

Grid'5000 Cheat Sheet

Text between **double brackets** are wiki pages.
See <https://www.grid5000.fr/>

For **events** and **maintenance** on platform
See <https://www.grid5000.fr/status/>

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Hardware Overview **[[Hardware]]**

Location	Year	Cores	Freq	Mem	SSD	HDD	GPU	Network
Grenoble								
dahu	(2018)	32	2x16cores	@2.1Ghz	192Gb	223Gb SSD, 447Gb SSD, 3726Gb HDD		1 x 10Gb Ethernet, 1 x 100Gb Omni-Path
troll	(2019)	4	2x16cores	@2.3Ghz	384Gb	447Gb SSD, 1490Gb SSD		1 x 10Gb Ethernet, 1 x 100Gb Omni-Path
yeti	(2018)	4	4x16cores	@2.1Ghz	768Gb	447Gb SSD, 1490Gb SSD, 3x1863Gb HDD		1 x 10Gb Ethernet, 1 x 100Gb Omni-Path
Lille								
chetemi	(2016)	15	2x10cores	@2.2Ghz	256Gb	2x279Gb HDD		2 x 10Gb Ethernet
chiclet	(2018)	8	2x16cores	@2.2Ghz	128Gb	447Gb SSD, 2x3726Gb HDD		2 x 25Gb Ethernet
chifflet	(2016)	8	2x14cores	@2.4Ghz	768Gb	2x372Gb SSD, 2x3726Gb HDD	2 x GeForce GTX 1080 Ti	2 x 10Gb Ethernet
chiffrot	(2018)	8	2x12cores	@2.6Ghz	192Gb	2x447Gb SSD, 4x3726Gb HDD	2 x Tesla P100-PCIE-16GB	2 x 25Gb Ethernet
Luxembourg								
petitprince	(2013)	15	2x6cores	@2.0Ghz	32Gb	232Gb HDD		2 x 10Gb Ethernet
Lyon								
gemini	(2019)	2	2x20cores	@2.2Ghz	512Gb	447Gb SSD, 4x1788Gb SSD	8 x Tesla V100-SXM2-32GB	1 x 10Gb Ethernet, 1 x 100Gb InfiniBand EDR
hercule	(2012)	4	2x6cores	@2.0Ghz	32Gb	3x1863Gb HDD		1 x 10Gb Ethernet
nova	(2016)	23	2x8cores	@2.1Ghz	64Gb	557Gb HDD		1 x 10Gb Ethernet
orion	(2012)	4	2x6cores	@2.3Ghz	32Gb	557Gb HDD	1 x Tesla M2075	1 x 10Gb Ethernet
sagittaire	(2006)	22	2x1cores	@2.4Ghz	2Gb	68Gb HDD		1 x 1Gb Ethernet
taurus	(2012)	15	2x6cores	@2.3Ghz	32Gb	557Gb HDD		1 x 10Gb Ethernet
Nancy								
graffiti	(2019)	13	2x8cores	@2.1Ghz	128Gb	446Gb SSD	4 x GeForce RTX 2080 Ti	1 x 10Gb Ethernet
graouilly	(2016)	16	2x8cores	@2.4Ghz	128Gb	2x558Gb HDD		1 x 10Gb Ethernet, 1 x 56Gb InfiniBand FDR
graphique	(2015)	6	2x6cores	@2.4Ghz	64Gb	278Gb HDD		1 x 10Gb Ethernet, 1 x 56Gb InfiniBand FDR
graphite	(2013)	4	2x8cores	@2.0Ghz	256Gb	2x279Gb SSD		1 x 10Gb Ethernet, 1 x 56Gb InfiniBand FDR
grcinq	(2013)	48	2x8cores	@2.0Ghz	64Gb	931Gb HDD		1 x 1Gb Ethernet, 1 x 56Gb InfiniBand FDR
grele	(2017)	14	2x12cores	@2.2Ghz	128Gb	2x278Gb HDD		1 x 10Gb Ethernet, 1 x 100Gb Omni-Path
grimani	(2016)	6	2x6cores	@1.6Ghz	64Gb	931Gb HDD		1 x 10Gb Ethernet, 1 x 100Gb Omni-Path
grimoire	(2016)	8	2x8cores	@2.4Ghz	128Gb	5x558Gb HDD, 186Gb SSD	2 x Tesla K40m	4 x 10Gb Ethernet, 1 x 56Gb InfiniBand FDR
grisou	(2016)	51	2x8cores	@2.4Ghz	128Gb	2x558Gb HDD		4 x 10Gb Ethernet, 1 x 1Gb Ethernet
gros	(2019)	124	1x18cores	@2.2Ghz	96Gb	447Gb SSD, 894Gb SSD		2 x 25Gb Ethernet
grue	(2019)	5	2x16cores	@2.4Ghz	128Gb	446Gb SSD		1 x 10Gb Ethernet
grvingt	(2018)	64	2x16cores	@2.1Ghz	192Gb	931Gb HDD	4 x Tesla T4	1 x 10Gb Ethernet, 1 x 100Gb Omni-Path
Nantes								
ecomme	(2014)	22	2x8cores	@2.2Ghz	64Gb	1863Gb HDD		1 x 10Gb Ethernet
ecotype	(2017)	48	2x10cores	@1.8Ghz	128Gb	372Gb SSD		2 x 10Gb Ethernet
Rennes								
paranoia	(2014)	8	2x10cores	@2.2Ghz	128Gb	5x558Gb HDD		2 x 10Gb Ethernet, 1 x 1Gb Ethernet
parapide	(2010)	20	2x4cores	@2.95Ghz	24Gb	465Gb HDD		1 x 1Gb Ethernet, 1 x 20Gb InfiniBand DDR
parapluie	(2010)	18	2x12cores	@1.7Ghz	48Gb	232Gb HDD		1 x 1Gb Ethernet, 1 x 20Gb InfiniBand DDR
parasilo	(2015)	28	2x8cores	@2.4Ghz	128Gb	5x558Gb HDD, 186Gb SSD		2 x 10Gb Ethernet
paravance	(2015)	72	2x8cores	@2.4Ghz	128Gb	2x558Gb HDD		2 x 10Gb Ethernet
Sophia								
suno	(2010)	45	2x4cores	@2.25Ghz	32Gb	557Gb HDD		1 x 1Gb Ethernet
uvb	(2011)	43	2x6cores	@2.95Ghz	96Gb	232Gb HDD		1 x 1Gb Ethernet, 1 x 40Gb InfiniBand QDR

API **[[API_Main_Pratical]]** **[[API]]**

API Dashboard

- <https://api.grid5000.fr/stable/ui/index.html>

Grid'5000 Nodes API

- <https://api.grid5000.fr/stable/ui/visualizations/nodes.html>

Tutorials

- <https://www.grid5000.fr/w/Category:Portal:User>

KaVLAN **[[KaVLAN]]**

Submission

```
oarsub -t deploy -l {"type='kavlan'};vlan=1+nodes=2\
walltime=2 -I
```

Deploy

```
kadeploy3 -f $OAR_NODEFILE -e env -k --vlan 'kavlan -V'
```

Find out in which vlan is a node

```
kavlan -g -m node.fqdn.fr
```

List nodes (kavlan fqdn of a reservation)

```
kavlan -l -j jobid
```

Resources

- kavlan-local not routed (1..3)

- kavlan routed locally (4..9)

- kavlan-global routed (one per site)

* With electrical consumption. See <https://helpdesk.grid5000.fr/supervision/lyon/wattmetre/>

[[Cluster_experiment]] **[[Advanced_OAR]]**

Jobs states

```
oarstat
oarstat -f -j JOB_ID
oarstat -u G5K_LOGIN
```

Nodes states

```
oarnodes
oarnodes --sql "cpucore='4'"
```

Submission : Interactive

```
oarsub -I
env | grep OAR
cat $OAR_NODEFILE
```

Reserve IPs

```
oarsub -I -l slash_22=1
g5k-subnets
```

5 nodes on graouilly during 2h with 56G ib cards

```
oarsub -I -l nodes=5,walltime=2 \
-p "cluster='graouilly' and ib_rate=56"
```

Submission : Passive

```
oarsub -/my-script
```

5 nodes during 2h with 10G ib cards

```
oarsub -l nodes=5,walltime=2 -p "ib_rate=10" -/prog
cat OAR.OAR_JOB_ID.std{err,out}
```

Connection to a running job

```
oarsub -C OAR_JOB_ID
```

on a node in your reservation

```
oarsh node.fqdn
```

Submission : Reservation (passive mode)

```
oarsub -r '2011-05-16 14:20:00' \
-l nodes=10,walltime=0:10:00 -/my-script
```

Reservation with deploy type (interactive mode)

```
oarsub -t deploy -r '2011-05-16 14:30:00' \
-l nodes=5,walltime=2 -p "ib_rate=10" -n "Prog42"
```

Become superuser (destructive mode)

```
oarsub -I
sudo-g5k apt install iftop
```

Increase walltime of a running reservation if possible

```
oarwalltime OAR_JOB_ID +1:0:0
```

Delete a reservation

```
oardele OAR_JOB_ID
```

Oar Grid **[[Grid_experiment]]**

Jobs Grid stats

```
oargridstat
oargridstat GRID_JOB_ID
```

Submission : Interactive

```
oargridsub -t allow_classic_ssh \
-w '0:20:00' CLUSTER1:rdef="/nodes=2",CLUSTER2:rdef="/nodes=3"
```

Create a node file

```
oargridstat -w -l GRID_JOB_ID | sed '/^\$/d' > -/nodes
```

Distribute node file

```
OAR_JOB_ID=CLUSTER_JOB_ID oarsub -I \
/tmp/oargrid/oargrid_ssh_key_LOGIN_GRID_JOB_ID~/machines \
'head -n 1 machines'
```

Connect on first node

```
OAR_JOB_ID=CLUSTER_JOB_ID oarsub -I \
/tmp/oargrid/oargrid_ssh_key_LOGIN_GRID_JOB_ID 'head -n 1 machines'
```

Ending

```
oargriddele GRID_JOB_ID
```

Submission : Reservation (passive mode)

```
oargridsub -t allow_classic_ssh CLUSTER1:rdef="/nodes=1",\
CLUSTER2:rdef="/nodes=4" -s '2011-05-16 14:20:00' \
-w '0:10:00' -p /prog42/helloworld
```

View results

```
tail -f OAR.CLUSTER_JOB_ID.std{err,out}
```

[[Deploy_environment-OAR2]] **[[Advanced_Kadeploy]]**

Locate a suitable image

```
kaenv3 -l
kaenv3 -l -u LOGIN
kaenv3 -p debian10-x64-min -u deploy
```

Use deploy type for your job

```
oarsub -I -t deploy -l nodes=2
cat $OAR_NODEFILE
```

Deploy an environment

```
kadeploy3 -e debian9-x64-base -m node.site.grid5000.fr -k
kadeploy3 -e debian9-x64-base -f $OAR_NODEFILE -k ssh_key.pub
```

Save your deployed environment with tgz-g5k (available on gforge, or installed on environments)

```
tgz-g5k login@frontend:image.tgz (from node)
ssh root@node tgz-g5k > image.tgz (from frontend)
```

Connection to the deployed environment

```
ssh root@node.site.grid5000.fr
```

with console (useful if network doesn't work)

```
kaconsole3 -m node.site.grid5000.fr # login root / password "grid5000"
```

Deploy and save your environment Generate a description file

```
kaenv3 -p debian9-x64-base -u deploy > image.env
```

(edit file image.env to update with your values) Deploy

```
kadeploy3 -f $OAR_NODEFILE -a image.env
```

Save your image

```
kaenv3 -a image.env
```

Multi-sites deployment

```
kadeploy3 -e debian9-x64-base -f -/gridnodes --multi-server -k
```

Easy use with public share

```
kadeploy3 -f $OAR_NODEFILE \
-f http://public.nancy.grid5000.fr/~login/image.env -k
```

Links

DrawGantt (Nodes states in a temporal diagram)

- <https://intranet.grid5000.fr/oar/site/drawgantt-svg.cgi>

Monika (Nodes states with properties)

- <https://intranet.grid5000.fr/oar/site/monika.cgi>

Ganglia (Nodes metrics)

- <https://intranet.grid5000.fr/ganglia/>

Grid'5000 API

- <https://api.grid5000.fr/>

UMS (Account, quotas extensions)

- <https://api.grid5000.fr/stable/users/>

Public share access from outside g5k (with http auth)

- <https://api.grid5000.fr/sid/grid5000/sites/site/public/login/>

Public share access from inside g5k

- <https://public.site.grid5000.fr/~login/>

Public share (populate your own public share)

- drop files in your /public/ folder (see README in there)

Restfully, g5k-campaign

- <http://github.com/crohr/restfully/>

- <http://g5k-campaign.gforge.inria.fr/>

Grid'5000 software

- <https://www.grid5000.fr/mediawiki/index.php/Grid5000:Software>