

ATLAS Central Computing (Distributed Computing Infrastructure)

The total number of panda virtual machines in their main groups is as follows:

PANDA:

```
vopanda/arcct/arc_dev = 2
vopanda/arcct/arc_new = 2
vopanda/bigpanda/bigpanda_centos7 = 6
vopanda/bigpanda/bigpanda_centos7_dev = 3
vopanda/bigpanda/nginx = 2
vopanda/cache/cache_cc7 = 2
vopanda/central_container/nexus = 1
vopanda/central_container/varnish = 1
vopanda/doma/iam = 1
vopanda/eventstreaming/header = 1
vopanda/eventstreaming/idds = 1
vopanda/eventstreaming/worker = 4
vopanda/eventstreaming/worker_doma = 3
vopanda/harvester/condor = 7
vopanda/harvester/condor_dev = 1
vopanda/harvester/condor_logs = 1
vopanda/harvester/harvester = 8
vopanda/harvester/harvester_dev = 1
vopanda/harvester/harvester_local = 1
vopanda/idds/harvester = 1
vopanda/idds/monitor = 1
vopanda/idds/server = 1
vopanda/jedi/jedi_py3 = 9
vopanda/jedi/jedidev_cc7 = 3
vopanda/logstash/logstash_centos7 = 5
vopanda/oraclemon/orainfo_mon_cc7 = 1
vopanda/panda
vopanda/pandaserver/server_cc7_dev = 1
vopanda/pandaserver/server_dev_cc7 = 1
vopanda/pandaserver/server_doma = 2
vopanda/pandaserver/server_py3 = 9
vopanda/pilot/pilot_cc7 = 1
vopanda/prodtask/prodtask_cc7 = 2
vopanda/prodtask/prodtask_cc7_dev = 2
vopanda/schedconfig/schedconfig_cc7 = 2
```

For estimate details of Panda we have these plots: https://monit-grafana.cern.ch/d/000000609/openstack-atlas-project-quota?orgId=17&var-project_name=ATLAS%20Services%20PANDA

So panda is using ~600 cores, 1.06TB of RAM and 100TB of disk space (this does not include their ceph storage space)

There is also the harvester new k8 project: I dont know what these nodes all do as they are managed by the Panda team.

But I can tell you that they have 48 nodes, 372 cores and 681GB of RAM

Plots for this are at https://monit-grafana.cern.ch/d/000000609/openstack-atlas-project-quota?orgId=17&var-project_name=ATLAS%20Harvester%20Kubernetes

RUCIO:

Development:

```
voatlasrucio = 1
```

```
voatlasrucio/integration/analytics = 1
```

voatlasrucio/integration/authentication = 1
 voatlasrucio/integration/build = 1
 voatlasrucio/integration/daemon = 5
 voatlasrucio/integration/graphite = 1
 voatlasrucio/integration/haproxy = 2
 voatlasrucio/integration/server =2
 voatlasrucio/integration/ui = 1

Production:

voatlasrucio/production/analytix = 1
 voatlasrucio/production/authentication = 1
 voatlasrucio/production/daemon = 7
 voatlasrucio/production/graphite = 1
 voatlasrucio/production/hadoop = 1
 voatlasrucio/production/haproxy = 3
 voatlasrucio/production/logger = 1
 voatlasrucio/production/nagios = 2
 voatlasrucio/production/redirect = 1
 voatlasrucio/production/server = 14
 voatlasrucio/production/ui = 2

For estimate details of rucio we have these plots: https://monit-grafana.cern.ch/d/000000609/openstack-atlas-project-quota?orgId=17&var-project_name=ATLAS%20Offline%20Data%20Processing

So rucio is using ~200 cores, 370TB of RAM and 6.6TB of disk space (this does not include their ceph storage space)

Rucio have started moving a lot of their things to Kubernetes though. Again, I dont know what the K8 nodes are doing.

But I can tell you that they have 27 nodes, 108 cores, and 198 GB of RAM

Plots for this are at: <https://monit-grafana.cern.ch/d/HH2gc5rGk/openstack-rucio-k8-project-quota?orgId=17>

CRIC:

Y2020 (it was slightly changed after AGIS→ CRIC migration)

Name	Flavour	Responsible	HostGroup
aiatlas007	hep2.8	atlas-adc-agis@cern.ch	voatlasmisc/agis/agisapi
aiatlas008	hep2.8	atlas-adc-agis@cern.ch	voatlasmisc/agis/agispare
aiatlas014	hep2.4	atlas-adc-agis@cern.ch	voatlasmisc/agis/agis
aiatlas018	hep2.2	atlas-adc-agis@cern.ch	voatlasmisc/agis/agisdev
aiatlas019	hep2.2	atlas-adc-agis@cern.ch	voatlasmisc/agis/agiscmsdev
aiatlas020	m1.large	atlas-adc-agis@cern.ch	voatlasmisc/agis/agis
aiatlas056	hep2.2	atlas-adc-agis@cern.ch	voatlasmisc/agis/agisricdev
aiatlas069	hep2.4	atlas-adc-agis@cern.ch	voatlasmisc/agis/agis
aiatlas157	hep2.4	atlas-adc-agis@cern.ch	voatlasmisc/agis/agis

So that would have been ~40 cores, 80G of RAM

Monitoring:

Each group above have some of their own monitoring nodes as can be seen from the names above.

For central services, we have 1 webserver, and 3 open shift nodes doing monitoring work. (~ 20 cores, 40G RAM)

The rest of our monitoring we rely on CERN IT's services for Grafana, Elastic Search, Kibana, etc. So its a bit difficult to know exactly what % is used by ATLAS directly.

Then we also have a few misc machines for ADC, these include things like the frontier servers, squids, Boinc, our blog servers, etc

MISC:

voatlas/misc/adcmon = 1

voatlas/misc/boinc/boinc = 6

voatlas/misc/elog/elisa_prod = 1

voatlas/misc/elog/elisa_qa = 1

voatlas/misc/frontier/front* = 15

voatlas/misc/frontier/frontdev = 4

voatlas/misc/squid/squid = 3

voatlas/misc/switcher/switcher = 2

These are about 200 cores, and 400G of RAM

Not sure if you want details for AMI?

Let me know if I should break it down more, if there is anything else you need?

Rough Estimate of all including frontier, squids etc:

Cores: ~1100

RAM: 2.5 TB

 Scrutiny Report Cloud Computing

 Project

Project	Cores			Instances		
	Quota /	Usage /	Pct	Quota /	Usage /	Pct
ATLAS Acts	64	64	100	8	8	100
ATLAS AnalyticsSvc	10	10	100	5	5	100
ATLAS atlas-sw-art	25	20	80	25	5	20
ATLAS Cloud Scheduler	40	40	100	5	5	100
ATLAS Compute Cloud - Services	75	57	76	30	19	63
ATLAS COMSOL Simulations of ITk Sensor Modules	8	8	100	1	1	100
ATLAS Container Testbed	20	3	15	5	3	60
ATLAS CORAL Server	25	12	48	10	5	50
ATLAS CREST development	34	12	35	10	5	50
ATLAS DCS OPC UA	28	16	57	7	5	71
ATLAS Firmware Development	25	4	16	3	1	33
ATLAS Frontier	158	98	62	21	12	57
ATLAS Frontier GPN	66	64	97	12	7	58
ATLAS Glance	40	36	90	10	8	80
ATLAS Harvester Kubernetes	375	372	99	50	48	96
ATLAS L0 Muon Barrel Trigger	28	28	100	2	1	50
ATLAS L1CALO eFEX	48	48	100	6	6	100
ATLAS L1CT build service	24	0	0	4	0	0
ATLAS MDA Web Services	25	8	32	5	2	40
ATLAS ObjectStore tests	20	0	0	10	0	0
ATLAS Offline Data Processing	202	202	100	51	51	100
ATLAS OTP	12	12	100	4	4	100
ATLAS OTP resources	25	5	20	25	2	8
ATLAS Pixel RnD	25	17	68	15	6	40
ATLAS RECAST	42	0	0	25	0	0
ATLAS RECAST - Container Pilot	600	480	80	150	72	48
ATLAS Rucio Development	40	40	100	5	5	100
ATLAS Services AMI	50	30	60	20	11	55
ATLAS Services Build	32	16	50	4	1	25
ATLAS Services Build Optimised	1296	1004	77	75	59	79
ATLAS Services DDM	44	8	18	5	1	20
ATLAS Services DKB	64	38	59	8	7	88
ATLAS Services Ironic	32	32	100	1	1	100
ATLAS Services Misc	660	438	66	150	83	55
ATLAS Services PANDA	620	594	96	140	93	66
ATLAS Servicex development	24	12	50	12	6	50
ATLAS SimAtP1	64	25	39	16	13	81
ATLAS Simulations of ITk Sensor Modules	15	12	80	3	3	100
ATLAS Squid	12	12	100	3	3	100
ATLAS TDAQ Build Service	50	46	92	50	8	16
ATLAS TDAQ FELIX Project	40	15	38	40	7	18
ATLAS TDAQ firmware development	48	48	100	3	3	100
ATLAS TDAQ firmware development - Test	80	80	100	5	5	100
ATLAS TDAQ SysAdmins	50	36	72	50	11	22
ATLAS TDAQ SysAdmins - Critical	24	24	100	6	5	83
ATLAS TDAQ Training	25	8	32	25	2	8
ATLAS Tier0	50	10	20	50	8	16
ATLAS Tile Calorimeter web development	50	21	42	30	17	57
ATLAS TPX data analysis and visualization service	48	8	17	15	4	27
ATLAS Virtual Placement	24	24	100	3	3	100
TOTAL	5486	4197	77	1218	640	53