Avaya Solution & Interoperability Test Lab

Application Notes for IPC UnigyV2 with Avaya Aura® Communication Manager 6.0.1 using EC500 Features and QSIG Trunks – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for IPC UnigyV2 to interoperate with Avaya Aura® Communication Manager 6.0.1 using EC500 features and QSIG trunks.

IPC UnigyV2 is a trading communication solution. In the compliance testing, IPC UnigyV2 used E1 QSIG trunks to connect to Avaya Aura® Communication Manager.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for IPC UnigyV2 to interoperate with Avaya Aura® Communication Manager 6.0.1 using QSIG trunks.

The purpose of the compliance test is to verify using EC500 features on Avaya Aura® Communication Manager to terminate calls on IPC turrets.

IPC UnigyV2 is a trading communication solution. In the compliance testing, IPC UnigyV2 used E1 QSIG trunks to connect to Avaya Aura® Communication Manager.

2. General Test Approach and Test Results

The feature test cases were performed manually. Calls were manually established to Avaya H.323 phones and terminated on IPC turret users via E1 QSIG trunk.

The serviceability test was skipped during this compliance test.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The interoperability compliance test only included EC500 features.

The feature testing included basic call, G.711MU, hold/resume, call forwarding unconditional/ring-no-answer/busy, blind/attended transfer, conference, and long duration calls.

2.2. Test Results

All test cases were executed and passed.

2.3. Support

Technical support on IPC UnigyV2 can be obtained through the following:

- **Phone:** (800) NEEDIPC, (203) 339-7800
- **Email:** systems.support@ipc.com

3. Reference Configuration

As shown in the test configuration below, IPC UnigyV2 at the Remote Site consists of the Media Manager, Converged Communication Manager, Media Gateway, and Turrets. The Media Manager and Converged Communication Manager are typically deployed on separate servers. In the compliance testing, the same server hosted the Media Manager and Converged Communication Manager. There is a physical connection between the DS1 circuit pack on Communication Manager and the IPC Media Gateway. E1 QSIG trunks are used from IPC UnigyV2 to Communication Manager.

A five digit Uniform Dial Plan (UDP) was used to facilitate dialing between the Avaya and IPC sites. Unique extension ranges were associated with Communication Manager users at the Avaya site (4200x), and IPC turret users at the IPC site (7205x).

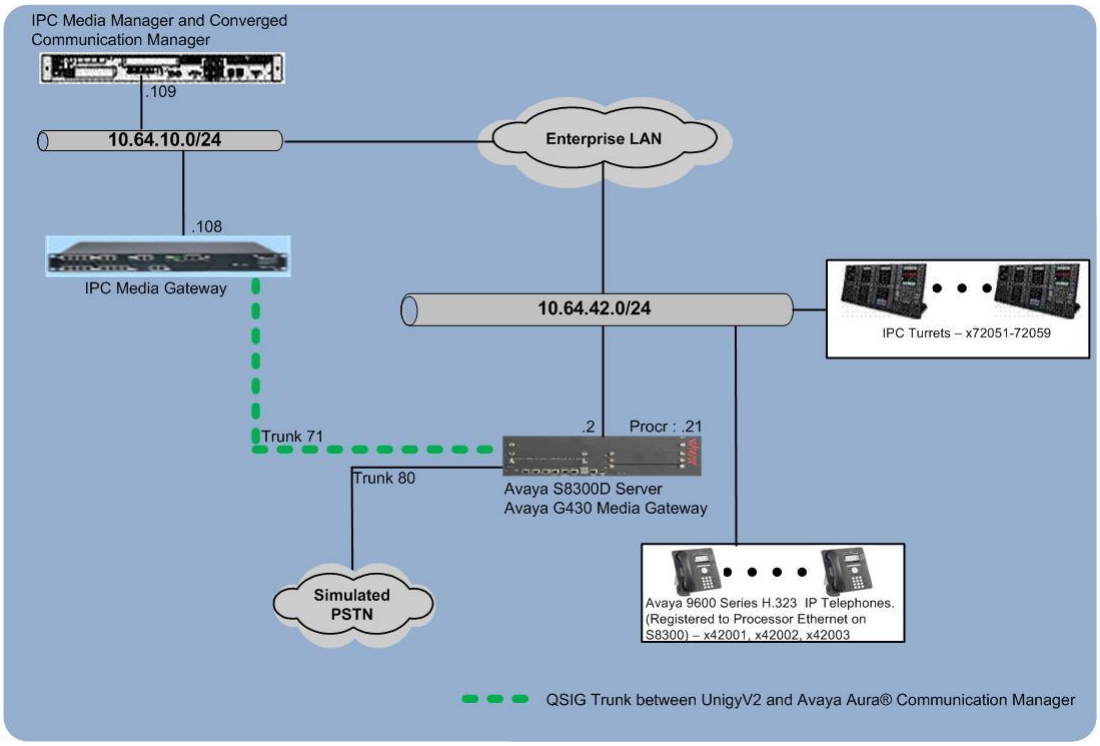


Figure 1: Test Configuration of IPC UnigyV2 with Avaya Aura® Communication Manager on S8300D Server

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya Aura® Communication Manager on Avaya S8300D Server	6.0.1 (R016x.00.1.510.1-19940)
Avaya G430 Media Gateway • MM710AP DS1 Interface	31.26 HW02 FW019
Avaya 96xx IP Telephone (H.323)	3.1
IPC UnigyV2 • Media Manager • Converged Communication Manage • Media Gateway • Turrets	 02.00.00.00.1571 02.00.00.00.1571 6.40A.042.004 02.00.00.00.1571

5. Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring Communication Manager. The procedures include the following areas:

- Verify Communication Manager license
- Administer system parameters features
- Administer DS1 circuit pack
- Administer ISDN trunk group
- Administer ISDN signaling group
- Administer trunk group members
- Administer route pattern
- Administer public unknown numbering
- Administer uniform dial plan
- Administer AAR analysis
- Administer Off-PBX-telephone

5.1. Verify Communication Manager License

Log into the System Access Terminal (SAT) to verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the "display system-parameters customer-options" command. Navigate to **Page 4**, and verify that **ISDN-PRI** is enabled, as shown below.

```
display system-parameters customer-options                      Page   4 of  11
                               OPTIONAL FEATURES

   Emergency Access to Attendant? y                               IP Stations? y
            Enable 'dadmin' Login? y
            Enhanced Conferencing? y                       ISDN Feature Plus? n
                  Enhanced EC500? y        ISDN/SIP Network Call Redirection? y
    Enterprise Survivable Server? n                           ISDN-BRI Trunks? y
       Enterprise Wide Licensing? n                                 ISDN-PRI? y
              ESS Administration? y                Local Survivable Processor? n
         Extended Cvg/Fwd Admin? y                      Malicious Call Trace? y
     External Device Alarm Admin? y                  Media Encryption Over IP? n
  Five Port Networks Max Per MCC? n     Mode Code for Centralized Voice Mail? n
                Flexible Billing? n
   Forced Entry of Account Codes? y                  Multifrequency Signaling? y
      Global Call Classification? y           Multimedia Call Handling (Basic)? y
             Hospitality (Basic)? y        Multimedia Call Handling (Enhanced)? y
 Hospitality (G3V3 Enhancements)? y                Multimedia IP SIP Trunking? y
                      IP Trunks? y

          IP Attendant Consoles? y
        (NOTE: You must logoff & login to effect the permission changes.)
```

Navigate to **Page 8**, and verify the QSIG optional features are enabled, as shown below.

```
display system-parameters customer-options                    Page   8 of  11
                            QSIG OPTIONAL FEATURES

                                        Basic Call Setup? y
                               Basic Supplementary Services? y
                                      Centralized Attendant? y
                                      Interworking with DCS? y
                         Supplementary Services with Rerouting? y
                                Transfer into QSIG Voice Mail? y
                                          Value-Added (VALU)? y
```

5.2. Administer System Parameters Features

Use the "change system-parameters features" command to allow for trunk-to-trunk transfers.

This feature is needed to be able to transfer an incoming call from IPC back out to IPC (incoming trunk to outgoing trunk), and to transfer an outgoing call to IPC to another outgoing trunk to IPC (outgoing trunk to outgoing trunk). For ease of compliance testing, the **Trunk-to-Trunk Transfer** field was set to "all" to enable all trunk-to-trunk transfers on a system wide basis. Note that this feature poses significant security risk, and must be used with caution. For alternatives, the trunk-to-trunk feature can be implemented on the Class Of Restriction or Class Of Service levels. Refer to [1] for more details.

```
change system-parameters features                             Page   1 of  19
                            FEATURE-RELATED SYSTEM PARAMETERS
                               Self Station Display Enabled? n
                                    Trunk-to-Trunk Transfer: all
                 Automatic Callback with Called Party Queuing? n
    Automatic Callback - No Answer Timeout Interval (rings): 3
                         Call Park Timeout Interval (minutes): 10
        Off-Premises Tone Detect Timeout Interval (seconds): 20
                                  AAR/ARS Dial Tone Required? y

              Music (or Silence) on Transferred Trunk Calls? no
                       DID/Tie/ISDN/SIP Intercept Treatment: attd
    Internal Auto-Answer of Attd-Extended/Transferred Calls: transferred
                  Automatic Circuit Assurance (ACA) Enabled? n




            Abbreviated Dial Programming by Assigned Lists? n
       Auto Abbreviated/Delayed Transition Interval (rings): 2
                    Protocol for Caller ID Analog Terminals: Bellcore
    Display Calling Number for Room to Room Caller ID Calls? n
```

5.3. Administer DS1 Circuit Pack for QSIG Trunks to IPC

Use the "add ds1 x" command, where "x" is the slot number of the DS1 circuit pack with physical connectivity to IPC. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Name:** A descriptive name.
- **Line Coding:** "hdb3"
- **Signaling Mode:** "isdn-pri"
- **Connect:** "pbx"
- **Interface:** "peer-master"
- **Peer Protocol:** "Q-SIG"
- **Side:** "b"
- **Interface Companding:** "mulaw"
- **CRC:** "y"
- **Channel Numbering:** "timeslot"

```
change ds1 1v2                                                Page   1 of   1
                              DS1 CIRCUIT PACK

            Location: 001V2                          Name: QSIG to Unigy
            Bit Rate: 2.048                   Line Coding: hdb3

      Signaling Mode: isdn-pri
             Connect: pbx                        Interface: peer-master
   TN-C7 Long Timers? n                      Peer Protocol: Q-SIG
Interworking Message: PROGress                        Side: b
Interface Companding: mulaw                           CRC? y
           Idle Code: 11111111           Channel Numbering: timeslot
                                DCP/Analog Bearer Capability: 3.1kHz

                                            T303 Timer(sec): 4
                                           Disable Restarts? n

      Slip Detection? n                 Near-end CSU Type: other

   Echo Cancellation? n
```

5.4. Administer ISDN Trunk Group

Administer an ISDN trunk group to interface with IPC. Use the "add trunk-group n" command, where "n" is an available trunk group number. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Group Type:** "isdn"
- **Group Name:** A descriptive name.
- **TAC:** An available trunk access code.
- **Carrier Medium:** "PRI/BRI"
- **Service Type:** "tie"

```
change trunk-group 71                                          Page   1 of  21
                                TRUNK GROUP

Group Number: 71                    Group Type: isdn          CDR Reports: n
  Group Name: E1QSIG-Unigy                COR: 1        TN: 1        TAC: 1071
   Direction: two-way         Outgoing Display? n          Carrier Medium: PRI/BRI
 Dial Access? n               Busy Threshold: 255  Night Service:
Queue Length: 0
Service Type: tie                    Auth Code? n            TestCall ITC: rest
                         Far End Test Line No:
TestCall BCC: 4
```

Navigate to **Page 2**. For **Supplementary Service Protocol**, enter "b" for QSIG. For **Digit Handling (in/out)**, enter "enbloc/enbloc". Retain the default values for the remaining fields.

```
change trunk-group 71                                          Page   2 of  21
      Group Type: isdn

TRUNK PARAMETERS
         Codeset to Send Display: 6     Codeset to Send National IEs: 6
        Max Message Size to Send: 260
  Supplementary Service Protocol: b     Digit Handling (in/out): enbloc/enbloc

            Trunk Hunt: cyclical
                                                  Digital Loss Group: 13
Incoming Calling Number - Delete:     Insert:                 Format: unk-unk
              Bit Rate: 1200         Synchronization: async    Duplex: full
 Disconnect Supervision - In? y  Out? n
 Answer Supervision Timeout: 0
          Administer Timers? n        CONNECT Reliable When Call Leaves ISDN? n
             XOIP Treatment: auto    Delay Call Setup When Accessed Via IGAR? n
```

Navigate to **Page 3**. Enable **Send Name**, **Send Calling Number**, and **Send Called/Busy/Connected Number**. For **Format**, enter "private".

```
change trunk-group 71                                          Page   3 of  21
TRUNK FEATURES
          ACA Assignment? n            Measured: none      Wideband Support? n
                                     Internal Alert? n       Maintenance Tests? y
                                   Data Restriction? n     NCA-TSC Trunk Member: 30
                                          Send Name: y      Send Calling Number: y
            Used for DCS? n              Hop Dgt? n     Send EMU Visitor CPN? n
   Suppress # Outpulsing? n    Format: private
 Outgoing Channel ID Encoding: preferred     UUI IE Treatment: service-provider

                                                 Replace Restricted Numbers? n
                                                Replace Unavailable Numbers? n
                                          Send Called/Busy/Connected Number: y
                                                  Hold/Unhold Notifications? y
             Send UUI IE? y     Modify Tandem Calling Number: no
               Send UCID? n
 Send Codeset 6/7 LAI IE? y                          Ds1 Echo Cancellation? n

    Apply Local Ringback? n
 Show ANSWERED BY on Display? y
                            Network (Japan) Needs Connect Before Disconnect? n
 DSN Term? n
```

5.5. Administer ISDN Signaling Group

Administer an ISDN signaling group for the new trunk group to use for signaling. Use the "add signaling-group n" command, where "n" is an available signaling group number. For **Primary D-Channel**, enter the slot number for the DS1 circuit pack from **Section 5.3** and port "16". Set desired values for **Max number of NCA TSC** and **Max number of CA TSC**.

For **Trunk Group for NCA TSC** and **Trunk Group for Channel Selection**, enter the ISDN trunk group number from **Section 5.4**. For **TSC Supplementary Service Protocol**, enter "b" for QSIG. Retain the default values for the remaining fields.

```
change signaling-group 71                                      Page   1 of   1
                              SIGNALING GROUP

 Group Number: 71             Group Type: isdn-pri
                     Associated Signaling? y          Max number of NCA TSC: 30
                        Primary D-Channel: 001V216     Max number of CA TSC: 30
                                                   Trunk Group for NCA TSC: 71
       Trunk Group for Channel Selection: 71      X-Mobility/Wireless Type: NONE
     TSC Supplementary Service Protocol: b          Network Call Transfer? n
```

5.6. Administer Trunk Group Members

Use the "change trunk-group n" command, where "n" is the ISDN trunk group number added in **Section 5.4**. Navigate to **Page 3**. For **NCA-TSA Trunk Member**, enter the highest trunk group member number to use for routing of tandem QSIG call independent signaling connections.

```
change trunk-group 71                                          Page   3 of  21
TRUNK FEATURES
          ACA Assignment? n            Measured: none      Wideband Support? n
                                 Internal Alert? n        Maintenance Tests? y
                               Data Restriction? n     NCA-TSC Trunk Member: 30
                                      Send Name: y      Send Calling Number: y
            Used for DCS? n             Hop Dgt? n     Send EMU Visitor CPN? n
   Suppress # Outpulsing? n    Format: private
 Outgoing Channel ID Encoding: preferred     UUI IE Treatment: service-provider

                                               Replace Restricted Numbers? n
                                              Replace Unavailable Numbers? n
                                        Send Called/Busy/Connected Number: y
                                                Hold/Unhold Notifications? y
             Send UUI IE? y     Modify Tandem Calling Number: no
               Send UCID? n
 Send Codeset 6/7 LAI IE? y                          Ds1 Echo Cancellation? n

    Apply Local Ringback? n
 Show ANSWERED BY on Display? y
                            Network (Japan) Needs Connect Before Disconnect? n
 DSN Term? n
```

Navigate to **Page 5** and **6**. Enter all 30 ports of the DS1 circuit pack into the **Port** fields, and the corresponding **Code** and **Sfx** fields will be populated automatically. Enter the ISDN signaling group number from **Section 5.5** into the **Sig Grp** field as shown below.

```
change trunk-group 71                                          Page   5 of  21
                                 TRUNK GROUP
                                      Administered Members (min/max):   1/30
GROUP MEMBER ASSIGNMENTS                  Total Administered Members:  30

       Port    Code Sfx Name        Night            Sig Grp
  1: 001V201  MM710                                    71
  2: 001V202  MM710                                    71
  3: 001V203  MM710                                    71
  4: 001V204  MM710                                    71
  5: 001V205  MM710                                    71
  6: 001V206  MM710                                    71
  7: 001V207  MM710                                    71
  8: 001V208  MM710                                    71
  9: 001V209  MM710                                    71
 10: 001V210  MM710                                    71
 11: 001V211  MM710                                    71
 12: 001V212  MM710                                    71
 13: 001V213  MM710                                    71
 14: 001V214  MM710                                    71
 15: 001V215  MM710                                    71
```

```
change trunk-group 71                                          Page   6 of  21
                                  TRUNK GROUP
                                       Administered Members (min/max):   1/30
GROUP MEMBER ASSIGNMENTS                   Total Administered Members:  30

       Port    Code Sfx Name        Night            Sig Grp
 16: 001V217  MM710                                    71
 17: 001V218  MM710                                    71
 18: 001V219  MM710                                    71
 19: 001V220  MM710                                    71
 20: 001V221  MM710                                    71
 21: 001V222  MM710                                    71
 22: 001V223  MM710                                    71
 23: 001V224  MM710                                    71
 24: 001V225  MM710                                    71
 25: 001V226  MM710                                    71
 26: 001V227  MM710                                    71
 27: 001V228  MM710                                    71
 28: 001V229  MM710                                    71
 29: 001V230  MM710                                    71
 30: 001V231  MM710                                    71
```

5.7. Administer Route Pattern

Use the "change route-pattern n" command, where "n" is an available route pattern number, in this case "71". Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Pattern Name:** A descriptive name.
- **Grp No:** The ISDN trunk group number from **Section 5.4**.
- **FRL:** A level that allows access to this trunk, with 0 being least restrictive.

```
change route-pattern 71                                        Page   1 of   3
                    Pattern Number: 71  Pattern Name:
                              SCCAN? n     Secure SIP? n
    Grp FRL NPA Pfx Hop Toll No.  Inserted                        DCS/ IXC
    No          Mrk Lmt List Del  Digits                        QSIG
                              Dgts                              Intw
 1: 71   0                                                       n   user
 2:                                                              n   user
 3:                                                              n   user
 4:                                                              n   user
 5:                                                              n   user
 6:                                                              n   user

     BCC VALUE  TSC CA-TSC    ITC BCIE Service/Feature PARM  No. Numbering LAR
    0 1 2 M 4 W     Request                                 Dgts Format
                                                         Subaddress
 1: y y y y y n  n            rest                                    none
 2: y y y y y n  n            rest                                    none
```

5.8. Administer Public Unknown Numbering

Use the "change public-unknown-numbering 0" command, to define the calling party number to send to IPC. Add an entry for the trunk group defined in **Section 5.4**. In the example shown below, all calls originating from a 5-digit extension beginning with 4 and routed to trunk group 71 will result in a 5-digit calling number.

```
change public-unknown-numbering 0                              Page   1 of   2
                     NUMBERING - PUBLIC/UNKNOWN FORMAT
                                          Total
Ext Ext           Trk       CPN            CPN
Len Code          Grp(s)    Prefix         Len
                                                  Total Administered: 11
 5  4             71                       5        Maximum Entries: 9999
```

5.9. Administer Uniform Dial Plan

This section provides a sample AAR routing used for routing calls with dialed digits 7205x to IPC. Note that other methods of routing may be used. Use the "change uniform-dialplan 0" command, and add an entry to specify the use of AAR for routing digits 7205x, as shown below.

```
change uniform-dialplan 0                                      Page   1 of   2
                       UNIFORM DIAL PLAN TABLE
                                                          Percent Full: 0

  Matching                    Insert                Node
  Pattern        Len Del      Digits      Net Conv  Num
7205             5   0                    aar   n
                                                   n
```

5.10. Administer AAR Analysis

Use the "change aar analysis 0" command, and add an entry to specify how to route calls to 7205x. In the example shown below, calls with digits 7205x will be routed as an AAR call using route pattern "71" from **Section 5.7**.

```
change aar analysis 0                                          Page   1 of   2
                            AAR DIGIT ANALYSIS TABLE
                                  Location: all            Percent Full: 1

          Dialed           Total      Route     Call    Node   ANI
          String          Min  Max   Pattern    Type    Num    Reqd
    7205                  5    5     71         aar            n
                                                               n
```

5.11. Administer Off-PBX-telephone

Use the "change off-pbx-telephone station-mapping n" command, where "n" is the EC500 origination station. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Application:** Select "EC500"
- **Phone Number:** EC500 termination station. In this compliance test, the turret with extension, 72052, was used.
- **Trunk Selection:** Select "aar"
- **Config Set:** Select a configuration set utilized for the EC500 features. In this compliance test, the configuration set 1 was used.

```
change off-pbx-telephone station-mapping 42001                  Page   1 of   3
                  STATIONS WITH OFF-PBX TELEPHONE INTEGRATION

 Station       Application Dial   CC  Phone Number    Trunk       Config  Dual
 Extension                 Prefix                    Selection   Set     Mode
 42001           EC500         -     72052             aar        1
                               -
                               -
```

Enter the "change off-pbx-telephone configuration-set x" command, where "x" is the Config Set designated previously. Set the **Cellular Voice Mail Detection** field to "none", and retain the default values for the remaining fields.

```
change off-pbx-telephone configuration-set 1                    Page   1 of   1



                                  CONFIGURATION SET: 1

                       Configuration Set Description:
                                Calling Number Style: network
                                 CDR for Origination: phone-number
                   CDR for Calls to EC500 Destination? n
                          Fast Connect on Origination? n
                         Post Connect Dialing Options: dtmf
                       Cellular Voice Mail Detection: none
                                        Barge-in Tone? n
                          Calling Number Verification? y
             Call Appearance Selection for Origination: primary-first
                                   Confirmed Answer? n

 Use Shared Voice Connections for Second Call Answered? n
Use Shared Voice Connections for Second Call Initiated? n
```

6. Configure IPC Converged Communications Manager

This section provides the procedures for configuring IPC Media Manager and Media Gateway. The procedures include the following areas:

- Launch Unigy Management System
- Administer Media Gateway
- Administer Trunk Groups
- Administer Route Lists
- Administer Dial Patterns
- Administer Route Plans
- Administer Codecs

The configuration of Media Manager is typically performed by IPC installation technicians. The procedural steps are presented in these Application Notes for informational purposes.

6.1. Launch Unigy Management System

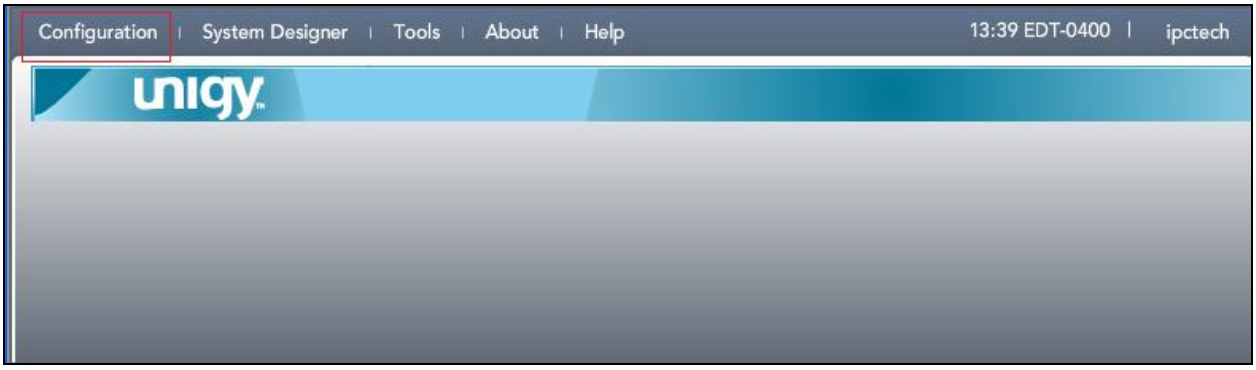
Access the Unigy Management System web interface by using the URL "http://ip-address" in an Internet browser window, where "ip-address" is the IP address of the Media Manager. Log in using the appropriate credentials.

The screen below is displayed. Enter the appropriate credentials. Check **I agree with the Terms of Use**, and click **Login**.

In the subsequent screen (not shown), click **Continue**.

6.2. Administer Media Gateway

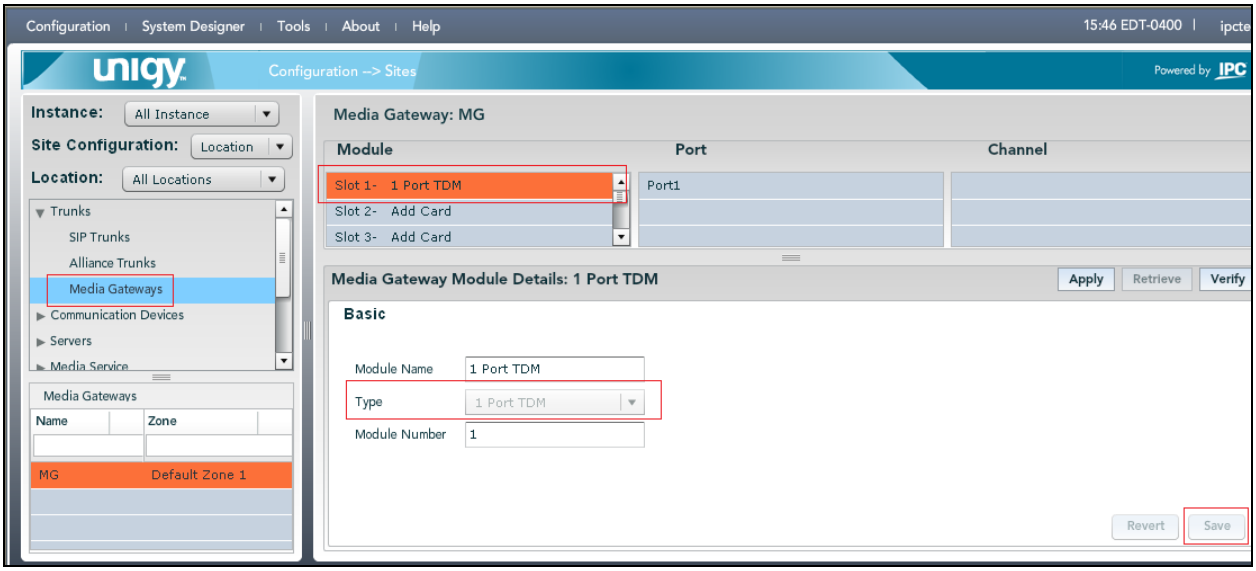
The screen below is displayed next. Select **Configuration → Sites** from the top menu.



The **Sites** information is displayed in the left pane. Select **Trunks → Media Gateways**, to display a list of media gateway in the lower left pane. Select the applicable media gateway from the listing, in this case "MG".

The **Media Gateway** information is displayed in the upper right pane. Select the applicable physical card, in this case "Slot 1".

The **Media Gateway Module Details** information is displayed in the lower right pane. Select "1 Port TDM" for **Type**, and click **Save**.

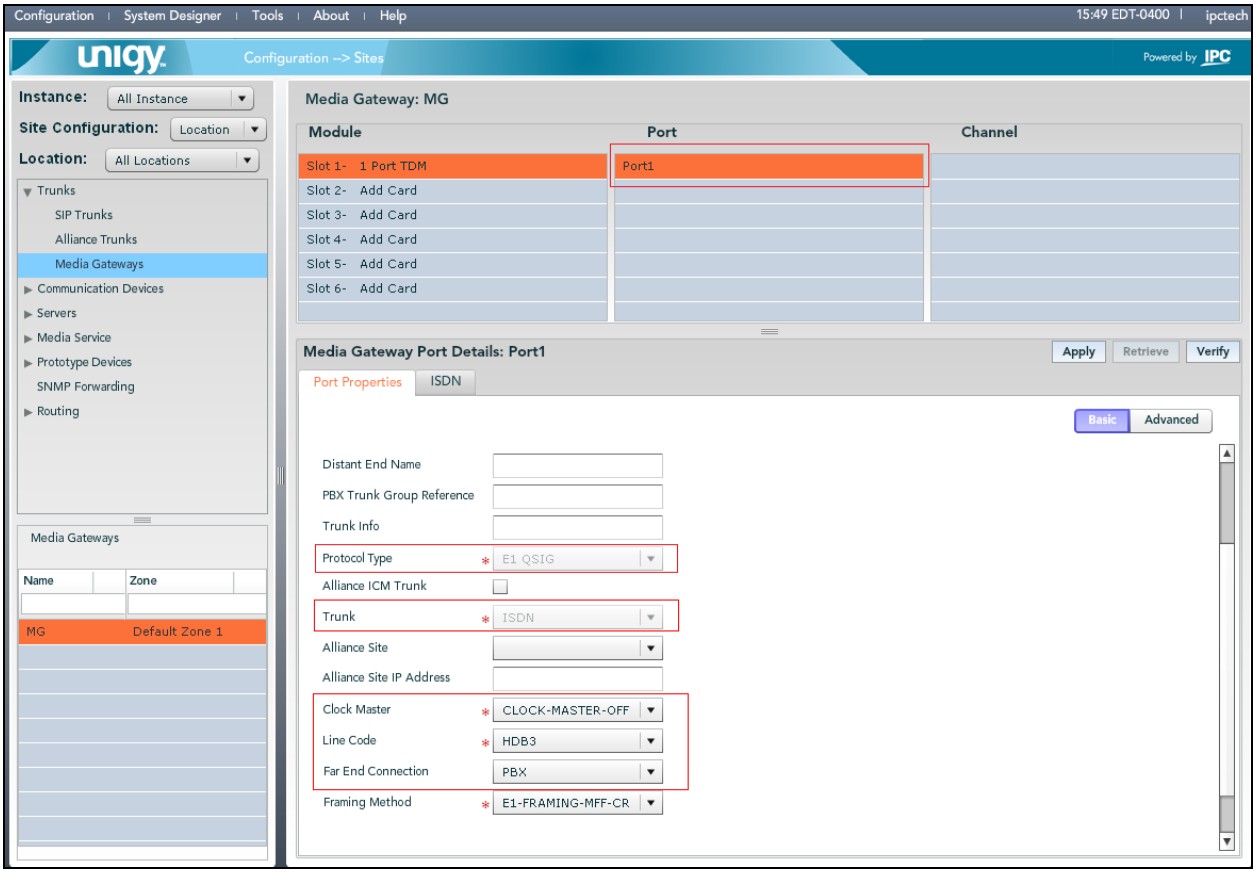


In the updated screen, click on a desired **Port** in the upper right pane, in this case "Port 1".

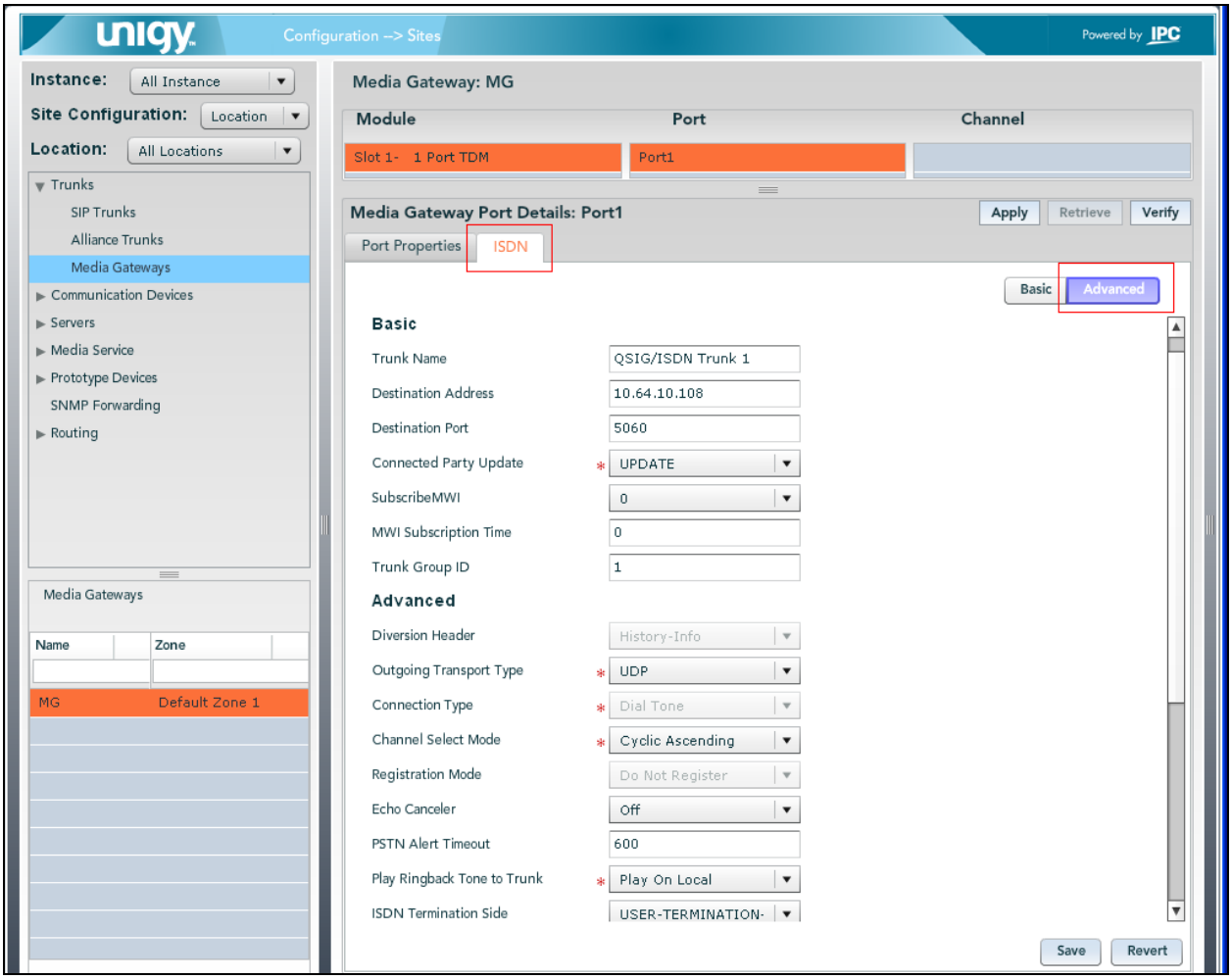
The **Media Gateway Port Details** information is displayed in the lower right pane. Enter the following values for the specified fields, and retain the default values for the remaining fields:

- **Protocol Type**: Select "E1 QSIG".
- **Clock Master**: Select "CLOCK-MASTER-OFF".
- **Far End Connection**: Select "PBX".
- **Trunk**: "ISDN". This is the default value displayed when "E1 QSIG" is selected for **Protocol Type**.
- **Line Code**: "HDB3". This is the default value displayed when "E1 QSIG" is selected for **Protocol Type**. This value needs to be matched with the value set in **Section 5.3**.

Click **Save** (not shown), followed by **Apply**.



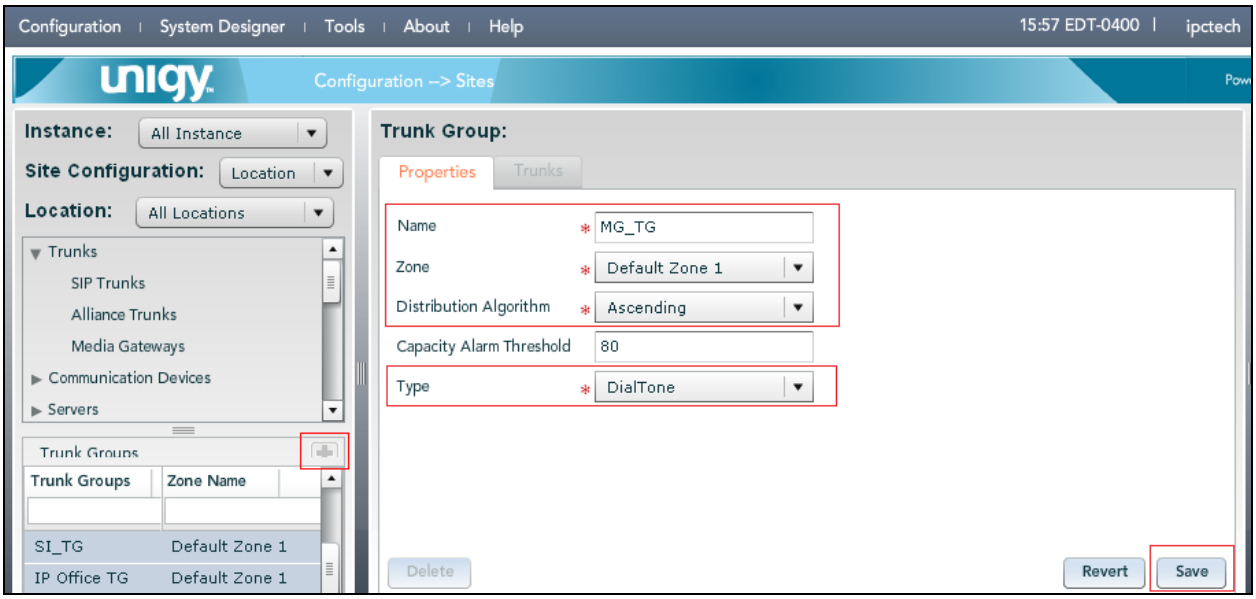
When the value for **Protocol Type** is entered, a new tab called **ISDN** is appeared as shown below. Click the **ISDN** tab, and select **Advanced**. All ISDN trunk related values shown here are defaults, and used as such.



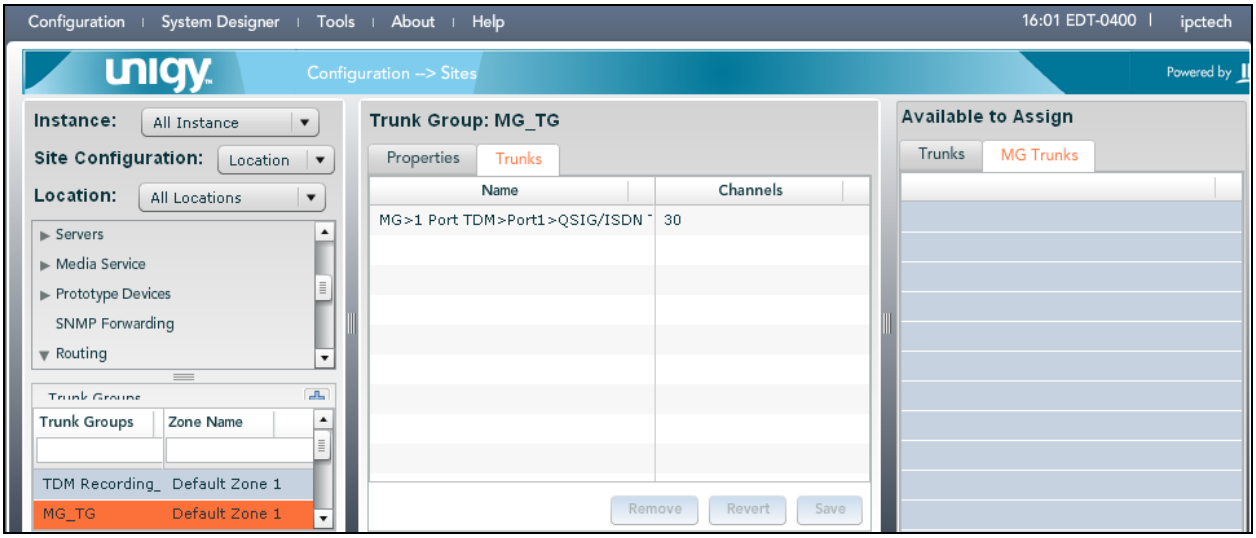
6.3. Administer Trunk Groups

Select **Routing → Trunk Groups** (not shown) in the left pane, and click the **Add** icon, , in the lower left pane to add a new trunk group.

The **Trunk Group** screen is displayed in the right pane. In the **Properties** tab, enter a descriptive **Name**, select "Default Zone 1" for **Zone**, and select a Distribution Algorithm. Select "DialTone" for **Type**, and click **Save**. Select the **Trunks** tab in the right pane.



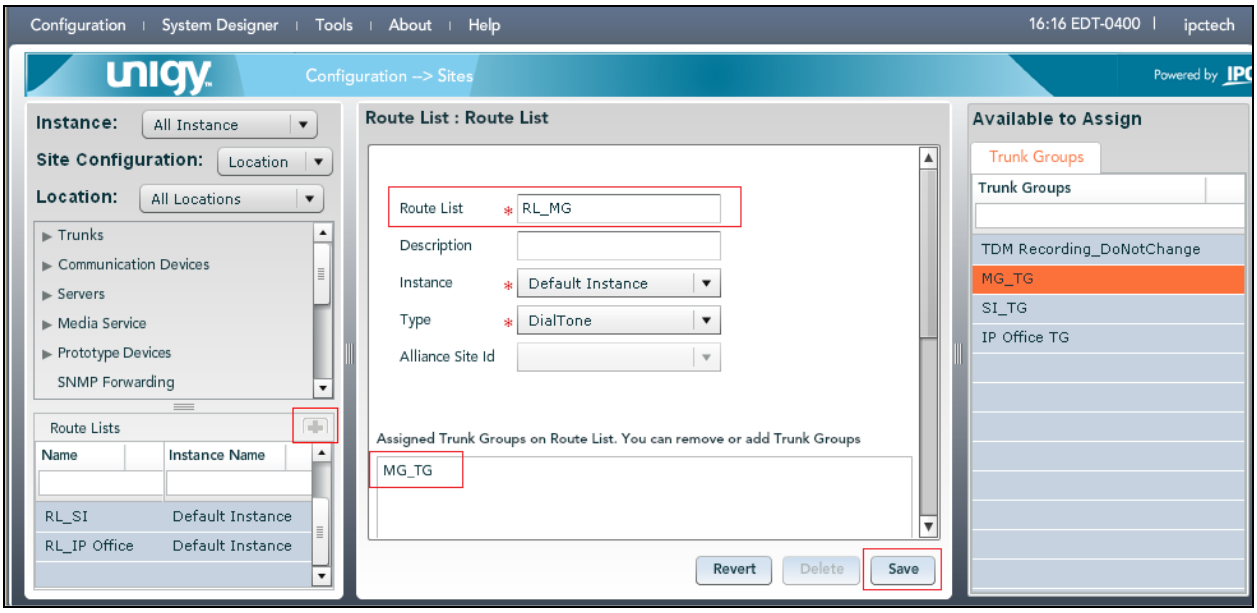
The screen is updated with three panes. In the right pane, select the **MG Trunks** tab. In the **Media Gateway Trunks** listing, select and expand the applicable media gateway slot and port from **Section 6.2**, and drag the selection to the **Name** column in the middle pane as shown below. Click **Save**.



6.4. Administer Route Lists

Select **Routing → Route Lists** in the left pane, and click the **Add** icon, , in the lower left pane to add a new route list.

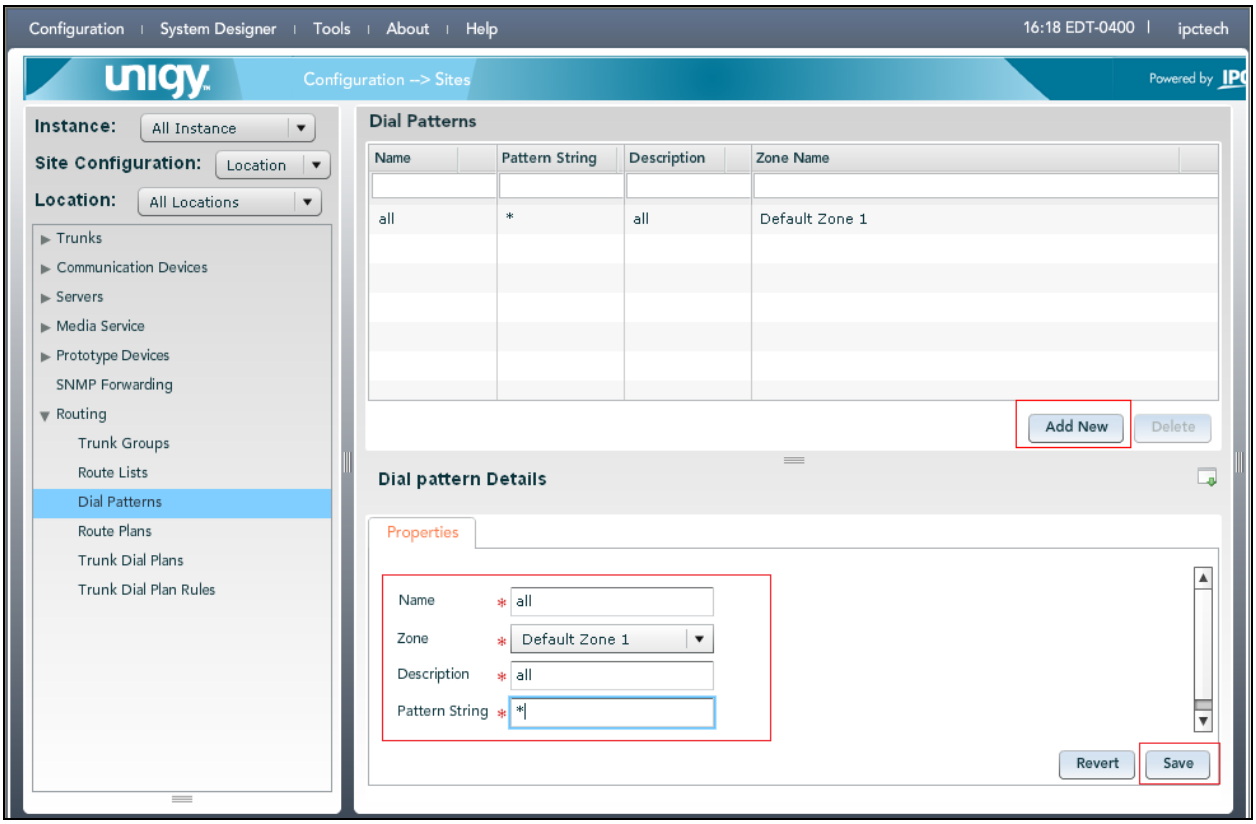
The **Route List** screen is displayed in the middle pane. For **Route List**, enter a descriptive name. In the right pane, select the trunk group from **Section 6.3** and drag into the **Assigned Trunk Groups on Route List** sub-section in the middle pane, as shown below. Click **Save**.



6.5. Administer Dial Patterns

Select **Routing → Dial Patterns** in the left pane, to display the **Dial Patterns** screen in the right pane. Click **Add New** in the upper right pane.

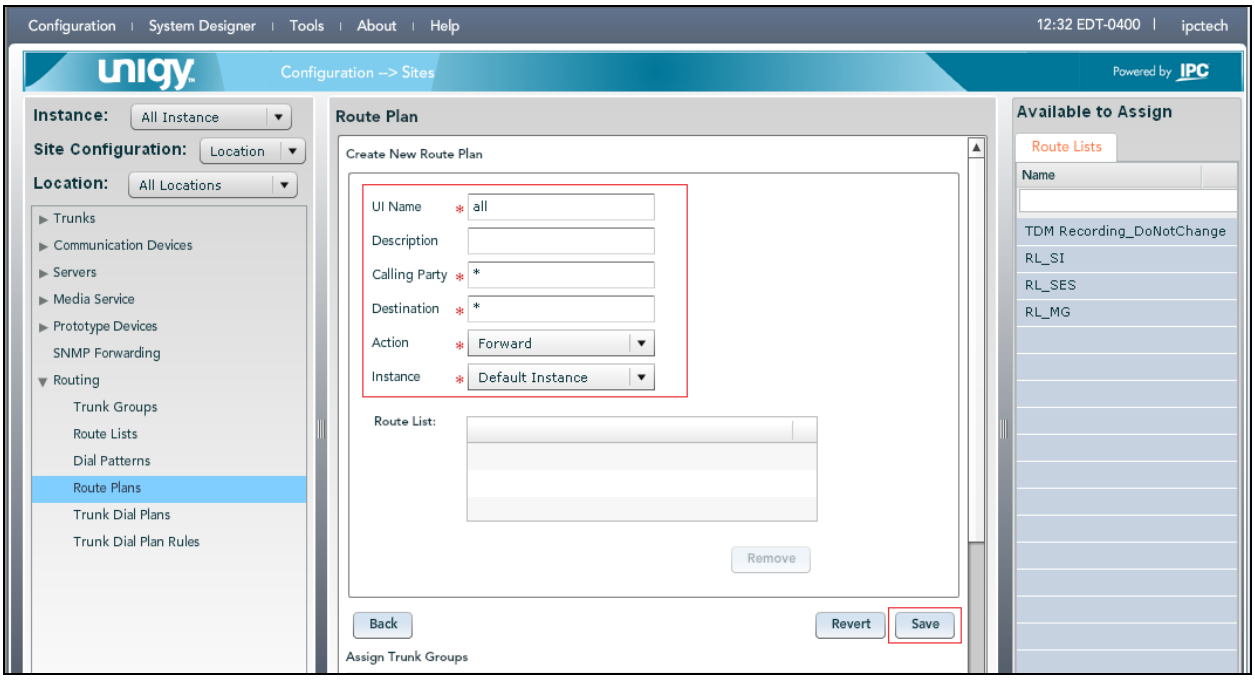
In the **Dial pattern Details** sub-section in the lower right pane, enter the desired **Name** and **Description**. For **Pattern String**, enter the dial pattern to match for Avaya endpoints, in this case "*", meaning any digit. For **Zone**, select "Default Zone 1". Click **Save**.



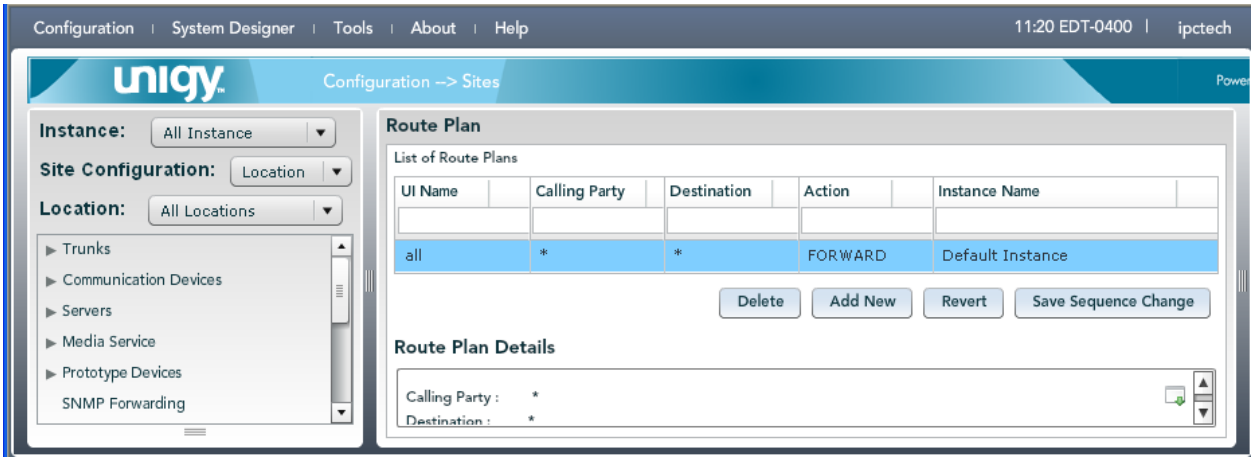
6.6. Administer Route Plans

Select **Routing → Route Plans** in the left pane, and click **Add New** (not shown) in the right pane to create a new route plan.

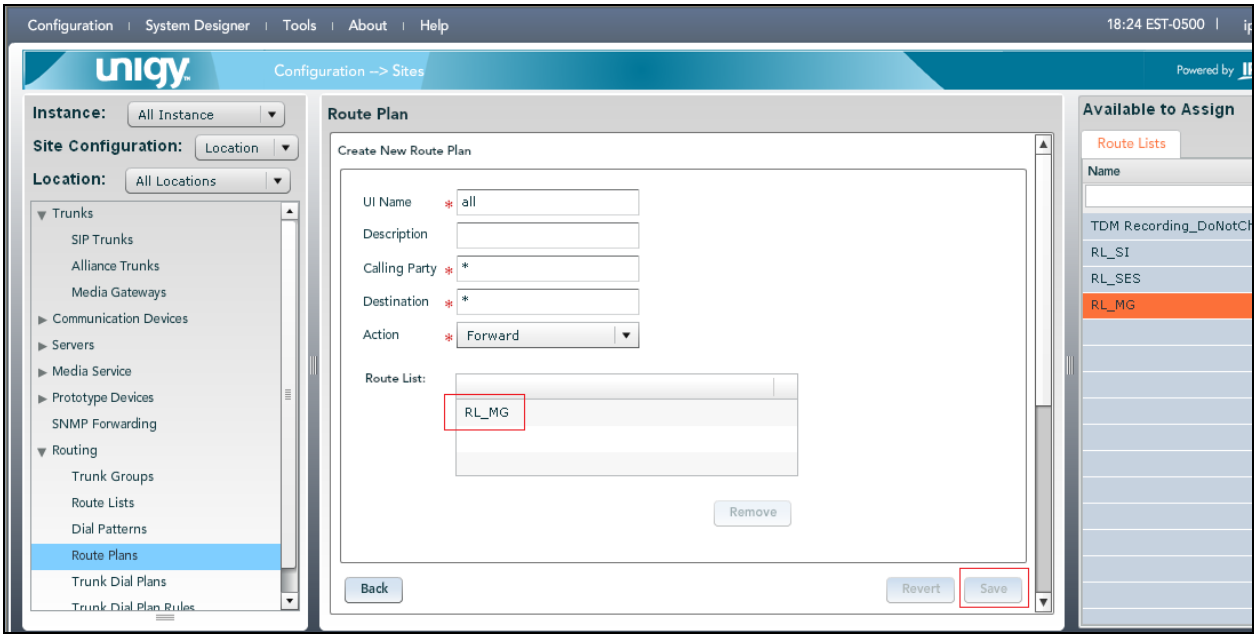
The screen is updated with three panes, as shown below. In the **Route Plan** middle pane, enter a descriptive **UI Name** and optional **Description**. For **Calling Party**, enter "*" to denote any calling party from UnigyV2. For **Destination**, enter "*" to denote any called party from UnigyV2. Select "Forward" for **Action**. Select "Default Instance" for **Instance**, and click **Save**.



The screen is updated with the newly created route plan. Select the route plan, and click **Edit** under Route Plan Details section toward the bottom of the screen (not shown).



The screen is updated with three panes again, as shown below. In the right pane, select the route list from **Section 6.4** and drag into the **Route List** sub-section in the middle pane, as shown below. Click **Save**.



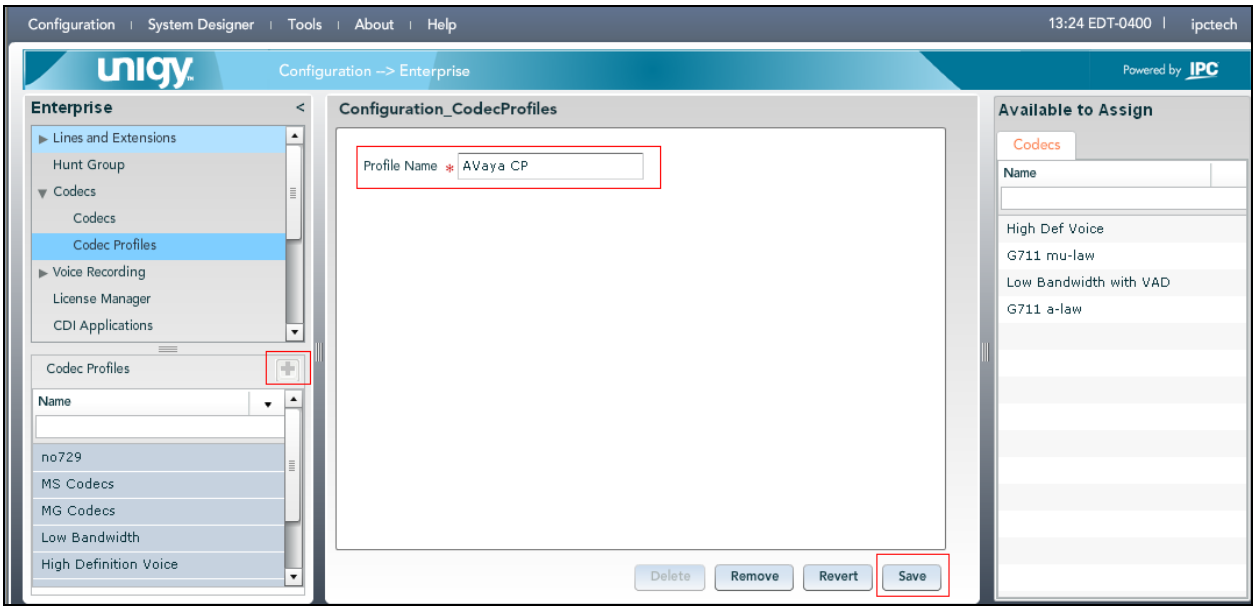
6.7. Administer Codecs

This section provides the procedures for configuring codecs. The procedures include the following areas:

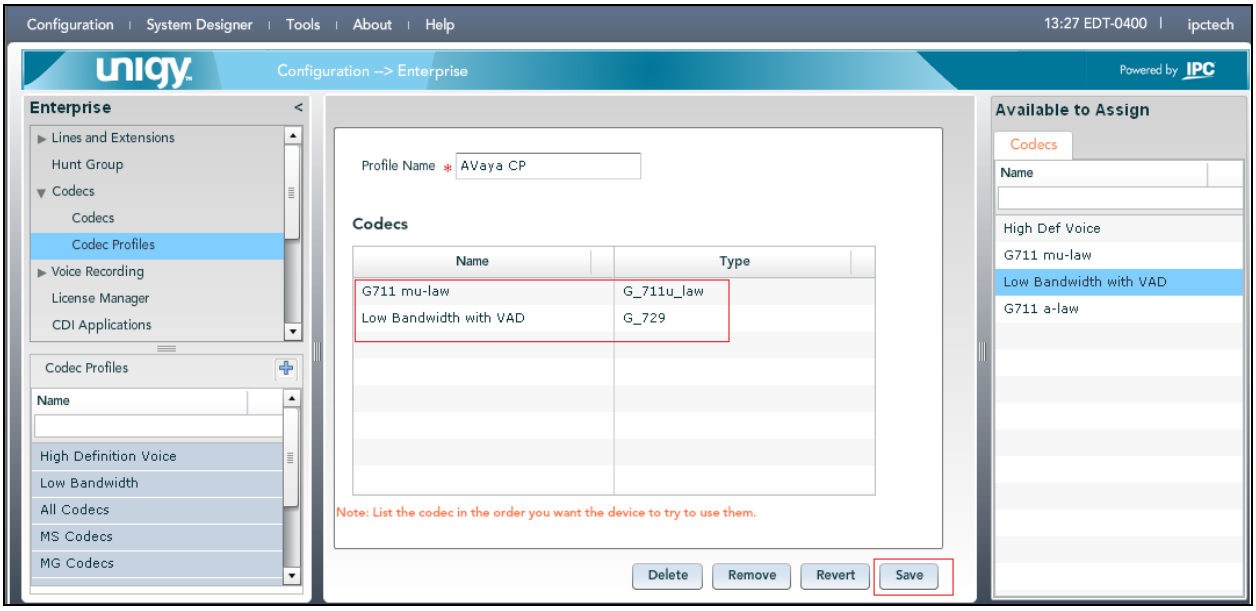
- Administer codec profile
- Assign codec profile to user
- Assign codec profile to turret

6.7.1. Administer Codec Profile

Select **Configuration → Enterprise → Codecs → Codec Profiles**, and click **Add New**, ,in the left pane to create a new codec profile. Provide a profile name, and click **Save**.

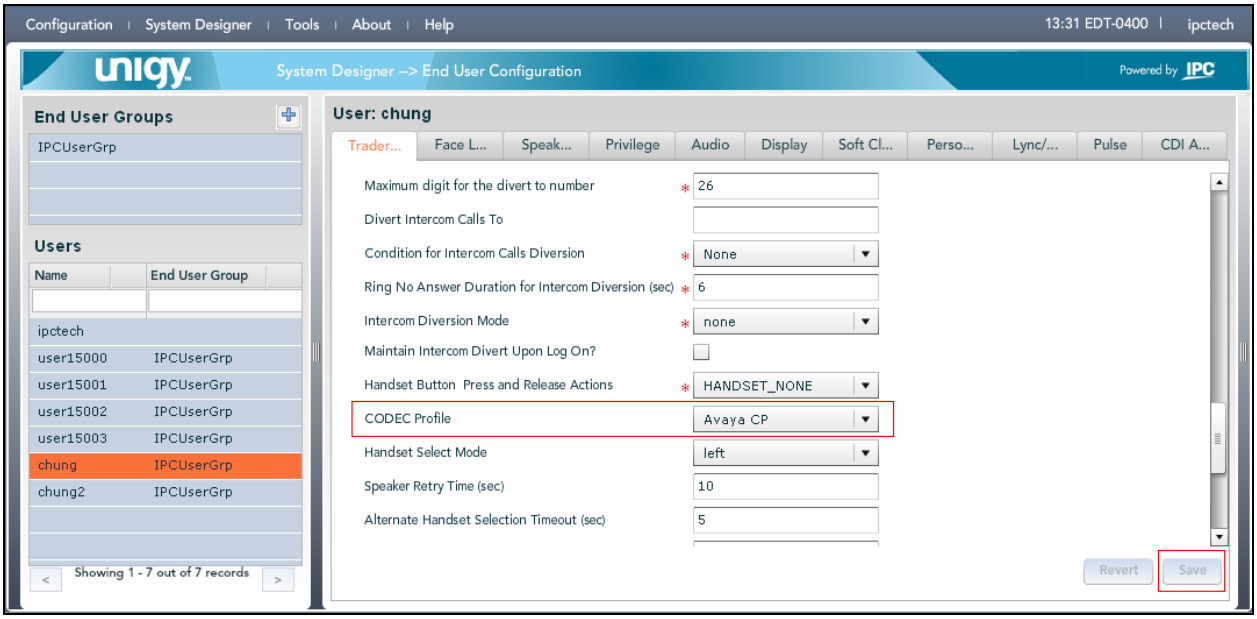


After saving the codec profile, the following screen is displayed. In the right pane, select the available codecs and drag into the **Codecs** sub-section in the middle pane, as shown below. Click **Save**.



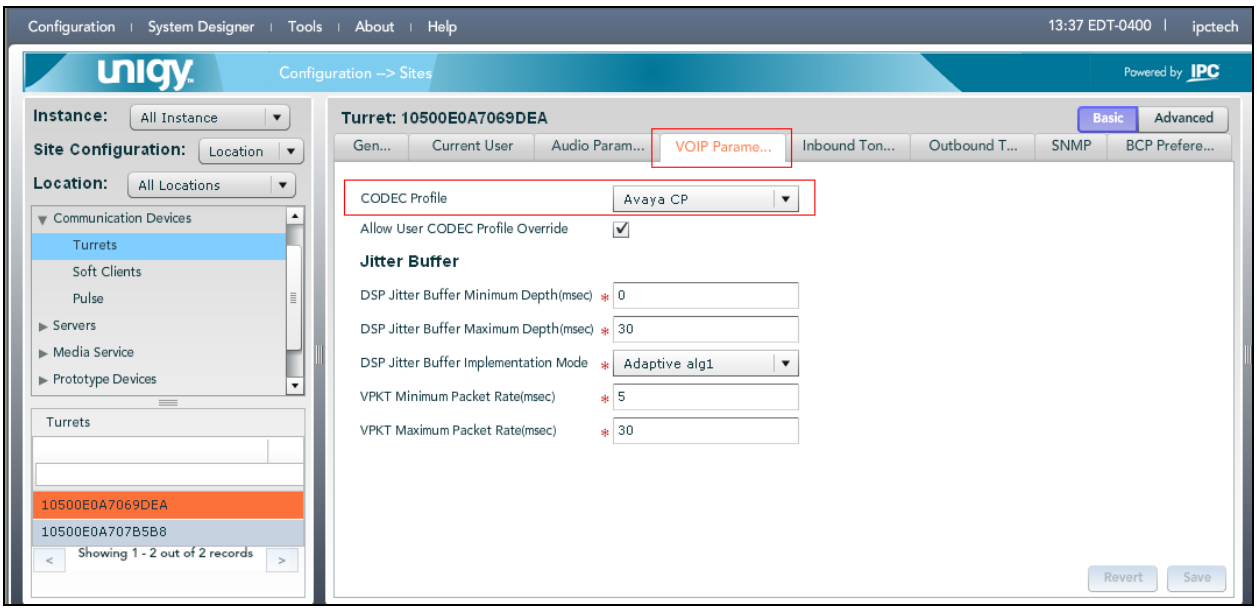
6.7.2. Assign Codec Profile to User

Select **System Designer→ End User Configuration**, and select a user to associate a codec profile with. Provide a profile name, and click **Save**.



6.7.3. Assign Codec Profile to Turret

Navigate to **Configuration→ Sites → Communication Devices → Turrets** and select a turret to associate a codec profile with. Click the **VoIP Parame...** tab in the right pane. Select a codec profile, and click **Save**.



After codecs are configured, reboot the turret.

7. Configure Codec in the IPC Media Gateway

This section provides the procedures for configuring codecs in IPC Media Gateway. The procedures include the following areas:

- Launch Gateway Web Interface
- Administer Coders Settings
- Administer TDM Bus Settings

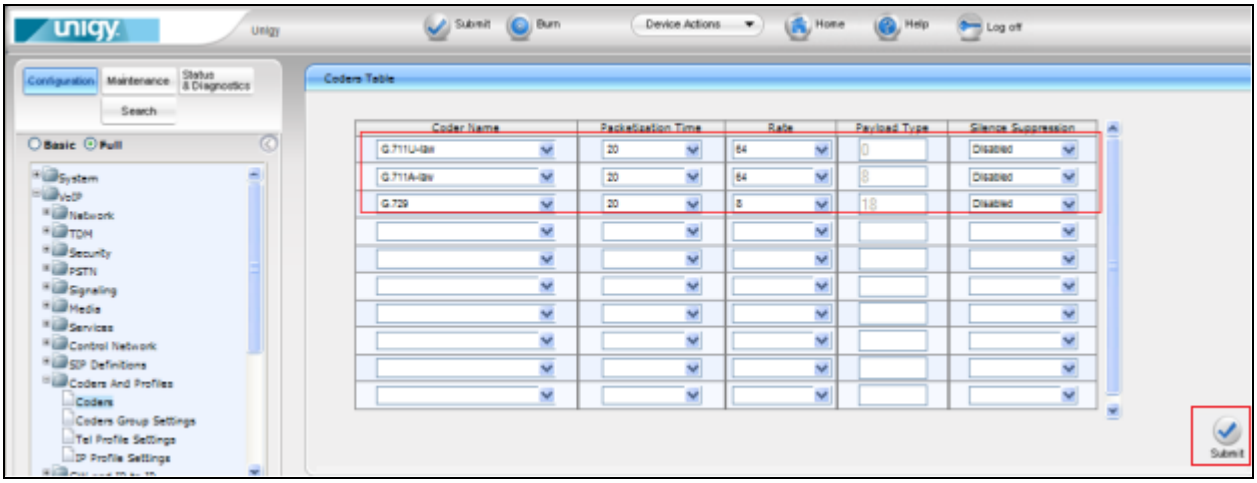
The configuration of the Media Gateway is typically performed by IPC installation technicians. The procedural steps are presented in these Application Notes for informational purposes.

7.1. Launch Gateway Web Interface

Access the Media Gateway web interface by using the URL "http://ip-address" in an Internet browser window, where "ip-address" is the IP address of the Media Gateway. Log in using the appropriate credentials.

7.2. Administer Coders Settings

The screen below is displayed. Select **Configuration** from the top left pane. Click the radio button for **Full** in the left pane, and select **VOIP → Coders And Profiles → Coders**, to display the **Coders Table** screen. Select appropriate codecs that matches the setting in the Media Manager, and click **Submit**.

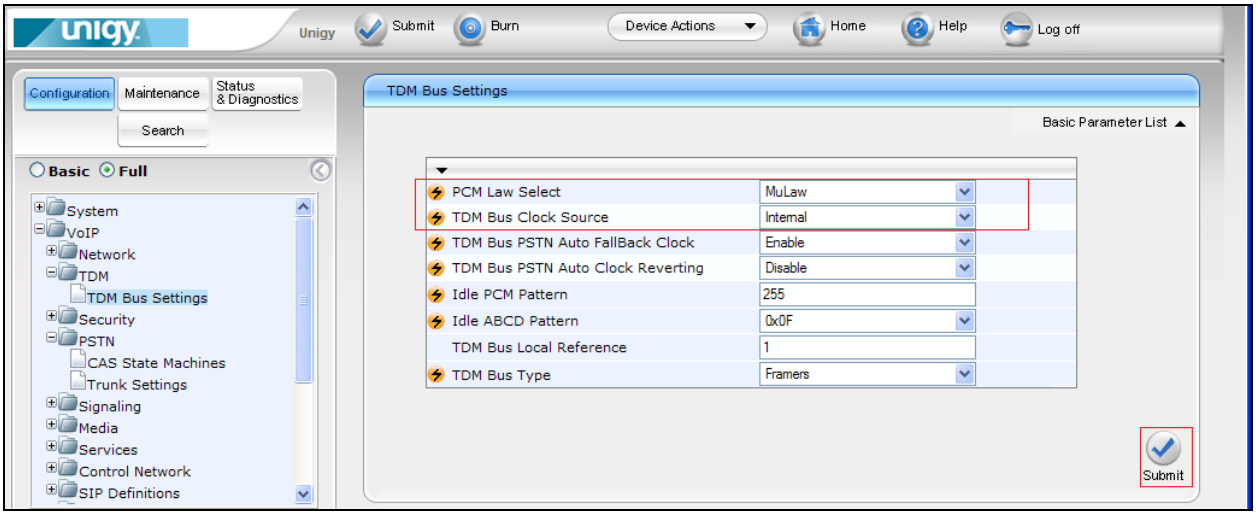


7.3. Administer TDM Bus Settings

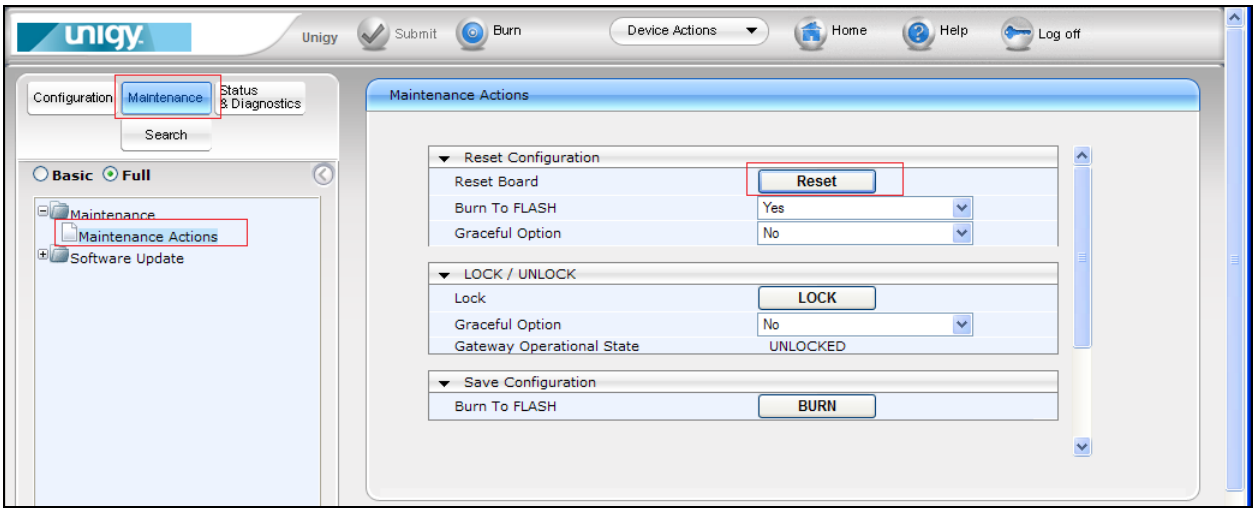
Navigate to **VOIP → TDM → TDM Bus Settings**, and select the followings:

- PCM Law Select: Select "MuLaw"
  Note: *Interface Compounding in Avaya side is set to mulaw*
- TDM Bus Clock Source: Select "Internal".

Click **Submit**.

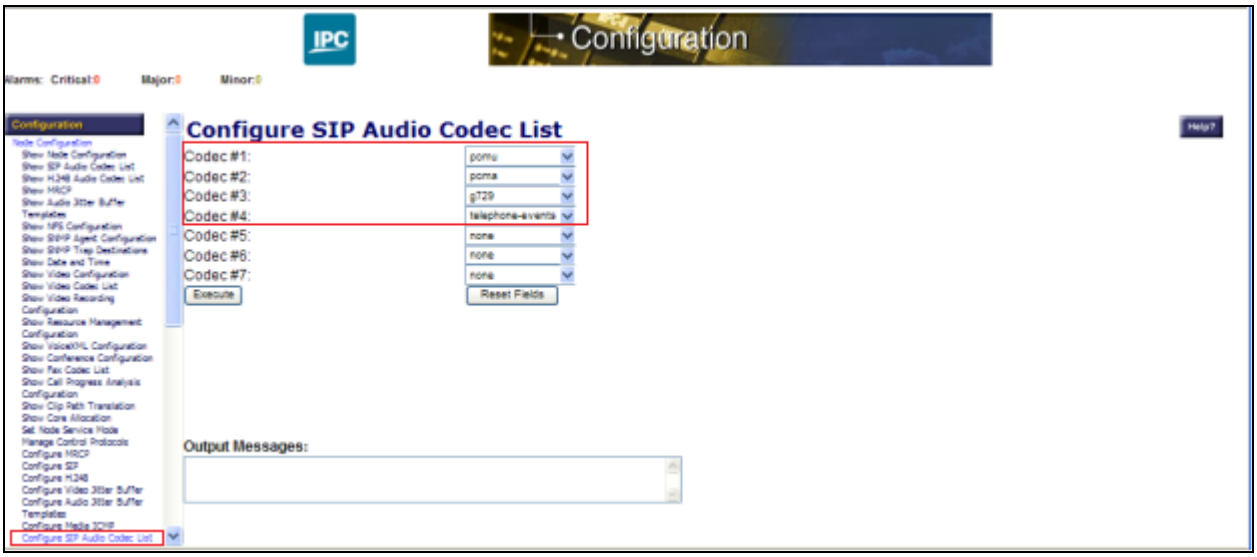


When configuration is completed, save configuration by performing "burn to flash" and "reset" to the Media Gateway. Navigate to **Maintenance →Maintenance → Maintenance Actions** in the left pane. Set the "Burn To Flash" field to "Yes" and press the **Reset** button, to reset the Media Gateway.



8. Configure IPC Media Manager

This section provides the procedures for administering codecs for IPC Media Manager. Access the Media Manager web interface by using the URL "http://<CCM ip-address>/swms" in an Internet browser window where <CCM ip-address> is the IP address of IPC Converged Communication Manager. Navigate to **Configuration → Node Configuration → Configure SIP Audio Codec List** and specify a list of codecs in priority order.



After codecs are specified and prioritized, reboot the IPC Converged Communication Manager server.

9. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Aura® Communication Manager and IPC UnigyV2.

9.1. Verify Avaya Aura® Communication Manager

From the Communication Manager SAT interface, verify the status of the ISDN trunk group by using the "status trunk n" command, where "n" is the ISDN trunk group number administered in **Section 5.4**. Verify that all trunks are in the "in-service/idle" state as shown below.

```
status trunk 71                                                    Page   1

                            TRUNK GROUP STATUS

Member   Port     Service State      Mtce Connected Ports
                                     Busy

0071/001 001V201  in-service/idle    no
0071/002 001V202  in-service/idle    no
0071/003 001V203  in-service/idle    no
0071/004 001V204  in-service/idle    no
0071/005 001V205  in-service/idle    no
0071/006 001V206  in-service/idle    no
0071/007 001V207  in-service/idle    no
0071/008 001V208  in-service/idle    no
0071/009 001V209  in-service/idle    no
0071/010 001V210  in-service/idle    no
0071/011 001V211  in-service/idle    no
0071/012 001V212  in-service/idle    no
0071/013 001V213  in-service/idle    no
0071/014 001V214  in-service/idle    no
```

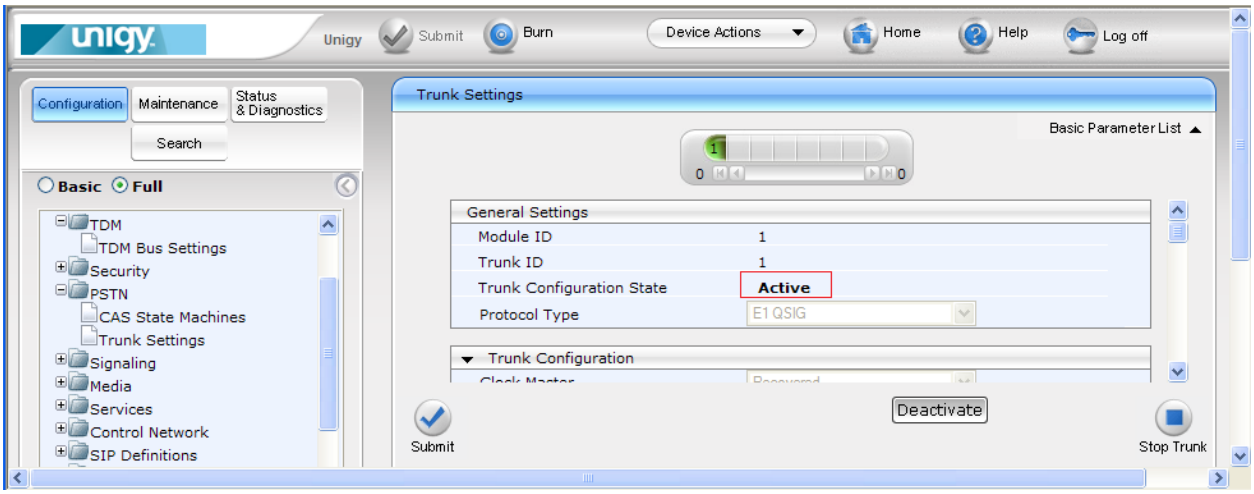
Verify the status of the ISDN signaling groups by using the "status signaling-group n" command, where "n" is the ISDN signaling group number administered in **Section 5.5**. Verify that the signaling group is "in-service" as indicated in the **Group State** and **Level 3 State** fields shown below.

```
status signaling-group 71
                         STATUS SIGNALING GROUP

       Group ID: 71                              Active NCA-TSC Count: 0
     Group Type: isdn-pri                         Active CA-TSC Count: 0
  Signaling Type: facility associated signaling
    Group State: in-service


                           Primary D-Channel


           Port: 001V216        Level 3 State: in-service
```

9.2. Verify IPC UnigyV2

From the Media Gateway web interface, select **VoIP → PSTN → Trunk Settings** to display the **Trunk Settings** screen.

Toward the top of the screen, click the applicable trunk port from **Section 6.2**, in this case "1". Verify that the **Trunk Configuration State** is "Active", as shown below.



10. Conclusion

These Application Notes describe the configuration steps required for IPC UnigyV2 to successfully interoperate with Avaya Aura® Communication Manager 6.0.1 using EC500 features and QSIG trunks.

11. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya Aura® Communication Manager*, Document 03-300509, Issue 6.0, Release 6.0, June 2010, available at http://support.avaya.com.

2. *UnigyV2 1.1 System Configuration*, Part Number B02200187, Release 00, available upon request to IPC Support.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.