



VoIP Network Assessment

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“85% of today’s router-based data networks are not ready for successful VoIP deployment.”
-Gartner Group



VoIP uses a lot more packets than data

“For a given kbps capacity, VoIP uses approximately 10 times more packets than web or email data traffic. This high packet rate can cause networks to congest faster, leading to poor VoIP call quality. A VoIP network assessment can often reveal bottlenecks in a network and guide you to fixes that prepares your network for trouble-free VoIP service.”

Voice over IP (VoIP) is a powerful alternative to traditional phone service due to its cost savings and superior feature set. However, realizing the true benefits of VoIP depends on the quality of the underlying network.

Gartner estimates that 85% of today's data networks are not ready for VoIP, and proceeding without a network assessment will likely result in a failed deployment. Therefore, to successfully implement VoIP it is essential to understand whether or not your existing data network and Internet service can support VoIP with good quality.

Most SMB and Internet Service Provider (ISP) networks were originally designed to support data traffic. The challenge with adding VoIP traffic to a data network is that VoIP uses approximately 10 times more packets than data traffic for the same kbps capacity. This can cause routers to congest faster, and because VoIP is much more sensitive to congestion and latency than data, this quite often negatively affects call quality. Therefore performing a live network assessment on both your LAN and WAN is a necessary first step to successfully implement VoIP.

A recent study conducted by CompTIA confirmed that 60% of SMBs have monthly disruptions in their voice-data networks, with 70% of these disruptions materially impacting business. The main reason why VoIP deployments fail is because customers chose not to do a thorough VoIP network assessment before deployment. A network assessment can identify potential networking issues like poor router performance, poor switching capacity, LAN/WAN call capacity, unexpected data traffic spikes, cabling issues, and more. Identifying such issues often means that one can implement precise, simple, and low cost network upgrades that go a long way in helping ensure quality VoIP service.

A comprehensive network assessment involves both a LAN assessment and a WAN assessment. In the LAN assessment phase, purpose-built VoIP micro-appliances are used to apply a live VoIP traffic load on every LAN path to determine their true VoIP capacity. The tests are performed during peak business hours to accurately characterize the VoIP and data capacity of the LAN. In the WAN assessment phase, the micro-appliances perform a 24-hour VoIP load test on the WAN, while monitoring and characterizing the LAN and WAN traffic. A 24-hour test helps to fully characterize the VoIP readiness of the ISP's network and identify any points or periods of congestion.

At the end of the network assessment, a detailed network assessment report is delivered. This report will summarize and correlate the results of the assessment, showing current network call capacity, route path and router performance, network traffic during peak and off-peak hours, potential congestion points/periods, and per-second VoIP measurements such as jitter, packet loss, packet rate, MOS estimate, and more.

The data in this report helps you determine the network's true call capacity and offers insight into network upgrades that may need to be performed to enjoy high quality VoIP service.



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