

IT Director Note to Self: How Many SIP Trunks Do I Need?



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Company owners and upper management care about results and return on investment, especially when it comes to IT spending. To get the best ROI when telecommunications intersects with IT, directors will need to answer the question, "How many SIP trunks do I need?"



If you have multiple phone lines, you probably ask yourself, "How many SIP trunks do I need?" pretty frequently. The answer might be less complicated than you expect.

An extremely useful and popular telecom technology, SIP trunking has helped IT directors satisfy cost-conscious executives with its capability for quickly scalable VoIP lines. Let's take a look at what you as an IT director need to know about SIP trunk configuration for your medium-to-large enterprise.

It's Different for IT Directors

When evaluating SIP trunking as an enterprise technology, IT directors have different questions to answer compared to typical business executives. Not only do they need to deliver a workable solution, they also must demonstrate strong ROI or another highly correlated business value, such as customer experience or net promoter score.

In order to deliver maximum business value, IT directors must have reliable business partners — especially their partnerships with those delivering mission-critical services such as SIP trunks. SIP trunking solutions are available from many vendors. But as a born-in-the-internet technology, some communication solution providers seem to lack total commitment based on their legacy roots in analog networks.

The most reliable SIP trunk provider will not only be able to provision as many SIP trunks as necessary to the network edge, but also provide end-to-end connectivity through a next-generation core network based on advanced platform technologies, such as MPLS. IT directors will want to fully evaluate potential solution providers to make sure they can get SIP trunking today — and any other needed communication applications tomorrow.

SIP trunking enables IT directors to continue using analog phones and IP-PBX equipment simply by connecting the legacy infrastructure to the SIP trunk configuration delivered from the cloud.

What is SIP Trunking?

Even before IT directors can answer the question, "How many SIP trunks do I need?" they must understand the background of this technology. First of all, SIP trunking is an IP telecommunications technology based on session initiation protocol (SIP), an application layer protocol that enables setup of voice calls, video and audio conferencing, instant messaging and other real-time communications applications between two endpoints and an SIP proxy.

Based on SIP technology, SIP trunking is a solution that enterprises can use to deploy as many business phone lines as they need at the time they need them. There is no need to buy more capacity than necessary or before it will be used. Essentially, you can think of SIP trunking as a pay-as-you-go utility. For remote employees and branch offices, the process can be as simple as plugging an IP phone into a jack. At main offices, SIP trunking enables IT directors to continue using analog phones and IP-PBX equipment simply by connecting the legacy infrastructure to the SIP trunk configuration delivered from the cloud.

How Many SIP Trunks Do I Need?

Now that you know what SIP trunks are and that you can use as many or as few as you want, you must determine how many your enterprise needs. First, let's make some basic assumptions. As a rule of thumb, enterprises typically aspire to have 99 percent of incoming calls go through on the first dialing attempt. This call success rate is referred to as the grade of service (GoS). If you have a basic office or industrial environment, a 99 percent GoS is probably more than enough to meet your business objectives. However, if your SIP trunk configuration will service a contact center or interactive voice response (IVR) system, your business executives will want a higher GoS on the order of 99.9 percent or better, according to experts who know how to size SIP trunks (as reported in No Jitter).

Once you have determined your GoS, you can calculate the number of SIP trunks you need. The best way of doing this is by figuring out your busiest hour of traffic (BHT) for concurrent calls. BHT is also known as the Erlang load and is calculated as follows:

$$\text{Erlang load (BHT)} = \text{Call Arrival Rate (CAR)} \times \text{Average Call Length (H)} / 60$$

In the above equation, CAR is the number of calls received by your enterprise during the busiest hour of the business day. Average Call Length, also called Holding time (H), is divided by 60 to result in a figure expressed as minutes.

If you're interested in learning more, there are a number of online calculators for Erlang B and Erlang B Extended (which incorporates consideration for immediate recall attempts) to help IT directors figure out how many SIP trunks they need.

And then, armed with that information, you can move forward in deciding the appropriate number of SIP trunks for your organization.

To find out more about provisioning SIP trunk configurations, connect with Vonage Business.