# Population of an Object in the IM Column Store

Before completing this example, the IM column store must be enabled for the database.

1. Log in to the database as an administrator, and then query the customers table as follows:

SELECT cust\_id, cust\_last\_name, cust\_first\_name

FROM sh.customers

WHERE cust\_city = 'Hyderabad'

AND cust\_income\_level LIKE 'C%'

AND cust\_year\_of\_birth > 1960;

1. Display the execution plan for the query:

SQL> SELECT \* FROM TABLE(DBMS\_XPLAN.DISPLAY\_CURSOR(FORMAT=>'+ALLSTATS'));

SQL\_ID frgk9dbaftmm9, child number 0

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SELECT cust\_id, cust\_last\_name, cust\_first\_name

FROM sh.customers

WHERE cust\_city = 'Hyderabad' AND cust\_income\_level LIKE 'C%' AND

cust\_year\_of\_birth > 1960

Plan hash value: 200821350

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1. | Id| Operation | Name |Starts|E-Rows|A-Rows| A-Time |Buffers|

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| 0| SELECT STATEMENT | | 1| | 6 |00:00:00.01 | 1523|

|\* 1| TABLE ACCESS FULL| CUSTOMERS | 1| 6 | 6 |00:00:00.01 | 1523|

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Predicate Information (identified by operation id):

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1 - filter(("CUST\_CITY"='Hyderabad' AND "CUST\_YEAR\_OF\_BIRTH">1960 AND

"CUST\_INCOME\_LEVEL" LIKE 'C%'))

1. Enable the sh.customers table for population in the IM column store:

ALTER TABLE sh.customers INMEMORY;

The preceding statement uses the default priority of NONE. A full scan is required to populate objects with no priority.

1. To determine whether data from the sh.customers table has been populated in the IM column store, execute the following query (sample output included):

SELECT SEGMENT\_NAME, POPULATE\_STATUS

FROM V$IM\_SEGMENTS

WHERE SEGMENT\_NAME = 'CUSTOMERS';

no rows selected

In this case, no segments are populated in the IM column store because the sh.customers table has not yet been scanned.

1. Query sh.customers using the same statement as in Step 1:

SELECT cust\_id, cust\_last\_name, cust\_first\_name

FROM sh.customers

WHERE cust\_city = 'Hyderabad'

AND cust\_income\_level LIKE 'C%'

AND cust\_year\_of\_birth > 1960;

1. Querying the cursor shows that the database performed a full scan and accessed the IM column store:

SQL> SELECT \* FROM TABLE(DBMS\_XPLAN.DISPLAY\_CURSOR(FORMAT=>'+ALLSTATS'));

SQL\_ID frgk9dbaftmm9, child number 0

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SELECT cust\_id, cust\_last\_name, cust\_first\_name FROM sh.customers

WHERE cust\_city = 'Hyderabad' AND cust\_income\_level LIKE 'C%' AND

cust\_year\_of\_birth > 1960

Plan hash value: 2008213504

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| Id| Operation | Name |Starts|E-Rows|A-Rows|A-Time|Buffers|

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| 0| SELECT STATEMENT | | 1| | 6 |00:00:00.02| 1523 |

|\* 1| TABLE ACCESS **INMEMORY** FULL| CUSTOMERS | 1| 6| 6 |00:00:00.02| 1523 |

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Predicate Information (identified by operation id):

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1 - inmemory(("CUST\_CITY"='Hyderabad' AND "CUST\_YEAR\_OF\_BIRTH">1960 AND

"CUST\_INCOME\_LEVEL" LIKE 'C%'))

filter(("CUST\_CITY"='Hyderabad' AND "CUST\_YEAR\_OF\_BIRTH">1960 AND

"CUST\_INCOME\_LEVEL" LIKE 'C%'))

1. Query V$IM\_SEGMENTS again (sample output included):

COL SEGMENT\_NAME FORMAT a20

SELECT SEGMENT\_NAME, POPULATE\_STATUS

FROM V$IM\_SEGMENTS

WHERE SEGMENT\_NAME = 'CUSTOMERS';

SEGMENT\_NAME POPULATE\_STATUS

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CUSTOMERS COMPLETED

The value COMPLETED in POPULATE\_STATUS means that the table is populated in the IM column store.

1. The DBA\_FEATURE\_USAGE\_STATISTICS view confirms that the database used the IM column store to retrieve the results:

COL NAME FORMAT a25

SELECT ul.NAME, ul.DETECTED\_USAGES

FROM DBA\_FEATURE\_USAGE\_STATISTICS ul

WHERE ul.VERSION= (SELECT MAX(u2.VERSION)

FROM DBA\_FEATURE\_USAGE\_STATISTICS u2

WHERE u2.NAME = ul.NAME

AND ul.NAME LIKE '%Column Store%');

NAME DETECTED\_USAGES

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In-Memory Column Store 1