ContactQ / Ericsson-LG iPECS Integration Brief

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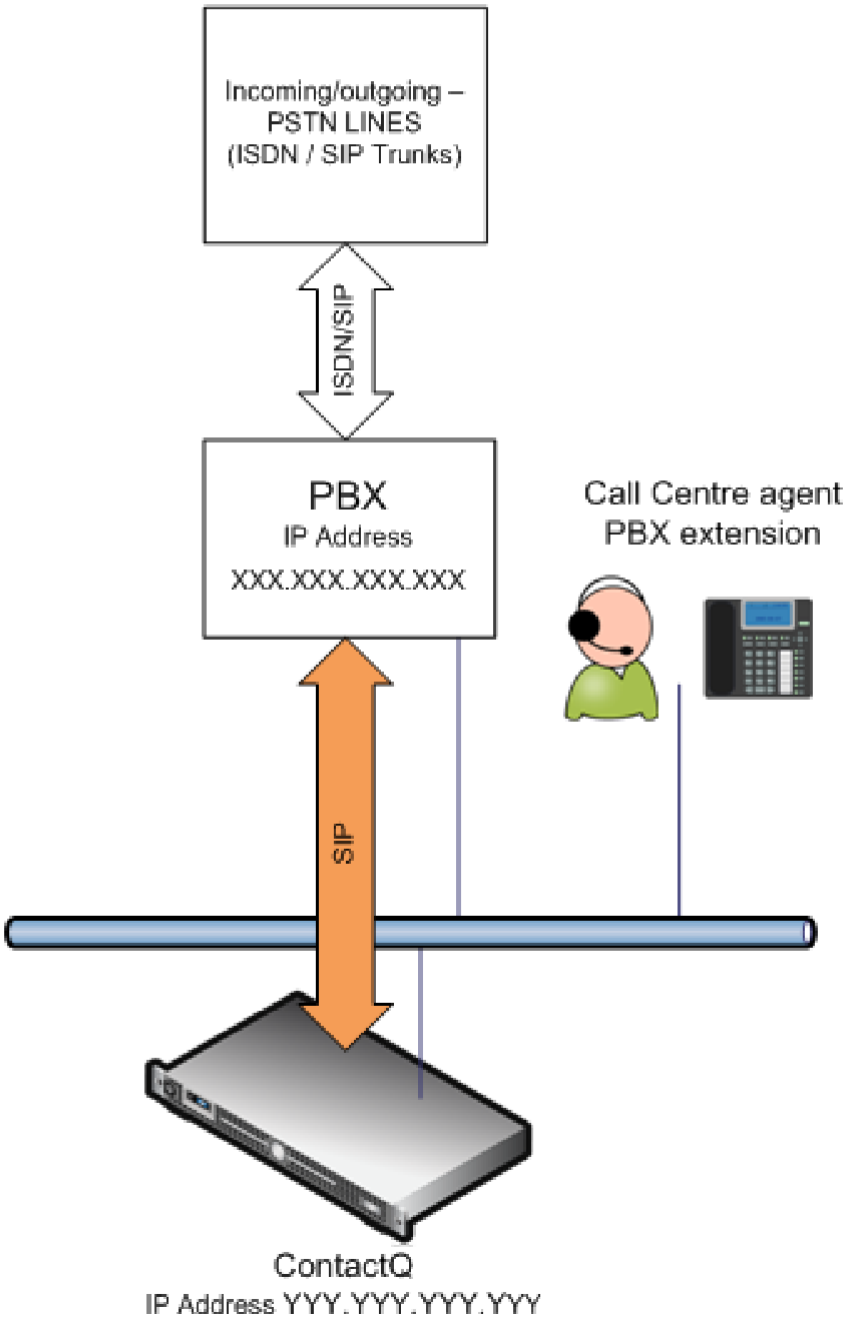
Overview of ContactQ

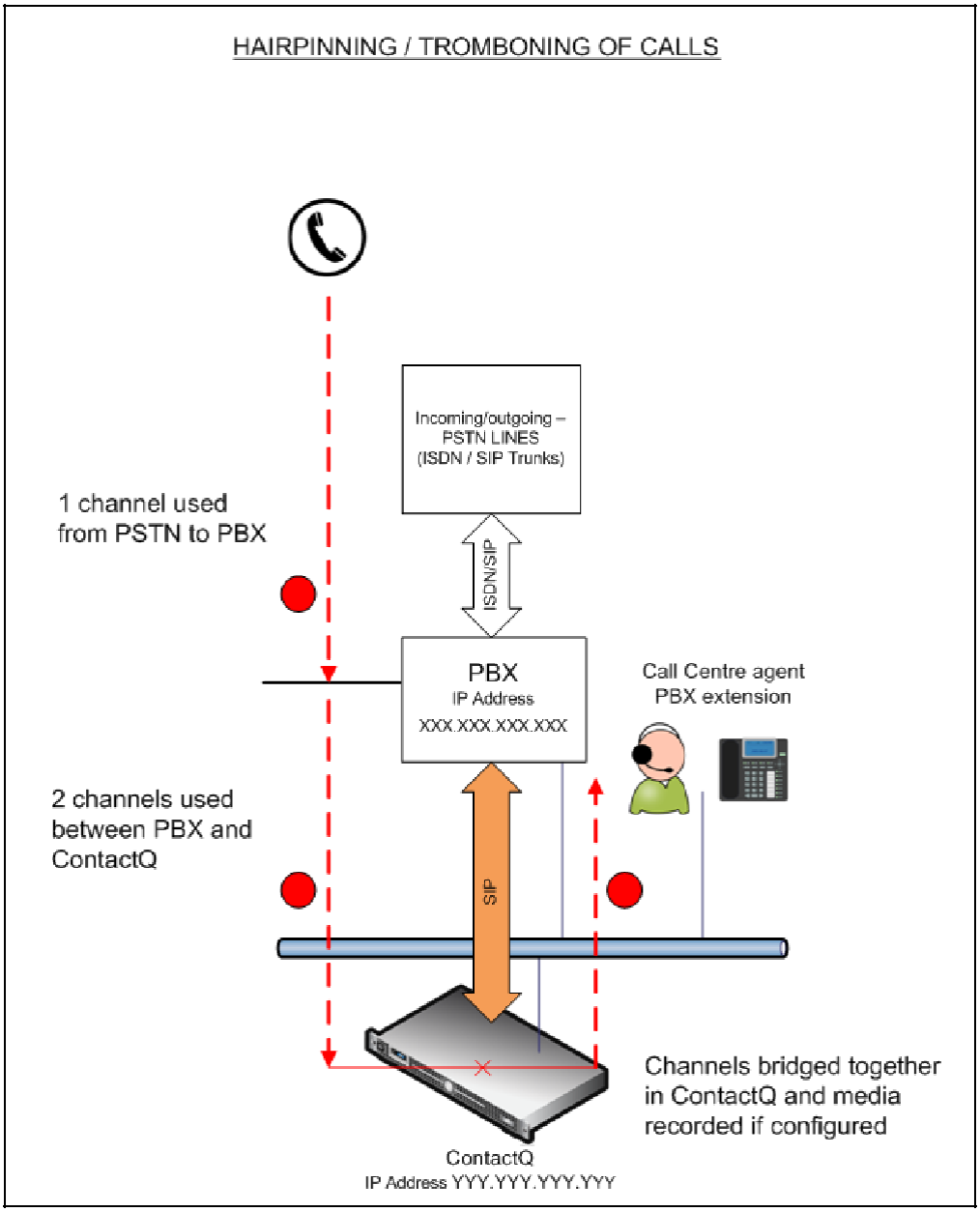
- ContactQ is an adjunct ACD/IVR system that integrates with any SIP compliant PBX using SIP Trunks. Traditionally, ContactQ is positioned behind the PBX connected via SIP channels.
  - **Inbound Calls**
    - Inbound calls from the PSTN/Carrier trunks would come into the PBX and be forwarded on into ContactQ
    - ACD - Specific call centre department DDI's/DID's are identified within the PBX and these are then routed into ContactQ via one of the SIP channel. The calls are then answered by a call flow and the caller may hear system prompts. The call is routed an agent's extension when an agent becomes available. If there aren't any agents available the calls are held in a queue within ContactQ and the caller hears comfort messages.
    - IVR – As well as allowing multi-level navigation menu's to be constructed, ContactQ's IVR allows callers to dial in and interact with backend business systems for self service features such as Account queries, Stock inquiries, online ordering, making payments etc
  - **Outbound Calls**
    - Outbound calls from ContactQ would be dialed into the PBX and either passed to an extension (if an extension number is dialled) or forwarded on & routed out to the PSTN/Carrier if an external number is being dialed.

POSITIONING OF ContactQ



Channel Usage - Hairpinning/Tromboning

- Inbound or outbound calls that are connected (in conversation) with an agent utilize 2 channels between the PBX and ContactQ - This practise is often referred to as "Hairpinning" or "Tromboning"
- Inbound calls that are queueing (not yet connected to an agent) uses 1 channel between the PBX and ContactQ.
    - If SIP trunks from the PSTN / Carrier are being used, the number of VoIP channels licensed within the PBX needs to take into account the number of SIP channels from the PSTN + the number of SIP channels required for integration with ContactQ
        - **Total** = **PSTN/Carrier** SIP Channels **+ ContactQ** SIP Channels.
    - If ISDN trunks from the PSTN/Carrier are being used then the number of VoIP channels required needs to be based upon the number required for integration with ContactQ only.
    - As an example, if the PBX has 8 SIP channels from the carrier/PSTN with a 8 agent ContactQ system
        - If you wanted capacity for all agents (8) to be on call (talking with callers) and allow 4 further calls to be queuing you would need to cater for a total of 28 SIP channels
        - 8 SIP channels in from the PSTN/Carrier
        - 8 Channels to pass the calls in to ContactQ
        - 8 Channels to connect to the agents LG extensions
        - 4 further calls queuing within ContactQ
        - Total = 28



Main Integration Objectives

For the purpose of this integration brief it is assumed that all inbound & outbound trunks from the PSTN are interfaced with the PBX and that the ContactQ system is positioned behind the PBX. Integrating ContactQ with the PBX is generally straight forward and relies upon some key points.

1. Establishing a SIP trunk group between the PBX and ContactQ
2. Identifying the Inbound DDI numbers that need to be handled by the call centre and routing these in to ContactQ via the SIP trunk group
    a. Ensure that callers CLID is passed through to ContactQ
    b. Ensure that DTMF digits can be passed through to ContactQ
3. Identifying Outbound “Internal” calls from ContactQ into the PBX and making sure that ContactQ can setup and establish calls to the PBX extensions
4. Identifying Outbound “External” calls from ContactQ and making sure that ContactQ can set up and establish calls through the PBX and out to the PSTN carrier.

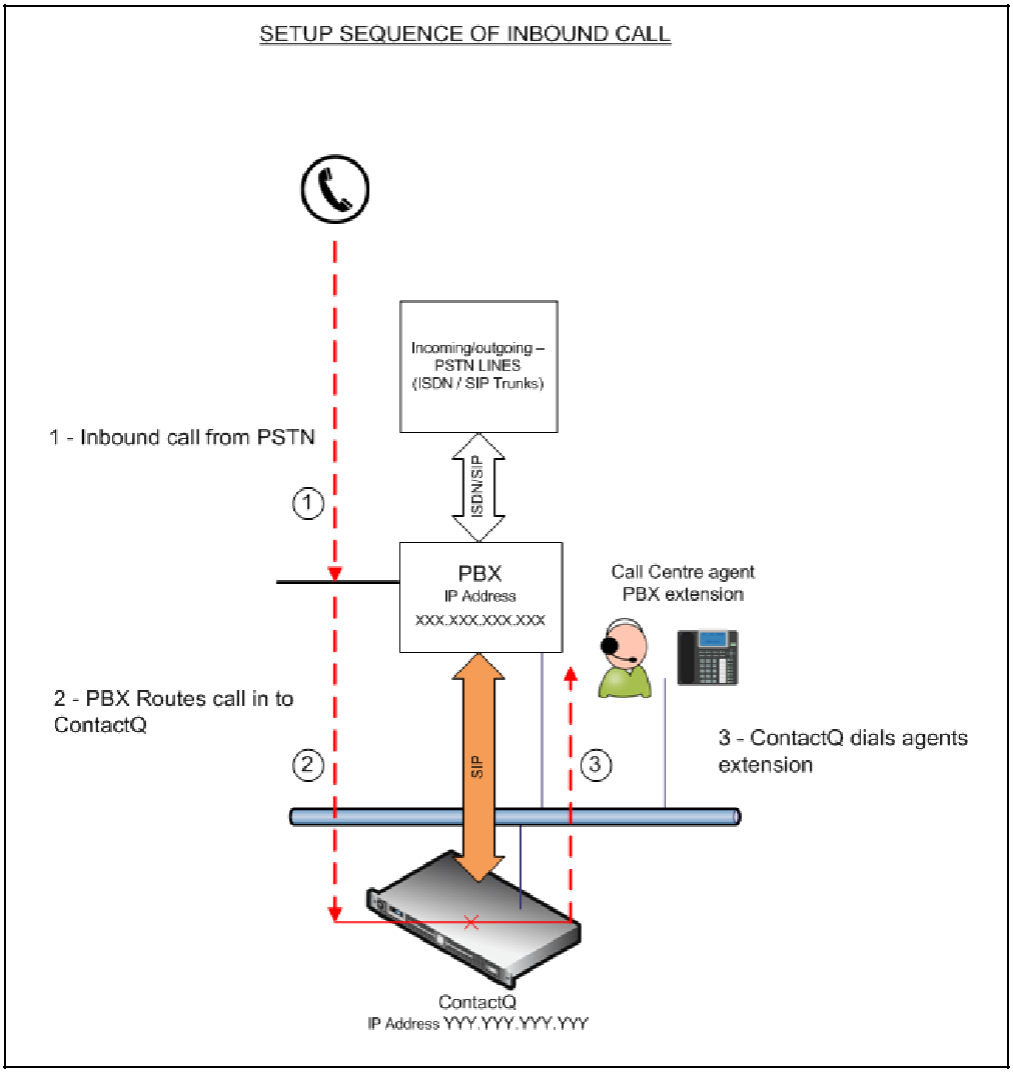
Create a SIP trunk group between the PBX and ContactQ. This will be used for the following..

- Pass calls from the PBX in to ContactQ
- ContactQ to dial agents PBX extensions (referred to as agent dialbacks) ContactQ to make external calls out to the PSTN via the PBX

The PBX must be configured & licensed for the recommended number of SIP channels. This is normally calculated as 2 x number of licensed ContactQ agents + an overhead to allow for additional queuing calls.

Inbound Call Centre Calls

1. Inbound calls received from the PSTN destined for the Call Centre will first hit the PBX
2. DDI Routing tables in the PBX identifies the relevant DDI numbers and routes the call out over the configured SIP trunk group into ContactQ (ContactQ greets the caller and plays department menu / queue prompts)
3. When an agent becomes available ContactQ established a dialback to their extension (calls their extension) and when the agent picks up the handset the inbound callers channel and the agents channel are bridged together to complete the speech path



Calls from ContactQ to the PBX

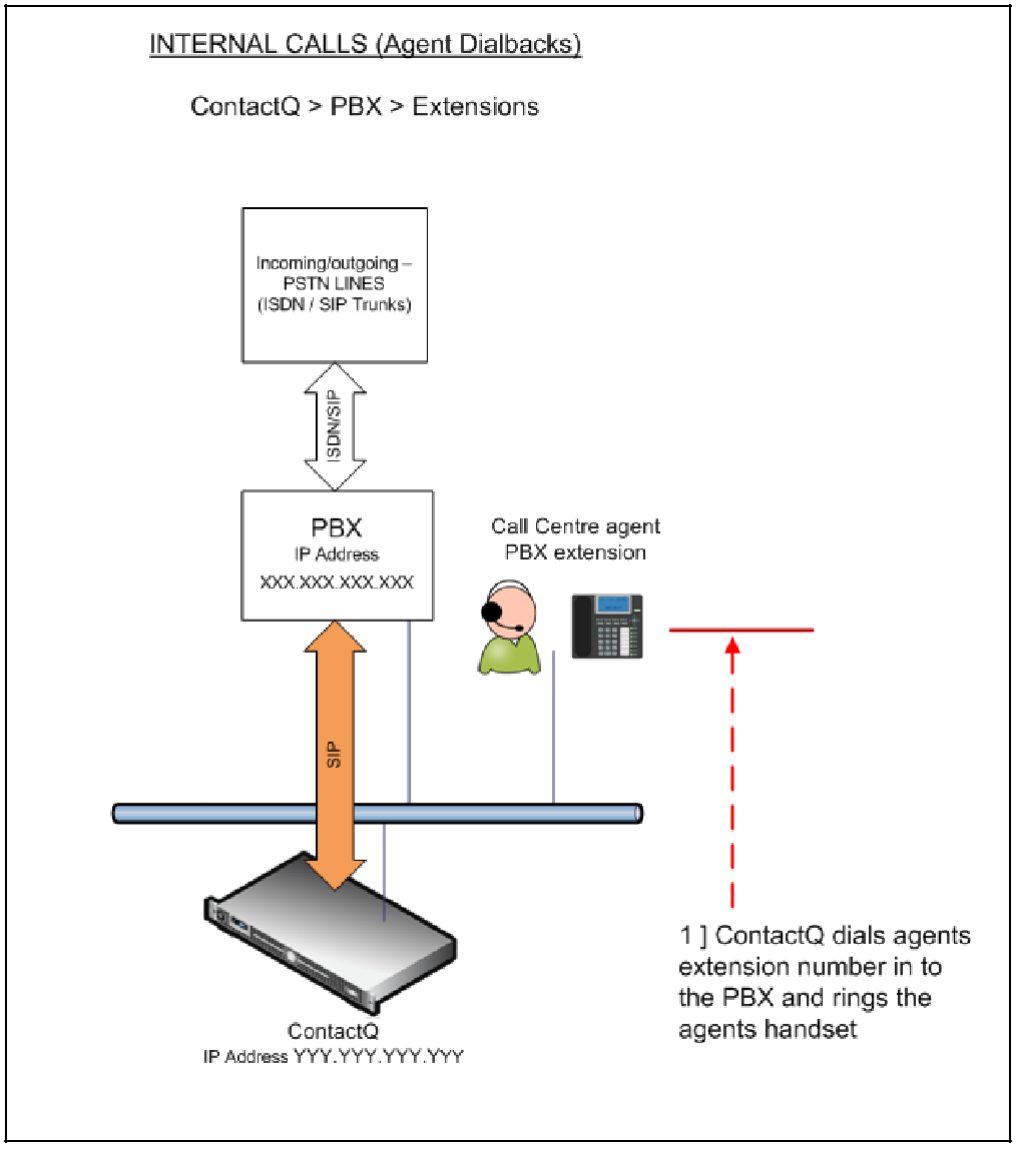
All outbound calls dialled ContactQ system will be sent to the PBX. Generally ContactQ makes types of calls to the PBX and these are either

Internal or External. The digits received by the PBX should be used to determine if the call is an internal call that should be routed to an internal extension or an outbound external call that should be routed out via the PSTN trunks

Programming within the PBX will be necessary to determine If the numbers dialled by ContactQ (received by the PBX) match the internal numbering range or whether they should be treated as an external number.

- If digits received by PBX from ContactQ are within the internal numbering range then route call to internal destination
- If digits received by PBX from ContactQ match external number pattern or include a trunk access prefix such as "9" / "0" (This is configurable within ContactQ Route Plans) then the PBX should route the call out via the PSTN trunks

Agent Dial-backs / Calls to Internal Extensions



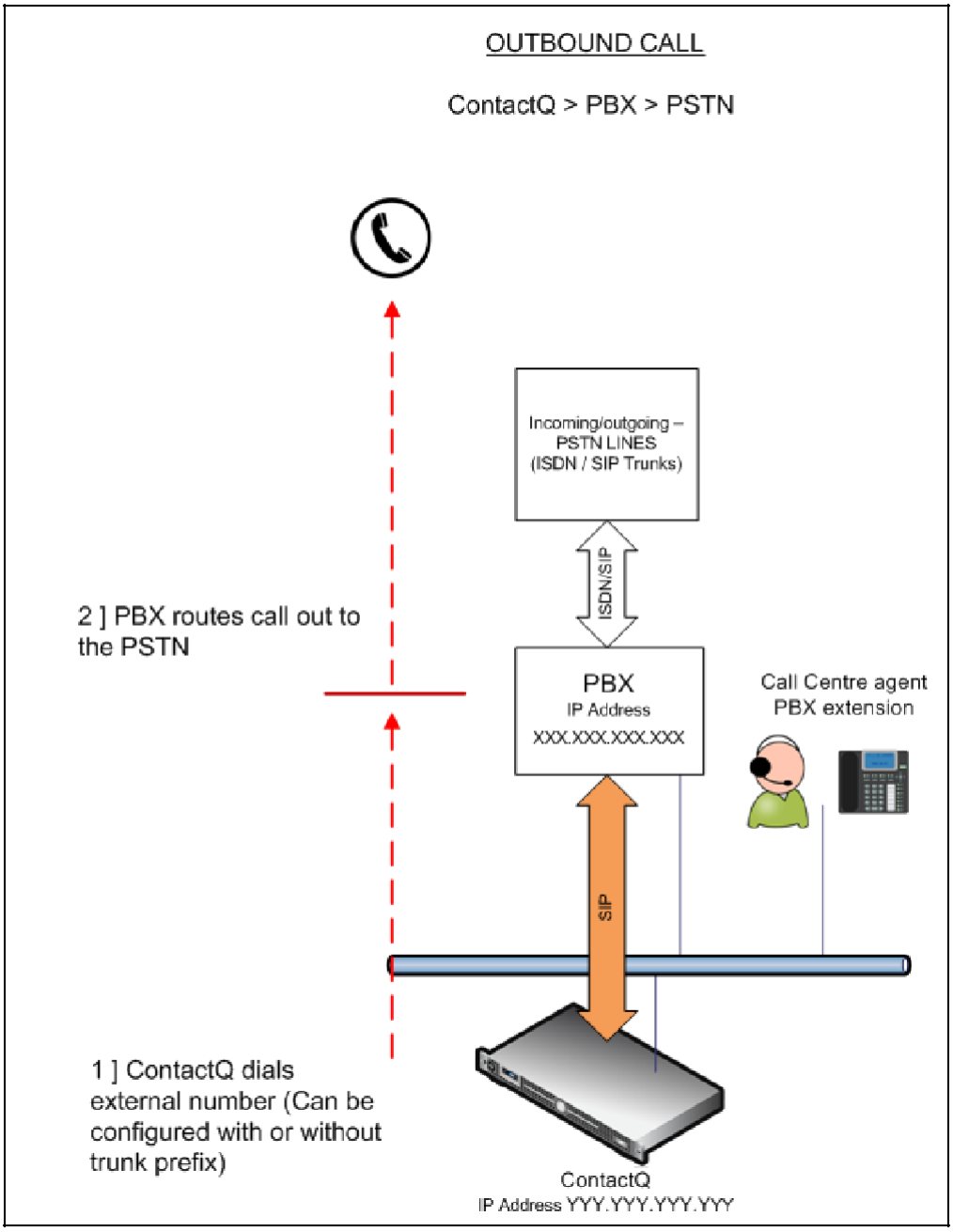
Outbound External Calls

External numbers identified by length & pattern of numbers

- Any numbers longer than 6 treat as external and route out via PSTN trunks

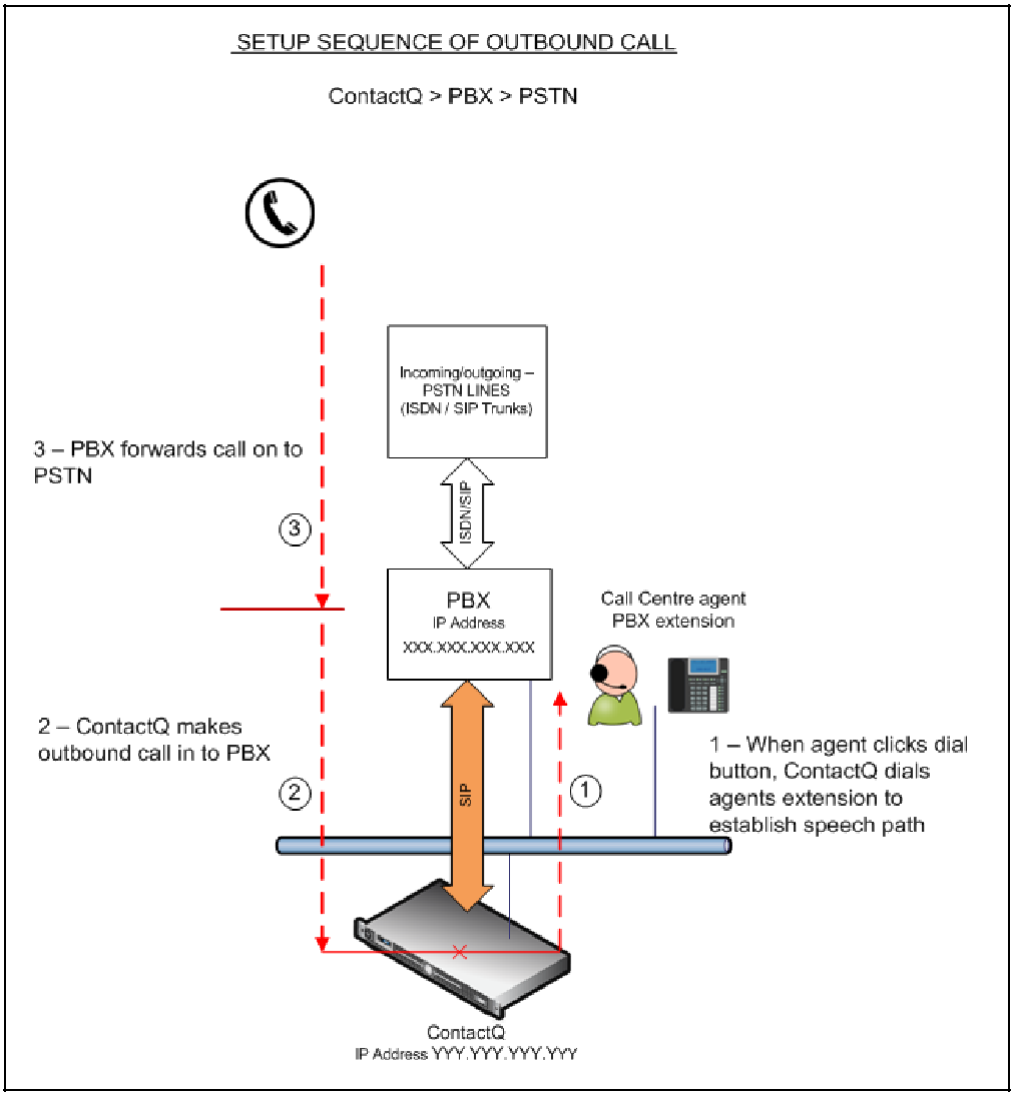
External numbers identified by trunk group prefix

- Any numbers starting with “9” / "0" (or other defined prefix) treat as external and route out via PSTN trunks



Outbound External Call - Call Setup Sequence

1. Agent enters number to dial in to the Agent Communicator dial box and clicks "Dial"
2. ContactQ initiates a call out into the PBX to the agents extension number
    a. PBX routes the call to the extension
3. ContactQ then initiates a second call out into the PBX to the external number (This only occurs once the agent has answered their ringing extension)
    a. PBX routes the call out to the external destination via the PSTN/Carrier trunks
4. ContactQ bridges media when SIP183 is received



Codecs

ContactQ is equipped to support G711 audio codec by default. Where further compression is required G729 codec can be applied as a licensable feature

Deactivate handset features on agent extensions

ContactQ works on the premise that agents that are logged in to the ContactQ system will only receive calls or make outbound calls through ContactQ. For the system to work correctly the agent's should not receive calls direct to their extension from back office or via DDI calls unless they have been routed via ContactQ. In addition agents should not make outbound calls direct from their extension – they should be trained to always initiate outbound calls via the ContactQ agent communicator application.

Why agents should not make/receive direct calls to/from their extension

If an agent does receive or make an ad-hoc call direct from their extension ContactQ will not know that this agent's extension is busy and & may try and present calls to the agents extension (which is busy)

- Call made/received directly by the agent won't be reported upon Calls made/received directly by the agent won't be recorded

Why agents should not use Call Forward / DND etc..

ContactQ does not know if an agent has activated any kind of feature on their extension such Call Forward or Do Not Disturb and may try and present calls to the agents extension.

- In this situation if an agent had a divert on busy feature activated and was diverted to their voicemail, the queued call that was being presented would have been routed in to the agents voice mail box and the ContactQ system would see this as the agent having answered the call – which is incorrect

For correct operation, all agent extension should have the following features disabled / deactivated.

Do Not Disturb

- ContactQ Should always be able to ring an agents extension
- If an agent needs to busy themselves out, they can do this by placing themselves in to an unavailable state
- **Call Forwards**
  - **Busy**
  - **No Answer**
  - **All**

All call forwards should be disabled. ContactQ should not have calls that it has routed to a specific extension forwarded and answered on a different extension

Internal Calls & DDI calls to individual ContactQ Agents

In some call centres the agents are assigned external DID numbers that callers can use to call them directly on, or back office extension users can call the agents directly by calling their internal extension number. ContactQ does not monitor the state of an agents extension and if an extension were to be used for a non call centre call the system wouldn't know about this and may still try and present queueing calls to the agent.

To ensure correct/optimal operation all calls that need to be routed to advisors should be routed in to an through the ContactQ system, this includes agent external DID and direct internal calls from back office extension users as well as the main numbers that ring in to the call centre.

In order to facilitate this, two numbers need to be assigned to each agent on the PBX.

Physical Extension Number

The first number is the extension number assigned to the agent's physical extension
This will be the agents dial back location that the ContactQ system will route calls to
This number should not be published within internal directory and should not be used for internal or DID calls

Sudo Extension Number

The second number should be a dummy or virtual extension number
This number should be the one that is published within the internal directory & the one that is used for both internal calls and external DID calls
Programming within the PBX should be put in place so that whenever one of the virtual extension numbers is called the call is passed/routed in to the ContactQ system
Programming within the ContactQ systems Contact Map will route the call to the correct agent (if available) If the agent is busy or unavailable the caller may be given to option to wait or leave a voicemail
If the agent is not currently logged in to the ContactQ system overflow rules can be used to redirect the caller to either another agent of have the call ring the agents physical extension
For periods when agents are on annual leave, others advisors can be assigned to the personal queue of the agent that is on leave in order that no calls are missed
By routing and handling all internal & DID calls through ContactQ in this manner means that all calls can be reported upon

Failover Routing

Consideration should be given to what should happen to inbound callers in the event that calls cannot be routed in to ContactQ for some reason, Ie SIP trunks are not available or ContactQ server is offline etc..

Some PBX's use operation modes to manually control when/where different DDI numbers are routed ie Normal Mode - Call centre DDI numbers are routed to ContactQ, when the system is placed in to Special Mode Call Centre DDI are routed to internal ring groups on the PBX. Others have the option to use automatic secondary route selection that would route inbound calls through to hunt groups on the PBX if the calls cannot be roited to ContactQ for any reason ?

System Planning - Prerequisites

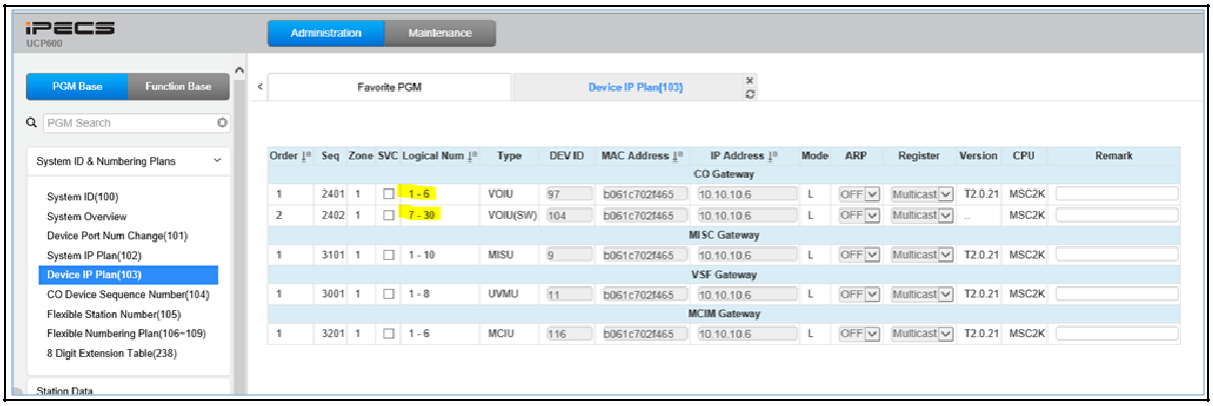
Before commencing, ensure that you have the following information to hand: -

Item	Example	Data
IP address of PBX	xxx.xxx.xxx.xxx	
IP address of ContactQ	yyy.yyy.yyy.yyy	
SIP port number	5060	
Number of SIP channels required	58	
PBX licensed for correct number of SIP channels ?	Yes/No	
Inbound DDI numbers (That need routing into ContactQ)	456500 – Sales 456501 - Helpdesk	
Internal PBX extension number range	2xxx - 3xxx	
External Trunk Grp Prefix (Prefix for ContactQ to apply when dialing out external numbers)	9	

E-LG iPECS – Programming Steps

These instruction are based on integrating ContactQ with an E-LG iPECS system running software revision 2.1.18

SIP Trunk Licensing



Please ensure that the E-LG iPECS is licensed correctly and has enough VoIP (SIP) channel capacity to support the number of channels required.

- If SIP trunks from the PSTN / Carrier are being used, the number of VoIP channels licensed within the E-LG iPECS needs to take into account the number of SIP channels from the PSTN + the number of SIP channels required for integration with ContactQ
  - **Total** = **PSTN/Carrier** SIP Channels **+ ContactQ** SIP Channels.
- If ISDN trunks from the PSTN/Carrier are being used then the number of VoIP channels required needs to be based upon the number

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Required for integration with ContactQ only.

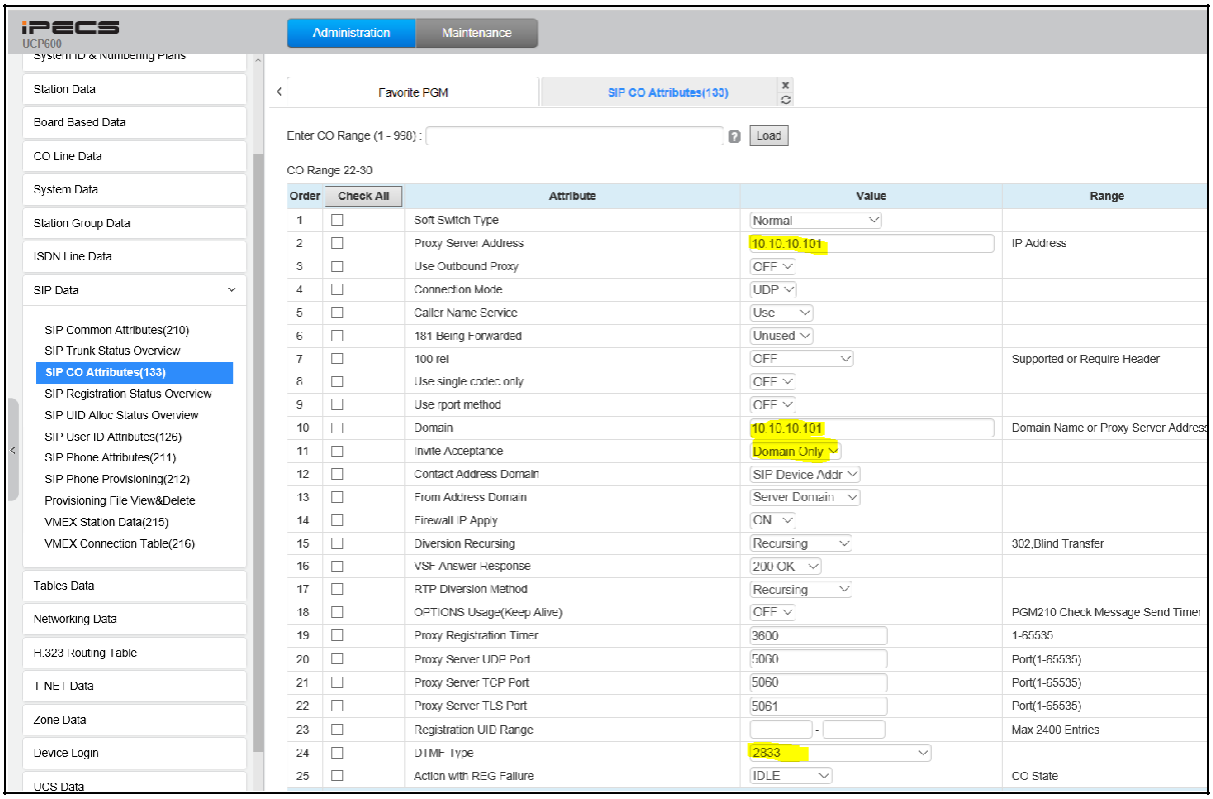
As an example, if the E-LG iPECS has 8 SIP channels from the carrier/PSTN with a 8 agent ContactQ system If you wanted capacity for all agents (8) to be on call (talking with callers) and allow 4 further calls to be queuing you would need to cater for a total of 28 SIP channels

- 8 SIP channels in from the PSTN/Carrier
- 8 Channels to pass the calls in to ContactQ
- 8 Channels to connect to the agents LG extensions
- 4 further calls queuing within ContactQ
- Total = 28

Establishing a SIP trunk group between the PBX and ContactQ

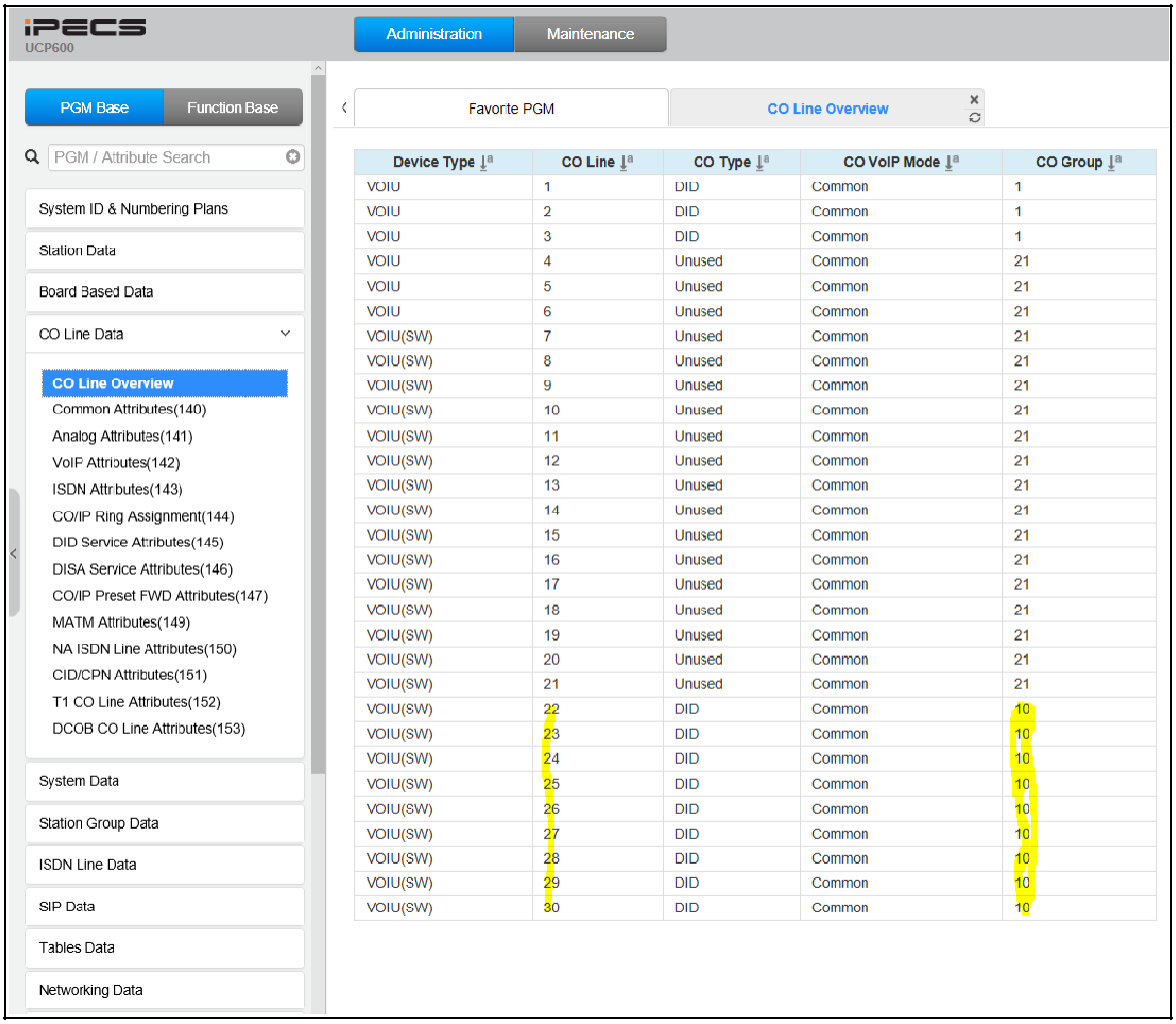
SIP CO Attributes (133)

"10.10.10.101" is the IP address of the ContactQ system
Set Invite Acceptance to "Domain Only" to prevent unauthorised invites DTMF Type = 2833



CO Line Overview

Here we can see that on the test system that these screenshots were taken from Channels 1-3 are assigned to CO group 1 (PSTN) and Channels 22-30 are assigned to CO group 10 (ContactQ)



Device Type	CO Line	CO Type	CO VoIP Mode	CO Group
VOIU	1	DID	Common	1
VOIU	2	DID	Common	1
VOIU	3	DID	Common	1
VOIU	4	Unused	Common	21
VOIU	5	Unused	Common	21
VOIU	6	Unused	Common	21
VOIU(SW)	7	Unused	Common	21
VOIU(SW)	8	Unused	Common	21
VOIU(SW)	9	Unused	Common	21
VOIU(SW)	10	Unused	Common	21
VOIU(SW)	11	Unused	Common	21
VOIU(SW)	12	Unused	Common	21
VOIU(SW)	13	Unused	Common	21
VOIU(SW)	14	Unused	Common	21
VOIU(SW)	15	Unused	Common	21
VOIU(SW)	16	Unused	Common	21
VOIU(SW)	17	Unused	Common	21
VOIU(SW)	18	Unused	Common	21
VOIU(SW)	19	Unused	Common	21
VOIU(SW)	20	Unused	Common	21
VOIU(SW)	21	Unused	Common	21
VOIU(SW)	22	DID	Common	10
VOIU(SW)	23	DID	Common	10
VOIU(SW)	24	DID	Common	10
VOIU(SW)	25	DID	Common	10
VOIU(SW)	26	DID	Common	10
VOIU(SW)	27	DID	Common	10
VOIU(SW)	28	DID	Common	10
VOIU(SW)	29	DID	Common	10
VOIU(SW)	30	DID	Common	10

TEST TO CONFIRM

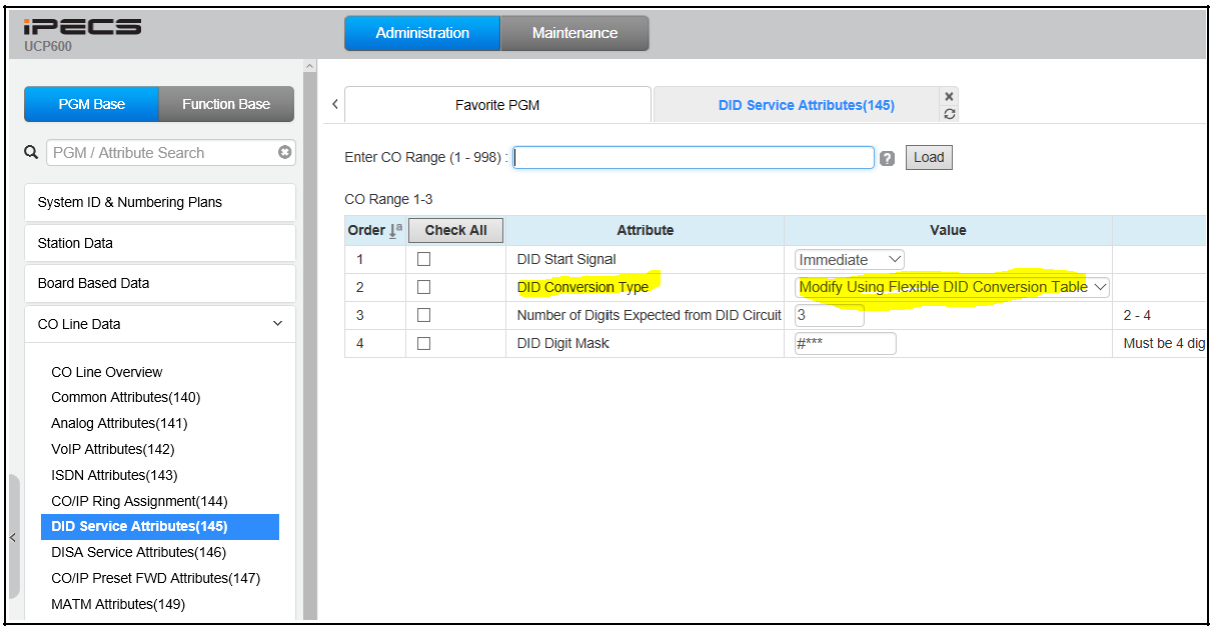
- To test the trunk group Dial **89010 1000#**
  - By default ContacQ has a contact map entry for "1000" which if dialled will place a call in
  - to the "default"queue If your test call is successful you should hear system prompts played from ContactQ "Thank you for calling..."

DDI Call Routing (Inbound)

All DDI numbers that need to be routed in to ContactQ must be identified within the PBX and routing put in place to forward these numbers on in to ContactQ. The steps below shows just 1 example of a DDI number ending with the last 3 digits of "462" being routed in to ContactQ. These steps must be repeated for all relevant DDI numbers.

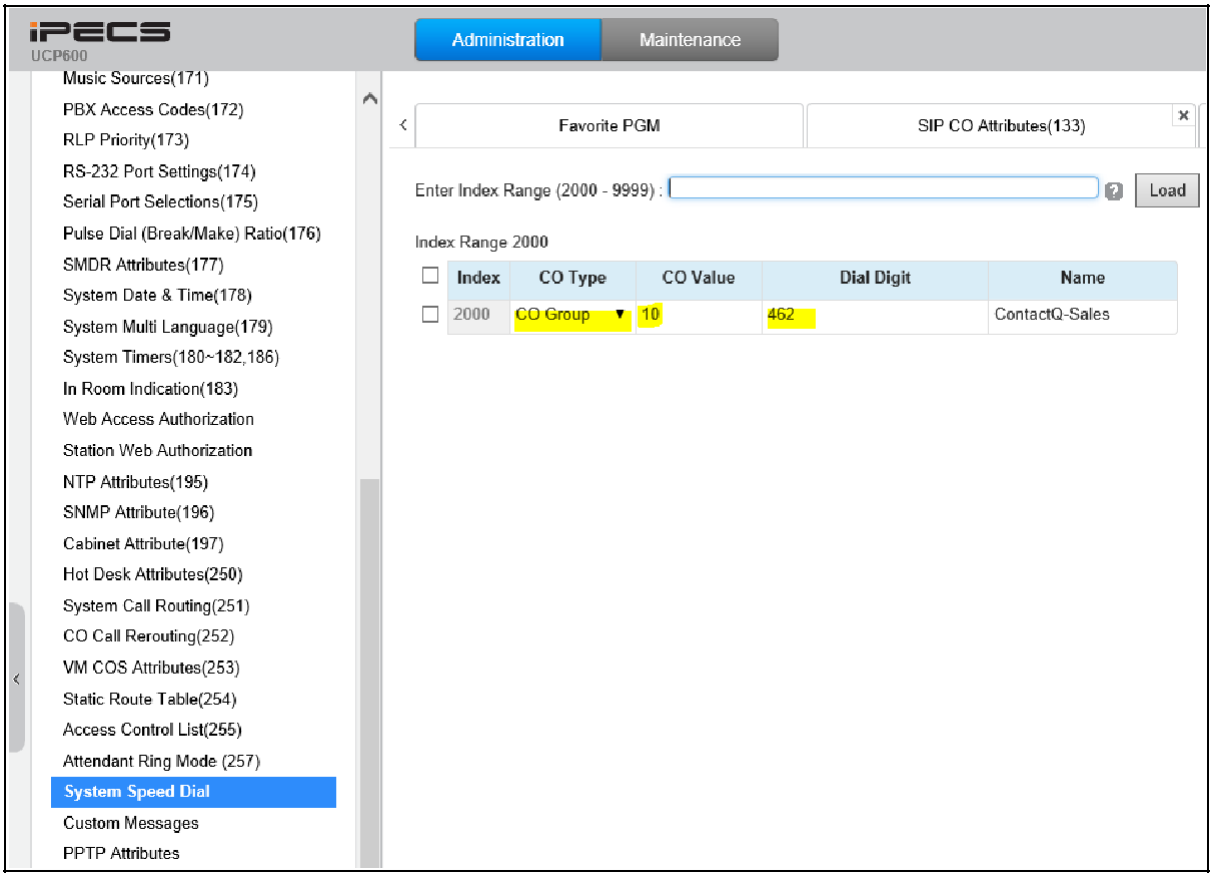
DID Service Attributes (145)

Ensure that the inbound PSTN channels (CO Range 1 - 3 in this example) are set to DID in PGM 140, and as shown below (PGM 145) set DID Conversion Type to “Modify Using Flexible DID Conversion Table”



System Speed Dial

- Create a system speed dial per DDI number that needs to be routed into ContactQ. Set CO Type = CO Group
- Set CO Value = The CO group number that routes to ContactQ (in this example "10")
- Set Dial Digit = The same as DDI digits received from the PSTN (in this example 462). These digits will be forwarded into ContactQ as the DNIS number and will be used within CQ to identify which queue to place this call in



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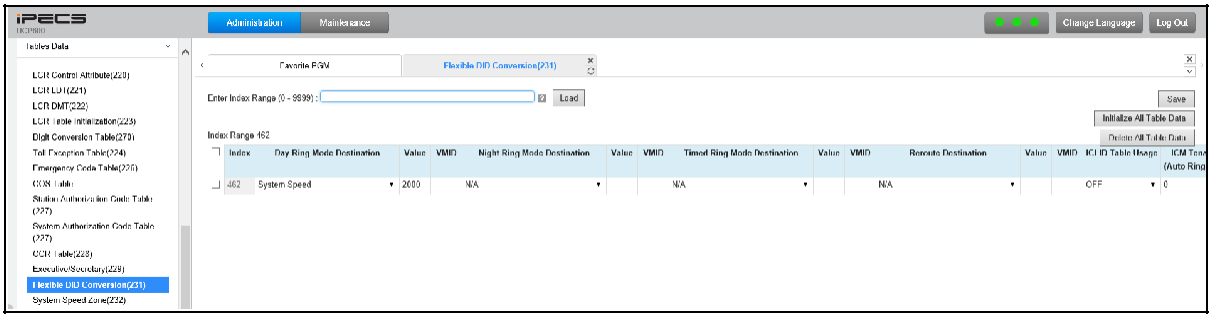
Flexible DID Conversion (231)

Create an entry for each DDI number that needs to be routed in to the ContactQ system and direct each one at a speed dial entry

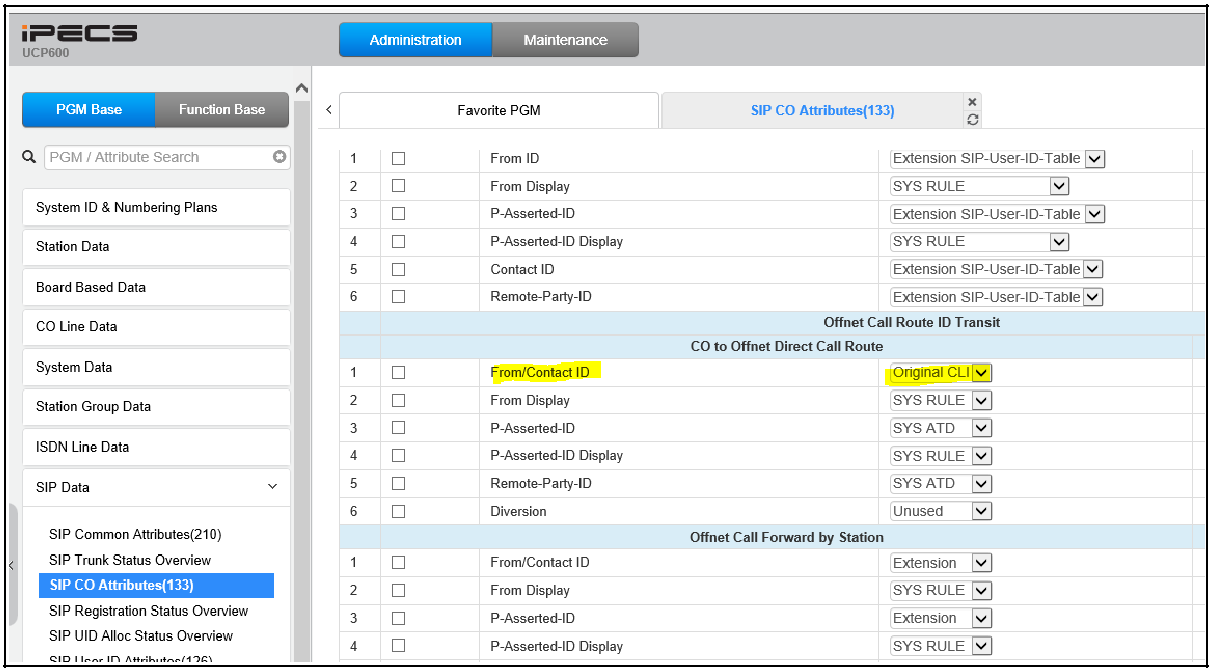


Forwarding of CLID (Inbound)

The callers CLID received from the PSTN must be included within the invite header when calls are routed into ContactQ. This allows the callers CLID to be displayed on the Agent Communicator, displayed on dashboards and is recorded within the historical reporting data.

SIP CO Attributes (133)

- CO to Offnet Direct Call Route
  - Set From/Contact ID = Original CLI



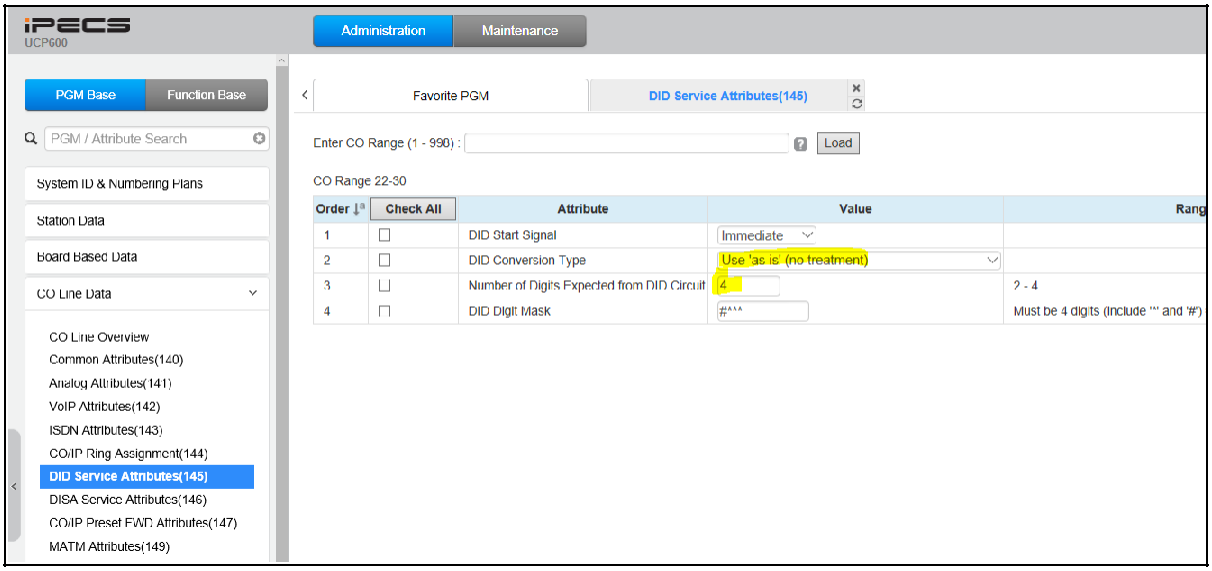
Configuring INTERNAL Call Routing from ContactQ > PBX Extensions

In order for ContactQ to route calls to agents it must be able call their extensions

DID Service Attributes (145)

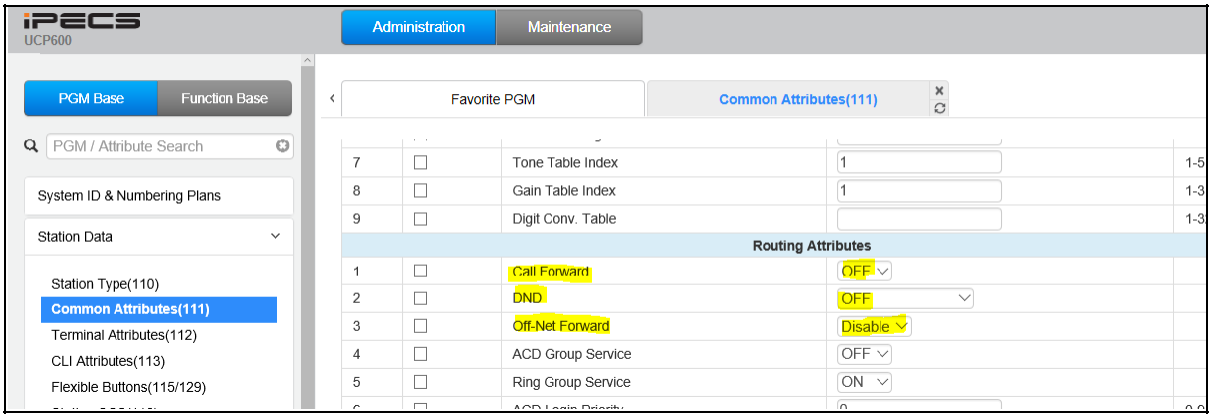
For the Channels used to communicate to/from ContactQ (Channels 22-30 in this example)

- set DID Conversion Type = Use 'as is' (no treatment)



Common Attributes (111)

Disable features such as Call Forward, DND & Off-Net Forward for extensions used by ContactQ agents.

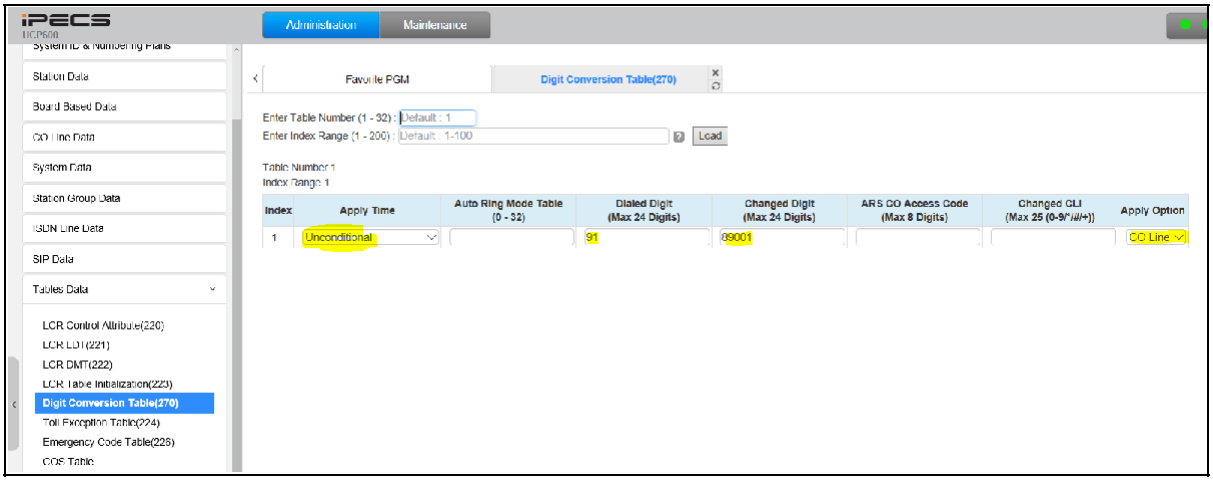


Configuring EXTERNAL Call Routing from ContactQ > PBX > PSTN/Carrier

When making outbound calls ContactQ will send and invite from ContactQ in to the PBX which should then be routed out by the E-LG iPECS system to the PSTN. In the exmaple shown below ContactQ is configured to prefix all outbound calls with "91" and this prefix is then used by the E-LG iPECS system to identify this as a call that needs routing out to the PSTN.

Digit Conversion Table (270)

Configure the Digit Conversion table as shown below for table / index 1 ContactQ will prefix outbound calls with 91
This table translates the prefix of "91" into the code ("89001") required to directly access your PSTN CO Group (Group 1) and sends out the subsequent dialled digits.

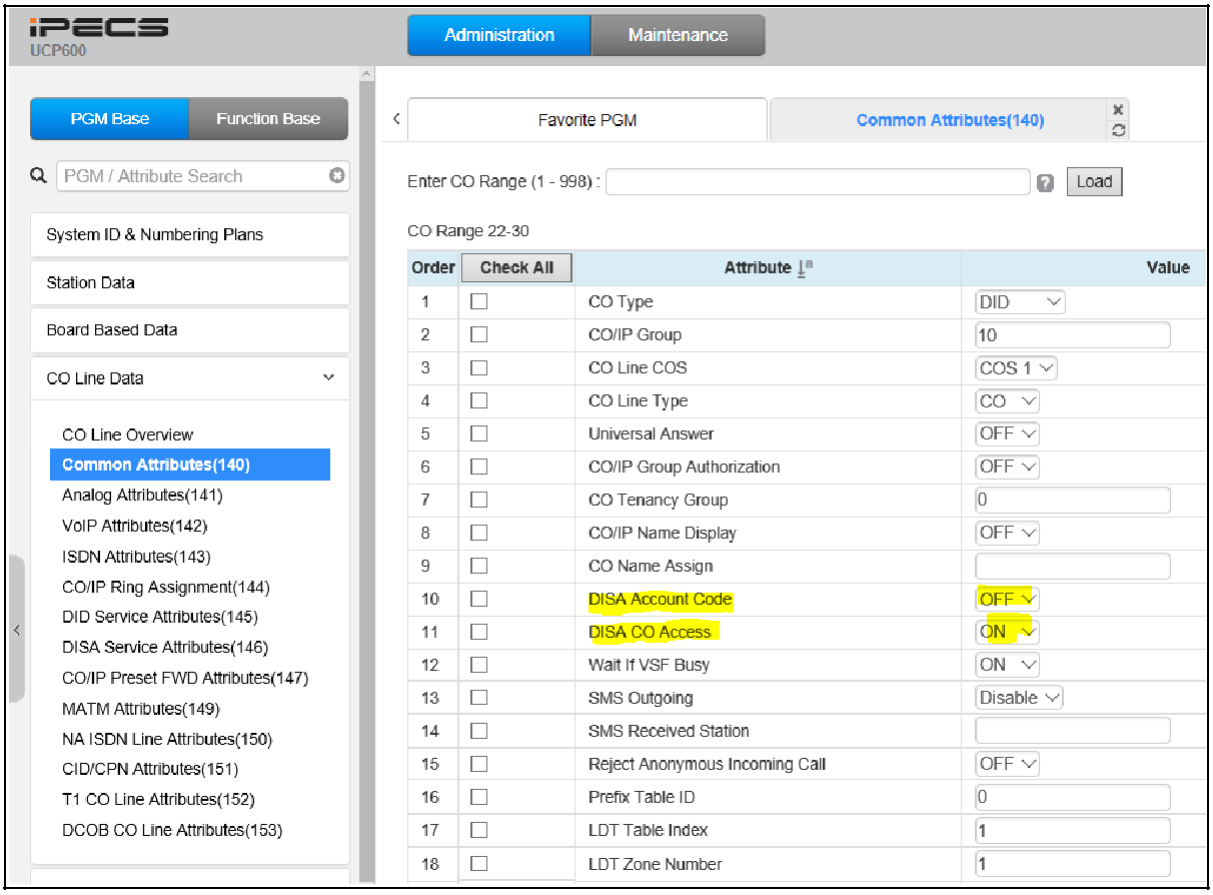


Common Attributes (14)

- The channels used for ContactQ (Channels 22-30 in this example) will need to access DISA DISA Account Code = OFF
- DISA CO Access = ON

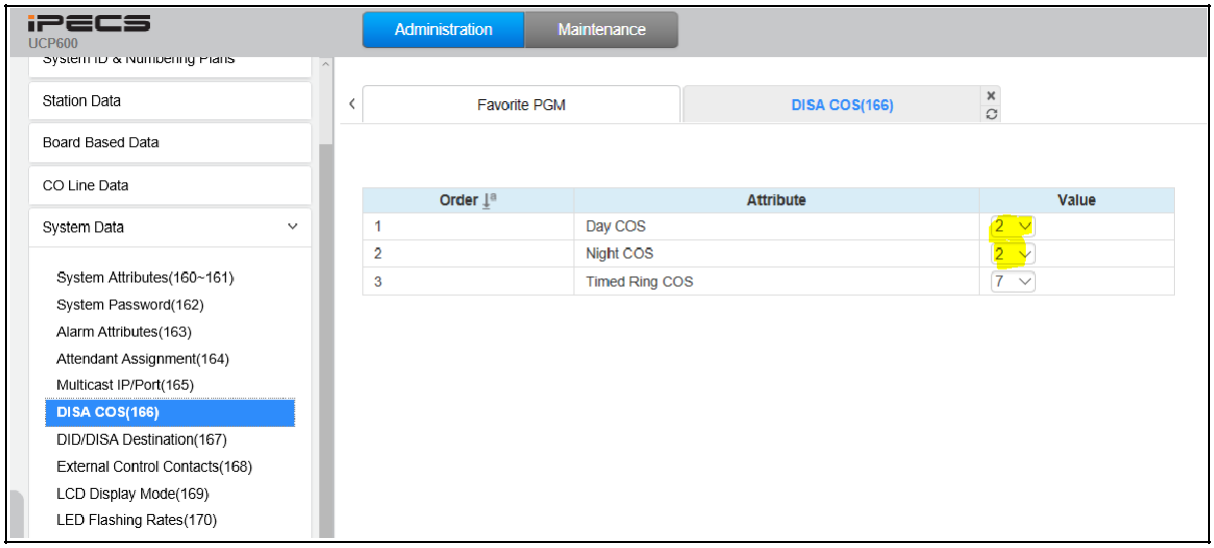
SECURITY

- Please see the steps below relating to security (Toll Exception Tables) below
- Failure to correctly configure dial restrictions could leave the system open to fraudulent use



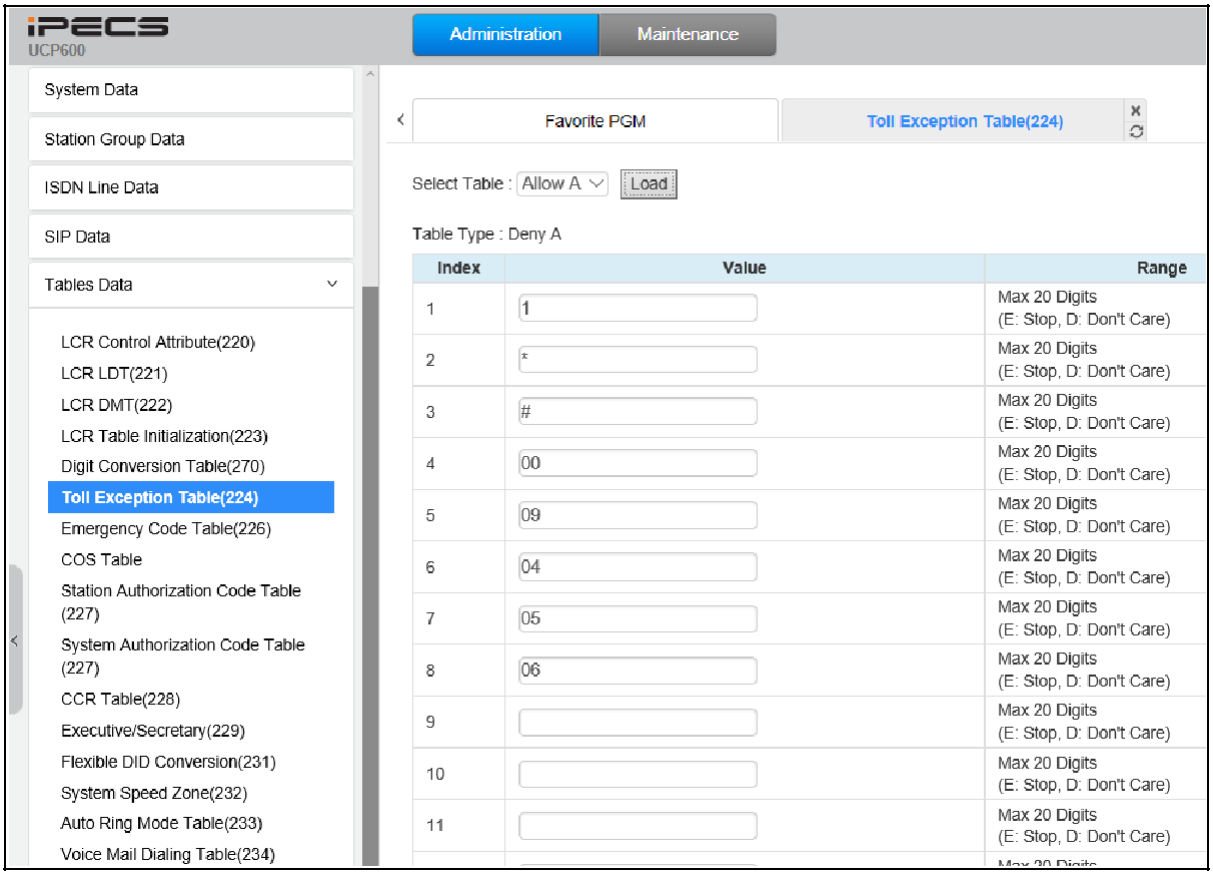
DISA COS (166)

- Set the DISA COS to use table 2 (or a similar table relating to the Toll Restriction Table). It is important to carefully restrict DISA COS.

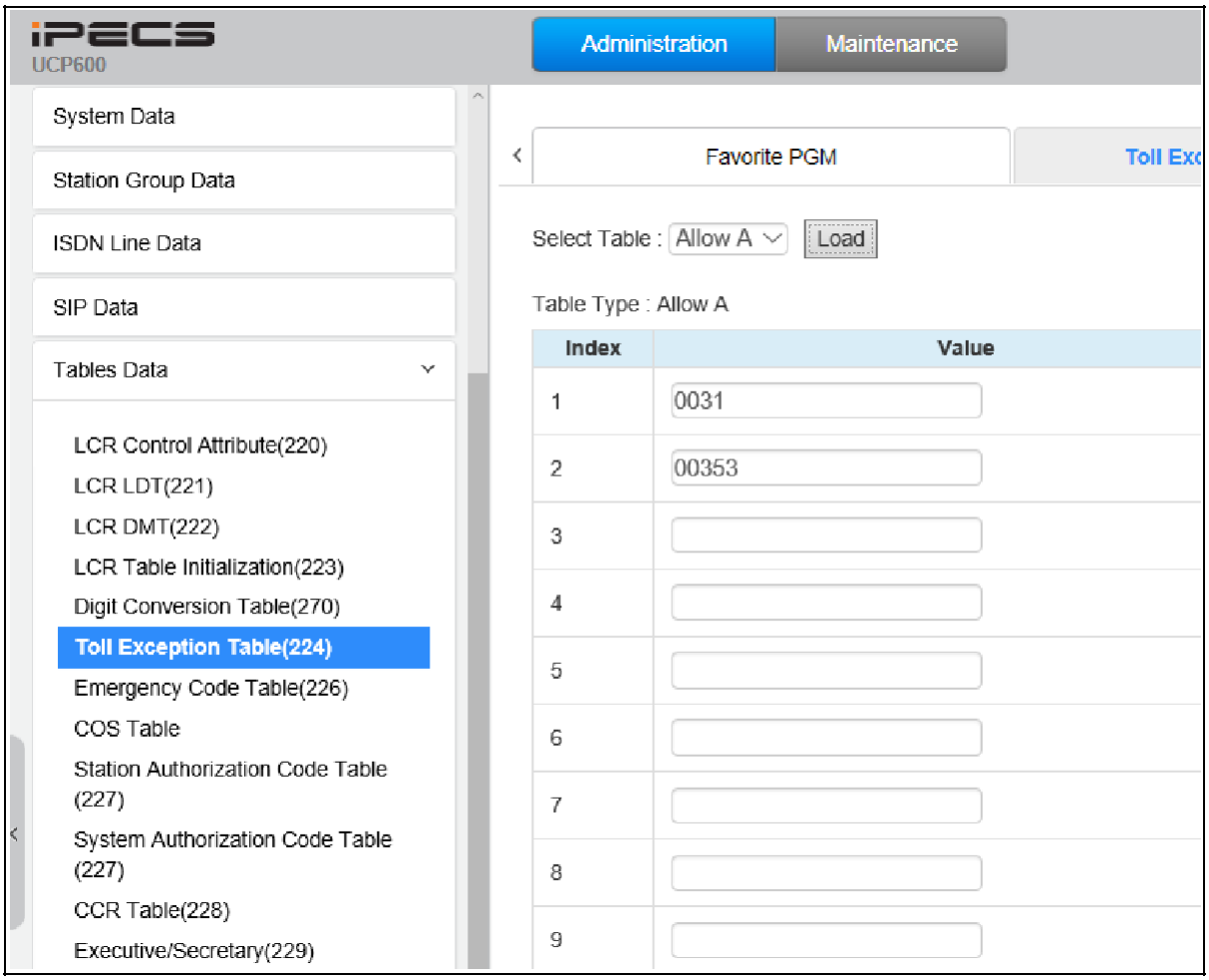


Toll Exception Tables (224)

- Configure the numbers you want to bar for COS 2 in the Deny A table.
- In this example we have shown barring of international / premium rate numbers as well as some others.



- Then, Configure the Allow A table for COS 2 to allow dialling and relax rules for specific locations

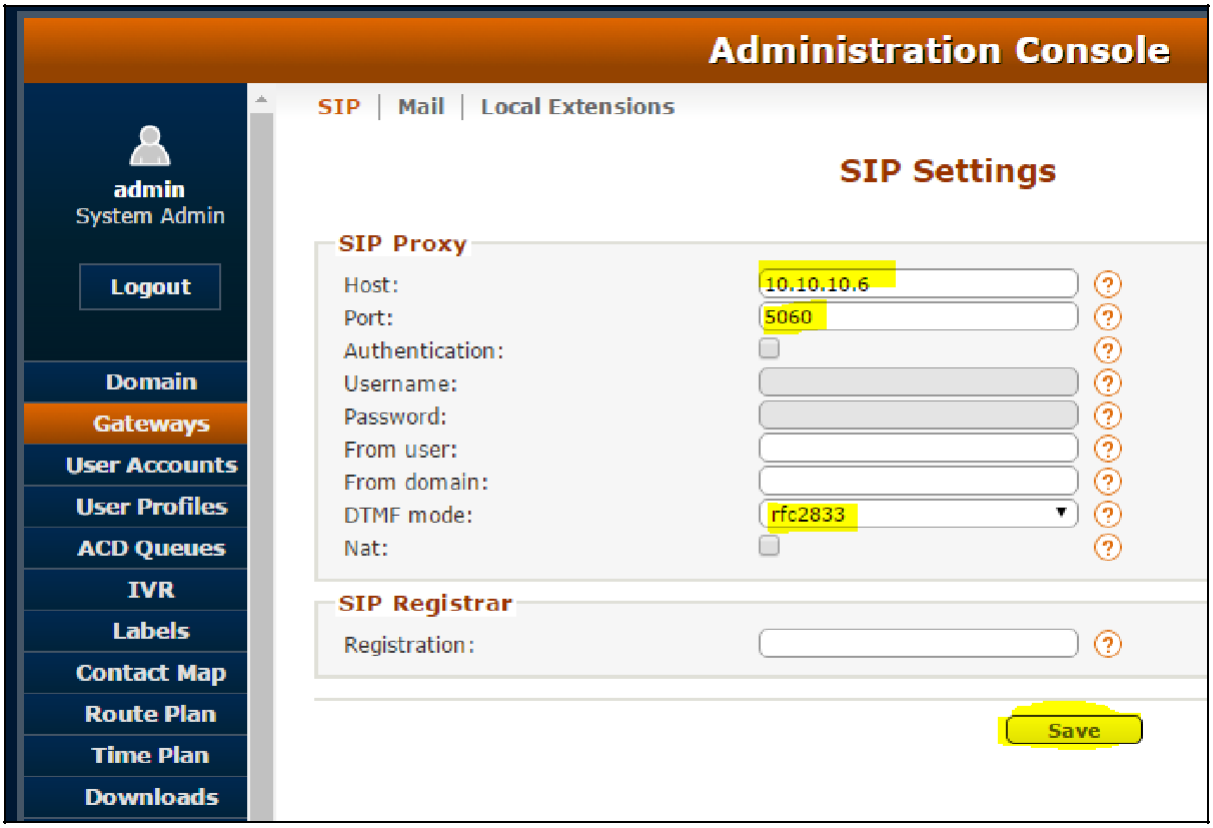


ContactQ Configuration / Testing

Gateways > SIP Settings

In most cases all that is required to configure the gateway within ContactQ to enable it to makes call out in to the PBX is for the Host & Port to be defined.

- Enter the IP address of the E-LG iPECS SYSTEM in the "Host" field Enter the SIP port of the E-LG iPECS in the "Port" field
- Click Save
- Navigate to "Apply Changes"



Setting	Description
Host	IP address of the remote SIP proxy server
Port	The port to connect to the SIP proxy on (usually 5060)
Authentication	Require a username and password for inbound calls. (inbound calls in to ContactQ)
Username	The expected username in SIP invites received for inbound calls (inbound calls in to ContactQ)
Password	The expected password in SIP invites received for inbound calls (inbound calls in to ContactQ)
From User	Username sent in the 'from' field in SIP invite message (outbound calls from ContactQ).
From Domain	Domain sent in the 'from' field in SIP invite message (outbound calls from ContactQ)
DTMF Mode	ContactQ supports Inband, Info & rfc2833. **Inband**: The device that you press the key on will generate the DTMF tones. - If the codec is not ulaw or alaw then the DTMF tones will be distorted by the audio compression and will not be recognised. If the phone is set for RFC2833 and The Contact Center system is set for inband then you may not hear anything. **rfc2833**: use rfc2833 protocol (http://www.ietf.org/rfc/rfc2833.txt) **Info**: send dtmf information using SIP info packages (http://www.ietf.org/rfc/rfc2976.txt)
NAT	Check if using Network Address Translation
Registration	SIP registration string. E.g.: username[:password[:authuser]]@host[:port][/extension]

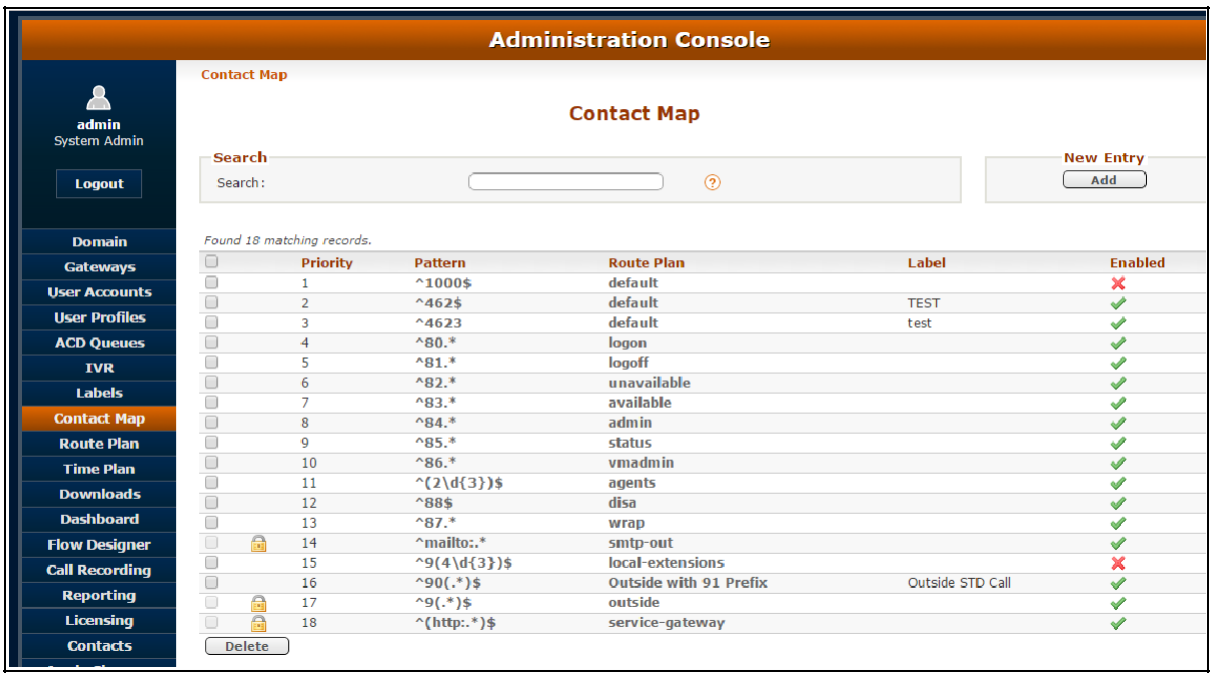
Contact Map

Checking PBX can place call in to ContactQ

By default ContactQ contains a Contact Map entry for a DNIS rule of "1000" this can be used to initially test whether calls cab established fro the PBX in to ContactQ

Checking PBX can place call in to ContactQ

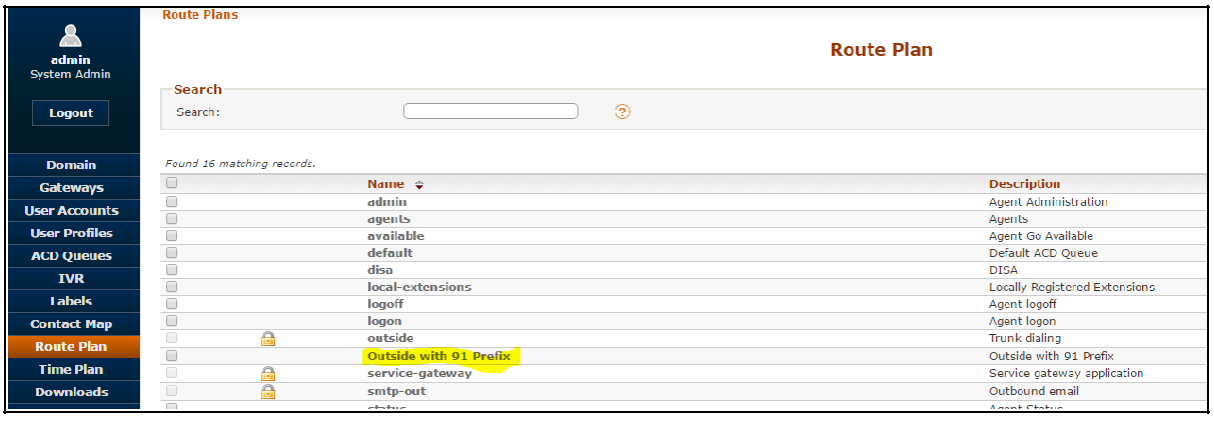
- Create DNIS routing patterns within the Contact Map for the expected inbound DNIS numbers that are to be received from the system. The patterns entered here must match the DNIS/DDI number being passed through from the PBX when calls are routed in to ContactQ If a call is presented to ContactQ and there isn't a rule that matches the pattern of the DDI/DNIS number the call will be denied & disconnected



Configuring ContactQ send a prefix when dialing outbound externals calls

ContactQ has a default route plan called "outside" but this route plan does not prefix the dialled number with any additional digits and cannot be edited. In order to add a prefix to outbound dialled numbers a new route plan must be created

- Click Add
  - Route Plan name = "Outside with 91 Prefix" Description = "Outside with 91 Prefix"
  - Save
- Go back to "Route Plans"
  - Click on Route Plan named "Outside with 91 Prefix"



- Click "Rules" tab

Add rule

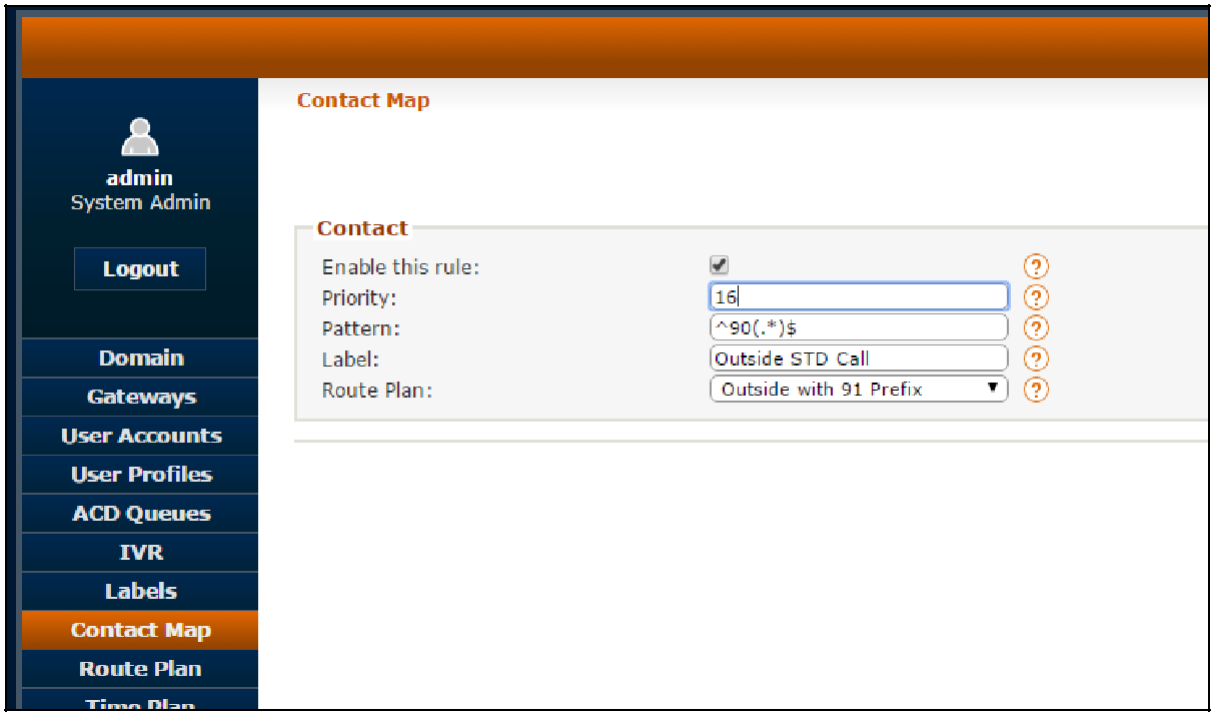
- Priority =1 Operation = Open
- Description = Always Time Plan = Always
- Application = Media Gateway
  Replacement = 910\1
    - This replacement rule means send the digits "910" followed by the subsequent digits in the 1st capturing gro (See explanation of Contact Map entry below)

- Save

Add new entry in to Contact Map for outbound calls

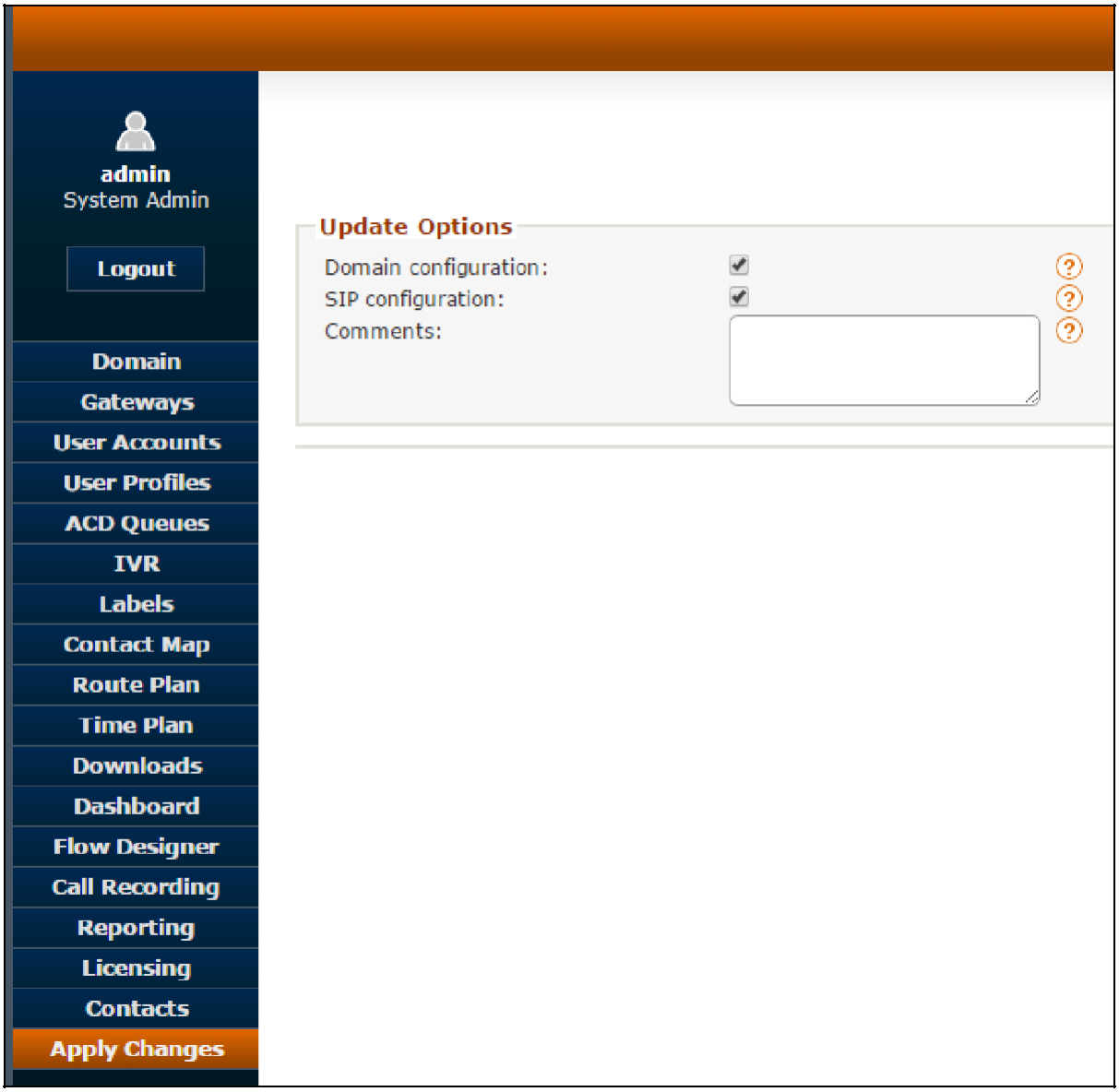
ContactQ has a default contact map entry that matches pattern ^9(.*)$ but this entry is locked and cannot be edited. In order to add a prefix to identify outbound external numbers a tell the system to use the new route plan a new contact map entry must be created.

- Make a note of the "Priority" of the current outside entry - the one that matches pattern ^9(.*)$ Click Add
- Set the Priority to be the same value of the existing outside rule.
- This will insert the new rule with this priority value and all other will be renumbered down by 1 Set the pattern to be matched to be ^90(.*)$
    - Whenever an agent dials a number using the AGent Communicator the CQ system inserts a hidden prefix of 9 which would ordinarily be stripped off by the default outbound route plan
    - In this instance we are specifically telling the system to look out for numbers that begin with "0" (and that have been prefixed by the system with 9) - hence 90
- The bit in the brackets is referred to as the 1st capturing group and .* essentially means any other digits Give this new entry a label
- Point the new contact map entry at the route plan "Outside with 91 Prefix" Save



Apply Changes

- Navigate to Apply Changes
- Check "Domain Configuration" & "SIP Configuration" Click "apply"



TESTING INBOUND CALLS

[TEST 1] Manual Route Selection

TESTING INBOUND CALLS [1] Manual Route Selection

Inbound Call Routing

1. Manual selection of the SIP trunk Group
   a. Use an extension to dial the SIP trunk group access code then dial 1000. This is default contact map rule. If successful your call should be routed in to ContactQ with a DNIS of 1000 & you should hear a system prompt
      i. If successful this proves that the SIP trunk group on the PBX is configured correctly and calls can be passed to ContactQ

[TEST 2] External DDI Number

TESTING INBOUND CALLS [2] External DDI Number

For test purposes add a Contact Map entry for a valid external DDI number and assign the rule to the "default" Route Plan. This is a default rule that points at a pre configured queue called "default"

The following test can then be used to verify inbound call routing of an external DDI number..

1. Dial the external DDI number that you pointed at the "default" route plan. If successful your call should be routed in to ContactQ with the assigned DNIS number & you should hear a system prompt
    a. If successful this proves that the PBX is passing the correct format/length of DDI number through to ContactQ & that ContactQ has a valid rule to matches this inbound DDI number
    b. If this test fails - check the following
        i. DDI routing on the PBX is targeting the DDI call to the correct SIP trunk group (to ContactQ)
        ii. Check if the PBX is programmed to pass all of the received DDI digits through to ContactQ or only the last X digits
        iii. Check the contact map within ContactQ is programmed to match the DDI number being transmitted by the PBX
        iv. If problems persist use wireshark to check if invites from the PBX to ContactQ are being received whenever test calls are being made

[TEST 3] Pass through of CLID

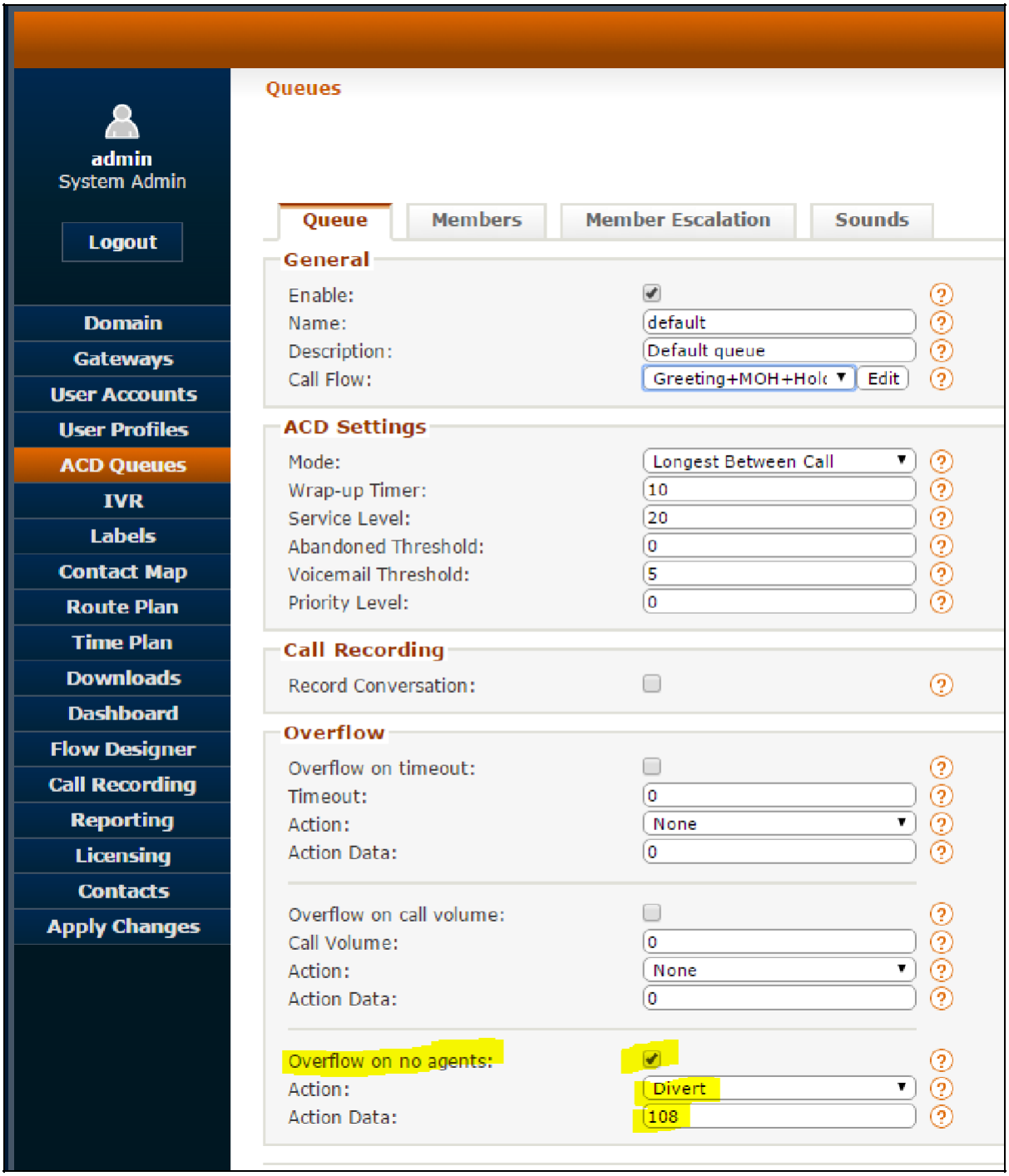
TESTING INBOUND CALLS [3] Pass through of CLID

a. If the test above are successful the next steps is to check whether the CLID of external callers is being passed through to ContactQ.
    i. Use a mobile/cell phone to dial in to the external DDI number that is directed at the "default" route plan
        1. Whilst the call is held in the queue (listening to prompts) navigate to the following screen within ContactQ Web Admin
            a. "Dashboard > Queue Monitor
                i. In the Queue column - Click on the label "default"
                ii. Click on the "Holding" tab
                iii. You should now see details of your holding call in this screen -check to see if the CLID matches the phone that you have used to make the test call.
                iv. Some carriers do not present the leading "0" of callers CLID's -This screen is useful to see if any leading digits are missing from the callers

Outbound "INTERNAL" Calls from ContactQ to PBX Extensions

In order to test this we will set and use the "overflow on no agents" rule of the default queue.

- Navigate to ACD Queues and click on the "default" queue Enable the "overflow on no agents"
- Set the "Action" to be "Divert"
- Enter a valid PBX extension number in the "Action Data" field Apply Changes



TESTING OUTBOUND CALLS

[TEST 4] Using Queue overflow rule to call extension

TESTING OUTBOUND INTERNAL CALLS [4] Using Queue overflow rule to call extension

1. Place an inbound test call into the default queue
   a. If dialing from an external phone dial the external DDI number that is programmed to ring the default queue
   b. If dialing from a extension (Use different one than the one defined as the overflow destination) dial the trunk group access code followed by 1000
2. The call will enter the default queue and after hearing "Thank you for calling, Please wait while we connect your call" should ring at the extension defined in the overflow rule. Answer the call and check speech

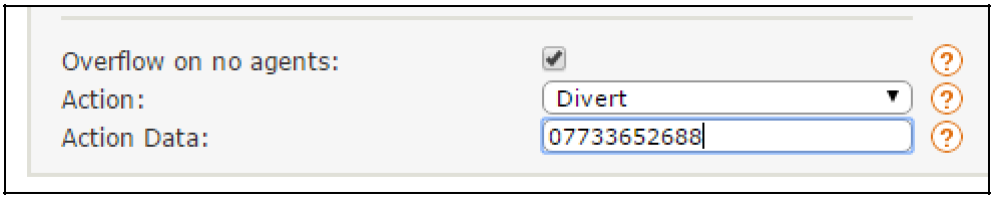
a. *Explanation - After hearing "Thank you for calling, Please wait while we connect your call" the call is queued by the system and looks for an agent, but because there aren't any agents logged in the call will follow the "overflow on no agents" rule and cause the system to dial the number defined in the overflow rule*

If this test is successful it demonstrates that the ContactQ system can make and establish calls to internal extensions

Outbound "EXTERNAL" Calls from ContactQ to External Numbers

This test uses the same principal as the intenal test above to test calls out to external numbers

- Navigate to ACD Queues and click on the "default" queue
- Enable the "overflow on no agents"
- Set the "Action" to be "Divert"
- Enter a valid external number in the "Action Data" field
  - (NOTE - Depending upon how the PBX is programmed you may need to insert a trunk group prefix in front of the external number being tested)
  - If in doubt repeat this test twice, once without a prefix and then once without to determine whether a prefix is necessary or not
- Apply Changes



[TEST 5] Using Queue overflow rule to call external numbers

TESTING OUTBOUND EXTERNAL CALLS [5] Using Queue overflow rule to call external numbers

1. Place an inbound test call into the default queue
   a. If dialing from an external phone dial the external DDI number that is programmed to ring the default queue
   b. If dialing from a extension (Use different one than the one defined as the overflow destination) dial the trunk group access code followed by 1000
2. The call will enter the default queue and after hearing "Thank you for calling, Please wait while we connect your call" should ring at the external number defined in the overflow rule. Answer the call and check speech
   a. *Explanation - After hearing "Thank you for calling, Please wait while we connect your call" the call is queued by the system and looks for an agent, but because there aren't any agents logged in the call will follow the "overflow on no agents" rule and cause the system to dial the number defined in the overflow rule*

If this test is successful it demonstrates that the ContactQ system can make and establish calls to external numbers

Agents Rule

ContactQ requires a agent "user number" to be assigned to each user account. This user number is different from and should not be confused with the agents extension number. A rule within the contact map defines which number range(s) can be assigned and used as the users "user numbers" Ensure that the "agents" rule within the Contact Map is set correctly so that it does not conflict with the numbering of the internal extension numbering of the system. The default rule of ^(2\d{3})$ is shown in the screenshot above and this covers anything beginning with 2 and that has a further 3 digits so this is effectively saying that the whole 2xxx range is going ti be used as the user number that are assigned to user accounts within ContactQ.

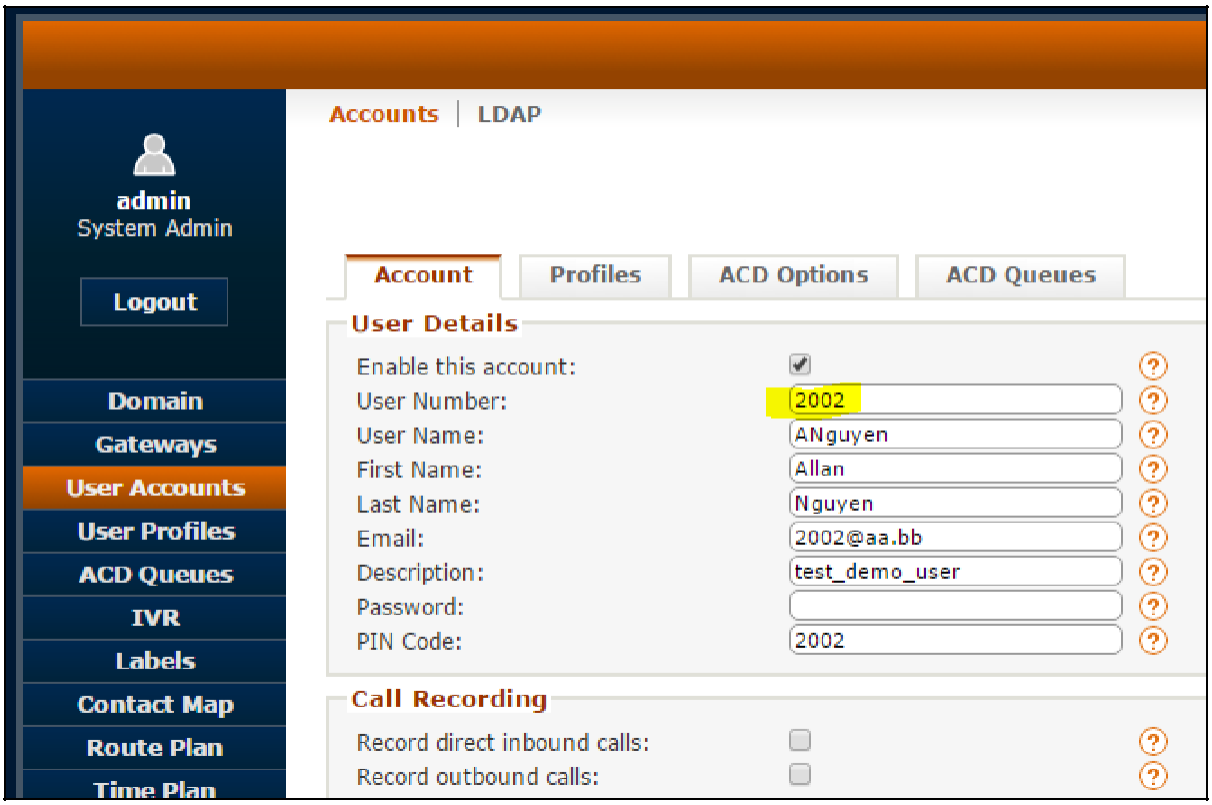
2xxx is quite a common range that is often used for internal PBX extensions - if this is the case then this rule will need to be changed so as not to conflict with the internal extension of the PBX. If the internal PBX extensions are not in this range then this rule can be left as it is.

For example where a PBX may use internal extensions in the ranges range 1xxx, 2xxx, 3xxx & 4xxx & in this case the agents rule might be changed to ^(5\d{3})$ to assign the agent user numbers the range of 5xxx

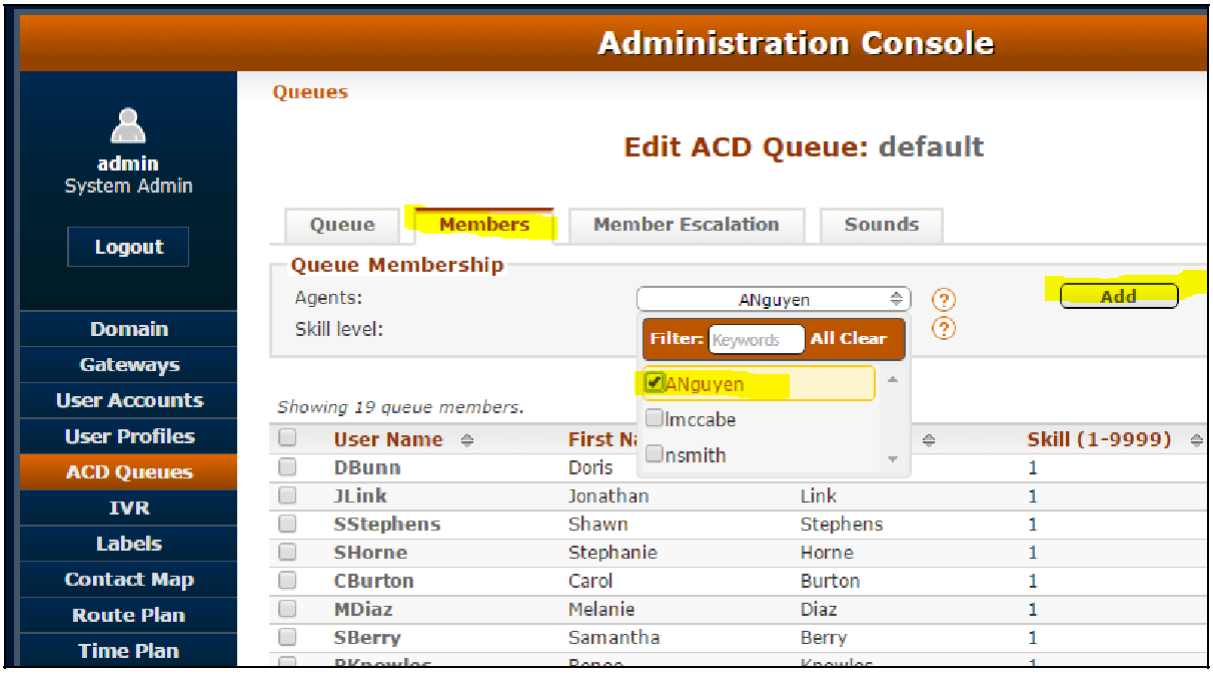
User Accounts

- Create a test user account & ensure that it is assigned the a valid user number that meets the agents rule described above

- Apply Changes

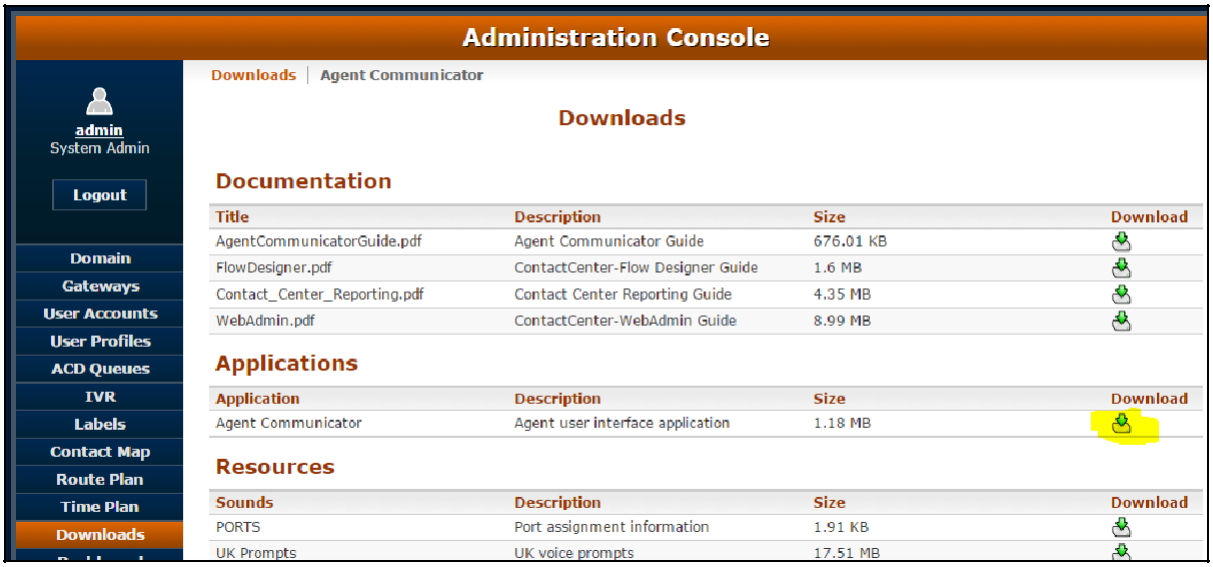


- Navigate to "ACD Queues" and edit the "default" queue
- Click on "Members" tab
- Find & check your test agent user account in the drop down and click Add Apply changes



- Download and install the Anet Communicator application
    - The Agent Commnicator is an application developed with Adobe Flex, If the computer you are installing on doesn't have it already you may need to download and install Adobe Air first

- https://get.adobe.com/air/



Log in using the Agent Communicator

- If this is the first time you've run the Agent Communicator you may be prompted to enter the server address of ContactQ
- Enter the username, password and the number of a PBX extension that is next to your computer running the Agent Communicator

With the agent account now logged in that is assigned to the default queue we can conduct some end to end testing

[TEST 6] Inbound call to logged in agent

TESTING INBOUND EXTERNAL CALLS [6] Inbound call to logged in agent

1. Place an inbound test call into the default queue
    a. If dialing from an external phone dial the external DDI number that is programmed to ring the default queue
    b. If dialing from a extension (Use different one than the one defined as the overflow destination) dial the trunk group access code followed by 1000
2. The call will enter the default queue and after hearing "Thank you for calling, Please wait while we connect your call" should do two things...
    a. Pop up the Agent Communicator app on your computer and present caller details such as queue name "default" and the callers CLI
    b. Ring the extension number that you entered when logging in the agent
3. Answer the call and check speech
    a. *Explanation - After hearing "Thank you for calling, Please wait while we connect your call" the call is queued by the system and looks for an agent, the system rings the agents extension and splashes the caller details on the screen. pon answering the agents extension the caller channel is bridged with the agents channel to complete the speech path*

If this test is successful it demonstrates that the ContactQ system can both receive calls from the PBX and establish calls to internal extension numbers numbers

[TEST 7] Outbound call from logged in agent

TESTING OUTBOUND INTERNAL CALLS [7] Outbound call from logged in agent

1. Enter the extension number of another extension in the dial box of the Agent Communicator
2. Click Dial
    a. The "Agents" extension should initially ring - Answer It
    b. The extension number that was dialed will now ring - Answer it and check speech

If this test is successful it demonstrates that an agent can establish a call with a back office extension

[TEST 8] Outbound call from logged in agent

TESTING OUTBOUND EXTERNAL CALLS [8] Outbound call from logged in agent

1. Enter the extension number of another extension in the dial box of the Agent Communicator
2. Click Dial
    a. The "Agents" extension should initially ring - Answer It
    b. The extension number that was dialed will now ring - Answer it and check speech

If this test is successful it demonstrates that an agent can establish a call with a back office extension