

HOW NETWORK PERFORMANCE IMPACTS VOICE SERVICES

Everything you need to know when
deploying voice services over your
network



Contents

- How do I improve VoIP quality?
- Why use a WAN company for your hosted telephony?
- The importance of network performance when deploying hosted voice
- What are the main causes of VoIP quality issues?
- How do I troubleshoot VoIP?

When deploying voice services, be it VoIP or SIP, the first time or tenth time, there will be questions raised about your network. Knowing how your network performance can impact your voice services puts you ahead of the curve when it comes to deploying voice.

It is as simple as like for like. If your network performs poorly, your voice service will perform poorly. But, as you will know, managing a network is not simple. When real-time changes need to be made and you're fighting tickets from users, the last thing you want to do is look up which element of your network could be causing the reported issue.

Preparing a voice implementation has changed from a complex to a simple process over the years. Thanks to cloud based portals and rapid provisioning, configuration and administration is easy. But, if your network is not ready to implement voice, or network issues arise post implementation, you need to know how to handle them.

So, let's break it down.

If you're new to voice services, you need to empower your team to be able to troubleshoot voice queries. If there is a common problem, you need to be able to locate and remedy within your network. Ultimately, you need to understand the importance of network performance when deploying voice services.

If you already run voice services, and perhaps you didn't factor in network performance beforehand, you will need to know how to improve VoIP quality. And you'll likely want to do that without changing providers and equipment.

So, read on through our network performance blog posts to ready or remedy your voice concerns.

Why use a WAN company for your hosted telephony?

Selecting a new provider is a minefield. With the hosted telephony market full of specialist providers for different verticals, niche focus areas and integrations, it can seem like repetition sifting through all the telephony providers.

When shortlisting, we highly recommend consider a WAN company for your hosted telephony. There are lots of reasons why this is beneficial to both SMB and enterprise customers. We have broken them down into 5 key areas.

1. Cost reduction – as with most technologies, or anything you shop for, you will likely reap the rewards by purchasing more than one item through a single provider. Often products and solutions can be bundled so you can benefit from a greater saving.

2. Connectivity – when combining both WAN and voice services through the same provider, everything is looked after in one house. This means the same support team has access to proactive monitoring tools and you can benefit from the same engineer dealing with your enquiry, rather than passing on to another advisor.
3. Network configuration – like with connectivity, network changes can be made in-house and in line with your voice requirements. When you make a change to your voice setup, you can rest assured that your network changes will be made too. This removes the risk of increasing voice users but not having enough bandwidth available for them to make and receive calls.
4. Scalability – when scaling up or down your voice users, using your WAN provider means changes can be made on both network and voice elements in one go. Rather than having to inform both providers and plan for two lots of change, modifications can be made swiftly.
5. Monitoring – when using a WAN company for your voice services, you remove the delay in

troubleshooting. When you phone the support team, you know that you are through to the right people to remedy your issue. With proactive monitoring, the support team are likely already aware of your issue and have set about remedying it.

The importance of network performance when deploying hosted voice

When implementing a hosted voice solution, it's easy to get carried away with new phones and features. Often, the importance of network performance gets lost in the confusion and excitement.

Ultimately, your hosted voice deployment will only perform as well as your network. Therefore, maximising your network performance is crucial.

If you do not prioritise voice over other business applications or segment enough bandwidth for your hosted voice service, you will likely experience

problems like packet loss, jitter and latency. These symptoms lead to poor user experience.

User experience is always key to voice solutions, but there is no time more important than day one. First impressions last with technology. In order to drive adoption, your network must be readied for the introduction of hosted voice.

Outside of configuration, the equipment you use on your network should be fully audited. If you haven't run voice over your network before, your routers and firewalls could restrict certain functionality or not be fit for purpose at all. A modern, voice enabled router should be the core component of every voice solution.

What are the main causes of VoIP quality issues?

There are six main areas that are associated with causing quality issues in VoIP deployments. Surprisingly, most are related to your network configuration.

1. Latency – every function of your network takes time. Some applications require quicker time to process data than others. None require as little latency as voice. Voice is a real-time communications application. If latency is too high on your network, speech is not delivered in real time. This causes delayed conversations and results in people talking over each other.
2. Jitter - jitter is the variation in the delay of received packets. Think back to the times you have been on a call and the end of the sentence didn't make it. You ask the person to repeat themselves because the full speech isn't making it through. This is a typical scenario where network jitter is higher than the required amount for VoIP calls.
3. Packet loss - packet loss is sometimes caused by latency and jitter. High levels of either could impact your VoIP quality and cause packets to be lost mid conversation. If packets are lost in transmission, the data does not get delivered in real-time and there is a delay in speech from either party.

4. Network and bandwidth configuration – just like when deploying VoIP for the first time, your network configuration is vital to the performance of your voice services. As the service continues, VoIP quality can be impacted by changes made to your configuration. Each time you make a change for another application or device, check for the potential impact it could have on your VoIP service.
5. Equipment – as part of your network, any degraded or underperforming equipment, like routers and firewalls, can have a knock on effect on your voice service. With enough monitoring in place, you can identify before any equipment becomes end of life – keeping your applications running without impacting quality.

How do I improve VoIP quality?

For IT teams that have already implemented VoIP, improving quality is a major concern. Usually, the

remedy resides in your network. Making a simple change to your network setup can resolve most VoIP quality issues.

If the quality has dipped following the addition of new users, you could be lacking bandwidth. Allowing additional dedicated bandwidth for voice traffic frees up capacity for more calls at the same time.

As applications and devices put a strain networks, levels of jitter and latency can have a knock on effect on VoIP services. Maintaining regular and optimised levels of both are important when running VoIP over a network that supports other business applications.

Outside of your network, VoIP quality could be caused by VoIP equipment. Wear and tear is a symptom on any equipment. If handsets or headsets are old or mistreated, the root cause of the quality issues could lie with the endpoint.

How do I troubleshoot VoIP?

Rather than reporting every issue to the support desk, sometimes it's easier to troubleshoot your VoIP issues in-house. If you know what the common causes of VoIP issues are, you can help your users first-time. We've suggested some steps to consider when troubleshooting VoIP that will come in handy for a variety of reported problems.

1. Check licensing – does the user's license support the features they are reporting as not working? If they do, there is likely an issue and the problem needs to be reported. If they don't, a simple upgrade will remedy their ticket.
2. Check equipment – if damaged or worn, the endpoint your user has could be the source of the problem. When handsets are slammed down or headsets thrown in bags without a cover, equipment can break or come loose. Providing replacement hardware either solves the problem or crosses off the next step in your troubleshooting process.

3. Connectivity – if the user is setup correctly and equipment is working, you are left with two options. The issue could lie within your internet or network configuration. If the problem reported is widespread, this is likely the issue. When your network is down or underperforming, your voice service will mirror this. If your connectivity is up and running, this is the time to consult your service provider. Having troubleshooted yourself, you are empowered to speed up the support journey.

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