There are some queues we have access to that you didn't list in the doc (all the new-* ones).

The new-* are queues without GPU?

I think, yes. I checked which hosts are inside new* queues:

| | | | | | | |
|---|---|---|---|---|---|---|
| blimits -a -q waic-short | limits slots | | | | | |
| | limit ngpus_phys | | | | | |
| | | new-risk | new-long | new-medium | new-interactive | new-short |
| time limit | min | 100800 | 10080 | 4320 | 1440 | 1440 |
| | h | 1680 | 168 | 72 | 24 | 24 |
| | days | 70 | 7 | 3 | 1 | 1 |
| | hosts_group | shalev_hosts/ | shalev_hosts/ | shalev_hosts/ | | shalev_hosts/ |
| | | elinav_hosts/ | elinav_hosts/ | elinav_hosts/ | | elinav_hosts/ |
| bqueues -l new-risk | | ginossar_hosts/ | ginossar_hosts/ | ginossar_hosts/ | | ginossar_hosts/ |
| | | public_himem_hosts/ | public_himem_hosts/ | public_himem_hosts/ | | public_himem_hosts/ |
| | | dell_hosts/ | dell_hosts/ | dell_hosts/ | | dell_hosts/ |
| | | schwartz_hosts/ | schwartz_hosts/ | schwartz_hosts/ | | schwartz_hosts/ |
| | | shlush_hosts/ | shlush_hosts/ | shlush_hosts/ | | shlush_hosts/ |
| | | bio_hosts/ | bio_hosts/ | bio_hosts/ | | bio_hosts/ |
| | | wicc_hosts/ | wicc_hosts/ | wicc_hosts/ | | wicc_hosts/ |
| | | ulitsky_hosts/ | ulitsky_hosts/ | ulitsky_hosts/ | | ulitsky_hosts/ |
| | | molgen_2020_hosts/ | molgen_2020_hosts/ | molgen_2020_hosts/ | | molgen_2020_hosts/ |
| | | ulitsky_2020_hosts/ | ulitsky_2020_hosts/ | ulitsky_2020_hosts/ | | ulitsky_2020_hosts/ |
| | | fleishman_2020_hosts/ | fleishman_2020_hosts/ | fleishman_2020_hosts/ | | fleishman_2020_hosts/ |
| | | feinerman_2020_hosts/ | feinerman_2020_hosts/ | feinerman_2020_hosts/ | | feinerman_2020_hosts/ |
| | | public_2017_hosts/ | public_2017_hosts/ | public_2017_hosts/ | | public_2017_hosts/ |
| | | isilon_hosts/ | isilon_hosts/ | isilon_hosts/ | | isilon_hosts/ |
| | | yan_hosts/ | yan_hosts/ | yan_hosts/ | | yan_hosts/ |
| | | samuels_2021_hosts/ | samuels_2021_hosts/ | samuels_2021_hosts/ | | samuels_2021_hosts/ |
| | | public_hosts/ | public_hosts/ | public_hosts/ | public_hosts | public_hosts/ |
| | | berg_hosts/ | berg_hosts/ | berg_hosts/ | | berg_hosts/ |
| | | schneidman_hosts/ | schneidman_hosts/ | schneidman_hosts/ | | schneidman_hosts/ |
| | | merbl_hosts/ | merbl_hosts/ | merbl_hosts/ | | merbl_hosts/ |
| | | physics_2021_hosts/ | physics_2021_hosts/ | physics_2021_hosts/ | | physics_2021_hosts/ |
| | | bio_hosts_2022/ | bio_hosts_2022/ | bio_hosts_2022/ | | bio_hosts_2022/ |
| | | tirosh_hosts/ | tirosh_hosts/ | tirosh_hosts/ | | tirosh_hosts/ |
| | | | | | | cn239 |
| | | public_gsla_hosts/ | public_gsla_hosts/ | public_gsla_hosts/ | | public_gsla_hosts/ |
| | | public_gsla_mem_hosts/ | public_gsla_mem_hosts/ | public_gsla_mem_hosts/ | | public_gsla_mem_hosts/ |
| | | koren_2020_hosts/ | koren_2020_hosts/ | koren_2020_hosts/ | | koren_2020_hosts/ |
| | | CPU | CPU | CPU | CPU | CPU |

and checked, for example the host group = ginossar_host => it includes two hosts: cn242 and cn243:

```
[ingap@access4 scripts]$ bhosts ginossar_hosts
HOST_NAME          STATUS       JL/U    MAX  NJOBS    RUN  SSUSP  USUSP    RSV
cn242              ok              -    104     21     21      0      0      0
cn243              ok              -    104     49     49      0      0      0
```

I run the command: ssh cn242 'nvidia-smi' => to see which type of GPU is there => the output was:

```
[ingap@access4 scripts]$ ssh cn242 'nvidia-smi'
Warning: Permanently added 'cn242,132.76.221.17' (ECDSA) to the list of known hosts.
ingap@cn242's password:
bash: nvidia-smi: command not found
```

or you can run:

```
[ingap@access4 scripts]$ lshosts -gpu cn242
lshosts: Waiting for LIM to collect GPU resource usage values or no hosts with GPU devices are detected.
```

so, my conclusion => it is not GPU.

There are additional queue which includes GPU, like yan-gpu with even higher priority than waic* queue:

```
[ingap@access4 ~]$ bqueues
QUEUE_NAME      PRIO STATUS          MAX JL/U JL/P JL/H NJOBS  PEND   RUN  SUSP
molgen-short    302  Open:Active       -   50    -    -     0     0     0     0
molgen-q        300  Open:Active       -  700    -    -    40     0    40     0
yan-gpu         289  Open:Active       -    -    -    -     0     0     0     0
sch-gpu         285  Open:Active       -    -    -    -     1     0     1     0
gsla-mem        240  Open:Active       -    -    -    -     0     0     0     0
gsla-cpu        240  Open:Active       -    -    -    -  5617  3744  1873     0
high_gpu_gsla   240  Open:Active       -   10    -    -     1     0     1     0
interactive_cpu 240  Open:Active       -    -    -    -     0     0     0     0
interactive_gpu 240  Open:Active       -   10    -    -     0     0     0     0
waic-short      189  Open:Active       -    -    -    -     7     0     7     0
waic-medium     188  Open:Active       -    -    -    -     2     0     2     0
waic-long       186  Open:Active       -    -    -    -    37    12    25     0
waic-risk       185  Open:Active       -    -    -    -   267    54   213     0
elinav          180  Open:Active       -    -    -    -     9     9     0     0
sorek-gpu       145  Open:Active       -    -    -    -     0     0     0     0
leeat-gpu       145  Open:Active       -    -    -    -     0     0     0     0
molgen-gpu      140  Open:Active       -    -    -    -     1     0     1     0
bio-gpu         140  Open:Active       -    -    -    -     0     0     0     0
gsla-gpu        140  Open:Active       -    -    -    -     1     0     1     0
gpu-test         90  Open:Active       -    -    -    -     0     0     0     0
gpu-interactive  89  Open:Active       -   30    -    -     6     0     6     0
gpu-shared       85  Closed:Active     - 1000    -    -     0     0     0     0
gpu-short        84  Open:Active       - 1000    -    -    69     0    69     0
gpu-medium       84  Open:Active       -  720    -    -    23     0    23     0
gpu-long         84  Open:Active       -  460    -    -   478   438    40     0
gpu-risk         83  Open:Active       - 1000    -    -     0     0     0     0
gpu-parallel     82  Open:Active       - 1000    -    -     0     0     0     0
```

yam-gpu queue includes 2 hosts ibdgx011 and ibdgx012:

```
[ingap@access4 scripts]$ bqueues -l yan-gpu

QUEUE: yan-gpu
  -- queue for Yan Binghai GPU jobs

PARAMETERS/STATISTICS
PRIO NICE STATUS          MAX JL/U JL/P JL/H NJOBS  PEND   RUN SSUSP USUSP  RSV PJOBS
289   20  Open:Active       -    -    -    -     0     0     0     0     0    0     0
Interval for a host to accept two jobs is 0 seconds
 RUNLIMIT
 1440.0 min

SCHEDULING PARAMETERS
           r15s   r1m  r15m   ut      pg    io   ls    it    tmp    swp    mem
 loadSched   -     -     -     -       -     -    -     -     -      -      -
 loadStop    -     -     -     -       -     -    -     -     -      -      -

SCHEDULING POLICIES:  FAIRSHARE
USER_SHARES:  [default, 1]

HIST_HOURS: 72.000000

USERS: talma yan-wx-grp/ wexac-admins/
HOSTS:  ibdgx011 ibdgx012
RES_REQ:  select[type=any] order[-mem]
RESRSV_LIMIT:  [ngpus_physical=0,10]
GPU_REQ:  num=1
ENABLE_GPU_HIST_RUN_TIME:  Y

[ingap@access4 scripts]$
```

and these hosts are GPUs =>

```
[ingap@access4 scripts]$ lshosts -gpu ibdgx011
HOST_NAME   gpu_id       gpu_model   gpu_driver   gpu_factor      numa_id       vendor          mig
ibdgx011         0 TeslaV100_SXM2_    525.60.13          7.0            0       Nvidia            N
                 1 TeslaV100_SXM2_    525.60.13          7.0            0       Nvidia            N
                 2 TeslaV100_SXM2_    525.60.13          7.0            0       Nvidia            N
                 3 TeslaV100_SXM2_    525.60.13          7.0            0       Nvidia            N
                 4 TeslaV100_SXM2_    525.60.13          7.0            1       Nvidia            N
                 5 TeslaV100_SXM2_    525.60.13          7.0            1       Nvidia            N
                 6 TeslaV100_SXM2_    525.60.13          7.0            1       Nvidia            N
                 7 TeslaV100_SXM2_    525.60.13          7.0            1       Nvidia            N
```

However, we can not use this queue:

```
[ingap@access4 scripts]$ bqueues -l yan-gpu

QUEUE: yan-gpu
  -- queue for Yan Binghai GPU jobs

PARAMETERS/STATISTICS
PRIO NICE STATUS          MAX JL/U JL/P JL/H NJOBS  PEND   RUN SSUSP USUSP  RSV PJOBS
289   20  Open:Active       -    -    -    -     0     0     0     0     0    0     0
Interval for a host to accept two jobs is 0 seconds
 RUNLIMIT
 1440.0 min

SCHEDULING PARAMETERS
           r15s   r1m  r15m   ut      pg    io   ls    it    tmp    swp    mem
 loadSched   -     -     -     -       -     -    -     -     -      -      -
 loadStop    -     -     -     -       -     -    -     -     -      -      -

SCHEDULING POLICIES:  FAIRSHARE
USER_SHARES:  [default, 1]

HIST_HOURS: 72.000000

USERS: talma yan-wx-grp/ wexac-admins/
HOSTS:  ibdgx011 ibdgx012
RES_REQ:  select[type=any] order[-mem]
RESRSV_LIMIT:  [ngpus_physical=0,10]
GPU_REQ:  num=1
ENABLE_GPU_HIST_RUN_TIME:  Y

[ingap@access4 scripts]$
```

so, our GPUs are waic* and gpu*.

I forgot to mention in the Task 3 that waic-risk can be preempted by waic-short/long/medium

```
[ingap@access4 scripts]$ bqueues -l waic-short

QUEUE: waic-short
  -- queue for non-interactive GPU jobs

PARAMETERS/STATISTICS
PRIO NICE STATUS          MAX JL/U JL/P JL/H NJOBS  PEND   RUN SSUSP USUSP  RSV PJOBS
189   20  Open:Active       -    -    -    -     3     0     3     0     0    0     0
Interval for a host to accept two jobs is 0 seconds
 RUNLIMIT
 240.0 min

SCHEDULING PARAMETERS
           r15s   r1m  r15m   ut      pg    io   ls    it    tmp    swp    mem
 loadSched   -     -     -     -       -     -    -     -     -      -      -
 loadStop    -     -     -     -       -     -    -     -     -      -      -

SCHEDULING POLICIES:  FAIRSHARE  DISPATCH_BY_QUEUE
FAIRSHARE_QUEUES:  waic-short waic-medium waic-long
USER_SHARES:  [default, 1]

SHARE_INFO_FOR: waic-short/
 USER/GROUP   SHARES  PRIORITY  STARTED  RESERVED  CPU_TIME  RUN_TIME   ADJUST  GPU_RUN_TIME
shakedd          1       0.333      0         0       0.0         0    0.000             0
assafsin         1       0.053      5         0     247.0      4642    0.000             0
drorm            1       0.045      4         0     770.8      2379    0.000          2379
maorturn         1       0.045      5         0    3185.0       647    0.000          1294
bagon            1       0.038      5         0      11.0      2874    0.000          2874
talzimb          1       0.036      5         0     116.7      3368    0.000          3368
andreyg          1       0.032      5         0     927.5      4379    0.000          4393
ilanaveh         1       0.022      5         0    3014.7      9169    0.000          9169
fadi             1       0.020     10         0   55032.6      8192    0.000          2020
arbelh           1       0.018      5         0    4716.5      9653    0.000         12261
shachart         1       0.009     20         0     548.1      7646    0.000         15292
amnong           1       0.005     64         0   10337.2      8290    0.000          8290
arielama         1       0.003     20         0  512243.5     17703    0.000         56656
amitabe          1       0.000     95         0 2975477.2    662986    0.000       1439597

HIST_HOURS: 336.000000

USERS: nivh yaelami leeatgen liorben guynev omerba yonina-wx-grp-lsf/ nadler-wx-grp/ talide-wx-g
HOSTS:  asus_hosts/+4 hpe6k_hosts/+3 waic_dgx_hosts/+2 hpe8k_hosts/+1 waic_2023_gpu/+1 ibdgxa01
ADMINISTRATORS:  ingap
RES_REQ:  affinity[thread*10] select[type=any] order[-slots:-ngpus_physical] rusage[mem=49152]
RESRSV_LIMIT:  [ngpus_physical=0,8]
PREEMPTION:  PREEMPTIVE[gpu-short gpu-medium gpu-long gpu-risk waic-risk gsla-gpu]
GPU_REQ:  num=1:aff=no:gmem=10GB
GPU_RUN_TIME_FACTOR:  10.000000
ENABLE_GPU_HIST_RUN_TIME:  Y

[ingap@access4 scripts]$
```

But on the other side waic-risk has not limits 300/60, which we saw for other waic*:

```
[ingap@access4 scripts]$ blimits -a -q waic-risk
No resource configuration found.

[ingap@access4 scripts]$ blimits -a -q waic-short

INTERNAL RESOURCE LIMITS:

    NAME          USERS           QUEUES          HOSTS          PROJECTS       APPS    SLOTS     MEM      TMP      SWP      JOBS
bagon_guaran bagon-wx-grp-lsf waic-short waic-       -               -            -     40/300     -        -        -        -
ronen_guaran ronen-wx-grp-lsf waic-short waic-       -               -            -     78/300     -        -        -        -
talide_guara talide-wx-grp-ls waic-short waic-       -               -            -     96/500     -        -        -        -
yonina_guara yonina-wx-grp-ls waic-short waic-       -               -            -     30/300     -        -        -        -
ylipman_guar ylipman-wx-grp-l (waic-short waic       -               -            -      -/300     -        -        -        -
shimon_guara shimon-wx-grp-ls (waic-short waic       -               -            -      -/300     -        -        -        -
irani_guaran (irani-wx-grp-ls (waic-short waic       -               -            -      -/300     -        -        -        -
maflash_guar maflash-wx-grp-l (waic-short waic       -               -            -      -/300     -        -        -        -
shamiro_guar shamiro-wx-grp-l (waic-short waic       -               -            -      -/300     -        -        -        -
nadler_guara nadler-wx-grp-ls (waic-short waic       -               -            -      -/300     -        -        -        -
dharel_guara dharel-wx-grp-ls (waic-short waic       -               -            -      -/300     -        -        -        -

EXTERNAL RESOURCE LIMITS:

    NAME          USERS           QUEUES          HOSTS          PROJECTS       APPS   ngpus_phys
bagon_guaran bagon-wx-grp-lsf waic-short waic-       -               -            -       6/60
ronen_guaran ronen-wx-grp-lsf waic-short waic-       -               -            -       5/60
talide_guara talide-wx-grp-ls waic-short waic-       -               -            -      20/100
yonina_guara yonina-wx-grp-ls waic-short waic-       -               -            -       7/60
ylipman_guar ylipman-wx-grp-l (waic-short waic       -               -            -       -/60
shimon_guara shimon-wx-grp-ls (waic-short waic       -               -            -       -/60
irani_guaran (irani-wx-grp-ls (waic-short waic       -               -            -       -/60
maflash_guar maflash-wx-grp-l (waic-short waic       -               -            -       -/60
shamiro_guar shamiro-wx-grp-l (waic-short waic       -               -            -       -/60
nadler_guara nadler-wx-grp-ls (waic-short waic       -               -            -       -/60
dharel_guara dharel-wx-grp-ls (waic-short waic       -               -            -       -/60

[ingap@access4 scripts]$
```

Can you explain how the "Factor" works?
According to IBM LSF manual:
https://www.ibm.com/docs/en/spectrum-lsf/10.1.0?topic=reference-command
https://www.ibm.com/docs/en/spectrum-lsf/10.1.0?topic=reference-bqueues

**RUN_TIME_FACTOR**

The weighting parameter for run_time within the dynamic priority calculation. If not defined for the queue, the cluster-wide value that is defined in the `lsb.params` file is used.

The explanation is not clear for me. Don't know. Lets leave this at his stage.

Does "RESRSV_LIMIT:  [ngpus_physical=0,8]" means we cant use less than 0 gpus or more than 8?

I think yes, this is range for amount of GPU which can be used per job: from 0 till 8.

`Can you explain how the "nfs4_editfacl" command works? (the one from the jupyter tutorial in the hpcwiki)`

I didn't have a time yet to read HPC wiki. I will send the task related to Jupyter how I open and work with it => how I do it.