

# MongoNAS

HPC Academy 2019

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# The MongoNAS Team



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# Overview

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- The Old Way
- The Problem
- The Solution!
- Under The Hood
- Demo
- The Future



# The Old Way

- SSH to Net App filer and use bash to produce user storage information
- Perl Script to make data human readable
- Data pulled from text files into web-app interfaces



# The Problem

- Lots of parts leads to a lot of possible failure points
- Data is not in a single regularly updated location
- Data has minimal structure and lacks depth
- Difficult to query
- Text files are not easily transferred to the web

```
du -h --max-depth=1 /collab/usr/gapps/ | sort -nr | head -n 100
```

File	Size
/collab/usr/gapps/python:lee1001:2.50GB:2160:96GB	2160:96GB
/collab/usr/gapps/python:lee218:84.04GB:2203785:96GB	2203785:96GB
/collab/usr/gapps/python:qtrees:Name:96GB	96GB
/collab/usr/gapps/python:taylor:4KB:1:96GB	4KB:1:96GB
/collab/usr/gapps/roguewave:38451:08:1:10GB	38451:08:1:10GB
/collab/usr/gapps/roguewave:ALL:08:n/a:10GB	ALL:08:n/a:10GB
/collab/usr/gapps/roguewave:duh1:08:2:10GB	duh1:08:2:10GB
/collab/usr/gapps/samrai:ALL:3.71GB:n/a:10GB	ALL:3.71GB:n/a:10GB
/collab/usr/gapps/samrai:rwa:2.80GB:88683:10GB	2.80GB:88683:10GB
/collab/usr/gapps/samrai:ukbeck:934.5MB:57758:10GB	934.5MB:57758:10GB
/collab/usr/gapps/shroud:ALL:153.0MB:n/a:10GB	ALL:153.0MB:n/a:10GB
/collab/usr/gapps/shroud:root:08:1:10GB	root:08:1:10GB
/collab/usr/gapps/shroud:taylor:153.0MB:8139:10GB	153.0MB:8139:10GB
/collab/usr/gapps/stapre:ALL:08:n/a:10GB	ALL:08:n/a:10GB
/collab/usr/gapps/stapre:kelly:24:08:1:10GB	24:08:1:10GB
/collab/usr/gapps/toss_3_x86_64:ALL:08:n/a:1MB	ALL:08:n/a:1MB
/collab/usr/gapps/toss_3_x86_64:djd:08:1:1MB	djd:08:1:1MB
/collab/usr/gapps/toss_3_x86_64:root:08:2:1MB	root:08:2:1MB
/collab/usr/gapps/toss_3_x86_64_ib:ALL:08:n/a:1MB	ALL:08:n/a:1MB
/collab/usr/gapps/toss_3_x86_64_ib:djd:08:1:1MB	djd:08:1:1MB
/collab/usr/gapps/toss_3_x86_64_ib:root:08:2:1MB	root:08:2:1MB
/collab/usr/gapps/tracker:ALL:08:n/a:10GB	ALL:08:n/a:10GB
/collab/usr/gapps/tracker:chase3:08:1:10GB	chase3:08:1:10GB
/collab/usr/gapps/tree:ALL:disk-used:n/a:disk-limit	disk-used:n/a:disk-limit
/collab/usr/gapps/uk:ALL:08:n/a:10GB	ALL:08:n/a:10GB
/collab/usr/gapps/uk:shale:08:3:10GB	shale:08:3:10GB
/collab/usr/gapps/ug:51209:126.9MB:2535:10GB	51209:126.9MB:2535:10GB
/collab/usr/gapps/ug:ALL:9.48GB:n/a:10GB	ALL:9.48GB:n/a:10GB
/collab/usr/gapps/ug:afillmor:27.75MB:194:10GB	27.75MB:194:10GB
/collab/usr/gapps/ug:dahlgren:1.25MB:1:10GB	1.25MB:1:10GB
/collab/usr/gapps/ug:ddom:17.09MB:206:10GB	17.09MB:206:10GB
/collab/usr/gapps/ug:minner2:4KB:1:10GB	4KB:1:10GB
/collab/usr/gapps/ug:vnvadm:9.31GB:13304:10GB	9.31GB:13304:10GB
/collab/usr/gapps/vampire:ALL:703.0MB:n/a:10GB	ALL:703.0MB:n/a:10GB
/collab/usr/gapps/vampire:strozzi:703.0MB:15645:10GB	703.0MB:15645:10GB
/collab/usr/gapps/visrad:ALL:1.08GB:n/a:10GB	ALL:1.08GB:n/a:10GB
/collab/usr/gapps/visrad:jay:1.08GB:8971:10GB	1.08GB:8971:10GB
/collab/usr/gapps/visrad:root:08:1:10GB	root:08:1:10GB
/collab/usr/gapps/wci:ALL:08:n/a:10GB	ALL:08:n/a:10GB
/collab/usr/gapps/wci:ines:08:1:10GB	ines:08:1:10GB
/collab/usr/gapps/wf:ALL:2.73GB:n/a:10GB	ALL:2.73GB:n/a:10GB
/collab/usr/gapps/wf:workflow:2.73GB:137238:10GB	2.73GB:137238:10GB
/collab/usr/gapps/yorick:ALL:3.67GB:n/a:10GB	ALL:3.67GB:n/a:10GB

User	Size	Files
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miller86	26.99GB	366364
tweis	23.86GB	248581
schneide	23.22GB	47261
landa	22.92GB	289576
stowell	22.11GB	242834
draeger	21.09GB	267623
akupres	20.10GB	82797
cah	19.09GB	21472
brown86	17.06GB	27012
puso	15.76GB	10885
caldwep	15.14GB	307633
benedict	15.13GB	14182
fried	15GB	19740
oh4	14.77GB	14427
mmorale	14.52GB	37261
chen41	14.07GB	84648
gokhale2	13.98GB	157479
streitz	13.71GB	117448
bennion1	13.67GB	212666
neely4	13.61GB	67398
acunning	13.43GB	17797
chase3	12.65GB	8469
lucas26	12.49GB	92097
jsc	12.45GB	14676
daniel	12.39GB	52457
luton2	12.10GB	51988
felice	12.02GB	18796
glascoe1	11.99GB	46276
u970344	11.55GB	6183
ilamni	11.54GB	2701
whitley3	11.37GB	196302
jjr	9.39GB	339
chambers	8.77GB	26015
jbogden	7.74GB	106057

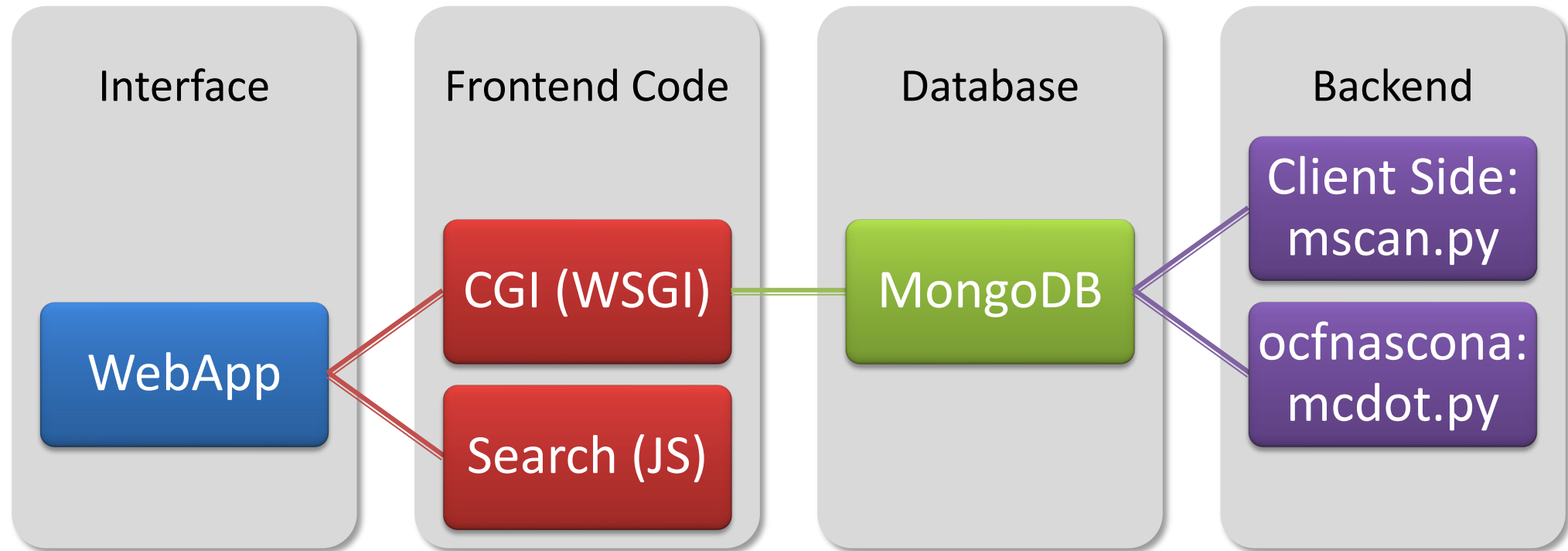
```
/collab/usr/gapps/python:lee1001:2.50GB:2160:96GB
/collab/usr/gapps/python:lee218:84.04GB:2203785:96GB
/collab/usr/gapps/python:qtrees:Name:96GB
/collab/usr/gapps/python:taylor:4KB:1:96GB
/collab/usr/gapps/roguewave:38451:08:1:10GB
/collab/usr/gapps/roguewave:ALL:08:n/a:10GB
/collab/usr/gapps/roguewave:duh1:08:2:10GB
/collab/usr/gapps/samrai:ALL:3.71GB:n/a:10GB
/collab/usr/gapps/samrai:rwa:2.80GB:88683:10GB
/collab/usr/gapps/samrai:ukbeck:934.5MB:57758:10GB
/collab/usr/gapps/shroud:ALL:153.0MB:n/a:10GB
/collab/usr/gapps/shroud:root:08:1:10GB
/collab/usr/gapps/shroud:taylor:153.0MB:8139:10GB
/collab/usr/gapps/stapre:ALL:08:n/a:10GB
/collab/usr/gapps/stapre:kelly:24:08:1:10GB
/collab/usr/gapps/toss_3_x86_64:ALL:08:n/a:1MB
/collab/usr/gapps/toss_3_x86_64:djd:08:1:1MB
/collab/usr/gapps/toss_3_x86_64:root:08:2:1MB
/collab/usr/gapps/toss_3_x86_64_ib:ALL:08:n/a:1MB
/collab/usr/gapps/toss_3_x86_64_ib:djd:08:1:1MB
/collab/usr/gapps/toss_3_x86_64_ib:root:08:2:1MB
/collab/usr/gapps/tracker:ALL:08:n/a:10GB
/collab/usr/gapps/tracker:chase3:08:1:10GB
/collab/usr/gapps/tree:ALL:disk-used:n/a:disk-limit
/collab/usr/gapps/uk:ALL:08:n/a:10GB
/collab/usr/gapps/uk:shale:08:3:10GB
/collab/usr/gapps/ug:51209:126.9MB:2535:10GB
/collab/usr/gapps/ug:ALL:9.48GB:n/a:10GB
/collab/usr/gapps/ug:afillmor:27.75MB:194:10GB
/collab/usr/gapps/ug:dahlgren:1.25MB:1:10GB
/collab/usr/gapps/ug:ddom:17.09MB:206:10GB
/collab/usr/gapps/ug:minner2:4KB:1:10GB
/collab/usr/gapps/ug:vnvadm:9.31GB:13304:10GB
/collab/usr/gapps/vampire:ALL:703.0MB:n/a:10GB
/collab/usr/gapps/vampire:strozzi:703.0MB:15645:10GB
/collab/usr/gapps/visrad:ALL:1.08GB:n/a:10GB
/collab/usr/gapps/visrad:jay:1.08GB:8971:10GB
/collab/usr/gapps/visrad:root:08:1:10GB
/collab/usr/gapps/wci:ALL:08:n/a:10GB
/collab/usr/gapps/wci:ines:08:1:10GB
/collab/usr/gapps/wf:ALL:2.73GB:n/a:10GB
/collab/usr/gapps/wf:workflow:2.73GB:137238:10GB
/collab/usr/gapps/yorick:ALL:3.67GB:n/a:10GB
```

# The Solution!

- MongoDB
  - Single Data Source
  - Access Control and Authorization
  - Easily accessible from multiple endpoints
- Python modules for inserting data into the database
- Web Interface
  - Quickly access and search the data



# Under The Hood



# The Future

- More advanced search and sort
- Usability enhancements
  - Rich tables
  - Human-readable data
- Integration into other tools
  - quotamod
  - Lorenz
- Rollout to all filers
  - Animal workspaces
  - RZ
- Collaborate with SAG and the Hotline





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