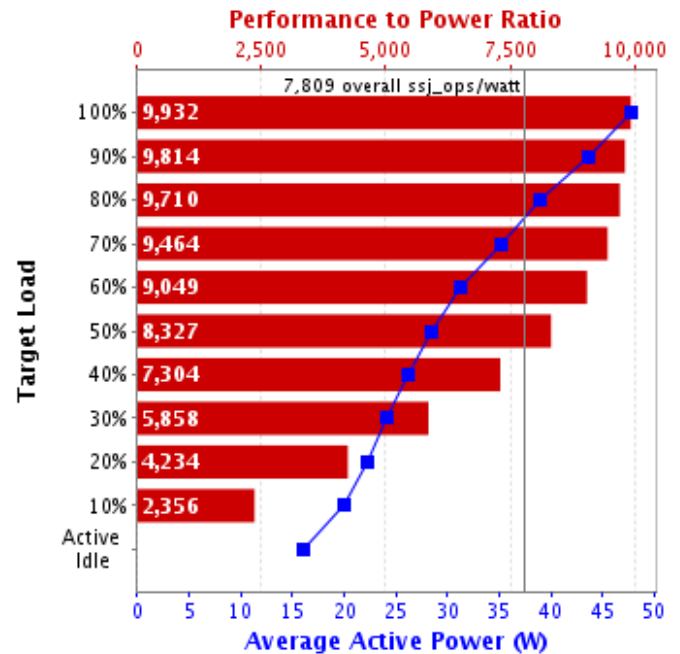# SPECpower_ssj2008

Copyright © 2007-2015 Standard Performance Evaluation Corporation

Fujitsu FUJITSU Server PRIMERGY RX1330 M2				SPECpower_ssj2008 = 7,809 overall ssj_ops/watt	
Test Sponsor:	Fujitsu	**SPEC License #:**	19	**Test Method:**	Single Node
Tested By:	Fujitsu	**Test Location:**	Paderborn, NRW, Germany	**Test Date:**	Nov 20, 2015
Hardware Availability:	Feb-2016	**Software Availability:**	Jan-2015	**Publication:**	Dec 15, 2015
System Source:	Single Supplier	**System Designation:**	Server	**Power Provisioning:**	Line-powered

Benchmark Results Summary

Performance			Power	Performance to Power Ratio
Target Load	**Actual Load**	**ssj_ops**	**Average Active Power (W)**	
100%	100.1%	474,047	47.7	9,932
90%	90.3%	427,509	43.6	9,814
80%	80.1%	379,044	39.0	9,710
70%	70.3%	332,812	35.2	9,464
60%	59.7%	282,416	31.2	9,049
50%	50.0%	236,669	28.4	8,327
40%	40.4%	191,106	26.2	7,304
30%	29.8%	141,210	24.1	5,858
20%	20.0%	94,558	22.3	4,234
10%	10.0%	47,253	20.1	2,356
Active Idle		0	16.0	0
∑ssj_ops / ∑power =				7,809

System Under Test

Set: 'RX1330 M2'

Set Identifier:	RX1330 M2
Set Description:	System Under Test
# of Identical Nodes:	1
Comment:	Single Node

Hardware	
Hardware Vendor:	Fujitsu
Model:	FUJITSU Server PRIMERGY RX1330 M2
Form Factor:	1U
CPU Name:	Intel Xeon E3-1260L v5
CPU Characteristics:	4-Core, 2.90GHz, 8MB L3 Cache
CPU Frequency (MHz):	2900
CPU(s) Enabled:	4 cores, 1 chip, 4 cores/chip
Hardware Threads:	8 (2 / core)
CPU(s) Orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

Hardware

Tertiary Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory Amount (GB):	16
# and size of DIMM:	2 x 8192 MB
Memory Details:	8 GB DDR4, unbuffered, ECC, 2133 MHz, PC4-2133U, DIMM, 2Rx8; slots 1A, 1B populated
Power Supply Quantity and Rating (W):	1 x 300
Power Supply Details:	Standard power supply part of base unit S26361-K1550-V101
Disk Drive:	1 x SSD SATA 6G 64GB DOM N H-P, S26361-F5522-E64
Disk Controller:	Integrated SATA Controller
# and type of Network Interface Cards (NICs) Installed:	2 x Intel I210 Gigabit Network Connection (onboard)
NICs Enabled in Firmware / OS / Connected:	1/1/1
Network Speed (Mbit):	1000
Keyboard:	None
Mouse:	None
Monitor:	None
Optical Drives:	No
Other Hardware:	None

Software

Power Management:	Enabled ("Fujitsu Enhanced Power Settings" power plan)
Operating System (OS):	Microsoft Windows Server 2012 R2 Standard
OS Version:	Version 6.3.9600 Build 9600
Filesystem:	NTFS
JVM Vendor:	Oracle Corporation
JVM Version:	Oracle Java HotSpot(TM) 64-Bit Server VM (build 24.80-b11, mixed mode), version 1.7.0_80
JVM Command-line Options:	-server -Xmn2300m -Xms2750m -Xmx2750m -XX:SurvivorRatio=60 -XX:TargetSurvivorRatio=90 -XX:AllocatePrefetchDistance=256 -XX:AllocatePrefetchLines=4 -XX:LoopUnrollLimit=45 -XX:InitialTenuringThreshold=12 -XX:MaxTenuringThreshold=15 -XX:ParallelGCThreads=2 -XX:InlineSmallCode=3900 -XX:MaxInlineSize=270 -XX:FreqInlineSize=2500 -XX:+AggressiveOpts -XX:+UseLargePages -XX:+UseParallelOldGC -XX:-UseAdaptiveSizePolicy
JVM Affinity:	start /AFFINITY [0x3,0xC,0x30,0xC0]
JVM Instances:	4
JVM Initial Heap (MB):	2750
JVM Maximum Heap (MB):	2750
JVM Address Bits:	64
Boot Firmware Version:	R1.4.0
Management Firmware Version:	8.07F
Workload Version:	SSJ 1.2.10
Director Location:	Controller
Other Software:	None

Boot Firmware Settings

- Set "Hardware Prefetcher = Disabled" in BIOS.
- Set "Adjacent Cache Line Prefetch = Disabled" in BIOS.
- Set "DCU Streamer Prefetcher = Disabled" in BIOS.
- Set "ASPM Support = Auto" in BIOS.
- Set "Turbo Mode = Disabled" in BIOS.
- Set "DMI Control = Gen1" in BIOS.
- Set "Intel Virtualization Technology = Disabled" in BIOS.
- Set "LAN 2 Controller = Disabled" in BIOS.

Management Firmware Settings

None

System Under Test Notes

- Set "Turn off hard disk after = 1 Minute" in OS.
- Using the local security settings console, "lock pages in memory" was enabled for the user running the benchmark.
- Benchmark was started via Windows Remote Desktop Connection.
- Each JVM instance was affinitized to two logical processors.

Controller System

Hardware	
Hardware Vendor:	Fujitsu
Model:	PRIMERGY RX200 S6
CPU Description:	Intel Xeon X5680
Memory amount (GB):	48

Software	
Operating System (OS):	Microsoft Windows Server 2008 R2 Enterprise SP1
JVM Vendor:	Oracle Corporation
JVM Version:	Oracle Java HotSpot(TM) 64-Bit Server VM (build 25.25-b02, mixed mode)
CCS Version:	1.2.6

Measurement Devices

Power Analyzer pwr1	
Hardware Vendor:	ZES Zimmer Electronic Systems GmbH
Model:	LMG95
Serial Number:	11210802
Connectivity:	RS-232
Input Connection:	Default (20A)
Metrology Institute:	PTB (Physikalisch Technische Bundesanstalt)
Accredited by:	Atlas Copco Tools Central Europe GmbH
Calibration Label:	W14113561
Date of Calibration:	21-Nov-2014
PTDaemon Host System:	same as CCS
PTDaemon Host OS:	same as CCS
PTDaemon Version:	1.7.1-6ff11330-20150212
Setup Description:	Connected to PSU 1

Temperature Sensor temp1	
Hardware Vendor:	Digi International Inc.
Model:	Watchport/H
Driver Version:	Watchport Virtual Port 5.70.105.0
Connectivity:	USB
PTDaemon Host System:	same as CCS
PTDaemon Host OS:	same as CCS

Temperature Sensor temp1	
Setup Description:	5 mm in front of SUT main air intake

Notes

- SPECpower_ssj.props input.load_level.number_warehouses set to 8 due to a known inconsistency in processor reporting with this Java version.

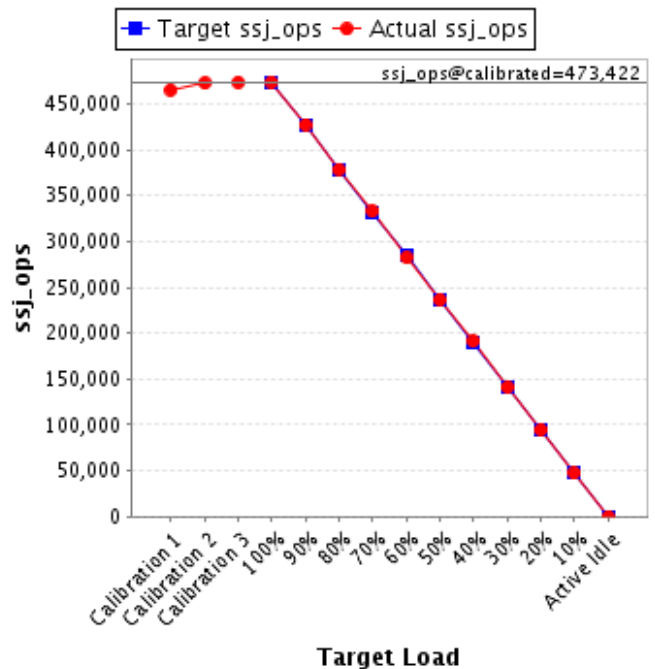## Aggregate Electrical and Environmental Data

Target Load	Average Active Power (W)	Minimum Ambient Temperature (°C)
100%	47.7	21.2
90%	43.6	21.1
80%	39.0	21.4
70%	35.2	21.6
60%	31.2	21.8
50%	28.4	21.9
40%	26.2	22.0
30%	24.1	22.1
20%	22.3	22.2
10%	20.1	21.6
Active Idle	16.0	21.3

Line Standard	Minimum Temperature (°C)	Elevation (m)
230V / 50 Hz / 1 phase / 2 wires	21.1	117

See the Power/Temperature Details Report for additional details.

Aggregate Performance Data

Target Load	Actual Load	ssj_ops Target	ssj_ops Actual
Calibration 1			465,420
Calibration 2			472,909
Calibration 3			473,935
		ssj_ops@calibrated=473,422	
100%	100.1%	473,422	474,047
90%	90.3%	426,080	427,509
80%	80.1%	378,738	379,044
70%	70.3%	331,395	332,812
60%	59.7%	284,053	282,416
50%	50.0%	236,711	236,669
40%	40.4%	189,369	191,106
30%	29.8%	142,027	141,210
20%	20.0%	94,684	94,558
10%	10.0%	47,342	47,253
Active Idle		0	0

See the Host Performance Report for additional details.