NSF/IUCRC CAC PROJECT

INTEGRATED VISUALIZING, MONITORING, AND MANAGING HPC SYSTEMS

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JOB ACCOUNTING COMMANDS

- **sacct** - Generates detailed accounting information about individual jobs or job steps
  - Filtering options by user, computer, partition, time, etc.
- **sreport** - Generates aggregated accounting reports
  - Reports resource usage by user, cluster, partition, etc.
  - Do not reported about individual jobs or steps
- **sstat** - Generates very detailed accounting report about individual currently running job or job step

Ref: https://www.youtube.com/watch?v=8UfzXnzSmL4&feature=relmfu

JOB USAGE ATTRIBUTES - SCHEMA USED IN QUANAH

qname	Name of the cluster queue in which the job has run
hostname	Name of the execution host
group	The effective group id of the job owner when executing the job
owner	Owner of the job
job_name	Job name
job_number	Job identifier
submission_time	Submission time
start_time	Start time
end_time	End time
failed	Indicates the problem which occurred in case a job could not be started on the execution host (e.g. because the
exit_status	Exit status of the job script
ru_wallclock	Difference between end_time and start_time
cpu	The cpu time usage in seconds
mem	The integral memory usage in Gbytes cpu seconds
io	The amount of data transferred in input/output operations
iow	The io wait time in seconds
maxvmem	The maximum vmem size in bytes
department	The department which was assigned to the job
granted_pe	The parallel environment which was selected for that job
slots	The number of slots which were dispatched to the job by the scheduler (The number of parallel processes
task_number	Array job task index number
pe_taskid	If this identifier is set the task was part of a parallel job and was passed to Sun Grid Engine via the qrsh -inherit
wait_time_seconds	The difference between start time and submit time in seconds
cluster_name	Cluster name
wallclock	[Very close to ru_wallclock]
end_time_hour	End time in YYYY-MM-DD HH:00:00 format
hard_runtime	The maximum run time (hours, minutes and seconds) (specified by user)
h_vmem	The amount of maximum memory required (specified by user)
project	The job's project name (specified by user)

JOB USAGE ATTRIBUTES

qname		Partition	Identifies the partition on which the job ran
hostname		NodeList	List of nodes in job/step
group		Group	The group name of the user who ran the job
owner		User	The user name of the user who ran the job
job_name		JobName	The name of the job or job step
job_number		JobID	The identification number of the job or job step
submission_time		Submit	The time the job was submitted. Default format output is, YYYY-MM-
start_time		Start	Initiation time of the job
end_time		End	Termination time of the job
failed			
exit_status		ExitCode	The exit code returned by the job script or salloc, typically as set by the
ru_wallclock		End - Start	Derived from (End - Start)
cpu		CPUTimeRAW	Time used (Elapsed time * CPU count) by a job or step in cpu-seconds
mem		TresUsageInTot + TresUsageOutTot	Tres total usage in + out by all tasks in job
io		TresUsageInTot + TresUsageOutTot	Tres total usage in + out by all tasks in job
iow			
maxvmem		MaxVMSize	Maximum Virtual Memory size of all tasks in job
department			
granted_pe			
slots		AllocCPUs	Count of allocated CPUs
task_number		NTasks	Total number of tasks in a job or step
pe_taskid			
wait_time_seconds		Start - Submit	Derived from (Start - Submit)
cluster_name		Cluster	Cluster name
wallclock			
end_time_hour		End.hour	Derived from End.hour
hard_runtime		TimelimitRaw	What the time limit was/is for the job. Format is in number of minutes
h_vmem		ReqMem	Minimum required memory for the job, in MB. A 'c' at the end of
project			

JOB ACCOUNTING COMMANDS

- **sacct** - Generates detailed accounting information about individual jobs or job steps

To get the daily job report, run the following command at 23:59:59 each day. (The default time window is from 00:00:00 to Now)

```
$ sacct –format=partition,nodelist,group,user,jobname,jobid,
submit,start,end,exitcode,cputimeraw,tresusageintot,
tresusageouttot,maxvmsize,alloccpus,ntasks,cluster,timelimitraw,
reqmem -p
```

QUESTIONS?/COMMENTS?

SACCT

sacct ––helpformat

Account	AdminComment	AllocCPUS	AllocGRES
AllocNodes	AllocTRES	AssocID	AveCPU
AveCPUFreq	AveDiskRead	AveDiskWrite	AvePages
AveRSS	AveVMSize	BlockID	Cluster
Comment	Constraints	ConsumedEnergy	ConsumedEnergyRaw
CPUTime	CPUTimeRAW	DBIndex	DerivedExitCode
Elapsed	ElapsedRaw	Eligible	End
ExitCode	Flags	GID	Group
JobID	JobIDRaw	JobName	Layout
MaxDiskRead	MaxDiskReadNode	MaxDiskReadTask	MaxDiskWrite
MaxDiskWriteNode	MaxDiskWriteTask	MaxPages	MaxPagesNode
MaxPagesTask	MaxRSS	MaxRSSNode	MaxRSSTask
MaxVMSize	MaxVMSizeNode	MaxVMSizeTask	McsLabel
MinCPU	MinCPUNode	MinCPUTask	NCPUS
NNodes	NodeList	NTasks	Priority
Partition	QOS	QOSRAW	Reason
ReqCPUFreq	ReqCPUFreqMin	ReqCPUFreqMax	ReqCPUFreqGov
ReqCPUS	ReqGRES	ReqMem	ReqNodes
ReqTRES	Reservation	ReservationId	Reserved
ResvCPU	ResvCPURAW	Start	State
Submit	Suspended	SystemCPU	SystemComment
Timelimit	TimelimitRaw	TotalCPU	TRESUsageInAve
TRESUsageInMax	TRESUsageInMaxNode	TRESUsageInMaxTask	TRESUsageInMin
TRESUsageInMinNode	TRESUsageInMinTask	TRESUsageInTot	TRESUsageOutAve
TRESUsageOutMax	TRESUsageOutMaxNode	TRESUsageOutMaxTask	TRESUsageOutMin
TRESUsageOutMinNode	TRESUsageOutMinTask	TRESUsageOutTot	UID
User	UserCPU	WCKey	WCKeyID
WorkDir			