL--+-----
-----+ | '-(length)-' | +-TIMESTAMP--
EXTERNAL--+-----+-----+ | '-(length)-' | +-
TIMESTAMP WITH THE ZONE EXTERNAL-----+-----+-----+ | '-
(length)-' | +-CONSTANT--+-'string'-----+-----
--+ | '-X'hex-string-' | +-ROWID-----
-----+ +-BLOB+-----+-----+-----+-----
-----+ | '-(length)-' '-TRUNCATE-' | +-CLOB+-----+-----+-----+-----
-----+ | '-(length)-' '-TRUNCATE-' | +-DBCLOB+-----
--+-----+-----+ | '-(length)-' '-TRUNCATE-'
| | .-(34)-----, | +-DECFLOAT--+-----+-----+-----
-----+ | +-(16)-----+ | | '-EXTERNAL--+-----
--+ | | '-(length)-' | '-XML--+-----+-----+-----
-----' '-BINARYXML-' Strip spec >>+-----+-----
-----+----->
| .-BOTH----. |
'-STRIP--+-----+-----+-----+'
+-TRAILING--+ | |
'-LEADING--' +- 'strip-char'-----+
'-X'strip-char'-----'

```

Selection-condition spec

```

>>+-predicate-----+-----+-----+-----
->
'-selection condition-'
.-----,
V |
>-----+-----+-----+-----+-----+-----+-----
->< '-+AND+--+predicate-----+' '-OR--' '-selection condition-'
Predicate >>+-basic predicate-----+-----+-----+-----+-----
----->< +-BETWEEN predicate+ +-IN predicate-----+ +-LIKE predicate-----+
+-NULL predicate-----+ Basic predicate >>-column-name--+ = --+-----+-----
----->
+- <> -+
+- > --+
+- < --+ +- >= -+
'- < = -' >--+constant-----+-----+-----
----->
'-labeled-duration-expression-'

```

IN predicate

```

      .,-----,
      V           I
>>-column-name--+-----+--IN--(---constant+--)------><
'-NOT-' LIKE predicate >>-column-name--+-----+--LIKE--string-constant-----
----->
      '-NOT-'
>+-----+-----+-----><
'-ESCAPE--string-constant-' NULL predicate >>-column-name--IS--+-----+--NULL-
----->< '-NOT-' Labeled-duration-
expression >>+--CURRENT_DATE-----+-----
----->
      '-CURRENT_TIMESTAMP-----+--'
      '-WITH TIME ZONE-'
      .,-----,
      V           I
>---+- + -+-constant--+--YEAR-----+-----><
+-YEARS-----+
      +-MONTH-----+
      +-MONTHS-----+
      +-DAY-----+
      +-DAYS-----+
      +-HOUR-----+
      +-HOURS-----+
      +-MINUTE-----+
      +-MINUTES-----+
      +-SECOND-----+
      +-SECONDS-----+
      +-MICROSECOND--+
      +-MICROSECONDS--+
```

Disclaimer: This Db2® 12 for z/OS Reference Guide was developed to help users in their daily activities in administrating and programming in Db2 for z/OS. There are no guarantees expressed or implied with the contents in this guide. We want to provide a quality and useful reference for users. Please notify us of any mistakes or errors in this reference guide at blogs@bmc.com. Db2 is a registered trademark of the IBM Corporation.