

# Quality of Service (QOS)

Quality of Service (QoS) is used to limit the characteristics that a job can have.

## Default QOS per partition

For every partition (fct, gpu, etc), there is a Quality of Service with different defined parameters like MaxJobs, MaxSubmitJobs. These parameters act on all the jobs submitted by all users on that partition. To see the default QOS for a specific partition run the below scontrol command:

### fct partition

```
[jpina@cirrus02 ~]$ scontrol show partition fct
PartitionName=fct
  AllowGroups=ALL
  AllowAccounts=fct1,cpca27902020,cpca59032020,cpca3952082021,cpca3949842021,cpca4021052021,cpca3969692021,cpca097952021,cpca4076702021,biosim,cpca4209172021,cpca4081432021,cpca4011972021,dsaipa00832020,cpca098302021,cpca097822021,cpca097522021,cpca096232021,cpca097312021,cpca097642021,cpca230372022,cpca262792022,cpca158802022,cpca158802023,cpca56132020,cpca156102022,cpca158542022,cpca280462022,cpca096232021,cpca159122022 DenyQos=normal,low,medium,high
  AllocNodes=ALL Default=NO QoS=N/A
  DefaultTime=NONE DisableRootJobs=NO ExclusiveUser=NO GraceTime=0 Hidden=NO
  MaxNodes=UNLIMITED MaxTime=4-00:00:00 MinNodes=0 LLN=NO MaxCPUsPerNode=90
  Nodes=hpc06[0-3]
  PriorityJobFactor=1 PriorityTier=1 RootOnly=NO ReqResv=NO OverSubscribe=NO
  OverTimeLimit=NONE PreemptMode=OFF
  State=UP TotalCPUs=384 TotalNodes=4 SelectTypeParameters=NONE
  JobDefaults=(null)
  DefMemPerCPU=5000 MaxMemPerNode=UNLIMITED
```

### gpu partition

```
[jpina@cirrus02 ~]$ scontrol show partition gpu
PartitionName=gpu
  AllowGroups=ALL
  AllowAccounts=aeon,biomeng,biosim,cbmr,ccmar,cedis,centec,cerberos,chlabb,ciceco,ciimar,cncb,comics,cosmo
```

```
s,csys,dei,eeisel,eworm,dosimetry,fcneuro,fctunlrequinte,fculbioisi,fculce3c,fculdi,fculfisica,fculgfm,fculibeb,feno
,hpc,ibb,ibet,ihmt,inl,inov,ipfn,insa,istcsociologia,ispa,istcftp,lapmet,lasige,lnec,lnecprd,localmaxs,mcfeup,neur
o,nlx,nps,scipion,seatox,solarb,spac,t3atlas,t3cms,ua,uaberta,uait,uaquimica,ubim,uc,uccibit,uedi,ulcefisa,ulibeb
,ulusofona,um,unlims,unlitqb,xtal,yeastgenomics,cpca27902020,cpca59032020,fct1,cpca4209172021,cpca2627
92022,cpca56132020,cpca158542022,cpca280462022,cpca097822021,cpca159122022
AllowQos=normal,gpu3952082021,gpu4021052021,gpu4209172021,gpu262792022,gpu158802022,gpu158002
022,gpu158542022,gpu280462022,fct1,gpu159122022,gpu097822021
AllocNodes=ALL Default=NO QoS=N/A
DefaultTime=NONE DisableRootJobs=NO ExclusiveUser=NO GraceTime=0 Hidden=NO
MaxNodes=1 MaxTime=4-00:00:00 MinNodes=0 LLN=NO MaxCPUsPerNode=2
Nodes=hpc06[0-3]
PriorityJobFactor=1000 PriorityTier=1000 RootOnly=NO ReqResv=NO OverSubscribe=NO
OverTimeLimit=NONE PreemptMode=OFF
State=UP TotalCPUs=384 TotalNodes=4 SelectTypeParameters=NONE
JobDefaults=(null)
DefMemPerCPU=5000 MaxMemPerNode=UNLIMITED
```

## hpc partition

```
[jpina@cirrus02 ~]$ scontrol show partition hpc
PartitionName=hpc
AllowGroups=ALL
AllowAccounts=aeon,biomeng,biosim,cbmr,ccmar,cedis,centec,cerberos,chlabb,cicco,ciimar,cncb,comics,cosmo
s,csys,dei,dosimetry,eeisel,eworm,fcneuro,fctunlrequinte,fculbioisi,fculce3c,fculdi,fculfisica,fculgfm,fculibeb,feno
,hpc,ibb,ibet,ihmt,inl,inov,ipfn,insa,istcsociologia,ispa,istcftp,lapmet,lasige,lnec,lnecprd,localmaxs,mcfeup,neur
o,nlx,nps,scipion,seatox,solarb,spac,t3atlas,t3cms,ua,uaberta,uait,uaquimica,ubim,uc,uccibit,uedi,ulcefisa,ulibeb
,ulusofona,um,unlims,unlitqb,xtal,yeastgenomics AllowQos=normal
AllocNodes=ALL Default=YES QoS=N/A
DefaultTime=NONE DisableRootJobs=NO ExclusiveUser=NO GraceTime=0 Hidden=NO
MaxNodes=UNLIMITED MaxTime=4-00:00:00 MinNodes=0 LLN=NO MaxCPUsPerNode=UNLIMITED
Nodes=hpc04[6-8]
PriorityJobFactor=1 PriorityTier=1 RootOnly=NO ReqResv=NO OverSubscribe=NO
OverTimeLimit=NONE PreemptMode=OFF
State=UP TotalCPUs=192 TotalNodes=3 SelectTypeParameters=NONE
JobDefaults=(null)
DefMemPerCPU=8000 MaxMemPerNode=UNLIMITED
```

## User QOS

By default there are no user QOS attributed. All user QOS attributed by INCD team are unique to specific users. The following command shows how to check the QOS you belong to:

```
[martinsj@cirrus02 ~]$ sacctmgr show user fmartins withassoc -p
User|Def
Acct|Admin|Cluster|Account|Partition|Share|Priority|MaxJobs|MaxNodes|MaxCPUs|MaxSubmit|MaxWall|MaxCPUMi
ns|QOS|Def QOS|
fmartins|biosim|None|production|cpca097522021||1||||||cpca097522021,gpu097522021,normal||
fmartins|biosim|None|production|cpca097822021||1||||||cpca097822021,gpu097822021,normal||
fmartins|biosim|None|production|biosim||1||||||cpca71402020,incdbiosim21,normal||
```

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