SPECjbb2013

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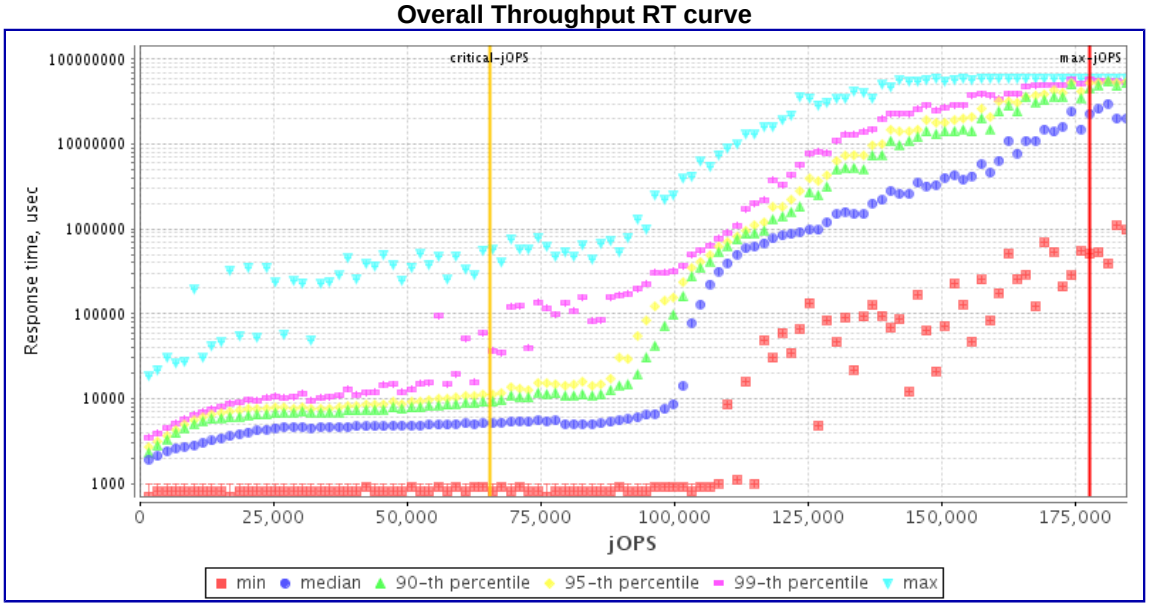
NEC Corporation Express5800/A2040b	**177753 SPECjbb2013-MultiJVM max-jOPS 65529 SPECjbb2013-MultiJVM critical-jOPS**		
Tested by: NEC Corporation ()	**Test Sponsor:** NEC Corporation	**Test location:** Fuchu, Tokyo, Japan	**Test date:** Feb 12, 2014
SPEC license #: 9006	**Hardware Availability:** Mar-2014	**Software Availability:** Mar-2014	**Publication:** MMM DD, YYYY

Benchmark Results Summary

SPECjbb2013 -MultiJVM: Multiple JVMs/Single Host (# of groups: 4)

Overall SUT Description
SUT Description
max-iOPS and critical-jOPS Details
Number of probes
Request Mix
Accuracy
Rate Of Non-Critical Failures
Delay between performance status pings
IR/PR Accuracy
Topology
SUT Configuration Properties
Validation Details

Overall Throughput RT curve



Overall SUT (System Under Test) Description

Vendor	NEC Corporation
Vendor URL	http://www.nec.com/
System Source	Single Supplier
System Designation	Server Rack
Total Systems	1
All SUT Systems Identical	YES
Total Nodes	1
All Nodes Identical	YES
Nodes Per System	1
Total Chips	4
Total Cores	60
Total Threads	120
Total Memory Amount (GB)	1024
Total OS Images	1
SW Environment	Non-virtual

SUT Description

Hardware hw_1

Vendor	NEC Corporation
Vendor URL	http://www.nec.com/
Available	Mar-2014
Model	Express5800/A2040b
Form Factor	4U
CPU Name	Intel Xeon E7-4890 v2
CPU Characteristics	15-Core, 2.80GHz, 37.5MB L3 Cache (Intel Turbo Boost Technology up to 3.40 GHz)
Number of Systems	1
Nodes Per System	1
Chips Per System	4
Cores Per System	60
Cores Per Chip	15
Threads Per System	120
Threads Per Core	2
Version	None
CPU Frequency (MHz)	2800
Primary Cache	32KB(I)+32KB(D) on chip per core
Secondary Cache	256KB(I+D) on chip per core
Tertiary Cache	37.5MB(I+D) on chip per chip
Other Cache	None
Disk	1 x 450GB 10K RPM SAS
File System	ext4
Memory Amount (GB)	1024
# and size of DIMM(s)	32 x 32768MB
Memory Details	4Rx4 PC3L-12800L ECC CL11; slots DIMM#1-DIMM#4 populated on each MR(Memory Riser)
# and type of Network Interface Cards (NICs)	2 x 10 Gbit NICs
Power Supply Quantity and Rating (W)	4 x 1200
Other Hardware	None
Cabinet/Housing/Enclosure	None
Shared Description	None
Shared Comment	None
Tuning	None
Notes	None

Other Hardware network_1

Vendor	None
Vendor URL	None
Version	None
Available	None
Bitness	None
Notes	None

Operating System os_1

Vendor	Red Hat, Inc.
Vendor URL	http://www.redhat.com/
Version	Red Hat Enterprise Linux Server release 6.4 (Santiago)
Available	Feb-2013
Bitness	64
Notes	None

Java Virtual Machine jvm_1

Vendor	Oracle Corporation
Vendor URL	http://www.oracle.com/
Version	Java HotSpot 64-bit Server VM, version 1.8.0
Available	Mar-2014
Bitness	64
Notes	None

Other Software other_1

Vendor	None
Vendor URL	None
Version	None
Available	None
Bitness	None
Notes	None

max-jOPS and critical-jOPS Details

max-jOPS = jOPS passed before the First Failure

Pass/Fail	Pass	Pass	Fail	Fail	Fail
jOPS	176061	177753	~~179446~~	~~181139~~	~~182832~~

critical-jOPS = Geomean (jOPS @ 10000; 50000; 100000; 200000; 500000; SLAs)

Response time percentile is 99-th

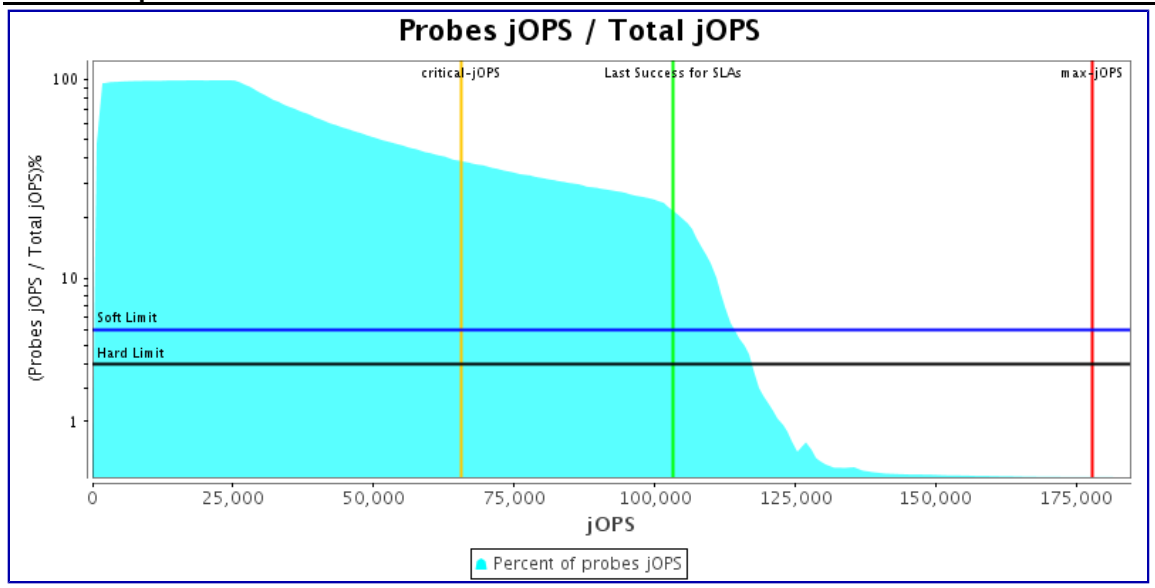
SLA (us)	10000	50000	100000	200000	500000	Geomean
jOPS	25110	65099	75564	93955	104112	65529

Last Success jOPS/First Failure jOPS for SLA points

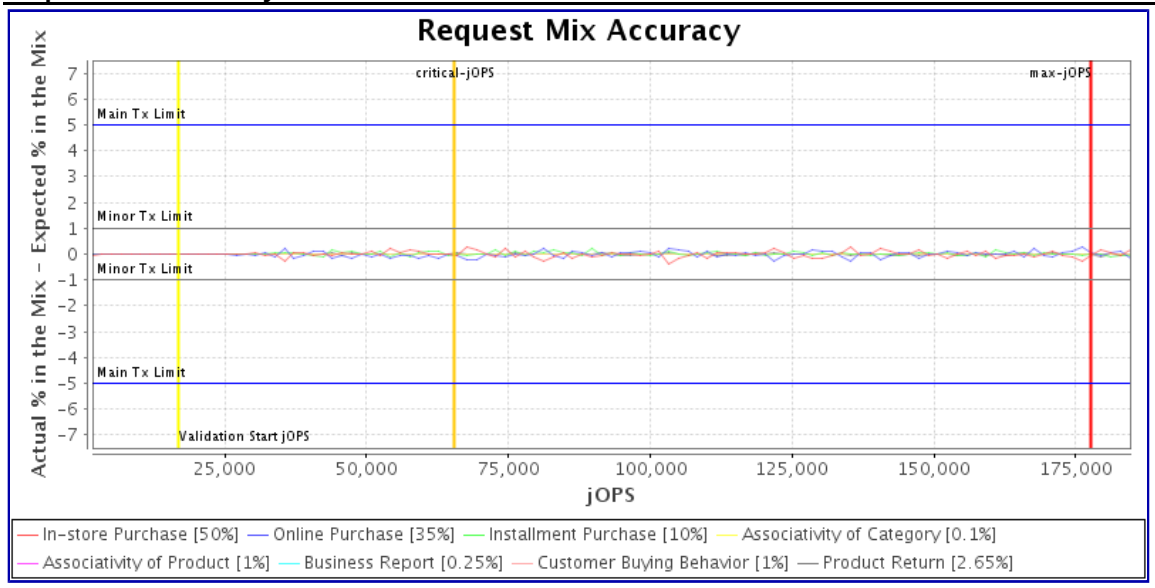
	Percentile					
	10-th	50-th	90-th	95-th	99-th	100-th
500us	- / 1693	- / 1693	- / 1693	- / 1693	- / 1693	- / 1693
1000us	- / 1693	- / 1693	- / 1693	- / 1693	- / 1693	- / 1693
5000us	101573 / 103266	84644 / 60944	10157 / 11850	8464 / 10157	5079 / 6772	- / 1693
10000us	103266 / 104959	99881 / 101573	67716 / 69408	57558 / 59251	32165 / 23700	- / 1693
20000us	104959 / 106652	101573 / 103266	93109 / 94802	88030 / 89723	62637 / 55865	1693 / 3386
50000us	104959 / 106652	101573 / 103266	96495 / 98188	91416 / 93109	72794 / 55865	32165 / 10157
100000us	106652 / 108345	103266 / 104959	99881 / 101573	94802 / 96495	86337 / 69408	32165 / 10157

200000us	108345 / 110038	104959 / 106652	101573 / 103266	99881 / 101573	93109 / 94802	32165 / 16929
500000us	118502 / 120195	111731 / 113424	106652 / 108345	106652 / 108345	103266 / 104959	84644 / 45708
1000000us	147281 / 140510	126967 / 128660	116809 / 118502	113424 / 115117	110038 / 111731	94802 / 93109

Number of probes



Request Mix Accuracy



Note

(Actual % in the Mix - Expected % in the Mix) must be within:

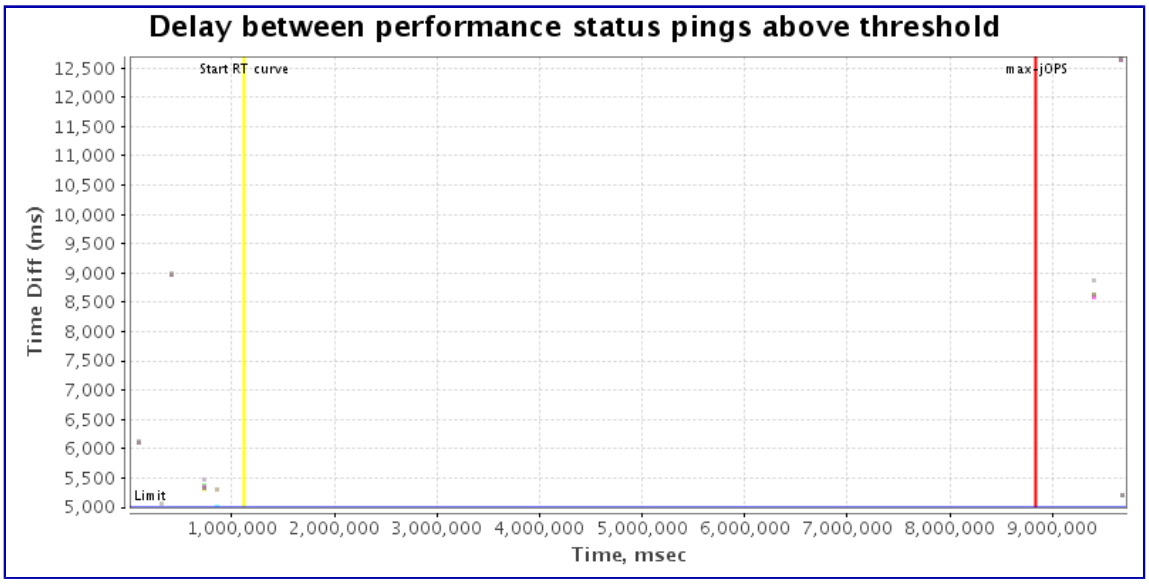
'Main Tx' limit of +/-5.0% for the requests whose expected % in the mix is >= 10.0%

'Minor Tx' limit of +/-1.0% for the requests whose expected % in the mix is < 10.0%

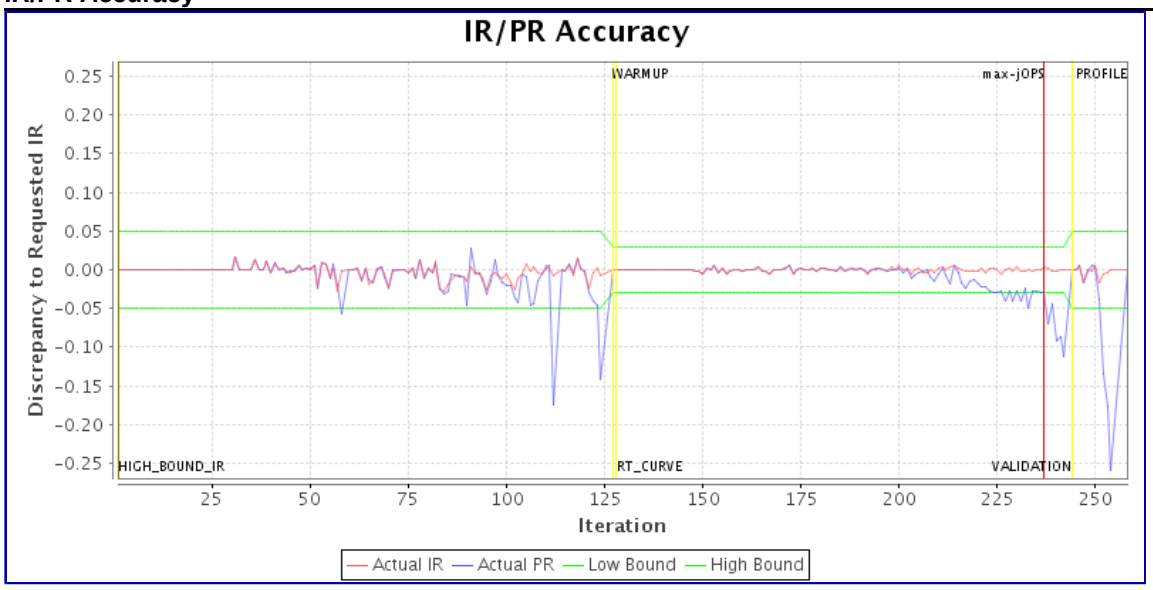
Rate of Non-Critical Failures

There were no non-critical failures in Response Time curve building

Delay between performance status pings during RT Curve (Response-Throughput Curve)



IR/PR Accuracy



Topology

SUT
- Hardware config_1
  - OS Image os_Image_1
    - JVM jvm_Ctr_1 : Controller
    - JVM jvm_Backend_1 : Backend
    - JVM jvm_TxInjector_1 : TxInjector

SUT config_1 Configuration

Hardware

OS Images	os_Image_1(1)
Hardware Description	hw_1
Number of Systems	1
SW Environment	non-virtual
Tuning	• Memory RAS Mode was set to Independent in BIOS. • Patrol Scrub was disabled in BIOS.
Notes	None

OS Image os_Image_1

JVM Instances	jvm_Ctr_1(1), jvm_Backend_1(4), jvm_TxInjector_1(4)
OS Image Description	os_1
Tuning	None
Notes	None

JVM Instance jvm_Ctr_1

Parts of Benchmark	Controller
JVM Instance Description	jvm_1

Command Line	-jar specjbb2013.jar -m MULTICONTROLLER
Tuning	None
Notes	None

JVM Instance jvm_Backend_1

Parts of Benchmark	Backend
JVM Instance Description	jvm_1
Command Line	-server -Xmx240G -Xms240G -Xmn220G -XX:+UseParallelOldGC -XX:+UseLargePages -XX:ParallelGCThreads=30 -XX:-UseBiasedLocking -XX:-UseAdaptiveSizePolicy -XX:+AlwaysPreTouch -jar specjbb2013.jar -m BACKEND -G=$GROUPID -J=$JVMID
Tuning	numactl --cpunodebind=[0,1,2,3] --localalloc
Notes	None

JVM Instance jvm_TxInjector_1

Parts of Benchmark	TxInjector
JVM Instance Description	jvm_1
Command Line	-Xmx6G -Xms6G -Xmn5G -XX:+UseParallelOldGC -jar specjbb2013.jar -m TXINJECTOR -G=$GROUPID -J=$JVMID
Tuning	numactl --cpunodebind=[0,1,2,3] --localalloc
Notes	None

Run Properties

This section lists properties only set by user; use -defaultProps reporter option to list all properties

Property Name	Default	Controller
specjbb.forkjoin.workers	120	60
specjbb.group.count	1	4
specjbb.txi.pergroup.count	1	1

View table in csv format

Validation Details

Validation Reports

Level: COMPLIANCE

Check	Agent	Result
Check properties on compliance	All	PASSED

Level: CORRECTNESS

Check	Agent	Result
Compare SM and HQ Inventory	All	PASSED

Other Checks

High-bound (max attempted) is 169289 IR

High-bound (settled) is 160131 IR

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