Limiting User Greed: Resource Quotas

Integrated over time, fair-share scheduling should ensure that each user gets their appropriate CPU usage (provided they submit sufficient jobs). Over and above this, we want to prevent any one user dominating any host-group at any given time.

[root@bgi projects]# qconf –mrqs

|  |  |
| --- | --- |
| 1. | Old Set |

**Prevent any one user dominating the serial queue:**

{

name C6100-STD-serial.q.rqs

description NONE

enabled TRUE

limit users {\*} queues C6100-STD-serial.q to slots=48

#

# ..."users {\*}" means "each and every user" while "users \*" would

# mean "all users together"...

#

}

**Limit total slot-count for each user on the main queues:**

{

name CSF.q.rqs

description NONE

enabled TRUE

limit users {\*} queues R815.q,C6100-STD.q,C6100-STD-ib.q, \

C6100-FAT.q,C6100-VFAT.q,R410-twoday.q to slots=256

}

**Discourage interactive work:**

{

name C6100-STD-interactive.q.rqs

description NONE

enabled TRUE

limit users {\*} queues C6100-STD-interactive.q to slots=4

}

**Prevent any one user grabbing more than half of this one:**

{

name R815.q.rqs

description NONE

enabled TRUE

limit users {\*} queues R815.q to slots=256

}

**Since we have so few M610x-hosted GPGPUs, limit to one per user:**

{

name M610x.rqs

description NONE

enabled TRUE

limit users {\*} hosts @M610x-GPU to slots=1

}

|  |  |
| --- | --- |
| 2. | New Set |

**Limit total usage (sum of all users) on some queues:**

{

name CSF-Queues-total-users.rqs

description NONE

enabled TRUE

limit users \* queues C6100-STD-serial.q to slots=144

limit users \* queues R410-twoday-interactive.q to slots=12

limit users \* queues R410-short-interactive.q to slots=12

}

**Multiple queues on some hosts, but don't want to overload them:**

{

name CSF-Hosts-slots.rqs

description NONE

enabled TRUE

limit hosts {@C6100-STD} to slots=12

limit hosts {@C6100-FAT} to slots=12

limit hosts {@C6100-STD-ib} to slots=12

limit hosts {@C6100-STD-test} to slots=12

limit hosts {@R815} to slots=32

limit hosts {@R410-twoday} to slots=12

limit hosts {@R410-short} to slots=12

}

**Don't want any individual to hog the precious IB-connected Intel nodes:**

{

name CSF-PEs-each-user.rqs

description NONE

enabled TRUE

limit users {\*} pes orte-12-ib.pe to slots=96

}

**Limit MACE use of the non-IB Intel nodes as they contributed only AMD:**

{

name CSF-Usersets.rqs

description NONE

enabled TRUE

limit users @mace01.userset queues C6100-STD.q to slots=36

**Limit each user's greed on each (well, most) queues:**

{

name CSF-Queues-each-user.rqs

description NONE

enabled TRUE

limit users {\*} queues C6100-FAT.q to slots=36

limit users {\*} queues C6100-STD-serial.q to slots=36

limit users {\*} queues C6100-STD-interactive.q to slots=4

limit users {\*} queues R815.q to slots=256

limit users {\*} queues R815.q,C6100-STD.q,C6100-STD-ib.q, \

C6100-FAT.q,C6100-VFAT.q,R410-twoday.q to slots=256

limit users {\*} queues M610x-GPU.q,M610x-GPU-interactive.q to slots=3

}

**Limit total usage (sum of users) on some PE/Queue combos:**

{

name CSF-PEs-total-users.rqs

description NONE

enabled TRUE

## limit users \* pes orte.pe,orte-12.pe to slots=550

limit users \* pes orte.pe,orte-12.pe queues C6100-STD.q to slots=96

#

# ...above, changed one t'other...

#

limit users \* pes smp.pe queues C6100-STD.q to slots=440

## limit users \* pes fluent-smp.pe queues C6100-STD.q to slots=48

#

# ...above, replaced by mace.userset quota...

}