

测试时间及人员：

测试时间：2022/9/12 ~ 2022/09/23 测试人员：项目组

测试背景：

集群架构与单机 PostgreSQL 的性能特性对比，从读写的效能，以及 SQL 兼容性、业务使用等多个方面进行验证。

测试环境：

同一台机器，不同数据库，分别是**集群_db**和**data_platform 单机（单机）**数据库，服务器信息如下：

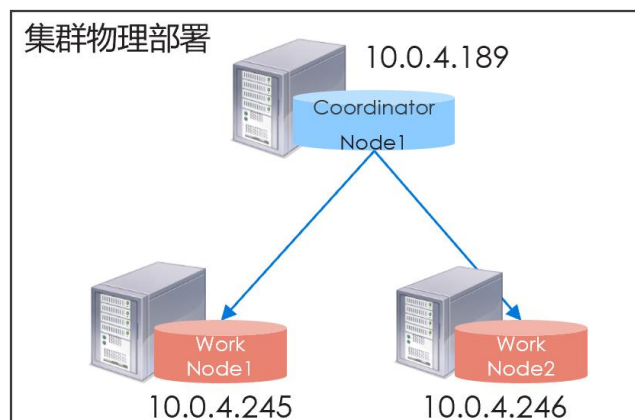
IP: 10.0.4.189 Port: 5432

OS: CentOS Linux release 7.8.2003 (Core)

CPU: 64 vcore

Memory: 512G, Disk: 24T

集群采用一个 CN 服务、两个 Work 机器，Work 机器 IP 分别是：10.0.4.245、10.0.4.246。



结论：

- 1、采用集群（目前 2 节点 worker）后，性能大幅度提升（从 2x~ 42x 不等）
- 2、按照生产的 SQL 测试了各类用例，SQL 完全兼容，运行良好
- 3、验证了架构的扩展性和各种功能，无异常

测试用例及测试结果：

测试数据信息概况：

	Record(s)		Elapsed Time		SQL
	集群_db	data_platform 单机	集群_db	data_platform 单机	
COM 层： F_AGG_STOCK(库存轻度汇总)	1,886,449,455	1,886,449,455	00:26.435	07:09.510	select count(*) from p30_common.f_agg_stock;
应用层： F_V_MONTHLY_ STOCK(库存月 结轻度汇总)	83,101,295	83,101,295	00:59.006	28:53.697	select count(*) from p63_ssas.f_v_monthly_stock;

集群按照日期字段（Date_Id）进行数据分布，两者都是分区表，按照日期字段（Date_Id）按月分区。

结论：大表扫描（18 亿），单机 7~28 分钟，集群 26~59 秒

记录数据统计:

1、单机 data_platform 单机, 运行结果:

■ F_AGG_STOCK

```
data_platform=# select count(*) from p30_common.f_agg_stock;
count
-----
1886449455
(1 row)

Time: 429509.582 ms (07:09.510)
```

■ F_V_MONTHLY_STOCK

```
data_platform=# select count(*) from p63_ssas.f_v_monthly_stock;
count
-----
83101295
(1 row)

Time: 1733697.216 ms (28:53.697)
```

2、集群_db, 运行结果:

■ F_AGG_STOCK

```
citus_db=# select count(*) from p30_common.f_agg_stock;
count
-----
1886449455
(1 row)

Time: 26435.352 ms (00:26.435)
```

■ F_V_MONTHLY_STOCK

```
citus_db=# select count(*) from p63_ssas.f_v_monthly_stock;
count
-----
83101295
(1 row)

Time: 59006.010 ms (00:59.006)
```

数据关联查询：

	Record(s)		Elapsed Time		SQL
	集群_db	data_platform 单机	集群_db	data_platform 单机	
COM 层： F_AGG_STOCK(库存轻度汇总)	1,886,449,455	1,886,449,455	08:31.651	04:05:27.533	select count(1) from p30_common.f_agg_stock ask left join p63_ssas.f_v_monthly_stock msk on msk.date_id = ask.date_id and msk.company_id = ask.company_id and msk.stock_id = ask.stock_id and msk.Material_Id = ask.Material_Id;
应用层： F_V_MONTHLY_STOCK(库存月结轻度汇总)	83,101,295	83,101,295	11:44.521	07:49:12.982	select count(1) from p63_ssas.f_v_monthly_stock msk left join p30_common.f_agg_stock ask on msk.date_id = ask.date_id and msk.company_id = ask.company_id and msk.stock_id = ask.stock_id and msk.Material_Id = ask.Material_Id;

结论： 2 个大表关联（18 亿 和 8 千 3 百万），单机：4 小时到 7 小时， 集群：8 分钟到 11 分钟

单机 data_platform 单机, 运行结果:

■ F_AGG_STOCK

```
select count(1) from p30_common.f_agg_stock ask
left join p63_ssas.f_v_monthly_stock msk
on msk.date_id = ask.date_id
and msk.company_id = ask.company_id
and msk.stock_id = ask.stock_id
and msk.Material_Id = ask.Material_Id;
count
-----
1886449455
(1 行记录)
```

时间: 14727532.502 ms (04:05:27.533)

■ F_V_MONTHLY_STOCK

```
select count(1) from p63_ssas.f_v_monthly_stock msk
left join p30_common.f_agg_stock ask
on msk.date_id = ask.date_id
and msk.company_id = ask.company_id
and msk.stock_id = ask.stock_id
and msk.Material_Id = ask.Material_Id;
count
-----
83101295
(1 行记录)
```

时间: 28152982.396 ms (07:49:12.982)

集群_db, 运行结果:

■ F_AGG_STOCK

```
citus_db=# select count(1) from p30_common.f_agg_stock ask
citus_db=# left join p63_ssas.f_v_monthly_stock msk
citus_db=# on msk.date_id = ask.date_id
citus_db=# and msk.company_id = ask.company_id
citus_db=# and msk.stock_id = ask.stock_id
citus_db=# and msk.Material_Id = ask.Material_Id;
count
-----
1886449455
(1 row)
```

Time: 511651.424 ms (08:31.651)

■ F_V_MONTHLY_STOCK

```
citus_db=# select count(1) from p63_ssas.f_v_monthly_stock msk
citus_db=# left join p30_common.f_agg_stock ask
citus_db=# on msk.date_id = ask.date_id
citus_db=# and msk.company_id = ask.company_id
citus_db=# and msk.stock_id = ask.stock_id
citus_db=# and msk.Material_Id = ask.Material_Id;

count
-----
83101295
(1 row)
```

Time: 704520.675 ms (11:44.521)

数据关联查询：按照日期聚合

	Record(s)		Elapsed Time		SQL
	集群_db	data_platform 单机	集群_db	data_platform 单机	
COM 层： F_AGG_STOCK(库存轻度汇总)	3	3	16:50.194	05:54:26.329	<pre>select date_trunc('year',ask.Date_Id)::date as Year_Id,sum(ask.Qty) as Qty,sum(ask.Amt) as Amt from p30_common.f_agg_stock ask left join p63_ssas.f_v_monthly_stock msk on msk.date_id = ask.date_id and msk.company_id = ask.company_id and msk.stock_id = ask.stock_id and msk.Material_Id = ask.Material_Id group by 1;</pre>
应用层： F_V_MONTHLY_STOCK(库存月结轻度汇总)	3	3	12:20.472	07:41:37.784	<pre>select date_trunc('year',msk.Date_Id)::date as Year_Id,sum(msk.On_Path_Qty) as Qty,sum(msk.On_Path_Amt) as Amt from p63_ssas.f_v_monthly_stock msk left join p30_common.f_agg_stock ask on msk.date_id = ask.date_id and msk.company_id = ask.company_id and msk.stock_id = ask.stock_id and msk.Material_Id = ask.Material_Id group by 1;</pre>

结论：

单机 data_platform 单机, 运行结果:

■ F_AGG_STOCK

```
select date_trunc('year',ask.Date_Id)::date as Year_Id
,sum(ask.Qty) as Qty
,sum(ask.Amt) as Amt
from p30_common.f_agg_stock ask
left join p63_ssas.f_v_monthly_stock msk
on msk.date_id = ask.date_id
and msk.company_id = ask.company_id
and msk.stock_id = ask.stock_id
and msk.Material_Id = ask.Material_Id
group by 1;
```

year_id	qty	amt
2020-01-01	14491428617	5299515684331.7442
2021-01-01	16274604545	5654616728034.0836
2022-01-01	11860924076	4206285515365.4653

(3 行记录)

时间: 21266329.289 ms (05:54:26.329)

■ F_V_MONTHLY_STOCK

```
select date_trunc('year',msk.Date_Id)::date as Year_Id
,sum(msk.On_Path_Qty) as Qty
,sum(msk.On_Path_Amt) as Amt
from p63_ssas.f_v_monthly_stock msk
left join p30_common.f_agg_stock ask
on msk.date_id = ask.date_id
and msk.company_id = ask.company_id
and msk.stock_id = ask.stock_id
and msk.Material_Id = ask.Material_Id
group by 1;
```

year_id	qty	amt
2020-01-01	481485441	176405424784.0708
2021-01-01	544225300	190034569561.9729
2022-01-01	369742539	131666956757.8259

(3 行记录)

时间: 27697783.944 ms (07:41:37.784)

集群_db, 运行结果:

■ F_AGG_STOCK

```
citus_db=# select date_trunc('year',ask.Date_Id)::date as Year_Id
citus_db=# ,sum(ask.Qty) as Qty
citus_db=# ,sum(ask.Amt) as Amt
citus_db=# from p30_common.f_agg_stock ask
citus_db=# left join p63_ssas.f_v_monthly_stock msk
citus_db=# on msk.date_id = ask.date_id
citus_db=# and msk.company_id = ask.company_id
citus_db=# and msk.stock_id = ask.stock_id
citus_db=# and msk.Material_Id = ask.Material_Id
citus_db=# group by 1;
```

year_id	qty	amt
2020-01-01	14491428617	5299515684331.7442
2021-01-01	16274604545	5654616728034.0836
2022-01-01	11860924076	4206285515365.4653

(3 rows)

Time: 1010193.904 ms (16:50.194)

■ F_V_MONTHLY_STOCK

```
citus_db=# select date_trunc('year',msk.Date_Id)::date as Year_Id
citus_db=# ,sum(msk.On_Path_Qty) as Qty
citus_db=# ,sum(msk.On_Path_Amt) as Amt
citus_db=# from p63_ssas.f_v_monthly_stock msk
citus_db=# left join p30_common.f_agg_stock ask
citus_db=# on msk.date_id = ask.date_id
citus_db=# and msk.company_id = ask.company_id
citus_db=# and msk.stock_id = ask.stock_id
citus_db=# and msk.Material_Id = ask.Material_Id
citus_db=# group by 1;
```

year_id	qty	amt
2020-01-01	6630100	3188761654.4600
2021-01-01	7262496	3168470956.5300
2022-01-01	4861772	2261727402.0460

(3 rows)

Time: 740472.427 ms (12:20.472)

数据关联查询：按照经营渠道聚合

	Record(s)		Elapsed Time		SQL
	集群_db	data_platform 单机	集群_db	data_platform 单机	
COM 层： F_AGG_STOCK(库存轻度汇总)	7	7	16:33.373	05:59:50.132	select Biz_Nature_Cd,sum(ask.Qty) as Qty,sum(ask.Amt) as Amt from p30_common.f_agg_stock ask left join p63_ssas.f_v_monthly_stock msk on msk.date_id = ask.date_id and msk.company_id = ask.company_id and msk.stock_id = ask.stock_id and msk.Material_Id = ask.Material_Id group by 1;
应用层： F_V_MONTHLY_STOCK(库存月结轻度汇总)	7	7	12:53.365	05:08:08.397	select Biz_Prop_Cd,sum(msk.On_Path_Qty) as Qty,sum(msk.On_Path_Amt) as Amt from p63_ssas.f_v_monthly_stock msk left join p30_common.f_agg_stock ask on msk.date_id = ask.date_id and msk.company_id = ask.company_id and msk.stock_id = ask.stock_id and msk.Material_Id = ask.Material_Id group by 1;

结论：

单机 data_platform 单机, 运行结果:

■ F_AGG_STOCK

```
select Biz_Nature_Cd
,sum(ask.Qty) as Qty
,sum(ask.Amt) as Amt
from p30_common.f_agg_stock ask
left join p63_ssas.f_v_monthly_stock msk
on msk.date_id = ask.date_id
and msk.company_id = ask.company_id
and msk.stock_id = ask.stock_id
and msk.Material_Id = ask.Material_Id
group by 1;
```

biz_nature_cd	qty	amt
D7002	715451000	389959823896.5034
D7005	162325660	65258115163.1800
D7010	9639941793	43430473346.6501
	100244	56081456.0000
D7003	1213471275	717656877376.0000
D7001	30439707725	13760990832153.5596
D7004	455959541	183065724339.4000

(7 行记录)

时间: 21590132.368 ms (05:59:50.132)

■ F_V_MONTHLY_STOCK

```
select Biz_Prop_Cd
,sum(msk.On_Path_Qty) as Qty
,sum(msk.On_Path_Amt) as Amt
from p63_ssas.f_v_monthly_stock msk
left join p30_common.f_agg_stock ask
on msk.date_id = ask.date_id
and msk.company_id = ask.company_id
and msk.stock_id = ask.stock_id
and msk.Material_Id = ask.Material_Id
group by 1;
```

biz_prop_cd	qty	amt
D7002	20306535	11096059569.5152
D7005	5315869	2104978522.5412
D7010	314220683	1400459952.7161
	3649	2019051.0000
D7003	38456494	22975199962.0000
D7001	1003085955	454935885012.2971
D7004	14064095	5592349033.8000

(7 行记录)

时间: 18488397.498 ms (05:08:08.397)

集群_db, 运行结果:

■ F_AGG_STOCK

```
citus_db=# select Biz_nature_cd
citus_db=# ,sum(ask.Qty) as Qty
citus_db=# ,sum(ask.Amt) as Amt
citus_db=# from p30_common.f_agg_stock ask
citus_db=# left join p63_ssas.f_v_monthly_stock msk
citus_db=# on msk.date_id = ask.date_id
citus_db=# and msk.company_id = ask.company_id
citus_db=# and msk.stock_id = ask.stock_id
citus_db=# and msk.Material_Id = ask.Material_Id
citus_db=# group by 1;
```

biz_nature_cd	qty	amt
D7002	715451000	389959823896.5034
D7005	162325660	65258115163.1800
D7010	9639941793	43430473346.6501
	100244	56081456.0000
D7003	1213471275	717656877376.0000
D7001	30439707725	13760990832153.5596
D7004	455959541	183065724339.4000

(7 rows)

Time: 993372.858 ms (16:33.373)

■ F_V_MONTHLY_STOCK

```
citus_db=# select Biz_Prop_Cd
citus_db=# ,sum(msk.On_Path_Qty) as Qty
citus_db=# ,sum(msk.On_Path_Amt) as Amt
citus_db=# from p63_ssas.f_v_monthly_stock msk
citus_db=# left join p30_common.f_agg_stock ask
citus_db=# on msk.date_id = ask.date_id
citus_db=# and msk.company_id = ask.company_id
citus_db=# and msk.stock_id = ask.stock_id
citus_db=# and msk.Material_Id = ask.Material_Id
citus_db=# group by 1;
```

biz_prop_cd	qty	amt
D7002	47923	40957167.0000
D7005	26929	11050468.0000
D7010	4594168	11679434.7800
	260	175870.0000
D7003	26711	18392779.0000
D7001	13929980	8460134575.2560
D7004	128397	76569719.0000

(7 rows)

Time: 773365.104 ms (12:53.365)

数据更新处理：

	Record(s)		Elapsed Time		SQL
	集群_db	data_platform 单机	集群_db	data_platform 单机	
COM 层： F_AGG_STOCK(库存轻度汇总)	2,762,917	2,762,917	00:51.170	02:25.597	update p30_common.f_agg_stock ask Set Zone_Id = Zone_Id '00' where Date_Id = DATE'2022-08-31';
	2,762,917	2,762,917	00:52.358	01:20.492	update p30_common.f_agg_stock ask Set Zone_Id = substring(Zone_Id,1,3) where Date_Id = DATE'2022-08-31';
	26,567,715	26,567,715	02:47.186	09:48.421	update p30_common.f_agg_stock ask Set Zone_Id = Zone_Id '00' where Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE;
	26,567,715	26,567,715	02:35.033	09:37.329	update p30_common.f_agg_stock ask Set Zone_Id = substring(Zone_Id,1,3) where Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE;
	59,752,603	59,752,603	04:40.411	21:58.538	update p30_common.f_agg_stock ask Set Zone_Id = Zone_Id '00' where Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE;
	59,752,603	59,752,603	04:13.076	25:48.663	update p30_common.f_agg_stock ask Set Zone_Id = substring(Zone_Id,1,3) where Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE;

结论：

单机 data_platform 单机，运行结果：

■ F_AGG_STOCK:2022-08-31(更新)

```
update p30_common.f_agg_stock ask
Set Zone_Id = Zone_Id || '00'
where Date_Id = DATE'2022-08-31';
UPDATE 2762917
时间: 145597.132 ms (02:25.597)
```

■ F_AGG_STOCK:2022-08-31(修复)

```
update p30_common.f_agg_stock ask
Set Zone_Id = substring(Zone_Id,1,3)
where Date_Id = DATE'2022-08-31';
UPDATE 2762917
时间: 80491.687 ms (01:20.492)
```

■ F_AGG_STOCK:9 月份(更新)

```
update p30_common.f_agg_stock ask
Set Zone_Id = Zone_Id || '00'
where Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE;
UPDATE 26567715
时间: 588421.206 ms (09:48.421)
```

■ F_AGG_STOCK: 9 月份(修复)

```
update p30_common.f_agg_stock ask
Set Zone_Id = substring(Zone_Id,1,3)
where Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE;
UPDATE 26567715
时间: 577329.115 ms (09:37.329)
```

■ F_AGG_STOCK: 8 月份(更新)

```
update p30_common.f_agg_stock ask
Set Zone_Id = Zone_Id || '00'
where Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE;
UPDATE 59752603
时间: 1318537.798 ms (21:58.538)
```

■ F_AGG_STOCK: 8 月份(修复)

```
update p30_common.f_agg_stock ask
Set Zone_Id = substring(Zone_Id,1,3)
where Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE;
UPDATE 59752603
时间: 1548662.668 ms (25:48.663)
```

集群_db，运行结果：

■ F_AGG_STOCK:2022-08-31(更新)

```
update p30_common.f_agg_stock ask
Set Zone_Id = Zone_Id || '00'
where Date_Id = DATE'2022-08-31';
UPDATE 2762917
时间: 51170.346 ms (00:51.170)
```

■ F_AGG_STOCK:2022-08-31(修复)

```
update p30_common.f_agg_stock ask
Set Zone_Id = substring(Zone_Id,1,3)
where Date_Id = DATE'2022-08-31';
UPDATE 2762917
时间: 52358.096 ms (00:52.358)
```

■ F_AGG_STOCK:9 月份(更新)

```
update p30_common.f_agg_stock ask
Set Zone_Id = Zone_Id || '00'
where Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE;
UPDATE 26567715
时间: 167186.488 ms (02:47.186)
```

■ F_AGG_STOCK: 9 月份(修复)

```
update p30_common.f_agg_stock ask
Set Zone_Id = substring(Zone_Id,1,3)
where Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE;
UPDATE 26567715
时间: 155033.323 ms (02:35.033)
```

■ F_AGG_STOCK: 8 月份(更新)

```
update p30_common.f_agg_stock ask
Set Zone_Id = Zone_Id || '00'
where Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE;
UPDATE 59752603
时间: 280411.307 ms (04:40.411)
```

■ F_AGG_STOCK: 8 月份(修复)

```
update p30_common.f_agg_stock ask
Set Zone_Id = substring(Zone_Id,1,3)
where Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE;
DATE 59752603
时间: 253075.846 ms (04:13.076)
```

数据写入处理：

	Record(s)		Elapsed Time		SQL
	集群_db	data_platform 单机	集群_db	data_platform 单机	
COM 层： F_AGG_STOCK(库存轻度汇总)	26,567,715	26,567,715	01:16.000	06:37.112	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE;
	59,752,603	59,752,603	02:08.110	15:55.646	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE;
	60,445,178	60,445,178	02:11.678	14:59.949	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220701'::DATE AND Date_Id < '20220801'::DATE;
	57,377,531	57,377,531	02:01.088	14:17.561	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220601'::DATE AND Date_Id < '20220701'::DATE;
	60,672,917	60,672,917	02:26.682	14:43.055	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220501'::DATE AND Date_Id < '20220601'::DATE;
	60,045,660	60,045,660	02:12.648	14:13.507	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220401'::DATE AND Date_Id < '20220501'::DATE;
	60,167,577	60,167,577	02:13.943	14:31.755	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220301'::DATE AND Date_Id < '20220401'::DATE;
	52,424,644	52,424,644	01:53.194	12:20.761	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220201'::DATE AND Date_Id < '20220301'::DATE;
	60,051,533	60,051,533	01:57.468	14:58.000	insert into p63_ssas.f_agg_stock select * from p30_common.f_agg_stock where Date_Id >= '20220101'::DATE AND Date_Id < '20220201'::DATE;

结论：

单机 data_platform 单机，运行结果：

■ F_AGG_STOCK_VERIFY:2022 年 9 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE
;
INSERT 0 26567715
时间: 397112.167 ms (06:37.112)
```

■ F_AGG_STOCK_VERIFY:2022 年 8 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE
;
INSERT 0 59752603
时间: 955646.466 ms (15:55.646)
```

■ F_AGG_STOCK_VERIFY:2022 年 7 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220701'::DATE AND Date_Id < '20220801'::DATE
;
INSERT 0 60445178
时间: 899949.064 ms (14:59.949)
```

■ F_AGG_STOCK_VERIFY:2022 年 6 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220601'::DATE AND Date_Id < '20220701'::DATE
;
INSERT 0 57377531
时间: 857561.235 ms (14:17.561)
```

■ F_AGG_STOCK_VERIFY:2022 年 5 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220501'::DATE AND Date_Id < '20220601'::DATE
;
INSERT 0 60672917
时间: 883055.320 ms (14:43.055)
```

■ F_AGG_STOCK_VERIFY:2022 年 4 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220401'::DATE AND Date_Id < '20220501'::DATE
;
INSERT 0 60045660
时间: 853507.263 ms (14:13.507)
```

集群_db 运行结果：

■ F_AGG_STOCK_VERIFY:2022 年 9 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220901'::DATE AND Date_Id < '20221001'::DATE
;
INSERT 0 26567715
时间: 76000.110 ms (01:16.000)
```

■ F_AGG_STOCK_VERIFY:2022 年 8 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220801'::DATE AND Date_Id < '20220901'::DATE
;
INSERT 0 59752603
时间: 128110.457 ms (02:08.110)
```

■ F_AGG_STOCK_VERIFY:2022 年 7 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220701'::DATE AND Date_Id < '20220801'::DATE
;
INSERT 0 60445178
时间: 131677.898 ms (02:11.678)
```

■ F_AGG_STOCK_VERIFY:2022 年 6 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220601'::DATE AND Date_Id < '20220701'::DATE
;
INSERT 0 57377531
时间: 121088.198 ms (02:01.088)
```

■ F_AGG_STOCK_VERIFY:2022 年 5 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220501'::DATE AND Date_Id < '20220601'::DATE
;
INSERT 0 60672917
时间: 146682.399 ms (02:26.682)
```

■ F_AGG_STOCK_VERIFY:2022 年 4 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220401'::DATE AND Date_Id < '20220501'::DATE
;
INSERT 0 60045660
时间: 132647.678 ms (02:12.648)
```

单机 data_platform 单机，运行结果：

■ F_AGG_STOCK_VERIFY:2022 年 3 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220301'::DATE AND Date_Id < '20220401'::DATE
;
INSERT 0 60167577
时间: 871754.515 ms (14:31.755)
```

■ F_AGG_STOCK_VERIFY:2022 年 2 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220201'::DATE AND Date_Id < '20220301'::DATE
;
INSERT 0 52424644
时间: 740761.008 ms (12:20.761)
```

■ F_AGG_STOCK_VERIFY:2022 年 1 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220101'::DATE AND Date_Id < '20220201'::DATE
;
INSERT 0 60051533
时间: 897999.917 ms (14:58.000)
```

集群_db 运行结果：

■ F_AGG_STOCK_VERIFY:2022 年 3 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220301'::DATE AND Date_Id < '20220401'::DATE
;
INSERT 0 60167577
时间: 133942.787 ms (02:13.943)
```

■ F_AGG_STOCK_VERIFY:2022 年 2 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220201'::DATE AND Date_Id < '20220301'::DATE
;
INSERT 0 52424644
时间: 113193.839 ms (01:53.194)
```

■ F_AGG_STOCK_VERIFY:2022 年 1 月份

```
FROM   P30_COMMON.F_AGG_STOCK
WHERE  Date_Id >= '20220101'::DATE AND Date_Id < '20220201'::DATE
;
INSERT 0 60051533
时间: 117468.268 ms (01:57.468)
```