

Cox Business
Service Guide
for
National Number Service
National 911
Teleworker
Off-Net Voice Service

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Purpose

This Service Guide helps prospective customers understand their responsibilities—and related technical requirements for Local Area Network (LAN) and broadband Internet connection—associated with the following Cox Business voice services:

- National Number
- National 911
- Teleworker
- Voice services used Off-Net

New services and capabilities are available for Cox Business Voice Products including IP Centrex and VoiceManager (with a five-line minimum) *.

Overview


The following sections are highlighted in this Service Guide:

- Terms and definitions for National Number and Internet services
- Broadband Internet speed requirements and guidance
- Public, static IP address requirements
- Local Area Network (LAN) recommendations and architectural diagrams

*Some rules and restrictions apply.

National Number Service Terms and Definitions

The table below is comprised of terms and descriptions related to Cox Business voice customers who have National Number Service.

Term	Description
National Numbering Service	<p>A National Number provides a telephone number from most areas within the continental United States for use with Cox Business Voice products. National Numbers can be used at customer locations that are inside or outside of the Cox Business serving area, also called “In-Franchise (IF)” and “Out-Of-Franchise (OOF),” respectively.</p> <p> Important: Rules and restrictions apply to OOF location availability and support. Check with your Account Representative for details.</p> <p>Cox voice services with a telephone number can have a traditional Cox phone number or a National Number.</p>
National 911	<p>National 911 provides emergency calling for areas throughout most of the continental United States.</p> <p>For a fixed service address that is out-of-franchise, National 911 is configured for the account at the time of install.</p> <p>With Teleworker, Unified Communications (UC), or National 911 for DID numbers, customers can update the emergency address information at any time using MyAccount. Each time the telephone handset or UC Desktop App is moved to a different address, the customer is responsible for updating the emergency address information using MyAccount.</p> <p>Visit http://coxbusiness.com/e911 for more information and the E911 Quick Reference Guide.</p>
On-Network or On-Net	<p>On-Net describes a network connection and equipment that Cox Business provides at the customer premise.</p>
Off-Network or Off-Net	<p>Off-Net describes a network connection that is not provided (“off”) the Cox Business network. An Off-Net connection is typically a broadband public Internet connection that the customer acquires and maintains.</p>
Teleworker	<p>Teleworker is an optional add on for an IP Centrex “seat” (phone line). Using a public Internet connection provided by the customer, Teleworker enables the primary business phone to be used at a location external to the service address, such as a home office.</p> <p>Note: Only one Teleworker seat is permitted per Internet connection. Only the Polycom VVX410 handset supports Teleworker.</p>

Term	Description
Voice Quality of Service	When Cox Business voice services are used with Off-Net broadband connections (that Cox does not provide), the voice quality may be negatively impacted by the quality of the network connection. This voice service is known as “Best Effort” and a Service Level Agreement (SLA) will not apply.

Call Types

In the previous section, you read terms and definitions that relate to National Number Service (NNS) for Cox Business voice and Internet customers. Now that you have a better understanding of what the service offers, let's review the types of calls that are allowed (and not allowed) with Cox Business voice customers who use NNS

Call Types Allowed	Call Types NOT Allowed
<ul style="list-style-type: none"> • Local • Long Distance – Intra-LATA and Inter-LATA • International • Toll Free • 411, NPA-555-1212, Directory Assistance • 711 Tele Relay • 911 Emergency 	<ul style="list-style-type: none"> • 311, 511, 611 • 900, 976 • Casual Dialing • Equal Access (Must be PIC=Cox/Level3)

Teleworker for IP Centrex - Troubleshooting

The table below contains types of issues and corresponding troubleshooting steps you can take to resolve problems with teleworking.

Issue	Troubleshooting
Call drops after 20 minutes OR Phone does not register	Typically results during installation when firewall settings are configured in a manner incompatible with Cox TCPS handset specifications. To prevent these issues, you need to allow traffic from the Cox SBC IP address range (signaling and media). If firewall issues occur, contact Customer Support.
Unable to disable the SIP ALG or VoIP settings (May occur with customers who have remote extensions or who are remote. This issue is prone to happen with the following AT&T modems: <ul style="list-style-type: none"> • AT&T 3800HGV-B / 3600HGV • AT&T U-Verse 2Wire 	Request the carrier to put the router in <i>bridge</i> mode and connect another router that does not have SIP ALG capability; or has the option to turn the ALG off when doing NAT. Do not “double NAT” your network or place the phone behind a wireless repeater. Put the handset in a DMZ. (Some carriers include instructions on their website that walk you through how to do this.) The changes must be done online and the handset must be rebooted.

RTP Ports

Review the list below for RTP ports per phone model.

Phone Model	RTP Port
Polycom VVX410	default RTP ports udp 2222 - 2269



Note: Remote worker sites will be activated after the main site is activated.

Handsets will be shipped to the main site and the customer is responsible for transport of those intended for the remote worker site(s).

The customer is responsible for the Local Area Network installation and quality at Remote worker sites.

Technical Requirements for Off-Net Customer Locations

As you recall, Off-Net describes customers who have a network connection that is not provided by the Cox Business network. This is typically provided by a broadband public Internet connection that the customer must acquire and maintain.

This section reviews the technical requirements for Off-Net customer locations.

Internet Connection

- Each Off-Net or Teleworker location needs appropriate data connectivity (speed and quality) to support the quantity of simultaneous calls used by Lines or Seats. Each simultaneous call will require approximately 100kbps of upload and download speed. While approximately 1 Mbps is required for transport of 11 simultaneous calls (11 Call Capacity), the minimum speed required is 5 Mbps of upload and download speed.
- For Internet connections shared for voice calls and other Internet traffic, consider what other traffic will be necessary before selecting the upload and download speeds of the Internet connection
- To achieve optimal voice quality, Cox Business recommends using a broadband Internet connection dedicated for Cox Business voice services. This connection should also have a public static IP address for use on Cox Business voice equipment (except for teleworker, which is not necessary). See the Network Configuration diagrams for more detail.

Local Area Network (LAN)

- The Local Area (LAN) capacity needs to support the volume of voice traffic of the Off-net location.
- A site survey may be needed to validate the LAN's ability to support the voice traffic.
- Occasionally, complex or multi-location scenarios may extend installation intervals.

Network Configuration

The architectural diagrams below show Internet and LAN configuration options for Cox Business customers with voice services deployed Off-Net.

Figure 1. Dedicated Access – Preferred Solution

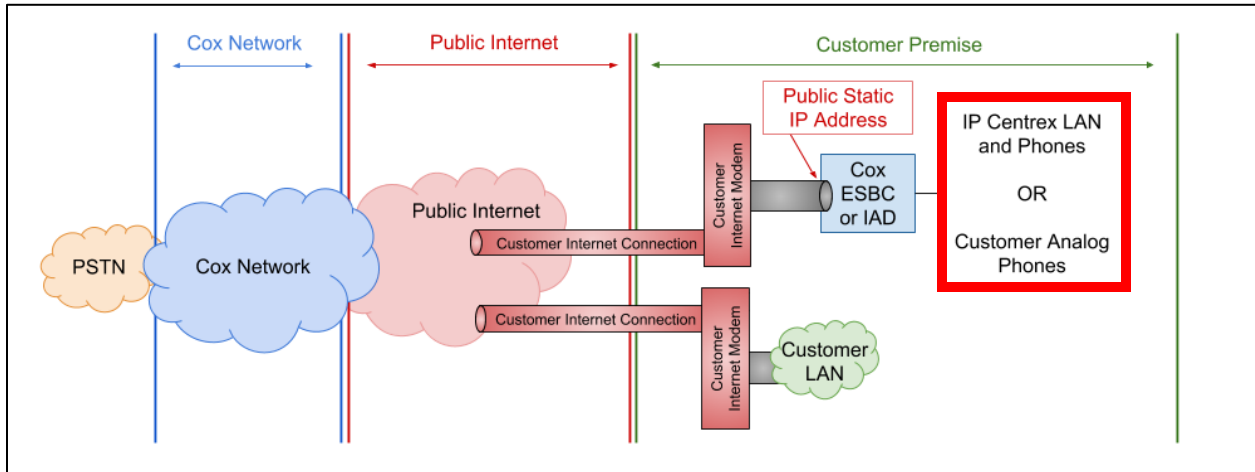
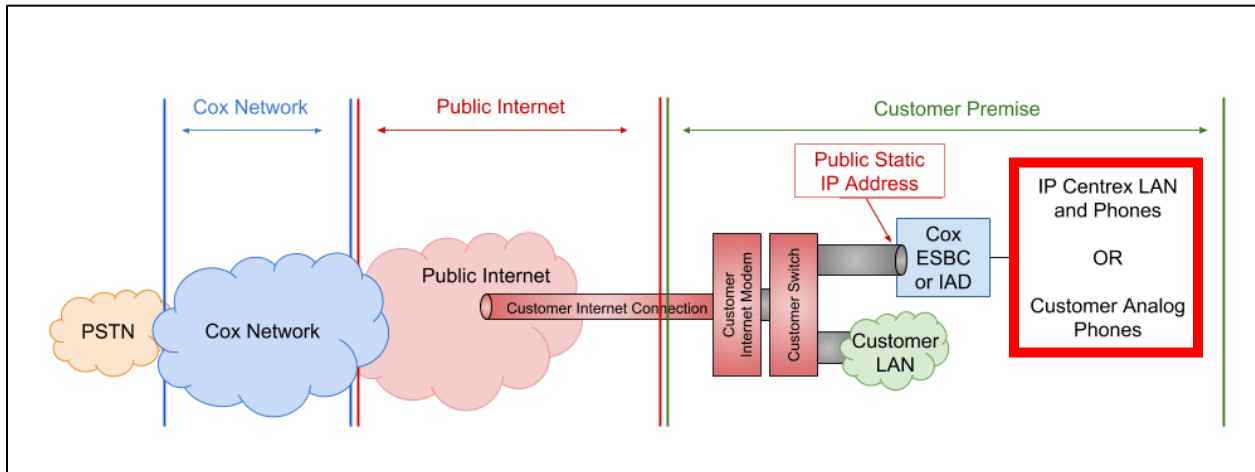


Figure 2. Shared Access – Alternate Solution



Note: Refer to Figures 3 and 4 on page Customer Premise Equipment8 for a detailed example of the premise equipment layout (outlined in red) for VoiceManager and IP Centrex when installed Off-Net.

Customer Premise Equipment

Figure 3. IP Centrex

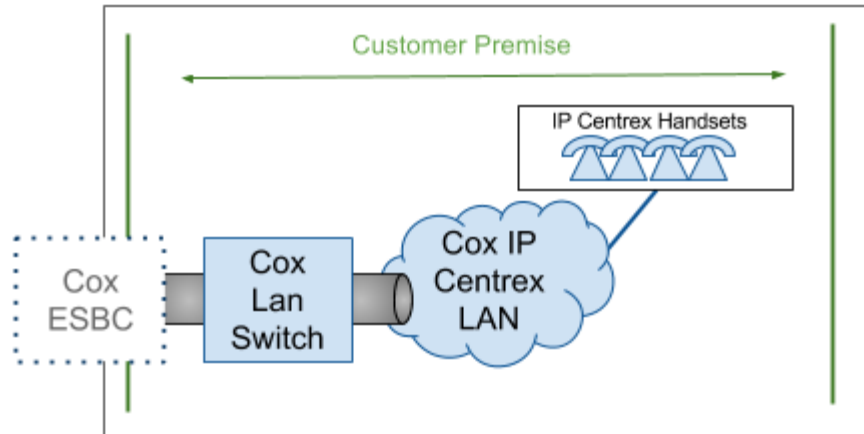
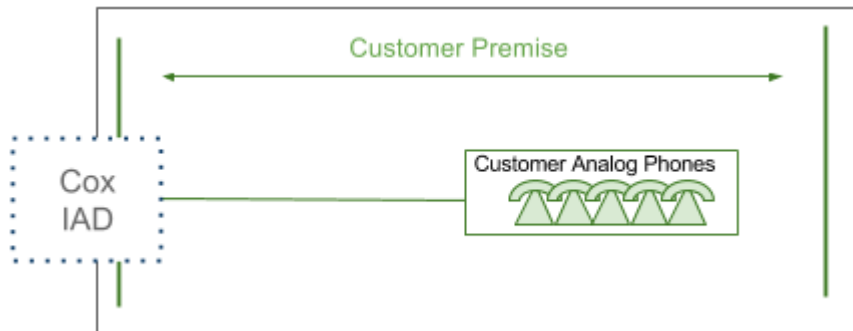


Figure 4. VoiceManager



Appendix A: Obtaining a Public Static IP Address

To configure National Numbering Service at your Off-Net site, you must have one dedicated Public Static IP address. This is different from an internal IP address (which typically looks like 192.168.x.x, 172.16 - 31.x.x, or 10.x .x .x). If you are not sure that you have an available Static Public IP address, contact your Internet Service Provider (ISP).



Important: You need to provide this information to your Service Coordinator before scheduling your National Numbering / e911 Phone System Activation.

You may use the sample script below to guide the conversation with your ISP.

I have recently obtained a new service that requires the provider to have a Public Static IP Address that is dedicated to their network equipment, in addition to what I already have. I need to ask you a few questions for confirmation.

1. *Can you tell me how many Static Public IP Addresses I have, and if any of them are actively being used?*
 - If there is at least one Static Public IP Address which is not actively being used, proceed to question 2.

If the answer is zero, ask the following additional questions:

2. *Can I add Static Public IP Addresses to my account for my Internet Service?*

If "Yes," state that you would like to order a "block of Static Public IP Addresses that gives me a minimum of two (2) usable Static Public IP Addresses."

If "No," ask about upgrading your service to a package which supports Static Public IP Addresses, and order a block of Static Public IP Addresses that will provide a minimum of two (2) usable Static Public IP Addresses.



Note: If you are unable to order Static Public IP Addresses, contact your Service Coordinator.

If you order Static Public IPs, ask the following questions when they are delivered. Depending on your ISP, they may be delivered immediately or within several days.

1. *Do you have a Network Information / Network Profile / Installation Profile you can send me that documents my IP Address information with your company? If yes, send me a copy.*
2. *What is my Public Static IP Address or Public Static IP Address Range, and which is not actively being used?*
3. *What is the Subnet Mask for my Public Static IP Address Range?*
4. *What is my Gateway Address?*
5. *What are my Primary and Secondary DNS Server addresses?*
- 6.