GVP HSG Pages

Multiple Dispatcher Tests

5/13/2025

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The GVP 8.5.1 August 2015 release added support for multiple dispatchers and improved latency performance on physical servers. Capacity increased due to the latencies improvements; CPU usage can now be increased as well.

Below are results from three tests from configurations of one dispatcher, four dispatchers, and eight dispatchers on a single 8-core physical server using SW Profile 1a (16Kbps MP3 stereo only without encryption).
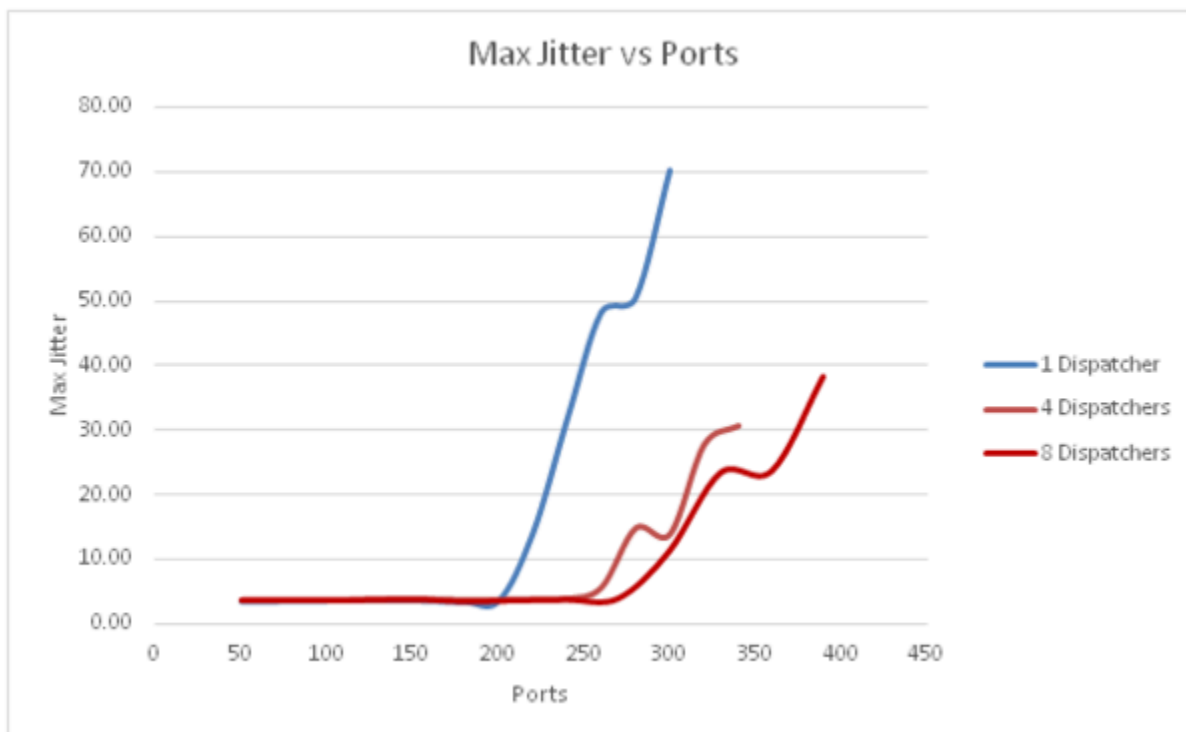

Figure 120: Max Jitter, Different # of dispatchers of 16Kbps MP3 stereo only, No encryption, on EL 6.6
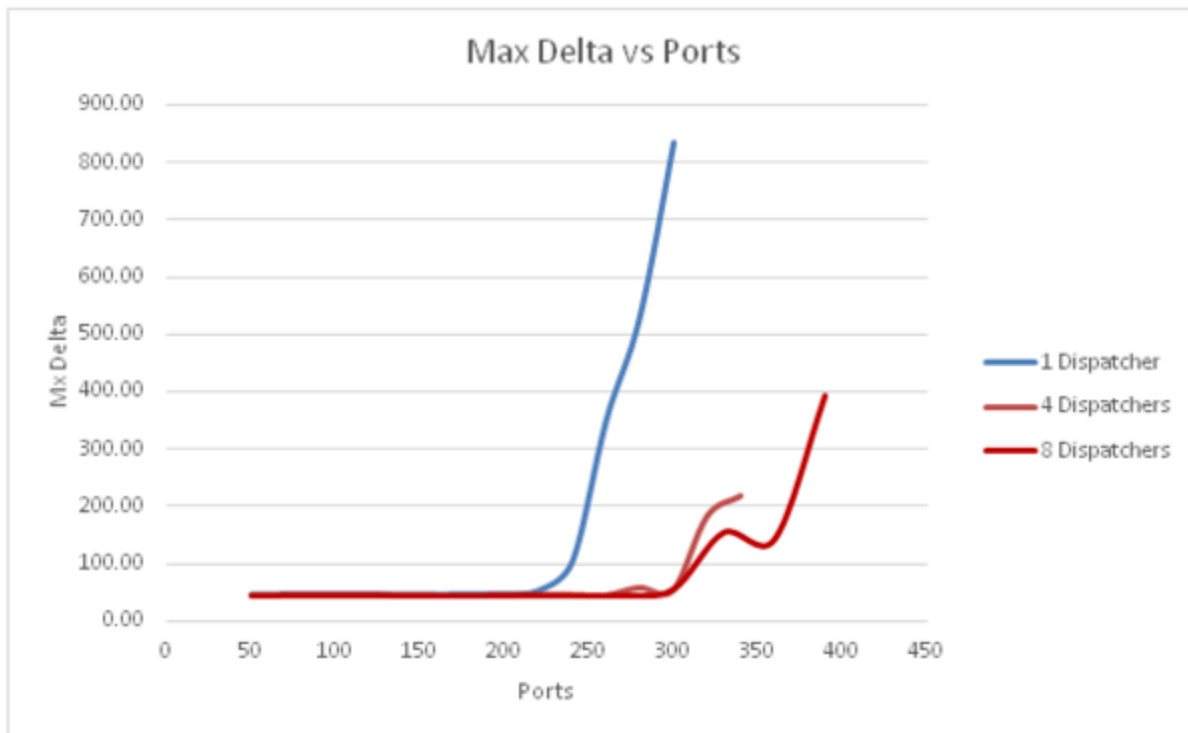
Figure 121: Max Delta, Different # of dispatchers of 16Kbps MP3 stereo only, No encryption, on EL 6.6

Results from four-dispatcher and eight-dispatcher configurations show significant improvement, when compared against the default of one dispatcher. Additionally, the results with eight dispatchers show slightly better results than with four dispatchers.

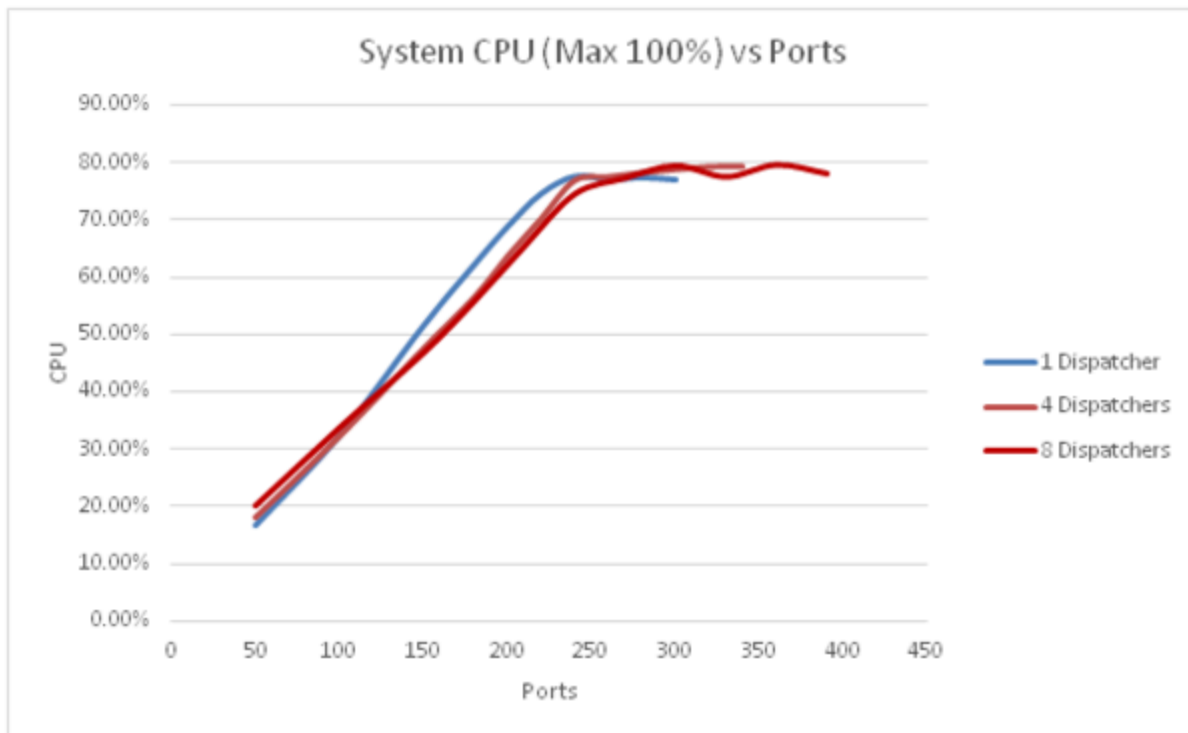The next results are for system CPU usage:

Figure 122: System CPU, Different # of dispatchers of 16Kbps MP3 stereo only, No encryption, on EL 6.6

CPU usage for one dispatcher is slightly higher than four and eight dispatchers, while CPU usage flattens out near peak capacity. The four-dispatcher and eight-dispatcher configurations may drive the CPU slightly higher, and thus achieve the higher capacity.

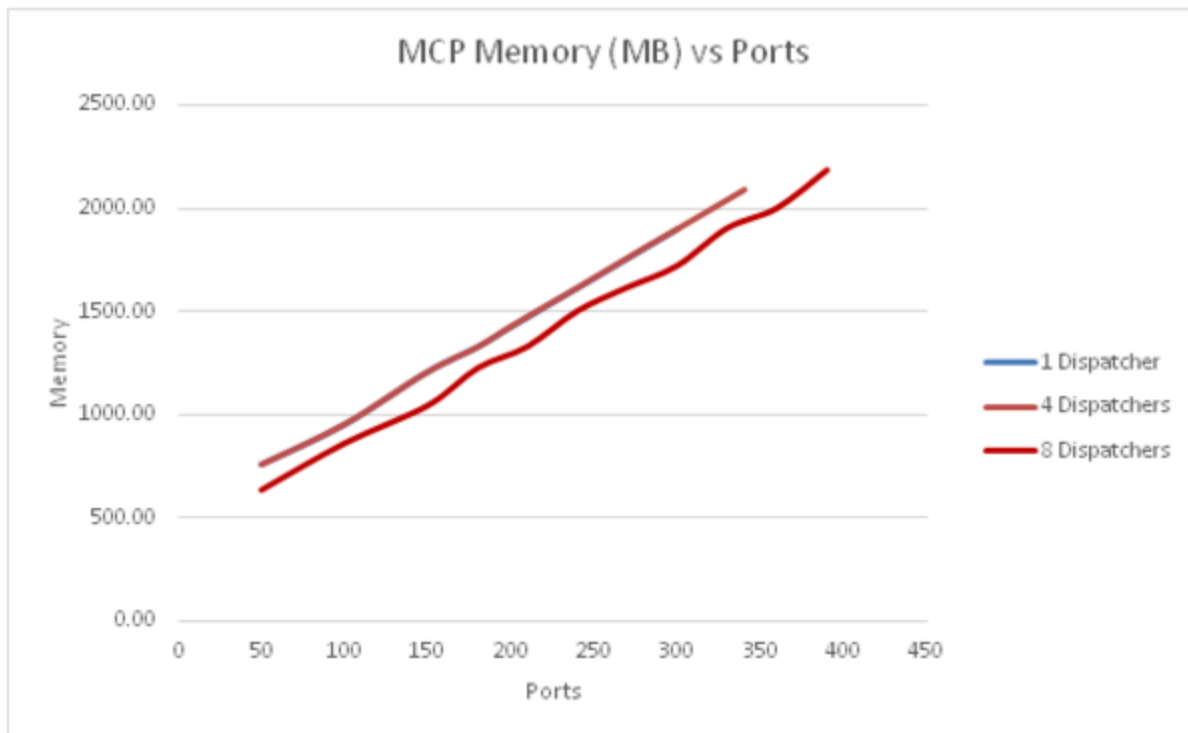The next results are for memory usage:

Figure 123: MCP Memory Usage, Different # of dispatchers of 16Kbps MP3 stereo only, No encryption, on EL 6.6

Memory usage for four-dispatcher and eight-dispatcher configurations is similar, with eight dispatchers using slightly less memory. Genesys recommends the eight-dispatcher configuration. Comparing eight dispatchers to the default one dispatcher reveals a 36% increase in preferred capacity (300 vs 220 ports); eight dispatchers achieved a 50% increase in peak capacity.

Jitter and Delta Tests

The results below were achieved using the same four-dispatcher and eight-dispatcher configurations, on a Windows 2008 R2 server with the same hardware specifications as the previous tests.
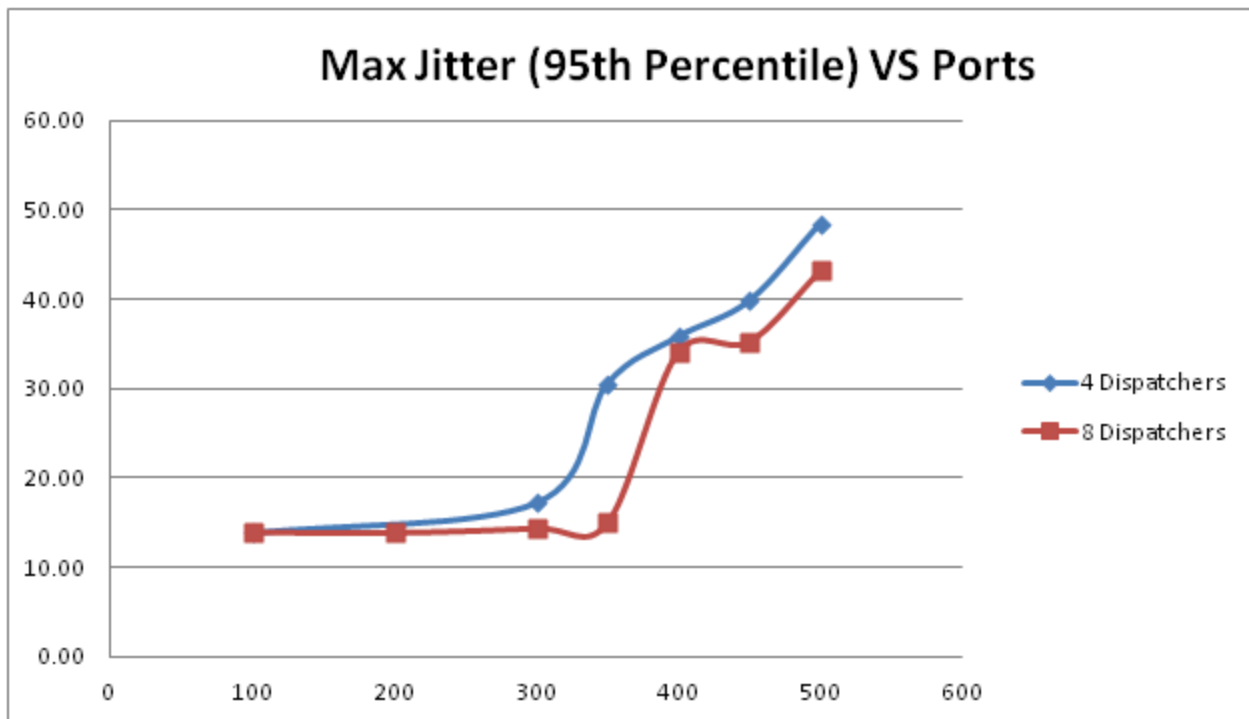
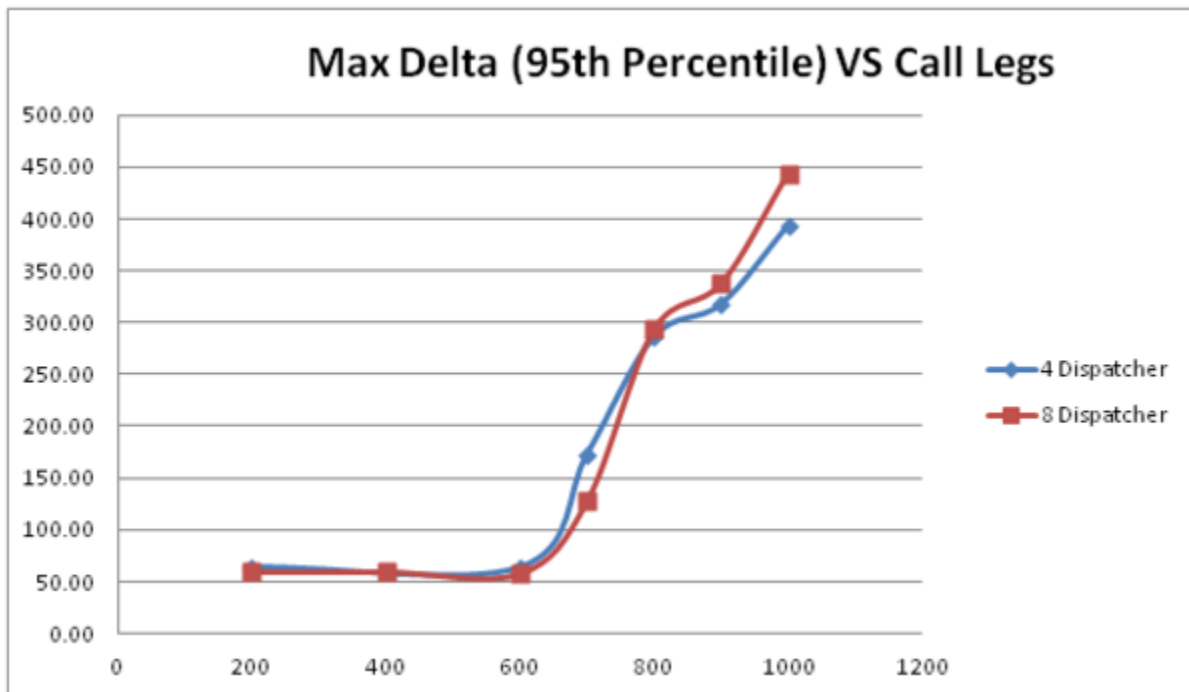**Figure 124: Max Jitter, Different # of dispatchers of 16Kbps MP3 stereo only, No encryption, on W2K8 R2**

Figure 125: Max Delta, Different # of dispatchers of 16Kbps MP3 stereo only, on W2K8 R2

These results are the same as were seen on similar Linux systems—eight-dispatcher configurations

achieved slightly better results than four-dispatcher configurations. Genesys recommends that the number of dispatchers and the number of cores should be the same in physical server configurations.

MP3 8 Kbps Mono Support

Physical Server Windows 2008 R2

The GVP 8.5.1 August 2015 release added support for MP3 Mono with an 8Kbps bit rate. Genesys tested the recommended eight dispatchers configurations on physical servers running Windows 2008 R2 Server and Linux EL 6.6, to compare with the results for 16Kbps MP3 stereo configurations.

Below are graphs of Max Jitter and Max Delta for latencies on a Windows 2008 R2 Server:
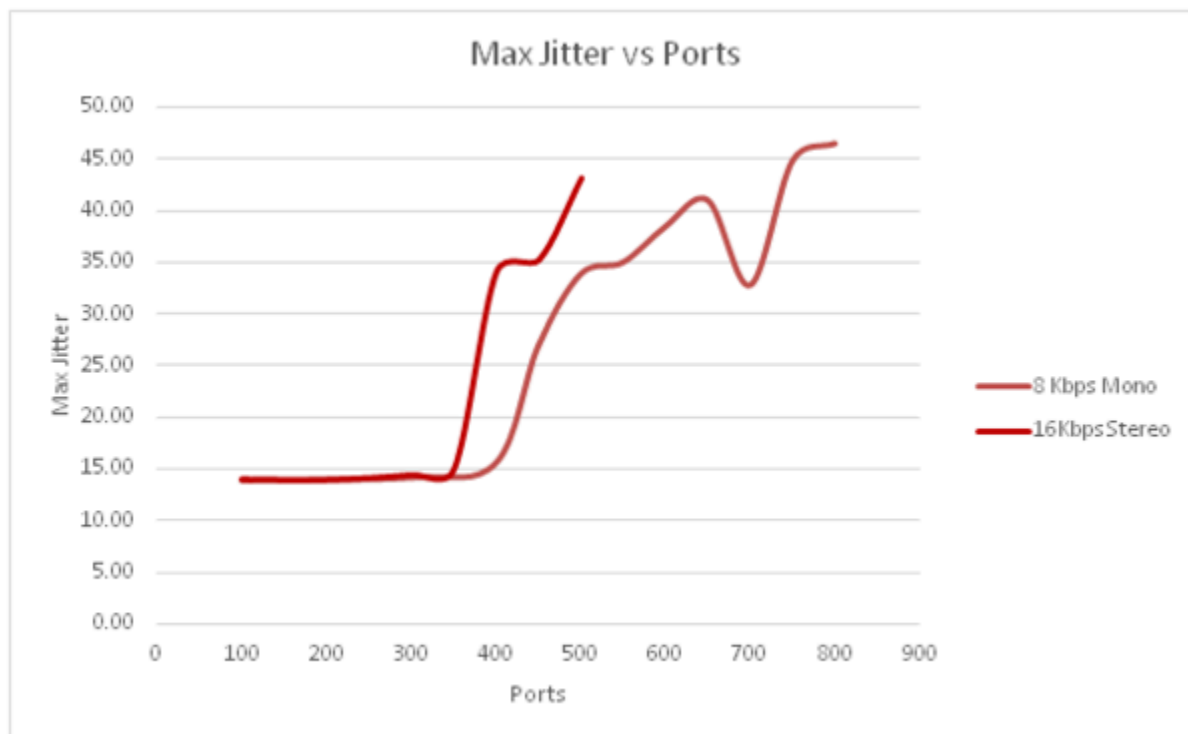

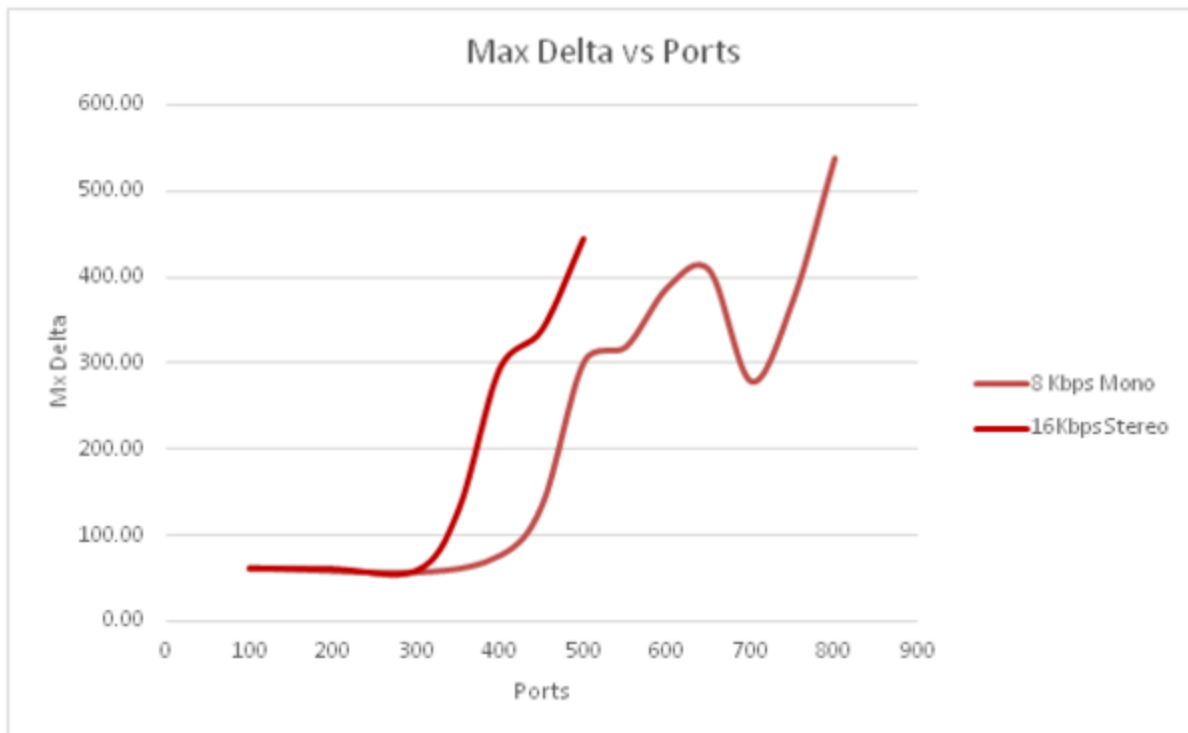**Figure 126: Max Jitter, 16Kbps MP3 stereo vs 8Kbps Mono, No encryption, on W2K8 R2**

Figure 127: Max Delta, 16Kbps MP3 stereo vs 8Kbps Mono, No encryption, on W2K8 R2

Below are CPU and Memory usage results for a Windows 2008 R2 Server configuration:
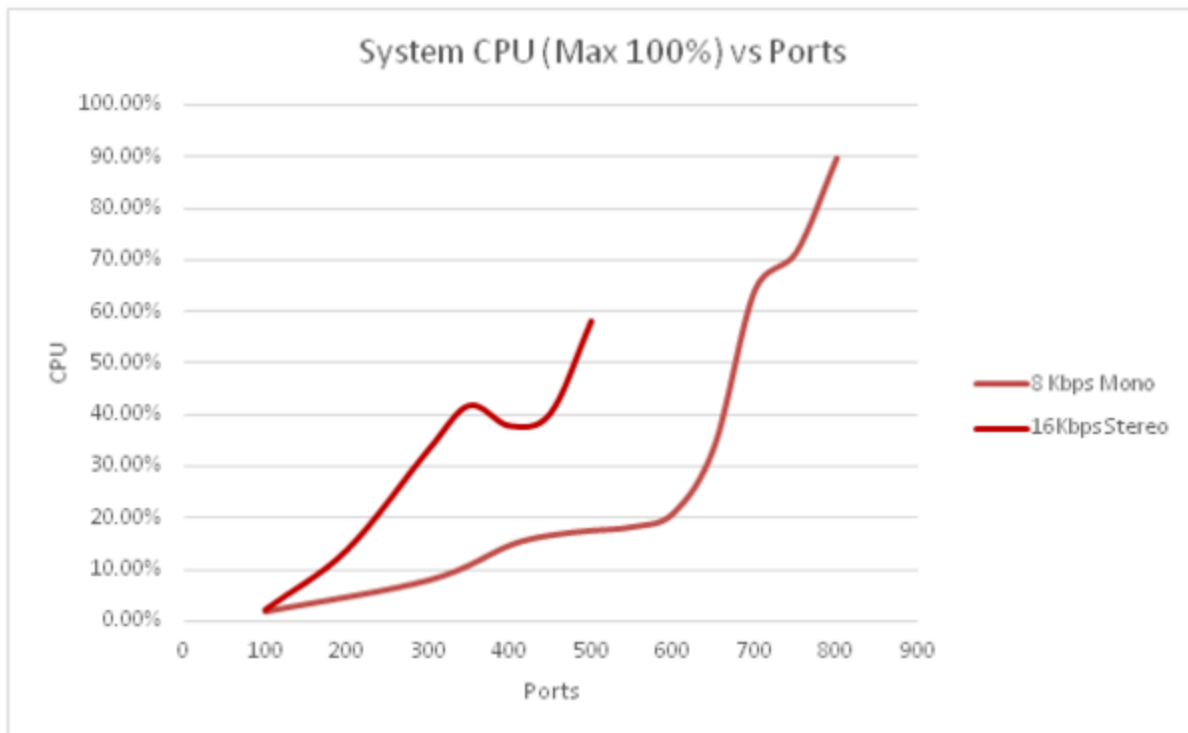
Figure 128: System CPU, 16Kbps MP3 stereo vs 8Kbps Mono, No encryption, on W2K8 R2
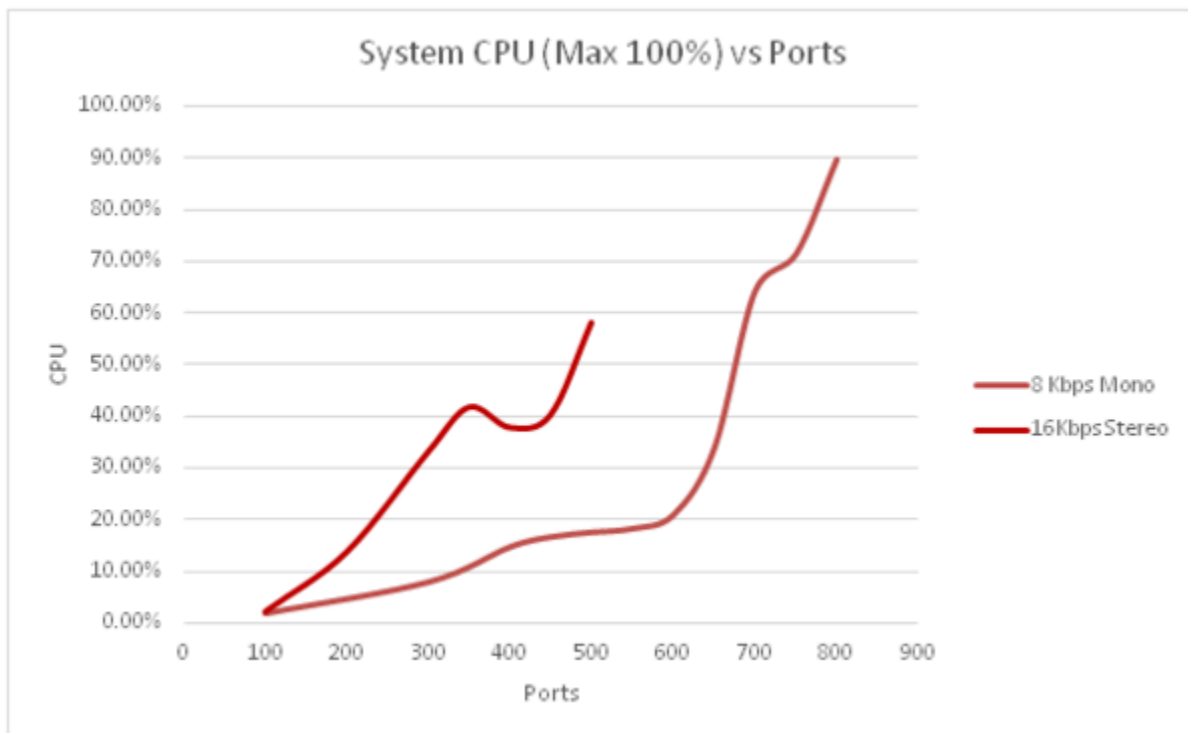

Figure 129: MCP Memory Usage, 16Kbps MP3 stereo vs 8Kbps Mono, No encryption, on W2K8 R2

The above results show that an 8 Kbps configuration uses less CPU and memory, with lower latencies of observed for Max Jitter and Max Delta, which achieves higher capacity. For example, there was a 28.6% increase in capacity (450 vs 350 ports) for preferred ports, and a 33.3% increase in peak capacity (600 vs 450 ports) when using 8 Kbps Mono compared to 16Kbps Stereo.

Figure 130: Disk IOPS, 8 Kbps Mono, No encryption, on W2K8 R2

Ports	Physical Server Disk IOPS		
	Total	Reads	Writes
100	60.35	0.00	60.35
300	168.82	0.00	168.82
400	224.52	0.00	224.52
450	252.20	0.00	252.20
500	280.28	0.00	280.28
550	306.22	0.00	306.22
600	333.88	0.00	333.88
650	359.84	0.00	359.84
700	388.11	0.00	388.11
750	415.87	0.00	415.87
800	441.96	0.00	441.96

Physical Server Linux EL 6.6 Tests

These tests were performed on a Linux EL 6.6 physical server. The graphs below compare Max Jitter and Max Delta for latencies with an MP3 8Kbps bit rate Mono configuration with using a 16 Kbps MP3 stereo configuration.
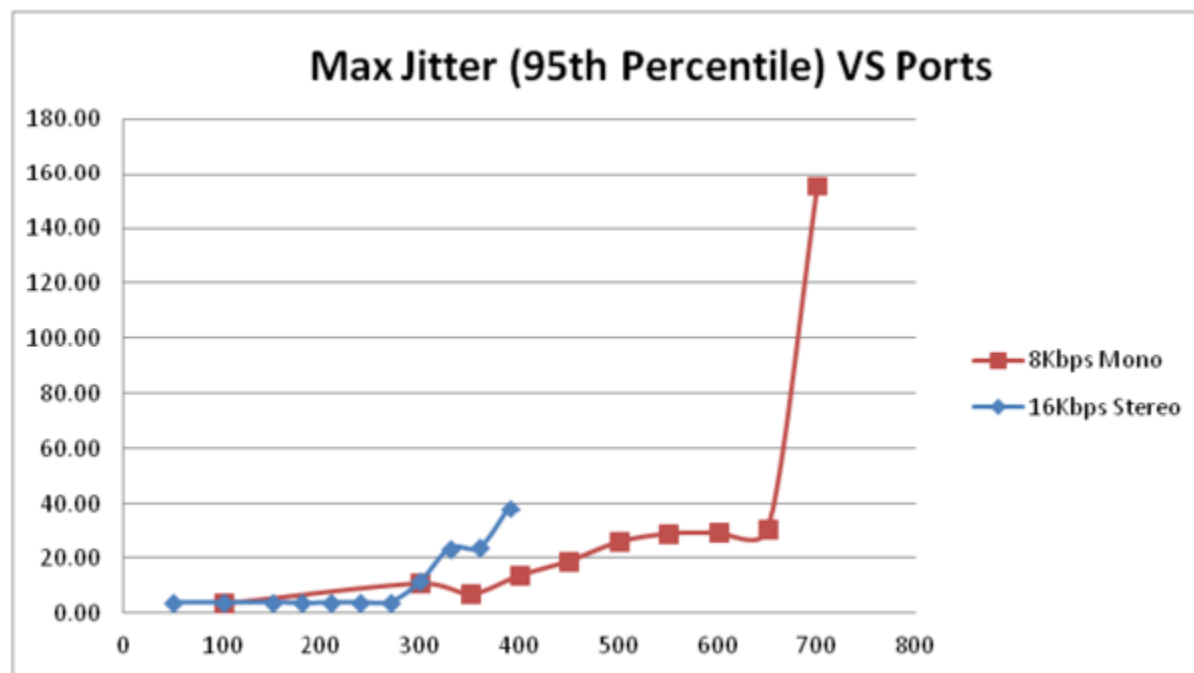
Figure 131: Max Jitter, 16Kbps MP3 stereo vs 8Kbps Mono, No encryption, on EL 6.6
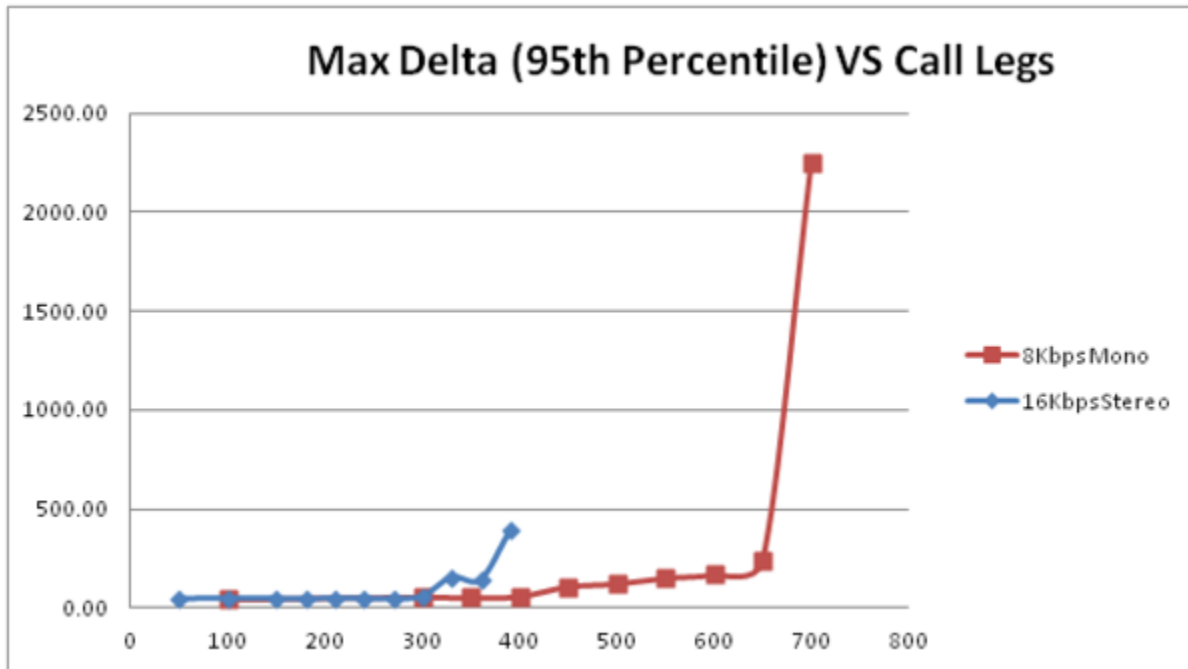

Figure 132: Max Delta, 16 Kbps MP3 stereo vs 8Kbps Mono, No encryption, on EL 6.6

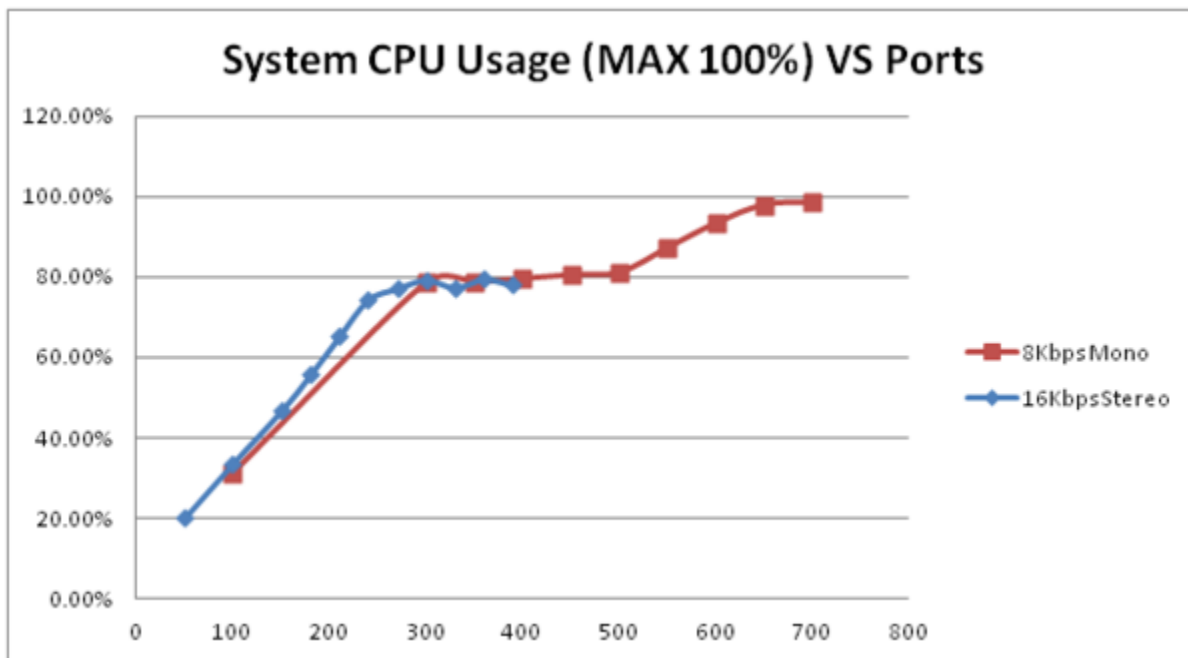Overall system CPU usage is shown below:

Figure 133: System CPU, 16 Kbps MP3 stereo vs 8Kbps Mono, No encryption, on EL 6.6

The same trend was seen on Linux as was seen on Windows—slightly lower CPU usage for 8 Kbps

Mono, lower latencies for both Max Jitter and Max Delta, thereby achieving higher capacity.

In fact, there is a 100% increase in preferred ports capacity (600 vs 300 ports), and an 80% increase in peak capacity (650 vs 360 ports) when using 8 Kbps Mono on Linux (with no encryption).

Figure 134: Disk IOPS, 8 Kbps Mono, No encryption, on EL 6.6

Ports	Physical Server Disk IOPS		
	Total	Reads	Writes
100	49.95	0.00	49.95
300	138.42	0.00	138.42
350	157.07	0.00	157.07
400	178.74	0.00	178.74
450	207.88	0.00	207.88
500	225.21	0.00	225.21
550	248.20	0.00	248.20
600	272.85	0.00	272.85
650	299.11	0.00	299.11
700	332.05	0.01	332.04