Supporting Remote Users on the

Com.X IP PBX

White Paper

Version 1.0, 14 January 2014

Document History

Version	Date	Description of Changes
1.0	2014/01/14	Preliminary release

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1 Introduction

1.1 Overview

This document provides a detailed discussion on the setup and configuration of the Com.X IP PBX to provide remote users / extensions with local presence, inbound and outbound call control, including access to CDR's and Call Recordings on the platform.

In this presentation, the remote user is provided a "dial up" access to/from the central office IP PBX and is associated with a local extension number offering this remote user with local presence.

In all cases below the remote user is referred to as the "Remote Extension".

This functionality makes use of Inbound Route, DISA, Flexpath, Follow-me and Gateway Call Recording.

1.2 Use Cases

The Com.X configurations presented here provide the off-site or remote user with "dial up" access from a pre-defined, fixed CID number. The defined extension may be via a traditional PSTN or SIP service.

The remote user is afforded full-featured access to their central office PBX while incurring only the cost of the dial-up access.

1.2.1 Worked Example

In this example, a central office PBX utilises a SIP trunk with its main DID (087)809 9900. The Com.X PBX configuration is provided such that a remote user of CID (021)700 8260 is enabled with inbound and outbound call access via an "unused" DDI, (087)809 9996.

A local free extension, #1000, is created to represent the remote extension, identified as CID (021)700 8260. It is also issued with an account code, DISA-1000.

Inbound calls from this remote extension are identified through the inbound call route configuration and provided access to a "unique" DISA facility, which then allows this remote user to place an outbound call through their office PBX. Outbound call access is secured via entry of a unique PIN as password, in this example #1234, known only to that remote user.

All calls to Ext 1000 are forwarded to the remote extension via Follow-me. Voice mail for Ext 1000 is enabled as the failover destination if the call is unanswered by the Remote Extension.

The setup of the account code allows the Com.X to allocate the CDR's, Call and Voice Mail Recordings to that user. The remote user associated with (021)700 8260 may then log onto the PBX User Portal as local extension 1000 to view all their available call settings, call history (i.e. CDR's) and recordings.

2 Configuration

This section details the creation of a "dummy" or free extension which is utilised as the local identity for the remote user. All call to/from this dummy extension are forwarded, as follow-me, to the remote extension, allowing the remote extension to place outbound calls through the Com.X, as well as associating those outbound calls to the dummy extension.

2.1 Incoming Calls

The following section details the creation of an internal extension to facilitate incoming calls. Calls to this extension are forwarded through the follow-me of the extension (in this case Ext 1000) to the number of the remote extension, (021) 7008260).

2.1.1 Dummy Extension

The first step of this configuration is to create a dummy extension. This extension will be local on the PBX and is used as a dummy extension to which all calls to and from the remote extension will be associated.

Navigate to the extensions page on the GUI and add an extension.

Figure 1 below shows the creation of a free extension numbered 1000, named RemoteExtension.
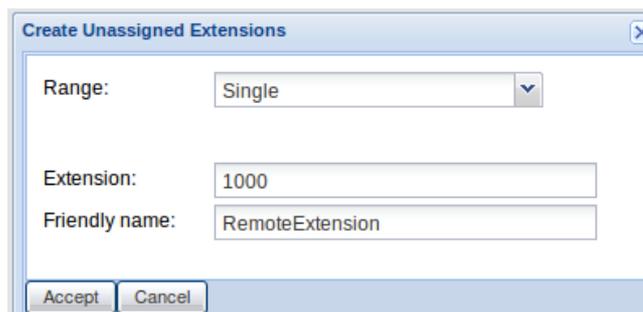
Figure 1: Free extension 1000 created.

2.1.2 Follow-me

All calls (incoming or local) to the dummy extension need to be routed directly (without first attempting the dummy extension) to the remote user. For this purpose, right-click on the dummy extension and select Follow Me.

Ensure that the Follow Me has an initial ring time of zero and remove the extension number from the Follow-Me List. Then add the remote extension to the Follow-Me List, but suffixed with a "#".

Figure 2, below, shows the completed configuration setup for this "follow me" configuration.

Figure 2: The number of the remote extension is included in the Follow-Me List, suffixed with a #.

Note: An outbound route that is capable of routing a call to the remote extension number needs to be configured. If no such route is configured, the call will fail.

2.2 Outgoing Calls

To facilitate outbound calls from the remote extension, the remote user needs to dial in to the Com.X and be presented with the option to place an outgoing call. This is facilitated by configuring a DISA destination. Further outgoing calls should be associated to the internal dummy extension, with call records and recordings appearing in the user portal of that extension. This is accomplished by adding an account code to the outbound calls.

2.2.1 DISA

Direct Inward System Access (DISA) is a tool available on Com.X systems to direct inbound callers to a dial tone, capable of placing calls as if they were dialled by local extensions.

To configure a DISA tone destination, select DISA from the Advanced Menu, and enter the configuration shown in the figure below.

Figure 3: DISA configuration options.

The configuration above, specifies the PIN code "1234", which must be entered by the Remote User in order to access outbound call facilities.

FIELD	DESCRIPTION
DISA Name	Enter an appropriate name for this DISA destination
PIN	Enter an optional pin code for the user to authenticate with the system. If a pin is configured, a user will not be allowed to place an outbound call from the DISA unless the correct pin is entered.
Response Time	Gives the maximum time for which the DISA will wait for a valid number to be dialled.
Digit Timeout	The maximum number of seconds permitted between digit presses when the user is entering a number.
Require Confirmation	If enabled, will require user confirmation before requesting a pin.
Caller ID	Optional outbound caller ID. If configured this number will be shown to the called party as the origin of the phone call.
Context	This setting indicates the internal context of the DISA destination. Note: Do NOT change this from the default!
Allow Hang-up	Enabling this option allows a user to hang-up on call by pressing ** during the call, and place another call from the DISA. If not enabled, users will only be able to place one call per DISA session.

Note: Each DISA destination can have only one associated CID, so individual DISA destinations will need configuring if the remote extensions require unique CIDs to be configured.

## 2.2.2 Using Flexpath to Add an Account Code

For each remote extension a Flexpath is required creation. The Flexpath is required to identify incoming calls from that external extension and map the call to the correct DISA destination, as well as associate the call with the remote extensions unique account code.

For each remote extension configure a Flexpath as follows:

From the Flexpath panel select Add Path, chose an appropriate name, and enter the account code.

Note: The account code for each extension should take the form "DISA-<extension number>". This format is imperative for the association of calls to the correct external extension and the viewing of associated calls from the user portal.

In this paper, the dummy extension created is number 1000. So the account code for the associated Flexpath is DISA-1000.
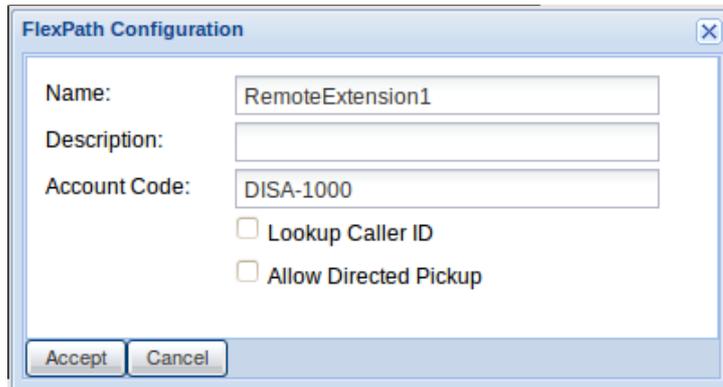
Figure 4: Account Code set for free extension 1000, corresponds to remote extension 0217008260

2.2.2.1 Match Route

Within each Flexpath a route should contain a match route, matching all DID's and transforming them to the number matching the number selected as the DID for the DISA inbound route, as configured in Section 2.2.3.1 (in this example configuration, 5555).
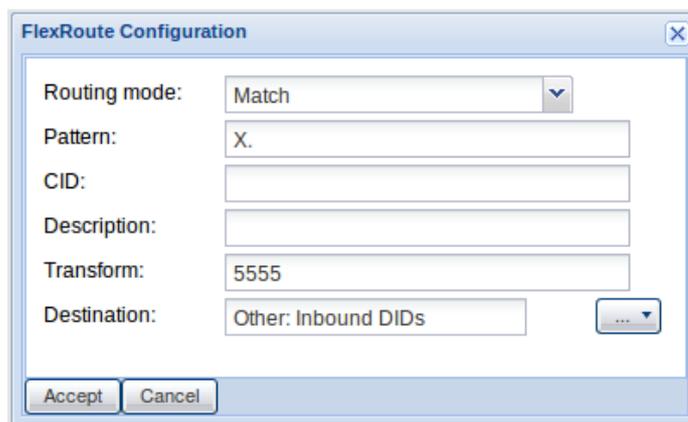
Figure 5: Transform DIDs and send the call to the Inbound DIDs destination.

2.2.3 Incoming Route

To obtain access to the PBX features, the remote extension needs to dial in to a DID serviced by the Com.X (not the main DID, but rather one of the unallocated DID's). Configure an inbound route to match the selected DID and the CID of the external extension and set the destination to Flexpath configured in 2.2.2.

Select the Inbound Panel and then select Add:

Figure 6: Inbound route configuration.

Note: The inbound route is set to match the full CID of the remote extension, including national code (27217008260, rather than 0217008260). This may require adaptation to match the number format sent the across service provider trunk network.

An inbound route should be created to match the CID of each remote extension and the DID of the remote users access trunk, sending each call that matches both the CID and DID to the appropriate RemoteExtension Flexpath. A new Flexpath is required for each remote extension so as to assign a unique account code to all calls from the same external user.

2.2.3.1 DISA Inbound Route Configuration

A separate inbound route is required to catch all calls returning from the Flexpaths, to direct them to a DISA destination. As per the example used throughout this document, a DID of 5555 is chosen.

Select the Inbound panel then set the configuration as per the figure below:

Figure 7: Configure an inbound route with a DID matching the transform in the corresponding Flexpath, setting the destination to your configured DISA.

Calls that match this inbound route will be presented with a dial tone from which outbound calls can be placed.

2.3 Call Monitor and Recording settings

The remote user can access the user portal of the dummy extension in order to edit call recording and voicemail settings, as well as to view call history and call recordings, if any exist.

Log in to the User page from the Com.X Web GUI, by entering the extension number of the dummy extension, in this case Ext 1000, and the appropriate password.

Figure 8: User Log-in

Note: the default password for an extension is simply the space bar. Upon logging in for the first time the user will be prompted to enter a new password which should be entered to access the user portal in the future.

Voicemail and recording settings can be viewed and edited by selecting Settings. User call history and call recordings are displayed on the Call Monitor page.

Figure 9: Voicemail and recording settings