


环境

 OBCServer版本: 4.2.1.4

架构: 1-1-1

场景一: 将一台非RS节点OBCServer系统时间调慢65s后, 进行集群合并

1. 查看集群所有OBCServer

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from __all_server;
```

```
MySQL [oceanbase]> select svr_ip,svr_port,zone,with_rootserver,status,build_version from __all_server;
+-----+-----+-----+-----+-----+-----+
| svr_ip | svr_port | zone | with_rootserver | status | build_version |
+-----+-----+-----+-----+-----+-----+
| 10.186.64.161 | 2882 | zone1 | 1 | ACTIVE | 4.2.1.4_104010012024030714-c4f3400ad2839e337bc9dab5d1bfe1d01134a1d7(Mar 7 2024 14:32:22) |
| 10.186.64.162 | 2882 | zone2 | 0 | ACTIVE | 4.2.1.4_104010012024030714-c4f3400ad2839e337bc9dab5d1bfe1d01134a1d7(Mar 7 2024 14:32:22) |
| 10.186.64.163 | 2882 | zone3 | 0 | ACTIVE | 4.2.1.4_104010012024030714-c4f3400ad2839e337bc9dab5d1bfe1d01134a1d7(Mar 7 2024 14:32:22) |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

2. 确认集群RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from __all_server where with_rootserver=1;
```

```
MySQL [oceanbase]> select svr_ip,svr_port,zone,with_rootserver,status,build_version from __all_server where with_rootserver=1;
+-----+-----+-----+-----+-----+-----+
| svr_ip | svr_port | zone | with_rootserver | status | build_version |
+-----+-----+-----+-----+-----+-----+
| 10.186.64.161 | 2882 | zone1 | 1 | ACTIVE | 4.2.1.4_104010012024030714-c4f3400ad2839e337bc9dab5d1bfe1d01134a1d7(Mar 7 2024 14:32:22) |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)
```

3. 启动insert数据脚本(往业务租户持续写入数据)

```
[root@10-186-64-160-ocp shell_scripts]# sh insert_table.sh
2024-05-22 15:25:30 INSERT INTO time_table SUCCESS
2024-05-22 15:25:31 INSERT INTO time_table SUCCESS
2024-05-22 15:25:32 INSERT INTO time_table SUCCESS
2024-05-22 15:25:33 INSERT INTO time_table SUCCESS
2024-05-22 15:25:34 INSERT INTO time_table SUCCESS
2024-05-22 15:25:35 INSERT INTO time_table SUCCESS
```

4. 确认租户优先级

- RS节点需处在时间领先的节点，然后进行合并，才能模拟产生合并时卡住的故障
- 如果RS节点处在时间滞后的节点，合并可能是成功的

```
1 select tenant_id,tenant_name,primary_zone,locality from __all_tenant;
```

```
MySQL [oceanbase]> select tenant_id,tenant_name,primary_zone,locality from __all_tenant;
+-----+-----+-----+-----+
| tenant_id | tenant_name | primary_zone | locality |
+-----+-----+-----+-----+
| 1 | sys | zone1;zone2;zone3 | FULL{1}@zone1, FULL{1}@zone2, FULL{1}@zone3 |
| 1001 | META$1002 | zone1;zone2;zone3 | FULL{1}@zone1, FULL{1}@zone2, FULL{1}@zone3 |
| 1002 | mysql_ob | zone1;zone2;zone3 | FULL{1}@zone1, FULL{1}@zone2, FULL{1}@zone3 |
| 1003 | META$1004 | zone1;zone2;zone3 | FULL{1}@zone1, FULL{1}@zone2, FULL{1}@zone3 |
| 1004 | oratnt | zone1;zone2;zone3 | FULL{1}@zone1, FULL{1}@zone2, FULL{1}@zone3 |
+-----+-----+-----+-----+
5 rows in set (0.01 sec)
```

1. 确认leader节点

```
1 select b.tenant_name,a.tenant_id,a.ls_id,a.zone,a.svr_ip,a.role from
cdb_ob_table_locations a join __all_tenant b on a.tenant_id = b.tenant_id where
role='LEADER' group by a.tenant_id;
```

```
MySQL [oceanbase]> select b.tenant_name,a.tenant_id,a.ls_id,a.zone,a.svr_ip,a.role from cdb_ob_table_locations a join __all_tenant b on a.tenant_id = b.tenant_id where role='LEADER' group by a.tenant_id;
+-----+-----+-----+-----+-----+-----+
| tenant_name | tenant_id | ls_id | zone | svr_ip | role |
+-----+-----+-----+-----+-----+
| sys | 1 | 1 | zone1 | 10.186.64.161 | LEADER |
| META$1002 | 1001 | 1 | zone1 | 10.186.64.161 | LEADER |
| mysql_ob | 1002 | 1 | zone1 | 10.186.64.161 | LEADER |
| META$1004 | 1003 | 1 | zone1 | 10.186.64.161 | LEADER |
| oratnt | 1004 | 1 | zone1 | 10.186.64.161 | LEADER |
+-----+-----+-----+-----+-----+
5 rows in set (1.25 sec)
```

5. 将非RS节点：10.186.64.163 的主机系统时间与时钟源模拟产生65s延迟（落后时钟源65s）

```
1 date && date --set="$(date -d '-65 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

```
[root@10-186-64-163-observer3 ~]# date && date --set="$(date -d '-65 seconds' +"%Y-%m-%d %H:%M:%S")" && date
Wed May 22 15:27:32 CST 2024
Wed May 22 15:26:27 CST 2024
Wed May 22 15:26:27 CST 2024
```

6. 查看与时钟源的时间差

```
1 clockdiff 10.186.64.160
```

```
[root@10-186-64-163-observer3 ~]# clockdiff 10.186.64.160
.
host=10.186.64.160 rtt=750(187)ms/0ms delta=6541ms/6541ms Wed May 22 15:28:18 2024
```

7. 确认集群状态是否正常

```
1 select * from __all_server;
```

```
mysql [(ocunbase)] select * from __all_server;
+-----+
| gts_name | gts_modified | svr_ip | svr_port | id | zone | inner_port | with_rootsvr | status | block_migrate_in_time | build_version | stop_time | start_service_time | first_sessid | with_partition | loc |
+-----+
| 2024-05-22 15:27:25 | 2024-05-22 11:31:47.734449 | 10.186.64.161 | 2881 | 1 | zone1 | 2881 | 0 | ACTIVE | 0 | 4.2.1.4_104010012024030714-0f3400a02839e337e-chun501fe10113461d70e9 | 7 2024 14:32:22 | 0 | 17161726570936 | 0 | 1 |
| 2024-05-22 15:27:26 | 2024-05-21 10:44:51.650037 | 10.186.64.162 | 2881 | 6 | zone2 | 2881 | 0 | ACTIVE | 0 | 4.2.1.4_104010012024030714-0f3400a02839e337e-chun501fe10113461d70e9 | 7 2024 14:32:22 | 0 | 171625248764689 | 0 | 1 |
| 2024-05-22 15:27:27 | 2024-05-22 11:31:47.734449 | 10.186.64.163 | 2881 | 7 | zone3 | 2881 | 0 | ACTIVE | 0 | 4.2.1.4_104010012024030714-0f3400a02839e337e-chun501fe10113461d70e9 | 7 2024 14:32:22 | 0 | 1716261221048783 | 0 | 1 |
+-----+
1 rows in set (0.01 sec)
```

8. 查看insert数据脚本是否正常

```
2024-05-22 15:27:25 INSERT INTO time_table SUCCESS
2024-05-22 15:27:26 INSERT INTO time_table SUCCESS
2024-05-22 15:27:27 INSERT INTO time_table SUCCESS
2024-05-22 15:27:28 INSERT INTO time_table SUCCESS
2024-05-22 15:27:29 INSERT INTO time_table SUCCESS
2024-05-22 15:27:30 INSERT INTO time_table SUCCESS
2024-05-22 15:27:31 INSERT INTO time_table SUCCESS
2024-05-22 15:27:32 INSERT INTO time_table SUCCESS
2024-05-22 15:27:33 INSERT INTO time_table SUCCESS
2024-05-22 15:27:34 INSERT INTO time_table SUCCESS
2024-05-22 15:27:35 INSERT INTO time_table SUCCESS
2024-05-22 15:27:36 INSERT INTO time_table SUCCESS
2024-05-22 15:27:37 INSERT INTO time_table SUCCESS
2024-05-22 15:27:38 INSERT INTO time_table SUCCESS
2024-05-22 15:27:39 INSERT INTO time_table SUCCESS
2024-05-22 15:27:40 INSERT INTO time_table SUCCESS
2024-05-22 15:27:41 INSERT INTO time_table SUCCESS
2024-05-22 15:27:42 INSERT INTO time_table SUCCESS
2024-05-22 15:27:43 INSERT INTO time_table SUCCESS
2024-05-22 15:27:44 INSERT INTO time_table SUCCESS
2024-05-22 15:27:45 INSERT INTO time_table SUCCESS
```

9. 查看OCP有无告警

告警 / 告警事件 / 详情

告警详情 告警中: 5分钟 严重 告警分析数据 详细告警

基本信息

ID: 9000399 应用: OCP 对象类型: 主机 告警对象: 10.186.64.163
告警规则: host_mysql_service_not_exist 产生时间: 2024年5月22日 15:29:04 恢复时间: - 告警分类: ocp_可用性
最后一次告警时间: 2024年5月22日 15:32:04

告警事件详情

告警描述: alarm_template_id=0:host=10.186.64.163 服务器时钟同步服务不存在
告警详情: 集群: ob-4214, 主机: 10.186.64.163, 告警: 服务器时钟同步服务不存在。服务器时钟同步服务 (ntp chrony) 不存在。 [查看告警处理建议](#)

告警事件历史

2024年5月22日 15:29:04
告警等级: 严重
告警状态: 告警中

告警名称	对象	类型	数据源内联、可用性	时间	告警中: 6分钟	严重	未配置推送 >
OceanBase集群状态检测失败	对象: ob-4214-1690727938 类型: OceanBase/集群	数据库内联、可用性	数据库内联、可用性	2024年5月22日 15:28:24	告警中: 6分钟	严重	未配置推送 >
获取OceanBase集群信息失败	对象: ob-4214-1690727938 类型: OceanBase/集群	数据库内联、可用性	数据库内联、可用性	2024年5月22日 15:28:24	告警中: 6分钟	严重	未配置推送 >
服务器时钟同步服务不存在	对象: 10.186.64.163 类型: OCP/主机	ocp_可用性	ocp_可用性	2024年5月22日 15:29:04	告警中: 5分钟	严重	未配置推送 >

10. 发起本集群所有租户合并(sys租户执行)

- ALTER SYSTEM MAJOR FREEZE TENANT sys;
- ALTER SYSTEM MAJOR FREEZE TENANT = all_user;
- ALTER SYSTEM MAJOR FREEZE TENANT = all_meta;

```
MySQL [oceanbase]> ALTER SYSTEM MAJOR FREEZE TENANT sys;
Query OK, 0 rows affected (0.08 sec)

MySQL [oceanbase]> ALTER SYSTEM MAJOR FREEZE TENANT = all_user;
Query OK, 0 rows affected (0.05 sec)

MySQL [oceanbase]> ALTER SYSTEM MAJOR FREEZE TENANT = all_meta;
Query OK, 0 rows affected (0.08 sec)
```

11. 查看集群状态

- select * from __all_server;

```
MySQL [oceanbase] select * from __all_server;
+-----+
|gmt_create      |gmt_modified    |svr_ip      |svr_port |id |zone |inner_port |with_rootserver |status |block_migrate_in_time |build_version      |stop_time |start_service_time |first_sessid |with_partition |iss
+-----+
|2024-04-25 16:25:28.618889 |2024-05-22 11:31:47.734449 |10.186.64.161 |2882 |1 |zone1 |2881 |0 |ACTIVE |0 |4.2.1.4_104010812824030714-CF3406a2839e337bc9abb5dbf610113461d70a9 |7 2824 34:32:22 |0 |1716172056709946 |0 |1 |
|2024-05-21 18:43:49.591523 |2024-05-21 18:44:51.656037 |10.186.64.162 |2882 |6 |zone2 |2881 |0 |ACTIVE |0 |4.2.1.4_104010812824030714-CF3406a2839e337bc9abb5dbf610113461d70a9 |7 2824 34:32:22 |0 |1716259488764689 |0 |1 |
|2024-05-21 11:18:35.560732 |2024-05-22 11:31:47.734449 |10.186.64.163 |2882 |7 |zone3 |2881 |0 |ACTIVE |0 |4.2.1.4_104010812824030714-CF3406a2839e337bc9abb5dbf610113461d70a9 |7 2824 34:32:22 |0 |1716261221048783 |0 |1 |
+-----+
3 rows in set (0.00 sec)
```

12. 查看zone级别合并情况

```
1 select * from CDB_OB_ZONE_MAJOR_COMPACTION;
```

- zone3一直处于COMPACTING状态

```
MySQL [oceanbase]> select * from CDB_OB_ZONE_MAJOR_COMPACTION;
```

TENANT_ID	ZONE	BROADCAST_SCN	LAST_SCN	LAST_FINISH_TIME	START_TIME	STATUS
1	zone1	1716363293211137083	1716363293211137083	2024-05-22 15:35:34.245944	2024-05-22 15:34:53.663733	IDLE
1	zone2	1716363293211137083	1716363293211137083	2024-05-22 15:35:44.326802	2024-05-22 15:34:53.675661	IDLE
1	zone3	1716363293211137083	1716359005613365790	2024-05-22 14:26:28.601116	2024-05-22 15:34:53.692730	COMPACTING
1001	zone1	1716363293363054503	1716363293363054503	2024-05-22 15:35:34.840012	2024-05-22 15:34:54.373700	IDLE
1001	zone2	1716363293363054503	1716363293363054503	2024-05-22 15:36:45.191999	2024-05-22 15:34:54.389219	IDLE
1001	zone3	1716363293363054503	1716359026902796725	2024-05-22 14:27:24.082221	2024-05-22 15:34:54.405945	COMPACTING
1002	zone1	1716363293281316629	1716363293281316629	2024-05-22 15:36:05.407771	2024-05-22 15:34:54.309145	IDLE
1002	zone2	1716363293281316629	1716363293281316629	2024-05-22 15:36:45.556868	2024-05-22 15:34:54.341429	IDLE
1002	zone3	1716363293281316629	1716359026692900106	2024-05-22 14:27:03.002393	2024-05-22 15:34:54.353511	COMPACTING
1003	zone1	1716363293405829669	1716363293405829669	2024-05-22 15:35:55.139660	2024-05-22 15:34:54.415614	IDLE
1003	zone2	1716363293405829669	1716363293405829669	2024-05-22 15:37:35.493396	2024-05-22 15:34:54.437052	IDLE
1003	zone3	1716363293405829669	1716359026961243642	2024-05-22 14:26:00.271395	2024-05-22 15:34:54.453086	COMPACTING
1004	zone1	1716363293297449231	1716363293297449231	2024-05-22 15:35:34.379926	2024-05-22 15:34:53.839566	IDLE
1004	zone2	1716363293297449231	1716363293297449231	2024-05-22 15:37:24.808095	2024-05-22 15:34:53.847679	IDLE
1004	zone3	1716363293297449231	1716359026801815076	2024-05-22 14:25:38.825616	2024-05-22 15:34:53.860580	COMPACTING

15 rows in set (0.01 sec)

13. 查看租户级别合并信息

```
1 select * from CDB_OB_MAJOR_COMPACTION;
```

```
MySQL [oceanbase]> select * from CDB_OB_MAJOR_COMPACTION;
```

TENANT_ID	FROZEN_SCN	FROZEN_TIME	GLOBAL_BROADCAST_SCN	LAST_SCN	LAST_FINISH_TIME	START_TIME	STATUS	IS_ERROR	IS_SUSPENDED	INFO
1	1716363293211137083	2024-05-22 15:34:53.211137	1716363293211137083	1716359005613365790	2024-05-22 14:26:28.679828	2024-05-22 15:34:53.553497	COMPACTING	NO	NO	
1001	1716363293363054503	2024-05-22 15:34:53.363055	1716363293363054503	1716359026902796725	2024-05-22 14:27:24.157152	2024-05-22 15:34:54.256189	COMPACTING	NO	NO	
1002	1716363293281316629	2024-05-22 15:34:53.281317	1716363293281316629	1716359026692900106	2024-05-22 14:27:03.141799	2024-05-22 15:34:54.221915	COMPACTING	NO	NO	
1003	1716363293405829669	2024-05-22 15:34:53.405830	1716363293405829669	1716359026961243642	2024-05-22 14:27:46.574120	2024-05-22 15:34:54.360463	COMPACTING	NO	NO	
1004	1716363293297449231	2024-05-22 15:34:53.297449	1716363293297449231	1716359026801815076	2024-05-22 14:27:33.719480	2024-05-22 15:34:53.794767	COMPACTING	NO	NO	

5 rows in set (0.01 sec)

14. 查看insert数据脚本是否正常

```
2024-05-22 15:36:36 INSERT INTO time_table SUCCESS
2024-05-22 15:36:37 INSERT INTO time_table SUCCESS
2024-05-22 15:36:38 INSERT INTO time_table SUCCESS
2024-05-22 15:36:39 INSERT INTO time_table SUCCESS
2024-05-22 15:36:40 INSERT INTO time_table SUCCESS
2024-05-22 15:36:41 INSERT INTO time_table SUCCESS
2024-05-22 15:36:42 INSERT INTO time_table SUCCESS
2024-05-22 15:36:43 INSERT INTO time_table SUCCESS
2024-05-22 15:36:44 INSERT INTO time_table SUCCESS
2024-05-22 15:36:45 INSERT INTO time_table SUCCESS
2024-05-22 15:36:46 INSERT INTO time_table SUCCESS
2024-05-22 15:36:48 INSERT INTO time_table SUCCESS
2024-05-22 15:36:49 INSERT INTO time_table SUCCESS
2024-05-22 15:36:50 INSERT INTO time_table SUCCESS
2024-05-22 15:36:51 INSERT INTO time_table SUCCESS
2024-05-22 15:36:52 INSERT INTO time_table SUCCESS
2024-05-22 15:36:53 INSERT INTO time_table SUCCESS
```


正常写入

15. 直连2881端口登陆时间滞后的OBServer节点，确认能否查到数据

```
1 mysql -h10.186.64.163 -P2881 -uroot@mysql_ob -p'xxxxx' -Ac -Devan -e "select *
  from time_table order by time desc limit 5; select now();"
```

- 可以正常读取到新写入的数据

```
[root@10-186-64-163-observer3 ~]# mysql -h10.186.64.163 -P2881 -uroot@mysql_ob -p -Ac -Devan -e "select * from time_table order by time desc limit 5; select now();"
+----+-----+
| id | time                |
+----+-----+
| 7000713 | 2024-05-22 15:37:45 |
| 7000712 | 2024-05-22 15:37:44 |
| 7000711 | 2024-05-22 15:37:43 |
| 7000710 | 2024-05-22 15:37:42 |
| 7000709 | 2024-05-22 15:37:41 |
+----+-----+
now()
+-----+
| 2024-05-22 15:36:41 |
+-----+
```



16. 提取 observer.log、rootservice.log、election.log 并另存

17. 将时间回调正常

- 如何调整 OBServer 的操作系统时间: <https://www.oceanbase.com/knowledge-base/oceanbase-database-20000000070?back=kb>

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

18. primary_zone 回调

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
  ''zone1;zone2;zone3'';') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%';
```

场景二：将一台非RS节点OBServer系统时间调慢65s后，将所有租户leader切至落后的OBServer，进行集群合并

1. 确认集群RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
   __all_server where with_rootserver=1;
```

2. 将非RS节点：10.186.64.163 的主机系统时间与时钟源模拟产生65s延迟（落后时钟源65s）

```
1 systemctl stop ntpd
2 date && date --set="$(date -d '-65 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

3. 查看与时钟源的时间差

```
1 clockdiff 10.186.64.160
```

4. 将本集群所有租户 primary_zone 切至 zone3：10.186.64.163

- 含RS节点

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
   ''zone3;zone2;zone1'';') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%';
```

5. 确认优先级

```
1 select tenant_id,tenant_name,primary_zone,locality from __all_tenant;
```

6. 确认leader节点

```
1 select b.tenant_name,a.tenant_id,a.ls_id,a.zone,a.svr_ip,a.role from
   cdb_ob_table_locations a join __all_tenant b on a.tenant_id = b.tenant_id
   where role='LEADER' group by a.tenant_id;
```

7. 发起本集群所有租户合并(sys租户执行)

```
1 ALTER SYSTEM MAJOR FREEZE TENANT sys;
2 ALTER SYSTEM MAJOR FREEZE TENANT = all_user;
3 ALTER SYSTEM MAJOR FREEZE TENANT = all_meta;
```

8. 查看zone级别合并情况

```
1 select * from CDB_OB_ZONE_MAJOR_COMPACTION;
```

9. 将时间回调正常

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

后加步骤，截图略

10. primary_zone 回调

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
   'zone1;zone2;zone3'';') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%';
```

后加步骤，截图略

场景三：将一台非RS节点OBServer系统时间调慢65s后，将1个业务租户leader切至落后的OBServer，进行集群合并

1. 确认集群RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
   __all_server where with_rootserver=1;
```

2. 将非RS节点：10.186.64.163 的主机系统时间与时钟源模拟产生65s延迟（落后时钟源65s）

```
1 systemctl stop ntpd
2 date && date --set="$(date -d '-65 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

3. 查看与时钟源的时间差

```
1 clockdiff 10.186.64.160
```

4. 将1个业务租户 primary_zone 切至 zone3：10.186.64.163

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
   'zone3;zone2;zone1'';') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%'
   AND tenant_name != 'sys' limit 1;
```

5. 确认优先级

```
1 select tenant_id,tenant_name,primary_zone,locality from __all_tenant;
```

6. 确认leader节点

```
1 select b.tenant_name,a.tenant_id,a.ls_id,a.zone,a.svr_ip,a.role from  
  cdb_ob_table_locations a join __all_tenant b on a.tenant_id = b.tenant_id  
  where role='LEADER' group by a.tenant_id;
```

7. 发起本集群所有租户合并(sys租户执行)

```
1 ALTER SYSTEM MAJOR FREEZE TENANT sys;  
2 ALTER SYSTEM MAJOR FREEZE TENANT = all_user;  
3 ALTER SYSTEM MAJOR FREEZE TENANT = all_meta;
```

8. 查看zone级别合并情况

```
1 select * from CDB_OB_ZONE_MAJOR_COMPACTION;
```

9. 查看租户级别合并信息

```
1 select * from CDB_OB_MAJOR_COMPACTION;
```

- 只有mysql_ob租户合并成功，其他租户一直处于COMPACTING状态

10. 将时间回调正常

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

11. primary_zone 回调

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
   ''zone1;zone2;zone3'';') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%';
```

场景四：将一台非RS节点OBServer系统时间调慢65s后，将sys租户leader切至落后的OBServer，进行集群合并

1. 确认集群RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
   __all_server where with_rootserver=1;
```

2. 将非RS节点：10.186.64.163 的主机系统时间与时钟源模拟产生65s延迟（落后时钟源65s）

```
1 systemctl stop ntpd
2 date && date --set="$(date -d '-65 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

3. 查看与时钟源的时间差

```
1 clockdiff 10.186.64.160
```

4. 将sys租户 primary_zone 切至 zone3 : 10.186.64.163

- 即, 将RS切至 10.186.64.163

```
1 ALTER TENANT sys PRIMARY_ZONE = 'zone3;zone2;zone1';
```

5. 确认优先级

```
1 select tenant_id,tenant_name,primary_zone,locality from __all_tenant;
```

6. 确认leader节点

```
1 select b.tenant_name,a.tenant_id,a.ls_id,a.zone,a.svr_ip,a.role from  
   cdb_ob_table_locations a join __all_tenant b on a.tenant_id = b.tenant_id  
   where role='LEADER' group by a.tenant_id;
```

7. 发起本集群所有租户合并(sys租户执行)

```
1 ALTER SYSTEM MAJOR FREEZE TENANT sys;  
2 ALTER SYSTEM MAJOR FREEZE TENANT = all_user;  
3 ALTER SYSTEM MAJOR FREEZE TENANT = all_meta;
```

8. 查看zone级别合并情况

```
1 select * from CDB_OB_ZONE_MAJOR_COMPACTION;
```

9. 查看租户级别合并信息

- 只有sys租户合并成功，其他租户的zone3一直处于COMPACTING状态

```
1 select * from CDB_OB_MAJOR_COMPACTION;
```

10. 将时间回调正常

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

11. primary_zone 回调

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
   'zone1;zone2;zone3');') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%';
```

场景五：将RS节点时间直接调慢65s进行合并

1. 确认优先级

```
1 select tenant_id,tenant_name,primary_zone,locality from __all_tenant;
```

2. 确认leader节点

```
1 select b.tenant_name,a.tenant_id,a.ls_id,a.zone,a.svr_ip,a.role from
   cdb_ob_table_locations a join __all_tenant b on a.tenant_id = b.tenant_id
   where role='LEADER' group by a.tenant_id;
```

3. 确认集群RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
   __all_server where with_rootserver=1;
```

4. 将RS节点：10.186.64.161 的主机系统时间与时钟源模拟产生65s延迟（落后时钟源65s）

```
1 systemctl stop ntpd
2 date && date --set="$(date -d '-65 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

5. 查看与时钟源的时间差

```
1 clockdiff 10.186.64.160
```

6. 确认集群状态

```
1 select * from __all_server;
```

• 集群状态异常

7. 发起本集群所有租户合并(sys租户执行)

```
1 ALTER SYSTEM MAJOR FREEZE TENANT sys;
2 ALTER SYSTEM MAJOR FREEZE TENANT = all_user;
3 ALTER SYSTEM MAJOR FREEZE TENANT = all_meta;
```

8. 查看zone级别合并情况

```
1 select * from CDB_OB_ZONE_MAJOR_COMPACTION;
```

9. 查看租户级别合并信息

```
1 select * from CDB_OB_MAJOR_COMPACTION;
```

10. 将时间回调正常

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

11. primary_zone 回调

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
  ''zone1;zone2;zone3'';') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%';
```

六、将RS节点时间直接调慢20s进行合并

1. 确认优先级

```
1 select tenant_id,tenant_name,primary_zone,locality from __all_tenant;
```

2. 确认leader节点

```
1 select b.tenant_name,a.tenant_id,a.ls_id,a.zone,a.svr_ip,a.role from  
  cdb_ob_table_locations a join __all_tenant b on a.tenant_id = b.tenant_id  
  where role='LEADER' group by a.tenant_id;
```

3. 确认集群RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from  
  __all_server where with_rootserver=1;
```

4. 将RS节点：10.186.64.161 的主机系统时间与时钟源模拟产生20s延迟（落后时钟源20s）

```
1 systemctl stop ntpd  
2 date && date --set="$(date -d '-20 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

5. 查看与时钟源的时间差


```
1 clockdiff 10.186.64.160
```

6. 确认集群状态

```
1 select * from __all_server;
```

7. 查看insert数据脚本

8. 发起本集群所有租户合并(sys租户执行)

```
1 ALTER SYSTEM MAJOR FREEZE TENANT sys;  
2 ALTER SYSTEM MAJOR FREEZE TENANT = all_user;  
3 ALTER SYSTEM MAJOR FREEZE TENANT = all_meta;
```

9. 查看zone级别合并情况

```
1 select * from CDB_OB_ZONE_MAJOR_COMPACTION;
```

10. 查看租户级别合并信息

```
1 select * from CDB_OB_MAJOR_COMPACTION;
```

11. 将时间回调正常

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

12. primary_zone 回调

```
1 SELECT CONCAT('ALTER TENANT ', tenant_name, ' PRIMARY_ZONE =
   ''zone1;zone2;zone3'';') FROM __all_tenant WHERE tenant_name NOT LIKE '%META%';
```

七、RS所在OBServer系统时间-依次按秒-调慢测试

1. RS所在OBServer系统时间调慢2s

结论：集群状态正常

2. RS所在OBServer系统时间调慢3s

结论：集群状态正常

3. RS所在OBServer系统时间调慢4s

结论：集群状态正常

4. RS所在OBServer系统时间调慢5s

1. 查看RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
   __all_server where with_rootserver=1;
```

2. 将RS所在OBServer系统时间调慢5s

```
1 systemctl stop ntpd
2 date && date --set="$(date -d '-5 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

3. 查看insert脚本状态

4. 查看OBServer状态

```
1 select * from __all_server;
```

5. 查看RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
   __all_server where with_rootserver=1;
```

6. 查看OCP云平台告警

7. 时间回调正常

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

8. 查看OCP云平台告警

9. 结论：集群状态正常

5. RS所在OBSERVER系统时间调慢10s

1. 查看RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
   __all_server where with_rootserver=1;
```

2. 将RS所在OBSERVER系统时间调慢10s

```
1 systemctl stop ntpd
2 date && date --set="$(date -d '-10 seconds' +"%Y-%m-%d %H:%M:%S")" && date
```

3. 查看insert脚本状态

4. 查看OBServer状态

```
1 select * from __all_server;
```

5. 查看RS节点

```
1 select svr_ip,svr_port,zone,with_rootserver,status,build_version from
__all_server where with_rootserver=1;
```

6. 查看OCP云平台告警

7. 时间回调正常

```
1 systemctl stop ntpd
2 date && ntpdate 10.186.64.160 && date
3 systemctl start ntpd && systemctl status ntpd
4 clockdiff 10.186.64.160
```

8. 查看OCP云平台告警

9. 结论：集群状态正常