

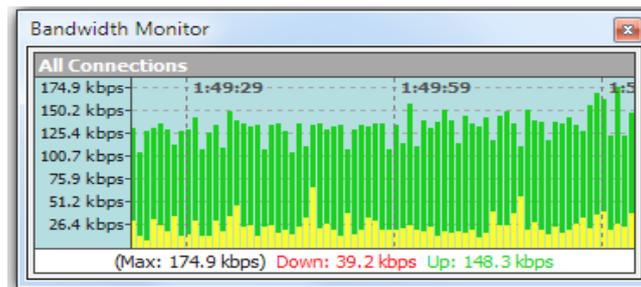
## WCS Pro 4.0 Performance Test Result

The WCS Service Use the TCP Port 4527 so it should be allowed if the client is working behind a proxy server or firewall.

### The Performance and the bandwidth requirements:

We have installed our system on a virtual hosting VPS server; it's open for public testing on <http://demo.socketcoder.com> so feel free to join and test our systems performance, to get the highest performance we recommend to use a dedicated server or cloud hosting.

As shown below, The Video/Audio/Text chatting are running with the Whiteboard normal drawing, The Bandwidth requirement around 175 kbps:



Therefore, to use these three services you should have 175 kbps for each connected user, for example if you want this system to cover 100 users your hosting server should have:

$(175 \text{ kbps} \times 100 \text{ (Number of users)})/1024 = \sim 17 \text{ Mbit/S}$  Download/Upload as a bandwidth requirement to cover around 100 online users with using the all services.

The Below Table shows the bandwidth requirement for each user to each service on the default settings:

Service	Bandwidth for each user
Voice Chat Service Testing on (16 bits, 8000 samples, 1 Channel) Using Speex Voice Codec on Wide Quality.	~20-30 Kbps
Video Chat Service Testing on (200X150, 5 FPS, 50% Quality) to (200X150, 7 FPS, 70% Quality) on MJPEG	~100-180 Kbps
Drawing Board Service Without Images Drawing Board Service With Images, depends on the image quality.	~35 Kbps
Presenter Tool Publisher/Viewer Service Testing on (640X480, 40% Quality) JPEG Format	~200 Kbps
Text Chat Service	Less than 1 KB for each message
Files Sharing System	Depends on the uploaded file.

## RAM and CPU Performance Test:

We have tested the CPU and the RAM Performance on a Hyper-V Windows 2008 R2 virtual Server:

Windows edition \_\_\_\_\_

Windows Server 2008 R2 Enterprise

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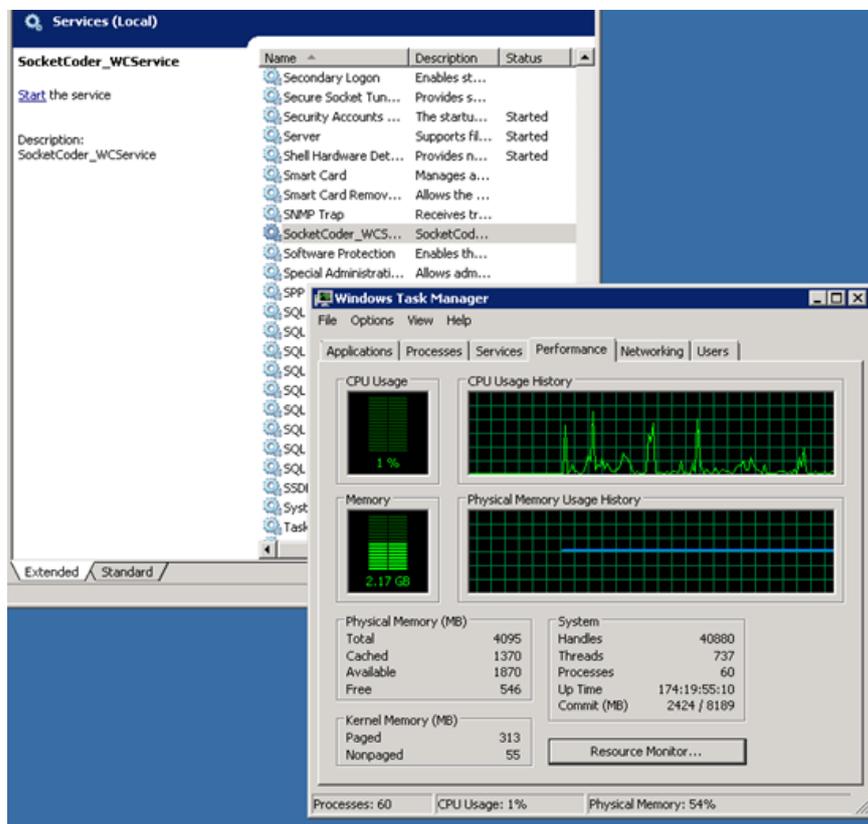
System \_\_\_\_\_

Processor: AMD Opteron(tm) Processor 6128 2.00 GHz

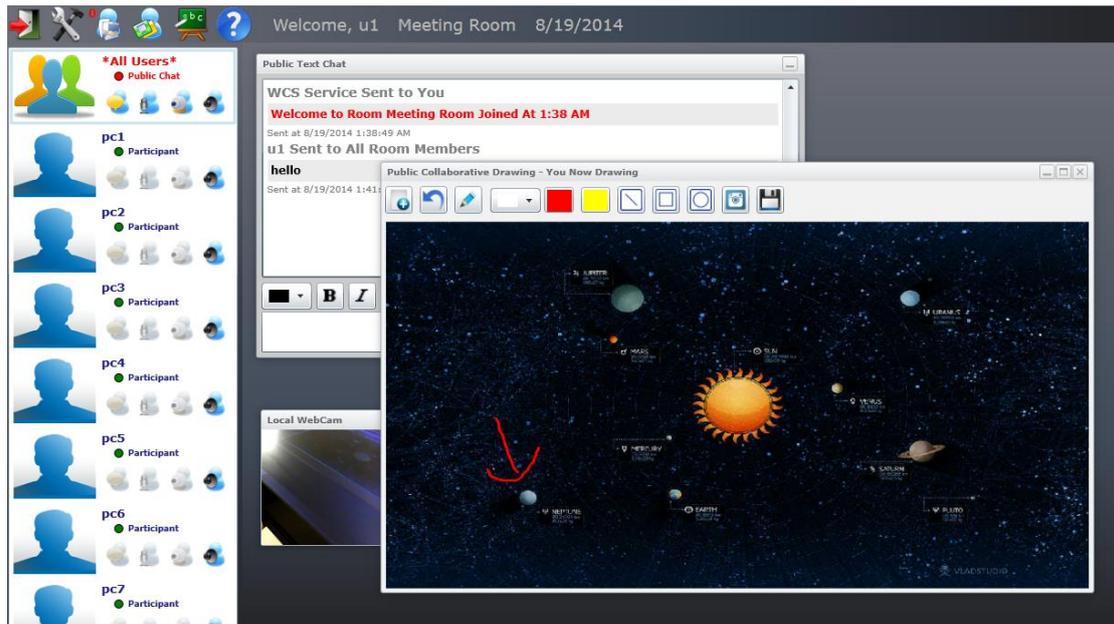
Installed memory (RAM): 4.00 GB

System type: 64-bit Operating System

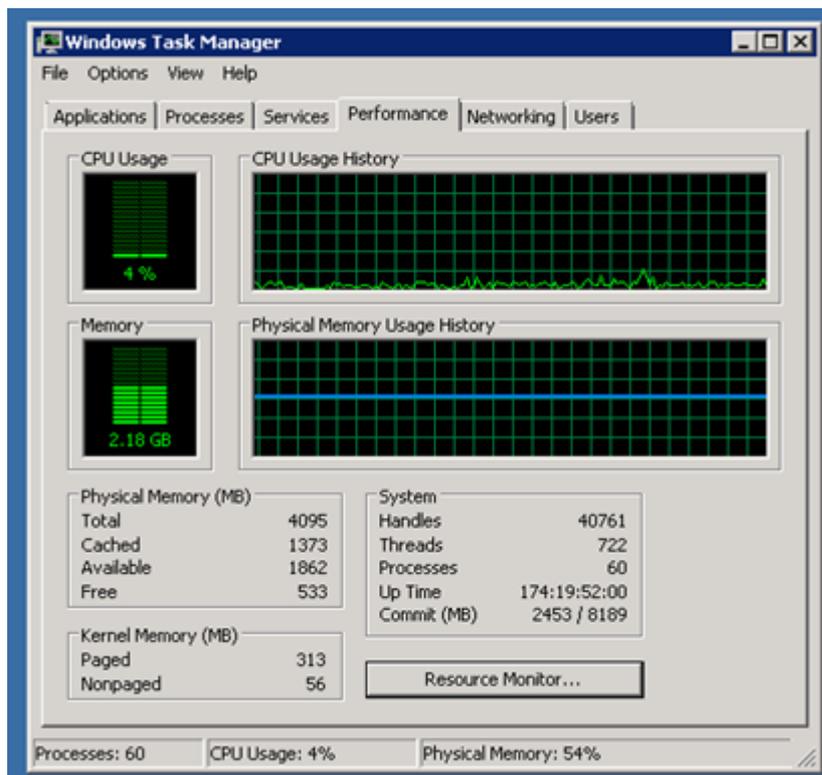
The RAM and CPU Usage before running the service:



After running the Service with Video/Audio broadcasting as one to 10 concurrent users:



The CPU and the RAM has increased from 1% to 4% for CPU and from 2.17 to 2.18 GB for RAM, the Usage for 10 concurrent users Video/Audio broadcasting has needed around 3% from CPU and around 10 MB for the RAM:



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Tested on demo.socketcoder.com Virtual Server.