

# Folding @ Home in the CERN Cloud

# Quick and dirty deployment

- Using hardware under retirement
  - March 30: 4,000 VM cores
    - Could add further ~5,000 cores this week
  - Note: no impact on production capacity
- Simple deployment
  - VMs with trivial user data:

```
# Install fahclient RPM
yum install https://download.foldingathome.org/releases/public/release/fahclient/centos-6.7-64bit/v7.5/fahclient-7.5.1-1.x86_64.rpm -y

# Join the CERN team
echo "EXTRA_OPTS=\"--user=CERN_Cloud --team=38188 --gpu=false --smp=true\"" >> /etc/default/fahclient

# Restart the service
/usr/sbin/service FAHClient restart
```

“Zero hardware cost, minimal deployment cost”

# F@H stats for CERN\_CLOUD

## Team: CERN

Date of last work unit 2020-03-31 06:31:56  
Active CPUs within 50 days 3,700  
Team Id 38188  
Grand Score [45,141,725](#)  
Work Unit Count [16,525](#)  
Team Ranking 1471 of 246183  
Homepage <http://public.web.cern.ch/public/>

## Team members

Rank	Name	Credit	WUs
18,695	<a href="#">TheLaboratoire</a>	15,523,024	281
7	<a href="#">Anonymous</a>	8,469,511	1,287
29,130	<a href="#">CERN_Cloud</a>	7,831,351	10,895
40,409	<a href="#">Cloverfield</a>	4,705,033	67
84,654	<a href="#">CERN</a>	1,451,013	2,321
91,118	<a href="#">Corne_Lukken</a>	1,288,311	60

<https://stats.foldingathome.org/team/38188>

# Deployment limitations

- F@H requires Internet connectivity to download work
  - 200 pre-retired Hypervisors cannot be used
  - Can we set up a proxy? Or host a F@H server?
- VMs not (Puppet) managed
  - Cannot easily update configuration
  - No monitoring. Are CPUs optimally used?
- Re-deploy as K8s clusters?
  - Would include monitoring and auto-scaling.

These issues would require some manpower

- And different skill sets, from different teams

# Conclusions

- CERN Cloud running 4,000 cores
  - Could ramp up to 9,000 later this week
  - But this will disappear in coming month(s)
- Simple deployment, with limitations
  - Overcoming those limitations requires some effort
- Q: Worth investing?
  - Are we adding significant (Batch) production capacity?
  - Do we want to focus on F@H? Or sthg else?

# Thank you!