**Master node:**

step 1. 配置apt代理服务器,连接外网:

/etc/apt/apt.conf

step 2. 配置hosts:

将所有node的IP和主机名映射添加到host文件中

/etc/hosts

127.0.0.1 localhost.localdomain localhost

43.82.40.25 mard1-HP-Z840-Workstation

43.82.40.44 SCRL-MARD2-DL580

43.82.40.45 SCRL-MARD2-Z820-45

step 3.安装gridengine

sudo apt-get install gridengine-master gridengine-client

如果同时需要master node做exec node：

apt-get install gridengine-master gridengine-client gridengine-exec

**exec node:**

step 1,2同Master node

step 3 安装gridengine

sudo apt-get install gridengine-client gridengine-exec

**Check installation：**

在master node上输入命令 qhost：

HOSTNAME ARCH NCPU LOAD MEMTOT MEMUSE SWAPTO SWAPUS

-------------------------------------------------------------------------------

global - - - - - - -

SCRL-MARD2-DL580 lx26-amd64 80 - 755.8G - 256.0G -

SCRL-MARD2-Z820-45 lx26-amd64 8 - 251.9G - 238.4G -

如不能显示所有运算node的信息，尝试依次重启exec node 和 master mode

exec node restart：

/etc/init.d/gridengine-exec restart

master node restart：

/etc/init.d/gridengine-master restart

**Configure exec node resource:**

在master node上进行配置

1. 添加或配置queue:

qconf -aq / qconf -mq all.q

qname all.q

1. 配置gridengine可以被使用的资源：

查看资源使用qconf –sc 配置资源使用qconf –mc

修改mem\_free，增加gpu和 ram\_free

#name shortcut type relop requestable consumable default urgency

#------------------------------------------------------------------------------------------

<snip>

mem\_free mf MEMORY <= YES YES 1G 0

gpu g INT <= YES YES 0 10000

ram\_free ram\_free MEMORY <= YES JOB 1G 0

1. 配置exec node 可以使用的资源量

qconf -me SCRL-MARD2-DL580

complex\_values ram\_free=700,gpu=3

qconf -me SCRL-MARD2-Z820-45

complex\_values ram\_free=250,gpu=3

1. 为GridEngine添加并行运行环境

qconf -ap smp

slots 88

1. 将smp添加到all.q中

qconf -mq all.q

pe\_list make smp

**Configuring GridEngine (adding nodes)：**

Follow：<http://kaldi-asr.org/doc/queue.html> Configuring GridEngine (adding nodes) part

**GridEngine Installation status：**

zwm@SCRL-MARD2-Z820-45:~$ hostname -I

192.168.1.201 43.82.40.45

zwm@SCRL-MARD2-Z820-45:~$ hostname

SCRL-MARD2-Z820-45

zwm@SCRL-MARD2-Z820-45:~$ qconf -sh

SCRL-MARD2-DL580

SCRL-MARD2-Z820-45

zwm@SCRL-MARD2-Z820-45:~$ qconf -sel

SCRL-MARD2-DL580

SCRL-MARD2-Z820-45

zwm@SCRL-MARD2-Z820-45:~$ qconf -ss

SCRL-MARD2-DL580

SCRL-MARD2-Z820-45

zwm@SCRL-MARD2-Z820-45:~$ qhost

HOSTNAME ARCH NCPU LOAD MEMTOT MEMUSE SWAPTO SWAPUS

-------------------------------------------------------------------------------

global - - - - - - -

SCRL-MARD2-DL580 lx26-amd64 80 0.01 755.8G 5.2G 256.0G 0.0

SCRL-MARD2-Z820-45 lx26-amd64 8 1.14 251.9G 47.8G 238.4G 12.8G

zwm@SCRL-MARD2-Z820-45:~$ qhost -q

HOSTNAME ARCH NCPU LOAD MEMTOT MEMUSE SWAPTO SWAPUS

-------------------------------------------------------------------------------

global - - - - - - -

SCRL-MARD2-DL580 lx26-amd64 80 0.01 755.8G 5.2G 256.0G 0.0

all.q BIP 0/0/80

SCRL-MARD2-Z820-45 lx26-amd64 8 1.14 251.9G 47.8G 238.4G 12.8G

all.q BIP 0/0/8

zwm@SCRL-MARD2-Z820-45:~$ qstat -f

queuename qtype resv/used/tot. load\_avg arch states

---------------------------------------------------------------------------------

all.q@SCRL-MARD2-DL580 BIP 0/0/80 0.01 lx26-amd64

---------------------------------------------------------------------------------

all.q@SCRL-MARD2-Z820-45 BIP 0/0/8 1.14 lx26-amd64

zwm@SCRL-MARD2-Z820-45:~$ qconf -se SCRL-MARD2-DL580

hostname SCRL-MARD2-DL580

load\_scaling NONE

complex\_values ram\_free=700,gpu=3

load\_values arch=lx26-amd64,num\_proc=80,mem\_total=773941.304688M, \

swap\_total=262099.996094M,virtual\_total=1036041.300781M, \

load\_avg=0.010000,load\_short=0.000000, \

load\_medium=0.010000,load\_long=0.050000, \

mem\_free=768613.964844M,swap\_free=262099.996094M, \

virtual\_free=1030713.960938M,mem\_used=5327.339844M, \

swap\_used=0.000000M,virtual\_used=5327.339844M, \

cpu=0.000000,m\_topology=NONE,m\_topology\_inuse=NONE, \

m\_socket=0,m\_core=0,np\_load\_avg=0.000125, \

np\_load\_short=0.000000,np\_load\_medium=0.000125, \

np\_load\_long=0.000625

processors 80

user\_lists NONE

xuser\_lists NONE

projects NONE

xprojects NONE

usage\_scaling NONE

report\_variables NONE

zwm@SCRL-MARD2-Z820-45:~$ qconf -se SCRL-MARD2-Z820-45

hostname SCRL-MARD2-Z820-45

load\_scaling NONE

complex\_values ram\_free=250,gpu=3

load\_values arch=lx26-amd64,num\_proc=8,mem\_total=257896.996094M, \

swap\_total=244140.996094M,virtual\_total=502037.992188M, \

load\_avg=1.050000,load\_short=0.980000, \

load\_medium=1.050000,load\_long=1.060000, \

mem\_free=208976.718750M,swap\_free=231018.144531M, \

virtual\_free=439994.863281M,mem\_used=48920.277344M, \

swap\_used=13122.851562M,virtual\_used=62043.128906M, \

cpu=11.100000,m\_topology=NONE,m\_topology\_inuse=NONE, \

m\_socket=0,m\_core=0,np\_load\_avg=0.131250, \

np\_load\_short=0.122500,np\_load\_medium=0.131250, \

np\_load\_long=0.132500

processors 8

user\_lists NONE

xuser\_lists NONE

projects NONE

xprojects NONE

usage\_scaling NONE

report\_variables NONE

zwm@SCRL-MARD2-Z820-45:~$ qconf -sq all.q

qname all.q

hostlist SCRL-MARD2-DL580 SCRL-MARD2-Z820-45

seq\_no 0

load\_thresholds np\_load\_avg=1.75

suspend\_thresholds NONE

nsuspend 1

suspend\_interval 00:05:00

priority 0

min\_cpu\_interval 00:05:00

processors UNDEFINED

qtype BATCH INTERACTIVE

ckpt\_list NONE

pe\_list make smp

rerun FALSE

slots 40,[SCRL-MARD2-DL580=80],[SCRL-MARD2-Z820-45=8]

tmpdir /tmp

shell /bin/csh

prolog NONE

epilog NONE

shell\_start\_mode posix\_compliant

starter\_method NONE

suspend\_method NONE

resume\_method NONE

terminate\_method NONE

notify 00:00:60

owner\_list NONE

user\_lists NONE

xuser\_lists NONE

subordinate\_list NONE

complex\_values NONE

projects NONE

xprojects NONE

calendar NONE

initial\_state default

s\_rt INFINITY

h\_rt INFINITY

s\_cpu INFINITY

h\_cpu INFINITY

s\_fsize INFINITY

h\_fsize INFINITY

s\_data INFINITY

h\_data INFINITY

s\_stack INFINITY

h\_stack INFINITY

s\_core INFINITY

h\_core INFINITY

s\_rss INFINITY

h\_rss INFINITY

s\_vmem INFINITY

h\_vmem INFINITY

zwm@SCRL-MARD2-Z820-45:~$ qconf -sc

#name shortcut type relop requestable consumable default urgency

#------------------------------------------------------------------------------------------

arch a RESTRING == YES NO NONE 0

calendar c RESTRING == YES NO NONE 0

cpu cpu DOUBLE >= YES NO 0 0

display\_win\_gui dwg BOOL == YES NO 0 0

gpu g INT <= YES YES 0 10000

h\_core h\_core MEMORY <= YES NO 0 0

h\_cpu h\_cpu TIME <= YES NO 0:0:0 0

h\_data h\_data MEMORY <= YES NO 0 0

h\_fsize h\_fsize MEMORY <= YES NO 0 0

h\_rss h\_rss MEMORY <= YES NO 0 0

h\_rt h\_rt TIME <= YES NO 0:0:0 0

h\_stack h\_stack MEMORY <= YES NO 0 0

h\_vmem h\_vmem MEMORY <= YES NO 0 0

hostname h HOST == YES NO NONE 0

load\_avg la DOUBLE >= NO NO 0 0

load\_long ll DOUBLE >= NO NO 0 0

load\_medium lm DOUBLE >= NO NO 0 0

load\_short ls DOUBLE >= NO NO 0 0

m\_core core INT <= YES NO 0 0

m\_socket socket INT <= YES NO 0 0

m\_topology topo RESTRING == YES NO NONE 0

m\_topology\_inuse utopo RESTRING == YES NO NONE 0

mem\_free mf MEMORY <= YES YES 1G 0

mem\_total mt MEMORY <= YES NO 0 0

mem\_used mu MEMORY >= YES NO 0 0

min\_cpu\_interval mci TIME <= NO NO 0:0:0 0

np\_load\_avg nla DOUBLE >= NO NO 0 0

np\_load\_long nll DOUBLE >= NO NO 0 0

np\_load\_medium nlm DOUBLE >= NO NO 0 0

np\_load\_short nls DOUBLE >= NO NO 0 0

num\_proc p INT == YES NO 0 0

qname q RESTRING == YES NO NONE 0

ram\_free ram\_free MEMORY <= YES JOB 1G 0

rerun re BOOL == NO NO 0 0

s\_core s\_core MEMORY <= YES NO 0 0

s\_cpu s\_cpu TIME <= YES NO 0:0:0 0

s\_data s\_data MEMORY <= YES NO 0 0

s\_fsize s\_fsize MEMORY <= YES NO 0 0

s\_rss s\_rss MEMORY <= YES NO 0 0

s\_rt s\_rt TIME <= YES NO 0:0:0 0

s\_stack s\_stack MEMORY <= YES NO 0 0

s\_vmem s\_vmem MEMORY <= YES NO 0 0

seq\_no seq INT == NO NO 0 0

slots s INT <= YES YES 1 1000

swap\_free sf MEMORY <= YES NO 0 0

swap\_rate sr MEMORY >= YES NO 0 0

swap\_rsvd srsv MEMORY >= YES NO 0 0

swap\_total st MEMORY <= YES NO 0 0

swap\_used su MEMORY >= YES NO 0 0

tmpdir tmp RESTRING == NO NO NONE 0

virtual\_free vf MEMORY <= YES NO 0 0

virtual\_total vt MEMORY <= YES NO 0 0

virtual\_used vu MEMORY >= YES NO 0 0

# >#< starts a comment but comments are not saved across edits --------

**Q1:**

如何让配置kaldi使用gridengine， 默认配置如下

kaldi-trunk/egs/wsj/s5$ vim cmd.sh

#a) JHU cluster options

export train\_cmd="queue.pl -l arch=\*64"

export decode\_cmd="queue.pl -l arch=\*64,mem\_free=2G,ram\_free=2G"

export mkgraph\_cmd="queue.pl -l arch=\*64,ram\_free=4G,mem\_free=4G"

export big\_memory\_cmd="queue.pl -l arch=\*64,ram\_free=8G,mem\_free=8G"

export cuda\_cmd="queue.pl -l gpu=1"

scrl-mard2@SCRL-MARD2-Z820-45:/home/tools/kaldi-trunk/egs/wsj/s5$ vim conf/queue.conf

# Default configuration

command qsub -v PATH -cwd -S /bin/bash -j y -l arch=\*64\*

option mem=\* -l mem\_free=10G,ram\_free=10G

option mem=0 # Do not add anything to qsub\_opts

option num\_threads=\* -pe smp 4

option num\_threads=1 # Do not add anything to qsub\_opts

option max\_jobs\_run=\* -tc 4

default gpu=0

option gpu=0

option gpu=\* -l gpu=4 -q g.q

**Q2：**

配置ssh密钥对于gridengine有什么作用

Q3: