Rover Tutorial

Presented by Zhijie Ji

Get Started

Step1: Create new database

rover init-repository [name]

Step2: Download data (should run under the database dir)

rover retrieve [nwk]_[st]_[loc]_[ch] [start] [end]

Step3: Check integrity (should run under the database dir)

rover list-retrieve [nwk]_[st]_[loc]_[ch] [start] [end]

What is inside Database

- Config
- Data (obspydata, and sqlite)
- Log
- temp

What is inside the timeseries.sqlite

- Code:

```
cd /scratch/tolugboj_lab/Prj10_DeepLrningEq/9_DanielSequencer/3_src/obspy_batch/1C/1C-AKWI/datarepo/data
sqlite3 timeseries.sqlite
.table
.header on
select * from tsindex limit 1
select * from tsindex_summary;
```

Data migration

Problem: root path of the database is different, so rover do not know where is our new database

Solution1: change all the root path in timeseries.sqlite and config

Solution2: Linkage, redirect the fake dir to our new root path

Data migration -- linkage

sudo mkdir -p /gpfs/fs2/scratch/tolugboj_lab/Prj10_DeepLrningEq/9_DanielSequencer/3_src/

sudo chown zji:zji /gpfs/fs2/scratch/tolugboj_lab/Prj10_DeepLrningEq/9_DanielSequencer/3_src/

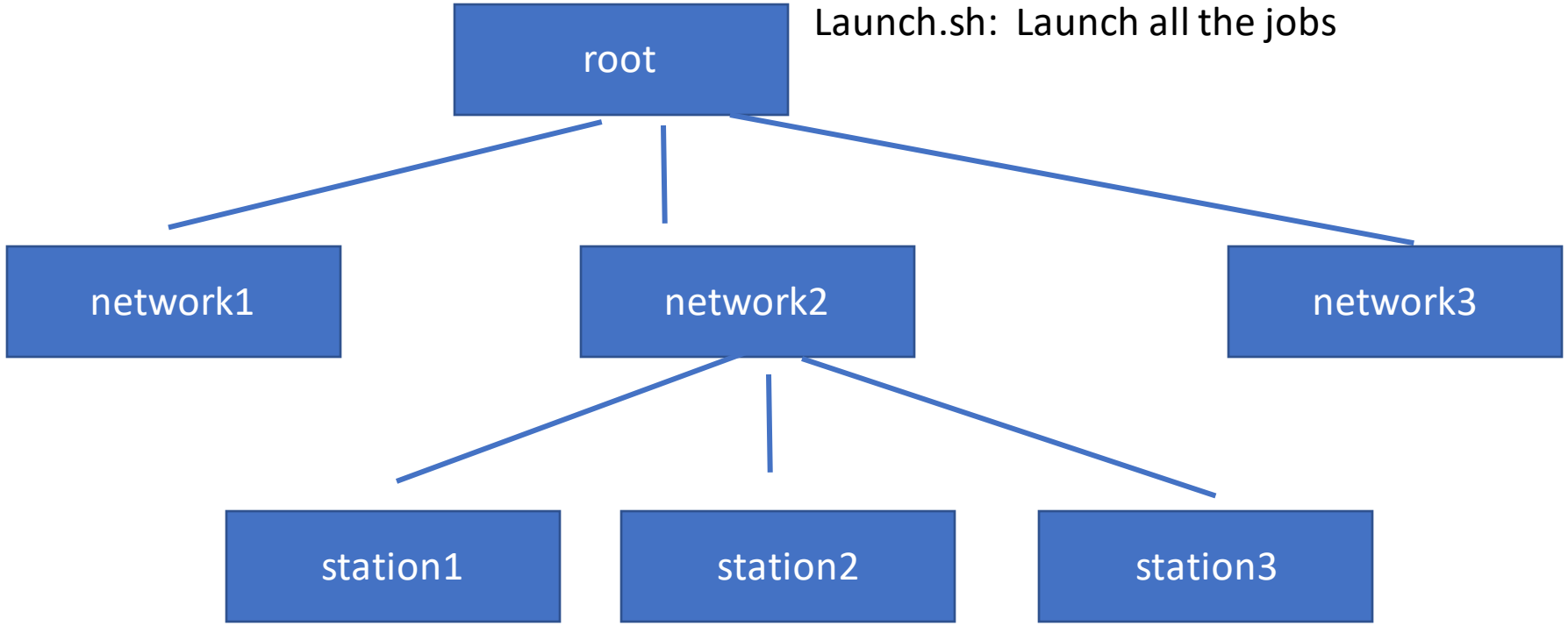
cd /gpfs/fs2/scratch/tolugboj_lab/Prj10_DeepLrningEq/9_DanielSequencer/3_src/

ln -s /RAID6/obspy_data obspy_batch

My code

- Batch_rover.py
  - Generate single job for each station
- Sum_res.py
  - Generate meta data
- Integrity_check.py
  - Check if the database fully synchronized with the IRIS server
- Email.sh
  - Send mail when it finishes downloading

Structure of Our Database

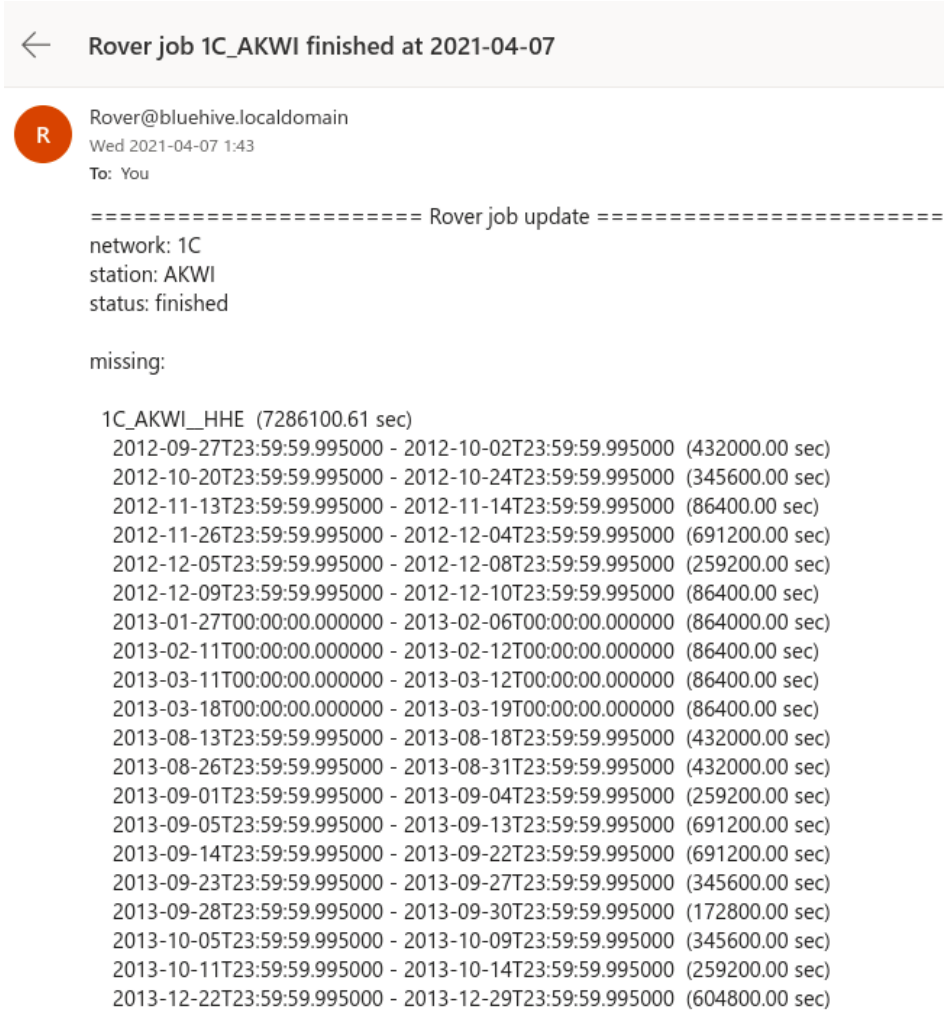


Script to launch a single job which will an independent database under this folder

One single job

- Create database
- Download data
- Create meta data
- Intergity check
- Send email

Email Function



Rover job 1C_AKWI finished at 2021-04-07

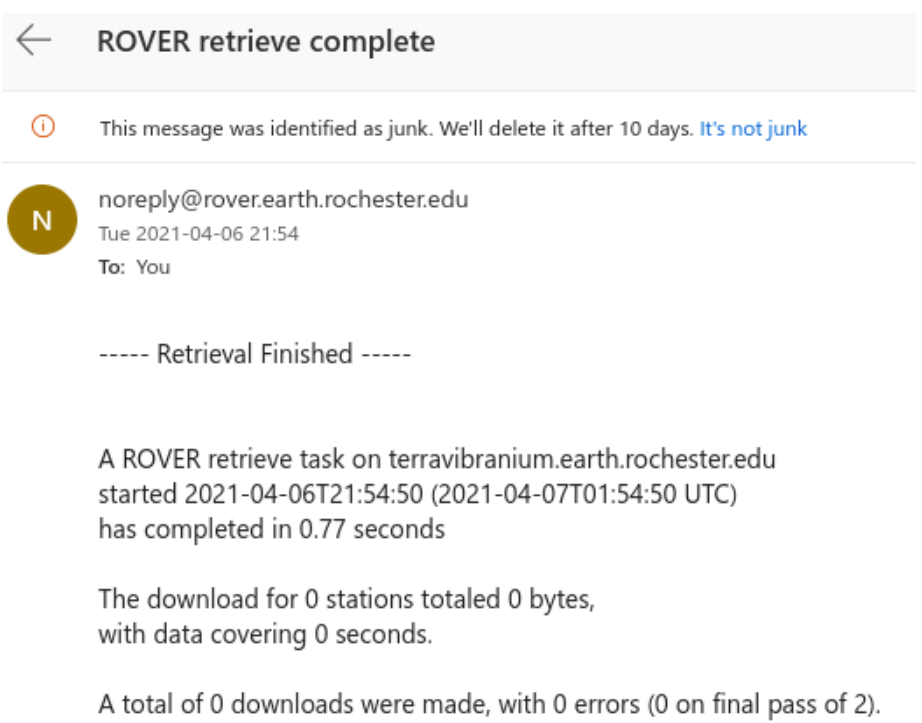
R

Rover@bluehive.localdomain
Wed 2021-04-07 1:43
To: You

========== Rover job update ==========
network: 1C
station: AKWI
status: finished

missing:

1C_AKWI__HHE (7286100.61 sec)
2012-09-27T23:59:59.995000 - 2012-10-02T23:59:59.995000 (432000.00 sec)
2012-10-20T23:59:59.995000 - 2012-10-24T23:59:59.995000 (345600.00 sec)
2012-11-13T23:59:59.995000 - 2012-11-14T23:59:59.995000 (86400.00 sec)
2012-11-26T23:59:59.995000 - 2012-12-04T23:59:59.995000 (691200.00 sec)
2012-12-05T23:59:59.995000 - 2012-12-08T23:59:59.995000 (259200.00 sec)
2012-12-09T23:59:59.995000 - 2012-12-10T23:59:59.995000 (86400.00 sec)
2013-01-27T00:00:00.000000 - 2013-02-06T00:00:00.000000 (864000.00 sec)
2013-02-11T00:00:00.000000 - 2013-02-12T00:00:00.000000 (86400.00 sec)
2013-03-11T00:00:00.000000 - 2013-03-12T00:00:00.000000 (86400.00 sec)
2013-03-18T00:00:00.000000 - 2013-03-19T00:00:00.000000 (86400.00 sec)
2013-08-13T23:59:59.995000 - 2013-08-18T23:59:59.995000 (432000.00 sec)
2013-08-26T23:59:59.995000 - 2013-08-31T23:59:59.995000 (432000.00 sec)
2013-09-01T23:59:59.995000 - 2013-09-04T23:59:59.995000 (259200.00 sec)
2013-09-05T23:59:59.995000 - 2013-09-13T23:59:59.995000 (691200.00 sec)
2013-09-14T23:59:59.995000 - 2013-09-22T23:59:59.995000 (691200.00 sec)
2013-09-23T23:59:59.995000 - 2013-09-27T23:59:59.995000 (345600.00 sec)
2013-09-28T23:59:59.995000 - 2013-09-30T23:59:59.995000 (172800.00 sec)
2013-10-05T23:59:59.995000 - 2013-10-09T23:59:59.995000 (345600.00 sec)
2013-10-11T23:59:59.995000 - 2013-10-14T23:59:59.995000 (259200.00 sec)
2013-12-22T23:59:59.995000 - 2013-12-29T23:59:59.995000 (604800.00 sec)



ROVER retrieve complete

This message was identified as junk. We'll delete it after 10 days. It's not junk

N

noreply@rover.earth.rochester.edu
Tue 2021-04-06 21:54
To: You

----- Retrieval Finished -----

A ROVER retrieve task on terravibranium.earth.rochester.edu
started 2021-04-06T21:54:50 (2021-04-07T01:54:50 UTC)
has completed in 0.77 seconds

The download for 0 stations totaled 0 bytes,
with data covering 0 seconds.

A total of 0 downloads were made, with 0 errors (0 on final pass of 2).

How to use my code

- Set the config to make sure those arguments are what you want
- Run batch_rover.py
- Go to root path of database and run ./launch

Environment setup in Terravibranium

What I did:

Yum install python3.6 which is accessible to every user

What I did NOT do:

Install all package in /bin which can be accessible to every user

Virtual Environment setup

Create:
python3 -m venv [dir]

Activate:
source ~/[dir]/bin/activate

Install:
Pip3 install

Close:
deactivate