Cheatography

SurrealQL Cheat Sheet

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M-Tree Index

DIMENSION			Size of the vector
DIST	EUCLIDEAN	EUCLIDEAN, COSINE, MANHATTAN	Distance function
TYPE	F64	F64, F32, I64, I32, I16	Vector type
CAPACITY	40		Max number of records that can be stored in the index
DOC_IDS_ORDER	100		
DOC_IDS_CACHE	100		
MTREE_CACHE	100		

-- Defaults:
DEFINE INDEX mt_idx ON pts FIELDS point MTREE DIMENSION 3;
-- Explicit:
DEFINE INDEX mt_idx ON pts FIELDS point MTREE DIMENSION 3 DIST EUCLIDEAN TYPE F64 CAPACITY 40 DOC_IDS_ORDER 100 DOC_IDS_CACHE 100 MTREE_CACHE 100;

HNSW Index

DIMENSION			Size of the vector
DIST	EUCLIDEAN	EUCLIDEAN, COSINE, MANHATTAN	Distance function
TYPE	F64	F64, F32, I64, I32, I16	Vector type
EFC	150		EF construction
M	12		max connections per element
M0	24		max connections in the lowest
LM	0.40242960438184466f		multiplier for level generation

-- Defaults:
DEFINE INDEX hnsw_idx ON pts FIELDS point HNSW DIMENSION 4;
-- Explicit:
DEFINE INDEX hnsw_idx ON pts FIELDS point HNSW DIMENSION 4 DIST EUCLIDEAN TYPE F64 EFC 150 M 12 M0 24 LM 0.4024296043-8184466f;

Vector Search WHERE statement

Query	M-Tree index	HNSW index
<|2|>	uses distance function defined in index	same
<|2, EUCLIDEAN|>	brute force methood	same
<|2, COSINE|>	brute force method	same
<|2, MANHATTAN|>	brute force method	same
<|2, MINKOWSKI, 3|>	brute force method (third param is p)	same
<|2, CHEBYSHEV|>	brute force method	same
<|2, HAMMING|>	brute force method	same

Vector Search WHERE statement (cont)

<|2, 10|>	invalid, only for HNSW	second param is *effort*

- p: 1: manhattan, 2: euclidean, 4: squircle, …
- *effort*: how far to go

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