



# Provisioning Docker securely for HPC

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[www.elixir-europe.org](http://www.elixir-europe.org)

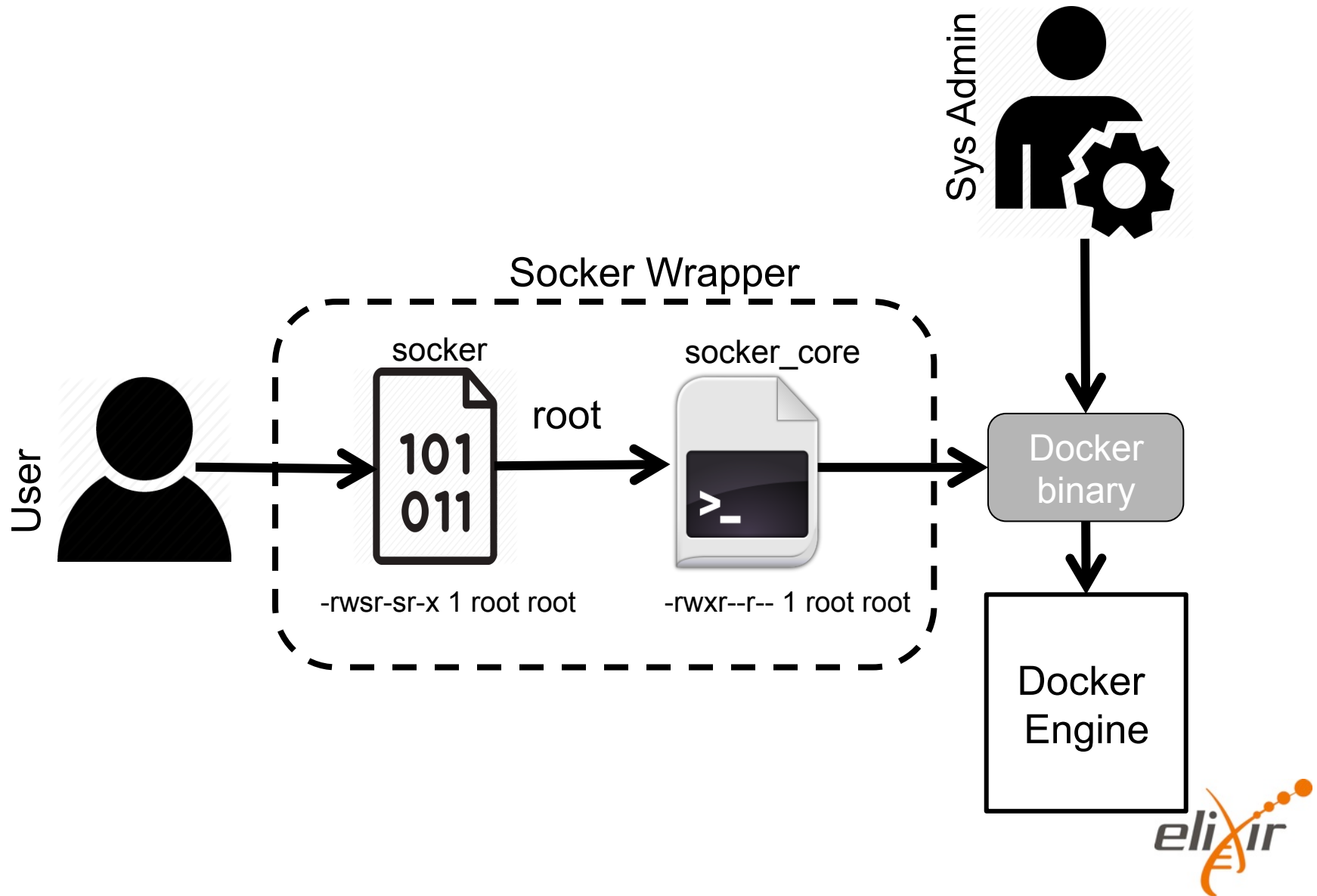
# Common issues/requirements in a production system

- I have an old kernel
- Old version of Docker
- I want to allow all users to run containers
- And to do so as themselves, not as root
- [This is possible](#) 😊



# Docker inside HPC SLURM

# Socker



# SLURM (socket)

```
#!/bin/bash
```

```
#SBATCH --nodes=1
```

```
#SBATCH --partition=docker
```

```
srun -n 32 socket bowtie1 -p 8 -S -v 2 -m  
1 /work/hg19/hg19  
/work/bowtie-input/${TASK_ID}.normal.fastq
```



# SLURM (socket)

```
[azab@compute-1-27~]$ cat /proc/4822/cgroup
```

```
11:blkio:/docker/d034ac18549fed91deff35e13a63767684ff43f3a961...
```

```
10:net_cls:/
```

```
8:devices:/docker/d034ac18549fed91deff35e13a63767684ff43f3a961...
```

```
6:cpuacct:/docker/d034ac18549fed91deff35e13a63767684ff43f3a961...
```

```
5:cpu:/docker/d034ac18549fed91deff35e13a63767684ff43f3a961...
```

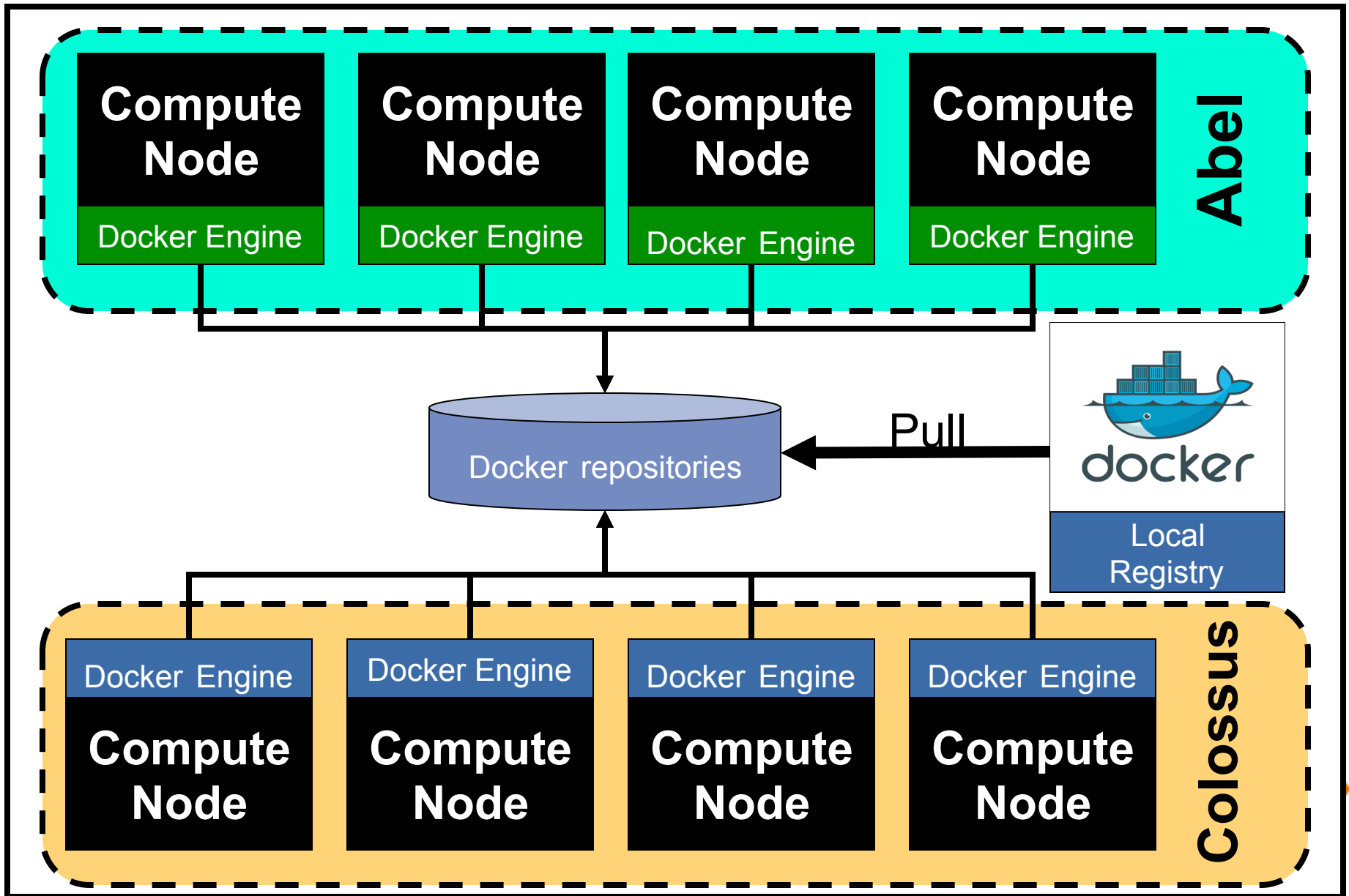
```
3:memory:/slurm/uid_238869/job_14576313
```

```
2:cpuset:/slurm/uid_238869/job_14576313
```

```
1:freezer:/slurm/uid_238869/job_14576313
```



# Docker on the cluster - SLURM



# Docker inside HPC HTCondor





# HTCondor

universe = docker

executable = /usr/local/bin/bowtie

arguments = -p 8 -S -v 2 -m 1 /work/hg19/hg19

/work/bowtie-input/\$(process).normal.fastq

docker\_image = genomicpariscentre/bowtie1

output = \$(process).normal.sam

error = \$(process).normal.err

log = normal.log

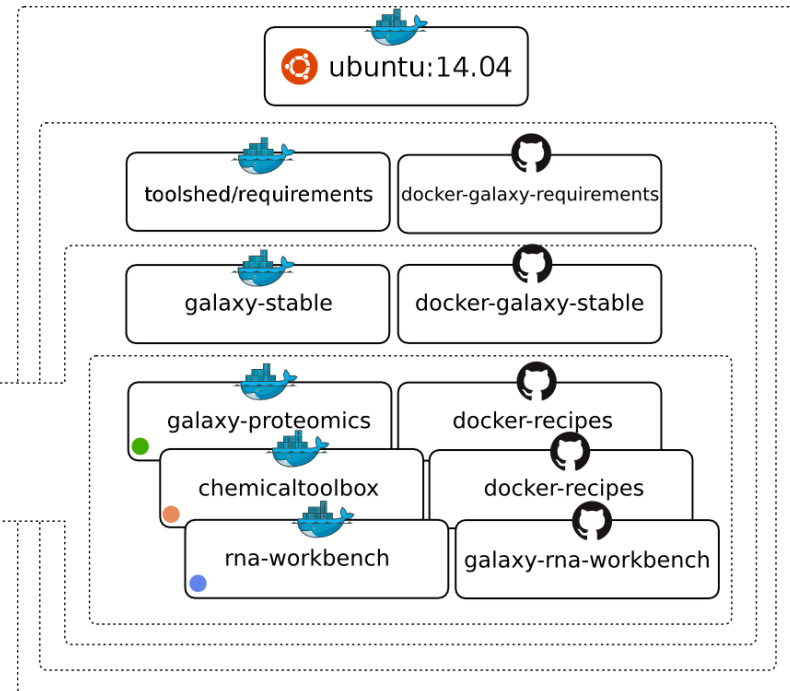
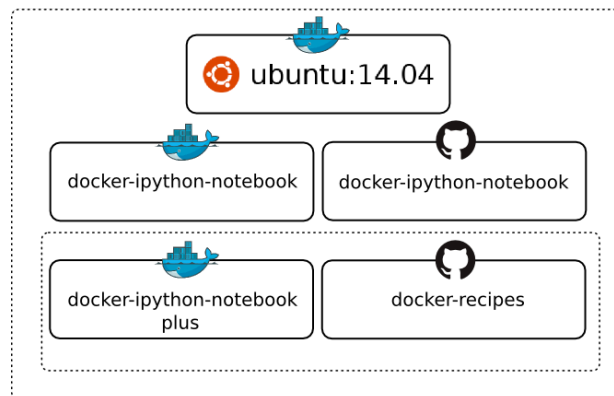
queue 46



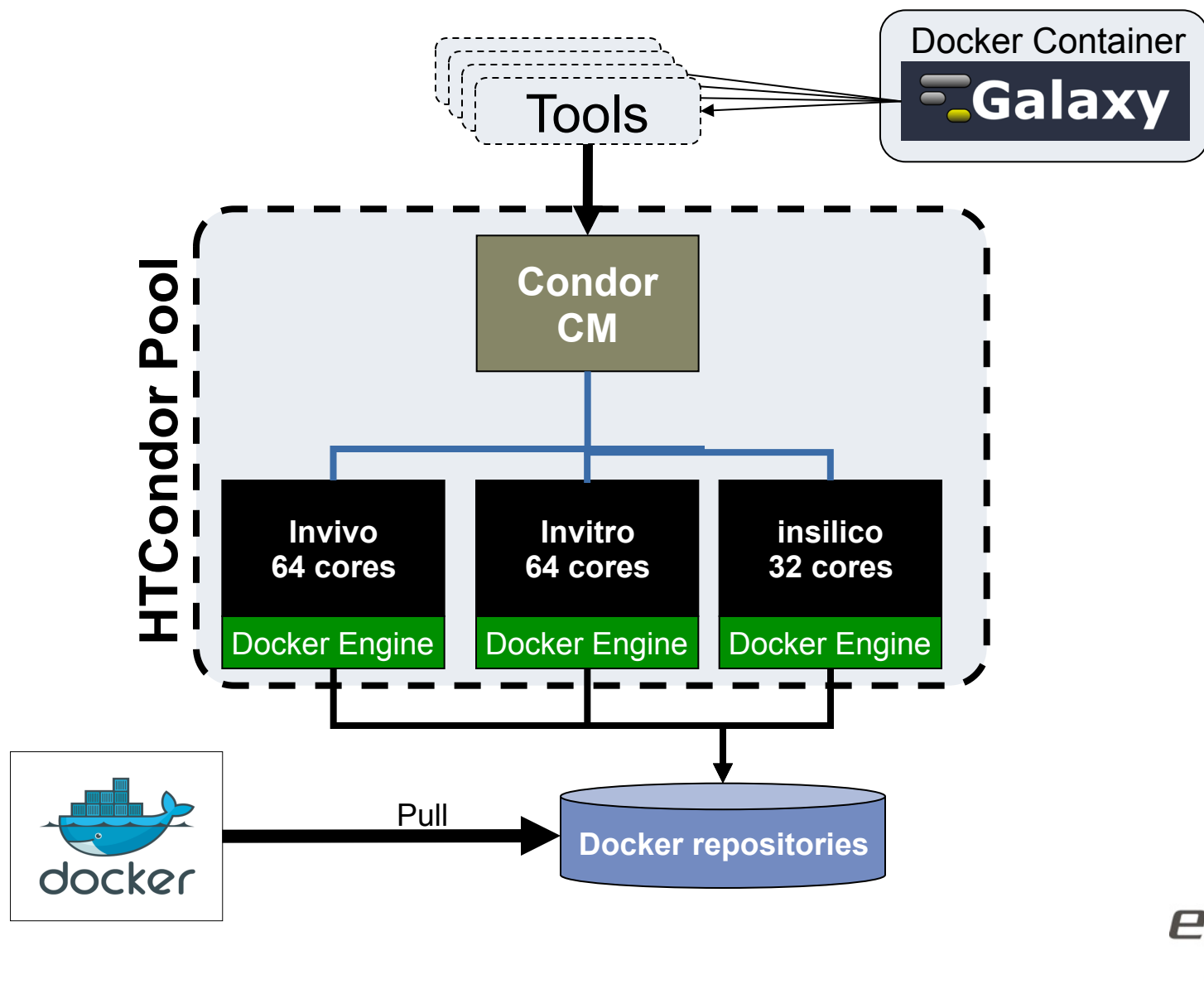
# Galaxy Docker with Docker enabled HPC HTCondor



# Galaxy Docker



# Docker on the cluster – HTCondor (Infrastructure)



# Docker on the cluster – HTCondor on the Cloud (cPouta)

