

# Running mentor graphic calibre drc job

(find out the best solution to run calibre drc job)

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# Items

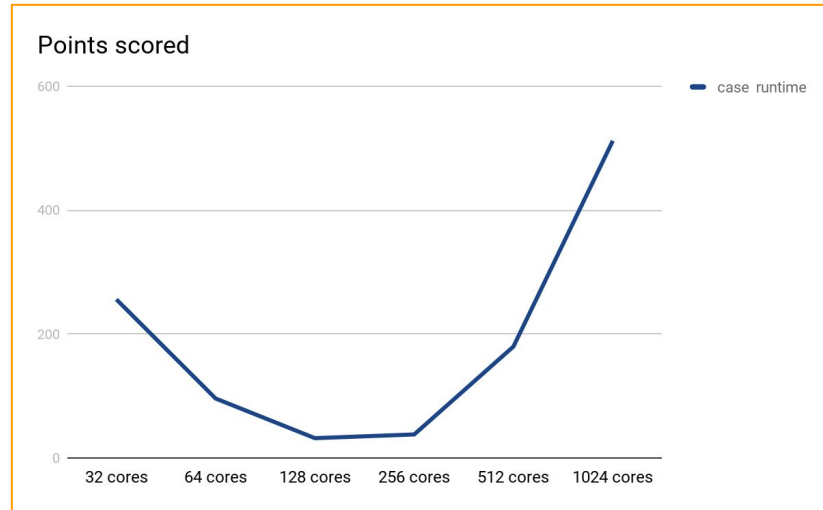
1. Background info
2. The env we set to run the test case
3. The runtime result
4. Conclusion and recommendation

# 1. Background info

- Users feedback calibre drc job run time is longer than the run on one of vendor pools.
- We like to find out what is the root cause on the slow calibre drc jobs as compared to the vendor compute pool, we have better remote compute nodes and better network switches.
- To run the calibre MTflex mode, the calibre drc command we set is “ *-hyper -turbo 120 -remotefile \$oreng* “
- To run the calibre MT mode, the calibre drc command we set is “ *-hyper -turbo* “

# Mentor graphics calibre drc MTflex job scalability

- Well known calibre drc MTflex job only scales up the cpu core between 64-256/386
- Run time is famous in U shape



# The env we set to run the test case

1. Fixed master with various remote hosts (network with multiple switch involve)
2. Fixed remote hosts with various master nodes(network with multiple switch involve)
3. Run same job in a single node
4. Fixed master and fixed remote hosts (network with multiple switch involve)
5. Fixed master and fixed remote hosts (within one non-blocking switch )

# Test case cpu info and network info

- Master node cpu at 2.8Ghz E7-4890 (2014 cpu)
- Slave node cpu at 3.2Ghz E5-2667 v4 (2016 cpu)
- Cisco 3k/7k switch
- All 10G network interface
- Network Latency below 0.1 ms

# The runtime result

ENV	result	comment
Fixed master with various remote hosts (network with multiple switch involve)	Run time from 2.5 hours to 5.x hours with 120 cores cpu	
Fixed remote hosts with various master nodes(network with multiple switch involve)	Run time from 2.5 hours to 5.x hours with 120 cores cpu	
Fixed master and fixed remote hosts, the traffic between master node and remote nodes across multiple non-blocking switch(Cisco)	Runtime from 2.5 hours to 3.x hours with 120 cores cpu	
Run same job in single master (MT mode)	Run time: 1.1 hours with 60 cores ( use 2014 cpu) Run time: 1.34 hours with 28 cores (use 2015 cpu) Run time: 2.27 hours with 16 cores (use 2012 cpu)	This is the best run time in our test evn, as their is no network traffic involved during job running
Fixed master and fixed remote hosts within one non-blocking switch(Cisco)	Run time 1.5 hours with 120 cores cpu (use 2016 cpu) Run time 1.49 hours with 64 cores cpu ( use 2012 cpu)	Traffic didn't cross multiple switches

# Conclusion and recommendation

1. Use single node with more cores and large memory to run calibre drc jobs (MT mode)
2. Or dedicate a pool of machines which were connected within in a single switch to run calibre drc jobs(MTflex mode).