

Flink on zeppelin从checkpoint&savepoint自动恢复任务

在上一篇的文章中介绍了Flink on zeppelin怎么配置checkpoint,并且从指定的checkpoint恢复任务,但是这个过程还是相对复杂,对用户来说不是很友好,在最新的版本中,zeppelin支持了自动从checkpoint&savepoint恢复任务,只需要添加几个参数即可,下面就来介绍一下如何使用.

1.checkpoint自动恢复

1.1 指定checkpoint恢复

测试自动从checkpoint恢复任务

```
%flink.ssql(type=update,
parallelism=8,
jobName="test"
)

select name,sum(age) from kafka_table
group by name;
```

name	EXPR\$1
flink	100
spark	99

JasonLee的博客

先启动一个简单的任务,点击右上角的Flink Job 看下Flink的web ui 任务的checkpoint情况.

test | RUNNING | 3

ID: 6ce6627bab4dc939ef79e2f245167b32 | Start Time: 2020-08-17 18:47:14 | Duration: 4m 45s

Cancel Job

Overview Exceptions TimeLine Checkpoints Configuration

Overview History Summary Configuration

ID	Status	Acknowledged	Trigger Time	Latest Acknowledgement	End to End Duration	Checkpointed Data Size	Buffered During Alignment
3	COMPLETED	17/17	18:50:14	18:50:14	94ms	33.2 KB	0 B
2	COMPLETED	17/17	18:49:14	18:49:14	94ms	33.2 KB	0 B
1	COMPLETED	17/17	18:48:14	18:48:14	189ms	33.2 KB	0 B

JasonLee的博客

可以看到checkpoint已经完成了3次了,现在把任务停掉,从checkpoint恢复任务.

测试自动从checkpoint恢复任务

```
%flink.ssql(type=update,
parallelism=8,
jobName="test",
execution.savepoint.path=hdfs://master:9000/flink-rockdb/checkpoints/6ce6627bab4dc939ef79e2f245167b32/chk-4
)

select name,sum(age) from kafka_table
group by name;
```

name	EXPR\$1
flink	195
spark	194

JasonLee的博客

上一篇文章说的 `execution.savepoint.path` 这个参数也可以直接设置到 `paragraph` 里面, 这样不同的任务可以设置从不同的checkpoint启动. 下面的 `sum` 结果不是从0开始的 是接着上一次的结果计算的, 说明从checkpoint启动成功了. 再到 UI 上面看一下

test | RUNNING | 3

ID: 7cf05607b27eb52c5aa19f1b77cdc3cc | Start Time: 2020-08-17 19:59:08 | Duration: 5s

Cancel Job

Overview Exceptions TimeLine Checkpoints Configuration

Overview History Summary Configuration

Refresh

Checkpoint Counts	Triggered: 1	In Progress: 1	Completed: 0	Failed: 0	Restored: 1
Latest Completed Checkpoint	None				
Latest Failed Checkpoint	None				
Latest Savepoint	None				
Latest Restore	ID: 58	Restore Time: 19:59:08	Type: Savepoint	Path: hdfs://master:9000/flink-rockdb/savepoints/savepoint-13184a-7378b999cb62	

JasonLee的博客

可以看到任务是从上一次的checkpoint恢复的.

1.2 自动从最近的checkpoint恢复

如果不想设置 想直接启动的时候就从最近一次成功的checkpoint恢复, 设置一下 `resumeFromLatestCheckpoint=true` 这个参数就可以了.

测试自动从checkpoint恢复任务

```
%flink.ssql(type=update,
parallelism=8,
jobName="test",
resumeFromLatestCheckpoint=true)

select name,sum(age) from kafka_table
group by name;
```

name	EXPR\$1
flink	389
spark	388

JasonLee的博客

zeppelin会定期的通过Flink的restful api 去获取checkpoint的信息, 并把最近一次成功的保存在 `note` 里面 这样在下次启动的时候就能直接从保存的 `checkpoint` 路径启动任务, 但是如果你设置保留了多个 `checkpoint`, 不想从最近的启动, 这个时候就不能用这种自动启动了, 需要用上面那个参数去指定你想要恢复的checkpoint路径即可.

2.savepoint自动恢复

savepoint不像checkpoint那样定期的自动触发,它是需要我们手动触发的,在用户cancel job的时候才去做savepoint. 正常是需要用下面的命令触发的.然后启动的时候指定savepoint的路径启动.

```
flink cancel -s jobid -yid appid
```

现在在zeppelin里面只需要在 Paragraph 里面配置 savepointDir 参数就可以了,取消任务的时候会自动触发savepoint,保存到指定的目录里面. 然后重启的时候需要设置 resumeFromSavepoint = true 这个参数,就可以自动从savepoint恢复任务了. 下面演示一下这个过程.

测试自动从checkpoint恢复任务

```
%flink.ssql(type=update,
parallelism=8,
jobName="test",
savepointDir=hdfs://master:9000/flink-rockdb/savepoints)
select name,sum(age) from kafka_table
group by name;
```

name	EXPR\$1
flink	193
spark	192

JasonLee的博客

先把任务运行起来,然后等任务做了几次checkpoint后把任务停掉,然后添加 resumeFromSavepoint = true 参数直接启动任务就可以了.

测试自动从checkpoint恢复任务

```
%flink.ssql(type=update,
parallelism=8,
jobName="test",
savepointDir=hdfs://master:9000/flink-rockdb/savepoints,
resumeFromSavepoint = true)
select name,sum(age) from kafka_table
group by name;
```

name	EXPR\$1
flink	353
spark	353

JasonLee的博客

test RUNNING 3

ID: 7cf05607b27eb52c5aa19f1b77cdc3cc | Start Time: 2020-08-17 19:59:08 | Duration: 5s

Overview Exceptions TimeLine Checkpoints Configuration

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Checkpoint Counts	Triggered: 1	In Progress: 1	Completed: 0	Failed: 0	Restored: 1
Latest Completed Checkpoint	None				
Latest Failed Checkpoint	None				
Latest Savepoint	None				
Latest Restore	ID: 58	Restore Time: 19:59:08	Type: Savepoint	Path: hdfs://master:9000/flink-rockdb/savepoints/savepoint-13184a-7378b999cb62	

JasonLee的博客

任务也是可以正常启动的,不管是从checkpoint还是savepoint都变的非常简便.

总结:

自动从checkpoint&savepoint恢复任务其实是一个必要的需求,zeppelin已经帮我们做了这个功能,这样恢复任务就变的非常简单,配置几个参数就可以直接启动任务了.