Pilot Log Anonymization in GlideinMonitor

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Introduction

GlideinWMS is a pilot-based resource provisioning tool for distributed High Throughput Computing

- Provides reliable and uniform virtual clusters to run scientific computations (analysis, simulations, reconstructions etc.)
- Provisions computers from many sources (local clusters, Grid, Cloud, Supercomputers)

GlideinMonitor

- Web application to view GlideinWMS's log files
- User interface tool
- Useful for searches and decoding log content
- Contains an efficient, managed archive of log files

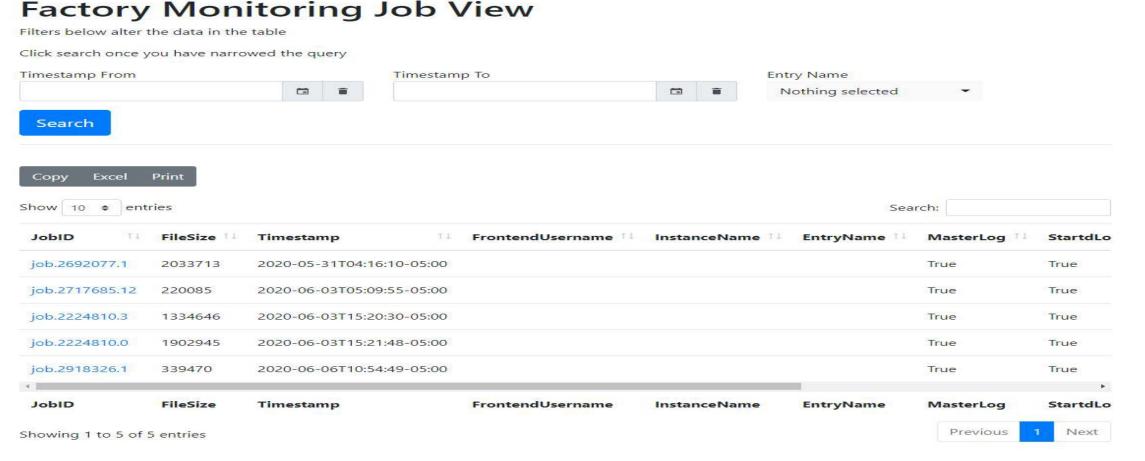


Figure 1 – GlideinMonitor Homescreen

Problem

Log files contain sensitive information that makes the logs less secure and decreases the ease of distribution amongst developers.

Objective

Create a script that:

- Locates the job submitter's IP Address
- Locates any identifiers of the job submitter
- •Filters those values with non-identifiable information

In order to:

- Protect User Information
- Allow easier distribution to developers

Methods

Identified what the personal information was and then cross-referenced files to ensure there was a consistent reference for this information in order to search and retrieve it.

```
def findEmail(filename): #CONDOR SPECIFIC finds and returns user email (before @symbol)
  with open(filename, 'rb', 0) as file, \
      mmap.mmap(file.fileno(), 0, access=mmap.ACCESS READ) as s:
      if s.find(b'x509UserProxyEmail') != -1:
          x = s.find(b'x509UserProxyEmail')
          end = s.find(b'@',x)
          lis = (((s[x: end].split(b'='))[1].decode("utf-8")).replace('"', '')).replace(' ',
```

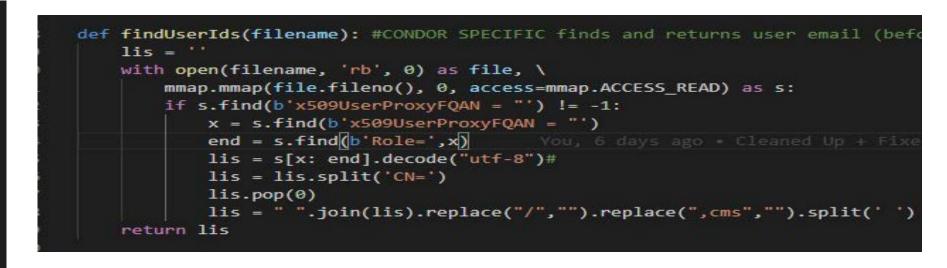


Figure 2 – Email Identifier Script

Figure 3 – User Information Identifier Script

Created a method to replace this information and followed software engineering standards: added docstrings and unit tests to insure clarity and quality



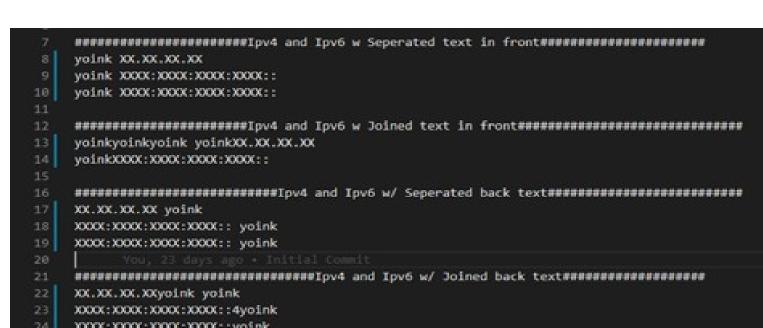


You, a few seconds ago | 1 author (You) class TestFilter(unittest.TestCase): def test_glidein(self): #Glidein Logs file1 = "regular_logs/overall_test_in.txt" user_ids2 = findGlideinUserIDs(file1) cleanGlidein(file1) file = open(file1, "r", encoding="utf8") line = file.read() file.close() self.assertNotRegex(line, IP_REGEX[0]) self.assertNotRegex(line, IP_REGEX[1]) self.assertNotRegex(line, rf"{user_ids2[0]}[\w \W]{user_ids2[1]}") for x in range(0, len(user_ids2)): self.assertFalse(line.find(user_ids2[x]) != -1)

Figure 5 – Glidein Unit Test

Results

- Filtered logs contain no personal identifiers
- Script tested individually
- Script integrated into GlideinMonitor and included in RPM release





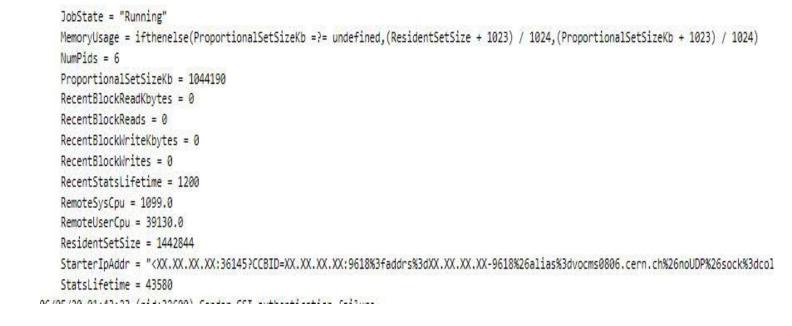


Figure 7 – Filtered IP Address in Log File

```
CRAB_SubmitterIpAddr = "XXXX:XXXX:XXXX:127"
CRAB_TaskEndTime = 1593944968
CRAB_TaskLifetimeDays = 30
CRAB_TaskWorker = "crab-prod-tw02"
CRAB_TFileOutputFiles = {
CRAB_TransferOutputs = 1
CRAB_UserDN = "/DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=USER/CN=USER/CN=USER USER"
CRAB_UserGroup = undefined
CRAB_UserHN = "USER"
```

Figure 8 – Filtered User Identifiers in Log File

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