

Is Your Internet Connection Fast & Reliable Enough for VoIP Telephones?

As we've discussed many times here in Insights, replacing your traditional PBX phone system with Voice over Internet Protocol (VoIP) PBX or cloud based Hosted PBX service is an excellent way to lower your overhead and enhance your communications capabilities.

In the previous issue, we addressed how to make sure your network is ready for VoIP. The next step is to ensure your Internet connection supports the use of VoIP. In many VoIP technology deployments you will be using your Internet connection to transport some or all of your telephone voice traffic to your office or remote workers. You want clear, high-quality, uninterrupted phone and data communications, so you must make sure your Internet environment supports these goals. The only way to be confident that your Internet connection will support high quality VoIP traffic is to have it tested.

Voice quality testing helps make sure that your network can support the additional load caused by VoIP phone traffic. In the testing process, rigorous voice and data traffic will be driven to your network to simulate real life loads.

To perform the test, the following will be done:

- Set up a phone simulation software on your network
- Tune the software to the number of phones you are planning to implement
- Run the simulation as if all phones are being used for several full business days, along with your regular network tasks
- Capture all network traffic information and analyze it and provide a written assessment report.

Your PBX system provider or Hosted Services provider is the best place to start to assess the quality of your Internet connection. Your provider will utilize a variety of testing and analysis tools to test your Internet connection before you actually deploy VoIP services. Your provider's engineers should analyze the stream of data packets (those bits of digitized information that flow through the network) along the following criteria:

- Bandwidth. Verify that your actual bandwidth is sufficient for both data and voice traffic.
- Packet loss. If voice packets are dropped on their way to their destination because of network congestion, there will be interruptions to your conversation. You need to spot this and correct it ahead of time.
- Latency. This is when packets take too long to get to the other side, which causes delays in the conversation. Any delay over 120 milliseconds is noticeable and disruptive.
- Jitter. Jitter is when data packets arrive in different order or at a different pace from when they were sent. If not corrected, jitter causes a noticeable drop in the quality of the phone call.
- Complete connectivity disruption. A complete disruption of the network connection will naturally cause call quality problems.



IDEACOM[®]
NETWORK

P.O. Box 595
Higley, AZ 85296
1-866-IDEACOM (433-2266)
www.ideacom.org

Be sure to have these tests run continuously over several business days. Your Internet utilization and quality can vary significantly from day to day, so you want to be sure that you are testing over a broad time period.

If the results of the test are good, and your network is solid, you can begin your transition to VoIP. If the results are poor, your next step is to find out if the problem is your Internet Service Provider (ISP) or the equipment used while accessing it.

What if the testing uncovers problems?

In more than 90% of tests there are no negative issues discovered. But when problems are uncovered, do two things: first, hold off on your VoIP implementation until you adjust your network environment. And second, work with your technology providers to formulate a plan to fix the issues.

In some cases, this is as simple as adjusting your data back-up schedule. In other cases, you will need to work with your Internet provider.

Be aware that the online activities of the employees in your business could be reducing your Internet capabilities and require far more bandwidth than your business actually needs to operate. These activities can include downloading large amounts of data, watching streaming video or YouTube videos or listening to music from an online radio. These activities can have a negative impact on the ability of your network to support high quality VoIP services.

VoIP requires an Internet connection and bandwidth that can ensure high quality phone conversations. A little upfront effort and testing will insure the highest quality voice service for your business.



IDEACOM[®]
NETWORK

P.O. Box 595
Higley, AZ 85296
1-866-IDEACOM (433-2266)
www.ideacom.org