How to install mslurm

1. Install slurm on the control node.
2. Copy the mslurm.tgz file on /usr/local/
3. Tar xvzf mslurm.tgz
4. In /usr/local/mslurm/bin there are 6 scripts
   - mslurm is the main script
   - mslurmdbd is a link to mslurm script. Although is the same script, It must have a different name than mslurm in order to work properly
   - rcslurm is the substitute to the slurm script in /etc/init.d/
   - rcslurmdbd is the substitute to the slurmdbd script in /etc/init.d/
   - rcmslurm is the script to automatically start all the slurmctld daemons when booting
   - rcmslurmdbd is the script to automatically start all the slurmdbd daemons when booting
5. Copy and rename rcslurm and rcslurmdbd at /etc /init.d as slurm and slurmdbd respectively
6. At /etc /init.d create a link named mslurm that points to rcmslurm:
   a. ln -s -T /usr/local/mslurm/sbin/rcmslurm /etc/init.d/mslurm
7. At /etc /init.d create a link named mslurmdbd that points to rcmslurmdbd
   a. ln -s -T /usr/local/mslurm/sbin/rcmslurmdbd /etc/init.d/mslurmdbd
8. At /usr/sbin create a link named mslurm that points to mslurm
   a. ln -s -T /usr/local/mslurm/sbin/mslurm /usr/sbin /mslurm
9. At /usr/sbin create a link named mslurmdbd that points to mslurmdbd
   a. ln -s -T /usr/local/mslurm/sbin/mslurmdbd /usr/sbin /mslurmdbd
10. Copy the mslurm.conf in /usr/local/mslurm to /etc/slurm/ (you can also use the empty sample on /usr/local/mslurm/samples)
11. Edit mslurm.conf to setup your clusters and/or databases. mslurm.conf has lot of comments it is useful to read them when configuring.
12. Copy /usr/local/mslurm/samples/sysconf/mslurm in /etc/sysconfig (this file is empty but can be used to load common variables when executing mslurm)
13. The slurm.conf for each of the cluster will now be on a subfolder of /etc/slurm based on the cluster name (typically /etc/slurm/cn=cluster_name, but this can be changed in mslurm.conf)
14. Copy the slurm.conf files of each of the clusters to each of the cluster configuration folder
15. Start the slurm control daemon using mslurm and check the status: **mslurm cluster_name start;mslurm cluster_name status**
16. If you want to have also multiple slurmdbd daemons running repeat steps 13-15 but with the slurmdbd.conf, in the folders named un/etc/slurm/un=database_name.
17. To start and check the slurmdbd daemons use: **mslurmdbd database_name start;mslurmdbd database_name status**
18. To start automatically all the daemons when booting use the mslurm and mslurmdbd daemons in /etc/init.d as you would do with the rest of the daemons and run levels.

Adding new clusters

1. Create a folder at /etc/slurm with the name of the new cluster, typically cn=cluster_name (it can be changed in mslurm.conf)
2. Copy slurm.conf file to /etc/slurm/cn=cluster_name
3. Create on /var the folder slurm-cluster_name and change its ownership to the slurm user.
4. Edit /etc/slurm/mslurm.conf and add the new cluster.
5. Start the slurmctld daemon with mslurm cluster_name start

F.A.Q.

Question:

Do the users of the cluster have to change their way of using slurm?

Answer:

No. mslurm is installed only on the control node. If you have a login node where users log to send slurm commands they don't have to use it. Only the users of the control node (typically the administrators) will be affected.

Question:

How do I send the same command to all of the clusters?

Answer:

You can write as second parameter all the cluster names comma separated, or you can use as second parameter –a

Examples: **mslrum –a sinfo**

mslurm –a status

Question:

I try to change the output format of squeue with –o and I get the following error:

squeue: error: Unrecognized option:

Answer:

Mslurm is passing each element of the string passed after –o as a separate parameter to squeue because of the spaces. You have to place a "\" character before each space in the string passed as parameter to –o

Example: **mslurm cluster1 squeue –o "%10i\ %.8j\ %.9P\ %.8u\ %.9M\ %N**"

Question:

I try to change the output format of sinfo with –o and either I don't get the desired columns or either I get an error:

Invalid node format specification

Answer:

Mslurm is passing each element of the string passed after –o as a separate parameter to sinfo because of the spaces. You have to place a "\" character before each space in the string passed as parameter to –o

Example: **mslurm cluster1 sinfo –o "%N\ %.5D\ %9P\ %6t"**

Question:

I have seen written the word union on the scripts and configuration files. What does it means in this context?

Answer:

In this context a union is the same as a database.