Virtual Office

Velocity Telephone, Inc.

Voice Over IP Best Effort Network Requirements

Virtual Office is a Voice Over IP (VoIP) product, which means it runs over your data network typically along side your computers. Velocity Telephone offers multiple WAN solutions that prioritize audio to insure you receive consistent quality of service (QoS) on your voice network and phone calls.

Many of our customers choose to 'bring their own network'. Often this means using best-effort services such as Cable or DSL to provide a less expensive network solution to use with Virtual Office. We have a large number of customers who do this, and most are extremely satisfied with their experience. That said, these networks are prone to congestion and other failures which can and will affect Voice over IP phone services, including Virtual Office. When pairing Virtual Office with a best-effort network solution it is important to understand the relationship between your best-effort network and how it can affect your phone service.

If you are on a best-effort WAN connection with your Virtual Office service and you saturate your WAN connection with other traffic, or your provider (ISP) has back-haul connectivity issues, these issues will affect your Voice over IP telephone service.

Below are the **minimum network requirements** which must be maintained across your network and WAN/ISP to achieve consistently clear audio quality and call completion:

1. **< 100 ms latency jitter*** and **< 0.5% packet loss** are required to maintain 'clean' audio.
   **Jitter > 100 ms is the same as packet loss for Voice over IP.*
2. No active SIP ALGs.
   What are SIP ALGs? *SIP Application Level Gateways (ALGs) are software built into some routers that manipulate and change Voice over IP packets to attempt to help the service work through NAT (Network Address Translation). In practice, these SIP ALGs can often severely impact call completion rates and other functions of your phone and reduce the reliability of your phone service substantially due to defects and other compatibility issues. Virtual Office receives NO benefit from SIP ALGs in any way, and they can only cause issues with your service. Therefore, all SIP ALGs must be disabled on the network in order to receive reliable service. Note that Velocity Telephone has a SIP ALG detector built into our remote monitor software which automatically detects SIP ALGs so they can be disabled if necessary.*
3. Properly functioning stateful UDP mapping in the router(s).

Many of our customers use best-effort services in order to provide their network and truly enjoy their Virtual Office experience and the cost savings that this combination provides. With best-effort service your Virtual Office call quality and completion will be only as good as your network performance. Velocity Telephone does not currently offer network management services and it is important to understand who manages your network and their responsibility to maintain the quality of your network and troubleshoot service issues with your best-effort service and network performance as they arise.

Velocity Telephone has remote monitor software and other tools we can use in order to assist in identifying and troubleshooting network issues, and we are happy to provide this service to our customers. But, in the end, Virtual Office will only function as well as your network, and your IT staff or consultant are ultimately responsible for maintaining that network and it's quality, not Velocity Telephone.

We hope you enjoy your new Virtual Office telephone service. It has an abundance of features and flexibility which we're sure you'll enjoy. With the appropriate understanding of how your phone service interacts with your network we are sure you will have a better experience when and if issues with your best-effort network arise.

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