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**NEC Network Queuing System V (NQS-V)**

**[Log Analysis Guide]**

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## Preface

This guide explains the log analysis methods of NEC Network Queuing System V (NQSV) job management system.

The manual of NEC Network Queuing System V (NQSV) is composed by following user's guides.

Name	Contents
NEC Network Queuing System V (NQSV) User's Guide [Introduction]	This guide explains the overview of NQSV and configuration of basic system.
NEC Network Queuing System V (NQSV) User's Guide [Management]	This guide explains the various management functions of the system.
NEC Network Queuing System V (NQSV) User's Guide [Operation]	This guide explains the various functions that used by general user.
NEC Network Queuing System V (NQSV) User's Guide [Reference]	The command reference guide.
NEC Network Queuing System V (NQSV) User's Guide [API]	This guide explains the C programming interface (API) to control NQSV.
NEC Network Queuing System V (NQSV) User's Guide [JobManipulator]	This guide explains about the scheduler component : JobManipulator.
NEC Network Queuing System V (NQSV) User's Guide [Accounting & Budget Control]	This guide explains the functions of accounting.

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## Remarks

- (1) This manual conforms to Release 1.00 and subsequent releases of the NQSV.
- (2) All the functions described in this manual are program products. The typical functions of them conform to the following product names and product series numbers:

<b>Product Name</b>	<b>product series numbers</b>
NEC Network Queuing System V (NQSV) /ResourceManager	UWAF00 UWHAF00 (Support Pack)
NEC Network Queuing System V (NQSV) /JobServer	UWAG00 UWHAG00 (Support Pack)
NEC Network Queuing System V (NQSV) /JobManipulator	UWAH00 UWHAH00 (Support Pack)

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## About This Manual

### Notation Conventions

The following notation rules are used in this manual:

Omission Symbol	...	This symbol indicates that the item mentioned previously can be repeated. The user may input similar items in any desired number.
Vertical Bar		This symbol divides an option and mandatory selection item.
Brackets	{ }	A pair of brackets indicates a series of parameters or keywords from which one has to be selected.
Braces	[ ]	A pair of braces indicate a series of parameters or keywords that can be omitted.

## Glossary

Term	Definition
Vector Engine (VE)	The NEC original PCIe card for vector processing based on SX architecture. It is connected to x86-64 machine. VE consists of more than one core and shared memory.
Vector Host (VH)	The x86-64 architecture machine that VE connected.
Vector Island (VI)	The general component unit of a single VH and one or more VEs connected to the VH.
Batch Server (BSV)	Resident system process running on a Batch server host to manage entire NQSV.
Job Server (JSV)	Resident system process running on each execution host to manage the execution of jobs.
JobManipulator (JM)	JobManipulator is the scheduler function of NQSV. JM manages the computing resources and determines the execution time of jobs.
Accounting Server	Accounting server collects and manages account information and manages budgets.
Request	A unit of user jobs in the NQSV. It consists of one or more jobs. Requests are managed by the Batch Server.
Job	A job is an execution unit of user job. It is managed by Job Server.
Logical Host	A logical host is a set of logical (virtually) divided resources of an execution host.
Queue	It is a mechanism that pools and manages requests submitted to BSV.
BMC	Board Management Controller for short. It performs server management based on the Intelligent Platform Management Interface (IPMI).
HCA	Host Channel Adapter for short. The PCIe card installed in VH to connect to the IB network.
IB	InfiniBand for short.
MPI	Abbreviation for Message Passing Interface. MPI is a standard for parallel computing between nodes.
NIC	Network Interface Card for short. The hardware to communicate with other node.

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# 1. Batch Server Log

The description of log information may change.

## 1.1. Request state Transition

The following is the status of a request.

```
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732: (RST_QUEUED SUBMIT rid 748032.1)
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732: (RST_STAGING STAGEIN rid 748032.1)
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732: (RST_QUEUED STAGEIN_SUCCESS rid 748032.1)
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732: (RST_PRERUNNING RUN rid 748032.1)
09/17 17:48:36 NQSV(DEBUG): gma_generate_event: r01732: (RST_RUNNING PRERUN_SUCCESS rid 748032.1 jobs 2)
09/17 17:51:11 NQSV(DEBUG): gma_generate_event: r01732: (RST_POSTRUNNING EXIT rid 748032.1)
09/17 17:51:11 NQSV(DEBUG): gma_generate_event: r01732: (RST_EXITING POSTRUN_SUCCESS rid 748032.1)
09/17 17:51:12 NQSV(DEBUG): gma_generate_event: r01732: (RST_EXITED DONE rid 748032.1)
```

Describes the output.

```
Date time      LogLevel      : information
-----
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732: (RST_QUEUED SUBMIT rid 748032.1)
                                     1           2           3           4
                                     1: rcb id
                                     2: Request State
                                     3. Request ID
                                     4. Batch Server Machine ID
```

### Request State

- RST\_QUEUED  
The request is queued and scheduled for execution.
- RST\_STAGING  
Batch request or network request are generated. The stage-in files are transferred from client hosts to the execution host.
- RST\_PRERUNNING  
The information required to execute batch request is being transferred to each job server.
- RST\_RUNNING  
Batch jobs associated with the batch request is being executed.
- RST\_POSTRUNNING  
Post-processing after completing execution of batch request is performed.
- RST\_EXITING  
The standard/error output file and stage-out file of the request are transferred from the execution host to the client host.

- **RST\_EXITED**  
The request is exited.
- **RST\_HELD**  
The request is not the target of scheduling and does not accept "run" or "restart" request from the scheduler.
- **RST\_HOLD**
- **RST\_SUSPENDING**  
The request is waiting until all of its batch jobs are stopped.
- **RST\_SUSPENDED**  
All the batch jobs for the request are stopped.
- **RST\_RESUMING**  
The request is waiting until all of its batch jobs are restarted.

## 1.2. Job State Transition

The following is the status of jobs in a request.

```
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732,j0000: (JST_CREATED CREATE jid 0:748032.1)
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732,j0001: (JST_CREATED CREATE jid 1:748032.1)
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732,j0001: (JST_RUNNING RUN jid 1:748032.1)
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732,j0000: (JST_RUNNING RUN jid 0:748032.1)
09/17 17:51:11 NQSV(DEBUG): gma_generate_event: r01732,j0000: (JST_DONE DONE jid 0:748032.1)
09/17 17:51:11 NQSV(DEBUG): gma_generate_event: r01732,j0001: (JST_DONE DONE jid 1:748032.1)
09/17 17:51:12 NQSV(DEBUG): gma_generate_event: r01732,j0000: (JST_DELETED DELETE jid 0:748032.1)
09/17 17:51:12 NQSV(DEBUG): gma_generate_event: r01732,j0001: (JST_DELETED DELETE jid 1:748032.1)
```

Describes the output.

```
Date time      LogLevel   : information
-----
09/17 17:48:34 NQSV(DEBUG): gma_generate_event: r01732,j0000: (JST_CREATED CREATE jid 0:748032.1)

                                1      2              3

                                1: Job No
                                2: Job State
                                3. Job ID
```

### Job State

- **JST\_CREATED**  
The job is created.
- **JST\_RUNNING**  
The job is executed.
- **JST\_DONE**  
The job is performed.

- JST\_DELETED  
The job is deleted.

### 1.3. Command Execution

#### 1.3.1. The flow of command execution process

- (1) Open primary session for Event
- (2) Attach ACB to primary session
- (3) Open secondary session for API
- (4) Attach ACB to secondary session
- (5) Do API
- (6) Detach ACB from secondary session
- (7) Close secondary session
- (8) Detach ACB from primary session
- (9) Close primary session

#### 1.3.2. qdel command

```

12/17 07:20:54 NQSV(DEBUG): gms_accept: s0833: Session opened. (peer 127.0.0.1:41770)      ...(1)
12/17 07:20:54 NQSV(DEBUG): gms_pop_packet: s0833: Assigned session type. (EVENT peer 127.0.0.1:41770)
12/17 07:20:54 NQSV(DEBUG): gma_attach_scb: s0833,a00297: ACB was attached. (uid 1103/1103 gid 3300/3300 pid 36212
USR) ...(2)
12/17 07:20:54 NQSV(DEBUG): gms_accept: s0834: Session opened. (peer 127.0.0.1:41772)      ...(3)
12/17 07:20:54 NQSV(DEBUG): gms_pop_packet: s0834: Assigned session type. (APIFUNC peer 127.0.0.1:41772)
12/17 07:20:54 NQSV(DEBUG): gma_attach_scb: s0834,a00297: ACB was attached. (Secondary ACB) ...(4)
12/17 07:20:54 NQSV(DEBUG): gma_rpcdone: s0834,a00297: MID2HNAME (mid 10)
12/17 07:20:54 NQSV(DEBUG): gma_rpcdone: s0834,a00297: HNAME2MID (hname bsv)
12/17 07:20:54 NQSV(DEBUG): create_task: j0000,r00041: Created a task. (DLVSIG jtbid 0x31,9) ...(5)
12/17 07:20:54 NQSV(DEBUG): execute_task: n0813,j0000,r00041: Transmitted a task. (jtbid 0x31,9)
12/17 07:20:54 NQSV(DEBUG): gma_rpcdone: s0834,a00297: DELREQ (rid 43.10 grace 5)
12/17 07:20:54 NQSV(DEBUG): gma_rpcdone: s0834,a00297: MID2HNAME (mid 10)
12/17 07:20:54 NQSV(DEBUG): gma_detach_scb: s0834,a00297: ACB was detached.              ...(6)
12/17 07:20:54 NQSV(DEBUG): gms_close: s0834: Session closed.                          ...(7)
12/17 07:20:54 NQSV(DEBUG): gma_detach_scb: s0833,a00297: ACB was detached.              ...(8)
12/17 07:20:54 NQSV(DEBUG): gms_close: s0833: Session closed.                          ...(9)
12/17 07:20:54 NQSV(DEBUG): complete_task: j0000,r00041: Complete a task. (SUCCEED jtbid 0x31,9)
12/17 07:20:54 NQSV(DEBUG): gmj_delete_task: j0000,r00041: Deleted a task. (jtbid 0x31,9)
12/17 07:20:54 NQSV(DEBUG): stage_switcher: r00041: All tasks have done. (s:1 f:0 c:0)

```

#### 1.3.3. qstat command

An example of executing the qstat command.

```
$ qstat
```

RequestID	ReqName	UserName	Queue	Pri	STT	S	Memory	CPU	Elapse	R	H	M	Jobs
44.nqsv-dev-c7	mpi_qcat	user1	bq	0	RUN	-	0.00B	0.00	4	Y	Y	Y	1

Batch server log when the qstat command is executed.

```
NQSV(DEBUG): gms_accept: s0771: Session opened. (peer 127.0.0.1:41324) ... (1)
NQSV(DEBUG): gms_pop_packet: s0771: Assigned session type. (EVENT peer 127.0.0.1:41324)
NQSV(DEBUG): gma_attach_scb: s0771,a00272: ACB was attached. (uid 1103/1103 gid 3300/3300 pid 36058 USR) (2)
NQSV(DEBUG): gms_accept: s0772: Session opened. (peer 127.0.0.1:41326) ... (3)
NQSV(DEBUG): gms_pop_packet: s0772: Assigned session type. (APIFUNC peer 127.0.0.1:41326)
NQSV(DEBUG): gma_attach_scb: s0772,a00272: ACB was attached. (Secondary ACB) ... (4)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: MID2HNAME (mid 10) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid REQID.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid QUEID.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid REQNAME.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid REQOWN.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid PRIORITY.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid REQST.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid USEMEMSZ.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid USECPUTIM.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid USEELPSTIM.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid RERUNABL.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid HOLDABL.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid RERUNABL.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid HOLDABL.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid MIGRATABL.REQ) ... (5)
NQSV(DEBUG): gma_rpcdone: s0772,a00272: ATTRSTREAM (obj REQ,BSV aid NJCONS.REQ) ... (5)
NQSV(DEBUG): gma_detach_scb: s0772,a00272: ACB was detached.
NQSV(DEBUG): gms_close: s0772: Session closed.
NQSV(DEBUG): gms_accept: s0773: Session opened. (peer 127.0.0.1:41328)
NQSV(DEBUG): gms_pop_packet: s0773: Assigned session type. (APIFUNC peer 127.0.0.1:41328)
NQSV(DEBUG): gma_attach_scb: s0773,a00272: ACB was attached. (Secondary ACB)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid REQID.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid QUEID.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid REQNAME.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid REQOWN.REQ)
```

```

NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid PRIORITY.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid REQST.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid USEMEMSZ.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid USECPUTIM.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid USEELPSTIM.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid RERUNABL.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid HOLDABL.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid MIGRATABL.REQ)
NQSV(DEBUG): gma_rpcdone: s0773,a00272: ATTRSTREAM (obj PRM,BSV aid NJCONS.REQ)
NQSV(DEBUG): gma_detach_scb: s0773,a00272: ACB was detached.      ...(6)
NQSV(DEBUG): gms_close: s0773: Session closed.                ...(7)
NQSV(DEBUG): gma_detach_scb: s0771,a00272: ACB was detached.  ...(8)
NQSV(DEBUG): gms_close: s0771: Session closed.                ...(9)

```

#### 1.4. Control Block

NQSV creates a Control Block as needed, and performs the process.

The main types of Control Block are as follows:

Control Block	ID	Note
ACB	a00000	API Control Block
CCB	c0000	Child Control Block
CRCB	cr0000	Custom Resource Control Block
GCB	g0000	Staging Control Block
HCB	h0000	Host Control Block
JCB	j0000 *	Job Control Block
JGCB	jpg0000 *	Job Group Control Block
NCB	n0000	Node Control Block
NGCB	ng0000	Node Group Control Block
PRCB	pr00000 *	Parametric Request Control Block
QCB	q0000	Queue Control Block
RCB	r00000	Request Control Block
SCB	s0000	Session Control Block
TCB	t0000	Template Control Block
VNCB	vn0000	Virtual Node Control Block

\* Uniq in a request

## 1.5. Batch Server Log List

The main messages and their meanings.

### DEBUG Level Messages

Message	
Cause	Note
assign_numanode_by_topology: h0014,r00008,j0001: Topology core assigned. (jid 1:149817.10 , cpus:0-7, exclusive:0) gmt_print_bi_table: [ 0] 0 - 39 000000ff 00000000 gmt_print_bi_table: Total number of busy is 8. [0-7]	
Assign cores to jobs in numa mode.	
complete_task: j0000,r00018: Complete a task. (SUCCEED jtbid 0x4,1) complete_task: j0001,r00251: Complete a task. (FAIL jtbid 0xe5,8) complete_task: j0001,r00251: Complete a task. (CANCEL jtbid 0xe5,9)	
Complete a task.	
create_task: j0000,r00018: Created a task. (CREJOB jtbid 0x4,1) create_task: j0000,r00018: Created a task. (CRESTGDIR jtbid 0x4,2) create_task: j0000,r00018: Created a task. (JATTR jtbid 0x4,3) create_task: j0000,r00018: Created a task. (SNDFILE jtbid 0x4,4) create_task: j0000,r00018: Created a task. (SNDFILE jtbid 0x4,5) create_task: j0000,r00018: Created a task. (JATTR jtbid 0x4,6) create_task: j0000,r00018: Created a task. (SNDFILE jtbid 0x4,7) create_task: j0000,r00018: Created a task. (RUNJOB jtbid 0x4,8) create_task: j0000,r00018: Created a task. (GETFSTAT jtbid 0x4,9) create_task: j0000,r00018: Created a task. (SNDFILE jtbid 0x4,a) create_task: j0000,r00018: Created a task. (SETFSTAT jtbid 0x4,b) create_task: j0000,r00018: Created a task. (RUNEXIT jtbid 0x4,c) create_task: j0000,r00018: Created a task. (RCVFILE jtbid 0x4,d) create_task: j0000,r00018: Created a task. (RCVFILE jtbid 0x4,e) create_task: j0000,r00018: Created a task. (PRGJOB jtbid 0x4,f)	
Created a task. CREJOB: create a job CRESTGDIR: create staging directry JATTR: SNDFILE: send files (stage in) RUNJOB: start to run a job GETFSTAT: RUNEXIT: exit a job RCVFILE: receive files (stage out) PRGJOB:	
detach_jgcb: jg0000,r00184: Detach JGCB.	
Detach JGCB(Job Group Control Block).	
Execve'ing server: /opt/nec/nqsv/sbin/nqs_stgd. argv[0]=DefaultNetQue server. envp[0]=DEBUG=3. envp[1]=TZ=(null). envp[2]=VIRTUAL_IPADDR=0.0.0.0. envp[3]=STG_UID=967. envp[4]=STG_USER=user1. envp[5]=STG_GID=3300. envp[6]=STG_GROUP=grp1. envp[7]=STG_QUEUE=DefaultNetQue. envp[8]=STG_REQID=149809.bsv. envp[9]=STG_DIRECTION=STAGE_OUT. envp[10]=STG_SEQNO=149809.	

envp[11]=STG_MID=10.	
envp[12]=STG_STGNO=0000.	
envp[13]=STG_METHOD=INTERNAL.	
envp[14]=STG_ORDERFILE=/var/opt/nec/nqsv/bsv/private/root/output/149809.10/stage_order.	
envp[15]=STG_CLIHOST=.	
envp[16]=STG_STARTTIME=1638937669.	
envp[17]=STG_RERUNCNT=0.	
envp[18]=DEFAULT_RETRYTIME=259200.	
envp[19]=DEFAULT_RETRYWAIT=300.	
envp[20]=DEFAULT_TIMEOUT=300.	
envp[21]=RETRYTIME_EXPIRED=no.	
Stage out information.	
execute_task: n0826,j0000,r00018: Transmitted a task. (jtbid 0x4,1)	
Transmit a task to execution host.	
gma_attach_scb: s0771,a00272: ACB was attached. (uid 1103/1103 gid 3300/3300 pid 36058 USR)	
Attach ACB(API Control Block) to SCB(Session Control Block).	
gma_attach_scb: s0772,a00272: ACB was attached. (Secondary ACB)	
Attach Secondary ACB to SCB.	
gma_detach_scb: s0504,a37836: ACB was detached.	
Detach ACB from SCB.	
gma_generate_event: r00245,j0007: (JST_CREATED CREATE jid 7:150073.10)	
gma_generate_event: r00245,j0007: (JST_DELETED DELETE jid 7:150073.10)	
gma_generate_event: r00245,j0006: (JST_RUNNING RUN jid 6:150073.10)	
Job status is changed.	
gma_generate_event: r00245: (RST_HELD SUBMIT rid 150073.10)	
gma_generate_event: r00245: (RST_QUEUED STAGEIN_SUCCESS rid 150073.10)	
gma_generate_event: r00245: (RST_PRERUNNING RUN rid 150073.10)	
gma_generate_event: r00245: (RST_RUNNING PRERUN_SUCCESS rid 150073.10 jobs 8)	
gma_generate_event: r00245: (RST_POSTRUNNING EXIT rid 150073.10)	
gma_generate_event: r00245: (RST_EXITING POSTRUN_SUCCESS rid 150073.10)	
gma_generate_event: r00245: (RST_EXITED DONE rid 150073.10)	
Request status is changed.	
gmacct_jacct: r01798,j0000: jobacct (0:151662.10) 2	
Job Accounting record outputs on BSV.	
gmc_attach_scb: s0395,c0160: CCB was created. (type ASSIRP pid 24311)	
gmc_attach_scb: s0027,c0234: CCB was created. (type JSVBOOT_FW pid 8022)	
gmc_attach_scb: s0339,c0235: CCB was created. (type JSVSTOP pid 8628)	
gmc_attach_scb: s2031,c0019: CCB was created. (type SUBREQ pid 26562)	
CCB(Child Control Block) was created.	
gmc_detach_scb: s0027,c0234: CCB was deleted.	
CCB(Child Control Blok) was detached.	
gmc_init: Child Process Layer was initialized.	
Child Process Layer was initialized.	BSV start
gmct_init: CustomResource Layer was initialized.	
CustomResource Layer was initialized.	BSV start
gmg_attach_gcb: g0000,r00000,q0049: GCB was attached.	
GCB(Staging Control Block) was attached.	
gmg_detach_gcb: g9600,r05323: GCB was detached. (stgno 0 dir 1)	
GCB(Staging Control Block) was detached.	
gmg_submit_netreq: r00000,q0049: Submit netreq. (que DefaultNetQue rid 149809.10 stgno 0)	
Submit a network request.	
gmh_append_veinfo: h0005: veinfo was attached (veno:0).	
VE information was attached.	
gmh_clear_gpuinfo: n0807,h0005: GPU information was cleared.	
GPU information was cleared.	
gmh_clear_veinfo: n0810,h0007: VE information was cleared.	

VE information was cleared.	
gmh_create_hcb: n0209,h0000: HCB was created. (peer 172.28.65.18)	
HCB(Host Control Block) was created.	
gmh_init: Host Layer was initialized.	
Host Layer was initialized.	BSV start
gmh_node_attach: h0000,n0209: JobServer was attached.	
JobServer was attached.	
gmh_set_hoststate: h0005: Host state was changed.(ip: 172.28.65.37, state: ACT(ACTIVE), reason: JSVUP)	
gmh_set_hoststate: h0027: Host state was changed.(ip: 172.28.65.150, state: INA(INACTIVE), reason: JSVDOWN)	
Host status was changed.	
gmhw_init: Agent Layer initialized.	
Agent Layer was initialized.	BSV start
gmj_delete_task: j0000,r00000: Deleted a task. (jtbid 0x0,1)	
Deleted a task.	
gmj_job_result: j0000,r01594: Job terminated. (exst 0)	
Job was terminated with status 0.	
gmn_attach_scb: s0008,n0819: NCB was attached.	
NCB(Node Control Block) was attached.	
gmn_detach_scb: s0015,n0818: NCB was detached.	
NCB(Node Control Bloc) was detached.	
gmn_init: JobServer Layer was initialized.	
JobServer Layer was initialized.	BSV start
gmng_init: NodeGroup Layer was initialized.	
NodeGroup Layer was initialized.	BSV start
gmq_attach_qcb: q0000: Attach QCB to queue. (ROUTING name `SysRoutingQue')	
gmq_attach_qcb: q0001: Attach QCB to queue. (EXECUTION name `bq')	
gmq_attach_qcb: q0052: Attach QCB to queue. (INTERACTIVE name `iq')	
Attach QCB(Queue Control Block) to queue.	
gmq_init: Queue Layer was initialized.	
Queue Layer was initialized.	BSV start
gmr_attach_jcb: j0000,r00000: JCB was created.	
JCB(Job Control Block) was created.	
gmr_attach_prbc: pr00000: Attach PRCB to request. (rid 149946[.].10 qid 1.bq)	
Attach PRCB(Parametric Request Control Block) to request.	
gmr_attach_rcb: r00004: Attach RCB to request. (rid 149813.10 qid 1.bq)	
Attach RCB(Request Control Block) to request.	
gmr_attach_rcb: r00140: RCB is connected to PRCB. (rid 149951.10 parent 149949.10 qid 1.bp)	
RCB(Request Control Block) is connected to PRCB(Parametric Request Control Block).	
gmr_detach_jcbs: r00000: All JCBs were deleted.	
All JCBs were deleted.	
gmr_detach_prbc: pr00046: Detach PRCB. (rid 150338.10)	
Detach PRCB(Parametric Request Control Block).	
gmr_elpse_checker: r00015: Elapse time limit will exceed. (grace 0)	
The request exceeded the elapsed tme limit.	
gmr_set_state: pr00000: Parametric status changed. (curr QUEUED prev OUTSET rsn SUBMIT rid 149946.10)	
gmr_set_state: pr00000: Parametric status changed. (curr RUNNING prev QUEUED rsn RUN rid 149946.10)	
gmr_set_state: pr00000: Parametric status changed. (curr EXITING prev RUNNING rsn DELETE rid 149946.10)	
gmr_set_state: pr00000: Parametric status changed. (curr EXITED prev EXITING rsn DONE rid 149946.10)	



Parametric request status was changed.	
gms_accept: s0000: Session opened. (peer 127.0.0.1:40116)	
Session was opened.	
gms_pop_packet: s0001: Assigned session type. (APIFUNC peer 127.0.0.1:40118)	
gms_pop_packet: s0001: Assigned session type. (EVENT peer 127.0.0.1:35054)	
gms_pop_packet: s0019: Assigned session type. (NODE peer 172.28.65.118:35328)	
Assigned Session type.	
gms_pop_packet: Topology data structure update finished. print_node: [level:index] empty print_node: [0:0000] 32 [1:0000] 32 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Topology data structure update finished.	
gmt_set_topology_info: Topology data structure created. print_node: [level:index] empty print_node: [0:0000] 32 [1:0000] 32 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Topology data structure created.	
gmt_attach_tcb: t0000: Attach TCB to template. (type Container name ve1_tmpl)	
Attach TCB(Template Control Block) to template.	
gmt_attach_trcb: tr0000,t0000,r00074: Attach TRCB. (template ve1_tmpl rid 149883.10)	
Attach TRCB(Template Request Control Block).	
gmvn_attach_ncb: n0209,vn0209: VNCB and NCB was linked.	
Link VNCB(Virtual Node Control Block) to NCB(Node Control Block).	
gmvn_inactivate: vn0807,n0807,h0005: event: NQSEVT_VJSV_INACTIVATE LINKDOWN DOWN/SHUT	
Virtual Node was linked down by shutdown.	
jcb_alloc: n0807,j0000,r00000: JCB was attached.	
JCB(Job Control Block) was attached.	
jcb_free: n2823,j10241,r03466: JCB was detached.	
JCB(Job Control Block) was detached.	
load_nodedb: n0827,q0041: JobServer was bound. (que 1.bq jsvno 827)	
JobServer wa bound to queue.	
main: Configuration loaded. main: Rebuild queue state.	
Load configuration file and rebuild queue state.	Start BSV
main: Received packet from local process: 22262 main: Client process real user-id = 0 main: Packet type is: 227 main: Packet contents are as follows: main: Integer [1] = 149809 main: Integer [2] = 10 main: Integer [3] = 0 main: Integer [4] = 1 main: Integer [5] = 2	
Main process was exited.	
nqs_reqexi(): rid 149809.10 rcm 051.	
Request was exited.	
nqs_stgd: Stage-out has completed. (Int. rid 149823.10 stgno 0 rcm 0051)	
Stage-out has completed.	
nqs_stgd: Stage-out has not completed. (Int. rid 149987.10 stgno 1 rcm 0033)	
Stage-out has not completed.	
parametric_stage_guard: pr00000: (EXITING JSTG_0 JSTG_FW)	
parametric_stage_guard: pr00000: (EXITING JSTG_1 JSTG_FW)	
parametric_stage_guard: pr00000: (EXITING JSTG_2 JSTG_FW)	
parametric_stage_guard: pr00000: (EXITING JSTG_3 JSTG_FW)	
parametric_stage_guard: pr00000: (EXITING JSTG_4 JSTG_FW)	
Parametric request's staging procedure.	

purge_all_tasks: r00247: All tasks were purged.	
All tasks were purged.	
release_topology: h0005: Topology released. (jid 0:149817.10 cpus:0-7) gmj_set_state: h0005,r00008,j0000: Released Logical Cpus:0-7 Sockets:0 gmj_set_state: h0005,r00008,j0000: (unbind) S:0 C:8/0/20(0-7) M:0/0/62	
Cores were released in numa node.	
stage_guard: r00000: (EXITING JSTG_0 JSTG_FW) stage_guard: r00000: (EXITING JSTG_1 JSTG_FW) stage_guard: r00000: (EXITING JSTG_2 JSTG_FW) stage_guard: r00000: (EXITING JSTG_3 JSTG_FW) stage_guard: r00000: (EXITING JSTG_4 JSTG_FW) stage_guard: r00000: (EXITING JSTG_5 JSTG_FW)	
EXITING procedure JSTG_0: purge all subrequests JSTG_1: gather stage out information JSTG_2: gather stage out file JSTG_3: output REQLOG file JSTG_4: output request account JSTG_5: Staging sequence completed	
stage_guard: r00000: (POSTRUNNING JSTG_0 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_1 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_2 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_3 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_4 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_5 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_6 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_7 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_8 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_9 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_10 JSTG_FW) stage_guard: r00000: (POSTRUNNING JSTG_11 JSTG_FW)	
POSTRUNNING procedure JSTG_0: Terminate all surviving jobs. JSTG_1: Calculate elapsed Time of Request. JSTG_2: Execute UserPP script. JSTG_3: Execute 1st UserEXIT. JSTG_4: Execute 2nd UserEXIT. JSTG_5: Execute 3rd UserEXIT. JSTG_6: Execute 4th UserEXIT. JSTG_7: Clone jobacct file. JSTG_8: ignite_chkhca JSTG_9: Send the stop_vm scripts if necessary. JSTG_10: Execute stop_vm scripts. JSTG_11: Post-running sequence completed.	
stage_guard: r00000: (PRERUNNING JSTG_0 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_1 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_2 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_3 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_4 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_5 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_6 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_7 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_8 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_9 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_10 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_11 JSTG_FW) stage_guard: r00000: (PRERUNNING JSTG_12 JSTG_FW)	
PRERUNNING procedure	

<p>JSTG_0: Initiate all jobs  JSTG_1: Dummy stage.  JSTG_2: Send the start_vm scripts if necessary.  JSTG_3: Execute start_vm scripts.  JSTG_4: Send the UserEXIT scripts if necessary.  JSTG_5: Execute 1st UserEXIT.  JSTG_6: Execute 2nd UserEXIT.  JSTG_7: Execute 3rd UserEXIT.  JSTG_8: Execute 4th UserEXIT.  JSTG_9: ignite_scagent  JSTG_10: ignite_userpp  JSTG_11: Start all slave jobs.  JSTG_12: Start master job.  JSTG_13: Pre-running sequence completed.</p>	
<p>stage_guard: r00000: (STAGING JSTG_0 JSTG_FW)  stage_guard: r00000: (STAGING JSTG_1 JSTG_FW)  stage_guard: r00000: (STAGING JSTG_2 JSkTG_FW)  stage_guard: r00000: (STAGING JSTG_3 JSTG_FW)  stage_guard: r00000: (STAGING JSTG_4 JSTG_FW)  stage_guard: r00000: (STAGING JSTG_5 JSTG_FW)</p>	
<p>STAGING procedure  JSTG_0: Create Jobs.  JSTG_1: Purge Jobs.  JSTG_2: 1st step of stage-in file transportation.  JSTG_3: 2st step of stage-in file transportation.  JSTG_4: Dummy stage.  JSTG_5: Staging sequence completed.</p>	
<p>stage_switcher: r00000: All tasks have done. (s:1 f:0 c:0)</p>	
<p>All task have done.</p>	

## 2. Job Manipulator

The description of log information may change.

### 2.1. Request Information

"Output\_reqinfo" is the starting point from which JM manages requests. The following line indicates whether the request is normal or urgent.

```
10/18 14:42:09 [INFO ] Output_reqinfo: queue=(eq), rid=(7445135.10), job=2, elaps=300, user=(user1),
rerunable=n, topology=necmpi, job0 - job1={cpu=8, memory=(lim:26 / unit:3), ve=8, hca=(mpi:0 / io:0 / all:2)}
10/18 14:42:09 [INFO ] Res_reqpool_shift: Request enter urgent assign pool. (rid=(7445135.10), rst=(JM_QUEUED))
```

Describes the output.

```
Date      time      LogLevel  : information
-----
09/10/18 14:42:09 [INFO ] Output_reqinfo: queue=(eq), rid=(7445135.10), job=2, elaps=300,
                                1          2          3          4
user=(user1), rerunable=n, topology=necmpi, job0 - job1={cpu=8, memory=(lim:26 / unit:3), ve=8,
5          6          7          8          9          10
hca=(mpi:0 / io:0 / all:2)}
11
                                1: queue name
                                2: Request ID
                                3. Number of Jobs
                                4. elapse time
                                5. user name
                                6. rerunable on/off
                                7. topology
                                8. Number of CPUs (x86)
                                9. memory(x86)
                                10. Number of VEs
                                11. Number of HCAs and type
```

Hybrid requests are output on multiple lines.

```
[INFO ] Output_reqinfo: queue=(bq), rid=(15633.10), job=2, elaps=200, user=(user1), rerunable=y,
topology=necmpi, job0={cpu=4, memory=(lim:280 / unit:2), hca=(mpi:0 / io:0 / all:1)}
[INFO ] Output_reqinfo: job1={cpu=2, memory=(unlimited), ve=4, hca=(mpi:0 / io:0 / all:1)}
[DEBUG1] Hash_reg_req: Request regist to hash table. (rid=(15633.10), hash=5660)
[INFO ] Res_reqpool_shift: Request enter normal assign pool. (rid=(15633.10), rst=(JM_QUEUED))
```

## 2.2. Job status output

These are examples of outputting the status of the job at each node at each scheduling interval.

```
[DEBUG2] Map_check_executable: (RUN) JSV=2042, VJSV=2042, jid=(1:7445135.10), status=(PRERUNNING), Start =  
Mon Oct 18 14:42:14 2021, Planned End time = Mon Oct 18 14:47:14 2021  
[DEBUG2] Map_check_executable: (RUN) JSV=2115, VJSV=2115, jid=(0:7445135.10), status=(PRERUNNING), Start =  
Mon Oct 18 14:42:14 2021, Planned End time = Mon Oct 18 14:47:14 2021
```

This is a start execution request (RUNREQ), but it is still in the state that it is PRERUN.

## 2.3. Performance Information

Scheduling performance information is output from R1.09.

```
[INFO ] Assign_proc: Processing 379.51 request per sec. sample: 1request
```

379.51 requests that can be assigned per second.

```
[DEBUG1] Assign_proc: JM_req_assign() response: ave 0.002635sec max 0.002635sec min 0.002635sec
```

It took to assign a request is a minimum of 0.002635sec and a maximum of 0.002635sec.

```
[DEBUG1] Map_space_search: search 2 times and response: average 0.000312sec, max 0.000624sec, min  
0.000624sec rid=(155960.10)
```

These are how many laps(2 times) the scheduler has made in map space search for a request(rid:155960) and the time per lap(average 0.000312sec).

```
[DEBUG1] Map_space_search: processing time = 0.000846 rid=(155746.10)
```

It took 0.000846sec to process a request (rid:155746).

## 2.4. The flow of Urgent Request Execution

(1) Urgent request submitted

```
10/18 14:42:09 [INFO ] Output_reqinfo: queue=(eq), rid=(7445135.10), job=2, elaps=300, user=(user1),  
rerunable=n, topology=necmpi, job0 - job1={cpu=8, memory=(lim:26 / unit:3), ve=8, hca=(mpi:0 / io:0 / all:2)}  
10/18 14:42:09 [INFO ] Res_reqpool_shift: Request enter urgent assign pool. (rid=(7445135.10), rst=(JM_QUEUED))
```

(2) Assign Urgent request

```
10/18 14:42:09 [INFO ] Map_req: Map registration. rid=(7445135.10)
```

```
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2115, jid=(0:7445135.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2042, jid=(1:7445135.10)
10/18 14:42:09 [DEBUG1] Map_req: Map regist complete. rid=(7445135.10)
```

(3) Detect normal requests that affect the execution of urgent request(3 Requests detected).

```
10/18 14:42:09 [INFO ] Map_req: Map clear. rid=(7445030.10)
10/18 14:42:09 [INFO ] Map_req: Map clear. rid=(7445004.10)
10/18 14:42:09 [INFO ] Map_req: Map clear. rid=(7445028.10)
```

(4) Re-assign normal request(rid: 7445030).

```
10/18 14:42:09 [INFO ] Remove_low_priority_req: Reassign request. rid=(7445030.10)
10/18 14:42:09 [INFO ] Map_req: Map registration. rid=(7445030.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2115, jid=(0:7445030.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2114, jid=(1:7445030.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2114, jid=(2:7445030.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2113, jid=(3:7445030.10)
10/18 14:42:09 [INFO ] Res_reqpool_shift: Request information is updated in normal assigned pool.
(rid=(7445030.10), rst=(SUSPENDING))
```

The normal request(rid: 7445030) was still suspending by another urgent request.

(5) Re-assign normal request(rid:7445004).

```
10/18 14:42:09 [INFO ] Remove_low_priority_req: Reassign request. rid=(7445004.10)
10/18 14:42:09 [INFO ] Suspend_interrupted_req: RUNNING request SUSPEND by interrupt. rid=(7445004.10)
10/18 14:42:09 [INFO ] Map_req: Map registration. rid=(7445004.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2043, jid=(0:7445004.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2043, jid=(1:7445004.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2042, jid=(2:7445004.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2042, jid=(3:7445004.10)
10/18 14:42:09 [INFO ] Remove_low_priority_req: SUSPENDING request(rid=(7445004.10)) was interrupted
by urgent request(rid=(7445135.10)).
10/18 14:42:09 [INFO ] Remove_low_priority_req: Start time changed to Mon Oct 18 14:48:34 2021.
rid=(7445004.10)
10/18 14:42:09 [INFO ] Res_reqpool_shift: Request enter normal assigned pool. (rid=(7445004.10),
rst=(SUSPENDING))
```

The normal request(rid:7445004) is suspended.

(6) Re-assign normal request(rid:7445028).

```
10/18 14:42:09 [INFO ] Remove_low_priority_req: Reassign request. rid=(7445028.10)
10/18 14:42:09 [INFO ] Suspend_interrupted_req: RUNNING request SUSPEND by interrupt. rid=(7445028.10)
10/18 14:42:09 [INFO ] Map_req: Map registration. rid=(7445028.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2117, jid=(0:7445028.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2116, jid=(1:7445028.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2116, jid=(2:7445028.10)
10/18 14:42:09 [INFO ] Map_regjobinfo: JSV=2115, jid=(3:7445028.10)
10/18 14:42:09 [INFO ] Remove_low_priority_req: SUSPENDING request(rid=(7445028.10)) was interrupted
by urgent request(rid=(7445135.10)).
10/18 14:42:09 [INFO ] Remove_low_priority_req: Start time changed to Mon Oct 18 14:48:34 2021.
rid=(7445028.10)
10/18 14:42:09 [INFO ] Res_reqpool_shift: Request enter normal assigned pool. (rid=(7445028.10),
rst=(SUSPENDING))
```

The normal request (rid:7445028) is suspended.

(7) Request to make an urgent request

```
10/18 14:42:10 [INFO ] Bsv_runreq: NQSRunreq: SUCCESS.
10/18 14:42:10 [INFO ] Res_reqpool_shift: Request enter urgent running pool. (rid=(7445135.10),
rst=(PRERUNNING))
```

(8) Urgent request starts running

```
10/18 14:42:10 [INFO ] Bsv_runreq: NQSRunreq: SUCCESS.
10/18 14:42:10 [INFO ] Res_reqpool_shift: Request enter urgent running pool. (rid=(7445135.10),
rst=(PRERUNNING))
```

## 2.5. JobManipulator Log List

The main messages and their meanings.

Message	
Cause	Note
[INFO ] JobManipulator Version = R1.09 [INFO ] Scheduler ID = 1 [INFO ] Command port number = 13001 [INFO ] Batch Server = localhost [INFO ] Standard job number = 10240 [INFO ] API_SUBREQ_CHK : OFF [INFO ] API_ASSIGN_CHK : OFF [INFO ] API_SET_PRI : OFF [DEBUG1] MARGIN_FOR_EVENT = 2S [DEBUG1] CONTINUE_MOVEUP_MINTIME = 2S [INFO ] TAT_SHORTER: ON [INFO ] Device Group Topology: On [INFO ] JM_RERUNWAIT = 600 [DEBUG1] nqs_jmd: sch_ip=172.17.0.5 [DEBUG1] Bsv_connect: NQSconnect(localhost, 602, 6) [DEBUG1] Bsv_connect: getpeername() name = 127.0.0.1 [DEBUG1] Bsv_connect: NQSregsch() [INFO ] Bsv_event_filter: NQSevflt START	
JM startup logs API_SUBREQ_CHK : External policy ON/OFF when assigning API_ASSIGN_CHK : External policy On/OFF of Request Priority API_SET_PRI : External policy ON/OFF when submitting	
[INFO ] Assign_proc: Processing 425.90 request per sec. sample: 1request	
Scheduling performance information Number of requests that can be assigned per second	R1.09 or later
[DEBUG1] Assign_proc: JM_req_assign() response: ave 0.001517sec max 0.001517sec min 0.001517sec	
Scheduling performance information How long it took to assign a request.	R1.09 or later
[DEBUG1] Assign_proc: Start the new list. list_id=7793	
Assign procedure starts. List id is 7793.	R1.09 or later
[DEBUG1] Bsv_getevent: event(JST_CREATED) [DEBUG1] Bsv_getevent: event(JST_RUNNING) [DEBUG1] Bsv_getevent: event(JST_DONE) [DEBUG1] Bsv_getevent: event(JST_DELETED)	
Get job Events from BSV (Job status)	
[DEBUG1] Bsv_getevent: event(RST_QUEUED) [DEBUG1] Bsv_getevent: event(RST_STAGING) [DEBUG1] Bsv_getevent: event(RST_PRERUNNING) [DEBUG1] Bsv_getevent: event(RST_RUNNING) [DEBUG1] Bsv_getevent: event(RST_POSTRUNNING) [DEBUG1] Bsv_getevent: event(RST_EXITING) [DEBUG1] Bsv_getevent: event(RST_EXITED)	
Get request Events from BSV (Request Status)	
[DEBUG1] Bsv_getevent: event(VJSVAT_VMSTARTFAILED)	
VM failed to boot.	
[INFO ] Bsv_runreq: NQSRunreq: SUCCESS.	
Run request is successful.	
[DEBUG1] Bsv_setdevice: devgroups[0]: id=1 type=0 ve_num=4 numofibids=2 [DEBUG1] Bsv_setdevice: ibids[0]: 0000:05:00.0:1 [DEBUG1] Bsv_setdevice: ibids[1]: 0000:0b:00.0:1	



[DEBUG1] Bsv_setdevice: devgroups[1]: id=2 type=0 ve_num=4 numofibids=2	
[DEBUG1] Bsv_setdevice: ibids[0]: 0000:0b:00.0:1	
[DEBUG1] Bsv_setdevice: ibids[1]: 0000:05:00.0:1	
Assigned device group. type: HCA type, 0 means all. numofibids: number of using HCA.	
[INFO ] Bsv_stgreq: Stage request. rid=(155647.10)	
[INFO ] Bsv_stgreq: Staging set -> JOBNO=0, JSVID=2819	
The request(job) is staged in.	
[INFO ] Bsv_userprv_check: user_name = user1 host = 127.0.0.1	
Checking user privileges when executing commands.	
[INFO ] Clear_start_time: Start time clear. rid=(152713.10)	
Request's start time was cleared.	
[INFO ] Cmd_session_close: Command session close.(SID=0)	
Session for command was closed.	
[INFO ] Cmd_user_check: User check OK. Local user=user1, Remote user=user1, priv=1	
Check who executed the command	
[INFO ] Event_jst: event = JST_DELETED jid=(0:152713.10)	
Job (jobid:0,rid:152713) is deleted.	
[INFO ] Event_rst: event = RST_QUEUED reason = SUBMIT rid=(155920.10)	
[INFO ] Event_rst: event = RST_STAGING reason = STAGEIN rid=(155920.10)	
[INFO ] Event_rst: event = RST_QUEUED reason = STAGEIN_SUCCESS rid=(155920.10)	
[INFO ] Event_rst: STAGING SUCCESS. rid=(152714.10)	
[INFO ] Event_rst: event = RST_PRERUNNING reason = RUN rid=(155920.10)	
[INFO ] Event_rst: event = RST_RUNNING reason = PRERUN_SUCCESS rid=(155920.10)	
[INFO ] Event_rst: event = RST_POSTRUNNING reason = EXIT rid=(155920.10)	
[INFO ] Event_rst: event = RST_EXITING reason = POSTRUN_SUCCESS rid=(155920.10)	
[INFO ] Event_rst: event = RST_EXITED reason = DONE rid=(155920.10)	
Request event information.	
[INFO ] Event_vjsvat: event = VJSVAT_VMSTARTFAILED JSV=831	
VM start was failed.	
[INFO ] Execute_check: Map status(MAP_EXECUTABLE) start:Thu Dec 9 11:32:45 2021 rid=(155634.10)	
The request is executable.	
[DEBUG1] Execute_current_req: Execute request. rid=(155446.10)	
Start exectin a request.	
[DEBUG1] Hash_reg_req: Request regist to hash table. (rid=(155646.10), hash=6051)	
Register the request in the hash table.	
[DEBUG1] JM_req_assign: Enter function. (type=7, rid=(155746.10))	
[INFO ] Map_space_search: ***** Map space search information ***** rid=(155746.10)	
[INFO ] Map_space_search: ASSIGNABLE_JOB=27, START TIME=Thu Dec 9 11:54:45 2021, END TIME=Thu Dec 9 12:04:45 2021	
[INFO ] Map_space_search: JSV = 831	
[INFO ] Map_req: Map registration. rid=(155746.10)	
[INFO ] Map_regjobinfo: JSV=831, jid=(0:155746.10)	
Assigned nodes and time to a request.	
[INFO ] JM_req_assign: No stage assign. rid=(156116.10)	
Assigned, but no staging required	
[INFO ] JM_req_escalation: ESCALATION rid=(155623.10) Start_time: Thu Dec 9 12:55:45 2021 -> Thu Dec 9 12:52:35 2021	
[INFO ] Map_req: Map clear. rid=(155623.10)	
[DEBUG1] Map_clrjobinfo: JSV=2822, jid=(0:155623.10)	
[DEBUG1] Map_clrjobinfo: Clear devgroupinfo. jid=(0:155623.10)	
[DEBUG1] Map_req: Map clear complete. rid=(155623.10)	
[INFO ] Map_req: Map registration. rid=(155623.10)	
[INFO ] Map_regjobinfo: JSV=2822, jid=(0:155623.10)	
[DEBUG1] Map_regjobinfo: DevGrp=1, VENUM=1	

[DEBUG1] Map_req: Map regist complete. rid=(155623.10)	
Escalation procedure	
[DEBUG1] JM_reqlist_clr: reqlist deleted. list_id=7768	
Delete a request from list.	
[DEBUG1] JM_reqlist_cre: Add reqlist rid=(152714.10)	
Add a request to list.	
[DEBUG1] JM_reqlist_cre: normal assign reqlist created. list_id=7793	
Normal assign reqlist is created.	
[DEBUG1] Map_req: Map clear complete. rid=(152713.10)	
Request's map clear was completed.	
[DEBUG1] Map_req: Map regist complete. rid=(152714.10)	
Request's map register was completed.	
[DEBUG1] Map_check_executable: EXECUTABLE REQUESTS CHECK [INFO ] Map_check_executable: (EXEC) JSV=2808, jid=(0:155297.10), status=(JM_ASSIGNED), Planned Start Time = Thu Dec 9 11:33:45 2021, Planned End Time = Thu Dec 9 11:39:45 2021	
Checking the executable requests	
[DEBUG2] Map_check_executable: (RUN) JSV=2042, VJSV=2042, jid=(1:7445135.10), status=(PRERUNNING), Start = Mon Oct 18 14:42:14 2021, Planned End time = Mon Oct 18 14:47:14 2021	
[DEBUG2] Map_check_executable: (RUN) JSV=8003, VJSV=8003, jid=(0:748029.1), status=(RUNNING), Start = Fri Sep 17 17:39:39 2021, Planned End time = Fri Sep 17 17:44:39 2021	
The status of the job at each node at each scheduling interval	DEBUG2
[DEBUG1] Map_space_search: search 2 times and response: average 0.000021sec, max 0.000042sec, min 0.000042sec rid=(156109.10)	
Scheduling performance information. These are how many laps the scheduler has made in map space search for a request and the time per lap.	
[INFO ] Map_regjobinfo: JSV=2820, jid=(0:155634.10) [DEBUG1] Map_regjobinfo: DevGrp=1, VENUM=4 [DEBUG1] Map_regjobinfo: DevGrp=2, VENUM=4	
Register job information in the map.	JM_req_assign:
[INFO ] Map_req: Map clear. rid=(157104.10)	
Cleared the map information for a request (rid:157104).	
[INFO ] Map_req: Map registration. rid=(152714.10)	
Registered map information for a request (rid:152714).	
[INFO ] Output_reqinfo: queue=(bq), rid=(155669.10), job=1, elaps=300, user=(user1), rerunable=y, topology=necmpi, job0={cpu=8, memory=(lim:40 / unit:3), ve=8, hca=(mpi:0 / io:0 / all:2)}	
Request Information.	
[DEBUG1] poll_exec: Next interval value = 10	
Time to next scheduling interval.	
[INFO ] Remove_low_priority_req: Reassign request. rid=(7445030.10)	
Remove low priority request, and reassign request.	
[INFO ] Req_state_update: Get new request. rid=(156102.10)	
Get new request.	
[INFO ] Req_state_update: Request information deleted. rid=(156093.10)	
Request information deleted.	
[INFO ] Res_reqpool_shift: Request enter normal assign pool. (rid=(152714.10), rst=(JM_QUEUED))	
Put a request in the waiting pool to assign	
[INFO ] Res_reqpool_shift: Request enter normal staging pool. (rid=(152714.10),	

rst=(STAGING))	
Put a request in the waiting pool to staging	
[INFO ] Res_reqpool_shift: Request enter normal assigned pool. (rid=(152714.10), rst=(JM_ASSIGNED))	
Put a request in an assigned pool	
[INFO ] Res_reqpool_shift: Request enter normal running pool. (rid=(152714.10), rst=(PRERUNNING))	
Put a request in the running pool	
[INFO ] Res_reqpool_shift: Request enter normal other pool. (rid=(152713.10), rst=(EXITING))	
Put a request in the other status pool	
[INFO ] Res_reqpool_shift: Request information is updated in normal staging pool. (rid=(156914.10), rst=(STAGING))	
Update request information in staging pool	
[INFO ] Res_reqpool_shift: Request information is updated in normal assigned pool. (rid=(152714.10), rst=(JM_ASSIGNED))	
Update request information in assigned pool	
[INFO ] Res_reqpool_shift: Request information is updated in normal running pool. (rid=(156408.10), rst=(RUNNING))	
Update request information in running pool	
[INFO ] Res_reqpool_shift: Request information is updated in normal running pool. (rid=(152713.10), rst=(POSTRUNNING))	
Update request information in running pool	
[INFO ] Res_reqpool_shift: Request is removed from normal other pool. (rid=(152713.10), rst=(EXITED))	
Remove a request in other pool	

## **Appendix.A Update history**

### **A.1 History Table**

January 2022      Rev. 1

### **A.2 Change Note**