

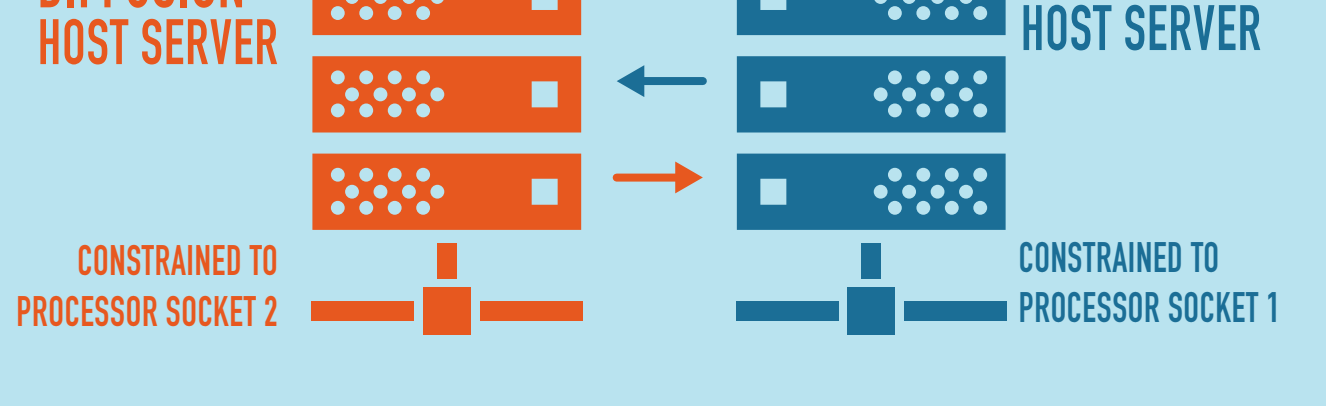
# AZUL SYSTEMS ZING VS. HOTSPOT JVM

a Diffusion™ Performance study



Push Technology compared the performance of their Java-based data distribution solution, Diffusion, running on Azul Zing®, versus performance using Oracle's HotSpot JVM

## TEST ENVIRONMENT



MANUFACTURER	IRON SYSTEMS	IRON SYSTEMS
PROCESSORS	INTEL XENON PROCESSOR E5-4620 (16M CACHE, 2.20 GHZ, 7.20 GT/S INTEL QPI)	INTEL XENON PROCESSOR X5650 (12M CACHE, 2.66 GHZ, 6.40 GT/S INTEL QPI)
MEMORY	16GB RDIMM, 1333MHZ, LOW VOLT, DUALRANK	16GB RDIMM, 1333MHZ, LOW VOLT, DUALRANK
NETWORKING	1 X SOLARFLARE COMMUNICATIONS SFC9020 [SOLAR STORM]	1 X SOLARFLARE COMMUNICATIONS SFC9020 [SOLAR STORM]
OPERATING SYSTEM	CENTOS 6.3 - WITH LINUX KERNEL: 2.6.32 - 279.EL6. X86_64	CENTOS 6.4 - WITH LINUX KERNEL: 2.6.32 - 258.EL6. X86_64

## RESULTS

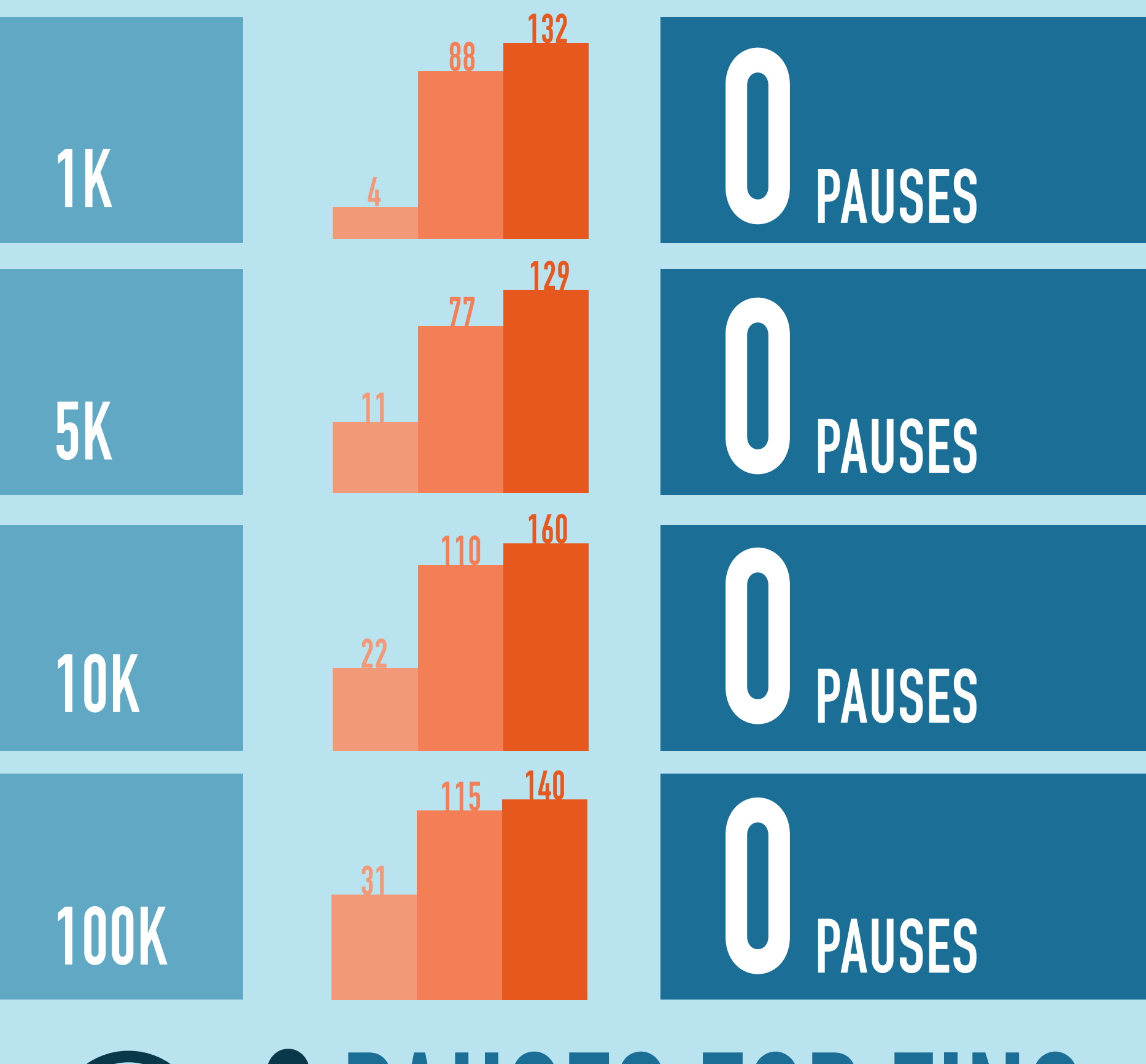
### GARBAGE COLLECTION TIME

#### DELAY IN MILLISECONDS

AVERAGE 99TH PERCENTILE 99.9TH PERCENTILE

**HOTSPOT JVM**  
GARBAGE COLLECTION PAUSE TIMES UP TO 115 MILLISECONDS AT THE 99TH PERCENTILE

**ZING**  
ZERO GC-RELATED PAUSES OVER 2.5 MSEC— EVEN AT THE 99.999TH PERCENTILE!

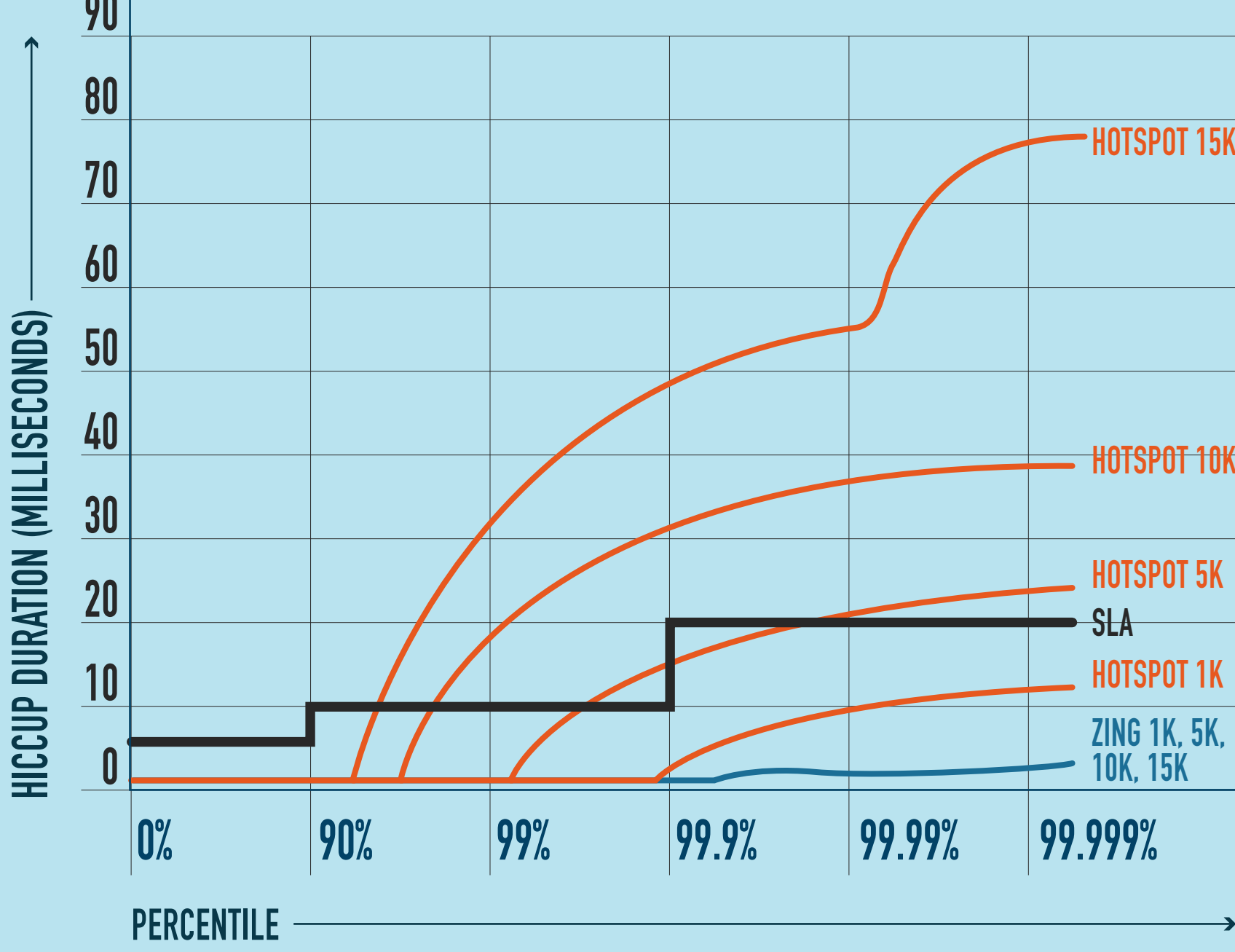


## 0 PAUSES FOR ZING

### SYSTEM HEALTH HICCUP CHARTS

#### GC PAUSES FOR EACH JAVA RUNTIME, BY PERCENTILE

HOTSPOT ZING SLA



SLA = 5 MSEC FOR 90% | 10 MSEC FOR 99.99% | 20 MSEC FOR 100%

PERCENTILE AT WHICH SYSTEMS START SHOWING STRESS

**HOTSPOT JVM**  
**95%**

**AZUL SYSTEMS ZING**  
**99.9999%**

### THE TAKEAWAY

WHEN LATENCY IS A CRITICAL COMPONENT, A WELL-TUNED ZING RUNTIME OUTPERFORMS A WELL-TUNED HOTSPOT.

### FOR THIS DATA DISTRIBUTION BENCHMARK

- ZING ELIMINATES GC PAUSES IN LATENCY-CRITICAL DEPLOYMENTS
- ZING REDUCES LATENCY OUTLIERS ON APPLICATION MESSAGES
- ZING DELIVERS FINE-GRAINED DATA DISTRIBUTION CONTROL
- ZERO DATA LOST **100%**
- SAVES UP TO 95% OF THE BANDWIDTH

TUNE UP YOUR JAVA-BASED DATA DISTRIBUTION WITH ZING FROM AZUL SYSTEMS.

VIEW OUR COMPLETE METHODOLOGY >>



Contact Azul Systems at:

CALL US  
+1.650.230.6500

EMAIL US  
info@azulsystems.com

ON THE WEB  
azulsystems.com