The proliferation of VoIP technology has enabled a range of new services that were previously not cost-effective or even practical using the legacy Public Switched Telephone Network (PSTN). This use case describes a hosted PBX service, but could just as easily apply to other services such as hosted Interactive Voice Response (IVR) servers or hosted contact centers.

The VoIP service provider supplies SIP trunks and cost-effective virtual PBX services using a large, robust and redundant platform. The corporate client gets all the advantages of a PBX without the need to install, maintain or manage the PBX system.

A common way to supply these services is across the internet, which delivers a universal and inexpensive access method, although the medium itself is insecure. It is essential that this off-site service be delivered securely. Just as the firewall provides security to the data network, the SBC provides security to the VoIP network and individual VoIP calls. The SBC protects against toll fraud and other vulnerabilities which VoIP can introduce. The SBC in the VoIP service provider’s network and the eSBC in the corporation’s network provide needed security and privacy for the connection.

If privacy of the voice channel is important, encryption can be applied to voice traffic. Sangoma implements encryption using their transcoding engine.

Transcoding may be required if disparate equipment are unable to negotiate a common codec. Transcoding also allows for adjustments to the trade-off between bandwidth consumption and quality across the network.

Interoperability issues may appear between equipment used by the corporate customer and the VoIP service provider. The SBC on the service provider’s side corrects these compatibility issues by normalizing SIP messages.
VoIP routing issues can develop when Network Address Translation (NAT) is used by the corporate network. If the SIP messages use an IP address local to the corporate network, replies to the SIP message cannot be routed properly. This is corrected by the carrier SBC which changes the IP address of the SIP message to match the IP address of the packet in which it was delivered.

Sangoma has a wide range of SBCs to suit both the corporate network and the higher capacity VoIP service provider’s network. They are available as a hardware appliance or as software suitable for a purely virtual environment.