



Spark DataFrame Join

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How Joins are Implemented

- ▶ ShuffleHashJoin
- ▶ Sort Merge Join
- ▶ Broadcast join
- ▶ Bucketed Join

Broadcast Join

Small
Table

Big Table

Broadcast Join

Small
Table

Machine 1

Big Table Part1

Machine 2

Big Table Part2

Machine 3

Big Table Part3

Broadcast Join

Small
Table

Machine 1

Big Table Part1

Small
Table

Machine 2

Big Table Part2

Small
Table

Machine 3

Big Table Part3

Small
Table

Broadcast Join

- ▶ `spark.sql.autoBroadcastJoinThreshold`
- ▶ Explicitly mark a dataset for Broadcast

```
1 val q = df1.join(df2).where($"a.id" === $"b.id")
```

```
▶ q: org.apache.spark.sql.Dataset[org.apache.spark.sql.Row] = [id: long, id: long]
```

```
q: org.apache.spark.sql.Dataset[org.apache.spark.sql.Row] = [id: bigint, id: bigint]
```

```
Command took 1.80 seconds -- by harjeet.kumar4@gmail.com at 12/30/2018, 9:26:36 PM on spark
```

Cmd 4

```
1 q.explain
```

```
== Physical Plan ==
```

```
*(2) BroadcastHashJoin [id#2L], [id#5L], Inner, BuildRight, false
```

```
:- *(2) Range (0, 100, step=1, splits=8)
```

```
+-- BroadcastExchange HashedRelationBroadcastMode(List(input[0, bigint, false]))
```

```
+- *(1) Range (0, 100, step=1, splits=8)
```