

Oracle 关于索引并发 parallel_index hint

参考：<https://www.cnblogs.com/polestar/archive/2012/07/02/2572793.html>

这里说的 PARALLEL_INDEX 可以用在分区索引上开并发，还有一种是当查询走 index fast full scan 时，也可以开并发。

索引并行

使用 PARALLEL_INDEX 可以在索引上开并发，先来看看文档中的描述：The PARALLEL_INDEX hint instructs the optimizer to use the specified number of concurrent servers to parallelize index range scans for partitioned indexes.

这里说的是 PARALLEL_INDEX 可以用在分区索引上开并发，其实还有一种情况是，当查询走 index fast full scan 时，也可以开并发

1、分区索引：



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```
1 SQL> select index_name, index_type, status, partitioned, degree
2 2 from dba_indexes
3 3 where table_name = 'T1'
4 4 and owner = 'SYS';
5
6 INDEX_NAME      INDEX_TYPE      STATUS      PARTIT  DEGREE
7 -----
8 IND_T1_ID       NORMAL          N/A         YES     1
9 IND_T1_NAME     NORMAL          VALID        NO     1
10
11 SQL> SELECT /*+ PARALLEL_INDEX(T1, ind_t1_id, 3) */ id from T1 where id between 1 and 3000;
12
13 Execution Plan
14 -----
15 Plan hash value: 2134138182
16
17 -----
18 | Id | Operation | Name | Rows | Pstart | Pstop | TQ | IN-OUT | PQ Di
19 -----
20 | 0 | SELECT STATEMENT | | | 2500 | | | | |
21 | 1 | PX COORDINATOR | | | | | | |
22 | 2 | PX SEND QC (RANDOM) | :TQ10000 | 2500 | | | Q1,00 | P->S | QC (R
23 | 3 | PX PARTITION RANGE ALL | | 2500 | 1 | 4 | Q1,00 | PCWC |
24 | * 4 | INDEX RANGE SCAN | IND_T1_ID | 2500 | 1 | 4 | Q1,00 | PCWP |
25 -----
26
27 SQL> SELECT /*+ PARALLEL_INDEX(T1, ind_t1_id, 3) */ id from T1;
28
29 Execution Plan
30 -----
31 Plan hash value: 2841388588
32
33 -----
34 | Id | Operation | Name | Rows | Pstart | Pstop | TQ | IN-OUT | PQ Dis
35 -----
36 | 0 | SELECT STATEMENT | | 936K | | | | |
37 | 1 | PX COORDINATOR | | | | | | |
38 | 2 | PX SEND QC (RANDOM) | :TQ10000 | 936K | | | Q1,00 | P->S | QC (RA
39 | 3 | PX BLOCK ITERATOR | | 936K | 1 | 4 | Q1,00 | PCWC |
40 | 4 | INDEX FAST FULL SCAN | IND_T1_ID | 936K | 1 | 4 | Q1,00 | PCWP |
41 -----
```



复制代码

```
1 SQL> SELECT /*+ INDEX_FFS(T1,IND_T1_NAME) PARALLEL_INDEX(T1, ind_t1_name, 2) */
2 2 count(name) from T1;
```



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2、非分区索引，需要走 index fast full scan 才能开并发：



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```
1 SQL> SELECT /*+ INDEX_FFS(T1,IND_T1_NAME) PARALLEL_INDEX(T1, ind_t1_name, 2) */
2 2 count(name) from T1;
```

3

4 Execution Plan

5 -----

6 Plan hash value: 1205896683

7

8 -----

9 | Id | Operation | Name | Rows | TQ | IN-OUT | PQ Distrib |

10 -----

11 | 0 | SELECT STATEMENT | | 1 | | | |

12 | 1 | SORT AGGREGATE | | 1 | | | |

13 | 2 | PX COORDINATOR | | | | | |

14 | 3 | PX SEND QC (RANDOM) | :TQ10000 | 1 | Q1,00 | P->S | QC (RAND) |

15 | 4 | SORT AGGREGATE | | 1 | Q1,00 | PCWP | |

16 | 5 | PX BLOCK ITERATOR | | 936K | Q1,00 | PCWC | |

17 | 6 | INDEX FAST FULL SCAN | IND_T1_NAME | 936K | Q1,00 | PCWP | |

18 -----



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以下T2表为非分区表:



复制代码

1 SQL> select /*+ PARALLEL_INDEX(T2, ind_t2_id, 2) */count(id) from T2;

2

3 Execution Plan

4 -----

5 Plan hash value: 155381254

6

7 -----

8 | Id | Operation | Name | Rows | TQ | IN-OUT | PQ Distrib |

9 -----

10 | 0 | SELECT STATEMENT | | 1 | | | |

11 | 1 | SORT AGGREGATE | | 1 | | | |

12 | 2 | PX COORDINATOR | | | | | |

13 | 3 | PX SEND QC (RANDOM) | :TQ10000 | 1 | Q1,00 | P->S | QC (RAND) |

14 | 4 | SORT AGGREGATE | | 1 | Q1,00 | PCWP | |

15 | 5 | PX BLOCK ITERATOR | | 949K | Q1,00 | PCWC | |

16 | 6 | INDEX FAST FULL SCAN | IND_T2_ID | 949K | Q1,00 | PCWP | |

17 -----



复制代码

另外还找到一个与PARALLEL_INDEX相关的BUG, 使HINT无法在DBLINK中使用, 该BUG在10.2.0.5中修复:

Bug 6621937 – [NO]PARALLEL_INDEX hint not sent to remote site for SQL over database link [ID 6621937.8]:

A SQL statement containing [NO_]PARALLEL_INDEX hints which is sent to a remote site (over a database link)does not send those hints with the remote SQL. This can affect query performance.

eg:

```
select /*+ driving_site(a) parallel_index(a,4) */
a.*,b.* from test_aaa@test_link a,test_bbb b
where a.col1 = b.col1 and a.col3=5;
```

