GVP HSG Pages

Performance and Scalability Comparisons

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Performance and Scalability Comparisons

This section compares performance and scalability between GVP 8.x and previous releases, using the profiles VoiceXML_App1 and VoiceXML_App2.

- Performance Comparisons
- Scalability Comparisons
- High Performance Configuration

Performance Comparisons

Tested with VoiceXML_App1	Tested with VoiceXML_App2

Peak capacity of GVP 8.x:
 	
- with NGI:
 	
    - ~50% higher than VG 7.2
    - ~90% higher than GVP 7.6
 	
- with GVPi, equivalent to GVP 7.6
 	
Comparing GVP 8.x and GVP 7.6 (with GVPi) to GVP 8.1:
 	
- 8.1 uses significantly fewer CPU cycles (relatively 30%)
 	
- 8.1 uses less memory (relatively 30%)
 	
In 8.1, the peak capacity is identical to previous releases (using identical temp file management mechanisms), as the bottleneck is due to disk I/O.
	Peak capacity of GVP 8.x:
	
	- with NGI:
	
	    - ~66% higher than VG 7.2
	    - ~100% higher than GVP 7.6
	
	- with GVPi, equivalent to GVP 7.6
	
	In the use case with GVPi, the peak capacity for GVP 8.x is identical to GVP 7.6 (using identical temp file management mechanisms), because the bottleneck is due to disk I/O.

Scalability Comparisons

For applications that are CPU-dependent (or applications in which bottlenecks occur due to CPU cycles) GVP 8.x can use additional CPU cycles and cores. Use case results showed that peak port densities scaled upward linearly relative to an increase in CPU clock speed.

Table: Examples of Peak Capacity using VoiceXML_App1

Processor	Total Clock Speed	Peak Port Density
2x Core 2 Quad, 2.66 GHz	21.28 GHz	1300
2x Core 2 Dual, 3.00 GHz	12 GHz	700

Processor	Total Clock Speed	Peak Port Density
1x Core 2 Dual, 3.00 GHz	6 GHz	400

Figure: CPU Clock Speed Versus Peak Capacity is a graphical depiction of the peak port density in Table: Call Control Platform Bandwidth Usage.
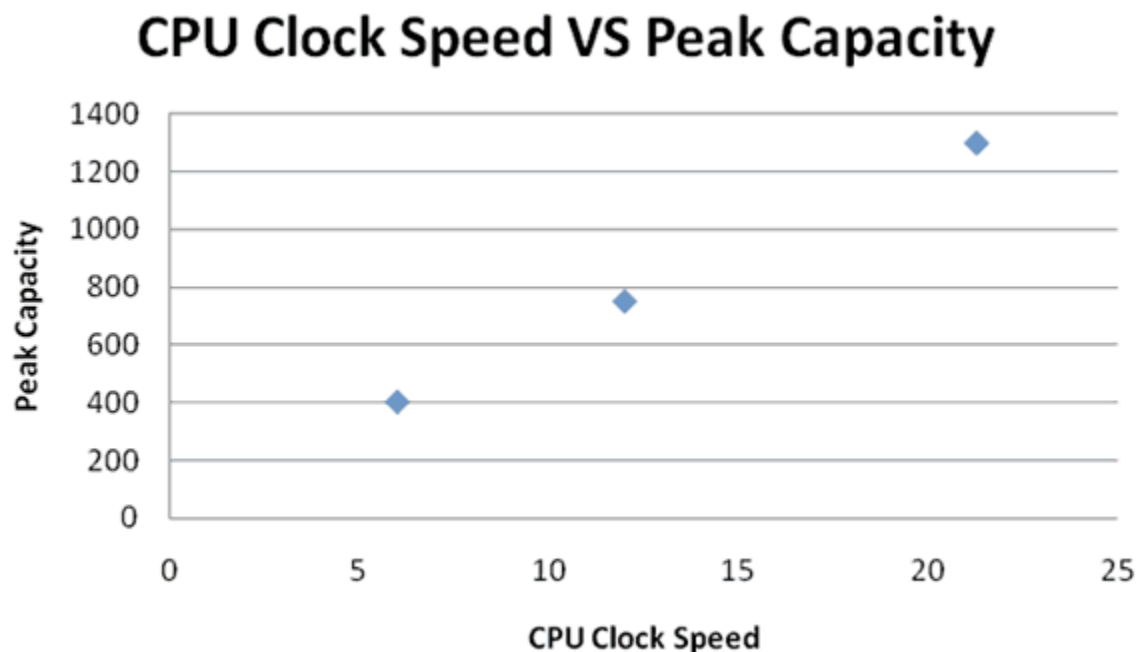

Figure: CPU Clock Speed Versus Peak Capacity

CPU Clock Speed Versus Peak Capacity

To increase the total clock speed by 100%, the peak capacity would have to increase by ~90 to 100%, assuming:

- The type of CPUs are the same as the ones in Table: Call Control Platform Bandwidth Usage.
- The VoiceXML_App1 application is used.
- The overall system bottleneck CPU cycles remain the same.

High Performance Configuration

The Media Control Platform can support more than 400 ports on a single host, however, some configuration changes are required. Use Genesys Administrator to configure the Media Control Platform for high performance by modifying the options and default values in the table below, and configure the Windows Registry on the Media Control Platform to support either the NGI, GVPi, or both.

Table: High Performance Configuration for Media Control Platform

Section	Option/Key	Default Value	High Performance Value
Media Control Platform with NGI			
mpc	maxmediathreads	32	16
vxmli	max_num_documents	5000	10,000 (> 1000 ports)
Windows Registry key: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameteres\TcpTimedWaitDelay`		None	Type = DWORD Value = 30 or 1e (hex)
Media Control Platform with GVPi			
mpc	maxmediathreads	32	32
PageCollector	maxpoolthreads	512	>= Port Density
PopGateway1	maxpoolthreads	512	>= Port Density
Windows Registry key: `HKEY_LOCAL_MACHINE\Software\CallNet\CnlnetSettings\MaxThreadPool`		None	Type = DWORD Value >= Port Density /2