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Batch Systems Comparison


Functionality	Torque/Maui	SLURM	HTCondor	USGE/SoGE	LSF
Number of sites 7	78	18	25	8	5
Developer Support	maui not supported	yes	yes	yes	yes
Community Support	yes for torque	yes through slurm-dev list	yes through the HTCondor-users list	no/?	no
Documentation	Good	Good	Good	less than satisfying/?	Good
Cream integration	partial	partial	partial	full	full
ARC-CE integration	full	full	full	full	full
APEL support	yes	yes	yes	yes	yes
Info System support 7	Cream	Cream	no	Cream	Cream
Getting arguments from CE	ARC-CE/Cream if site writes blah script	ARC-CE	ARC-CE	ARC-CE/Cream if site writes blah script	ARC-CE/Cream if site writes blah script
Licenses/Costs	free	free	free	Univa/free	IBM
Scalability	no	Debated. Probably depending on the hardware type (HPC vs HTC) as much as the configuration of the DB and plug-ins.	yes	yes	6500 nodes
IPv6 support	no	no	yes, with limitations	no	yes
Distribution format	source, rpm	source	source, rpm, tarball	tarball	tarball
High Availability	no	head node failover	central manager & job queue failover	head node failover	head node failover
Stability	low	high	high	high	high
Installation easiness	yes	without DB yes	yes	yes	yes
Configuration easiness		yes	with puppet yes	yes	yes
Min Num config files	3 on head, 1 on WN	1 shared (+DB for fairshares)	2 default can be split in /etc/condor/config.d	DB or a bunch of filesmanaged with GE tools	±10 on master, 1 on WN
Min Num daemons	2 Master / 1 WNs	1 Master / 1 WNs (without DB for fairshares)	4 Master / 2 WNs	1...3 Master / 1 WNs	±10 master / ± 5 WNs
Comunity puppet module	yes	no	yes	no	wrote our own
Efficient Backfilling	tunable	tunable	not out-of-the-box, but similar behaviour can probably be configured	yes	yes

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Queues	yes	no	can use accounting groups to produce similar functionality	yes	yes
Partitioning	reservations	yes, can overlap	fully configurable	fully configurable	fully configurable
Fairshares	yes	yes	yes	yes	yes
Hierarchical Fairshares		yes	yes	yes	yes
Wholenode/multicore	yes	yes	yes	yes	yes
Limits	configurable	standard + custom	fully configurable	fully configurable	fully configurable
Priorities	configurable	based on fairshare	job, user & group priorities	yes	user, group, queue priorities
Cgroup support	yes (>6.0.0)	full support	cpu & memory	yes (>8.2.0)	yes (>9.1.1)
Multicluster	no	yes	yes (flocking, job router)	yes	yes
Requires DB	no	yes for advanced features	no	optional	no
Requires shared FS	no	yes according to the manual	no	yes according to the manual but files can also be distributed across the cluster	no
Command line tools 	custom commands	custom commands, pbs like wrappers	custom commands	custom commands	custom commands

 **Number of sites:** is an approximate number extracted from BDII summing T1 and T2 no distinction between varieties (SGE*, PBS*). Last updated on the 26/02/2017.

 **Info system support:** IS responsibility Matrix

 **Command line tools:** different batch systems commands comparison [↗](#) (HTcondor missing).

Other comparison documents

CESGA Torque/MAUI,SGE,SLURM comparison [↗](#) document

-- AlessandraForti - 13 Mar 2014

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