4.1. YTS - TCC

YTS RMTCC

1. YTS - TCC

2. TCC

2.1.

TCCTry - Confirm - Cancel

TryConfirm / Cancel

- Try
- Confirm
- Cancel

Tips: YTS TCC commit confirm cancel confirm

try confirm cancel confirm cancel cancel confirm

2.2.

A 100 30

Try: 检查余额，冻结其中的 30 元余额

| 账户A: | 冻结金额: 30 | 可用金额: 70 | 账户总金额: 100 |

Confirm: 扣除账户金额

| 账户A: | | 可用金额: 70 | 账户总金额: 70 |

Cancel: 解冻冻结金额 30 元

| 账户A: | 可用金额: 100 | 账户总金额: 100 |

B 0 30

Try: 空操作

账户B:	可用金额: 0	账户总金额: 0

Confirm: 增加金额 30 元

账户B:	可用金额: 30	账户总金额: 30

Cancel: 空操作

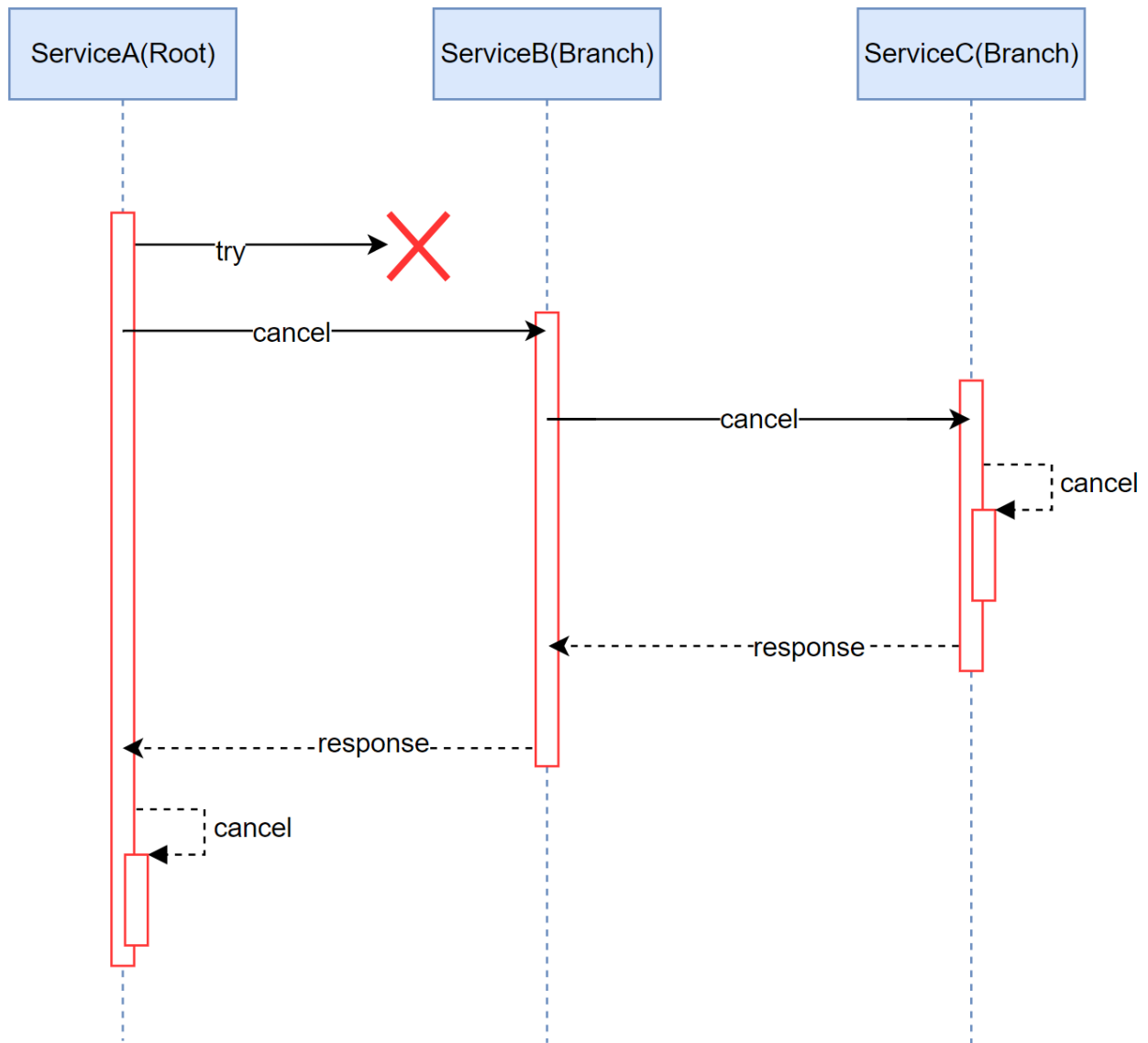| 账户B:	可用金额: 0	账户总金额: 0

3. TCC -

3.1.

3.1.1.

try cancel

- try
- cancel try cancel

YTS YTS Cancelconfirming || cancel_init || cancel_suspend

3.1.2.

confirm/cancel try

- try
- cancel cancel try

YTS YTS try
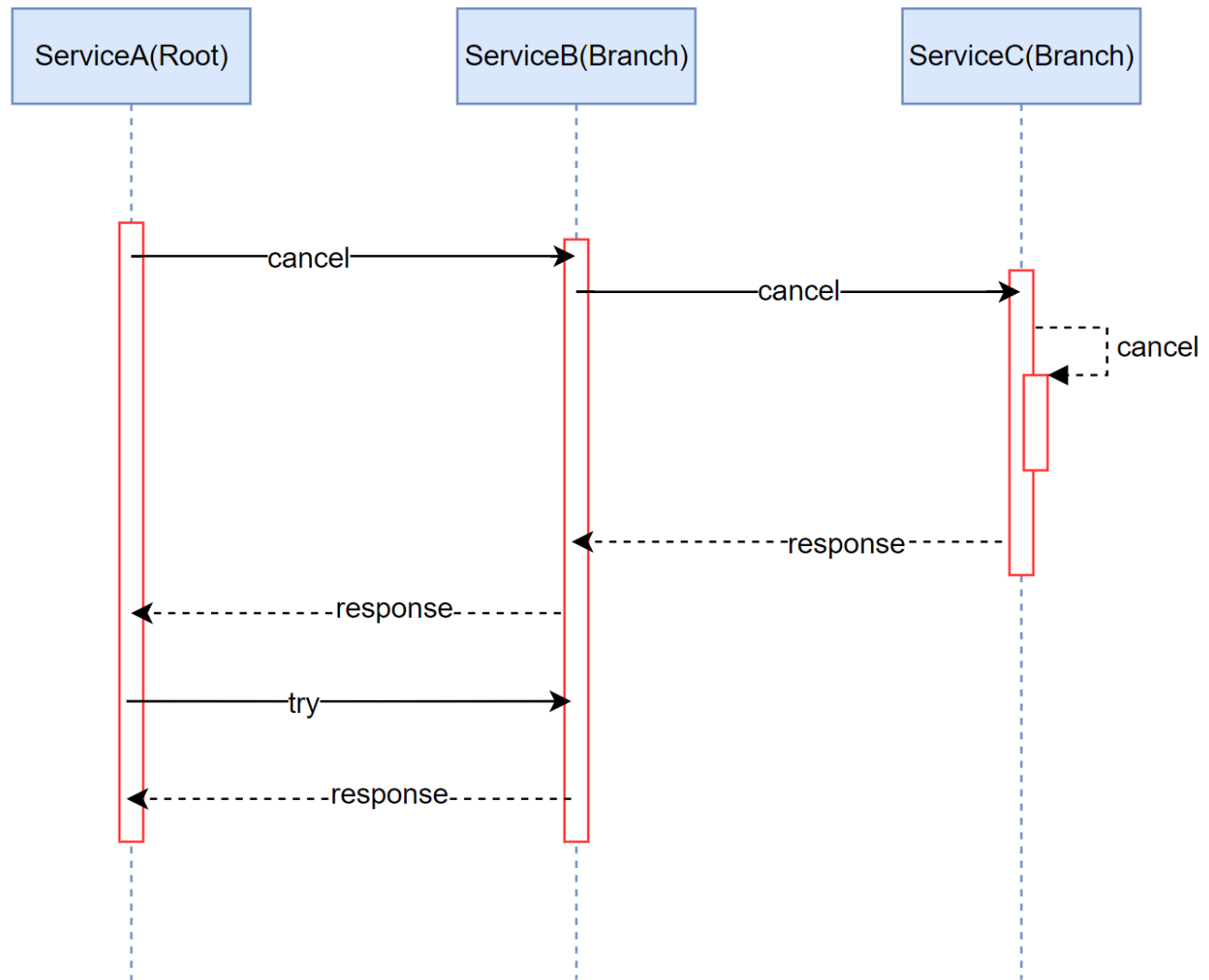
3.1.3.

- confirm/cancel
- try confirm/cancel

-
-

YTS

3.2.

3.2.1. - Try

try

1. try
2.

1. YTS yts_trans_datestatus = confirming
    a. "tx_id" unique_key
        i.
        ii. tx_id yts
    b. for update
        i. brief = null
            1.
        ii. "tx_id"
        iii.
    c.
        i. tips: YTS YTS

```mermaid
flowchart TD
    A([开始]) --> B[插入事务控制表记录]
    B --> C[查询事务控制表并加行级写锁: transBrief]
    C --> D{是否查询(加锁)成功}
    D -->|N| E[抛出异常, 终止一阶段]
    D -->|Y| F{transBrief != null ?}
    F -->|N| G[抛出异常, 终止一阶段]
    F -->|Y| H[执行一阶段业务]
    H --> I([结束])
    E --> I
    G --> I
```
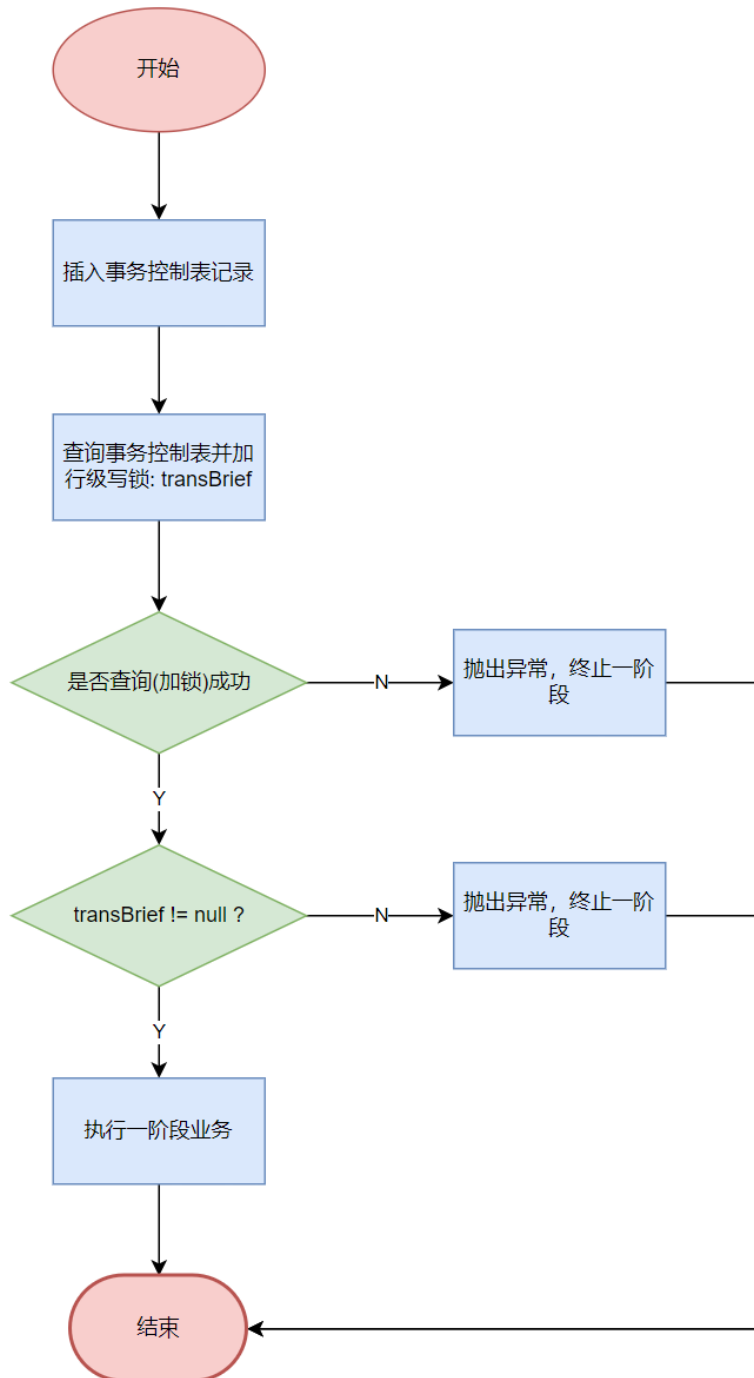
3.2.2. - Confirm

confirm

1. confirm try
2. confirm
3.

1. status = cancel_init cancel_init
   a.
      i. confirm try
   b. YTS
      i. "tx_id"
2.
   a.
   b.
      i.
      ii. confirm try
3. transactionBrief
   a. brief confirmed || cancel_success
      i. confirm
   b. brief try_success || confirm_error
      i. confirm try
      ii. confirm_error confirm
4. confirm yts_rel_date
   a. confirm
      i. confirm_error
      ii.
   b. confirm confirm confirm

```
                        ┌─────────────┐
                        │    开始      │
                        └─────────────┘
                               │
                               ▼
                    ┌─────────────────────┐
                    │  更新事务控制表的记      │
                    │  录的状态: cancel_init  │
                    └─────────────────────┘
                               │
                               ▼
                    ┌─────────────────────┐
                    │  查询事务控制表并加      │
                    │  行级写锁: transBrief   │
                    └─────────────────────┘
                               │
                               ▼
                        ◇ 是否查询(加锁)成功 ◇ ──N──→ ┌─────────────────┐
                                                      │  抛出异常，终止二阶  │
                               │                      │  段               │
                               Y                      └─────────────────┘
                               ▼
                        ◇ transBrief == null ？◇ ──N──→ ┌─────────────────┐
                                                         │  抛出异常，终止二阶  │
                               │                         │  段               │
                               Y                         └─────────────────┘
                               ▼
                        ◇ brief 状态为:          ◇ ──Y──→ ┌─────────────────┐
                          已完成二阶段的确认或已回              │  直接返回成功      │
                          滚?                                └─────────────────┘
                               │
                               N
                               ▼
                        ◇ try_succeuss ||     ◇ ──N──→ ┌─────────────────┐
                          confirm_error?                │  直接返回失败      │
                                                        └─────────────────┘
                               │
                               Y
                               ▼
                    ┌─────────────────────┐
                    │  将当前节点所有子事       │
                    │  务进行 confirm         │
                    └─────────────────────┘
```
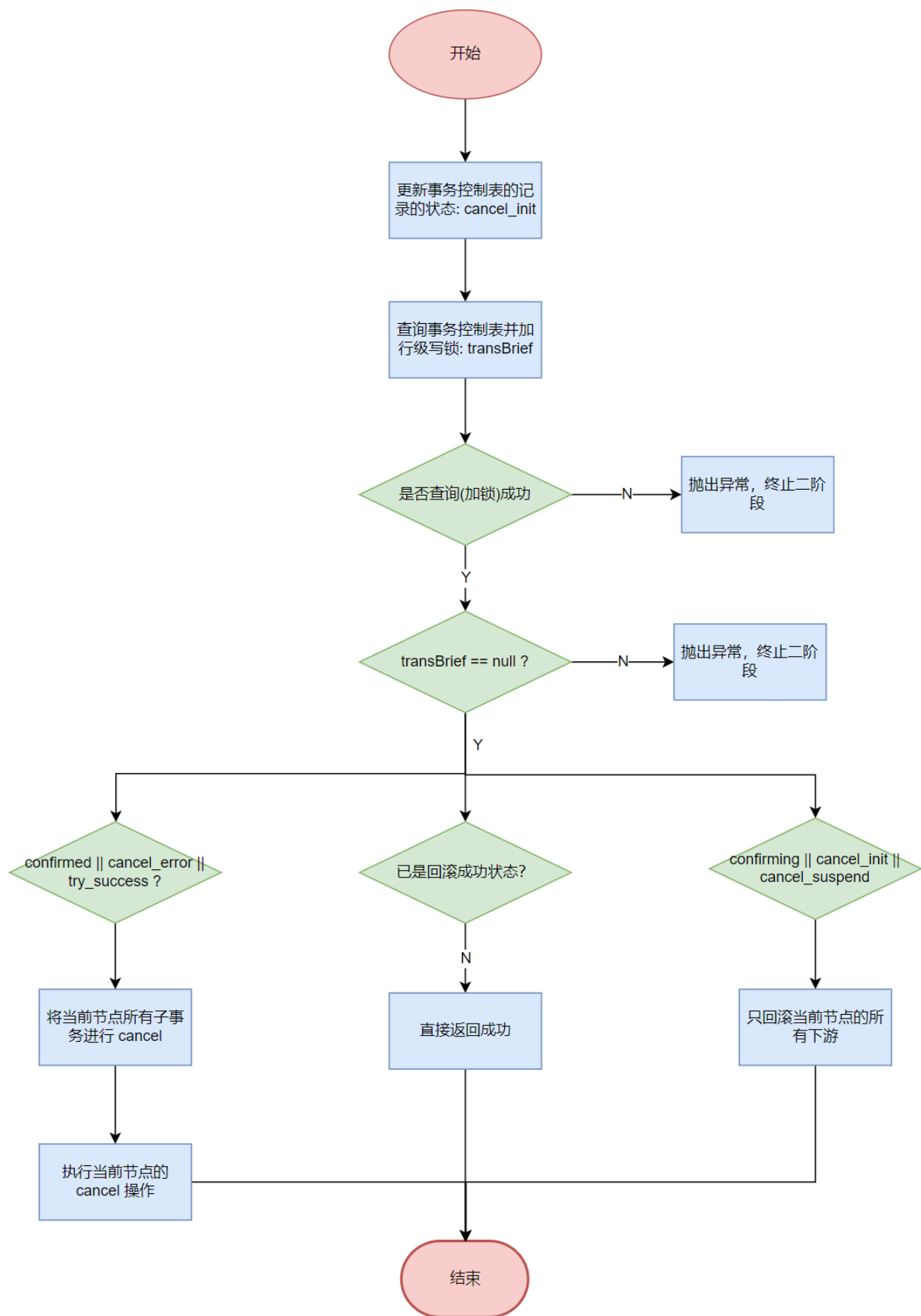
执行当前节点的
confirm 操作

结束
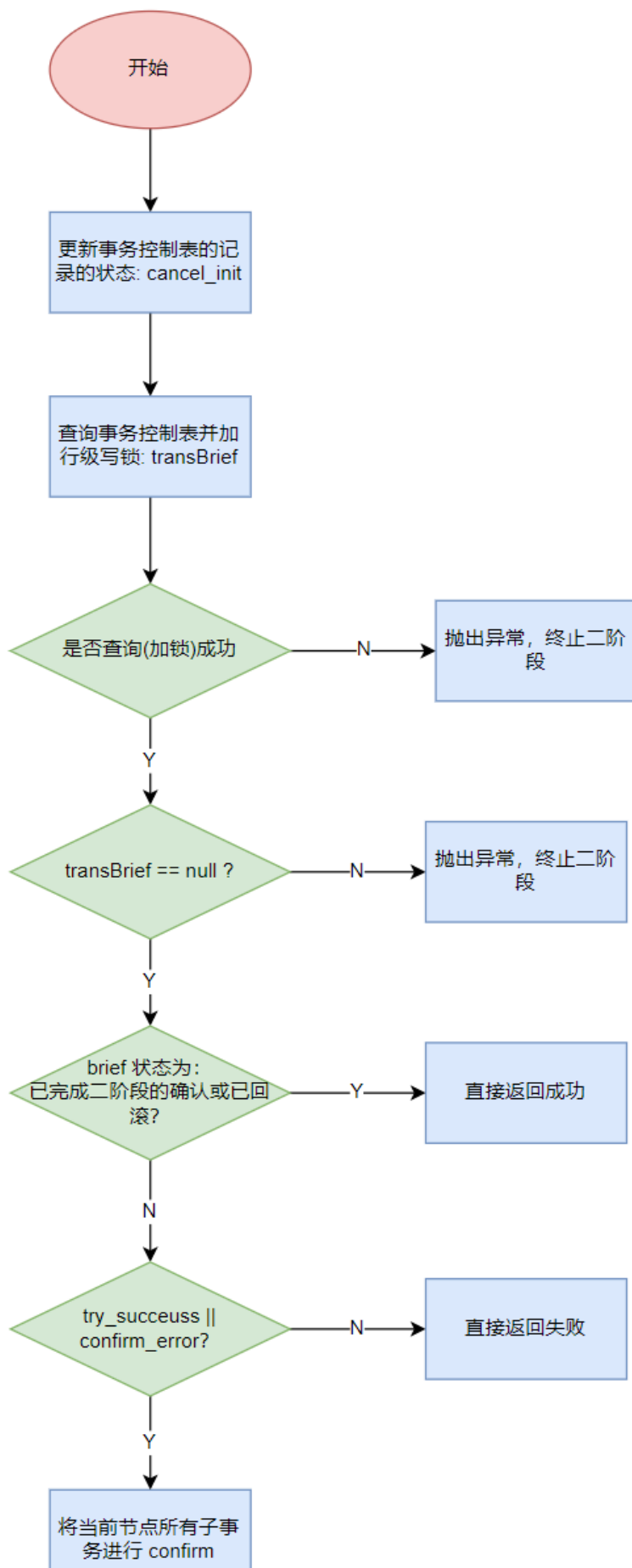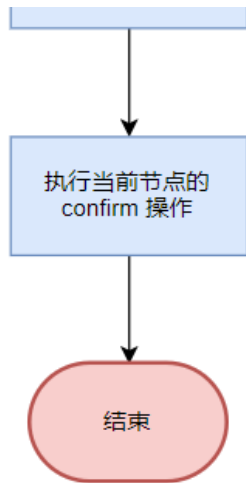
3.2.3. - Cancel

confirm

1. cancel try cancel cancel try cancel
2.

cancel try cancel cancel_init

1. status = cancel_init
   a. "tx_id"
   b. YTS
2.
   a.
   b.
      i.
      ii. confirm try
   c. brief
      i.
         1. || || || !tableExists || confirmed || cancel_error || try_success
            a.
               i. A 45 B 15 16 B
                  1.
                  2.
            b. TCC cancel confirmed cancel confirm confirm confirmed
      ii.
         1. || || confirming || cancel_init || cancel_suspend
            a.
      iii.
         1. cancel_success

```mermaid
flowchart TD
    开始 --> A[更新事务控制表的记录的状态: cancel_init]
    A --> B[查询事务控制表并加行级写锁: transBrief]
    B --> C{是否查询(加锁)成功}
    C -->|N| D[抛出异常，终止二阶段]
    C -->|Y| E{transBrief == null ?}
    E -->|N| F[抛出异常，终止二阶段]
    E -->|Y| G{confirmed || cancel_error || try_success ?}
    E -->|Y| H{已是回滚成功状态?}
    E -->|Y| I{confirming || cancel_init || cancel_suspend}
    G --> J[将当前节点所有子事务进行 cancel]
    H -->|N| K[直接返回成功]
    I --> L[只回滚当前节点的所有下游]
    J --> M[执行当前节点的 cancel 操作]
    M --> 结束
    K --> 结束
    L --> 结束
```

开始

更新事务控制表的记录的状态: cancel_init

查询事务控制表并加行级写锁: transBrief

是否查询(加锁)成功

N → 抛出异常，终止二阶段

Y

transBrief == null ?

N → 抛出异常，终止二阶段

Y

confirmed || cancel_error || try_success ?

已是回滚成功状态?

confirming || cancel_init || cancel_suspend

将当前节点所有子事务进行 cancel

N

直接返回成功

只回滚当前节点的所有下游

执行当前节点的 cancel 操作

结束

3.2.4. YTS

1. YTS
2. tryconfirm/cancel
   a. status
   b.
   c.

4. YTS

4.1.

TransactionHook

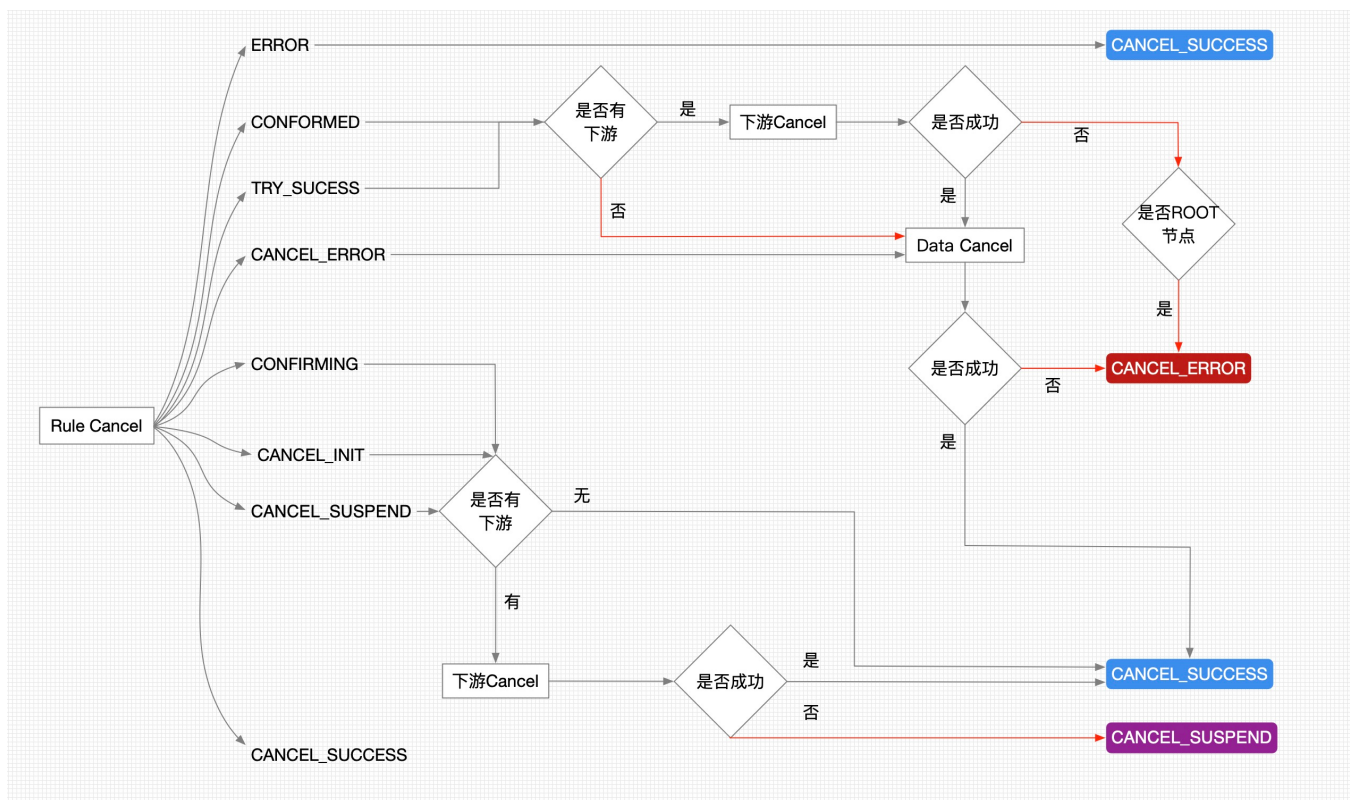ConfirmHook

ActionHook

4.2.

4.2.1.

-
-

- **confirming**:
  - YTS confirming
  -
    - try confirming
  -
    - confirming
      - try try cancel
        - cancel try
        - confirm YTS try
- **try_success**:
- **confirmed**: confirm
  - tcc sagas
    - tcc confirm confirmed cancel

- **cancel_init**: confirm/canceltry cancel_init
- **cancel_suspend**: cancel
  - cancel_init/confirming cancel_suspend ActionHook#afterCompletion , cancel cancel_suspend
  - cancel cancel
  - Sagas cancel_suspend ?
- **cancel_error**:
  -
  - cancel cancel_error
- **cancel_success**:

5. yts_trans yts_rel