

PFLOCK Report

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The problems...

- ▶ A few very large tasks.
- ▶ Unbalance distributions of tasks.

Details for Stage 5 (Attempt 0)

Total Time Across All Tasks: 6 s

Locality Level Summary: Node local: 496; Process local: 7

Shuffle Read: 676.3 KB / 26397

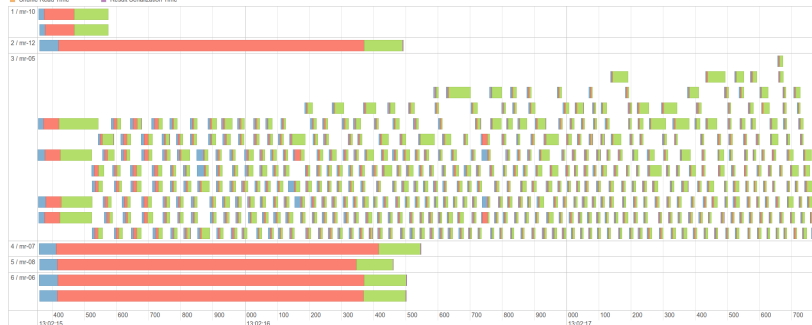
▶ DAG Visualization

▶ Show Additional Metrics

▼ Event Timeline

☐ Enable zooming

■ Scheduler Delay ■ Executor Computing Time ■ Getting Result Time
■ Task Deserialization Time ■ Shuffle Write Time
■ Shuffle Read Time ■ Result Serialization Time



Solution 1...

- ▶ Most of the time is for deserialization (time sending task closure to executor: i.e. code, libraries and data).
- ▶ It has to be done once per executor.
- ▶ Solution: force repartition at the very beginning to initialize all the executors.

Solution 2...

- ▶ Spark does not distribute tasks correctly for RDD with less than 1000 partitions.

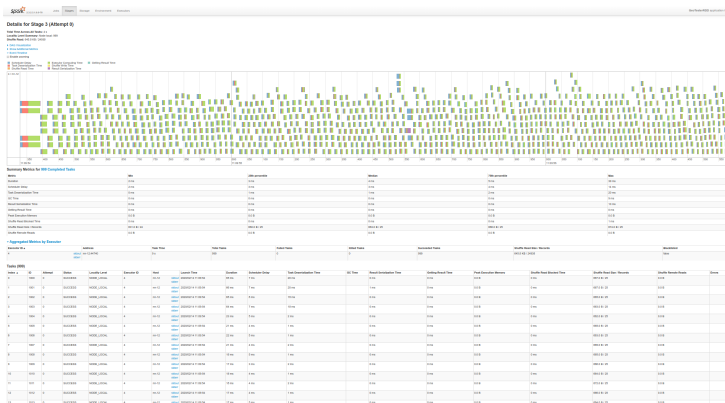


Figure: 999 partitons

Solution 2...

- ▶ Spark does not distribute tasks correctly for RDD with less than 1000 partitions.



Figure: 1000 partitons

General performance...

[Jobs](#)
[Stages](#)
[Storage](#)
[Environment](#)
[Executors](#)

GeoTesterRDD application UI

Stages for All Jobs

Completed Stages: 9

Skipped Stages: 6

Completed Stages (9)

Stage Id ▾	Description	Submitted	Duration	Tasks: Succeeded/Total	Input	Output	Shuffle Read	Shuffle Write
14	count at GeoTesterRDD scala:108	*details 2020/02/14 11:10:10	2 s	<div><div>1504/1504</div></div>	12.5 MB		1889.5 KB	
13	flatMapToPair at SpatialRDD.java:334	*details 2020/02/14 11:10:06	4 s	<div><div>999/999</div></div>	4.6 MB			1889.5 KB
10	count at GeoTesterRDD scala:90	*details 2020/02/14 11:10:03	3 s	<div><div>1504/1504</div></div>			2.5 MB	
9	flatMapToPair at SpatialRDD.java:334	*details 2020/02/14 11:09:59	4 s	<div><div>999/999</div></div>	4.6 MB			2.5 MB
7	aggregate at SpatialRDD.java:502	*details 2020/02/14 11:09:58	1 s	<div><div>999/999</div></div>	4.6 MB			
5	collect of SpatialRDD.java:240	*details 2020/02/14 11:09:56	1 s	<div><div>999/999</div></div>	4.6 MB			
3	count at GeoTesterRDD scala:77	*details 2020/02/14 11:09:54	2 s	<div><div>999/999</div></div>			645.8 KB	
1	aggregate at SpatialRDD.java:502	*details 2020/02/14 11:09:51	3 s	<div><div>999/999</div></div>			645.8 KB	
0	rdd at GeoTesterRDD scala:64	*details 2020/02/14 11:09:48	3 s	<div><div>1/1</div></div>	831.9 KB			645.8 KB

▼ Skipped Stages (6)

Stage Id ▾	Description		Submitted	Duration	Tasks: Succeeded/Total	Input	Output	Shuffle Read	Shuffle Write
12	flatMapToPair at SpatidRDD.java:334	+details	Unknown	Unknown	0/999				
11	rdd at GeoTesterRDD.scala:64	+details	Unknown	Unknown	0/1				
8	rdd at GeoTesterRDD.scala:64	+details	Unknown	Unknown	0/1				
6	rdd at GeoTesterRDD.scala:64	+details	Unknown	Unknown	0/1				
4	rdd at GeoTesterRDD.scala:64	+details	Unknown	Unknown	0/1				
2	rdd at GeoTesterRDD.scala:64	+details	Unknown	Unknown	0/1				

Figure: 999 partitons

General performance...

Stages for All Jobs

Completed Stages: 9

Skipped Stages: 6

Completed Stages (9)

Stage Id ▾	Description	Submitted	Duration	Tasks: Succeeded/Total	Input	Output	Shuffle Read	Shuffle Write
14	count at GeoTesterRDD.scala:108	*details 2020/02/14 11:02:40	1 s	<div><div>1488/1488</div></div>	12.6 MB		1889.3 KB	
12	flatMapToPair at SpatialRDD.java:334	*details 2020/02/14 11:02:39	1 s	<div><div>1000/1000</div></div>	4.6 MB			1889.3 KB
10	count at GeoTesterRDD.scala:90	*details 2020/02/14 11:02:37	2 s	<div><div>1488/1488</div></div>			2.5 MB	
9	flatMapToPair at SpatialRDD.java:334	*details 2020/02/14 11:02:36	1 s	<div><div>1000/1000</div></div>	4.6 MB			2.5 MB
7	aggregate at SpatialRDD.java:502	*details 2020/02/14 11:02:36	0.6 s	<div><div>1000/1000</div></div>	4.6 MB			
5	collect at SpatialRDD.java:240	*details 2020/02/14 11:02:35	0.8 s	<div><div>1000/1000</div></div>	4.6 MB			
3	count at GeoTesterRDD.scala:77	*details 2020/02/14 11:02:34	1.0 s	<div><div>1000/1000</div></div>			645.7 KB	
1	aggregate at SpatialRDD.java:502	*details 2020/02/14 11:02:31	2 s	<div><div>1000/1000</div></div>			645.7 KB	
0	rdd at GeoTesterRDD.scala:64	*details 2020/02/14 11:02:28	3 s	<div><div>1/1</div></div>	831.9 KB			645.7 KB

Skipped Stages (6)

Stage Id ▾	Description	Submitted	Duration	Tasks: Succeeded/Total	Input	Output	Shuffle Read	Shuffle Write
13	flatMapToPair at SpatialRDD.java:334	*details Unknown	Unknown	<div><div>0/1000</div></div>				
11	rdd at GeoTesterRDD.scala:64	*details Unknown	Unknown	<div><div>0/1</div></div>				
8	rdd at GeoTesterRDD.scala:64	*details Unknown	Unknown	<div><div>0/1</div></div>				
6	rdd at GeoTesterRDD.scala:64	*details Unknown	Unknown	<div><div>0/1</div></div>				
4	rdd at GeoTesterRDD.scala:64	*details Unknown	Unknown	<div><div>0/1</div></div>				
2	rdd at GeoTesterRDD.scala:64	*details Unknown	Unknown	<div><div>0/1</div></div>				

Figure: 1000 partitons

Distance self-join stage...

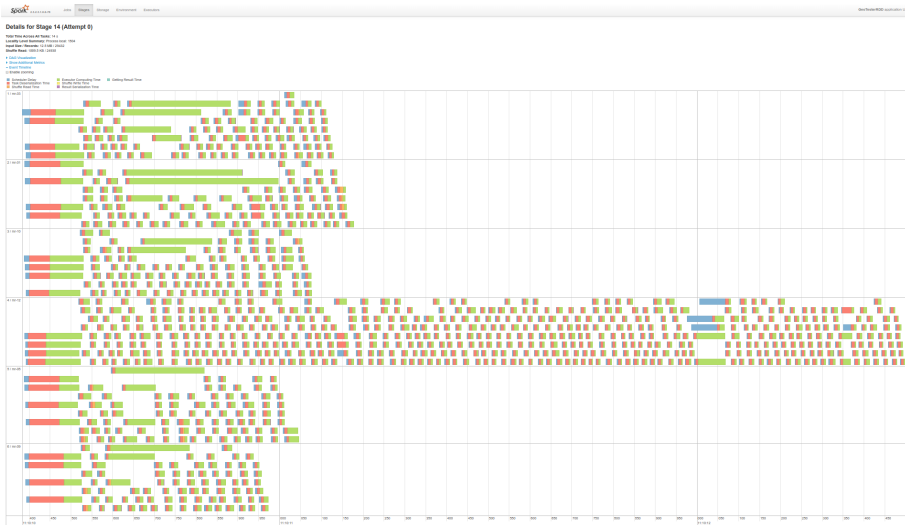


Figure: 999 partitons

Distance self-join stage...



Figure: 1000 partitons

Distance self-join task summary...

Summary Metrics for 1468 Completed Tasks

Metric	Min	25th percentile	Median	75th percentile	Max
Duration	3 ms	5 ms	7 ms	10 ms	0.1 s
Scheduler Delay	1 ms	3 ms	4 ms	4 ms	20 ms
Task Deserialization Time	5 ms	6 ms	6 ms	7 ms	43 ms
GC Time	0 ms	0 ms	0 ms	0 ms	26 ms
Result Serialization Time	0 ms	0 ms	0 ms	0 ms	1 ms
Getting Result Time	0 ms	0 ms	0 ms	0 ms	0 ms
Peak Execution Memory	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
Input Size / Records	16.0 B / 0	2.7 KB / 6	5.7 KB / 13	12.1 KB / 28	83.2 KB / 195
Shuffle Read Blocked Time	0 ms	0 ms	0 ms	0 ms	38 ms
Shuffle Read Size / Records	0.0 B / 0	315.0 B / 4	864.0 B / 11	1834.0 B / 24	12.0 KB / 166
Shuffle Remote Reads	0.0 B	312.0 B	706.0 B	1489.0 B	9.7 KB

Aggregated Metrics by Executor

Executor ID	Address	Task Time	Total Tasks	Failed Tasks	Killed Tasks	Succeeded Tasks	Input Size / Records	Shuffle Read Size / Records	Blacklisted
1	stdout stderr mv-03-41763	6 s	306	0	0	306	2.7 MB / 6302	404.5 KB / 5339	false
2	stdout stderr mv-01-30346	6 s	289	0	0	289	2.5 MB / 6006	383.5 KB / 5060	false
3	stdout stderr mv-10-30669	5 s	284	0	0	284	2.3 MB / 5374	334.6 KB / 4415	false
4	stdout stderr mv-12-42503	5 s	272	0	0	272	2.3 MB / 5348	341.1 KB / 4501	false
5	stdout stderr mv-05-30528	5 s	154	0	0	154	1316.3 KB / 3026	199.8 KB / 2643	false
6	stdout stderr mv-05-49827	5 s	163	0	0	163	1539.1 KB / 3544	225.7 KB / 2860	false

Figure: 1000 partitions

Distance self-join task details...

Tasks (1468)

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Index	ID	Attempt	Status	Locality Level	Executor ID	Host	Launch Time	Duration	Scheduler Delay	Task Deserialization Time	GC Time	Result Serialization Time	Getting Result Time	Peak Execution Memory	Input Size / Records	Shuffle Read Blocked Time	Shuffle Read Size / Records	Shuffle Remote Reads	Errors
11	7479	0	SUCCESS	PROCESS_LOCAL	6	mr-05 shdout sdderr	2020/02/14 11:02:40	0.2 s	13 ms	44 ms	26 ms	0 ms	0 ms	0.0 B	6.1 KB / 14	0 ms	696.0 B / 9	618.0 B	
5	7473	0	SUCCESS	PROCESS_LOCAL	6	mr-05 shdout sdderr	2020/02/14 11:02:40	0.2 s	10 ms	44 ms	26 ms	0 ms	0 ms	0.0 B	3.6 KB / 8	0 ms	542.0 B / 7	465.0 B	
23	7491	0	SUCCESS	PROCESS_LOCAL	6	mr-05 shdout sdderr	2020/02/14 11:02:40	0.2 s	5 ms	44 ms	26 ms	0 ms	0 ms	0.0 B	14.7 KB / 34	0 ms	2.2 KB / 30	1966.0 B	
17	7485	0	SUCCESS	PROCESS_LOCAL	6	mr-05 shdout sdderr	2020/02/14 11:02:40	0.2 s	7 ms	44 ms	26 ms	0 ms	0 ms	0.0 B	10.4 KB / 24	0 ms	1784.0 B / 23	1551.0 B	
9	7477	0	SUCCESS	PROCESS_LOCAL	5	mr-05 shdout sdderr	2020/02/14 11:02:40	0.1 s	10 ms	35 ms		0 ms	0 ms	0.0 B	15.9 KB / 37	9 ms	2.4 KB / 32	2.3 KB	
15	7483	0	SUCCESS	PROCESS_LOCAL	5	mr-05 shdout sdderr	2020/02/14 11:02:40	0.1 s	8 ms	34 ms		0 ms	0 ms	0.0 B	27.4 KB / 64	7 ms	4.6 KB / 61	3.9 KB	
3	7471	0	SUCCESS	PROCESS_LOCAL	5	mr-05 shdout sdderr	2020/02/14 11:02:40	0.1 s	9 ms	35 ms		0 ms	0 ms	0.0 B	4.4 KB / 10	17 ms	651.0 B / 9	651.0 B	
21	7489	0	SUCCESS	PROCESS_LOCAL	5	mr-05 shdout sdderr	2020/02/14 11:02:40	0.1 s	6 ms	34 ms		0 ms	0 ms	0.0 B	7.4 KB / 17	10 ms	1238.0 B / 16	1082.0 B	
7	7478	0	SUCCESS	PROCESS_LOCAL	2	mr-01 shdout sdderr	2020/02/14 11:02:40	0.1 s	8 ms	40 ms		0 ms	0 ms	0.0 B	10.8 KB / 25	10 ms	1701.0 B / 22	1547.0 B	
1	7472	0	SUCCESS	PROCESS_LOCAL	2	mr-01 shdout sdderr	2020/02/14 11:02:40	0.1 s	9 ms	40 ms		0 ms	0 ms	0.0 B	2.7 KB / 6	12 ms	464.0 B / 6	387.0 B	
13	7484	0	SUCCESS	PROCESS_LOCAL	2	mr-01 shdout sdderr	2020/02/14 11:02:40	0.1 s	7 ms	39 ms		0 ms	0 ms	0.0 B	16.8 KB / 39	8 ms	2.7 KB / 36	2.1 KB	
4	7469	0	SUCCESS	PROCESS_LOCAL	1	mr-03 shdout sdderr	2020/02/14 11:02:40	0.1 s	12 ms	45 ms		0 ms	0 ms	0.0 B	3.6 KB / 8	12 ms	619.0 B / 8	541.0 B	
480	7965	0	SUCCESS	PROCESS_LOCAL	2	mr-01 shdout sdderr	2020/02/14 11:02:41	0.1 s	4 ms	6 ms		0 ms	0 ms	0.0 B	83.2 KB / 195	0 ms	12.0 KB / 166	9.7 KB	
19	7490	0	SUCCESS	PROCESS_LOCAL	2	mr-01 shdout sdderr	2020/02/14 11:02:40	0.1 s	7 ms	39 ms		0 ms	0 ms	0.0 B	7.0 KB / 16	12 ms	1161.0 B / 15	1084.0 B	

Figure: 1000 partitons