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San Francisco 2017

Introducing JobServ

A new CI system built without all of the Jenkins baggage

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About Me

- Wrote a bunch of the LAVA code in the early days
- Worked on the test automation of Ubuntu Phones
- Working on automation for Zephyr and MCUboot

I've basically spent the better part of 7 years fighting automation.



Why Would You Do This?

- We had a few “simple” requirements:
 - <http://tinyurl.com/jobserve-readme>



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Why Not \${X}?

- CI has changed dramatically
 - It's now a mission-critical piece of infrastructure
- Jenkins Can't
 - Scale
 - Run in HA
 - Upgrades require stopping everything
 - Debugging is a nightmare
 - Plugin-Hell
- GitLab CI - tied to gitlab
 - Their runner is 750,000 lines. JobServ is 1,400 (the entire source is <8,000).
- BuildBot - very interesting project, not quite there though
- Almost everything has a server initiating an SSH connection to a worker
- Nobody has a “simulator”



Benefits For Users

- The Simulator is a killer feature
- At 8,000 lines of code it's not complicated to poke around
 - Python makes this really easy compared to the Go alternatives



Benefits for Admins

- Scales out horizontally
- Almost no single point of failure
 - NFS used for streaming console logs during a run
 - There's no reason you couldn't use Ceph/Gluster instead
 - MySQL can be if not using something like Percona/Galera
- Multiple daemons
 - Logs easier to look at (look at the git-poller to see why git polling isn't working)
 - "Top" gives a better picture
- Live updates: you can kill any component and in-progress Runs won't fail
- "Surge Workers"



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Example Projects

- <https://github.com/linaro-technologies/jobserv/tree/master/examples/projects>



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Live Demo

```
doanac@doanac-xps: ~/code/ltd/heracles-deploy-toolz
doanac@doanac-xps: ~/code/ltd/jobserv

api_1 | 172.21.0.1 - - [15/Sep/2017 21:28:53] "GET /workers/doanac-xps/?load_avg_5=0.57&mem_free=180473856&load_avg_1=0.56&disk_free=97825517568&load_avg_15=0.46&available_runners=2 HTTP/1.1" 200 -
api_1 | 2017-09-15 21:28:53.619 INFO: 172.21.0.1 - - [15/Sep/2017 21:28:53] "GET /workers/doanac-xps/?load_avg_5=0.57&mem_free=180473856&load_avg_1=0.56&disk_free=97825517568&load_avg_15=0.46&available_runners=2 HTTP/1.1" 200 -
api_1 | 172.21.0.1 - - [15/Sep/2017 21:28:54] "GET /workers/doanac-xps/?load_avg_1=0.56&mem_free=180252672&disk_free=97825517568&available_runners=2&load_avg_15=0.46&load_avg_5=0.57 HTTP/1.1" 200 -
api_1 | 2017-09-15 21:28:54.862 INFO: 172.21.0.1 - - [15/Sep/2017 21:28:54] "GET /workers/doanac-xps/?load_avg_1=0.56&mem_free=180252672&disk_free=97825517568&available_runners=2&load_avg_15=0.46&load_avg_5=0.57 HTTP/1.1" 200 -
api_1 | 172.21.0.5 - - [15/Sep/2017 21:29:17] "GET /project-triggers/?type=git_poller HTTP/1.1" 200 -
api_1 | 2017-09-15 21:29:17.162 INFO: 172.21.0.5 - - [15/Sep/2017 21:29:17] "GET /project-triggers/?type=git_poller HTTP/1.1" 200 -
git-poller_1 | 2017-09-15 21:29:17.166 INFO: Adding home-poller to poller list
git-poller_1 | 2017-09-15 21:29:17.463 INFO: New version of project definition found for https://raw.githubusercontent.com/linaro-technologies/jobserv/master/.jobserv.yml
git-poller_1 | 2017-09-15 21:29:17.507 INFO: Looking for changes to: https://github.com/linaro-technologies/jobserv.git
git-poller_1 | 2017-09-15 21:29:17.832 INFO: https://github.com/linaro-technologies/jobserv.git refs/heads/master change 612039f14046ea3a0e41613b949b5783708dbae6->6deccc9fcae4a79d47ad474f73569ade6e6d3473
git-poller_1 | 2017-09-15 21:29:17.832 INFO: Trigger build for home-poller with params: {'GIT_REF': 'refs/heads/master', 'GIT_URL': 'https://github.com/linaro-technologies/jobserv.git', 'GIT_OLD_SHA': '612039f14046ea3a0e41613b949b5783708dbae6', 'GIT_SHA': '6deccc9fcae4a79d47ad474f73569ade6e6d3473'}
api_1 | 172.21.0.5 - - [15/Sep/2017 21:29:18] "POST /projects/home-poller/builds/ HTTP/1.1" 201 -
api_1 | 2017-09-15 21:29:18.300 INFO: 172.21.0.5 - - [15/Sep/2017 21:29:18] "POST /projects/home-poller/builds/ HTTP/1.1" 201 -
git-poller_1 | 2017-09-15 21:29:18.301 INFO: Build created: {"data": {"url": "http://lci-web/projects/home-poller/builds/3/"}, "status": "success"}
^CGracefully stopping... (press Ctrl+C again to force)
Stopping jobserv_worker-monitor_1 ... done
Stopping jobserv_lava-reaper_1 ... done
Stopping jobserv_git-poller_1 ... done
Stopping jobserv_lci-web_1 ... done
Stopping jobserv_api_1 ... done
Stopping jobserv_db_1 ... done
doanac@doanac-xps: ~/code/ltd/jobserv$
```



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Thank You

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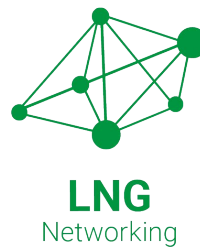
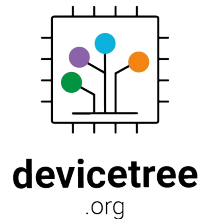
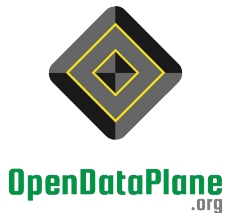
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