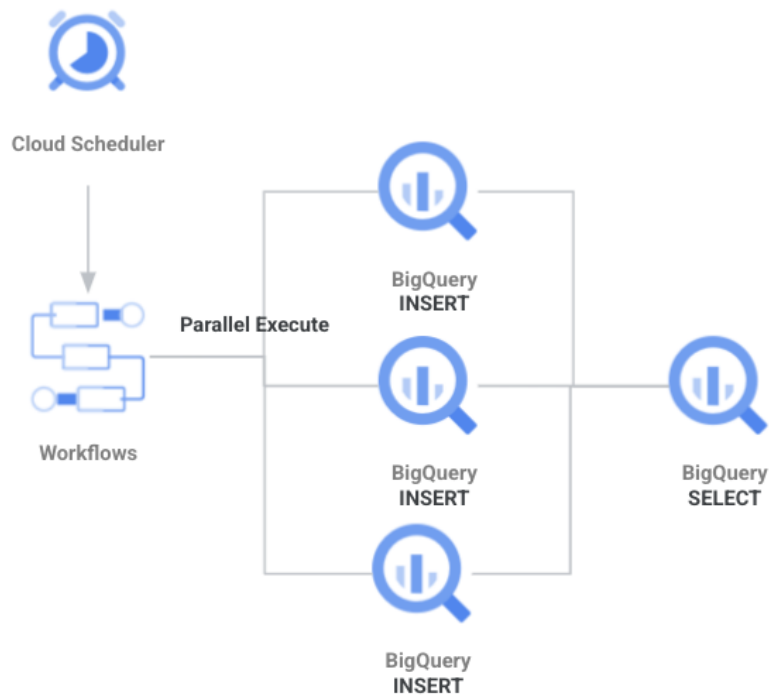# 1.架构图

由Workflow调用几个并行的BQ query，最后再执行一个BQ query

2.workflow Demo

- 主workflow, 并发调用sub workflow(通过`experimental.executions.map`)

```
# para2.workflows.yaml
main:
  steps:
  - parallel-executor:
      call: experimental.executions.map
      args:
        workflow_id: test-insert2
        # arguments: [{"key1":1},{"key1":2},{"key1":3}]
        arguments: [{"key1":1},{"key1":3}]
      result: result
  - logStep:
```

```
      call: sys.log
      args:
        text: ${result}
        severity: INFO
  - returnOutput:
        return: ${result}
```

- Subworkflow,
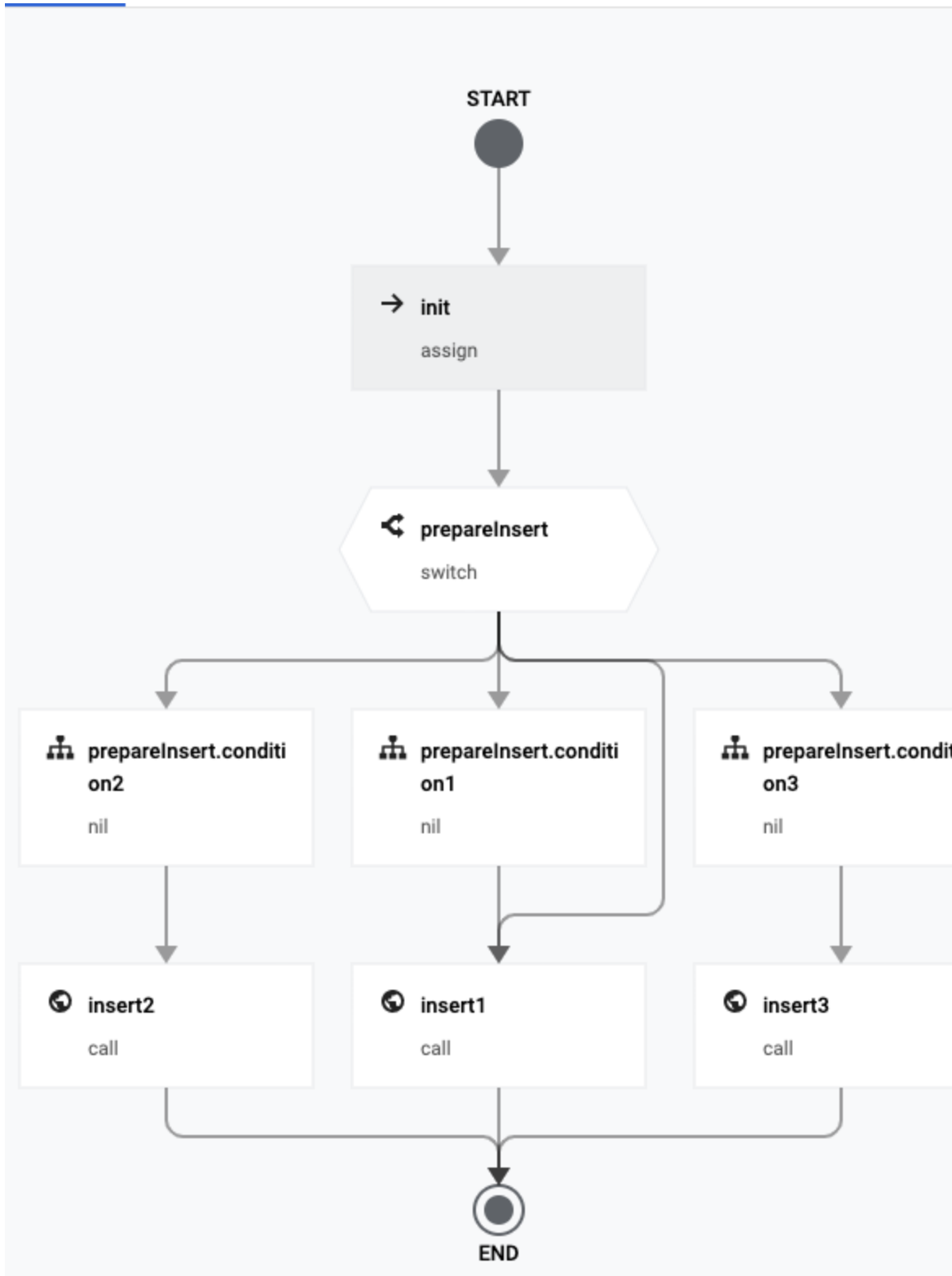
```
# long run insert with parameter
# insert2.workflows.yaml
main:
  params: [args]
  steps:
    - init:
        assign:
        - project_id: ${sys.get_env("GOOGLE_CLOUD_PROJECT_ID")}
        - dataset_id: "ds201"
        - table_id: "mobilelog2"
    - prepareInsert:
        switch:
          - condition: ${args.key1 == 1}
            next: insert1
          - condition: ${args.key1 == 2}
            next: insert2
          - condition: ${args.key1 == 3}
            next: insert3
    - insert1:
        call: googleapis.bigquery.v2.jobs.insert
        args:
          projectId: ${project_id}
          body:
            configuration:
              query:
                query: "INSERT INTO cliu201.ds201.mobilelog2 (id, price, product)
VALUES ('1','1','1')"
                allowLargeResults: true
                useLegacySql: false
        next: end

    - insert2:
        call: googleapis.bigquery.v2.jobs.insert
        args:
          projectId: ${project_id}
          body:
            configuration:
```

```
            query:
                query: "INSERT INTO cliu201.ds201.mobilelog2 (id, price, product)
VALUES  ('2','2','2')"
                allowLargeResults: true
                useLegacySql: false
        next: end

    - insert3:
        call: googleapis.bigquery.v2.jobs.insert
        args:
          projectId: ${project_id}
          body:
            configuration:
                query:
                    query: "INSERT INTO cliu201.ds201.mobilelog2 (id, price, product)
VALUES  ('3','3','3')"
                    allowLargeResults: true
                    useLegacySql: false
        next: end
```

START

init
assign

prepareInsert
switch

prepareInsert.conditi on2
nil

prepareInsert.conditi on1
nil

prepareInsert.condit on3
nil

insert2
call

insert1
call

insert3
call

END

```
gcloud workflows deploy --source=./insert2.workflows.yaml --location=us-central1
test-insert2
```

```
gcloud workflows deploy --source=./para2.workflows.yaml --location=us-central1
para2
gcloud workflows run para2
```

Configure the job's target

Target type *

HTTP ▼

URL *

https://workflowexecutions.googleapis.com/v1/projects/cliu201/locations/us-

HTTP method

POST ▼

HTTP headers

Some headers are set to default values or removed by Cloud Scheduler. Learn more

Name *

User-Agent

Value

Google-Cloud-Scheduler

+ ADD A HEADER

Body

Auth header

Add OAuth token ▼

Service account *

cliu201-sa@cliu201.iam.gserviceaccount.com

Scope

https://www.googleapis.com/auth/cloud-platform

CONTINUE

具体可以参考:
https://github.com/liuchenggang2014/wordlfow-bq

3.Cloud Scheduler 配置

Workflow executions api:
https://cloud.google.com/workflows/docs/reference/executions/rest/v1/projects.locations.workflows.executions/create

Scope:
https://www.googleapis.com/auth/cloud-platform

URLs:
https://workflowexecutions.googleapis.com/v1/projects/cliu201/locations/us-central1/workflows/para2/executions

Cliu201: projectid
Para2: workflow name

4.报价体系

https://cloud.google.com/workflows/pricing

Resource	Price per month
Internal steps	
First 5,000 steps	Free
Steps after 5,000	$0.01 per increment of 1,000 steps
External steps	
First 2,000 steps	Free
Steps after 2,000	$0.025 per increment of 1,000 steps

参考文档:

[Parallel executions with Google Workflows | by guillaume blaquiere | Google Cloud - Community](#)`experimental.executions.map`