



Interactive Intelligence

CIC 2016 R2 Patch4

Configuration Guide

Performed By



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DOCUMENT REVISION HISTORY

<i>Version</i>	<i>Reason for Change</i>	<i>Date</i>	<i>Created/Updated by</i>
1.1	Initial Release	4/14/2016	Pradeep Gali

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1 Introduction

This configuration guide describes how to configure an Interactive Intelligence (ININ) CIC 2016 R2 P4 SERVER with an IntelePeer IP Trunk. The deployment model covered in this application note is an ININ CIC 2016 R2 SERVER with an IntelePeer IP Trunk connected to the PSTN.

The configuration of the ININ CIC 2016 R2 SERVER detailed in this document is based on a lab environment with a simple dial-plan used to ensure proper interoperability between the IntelePeer IP Trunk and the PSTN network.

Testing was performed by tekVizion Labs, an independent testing and certification facility, in accordance to ININ Certification Test Plan. Key features verified are:

- New services install processes
- Call capabilities (various features, basic call operations, local calling, domestic long distance calling and international calling)
- FAX
- Out-of-band DTMF
- Conference Calls

The configuration described in this document details the critical commands to have enabled for interoperability to be successful.

This Application Note details the configuration used for connectivity to the tekVizion PSTN network. This document serves as guidance for the integration, but does not guarantee interoperability for every use case or release combinations.

2 Validation Environment

2.1 Network Topology

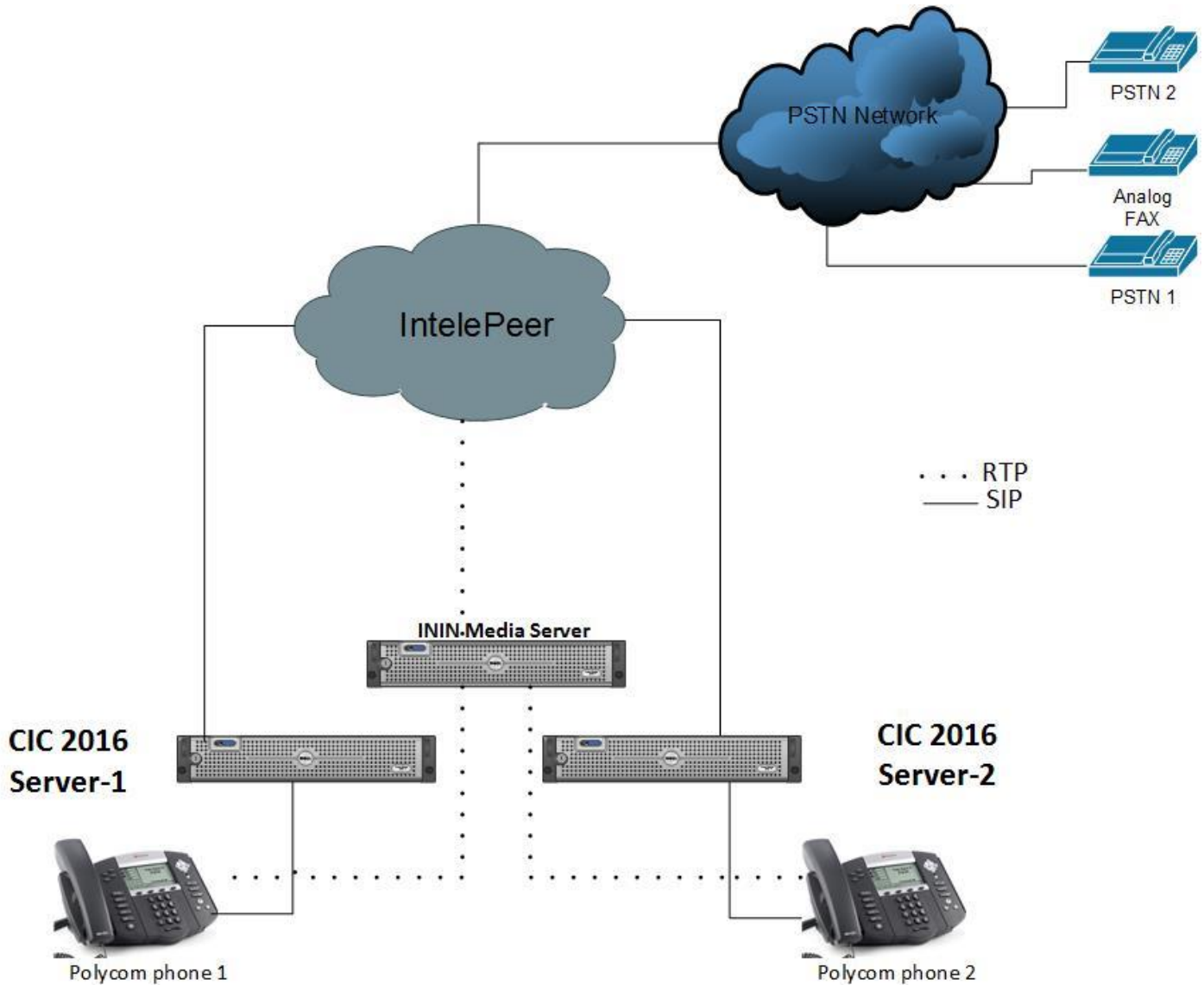


Figure 1: Network Topology

2.2 Hardware Components

- ININ CIC Media Server
- ININ CIC 2016 Servers
- Polycom IP 550 and IP 650 Phones

2.3 Software Requirements

- ININ CIC 2016 R2 Patch4

2.4 Features

2.4.1 Features Supported

- Voice calls using G.711 codec
- RFC 3261 support
- Calling number presentation / restriction
- Call conferencing
- Call transfer (attended, unattended & blind transfer)
- Call hold and resume
- Call forwarding
- CIC Server Switchover

2.4.2 Features Not Supported

- **Multiple Ports:** IntelePeer does not support Multiple Ports
- **SIP Authentication Support:** IntelePeer can only be connected as IP based and non-registering
- **WAN Phones:** IntelePeer does not support WAN phone provisioning

CIC Server Trunk Configuration

2.5 Trunk (Line) Configuration

2.5.1 Set Server IP Address

1. Navigate **Start > Control Panel > Network and Internet > View Network Status and Tasks > Change Adapter Settings > Ethernet > Ethernet Status > Properties > Internet Protocol Version 4(TCP/IP4) > Properties**
2. **Use the Following IP Address:** Selected
3. Set **IP Address:** Enter the IP address assigned for the ININ CIC 2016 server. 10.64.4.4 is used in this example.
4. Set **Subnet Mask:** 255.255.0.0 is given for this example
5. Set **Default Gateway:** 10.64.1.1 is used for this example
6. Set **Preferred DNS Server:** 10.64.3.39 is used for this example
7. Set **Alternate DNS Server:** Enter the DNS server address for Enterprise network. 10.64.1.3 is used for this example.
8. Click **OK**

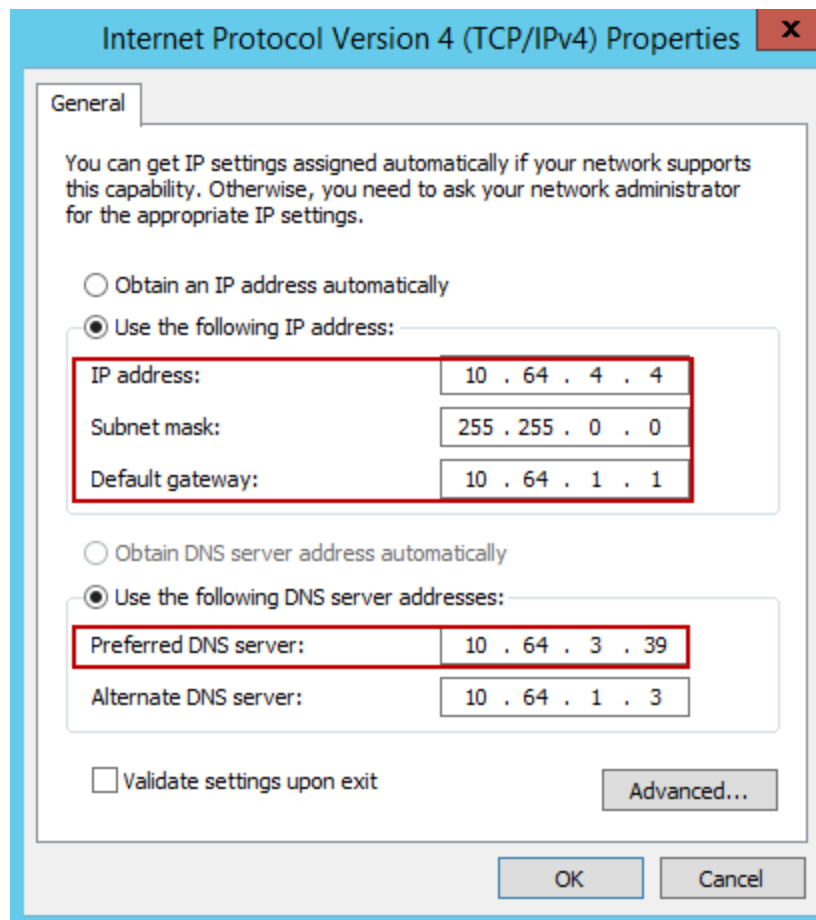


Figure 2: Server IP Address

2.5.2 SIP Line Configuration

1. In **Interaction Administrator**: Navigate to CICSERVER1(Name of IC Server) – 2016 > R2 Lines
2. Right-click on **Lines** and select **New**
3. Set **Line Name**: IntelePeer is given for this example

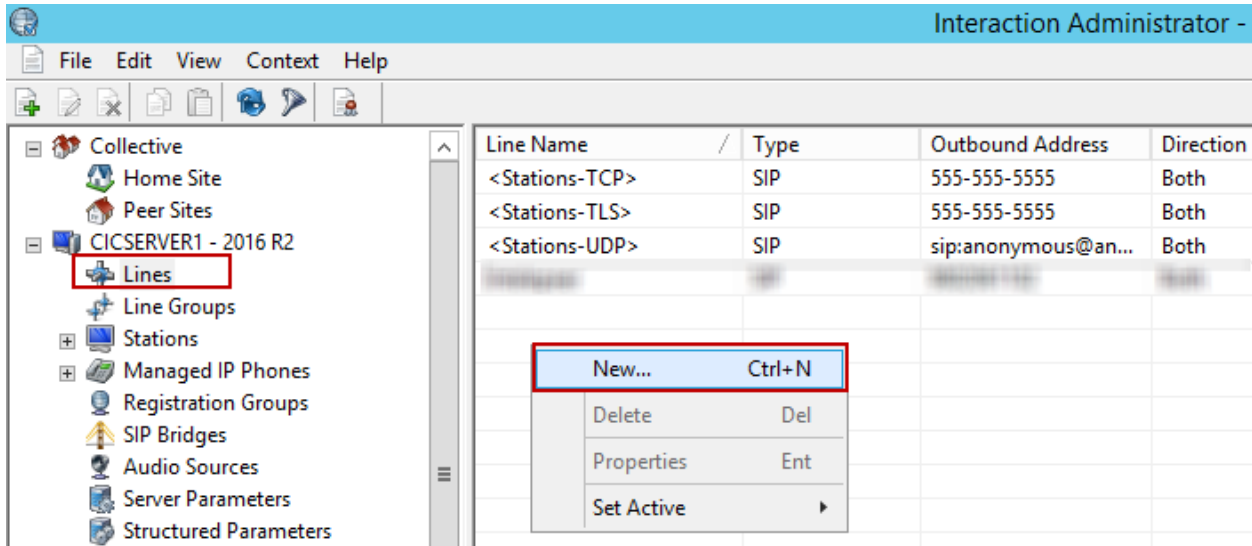
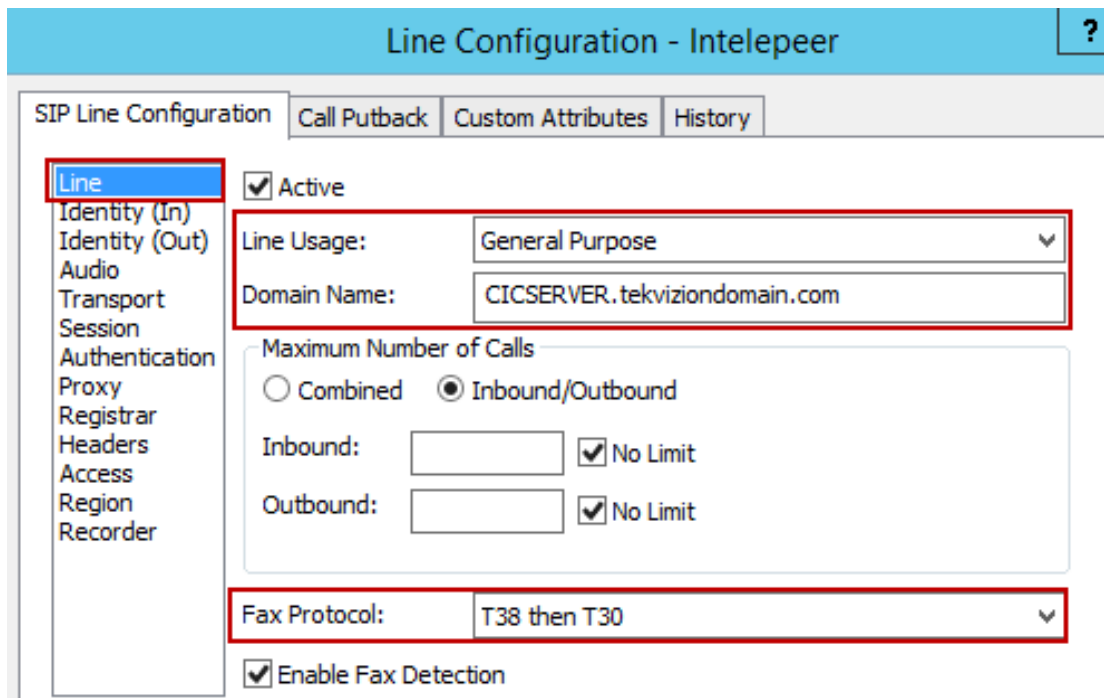


Figure 3: Line Configuration

2.5.2.1 Line Configuration

1. Select the **SIP Line Configuration** tab
2. In left navigation pane, select **Line**
3. Set **Line Usage**: *General Purpose* is selected from the drop down menu
4. Set **Domain Name**: Enter the FQDN of the server provided at the domain controller. CICSERVER.tekvizionlabs.com is given for this example.
5. Set **Fax Protocol**: T38 then T30 were selected for this example
6. Check **Enable Fax Detection**. It supports both Fax Protocols T38 & T30. This can be changed based on the carrier requirement.
7. All the other values are set to default values



The screenshot shows the 'Line Configuration - Intelepeer' interface. The left navigation pane has 'Line' selected. The main configuration area includes the following settings:

- Active
- Line Usage: General Purpose (dropdown menu)
- Domain Name: CICSERVER.tekviziondomain.com (text input)
- Maximum Number of Calls:
 - Combined
 - Inbound/Outbound
 - Inbound: [] No Limit
 - Outbound: [] No Limit
- Fax Protocol: T38 then T30 (dropdown menu)
- Enable Fax Detection

Figure 4: Line Configuration – Cont.

Line Configuration - Intelepeer ?

SIP Line Configuration
Call Putback
Custom Attributes
History

Line

Identity (In)

Identity (Out)

Audio

Transport

Session

Authentication

Proxy

Registrar

Headers

Access

Region

Recorder

Enable Fax Detection

Maximum Number of Faxes

Combined Inbound/Outbound

Inbound: No Limit

Outbound: No Limit

Auto Disconnect when Silence Detected in Voice Mail

Silence Time (ms):

Call Analysis Type: ▼

Allow Deferred Answer

Figure 5: Line Configuration – Cont.

Line Configuration - Intelepeer ?

SIP Line Configuration
Call Putback
Custom Attributes
History

Line

Identity (In)

Identity (Out)

Audio

Transport

Session

Authentication

Proxy

Registrar

Headers

Access

Region

Recorder

Outbound: No Limit

Auto Disconnect when Silence Detected in Voice Mail

Silence Time (ms):

Call Analysis Type: ▼

Allow Deferred Answer

Playback Early Media to Inbound Calls

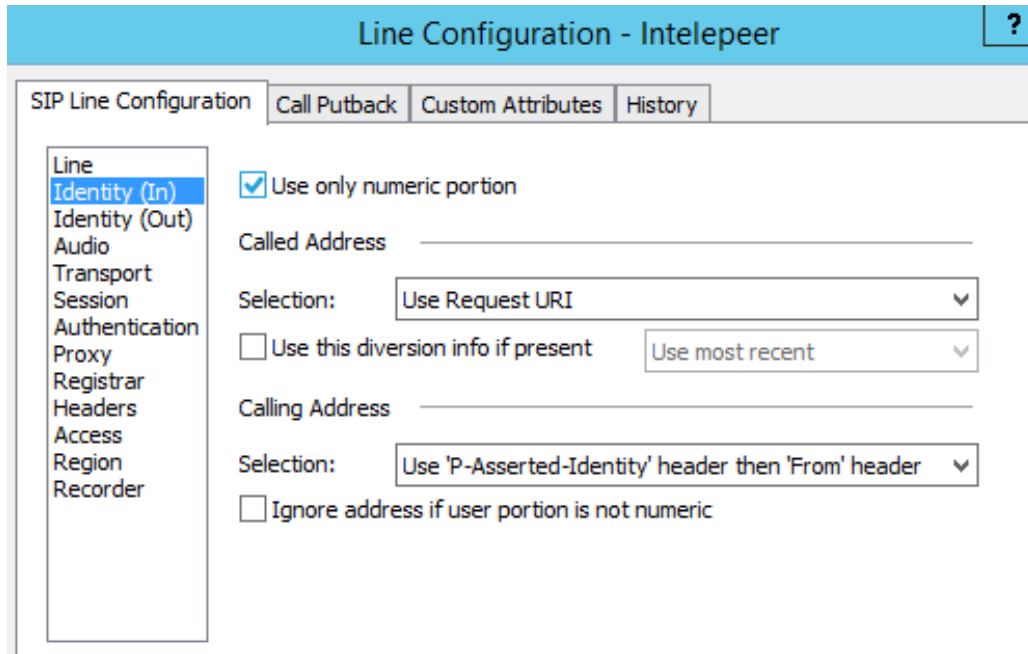
Enable SIP Prack/Update for EarlyMedia Support

Max Probation Time (s):

Figure 6: Line Configuration – Cont.

2.5.2.2 Identity (In)

1. In left navigation pane, click **Identity (In)**
2. All the values are set to default values



Line Configuration - Intelepeer ?

SIP Line Configuration | Call Putback | Custom Attributes | History

Line
Identity (In)
 Identity (Out)
 Audio
 Transport
 Session
 Authentication
 Proxy
 Registrar
 Headers
 Access
 Region
 Recorder

Use only numeric portion

Called Address _____

Selection: Use Request URI ▼

Use this diversion info if present Use most recent ▼

Calling Address _____

Selection: Use 'P-Asserted-Identity' header then 'From' header ▼

Ignore address if user portion is not numeric

Figure 7: Line Configuration – Identity (In)

2.5.2.3 Identity (Out)

1. In left navigation pane, select **Identity (Out)**
2. Set **Line Value 1**
3. Set **Name**: INTELEPEER is given for this example
4. Set **Address**: Enter the pilot number of the DID range assigned by ITSP
5. Click **OK**
6. All the other values are set to default values

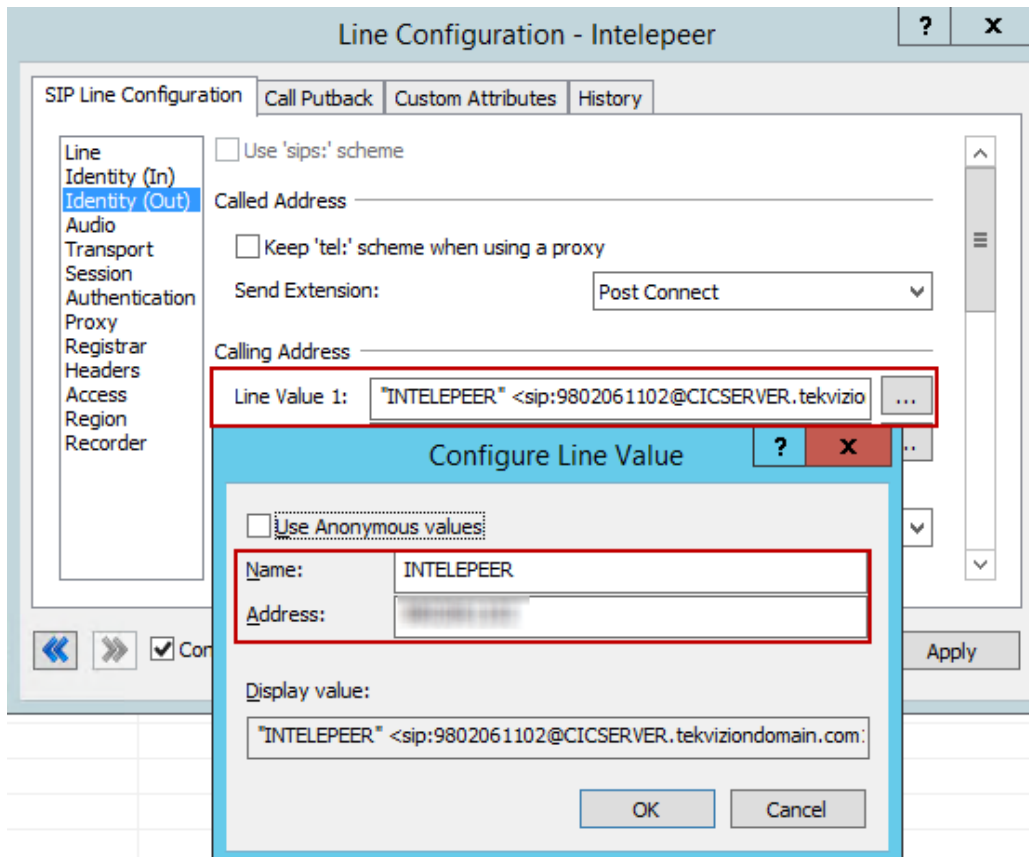


Figure 8: Line Configuration – Identity (Out)

Line Configuration - Intelepeer ?

SIP Line Configuration
Call Putback
Custom Attributes
History

- Line
- Identity (In)
- Identity (Out)
- Audio
- Transport
- Session
- Authentication
- Proxy
- Registrar
- Headers
- Access
- Region
- Recorder

Calling Address (Normal Calls)

'From' Header Address:

'From' Header Name:

'P-Asserted-Identity' Header Address:

'P-Asserted-Identity' Header Name:

Diverted Header Address:

Diverted Header Name:

Calling Address (Diverted Calls)

'From' Header Address:

Figure 9: Line Configuration – Identity (Out) – Cont.

Line Configuration - Intelepeer ?

SIP Line Configuration
Call Putback
Custom Attributes
History

- Line
- Identity (In)
- Identity (Out)
- Audio
- Transport
- Session
- Authentication
- Proxy
- Registrar
- Headers
- Access
- Region
- Recorder

Diverted Header Name:

Calling Address (Diverted Calls)

'From' Header Address:

'From' Header Name:

'P-Asserted-Identity' Address:

'P-Asserted-Identity' Name:

Diverted Header Address:

Diverted Header Name:

Figure 10: Line Configuration – Identity (Out) – Cont.

2.5.2.4 Audio

1. In left navigation pane, select **Audio**
2. Set **Audio Path**: *Always In* is selected from the drop down menu. This disables the Media Bypass.
3. Set **DTMF Type**: *RFC2833 if supported, otherwise inband* is selected from the drop down menu
4. Set **DTMF Payload**: 101 is selected for this example
5. All the values are set to default values

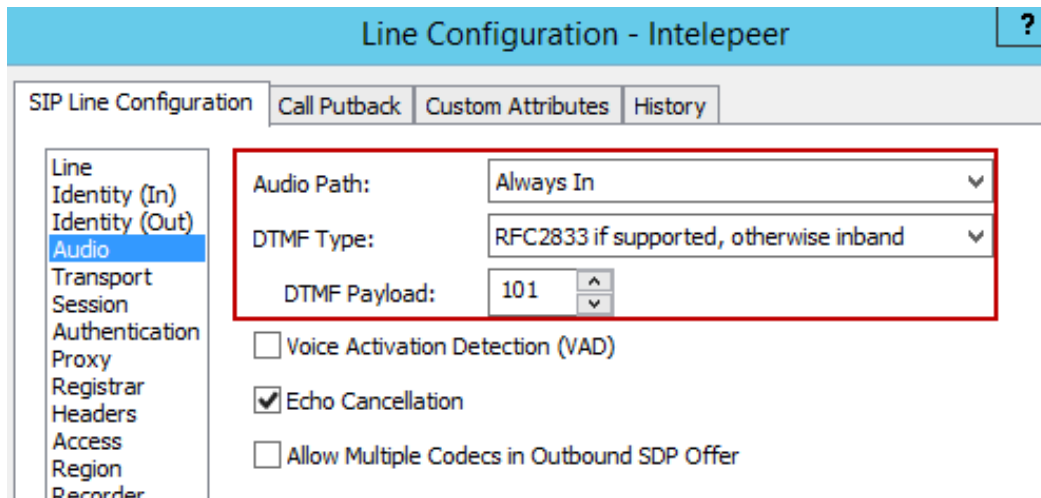


Figure 11: Line Configuration – Audio

2.5.2.5 Transport

1. In left navigation pane, select **Transport**
2. All the values are set to default values

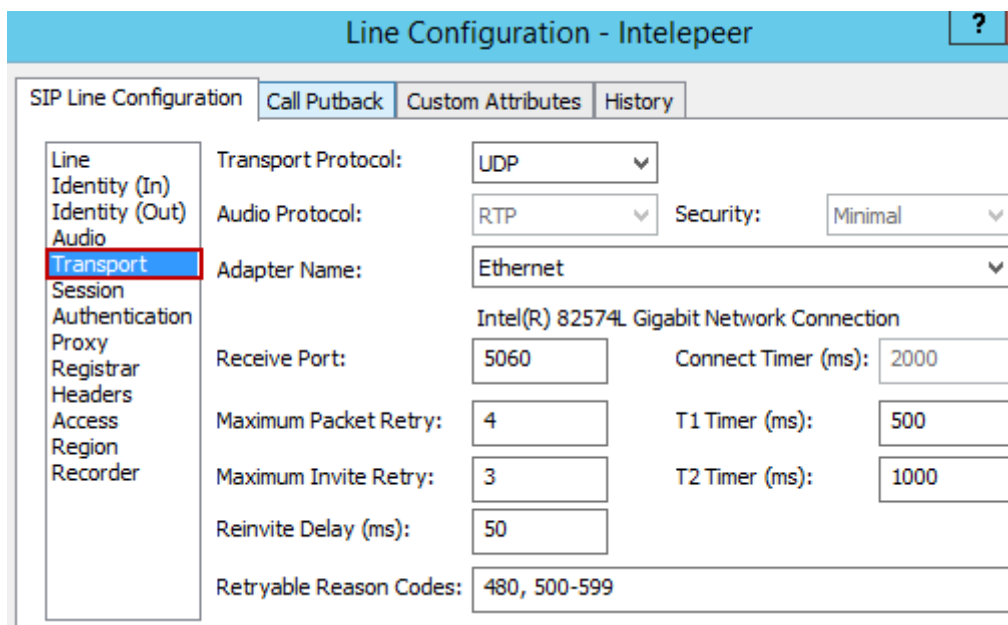


Figure 12: Line Configuration – Transport

The screenshot shows the 'SIP Line Configuration' window with the 'Transport' tab selected. The left-hand navigation pane lists various configuration categories, with 'Transport' highlighted in blue. The main configuration area contains the following settings:

- Reinvite Delay (ms): 50
- Retryable Reason Codes: 480, 500-599
- Retryable Cause Codes: 1-5,25,27,28,31,34,38,41,42,44,46,62,63,79,91,96,9
- SIP DSCP Value: 18 (24, 011000) CS3
- Inbound Progress Timer (ms): 5000
- No Inbound Progress Timer
- SIP Answer Delay (ms): 500

Figure 13: Line Configuration – Transport – Cont.

2.5.2.6 Session

1. In left navigation pane, select **Session**
2. All the values are set to default values

The screenshot shows the 'SIP Line Configuration' window with the 'Session' tab selected. The left-hand navigation pane lists various configuration categories, with 'Session' highlighted in blue. The main configuration area contains the following settings:

- Use SIP Session Timer
- SIP Session Timeout: 60 seconds
- Disconnect on Broken RTP
- Media Timing: Normal
- Media reINVITE Timing: Normal
- Terminate Analysis on Connect
- Disable Media Server Passthru
- ASR Enabled

Figure 14: Line Configuration – Session

2.5.2.7 Authentication

1. In left navigation pane, select **Authentication**
2. All the values are set to default values

Figure 15: Line Configuration – Authentication

2.5.2.8 Proxy

1. In left navigation pane, select **Proxy**
2. Set **Address**: Enter the Address of the next hop (i.e. IntelePeer SIP Trunk LAN IP Address). 192.168.1.57 is used for this example.
3. Set **Port Number**: 5060 is given for this example
4. Click **OK**

Address	Port
68.68.123.173	5060

Figure 16: Line Configuration – Proxy

2.5.2.9 Registrar

1. In left navigation pane, select **Registrar**
2. All the values are set to default values

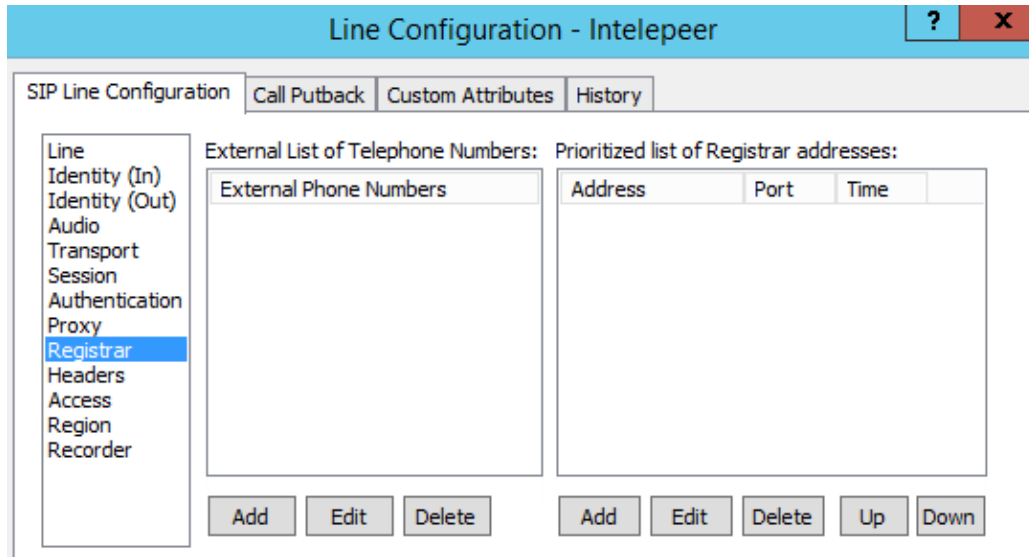


Figure 17: Line Configuration – Registrar

2.5.2.10 Headers

1. In left navigation pane, select **Headers**
2. All the values are set to default values

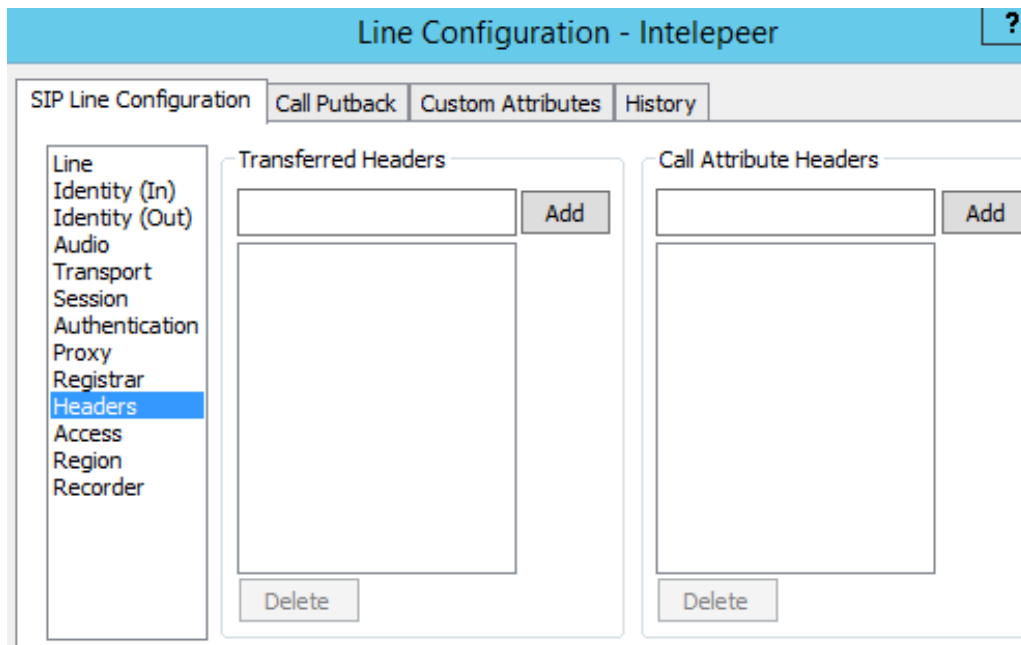


Figure 18: Line Configuration – Headers

2.5.2.11 Access

1. In left navigation pane, select **Access**
2. Under **All Computers will be:** Check **Denied Access**
3. Click **Add**
4. Set **Address:** Enter the Address of the next hop (i.e. IntelePeer SIP Trunk IP Address). 192.168.1.57 is used for this example.

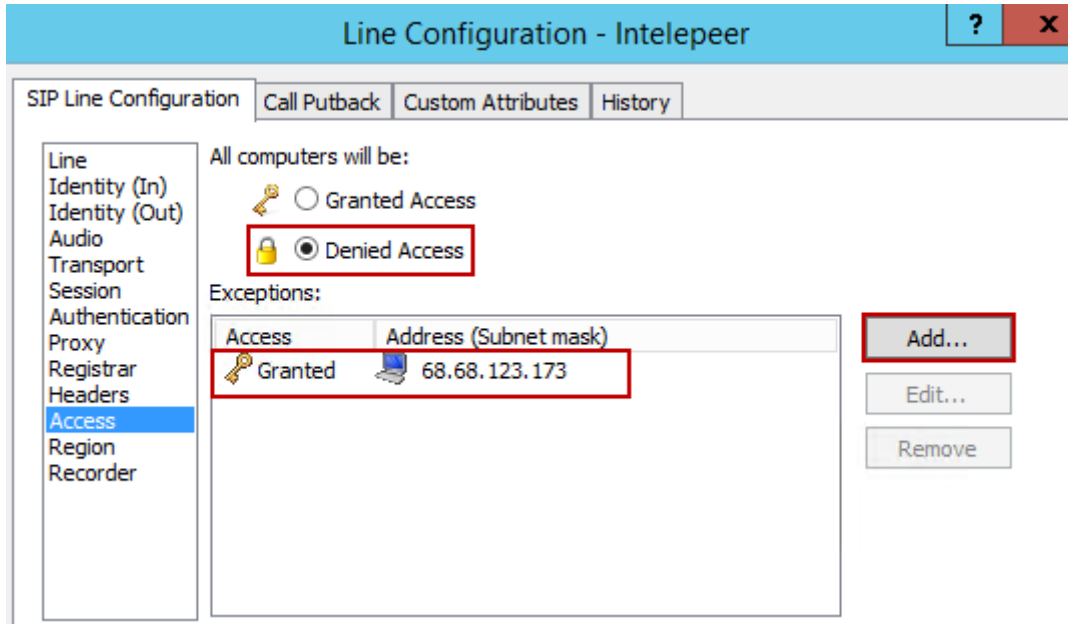


Figure 19: Line Configuration – Access

2.5.2.12 Region

1. In left navigation pane, select **Region**
2. All the values are set to default values as shown in the figure below

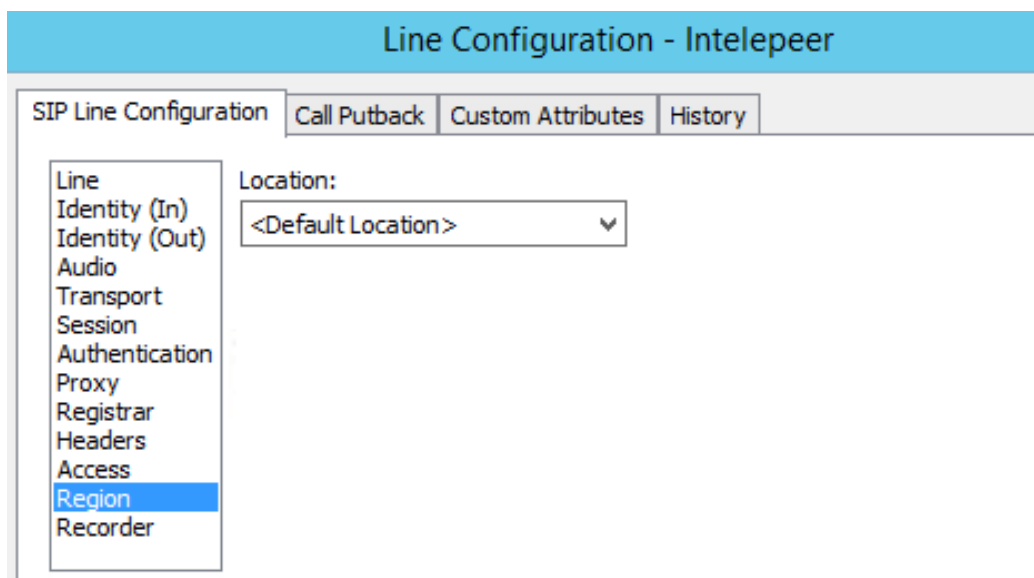


Figure 20: Line Configuration – Region

2.5.2.13 Recorder

1. In left navigation pane, select **Recorder**
2. All the values are set to default values

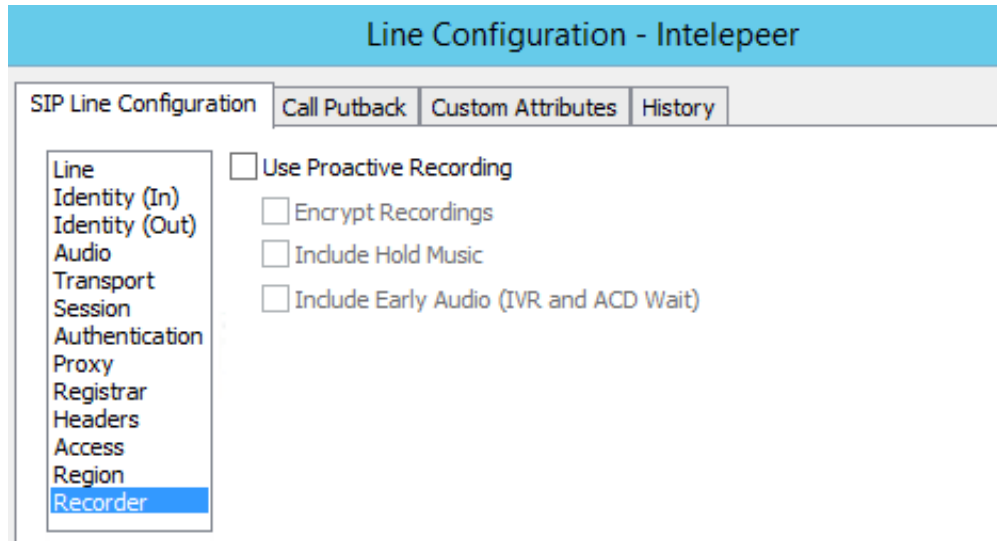


Figure 21: Line Configuration – Recorder

2.5.2.14 Call Putback

2.5.2.14.1 Sending SIP REFER Messages Disabled

1. Select the **Call Putback** tab
2. **Enable sending SIP REFER messages** is unchecked for Internal (Blind & Consultative) Transfers

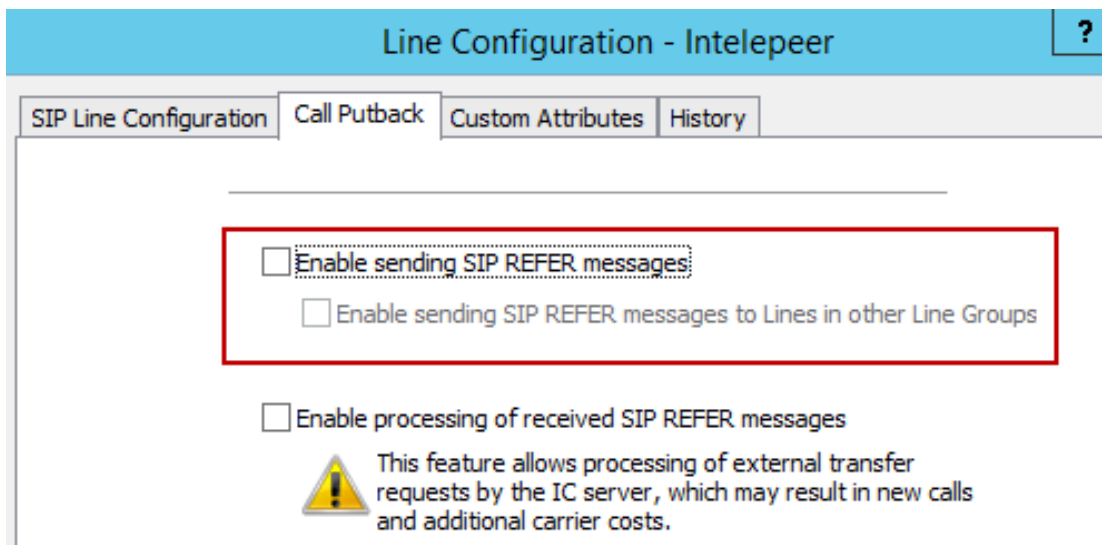


Figure 22: Line Configuration – Call Putback

2.5.2.15 Custom Attributes

1. Select the **Custom Attributes** tab
2. All the values are set to default values

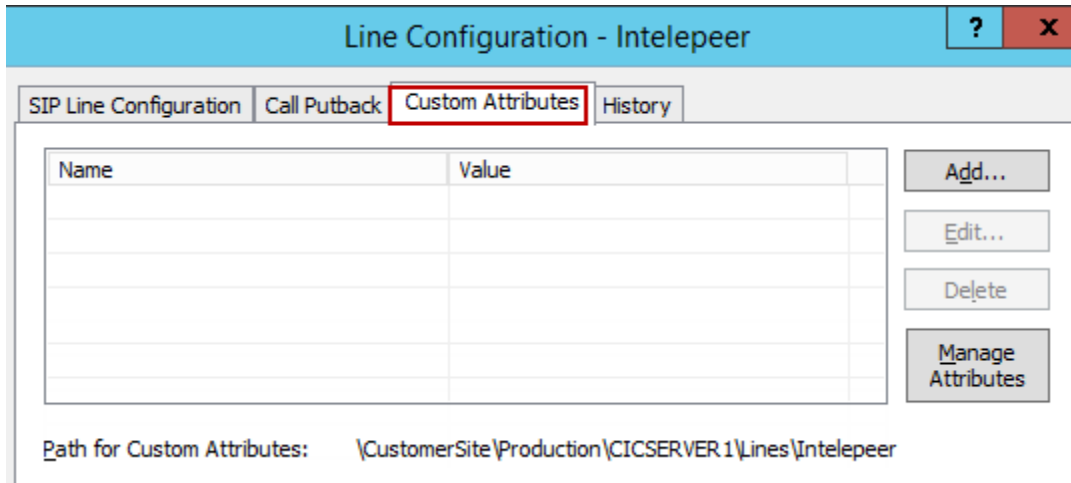


Figure 23: Line Configuration – Custom Attributes

2.5.3 Line Groups

1. Navigate to **CICSERVER1 > Line Groups**
2. Right-Click and select **New**
3. Set **Enter the Group Name:** INTELEPEER Group is given for this example
4. Click **OK**

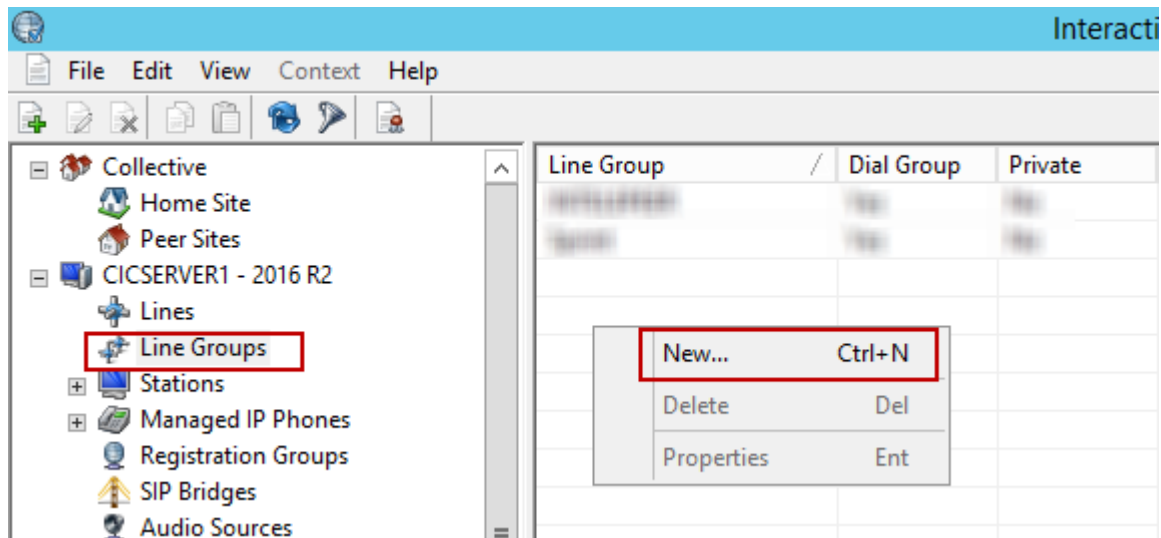


Figure 24: Line Groups

2.5.3.1 Line Group Configuration

1. **Use for Reporting:** Checked
2. **Use as Dial Group:** Checked
3. Under **Hunt Selection Method:** Select *Descending Sequential*
4. Click **Apply**

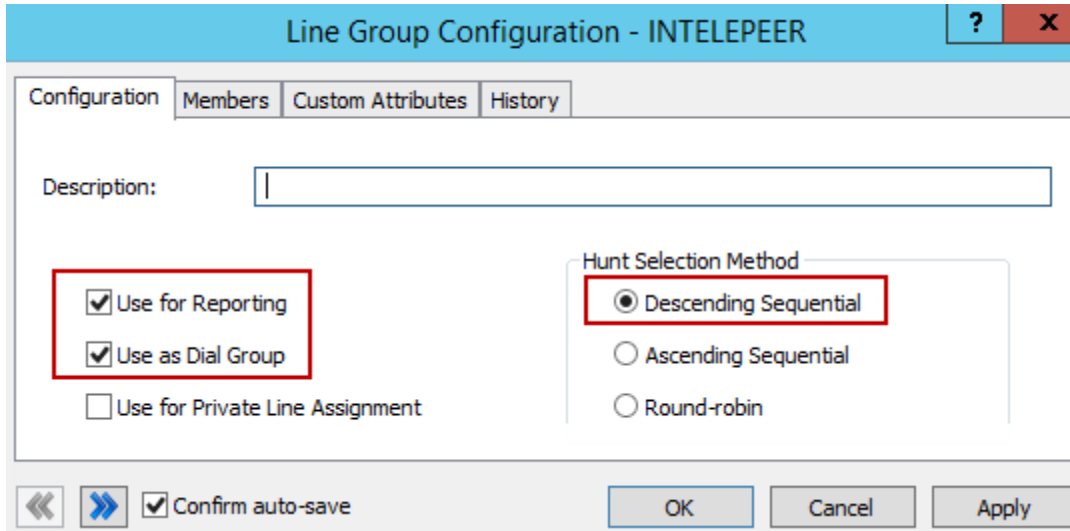


Figure 25: Line Group Configuration

2.5.3.2 Members

1. Select the **Members** tab
2. From **Available Lines:** Select IntelePeer and Click **Add** →
3. The **IntelePeer** Line should be moved to “Currently Selected Lines” as shown below
4. Click **Apply**

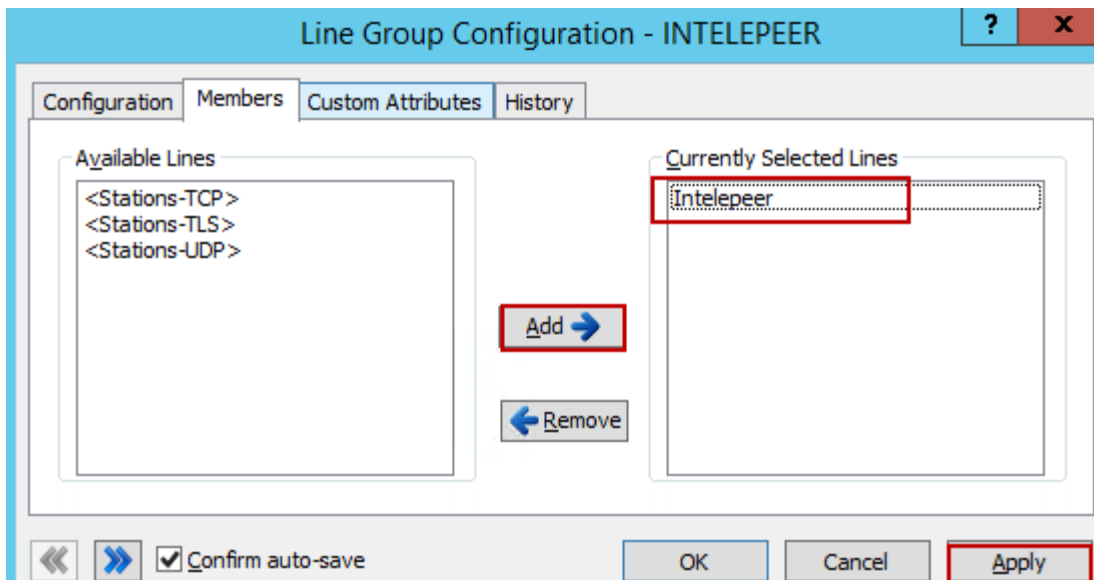


Figure 26: Line Groups – Members

2.5.4 Dial Plan Configuration

1. Navigate to system **Configuration > Phone numbers > Configuration**
2. Under **Regional Dial Plan**: Click Dial Plan
3. To route the 10 digit outbound call out from IC Server to Carrier, the Dial plan needs to be configured as shown below. To use this dial plan, dial the access code (9) followed by PSTN number.
4. Click **Add Group** and add the Line Group added in Section 3.1.3

Regional Dial Plan - Edit Pattern

Input Pattern: -> Standardized Number:

Location Filter: Default Dial String:

List Name: Display String:

Classification: Edit Base:

Account Code Verification Components:

Description:

Dial Group	Filter	Classification	Dial String
INTELEPEER	<All>	Long Distance	+XXXXXXXXXX

Buttons: Add Group, Edit, Remove, Up, Down

Navigation: << >> **OK** Cancel Help

Figure 27: Regional Dial Plan