SPECjbb2015

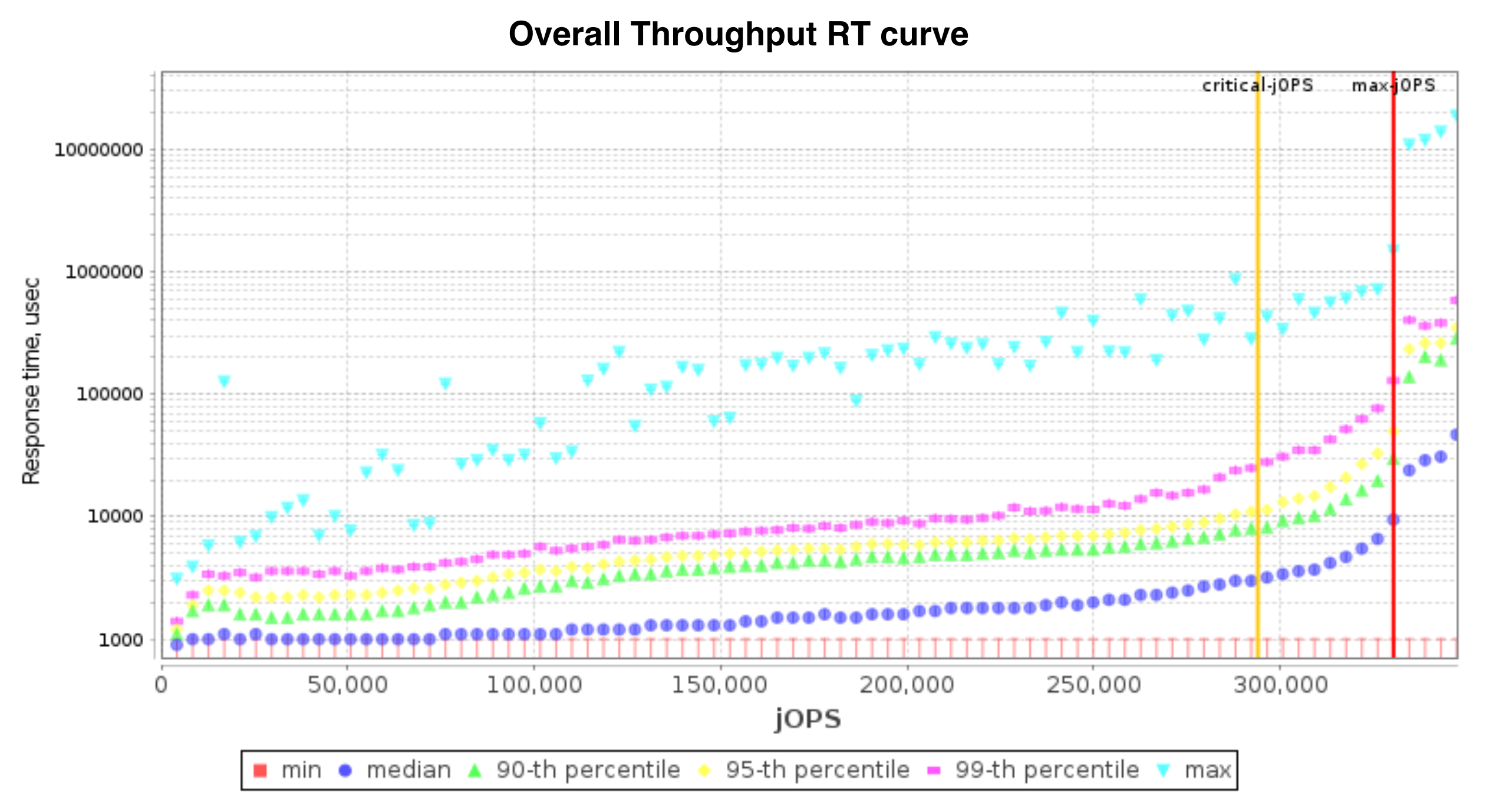
Cisco Systems Cisco UCS C245 M6	330326 SPECjbb2015-Composite max-jOPS 293968 SPECjbb2015-Composite critical-jOPS		
Tested by: Cisco Systems	**Test Sponsor:** Cisco Systems	**Test location:** San Jose, CA	**Test date:** June 2, 2021
SPEC license #: 9019	**Hardware Availability:** June-2021	**Software Availability:** April-2021	**Publication:** MMM DD, YYYY

Benchmark Results Summary

SPECjbb2015-Composite: Single JVM/Single Host
(# of groups: 2)

Overall SUT Description
SUT Description
max-jOPS 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

Link to Full Disclosure



Overall SUT (System Under Test) Description

Vendor	Cisco Systems
Vendor URL	https://www.cisco.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	2
Total Cores	128
Total Threads	256
Total Memory Amount (GB)	2048
Total OS Images	1
SW Environment	Non-virtual

SUT Description

Hardware hw_1

Name	Cisco UCS C245 M6
Vendor	Cisco Systems
Vendor URL	http://www.cisco.com/
Available	June-2021
Model	Cisco UCS C245 M6
Form Factor	2U Rack
CPU Name	AMD EPYC 7763
CPU Characteristics	64-Core, 2.45GHz, 256MB L3 Cache (Max Boost Clock up to 3.5 GHz)
Number of Systems	1
Nodes Per System	1
Chips Per System	2
Cores Per System	128
Cores Per Chip	64
Threads Per System	256
Threads Per Core	2
Version	C245M6.4.2.200.3.0518212014
CPU Frequency (MHz)	2450
Primary Cache	32 KB I+32 KB D per core
Secondary Cache	512 KB I+D per core
Tertiary Cache	256 MB I+D per chip
Other Cache	None
Disk	1 x 960 GB M.2 SSD SATA
File System	XFS
Memory Amount (GB)	2048
# and size of DIMM(s)	16 x 128 GB 4Rx4
Memory Details	128 GB 4Rx4 PC4-3200V-L
# and type of Network Interface Cards (NICs)	2x 10 Gbit NIC
Power Supply Quantity and Rating (W)	2 x 2300W
Other Hardware	None
Cabinet/Housing/Enclosure	None
Shared Description	None
Shared Comment	None
Notes	• NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented • Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented • Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented

Other Hardware network_1

Name	None
Vendor	None
Vendor URL	None
Version	None
Available	None
Bitness	n/a
Notes	None

Operating System os_1

Name	SUSE Linux Enterprise Server 15 SP2
Vendor	SUSE
Vendor URL	http://suse.com/
Version	5.3.18-22-default
Available	July-2020
Bitness	64
Notes	None

Java Virtual Machine jvm_1

Name	Oracle Java SE 16.0.1
Vendor	Oracle
Vendor URL	http://www.oracle.com
Version	Java HotSpot 64-Bit Server VM,version 16.0.1
Available	April-2021
Bitness	64
Notes	None

Other Software other_1

Name	None
Vendor	None
Vendor URL	None
Version	None
Available	None
Bitness	64
Notes	None

Topology

- SUT
  - Hardware config_1
    - OS Image os_Image_1
      - JVM jvm_Composite_1 : Composite

SUT config_1 Configuration

Hardware

OS Images	os_Image_1(1)
Hardware Description	hw_1
Number of Systems	1
SW Environment	Non-virtual
Tuning	• L1 Stream HW Prefetcher: Disable • L2 Stream HW Prefetcher: Disable • Global C-state Control: Enabled • Enhanced REP MOVSB/STOSB: Disabled • Fast Short REP MOVSB: Disabled • NUMA Nodes per socket: NPS2 • ACPI SRAT L3 Cache As NUMA Domain: Disabled • 4 Link xGMI max speed: 18Gbps • Determinism Control: Manual • Determinism Slider: Power • EDC Control: Manual
Notes	None

OS Image os_Image_1

JVM Instances	jvm_Composite_1(2)
OS Image Description	os_1
Tuning	• echo 400000000 > /proc/sys/kernel/sched_min_granularity_ns • echo 40000 > /proc/sys/kernel/sched_wakeup_granularity_ns • echo 40000 > /proc/sys/kernel/sched_migration_cost_ns • echo 128 > /proc/sys/kernel/sched_nr_migrate • echo 950000 > /proc/sys/kernel/sched_rt_runtime_us • echo 400000 > /proc/sys/kernel/sched_latency_ns • echo 10000 > /proc/sys/vm/dirty_expire_centisecs • echo 1500 > /proc/sys/vm/dirty_writeback_centisecs • echo 40 > /proc/sys/vm/dirty_ratio • echo 10 > /proc/sys/vm/dirty_background_ratio • echo 10 > /proc/sys/vm/swappiness • echo 0 > /proc/sys/vm/numa_stat • echo 0 > /proc/sys/kernel/numa_balancing • echo always > /sys/kernel/mm/transparent_hugepage/enabled • echo always > /sys/kernel/mm/transparent_hugepage/defrag>
Notes	None

JVM Instance jvm_Composite_1

Parts of Benchmark	Composite
JVM Instance Description	jvm_1
Command Line	-Xms975g -Xmx975g -Xmn965g -server -XX:+UseParallelGC -XX:+AlwaysPreTouch -XX:+UseLargePages -XX:LargePageSizeInBytes=2m -XX:MaxTenuringThreshold=5 -XX:-UseAdaptiveSizePolicy -XX:ParallelGCThreads=192 -XX:SurvivorRatio=180 -XX:TargetSurvivorRatio=95 -XX:+UseNUMA -XX:+UseTransparentHugePages -XX:-UseFastStosb -XX:+UseUnalignedLoadStores -XX:+UseXMMForArrayCopy -XX:+UseXMMForObjInit -XX:+UseFPUForSpilling
Tuning	Used numactl to run on all available nodes • numactl --cpunodebind=0-3 --interleave=0-3
Notes	None

max-jOPS and critical-jOPS Details

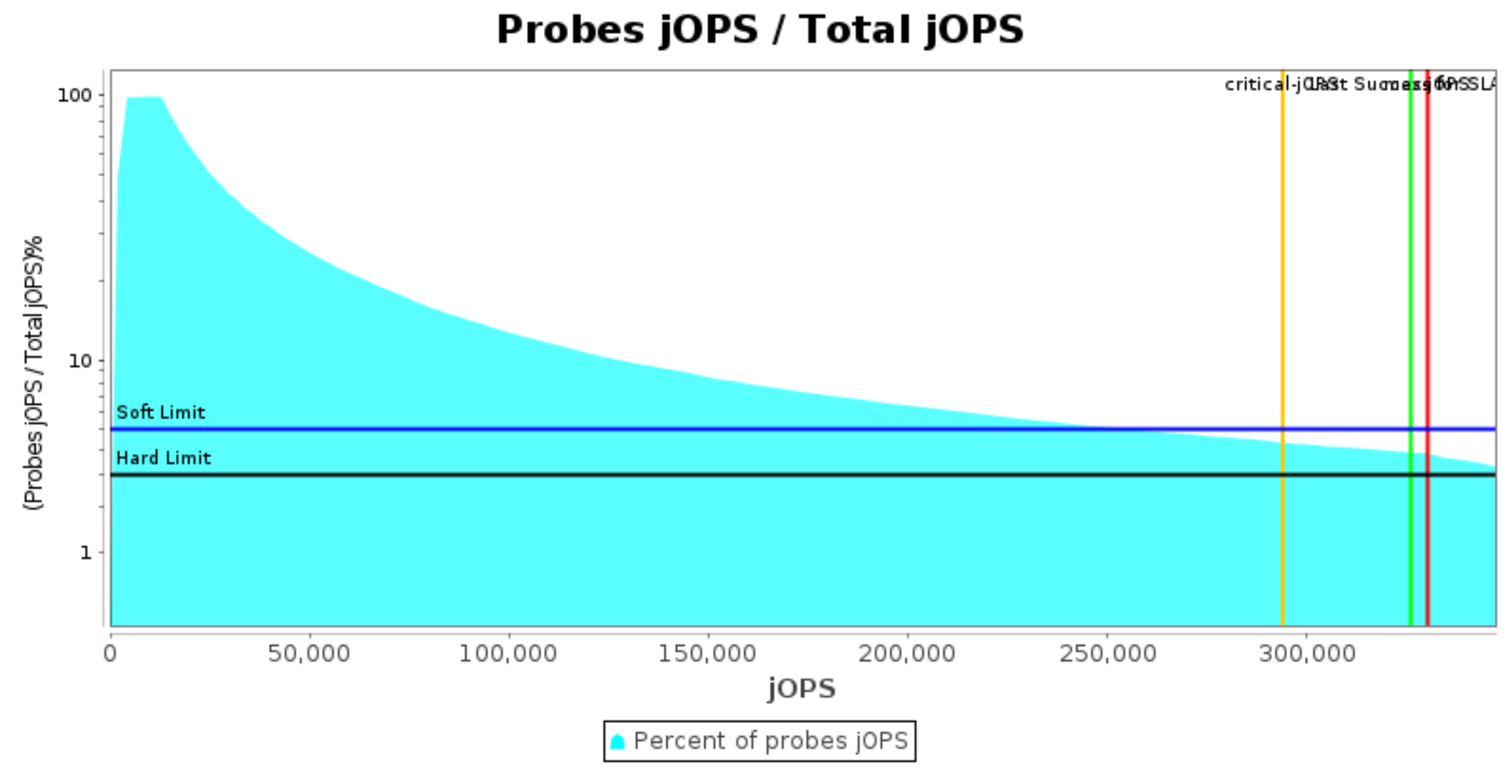
max-jOPS = jOPS passed before the First Failure					
Pass/Fail	Pass	Pass	Fail	Fail	Fail
jOPS	326091	330326	~~334561~~	~~338796~~	~~343031~~

critical-jOPS = Geomean (jOPS @ 10000; 25000; 50000; 75000; 100000; SLAs)						
Response time percentile is 99-th						
SLA (us)	10000	25000	50000	75000	100000	**Geomean**
jOPS	222334	294329	315503	323973	328208	293968

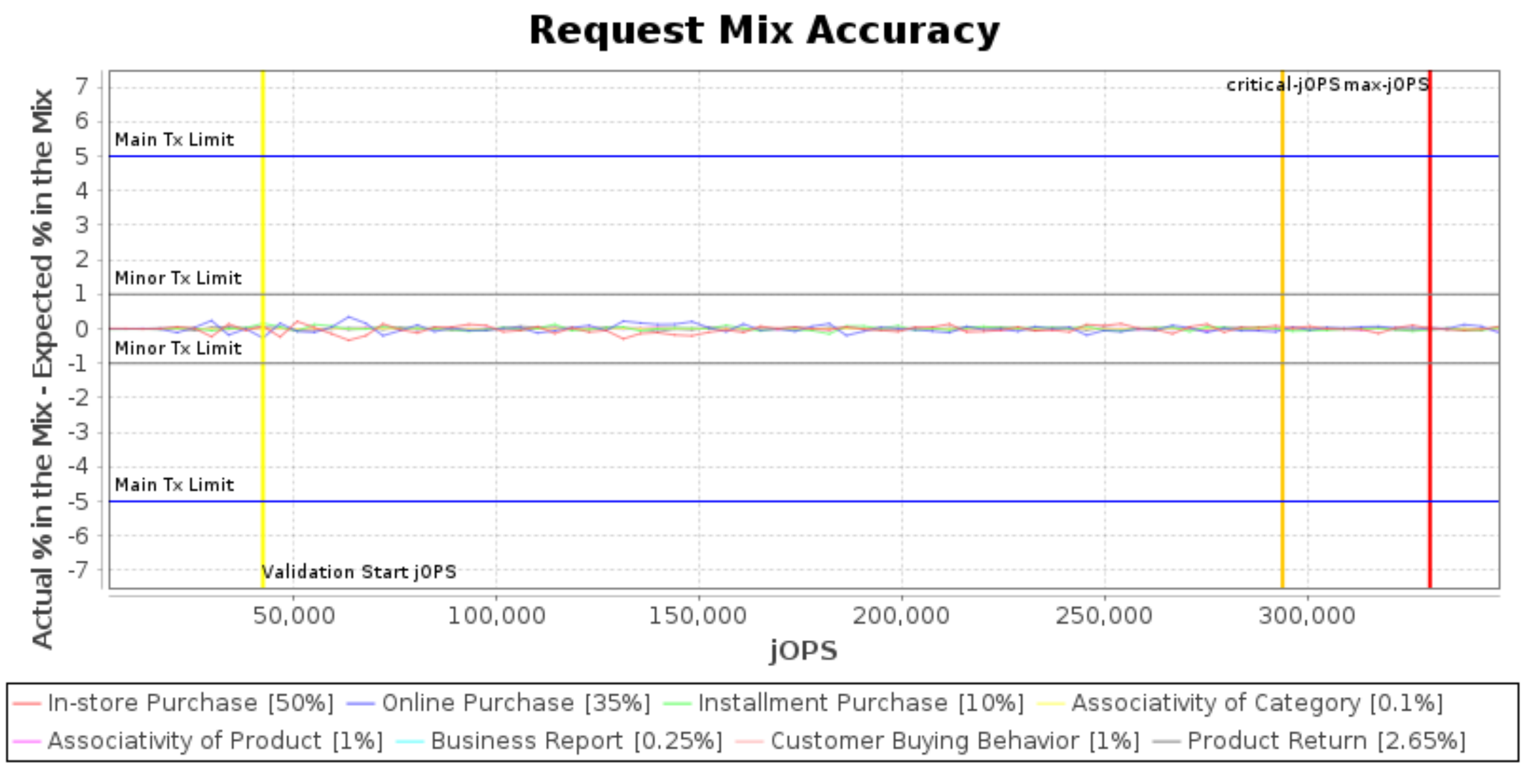
Last Success jOPS/First Failure jOPS for SLA points

	Percentile					
	10-th	**50-th**	**90-th**	**95-th**	**99-th**	**100-th**
500us	- / 4235	- / 4235	- / 4235	- / 4235	- / 4235	- / 4235
1000us	275272 / 262567	71994 / 16940	- / 4235	- / 4235	- / 4235	- / 4235
5000us	330326 / -	317621 / 321856	220217 / 224452	152458 / 156693	97404 / 101639	8470 / 12705
10000us	330326 / -	330326 / -	304916 / 309151	283742 / 287977	220217 / 224452	71994 / 16940
25000us	330326 / -	330326 / -	326091 / 330326	317621 / 321856	292212 / 296446	71994 / 16940
50000us	330326 / -	330326 / -	330326 / -	330326 / -	313386 / 317621	110109 / 16940
75000us	330326 / -	330326 / -	330326 / -	330326 / -	321856 / 326091	152458 / 16940
100000us	330326 / -	330326 / -	330326 / -	330326 / -	326091 / 330326	186338 / 16940
200000us	330326 / -	330326 / -	330326 / -	330326 / -	330326 / -	266802 / 122814
500000us	330326 / -	330326 / -	330326 / -	330326 / -	330326 / -	309151 / 262567
1000000us	330326 / -	330326 / -	330326 / -	330326 / -	330326 / -	326091 / 330326

Number of probes



Request Mix Accuracy



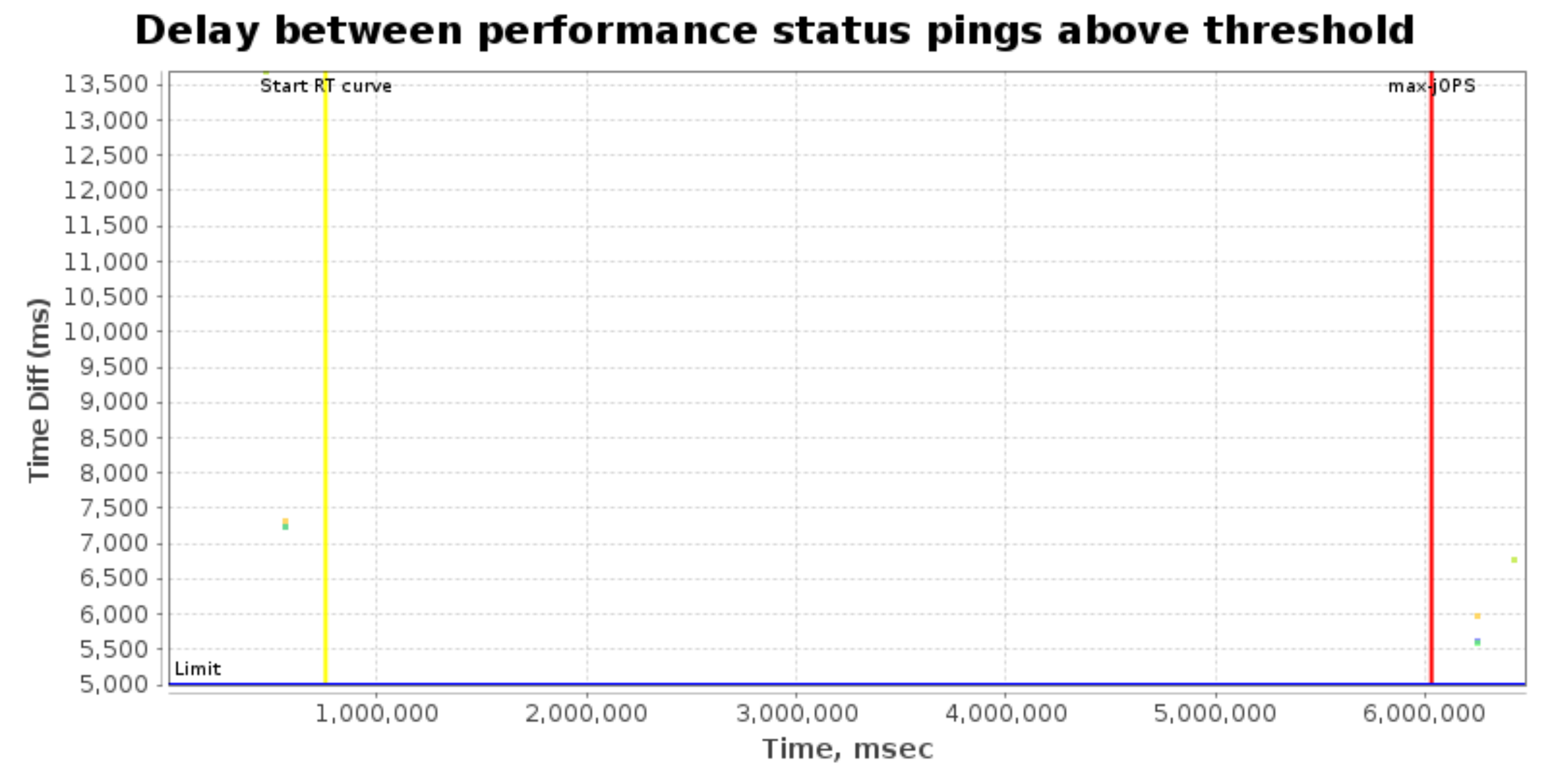
Note

(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%

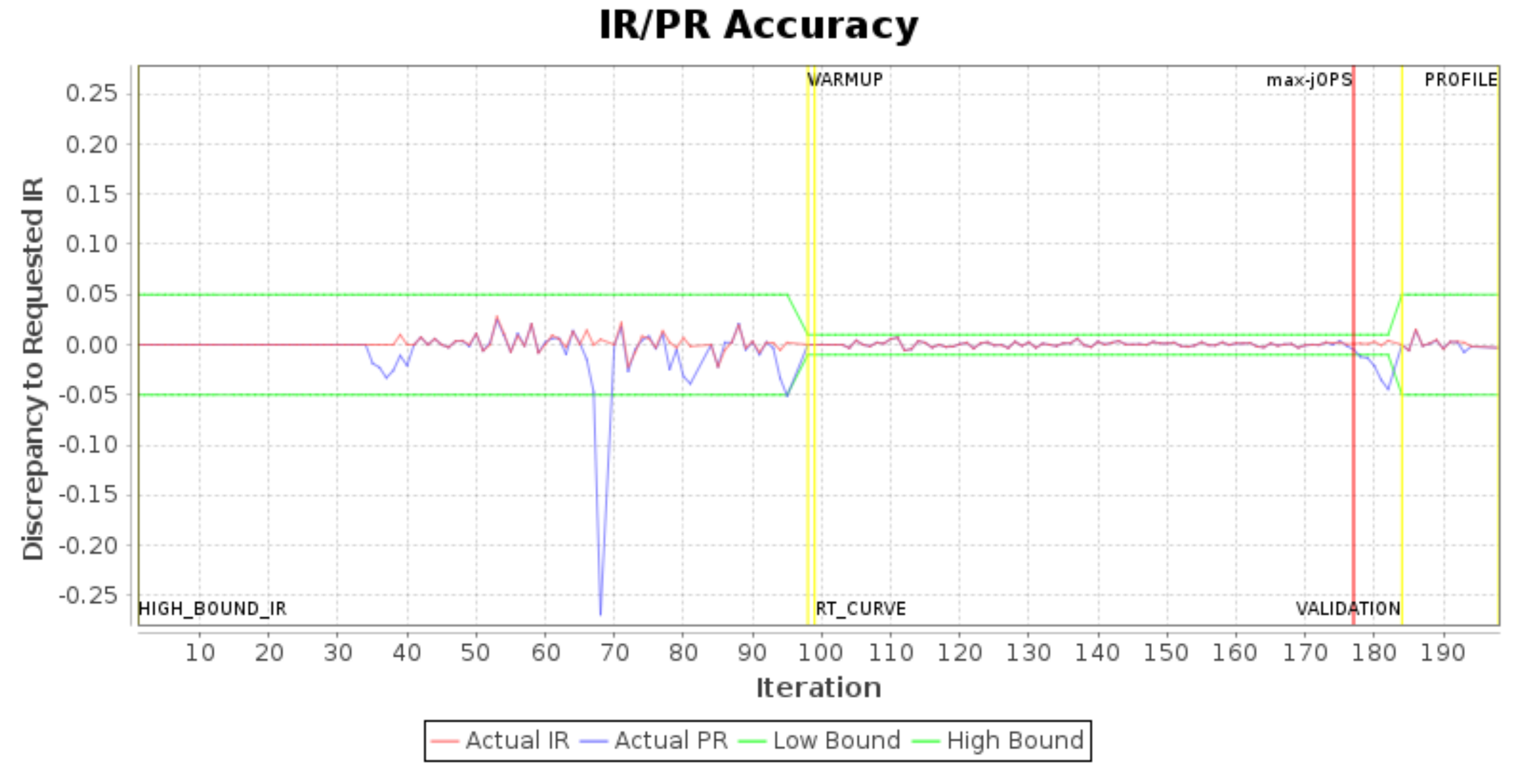
Rate of Non-Critical Failures

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



Run Properties

This section lists properties only set by user

Property Name	Default	Controller
specjbb.comm.connect.selector.runner.count	0	32
specjbb.forkjoin.workers	256	{Tier1=124, Tier2=1, Tier3=20}
specjbb.group.count	1	2
specjbb.mapreducer.pool.size	256	8

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 423495 IR

High-bound (settled) is 352946 IR

http://www.spec.org - info@spec.org
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