

**Claim for TPS Performance Testing:**

16x more transactions per second (TPS) per core with Hazelcast on enterprise-class IBM z16 versus on a compared x86 system

**Claim for Latency Performance Testing:**

2.75x decrease in latency with Hazelcast on enterprise-class IBM z16 versus on a compared x86 system

**TPS Performance Testing DISCLAIMER**

IBM Hazelcast Message Streaming Performance Study compared a memory- and network-intensive client workload running on an enterprise-class IBM Z Machine Type 3931 Max125 against an existing x86 solution using commercially available enterprise servers.

The cluster setup in the IBM Z solution consisted of a 3-node cluster, with 5 dedicated IFLs per node, totaling 15 IFLs across the cluster environment. The load-generating client node had 4 dedicated IFLs. Each node had a dedicated 25Gb OSA network device and 32 GB of memory. The cluster setup in the x86 solution consisted of a 3-node cluster with 20 cores per node, totaling 60 cores across three servers. The client server had 20 cores. Each server had 460 GB of memory and networking bandwidth of 40 Gbps.

In the IBM Z solution, workloads consisted of a Hazelcast Enterprise 5.5.5 application running on Red Hat Linux v9.5. Red Hat Linux v9.5 ran natively in the client node and on zVM 7.3 within the cluster. In the x86 solution, within the client node and the cluster, the Hazelcast Enterprise 5.5.5 application ran on Ubuntu v22.04 on bare metal.

The IBM Z solution had 16x Transaction Per Second per core (TPS per core) performance compared to the x86 solution for 100KB size payloads. Results may vary.

**Latency Performance Testing DISCLAIMER**

IBM Hazelcast Message Streaming Latency Study compared a memory- and network-intensive client workload running on an enterprise-class IBM Z Machine Type 3931 Max125 against an existing x86 solution using commercially available enterprise servers.

The cluster setup in the IBM Z solution consisted of a 3-node cluster, with 5 dedicated IFLs per node, totaling 15 IFLs across the cluster environment. The load-generating client node had 10 dedicated IFLs. Each node utilized HiperSockets and had 32 GB of memory. The cluster setup in the x86 solution consisted of a 3-node cluster with 20 cores per node, totaling 60 cores across three servers. The client server had 20 cores. Each server had 460 GB of memory and networking bandwidth of 40 Gbps.

In the IBM Z solution, workloads consisted of a Hazelcast Enterprise 5.5.5 application running on Red Hat Linux v9.5. Red Hat Linux v9.5 ran natively in the client node and on zVM 7.3 within the cluster. In the x86 solution, within the client node and the cluster nodes, the Hazelcast Enterprise 5.5.5 application ran on Ubuntu v22.04 on bare metal.

The IBM Z solution had a 2.75x improved latency performance compared to the x86 solution at the 99 percentile for a fixed ops/s of 20,000 with 200 clients. Results may vary.