



Application Notes for Wesley Clover Solutions Trading Platform with Avaya Aura® Communication Manager – Issue 1.0

Abstract

These Application Notes describe a compliance-tested configuration consisting of Wesley Clover Solutions IP PBX and Wesley Clover Solutions IP Turret with 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

Wesley Clover Solutions Trading Platform consists of an IP PBX and IP Turrets. Wesley Clover Solutions IP PBX communicates to Avaya Aura® Communication Manager via a QSIG trunk. Wesley Clover Solutions IP turrets register with Wesley Clover Solutions IP PBX.

2. General Test Approach and Test Results

The compliance test focused on the interoperability between Avaya Aura® Communication Manager and Wesley Clover Solutions IP PBX.

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

Compliance testing focused on verifying call scenarios mentioned below:

- Call setup and termination
- Call Holds, Call Transfers and Conference calls

2.2. Test Results

All executed test cases were passed and all objectives were met with the observation noted below:

- For call scenarios related to Call Conferences and Call Forwards, Wesley Clover Solutions IP PBX holds a Q-SIG trunk member for each call leg.

2.3. Support

Support for Wesley Clover Solutions can be found via the following means:

Web: www.wesleycloversolutions.com

E-mail: service@wesleycloversolutions.com

3. Reference Configuration

The following figure displays the configuration used during the compliance test.

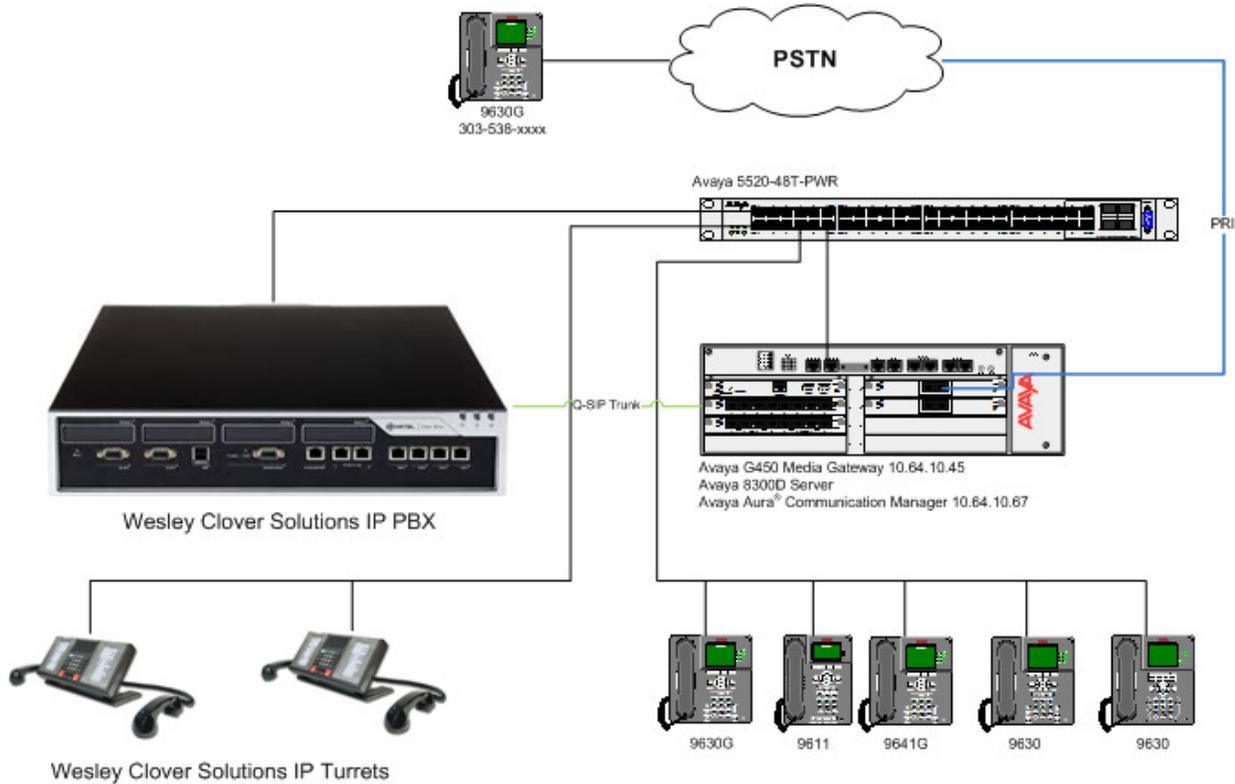


Figure 1: Reference Configuration

4. Equipment and Software Validated

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

Equipment	Version
Avaya Aura [®] Communication Manager	6.3.1 (SP1)
Avaya G450 Media Gateway	31.20.1
Avaya 96x1 Series H.323 Phones	6.2.4
Avaya 96x0 Series H.323 Phones	3.10
Avaya Aura [®] Utility Services	6.3.1 (SP1)
Wesley Clover Solutions IP PBX	12.0.1.24
Wesley Clover Solutions IP Turrets	3.0.0.8

5. Configure Avaya Aura® Communication Manager

Communication Manager allows for routing calls via a Q-SIG trunk to Wesley Clover Solutions IP PBX. The following information allows for a Q-SIG connection between Communication Manager and Wesley Clover Solutions IP PBX.

5.1. Verify Avaya Aura® Communication Manager License

Use the **display system-parameters customer-options** command to verify options.

On **Page 4**, verify **ISDN/PRI** fields is set to **y**.

```
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
```

5.2. Configure DS1

Use the **add ds1 n** command to configure a network region, where **n** is the location of the T1 card. Configure this ds1 as follows:

- Type in a descriptive name in **Name**
- Set **Line Coding** to **b8zs**
- Set **Framing Mode** to **esf**
- Set **Signaling Mode** to **isdn-pri**
- Set **Connect** to **pbx**
- Set **Interface** to **peer-master**
- Set **Peer Protocol** to **Q-SIG**

```
add ds1 1v6                                     Page 1 of 2
                                               DS1 CIRCUIT PACK
      Location: 001V6                            Name: to_WCS
      Bit Rate: 1.544                          Line Coding: b8zs
Line Compensation: 1                            Framing Mode: esf
      Signaling Mode: isdn-pri
      Connect: pbx                               Interface: peer-master
      TN-C7 Long Timers? n                       Peer Protocol: Q-SIG
Interworking Message: PROGRESS                  Side: a
Interface Companding: mulaw                     CRC? n
      Idle Code: 11111111
      DCP/Analog Bearer Capability: 3.1kHz
      T303 Timer(sec): 4
      Disable Restarts? y
      Slip Detection? n                          Near-end CSU Type: other
      Echo Cancellation? n
```

5.3. Administer Q-SIG Signaling Group

Use the **add signaling-group *n*** command to add a new signaling group, where *n* is an available signaling group number. Configure this signaling group as follows:

- Set **Group Type** to **isdn-pri**
- Set **Primary D-Channel** according to the ds1 configured in previous section
- Set **TSC Supplementary Service Protocol** to **b**

```
add signaling-group 2                               Page 1 of 1
                                                    SIGNALING GROUP
Group Number: 2          Group Type: isdn-pri
Associated Signaling? y      Max number of NCA TSC: 0
Primary D-Channel: 001V624  Max number of CA TSC: 0
Trunk Group for Channel Selection:      Trunk Group for NCA TSC:
TSC Supplementary Service Protocol: b   X-Mobility/Wireless Type: NONE
                                         Network Call Transfer? n
```

5.4. Administer Q-SIG Trunk Group

Use the **add trunk-group *n*** command to add a trunk group, where *n* is an available trunk group number. Configure this trunk group as follows, on **Page 1**:

- Set **Group Type** to **isdn**
- Enter a **Group Name**
- Enter a valid **TAC**, e.g., *002
- Set **Carrier Medium** to **PRI/BRI**
- Set **Service Type** to **tie**

```
add trunk-group 2                               Page 1 of 21
                                                    TRUNK GROUP
Group Number: 2          Group Type: isdn          CDR Reports: r
Group Name: to_WCS          COR: 1          TN: 1          TAC: *002
Direction: two-way        Outgoing Display? n      Carrier Medium: PRI/BRI
Dial Access? y          Busy Threshold: 255  Night Service:
Queue Length: 0
Service Type: tie          Auth Code? n          TestCall ITC: rest
TestCall BCC: 4          Far End Test Line No:
```

On Page 3:

- **Set Send Name and Send Calling Number to y**
- **Set Format to unk-pvt**
- **Set Send Connected Number to y**

```
add trunk-group 2                                     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: 2
  Send Name: y                                  Send Calling Number: y
  Used for DCS? n                                 Hop Dgt? n               Send EMU Visitor CPN? n
  Suppress # Outpulsing? n                       Format: unk-pvt
  Outgoing Channel ID Encoding: preferred         UUI IE Treatment: service-provider
  Replace Restricted Numbers? n
  Replace Unavailable Numbers? n
  Send 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                     Dsl Echo Cancellation? n
  Apply Local Ringback? n
  Show ANSWERED BY on Display? y
  Network (Japan) Needs Connect Before Disconnect? n
```

On Page 5, configure the ports according the ds1 configured in Section 5.2.

```
add trunk-group 2                                     Page 5 of 21
TRUNK GROUP
  Administered Members (min/max): 1/23
GROUP MEMBER ASSIGNMENTS
  Total Administered Members: 23
  Port      Code Sfx Name      Night      Sig Grp
  1: 001V601 MM710
  2: 001V602 MM710
  3: 001V603 MM710
  4: 001V604 MM710
  5: 001V605 MM710
  6: 001V606 MM710
  7: 001V607 MM710
  8: 001V608 MM710
  9: 001V609 MM710
  10: 001V610 MM710
  11: 001V611 MM710
  12: 001V612 MM710
  13: 001V613 MM710
  14: 001V614 MM710
  15: 001V615 MM710
```

Note: Once the trunk group has been configured, modify the signaling-group to associate it with the trunk group configured in this section. Set the **Trunk Group for Channel Selection** to the trunk group number configured in this section.

5.5. Administer Route Pattern

Use the **change route-pattern *n*** command to configure a route pattern, where *n* is an available route patterns. Configure this route pattern as follows:

- Type a name in **Pattern Name** field
- For line 1, set **Grp No** to the trunk group configured in previous section, e.g., 2
- For line 1, set **FRL** to **0**
- Set the **Numbering Format** to **lev0-pvt**

```

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

  BCC VALUE  TSC CA-TSC  ITC BCIE Service/Feature PARM No. Numbering LAR
  0 1 2 M 4 W      Request
                Subaddress
 1: y y y y y n y none rest lev0-pvt none
 2: y y y y y n n rest none
 3: y y y y y n n rest none
 4: y y y y y n n rest none

```

5.6. Administer Private Numbering

Use the **change private-numbering 1** command to define the calling party number to send to Wesley Clover Solutions IP PBX.

Configure private numbering as follows:

- Add entries for trunk group configured in **Section 5.4**

```

change private-numbering 1                               Page 1 of 2
                NUMBERING - PRIVATE FORMAT

  Ext Ext      Trk      Private      Total
  Len Code     Grp(s)   Prefix     Len
  4 4          2
  5 5
                Total Administered: 1
                Maximum Entries: 540

```

5.7. Administer AAR Analysis

Use the **change aar analysis *n*** command to configure routing for extensions starting with *n*. For compliance testing, extensions starting with 4 and 4 digits long were used to route calls to Wesley Clover Solutions IP PBX:

- Set **Dialed String** to starting digits of extensions that will be used, e.g., 4
- Set **Min** and **Max** to 4 for 4 digit extensions
- Set **Route Pattern** to the pattern configured in **Section 5.5**, e.g., 2
- Set **Call Type** to **lev0**

```
change aar analysis 4                                     Page 1 of 2
```

AAR DIGIT ANALYSIS TABLE						
Location: all						
Percent Full: 1						
Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Reqd
4	4	4	2	lev0		n
4	5	5	2	aar		n
45000	5	5	30	aar		n
5	4	4	2	lev0		n
5	5	5	32	aar		n
552	10	10	10	aar		n
588	5	5	10	aar		n

5.8. Administer Stations

Administration of Avaya Stations/Extensions in Communication Manager is not shown in this document. Please refer to document [1] in reference section of this document.

6. Configure Wesley Clover Solutions

Wesley Clover Solutions trading platform utilizes Wesley Clover Solutions IP PBX, to allow for call routing via Q-SIQ trunks for inter-PBX and external call routing. The following information provides programming guidelines for Q-SIG connection between the Wesley Clover Solutions IP PBX and Avaya Aura[®] Communication Manager.

6.1. Assumptions

- It is assumed for the purposes of this document that the appropriate number of digital link licenses and T1 modules has been installed on Wesley Clover Solutions IP PBX. One Digital Link License, P/N 54000303, and one available RJ-45 port on a Dual T1/E1 Trunk MMC Module, P/N 50003560, is required for each Q-SIG T1
- The dialable Avaya extension numbers are 4 digits in length
- There are no dial restrictions for calls routing to the Avaya Aura[®] environment

Note: Configuration is performed via a web browser, by navigating to <http://<ip-address>>, where <ip-address> is the IP address of Wesley Clover Solutions IP PBX.

6.2. Create Digital Link Descriptor

Navigate to **Trunks → Digital → Digital Link Descriptors** (not shown)

In this example 7 is used as a link descriptor.

- Set **Integrated Digital Access to ISDN Node**
- Set **QSIG Private Network Access** to **Yes**
- Set **B8ZS Zero Code Suppression** to **Yes**
- Set **Operation Mode** to **CSU** and **Extended Super Frame** to **Yes**

Digital Link Descriptors

Number	7
Address for Message Control	A
BER - Maintenance Limit, 10**-n	4
BER - Service Limit, 10**-n	3
Data Call Alternate Digit Inversion	<input checked="" type="radio"/> No <input type="radio"/> Yes
Framing Losses in 24 hrs - Maintenance Limit	9000
Framing Losses in 24 hrs - Service Limit	9000
Integrated Digital Access	ISDN NODE
Vendor Inter-working Type	
Satellite Link Delay	<input checked="" type="radio"/> No <input type="radio"/> Yes
Slip Rate - Maintenance Limit (slips/24hr.)	9000
Slip Rate - Service Limit (slips/24hr.)	9000
Alarm Debounce Timer - Service Limit (millisec.)	500
Voice Encoding	Nil
Data Encoding	Nil
QSIG Private Network Access	<input type="radio"/> No <input checked="" type="radio"/> Yes
Digital Link Fault Delay Timer (sec.)	240
Termination Mode	<input type="radio"/> LT <input checked="" type="radio"/> NT
Send Malicious Call Indication to PSTN for Tagged Calls	<input checked="" type="radio"/> No <input type="radio"/> Yes
Inhibit sending Mitel Specific Info	<input type="radio"/> No <input checked="" type="radio"/> Yes
T1 Only	
B8ZS Zero Code Suppression	<input type="radio"/> No <input checked="" type="radio"/> Yes
Operation Mode	CSU
CSU Tx Line Build-Out (dB.)	0
DSX-1 Line Length (Ft.)	0-133
Extended Super Frame	<input type="radio"/> No <input checked="" type="radio"/> Yes
Inverted D channel (DPNSS only)	<input checked="" type="radio"/> No <input type="radio"/> Yes
T1-619a Signalling (MLPP only)	<input checked="" type="radio"/> No <input type="radio"/> Yes
E1 Only	
CRC-4 Enabled	<input type="radio"/> No <input checked="" type="radio"/> Yes
E1 Line Length (Ft.)	0-133
E1 Impedance (Ohms)	<input type="radio"/> 75 <input checked="" type="radio"/> 120

6.3. Assign the Digital Link

Navigate to **Trunks** → **Digital** → **Digital Links** (not shown)

Apply the Digital Link Descriptor that was created in previous section to an available Digital Link port. This corresponds to the physical RJ-45 port on the Dual T1/E1 MMC module. For clarity it is recommended that the comment field be filled in.

Digital Links	
Controller Module	1
Port	1
Unit	6
Shelf	1
Slot	2
Link	1
Interface Type	UNIVERSAL T1
Digital Link Descriptor	7
Comment	Q.SIG
Resilient Link	<input type="checkbox"/>
Resilient Link ID	1
Primary Network Element	
Secondary Network Element	

Save Cancel

6.4. Create MSDN-DPNSS-DASSII Trunk Circuit Descriptor

Navigate to **Trunks** → **Digital** → **MSDN-DPNSS-DASSII Trunk Circuit Descriptor** (not shown)

- Select **Universal T1** from **Card Type** drop down menu
- Select **Local Office** from **Far End Connection** drop down menu

MSDN-DPNSS-DASSII Trunk Circuit Descriptor

Number: 2

Card Type: UNIVERSAL T1

Dual Seizure Priority: Incoming Outgoing

Far End Connection: Local Office

Signalling Protocol: MSDN-DPNSS DASS II

ISDN BRI Mode: [dropdown]

Save Cancel

6.5. Set the ISDN Protocol

Navigate to **Trunks** → **Digital** → **ISDN** → **ISDN Protocol** (not shown)

In the ISDN Protocol form:

- Set **Protocol** to **Q.SIG**
- Set **Protocol Variant** to **ISO**
- Select **Fake Answer Supervision**
- Select **Enable Prefix Insertion**
- Type in a **Comment** for information purposes

The screenshot shows the 'ISDN Protocol' configuration form. The 'Protocol' dropdown is set to 'Q.SIG' and the 'Protocol Variant' dropdown is set to 'ISO'. The 'Q.SIG Only' section has 'Fake Answer Supervision' and 'Enable Prefix Insertion' checked. The 'Comment' field contains 'Avaya Q.SIG'.

ISDN Protocol	
Controller Module	1
Port	1
Link Number	1
Interface Type	T1
Protocol	Q.SIG
Protocol Variant	ISO
Network side/Q.SIG Master	<input type="checkbox"/>
Enbloc	<input type="checkbox"/>
Enable Unknown TON/NP	<input type="checkbox"/>
Enable NI2 Service Messages	<input type="checkbox"/>
Send NI2 Outgoing Name	<input type="checkbox"/>
Replace External CLID	<input type="checkbox"/>
Q.SIG Only	
Fake Answer Supervision	<input checked="" type="checkbox"/>
Enable Prefix Insertion	<input checked="" type="checkbox"/>
Comment	Avaya Q.SIG

6.6. Program Class Of Service (COS)

Navigate to **System Properties** → **System Feature Settings** → **Class of Service Options** (not shown)

Program a unique COS. In this example 7 is used. Add an identifier to the Comment field.

Class Of Service Number	7
Comment	QSIG

Set the following trunk options to **Yes**.

- ANI/DNIS/ISDN Number Delivery Trunk
- Public Network Access via DPNSS
- Public Network To Public Network Connection Allowed
- Trunk Calling Party Identification
- Trunk Flash Allowed
- Two B-Channel Transfer Allowed

Trunk

ANI/DNIS/ISDN Number Delivery Trunk	<input type="radio"/> No <input checked="" type="radio"/> Yes
DSS II OLI/TLI Provided	<input checked="" type="radio"/> No <input type="radio"/> Yes
Public Network Access via DPNSS	<input type="radio"/> No <input checked="" type="radio"/> Yes
Public Network To Public Network Connection Allowed	<input type="radio"/> No <input checked="" type="radio"/> Yes
Public Trunk	<input checked="" type="radio"/> No <input type="radio"/> Yes
R2 Call Progress Tone	<input checked="" type="radio"/> No <input type="radio"/> Yes
Suppress Simulated CCM after ISDN Progress	<input checked="" type="radio"/> No <input type="radio"/> Yes
Trunk Calling Party Identification	<input type="radio"/> No <input checked="" type="radio"/> Yes
Trunk Flash Allowed	<input type="radio"/> No <input checked="" type="radio"/> Yes
Two B-Channel Transfer Allowed	<input type="radio"/> No <input checked="" type="radio"/> Yes

Verify **Conference Call** is set to **Yes**.

Conference

Conference Call	<input type="radio"/> No <input checked="" type="radio"/> Yes
Disable Conference Join Tone	<input type="radio"/> No <input checked="" type="radio"/> Yes

6.7. Program Trunk Attributes

Navigate to **Trunks** → **Trunk Attributes** (not shown)

In this example, 7 is used as a Trunk Service Number.

- Set the **Class of Service** to the COS assigned in **Section 6.6**
- Set **Class of Restriction** to 1
- Set the **Dial-In Trunk Incoming Digit Modification – Absorb** to 0
- Add a **Trunk Label**

Trunk Attributes	
Trunk Service Number	7
Release Link Trunk	No
Call Recognition Service	Off
Class of Service	7
Class of Restriction	1
Baud Rate	9600
Intercept Number	1
Non-dial In Trunks Answer Point - Day	
Non-dial In Trunks Answer Point - Night 1	
Non-dial In Trunks Answer Point - Night 2	
Dial In Trunks Incoming Digit Modification - Absorb	0
Dial In Trunks Incoming Digit Modification - Insert	
Dial In Trunks Answer Point	
Dial In Trunks Insert Forwarding Information	<input checked="" type="radio"/> No <input type="radio"/> Yes
Trunk Label	Q.SIG

6.8. Program Digital Trunks

Navigate to **Trunks** → **Digital** → **Digital Trunks** (not shown)

In the Digital Trunks form, program 23 trunks.

- Assign a unique trunk number to each circuit
- Assign the Trunk Service Number created in **Section 6.7**
- Assign the Circuit Descriptor Number created in **Section 6.4**
- Interconnect Number and Tenant Number fields may be left as default of 1

Cabinet	6
Shelf	1
Slot	2
Circuit	1
Card Type	UNIVERSAL T1
Trunk Number	7001
Trunk Service Number	7
DTS Service Number	
Circuit Descriptor Number	2
Interconnect Number	1
Tenant Number	1

6.9. Program Trunk Groups

Navigate to **Trunks** → **Digital** → **Trunk Groups** (not shown)

Create a new Trunk Group. In this example Trunk Group Number 7 is used.

- Select **Terminal** for **Hunt Mode**
- Type in descriptive name in **Comment**

Add Range Programming - Trunk Groups Help

This form allows you to add one or more records.

1. Enter the number of records to add:

2. Define the Add Range Programming Pattern:

Field Name	Value to Add	Increment by
Trunk Group Number	<input type="text" value="7"/>	<input type="text"/>
Hunt Mode	<input checked="" type="radio"/> Terminal <input type="radio"/> Circular	-
Trunk Group Busy RAD	<input type="text"/>	<input type="text"/>
Maximum Network Hop	<input type="text"/>	<input type="text"/>
Comments	<input type="text" value="Q-SIG"/>	-

Preview Save Cancel

Add the 23 trunk members created in **Section 6.8** to the newly created group.

Add Range Programming - Trunk Group Members Help

This form allows you to add one or more records.

1. Enter the number of records to add:

2. Define the Add Range Programming Pattern:

Field Name	Value to Add	Increment by
Trunk Number	<input type="text" value="7001"/>	<input type="text" value="1"/>

6.10. Program Class Of Restriction Group

Navigate to **System Properties** → **System Feature Settings** → **Class of Restriction Groups** (not shown)

Verify that the class has no restrictions. Choose an index number without any restrictions applied. In this example **Number 1** is used. Note that the **Classes of Restriction For Group** is blank indicating no restrictions.

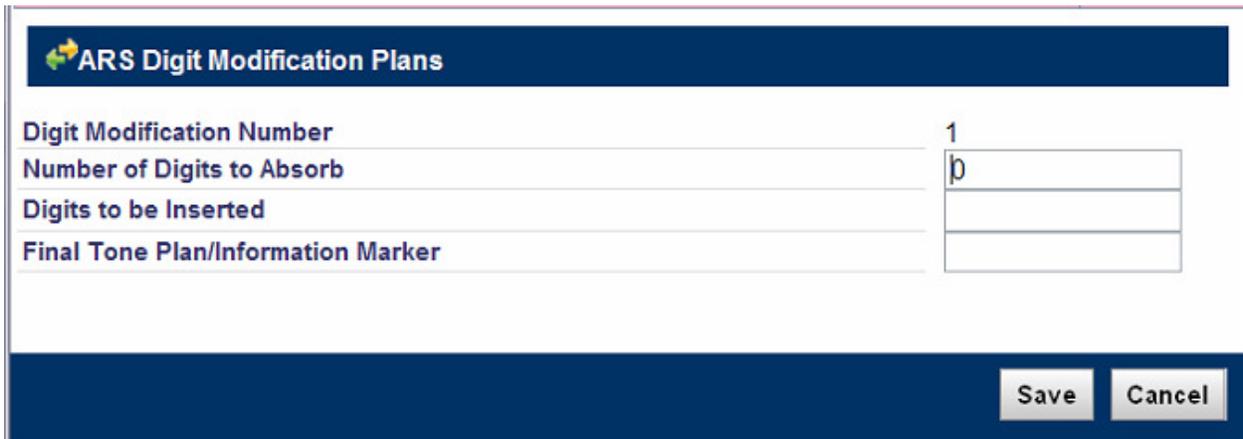


The screenshot shows a configuration window titled "Class of Restriction Groups". It has a dark blue header with a logo and the title. Below the header, there are two input fields. The first is labeled "Number" and contains the value "1". The second is labeled "Classes Of Restriction For Group" and is empty. At the bottom right, there are two buttons: "Save" and "Cancel".

6.11. Program Digit Modification Plan

Navigate to **Call Routing** → **Automatic Route Selections (ARS)** → **ARS Digit Modification Plans**

In this example **Digit Modification Number** of **1** is used. Set the **Number of Digits to Absorb** to **0**.



The screenshot shows a configuration window titled "ARS Digit Modification Plans". It has a dark blue header with a logo and the title. Below the header, there are four input fields. The first is labeled "Digit Modification Number" and contains the value "1". The second is labeled "Number of Digits to Absorb" and contains the value "0". The third is labeled "Digits to be Inserted" and is empty. The fourth is labeled "Final Tone Plan/Information Marker" and is empty. At the bottom right, there are two buttons: "Save" and "Cancel".

6.12. Program Route Assignment Form

Navigate to **Call Routing** → **Automatic Route Selection (ARS)** → **ARS Routes** (not shown)
In this example **Route Number** of **2** is used.

- Set **Routing Medium** to **TDM Trunk Group**
- Set **Trunk Group Number** created in **Section 6.9**
- Set **COR Group Number** from **Section 6.10**
- Set **Digit Modification Number** from **Section 6.11**

ARS Routes	
Route Number	2
Routing Medium	TDM Trunk Group
Trunk Group Number	7
SIP Peer Profile	
PBX Number / Cluster Element ID	
COR Group Number	1
Digit Modification Number	1
Digits Before Outpulsing	
Route Type	
Compression	Off

Save Cancel

6.13. Program ARS Digits Dialed Form

Navigate to **Call Routing** → **Automatic Route Selection (ARS)** → **ARS Digits Dialed**

In this example the Avaya extension are 5 digits in length and begin with a 2.

- Program the **Digits Dialed** field with the 1st digit of Avaya extensions
- Program the **Number of Digits to Follow** field to be the number of digits in the Avaya extension, minus 1 digit (the “2” programmed in Digits Dialed)
- Select **Route** for **Termination Type**
- Program **Termination Number** to match the route created in **Section 6.12**

Add Range Programming - ARS Digits Dialed Help

This form allows you to add one or more records.

1. Enter the number of records to add:

2. Define the Add Range Programming Pattern:

Field Name	Value to Add	Increment by
Digits Dialed	<input type="text" value="2"/>	<input type="text"/>
Number of Digits to Follow	<input type="text" value="4"/>	<input type="text"/>
Termination Type	<input type="text" value="Route"/>	<input type="text"/>
Termination Number	<input type="text" value="2"/>	<input type="text"/>

Preview Save Cancel

7. Verification Steps

7.1. Avaya Aura® Communication Manager

From the SAT interface, use the **status trunk *n*** command to check the status of the trunk, where *n* is the number of trunk group configured in **Section 5.4**. The **Service State** of **in-service/idle** indicates that the Q-SIG trunk between Communication Manager and Wesley Clover Solutions IP PBX is in service.

```
status trunk 6
```

TRUNK GROUP STATUS			
Member	Port	Service State	Mtce Connected Ports Busy
0002/001	001V601	in-service/idle	no
0002/002	001V602	in-service/idle	no
0002/003	001V603	in-service/idle	no
0002/004	001V604	in-service/idle	no
0002/005	001V605	in-service/idle	no

7.2. Wesley Clover Solutions

Navigate to **Maintenance and Diagnostic → Maintenance Commands**

The following maintenance commands may be useful for testing and validation. Please refer to the Wesley Clover Solutions IP PBX help files for additional commands and detailed descriptions.

- **DTSTAT READ <QSIG Link PLID> LAST 2**
This command will show the link status of the QSIG trunks for the last 2 hours.
- **STAT TRUNK GROUP <trunk group number>**
Use this command to view the status of the QSIG trunk. <trunk group number> qualifier is trunk group assigned to the QSIG trunks.
- **DGT TRACE <number>**
This command is useful to validate outbound ARS routing.
- **LOGS READ SMDR NEWEST <number>**
This command may be used to check call records for inbound or outbound calls. <number> is the number of records to read.

8. Conclusion

Wesley Clover Solutions Trading Platform was able to successfully interoperate with Avaya Aura® Communication Manager. All executed test cases passed.

9. Additional References

Product documentation for Avaya products may be found at <http://support.avaya.com>.

- [1] Administering Avaya Aura® Communication Manager, Release 6.3, Document 03-3005089, Issue 7.0, December 2012

Product information for Wesley Clover Solutions Trading Platform can be obtained from www.wesleycloversolutions.com

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