

# SPECjbb2015

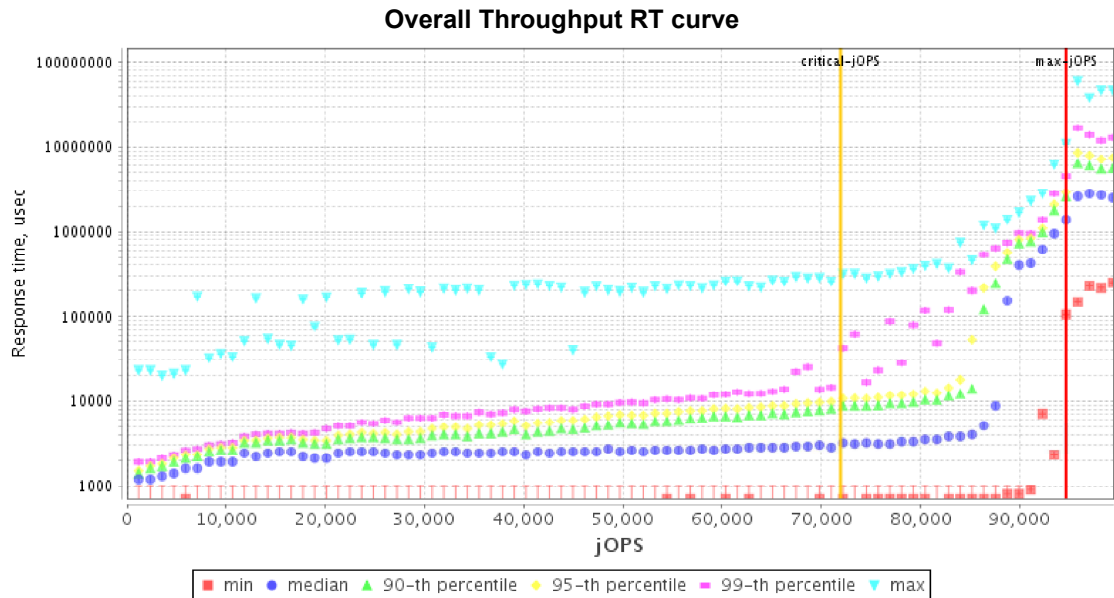
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Cisco Systems Cisco UCS C220 M4		<b>94667 SPECjbb2015-MultiJVM max-jOPS</b> <b>71951 SPECjbb2015-MultiJVM critical-jOPS</b>	
Tested by: Cisco Systems	Test Sponsor: Cisco Systems	Test location: San Jose, CA	Test date: March 10, 2016
SPEC license #: 9019	Hardware Availability: April-2016	Software Availability: April-2016	Publication: MMM DD, YYYY

## Benchmark Results Summary

**SPECjbb2015-  
MultiJVM:  
Multiple  
JVMs/Single  
Host  
(# of groups:  
2)**

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## Overall SUT (System Under Test) Description

Vendor	Cisco Systems
Vendor URL	<a href="http://www.cisco.com/">http://www.cisco.com/</a>
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	44
Total Threads	88
Total Memory Amount (GB)	1024
Total OS Images	1
SW Environment	Non-virtual

## SUT Description

Hardware hw_1		Operating System os_1	
Name	Cisco UCS C220 M4	Name	Red Hat Enterprise Linux
Vendor	Cisco Systems	Vendor	Red Hat
Vendor URL	<a href="http://www.cisco.com">http://www.cisco.com</a>	Vendor URL	<a href="http://www.redhat.com/">http://www.redhat.com/</a>
Available	April-2016	Version	Red Hat Enterprise Linux Server release 6.7
Model	Cisco UCS C220 M4	Available	July-2015
Form Factor	1U Rack	Bitness	64
CPU Name	Intel Xeon E5-2699 v4	Notes	None
CPU Characteristics	22Cores, 2.20 GHz, 55MB L3 Cache (Turbo Boost Technology up to 3.60 GHz)	<b>Java Virtual Machine jvm_1</b>	
Number of Systems	1	Name	Oracle Java SE 8u74
Nodes Per System	1	Vendor	Oracle Corporation
Chips Per System	2	Vendor URL	<a href="http://www.oracle.com">http://www.oracle.com</a>
Cores Per System	44	Version	Java HotSpot 64-bit Server VM, version 1.8.0_74
Cores Per Chip	22	Available	Feb-2016
Threads Per System	88	Bitness	64
Threads Per Core	2	Notes	note
Version	None	<b>Other Software other_1</b>	
CPU Frequency (MHz)	2200	Name	None
Primary Cache	32KB(I)+32KB(D) per core	Vendor	None
Secondary Cache	256 KB (I+D) per core	Vendor URL	<a href="#">None</a>
Tertiary Cache	55MB (I+D) on chip per chip	Version	None
Other Cache	None	Available	None
Disk	1x 400GB SSD SAS	Bitness	None
File System	ext4	Notes	None
Memory Amount (GB)	1024		
# and size of DIMM(s)	16 x 64 GB		
Memory Details	64 GB 4DRx4 PC4-2400T-LD1		
# and type of Network Interface Cards (NICs)	1x 1 Gbit NIC		
Power Supply Quantity and Rating (W)	2 x 770W		
Other Hardware	None		
Cabinet/Housing/Enclosure	None		
Shared Description	None		
Shared Comment	None		
Notes	None		
<b>Other Hardware network_1</b>			
Name	None		
Vendor	None		
Vendor URL	<a href="#">None</a>		
Version	None		
Available	None		
Bitness	None		
Notes	None		

## 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 Image os_Image_1	
OS Images	os_Image_1(1)	JVM Instances	jvm_Ctr_1(1), jvm_Backend_1(4), jvm_TxInjector_1(4)
Hardware Description	<a href="#">hw_1</a>	OS Image Description	<a href="#">os_1</a>

<b>Number of Systems</b>	1
<b>SW Environment</b>	non-virtual
<b>Tuning</b>	BIOS tuning <ul style="list-style-type: none"> <li>• Energy Performance set to Performance Mode</li> <li>• CPU Performance set to Enterprise</li> <li>• Memory Low Voltage DDR Mode set to Performance Mode</li> <li>• Processor C6 Report set to disabled</li> <li>• QPI Snoop Mode set to Home Directory Snoop with OSB</li> </ul>
<b>Notes</b>	notes

<b>Tuning</b>	<ul style="list-style-type: none"> <li>• SE Linux = Disabled</li> <li>• tuned-adm profile set to Latency Performance</li> </ul>
<b>Notes</b>	None

**JVM Instance jvm\_Ctr\_1**

<b>Parts of Benchmark</b>	Controller
<b>JVM Instance Description</b>	<a href="#">jvm_1</a>
<b>Command Line</b>	-Xmn1536m -Xms2g -Xmx2g
<b>Tuning</b>	None
<b>Notes</b>	None

**JVM Instance jvm\_Backend\_1**

<b>Parts of Benchmark</b>	Backend
<b>JVM Instance Description</b>	<a href="#">jvm_1</a>
<b>Command Line</b>	-showversion -server -XX:LargePageSizeInBytes=2m -XX:+AggressiveOpts -XX:-UseAdaptiveSizePolicy -XX:+AlwaysPreTouch -XX:-UseBiasedLocking -XX:+UseLargePages -XX:+UseParallelOldGC -Xms475g -Xmx475g -Xmn440g -XX:SurvivorRatio=48 -XX:TargetSurvivorRatio=95 -XX:ParallelGCThreads=44 -XX:MaxTenuringThreshold=15 -XX:+PrintTenuringDistribution -XX:+PrintGCDetails -XX:+PrintGCTimeStamps
<b>Tuning</b>	numactl used to affinityize each Backend JVM to a single memory node <ul style="list-style-type: none"> <li>• numactl --cpunodebind=0 --localalloc</li> <li>• numactl --cpunodebind=1 --localalloc</li> </ul>
<b>Notes</b>	None

**JVM Instance jvm\_TxInjector\_1**

<b>Parts of Benchmark</b>	TxInjector
<b>JVM Instance Description</b>	<a href="#">jvm_1</a>
<b>Command Line</b>	-showversion -Xmn1536m -Xms2g -Xmx2g
<b>Tuning</b>	None
<b>Notes</b>	None

**max-jOPS and critical-jOPS Details**

max-jOPS = jOPS passed before the First Failure

Pass/Fail	Pass	Pass	Fail	Fail	Fail
jOPS	93484	94667	95854	97034	98217

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	52658	73959	77508	78810	81058	71951

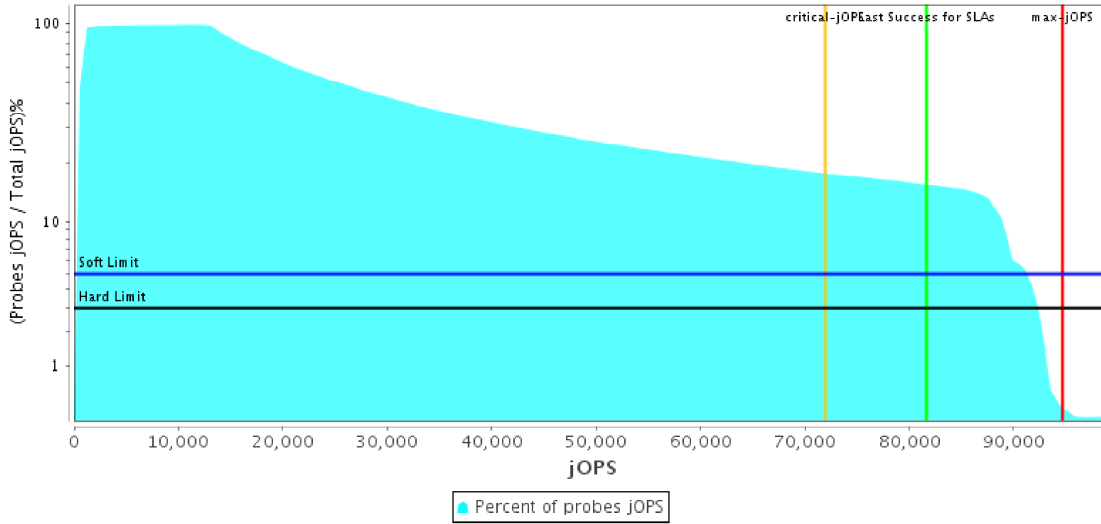
Last Success jOPS/First Failure jOPS for SLA points

	Percentile					
	10-th	50-th	90-th	95-th	99-th	100-th
500us	- / 1183	- / 1183	- / 1183	- / 1183	- / 1183	- / 1183
1000us	4733 / 5917	- / 1183	- / 1183	- / 1183	- / 1183	- / 1183
5000us	88750 / 89934	85200 / 86384	46150 / 47334	34317 / 35500	20117 / 21300	- / 1183
10000us	88750 / 89934	87567 / 88750	79284 / 80467	71000 / 72184	52067 / 53250	- / 1183
25000us	88750 / 89934	87567 / 88750	85200 / 86384	84017 / 85200	75734 / 72184	5917 / 7100
50000us	88750 / 89934	87567 / 88750	85200 / 86384	84017 / 85200	81650 / 73367	44967 / 7100
75000us	88750 / 89934	87567 / 88750	85200 / 86384	85200 / 86384	81650 / 80467	44967 / 7100
100000us	88750 / 89934	87567 / 88750	86384 / 86384	85200 / 86384	82834 / 84017	52067 / 28400
200000us	91117 / 92301	88750 / 89934	86384 / 87567	85200 / 86384	82834 / 84017	52067 / 28400
500000us	92301 / 93484	91117 / 92301	88750 / 89934	87567 / 88750	85200 / 86384	85200 / 84017

1000000us 94667 / - 93484 / 92301 / 91117 / 91117 / 85200 /  
 94667 93484 92301 92301 86384

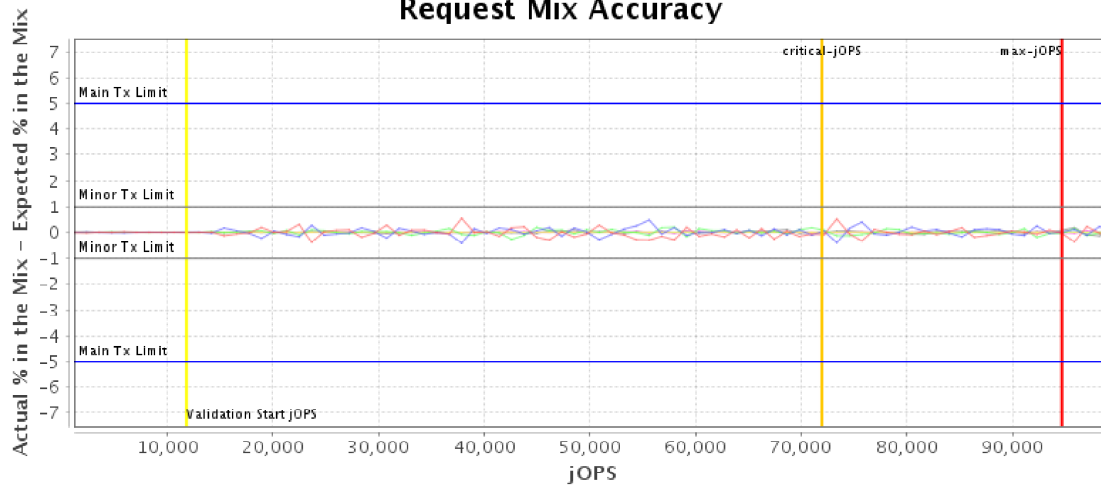
**Number of probes**

**Probes jOPS / Total jOPS**



**Request Mix Accuracy**

**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%

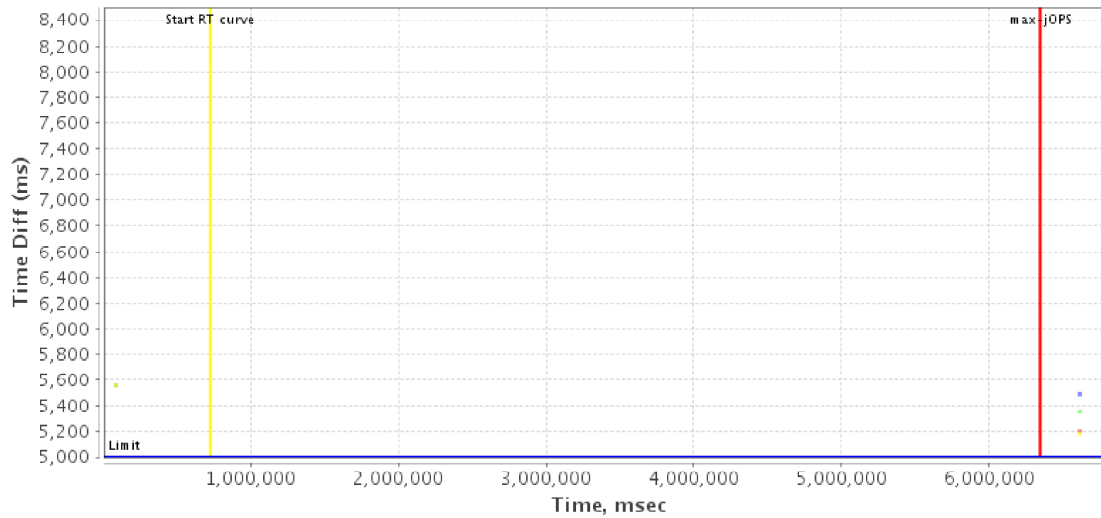
In-store Purchase [50%]	Online Purchase [35%]	Installment Purchase [10%]	Associativity of Category [0.1%]
Associativity of Product [1%]	Business Report [0.25%]	Customer Buying Behavior [1%]	Product Return [2.65%]

**Rate of Non-Critical Failures**

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

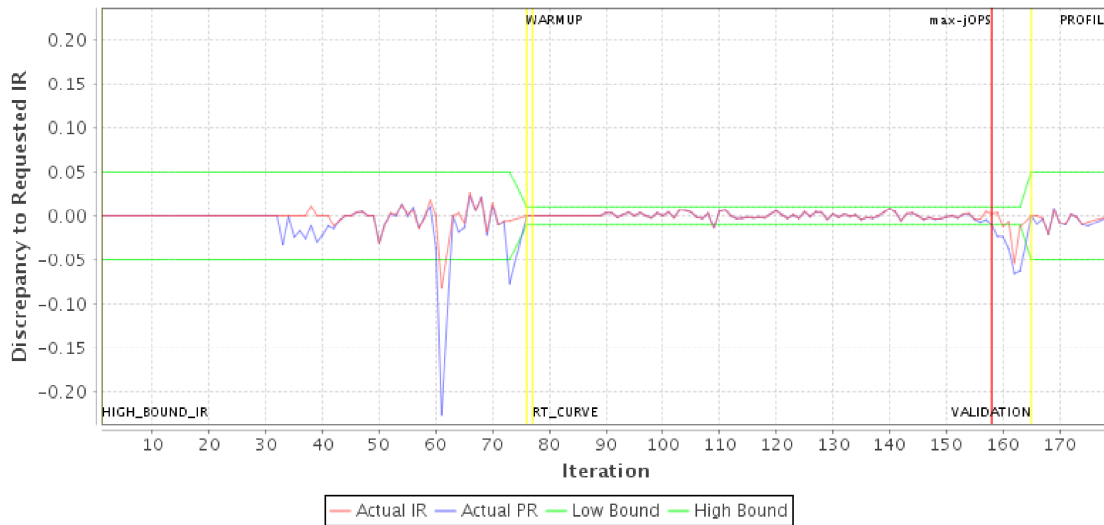
**Delay between performance status pings during RT Curve (Response-Throughput Curve)**

### Delay between performance status pings above threshold



### IR/PR Accuracy

#### IR/PR Accuracy



### Run Properties

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

Property Name	Default	Controller
specjbb.comm.connect.timeouts.connect	60000	600000
specjbb.comm.connect.timeouts.read	60000	600000
specjbb.comm.connect.timeouts.write	60000	600000
specjbb.comm.connect.worker.pool.max	256	88
specjbb.comm.connect.worker.pool.min	1	44
specjbb.forkjoin.workers	88	{Tier1=125, Tier2=62, Tier3=22}
specjbb.group.count	1	2
specjbb.mapreducer.pool.size	88	22
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

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Other Checks

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High-bound (max attempted) is 118334 IR

High-bound (settled) is 98645 IR

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