



# Development of Monitoring and Analysis Tools for The Huawei Cloud Storage System

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# Huawei Cloud Storage

- **Two Huawei Storage Systems (UDS1 and UDS2).**
- **Goals:**
  1. **General Huawei Cloud Storage Monitoring.**
  2. **Parallelization of file-listing script.**
  3. **Huawei Cloud Storage Nodes Analysis.**  
**(Future Work)**
- **Problem Statement:**
  1. **Monitoring for UDS1 only. Scripts incompatible with UDS2.**
  2. **Slow script for monitoring files stored on UDS1.**
  3. **Cloud storage information, e.g. Disk usage, not available**



UDS1

384 disks,  
2TB each  
7 front-end  
nodes

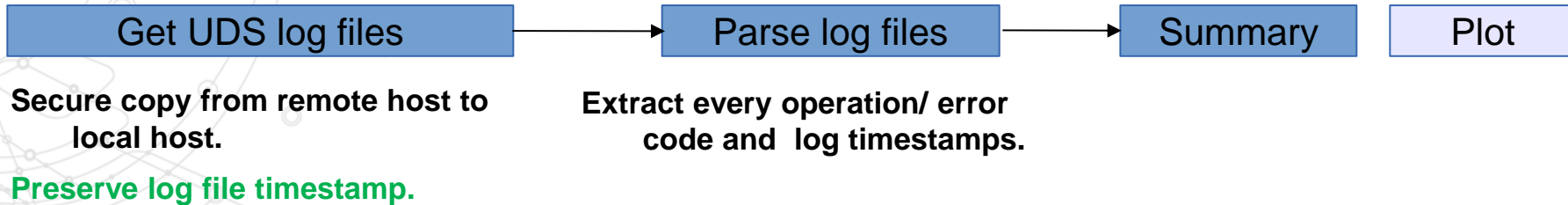


UDS2

300 disks,  
4TB each  
4 front-end  
nodes

# 1. General Huawei Cloud Storage Monitoring

- › **General Monitoring System for both cloud storages :**
  - 1. Configuration files per cloud storage.**
  - 2. General Script implementation for retrieving logs.**
  - 3. General Analysis script.**
  - 4. General Plotting.**



# 1. General Huawei Cloud Storage Monitoring

Monitored Range

```
Summary of 10.40.132.*.obs.access.log file.
All range: '01/Jan/1970 01:00:00' and '18/Aug/2014 08:58:43' (1408345123 seconds
).
Req range: '18/Aug/2014 05:58:43' and '18/Aug/2014 08:58:43' (10800 seconds).

Number of... Front end node...
#1 #2 #3 #4 =SUM
Total in range: 1161 1166 404 402 =3133
REST.GET.BUCKET 796 799 400 399 =2394
REST.GET.OBJECT 361 360 0 0 =721
REST.GET.SERVICE 4 7 4 3 =18
Unclassified: 0 0 0 0 =0
Old entries: 13494 6711 17843 9917 =9917
```

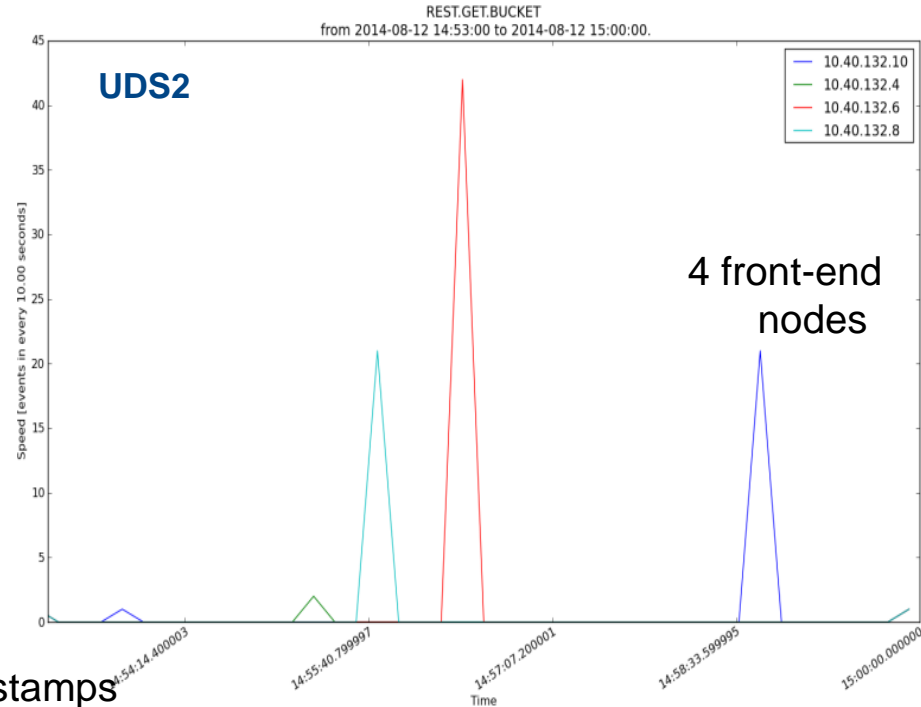
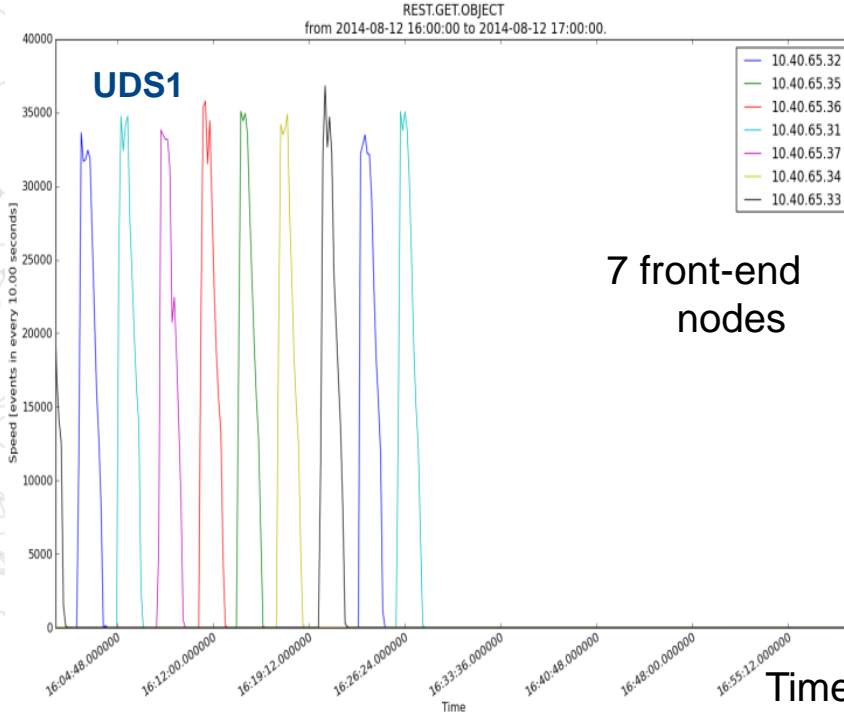
Events

Example Summary for UDS2

# 1. General Huawei Cloud Storage Monitoring

Monitored event & Interval

Speed (events every 10 sec)



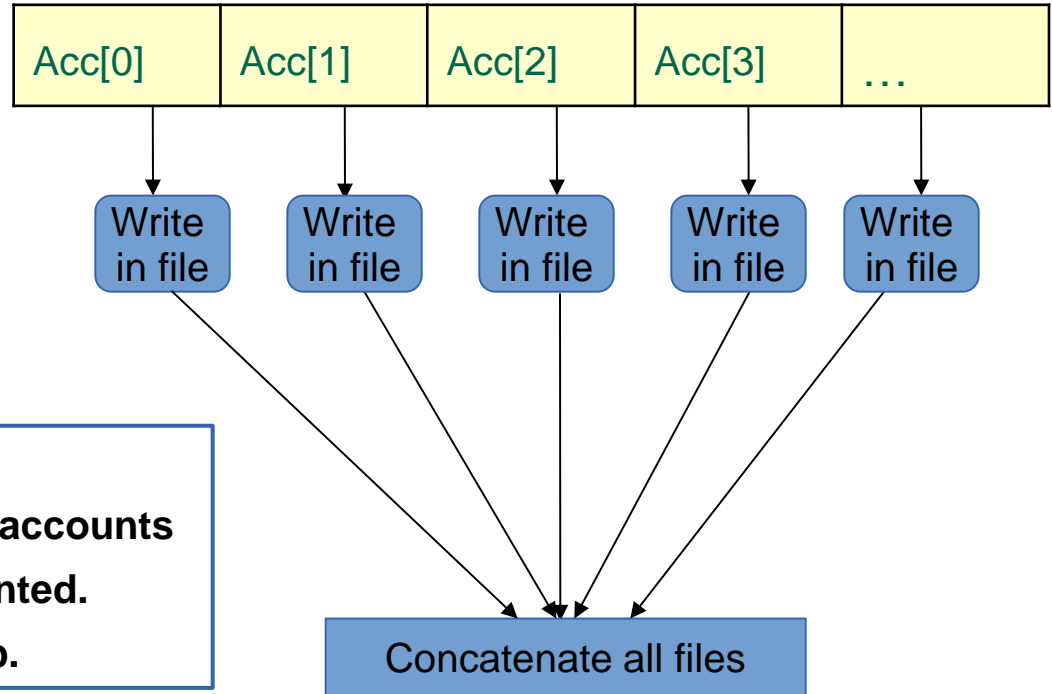
## 2. Parallelization of file-listing script

- > Script to list all files of user account.
- > Existing script too slow (1 thread).
- > Approach 1: One thread per user account to list all buckets and files.
- > Approach 2: Further parallelization. Several threads per account. Use a pool of threads.

### Results

Approach 1: **Speedup = 1.5** for 5 user accounts

Approach 2: Currently being implemented.  
Expected higher speedup.



## Future Work

- › **Huawei cloud storage node analysis. Collect data like CPU and disk usage from storage nodes.**
- › **File-listing script further parallelization (2<sup>nd</sup> approach).**

# Thank You