Avaya Solution & Interoperability Test Lab

Application Notes for Metropolis ProfitWatch Hotel Call Accounting with Avaya Aura™ Communication Manager – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Metropolis ProfitWatch Hotel Call Accounting to interoperate with Avaya Aura™ Communication Manager. Metropolis ProfitWatch Hotel Call Accounting is a call accounting application that uses the Call Detail Recording records from Avaya Aura™ Communication Manager to track phone calls and produce detailed reports for a hospitality environment.

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 Metropolis ProfitWatch Hotel Call Accounting to interoperate with Avaya Aura™ Communication Manager. Metropolis ProfitWatch Hotel Call Accounting is a call accounting application that uses the Call Detail Recording (CDR) records from Avaya Aura™ Communication Manager to track phone calls and produce detailed reports for a hospitality environment.

1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the proper parsing and displaying of CDR data received from Avaya Aura™ Communication Manager by Metropolis ProfitWatch Hotel Call Accounting for call scenarios including internal, inbound PSTN, outbound PSTN, transfer, conference, park, pickup, forward, account codes, and authorization codes. The verification also included sanity check on the various types of reports that can be generated from the received CDR data.

The serviceability testing focused on verifying the ability of Metropolis ProfitWatch Hotel Call Accounting to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable on the Metropolis ProfitWatch Hotel Call Accounting server.

1.2. Support

Technical support on Metropolis ProfitWatch Hotel Call Accounting can be obtained through the following:

- **Phone:** (954) 414-2900
- **Email:** support2010@metropolis.com

2. Reference Configuration

Figure 1 below shows the configuration used for the compliance testing.

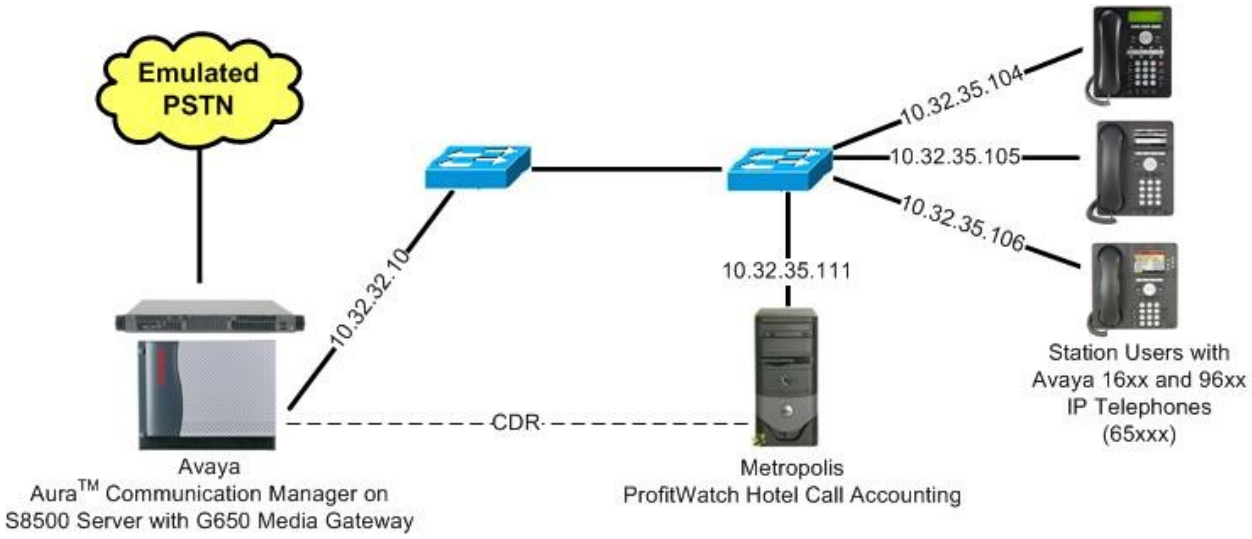


Figure 1: Metropolis ProfitWatch Hotel Call Accounting with Avaya Aura™ Communication Manager

3. Equipment and Software Validated

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

Equipment	Software
Avaya Aura™ Communication Manager on Avaya S8500 Server	R015x.02.0.947.3
Avaya G650 Media Gateway • TN799DP C-LAN Circuit Pack	 HW01 FW032
Avaya 1608 IP Telephone (H.323)	1.2
Avaya 9620 and 9640 IP Telephones (H.323)	3.0
Metropolis ProfitWatch Hotel Call Accounting	2010.01.13

4. Configure Avaya Aura™ Communication Manager

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

- Administer IP node names
- Administer IP services
- Administer system parameters CDR
- Administer trunk groups
- Administer intra switch CDR

4.1. Administer IP Node Names

Use the "change node-names ip" command, and add an entry for Metropolis ProfitWatch Hotel Call Accounting. In this case, "CDR-Metropolis" and "10.32.35.111" are entered as **Name** and **IP Address**. The actual node name and IP address may vary.

Note the **Name** of an existing C-LAN circuit pack that will be used for connectivity to Metropolis, in this case "Clan-1".

```
change node-names ip                                        Page   1 of   2
                                IP NODE NAMES
    Name              IP Address
AES-Test            10.32.32.20
Annc-1              10.32.32.14
CDR-Metropolis      10.32.35.111
Clan-1              10.32.32.12
```

4.2. Administer IP Services

Use the "change ip-services" command to add an entry for CDR connectivity to Metropolis. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Service Type:** "CDR1"
- **Local Code:** Node name of the C-LAN circuit pack from **Section 4.1**.
- **Local Port:** "0"
- **Remote Node:** Node name of the Metropolis server from **Section 4.1**.
- **Remote Port:** An available port in the range of 5000-64500.

```
change ip-services                                          Page   1 of   4

                                  IP SERVICES
 Service     Enabled     Local       Local       Remote      Remote
  Type                   Node        Port        Node        Port
CDR1                  Clan-1          0       CDR-Metropolis  9002
AESVCS         y      Clan-1          8765
```

Navigate to **Page 3**, locate the automatically created "CDR1" entry, and enter "y" for **Reliable Protocol**.

```
change ip-services                                          Page   3 of   4

                            SESSION LAYER TIMERS
  Service     Reliable  Packet Resp   Session Connect  SPDU  Connectivity
   Type       Protocol     Timer       Message Cntr    Cntr     Timer

 CDR1            y         30               3          3         60
```

4.3. Administer System Parameters CDR

Enter the "change system-parameters cdr" command to modify CDR related system parameters. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Primary Output Format:** "unformatted"
- **Primary Output Endpoint:** CDR service type from **Section 4.2**.
- **Use Legacy CDR Formats:** "n"
- **Intra-switch CDR:** "y"
- **Record Outgoing Calls Only:** "n"
- **Outg Trk Call Splitting:** "y"
- **Inc Trk Call Splitting:** "y"

```
change system-parameters cdr                                    Page   1 of   1
                           CDR SYSTEM PARAMETERS

 Node Number (Local PBX ID): 1                      CDR Date Format: month/day
      Primary Output Format: unformatted   Primary Output Endpoint: CDR1
    Secondary Output Format:
           Use ISDN Layouts? n                   Enable CDR Storage on Disk? n
       Use Enhanced Formats? n      Condition Code 'T' For Redirected Calls? n
      Use Legacy CDR Formats? n
                  Remove # From Called Number? n
Modified Circuit ID Display? n                                Intra-switch CDR? y
                  Record Outgoing Calls Only? n     Outg Trk Call Splitting? y
  Suppress CDR for Ineffective Call Attempts? y       Outg Attd Call Record? y
      Disconnect Information in Place of FRL? n      Interworking Feat-flag? n
 Force Entry of Acct Code for Calls Marked on Toll Analysis Form? n
                                   Calls to Hunt Group - Record: member-ext
Record Called Vector Directory Number Instead of Group or Member? n
Record Agent ID on Incoming? n       Record Agent ID on Outgoing? y
     Inc Trk Call Splitting? y                 Inc Attd Call Record? y
  Record Non-Call-Assoc TSC? n           Call Record Handling Option: warning
      Record Call-Assoc TSC? n   Digits to Record for Outgoing Calls: dialed
   Privacy - Digits to Hide: 0               CDR Account Code Length: 15
```

4.4. Administer Trunk Groups

For every trunk group for which CDR records are desired, enter the "change trunk-group n" command where "n" is the trunk group number. Make certain that **CDR Reports** is enabled, as shown below. Note that "y" is the default value for **CDR Reports**.

```
change trunk-group 500                                        Page   1 of  21
                              TRUNK GROUP

Group Number: 500                Group Type: isdn          CDR Reports: y
  Group Name: PRI to IPO500              COR: 1        TN: 1        TAC: 1450
   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
                        Far End Test Line No:
TestCall BCC: 4
```

In the compliance testing, two trunks groups were enabled for CDR records, as shown below.

```
list trunk-group

                              TRUNK GROUPS

Grp                                                 No.                  Out Que
No.  TAC  Group Type    Group Name                  Mem TN  COR CDR Meas Dsp Len

350  1035 isdn          IP Trunk to G350            6   1   1   y   none n   0
500  1450 isdn          PRI to IPO500               23  1   1   y   none n   0
```

4.5. Administer Intra Switch CDR

The CDR feature generally records calls originating or terminating outside of Communication Manager. To record calls between local users on Communication Manager, use the "change intra-switch-cdr" command and add an entry for each local user extension desired to be recorded. In the compliance testing, calls to and from five existing local user extensions shown below were recorded.

```
change intra-switch-cdr                                       Page   1 of   3
                          INTRA-SWITCH CDR

                               Assigned Members:   0    of 5000   administered
   Extension          Extension          Extension          Extension
   65000
   65001
   65002
   65005
   65007
```

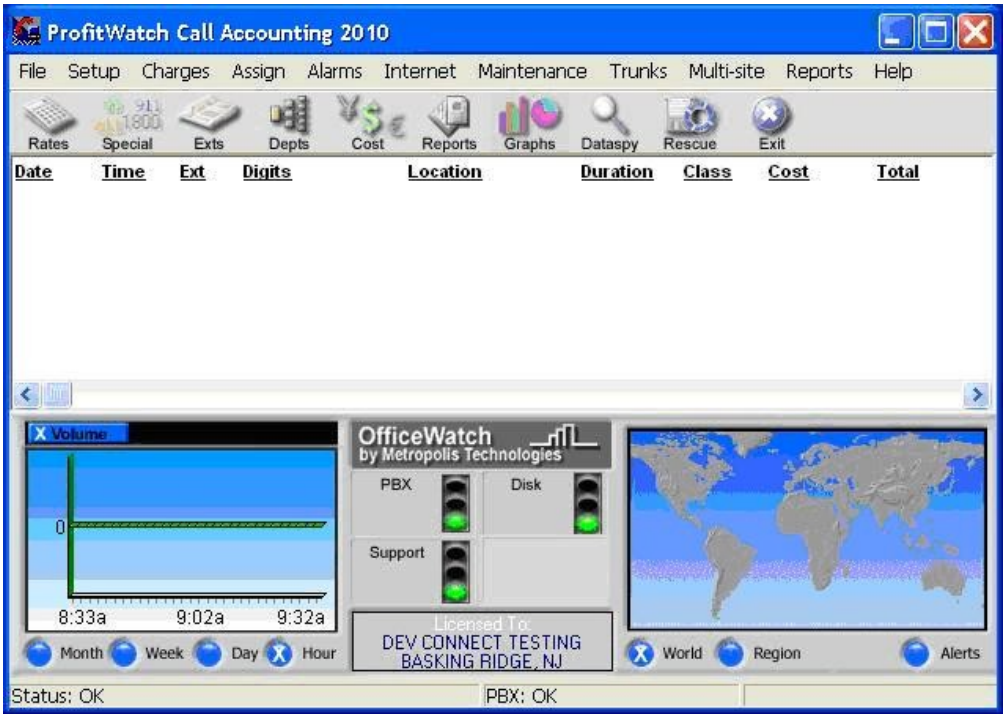
5. Configure Metropolis ProfitWatch Hotel Call Accounting

This section provides the procedures for configuring Metropolis ProfitWatch Hotel Call Accounting. The procedures include the following areas:

- Administer PBX
- Administer customize
- Administer grace periods

5.1. Administer PBX

From the Metropolis ProfitWatch Hotel Call Accounting server, select **Start > All Programs > Metropolis > ProfitWatch** to display the **ProfitWatch Call Accounting 2010** screen. Select **Setup > PBX** from the top menu.

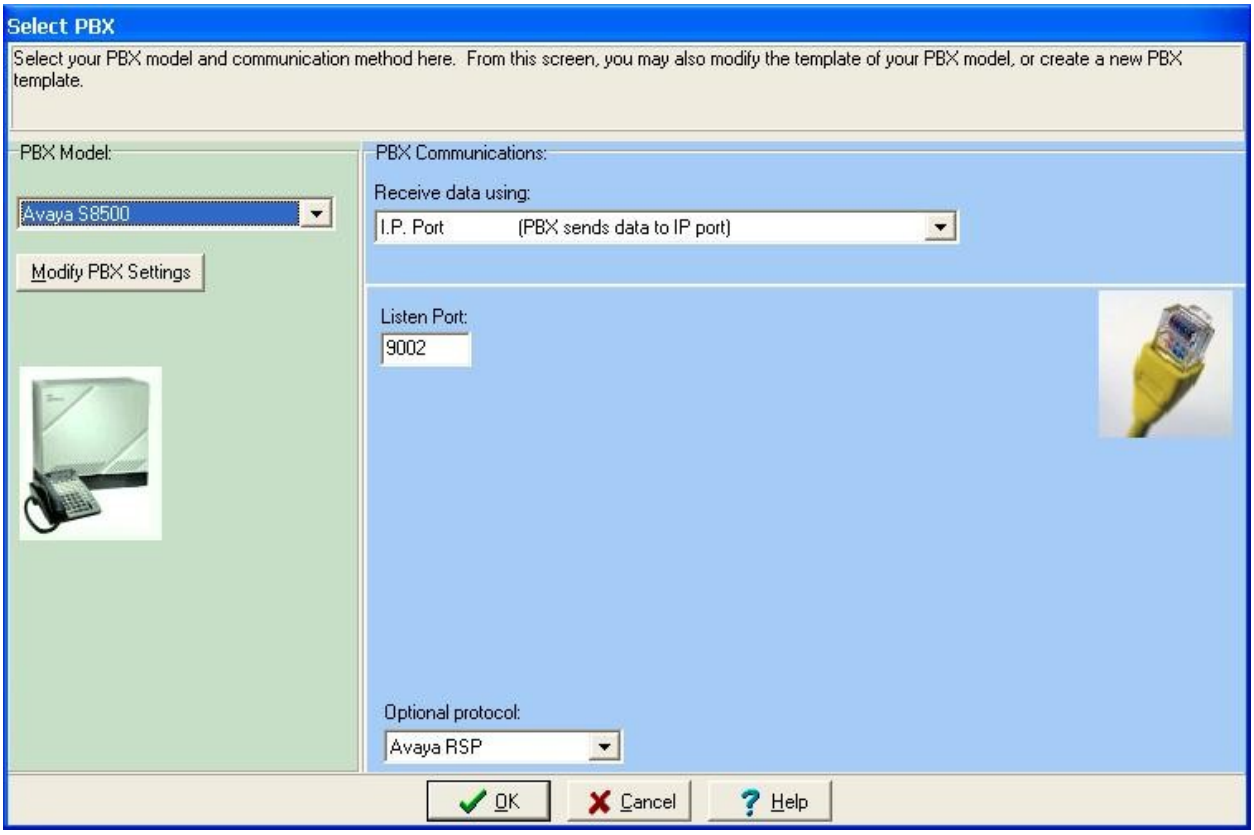


The **Password Security** screen is displayed. Enter the appropriate credentials.

The **Select PBX** screen is displayed next. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **PBX Model:** Select an applicable type, in this case "Avaya S8500".
- **Receive data using:** "I.P. Port (PBX sends data to IP port)"
- **Listen Port:** The remote port number from **Section 4.2**.
- **Optional protocol:** "Avaya RSP"

Click **Modify PBX Settings** in the left pane.

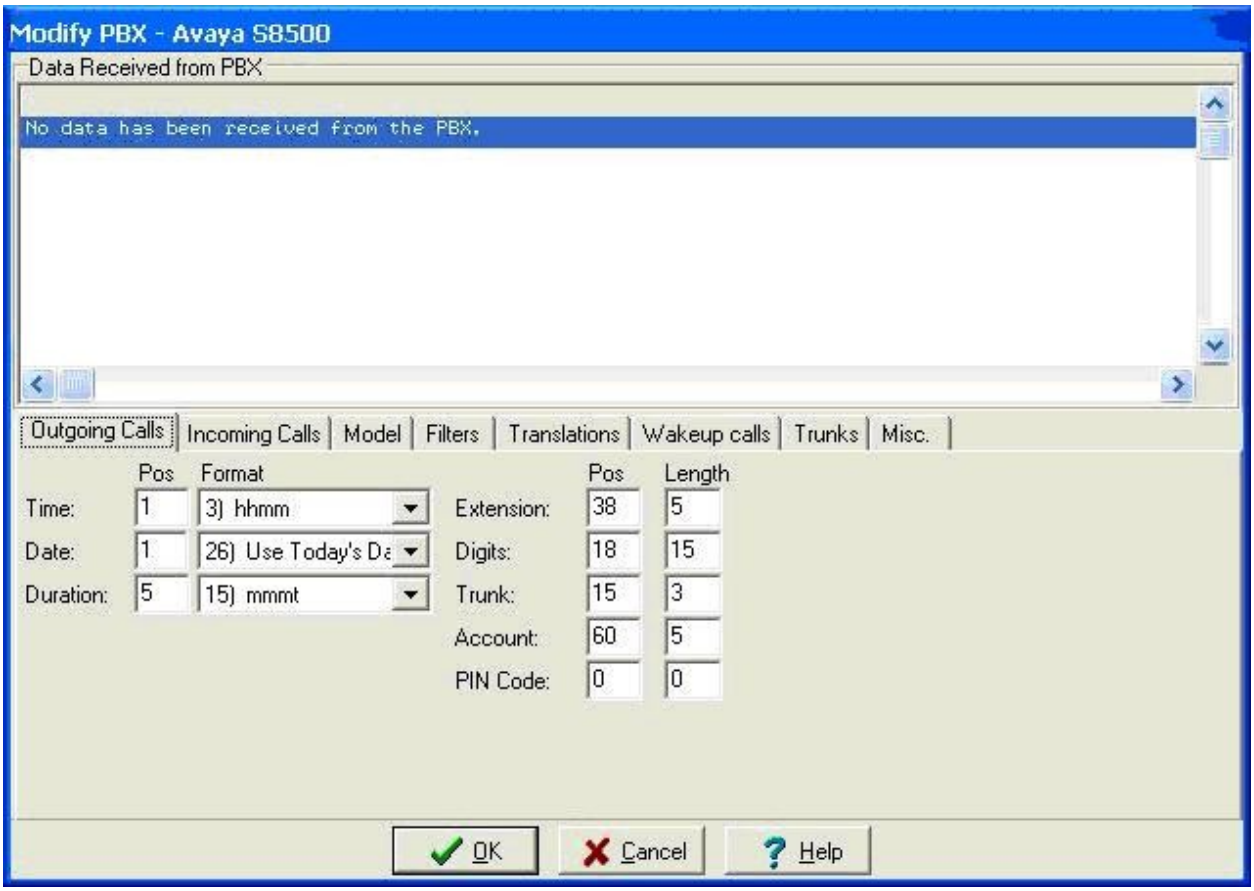


The **Modify PBX** screen is displayed. Note that in a live customer environment, CDR data may start appearing in the top portion of the screen. Select the **Outgoing Calls** tab.

For **Extension Length**, enter the maximum number of digits used for internal extensions on Avaya Aura™ Communication Manager. As the calling number field in the CDR record is right-justified and ends at position 42, adjust the **Extension Pos** value accordingly. In the compliance testing, calling numbers with 5-digit extensions appear in position 38-42 in the CDR records.

For **Digits**, enter "18" for **Pos** and "15" for **Length** as shown below. This will match to any number in the dialed number field in position 18-32 of the CDR record.

Retain the default values in the remaining fields.

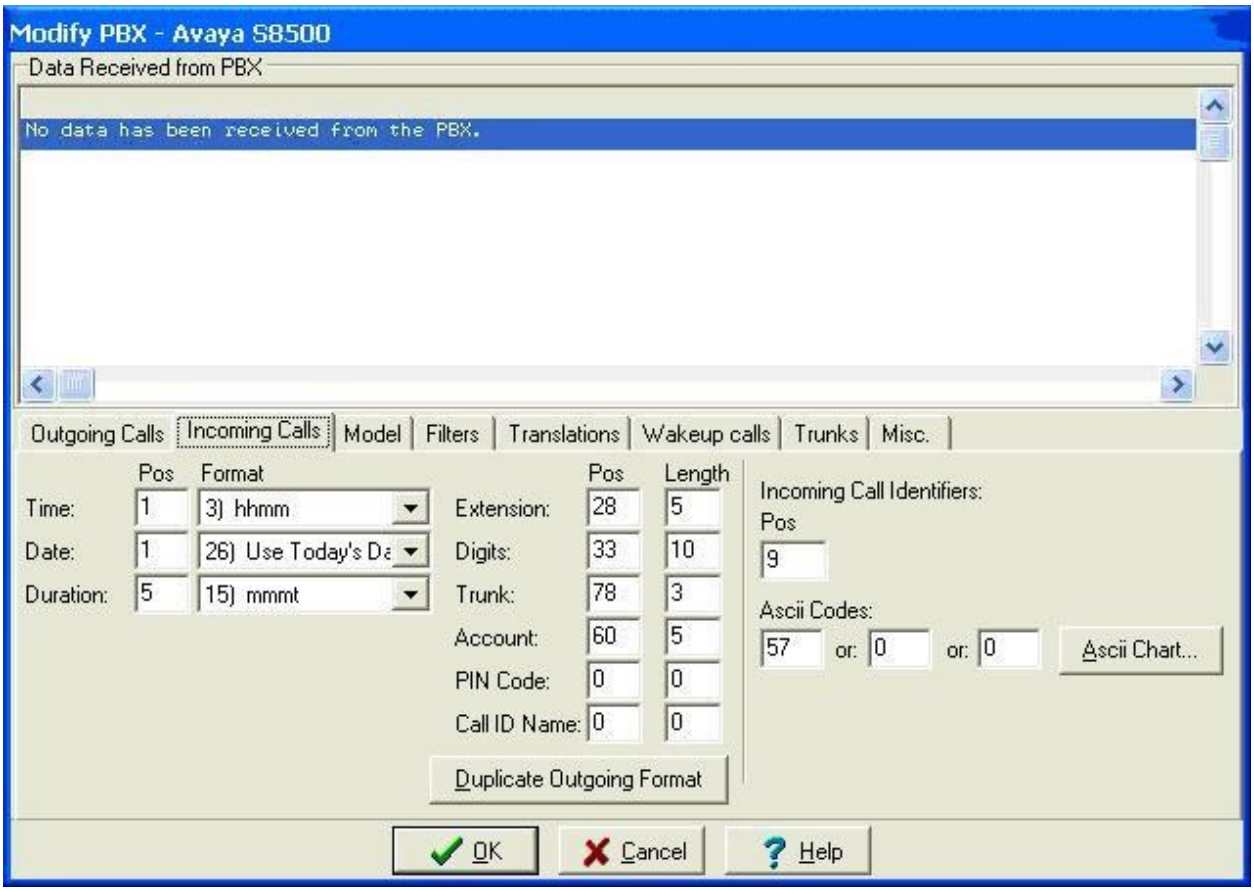


Select the **Incoming Calls** tab. For **Extension Length**, enter the maximum number of digits used for the internal extensions on Avaya Aura™ Communication Manager. The dialed number field in the CDR record is right-justified and ends at position 32, adjust the **Extension Pos** value accordingly. In the compliance testing, dialed numbers with 5-digit extensions appear in position 28-32 in the CDR records.

For **Digits**, enter "33" for **Pos** and "10" for **Length** as shown below. This will match to any number in the calling number field in position 33-42 of the CDR record.

For **Incoming Call Identifiers**, enter "9" for **Pos** and "57" for **Ascii Codes**. This will match to inbound calls with a condition code value of 9 in position 9 of the CDR record.

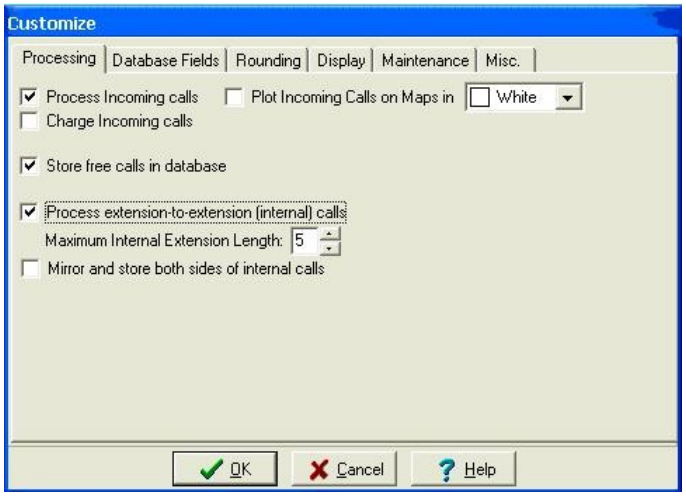
Retain the default values in the remaining fields.



5.2. Administer Customize

The **ProfitWatch Call Accounting 2010** screen shown in **Section 5.1** is displayed again (not shown below). Select **Setup > Customize** from the top menu, to display the **Customize** screen.

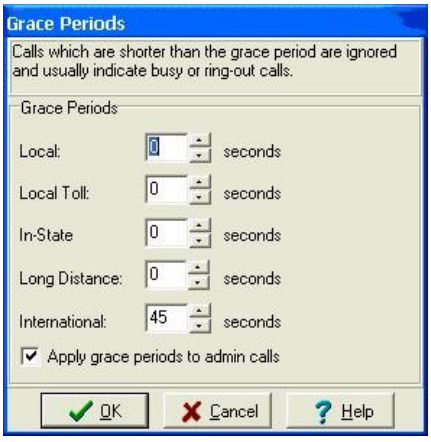
Check **Process Incoming calls** and **Process extension-to-extension (internal) calls** if desired. Set the appropriate value for **Maximum Internal Extension Length**, and retain the default values in the remaining fields. The screenshot below shows the settings used for the compliance testing.



5.3. Administer Grace Periods

The **ProfitWatch Call Accounting 2010** screen shown in **Section 5.1** is displayed again (not shown below). Select **Charges > Grace Periods** from the top menu, to display the **Grace Periods** screen.

Modify the grace period value for each type of call if desired. Note that calls with duration shorter than the grace period will not be logged. The screenshot below shows the settings used for the compliance testing.



6. General Test Approach and Test Results

The feature test cases were performed manually. Different types of calls were made, along with different actions initiated from the user telephones, to verify proper parsing and displaying of received CDR data by Metropolis ProfitWatch Hotel Call Accounting.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet cables on the Metropolis ProfitWatch Hotel Call Accounting server.

All test cases were executed. The following were the observations on Metroplis ProfitWatch Hotel Call Accounting from the compliance testing.

- Any change to the **Optional protocol** field on the **Select PBX** screen needs to be saved on the same screen, or else the change will be lost.

- Inbound CDR records with condition code values other than "9" can be mis-classified. An example is an inbound call involved in a conference scenario with a condition code of "C", and the call was classified as an internal call.

- Inbound CDR records with condition code values other than "9" and blank calling number will not be processed. An example is an inbound call involved in a conference scenario with a condition code of "C" and blank calling number, and the CDR record was not processed.

7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Aura™ Communication Manager and Metropolis ProfitWatch Hotel Call Accounting.

7.1. Verify Avaya Aura™ Communication Manager

Verify the status of the CDR link by using the "status cdr-link" command. Verify that the **Link State** of the primary CDR link is "up", as shown below.

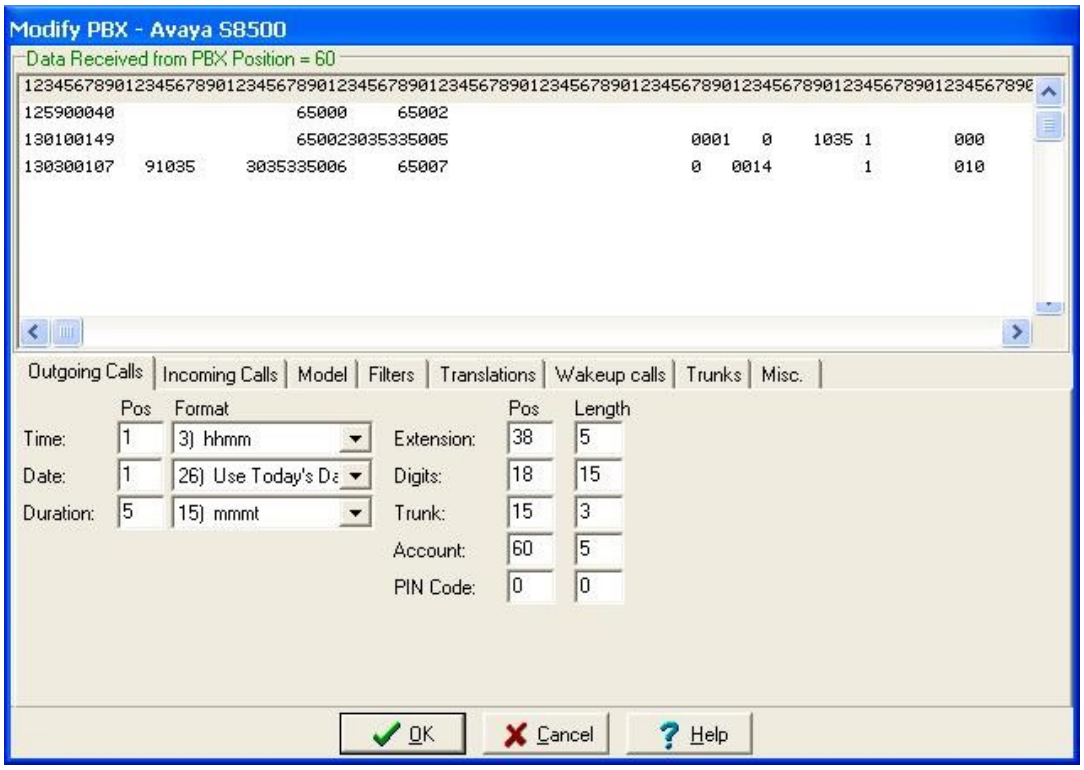
```
status cdr-link
                              CDR LINK STATUS
                    Primary                       Secondary

       Link State: up                             CDR not administered

      Date & Time: 2010/1 /28 8 :59:42            0   /0 /0  0 :0 :0
  Forward Seq. No: 44                             0
 Backward Seq. No: 0                              0
CDR Buffer % Full:   0.00                           0.00
      Reason Code: OK
```

7.2. Verify Metropolis ProfitWatch Hotel Call Accounting

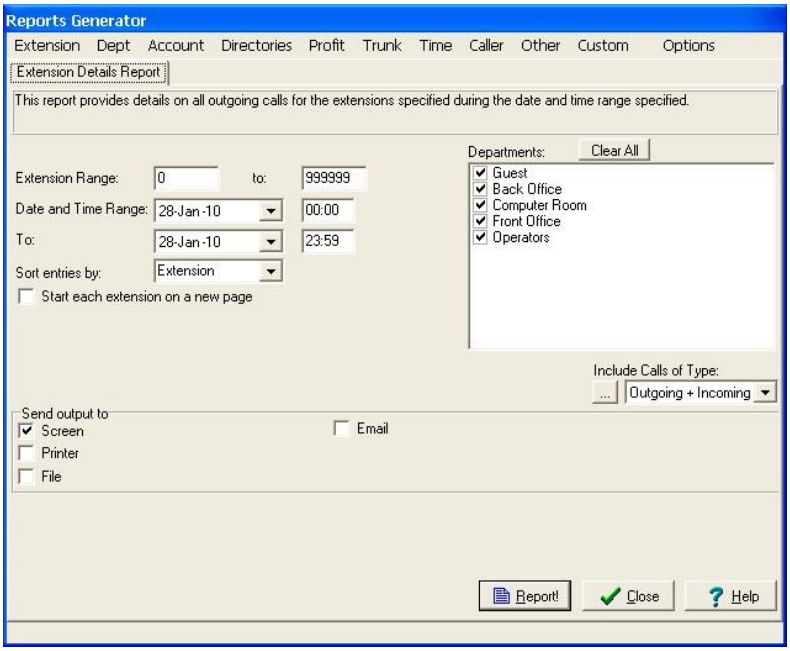
Make and complete a few phone calls, including internal, inbound from the PSTN, and outbound to the PSTN.

From the Metropolis ProfitWatch Hotel Call Accounting server, follow the navigation in **Section 5.1** to display the **ProfitWatch Call Accounting 2010** screen. Verify that an entry is displayed for each completed call. Note that the **Cost** data shown below is estimated by ProfitWatch based on call destination and duration.

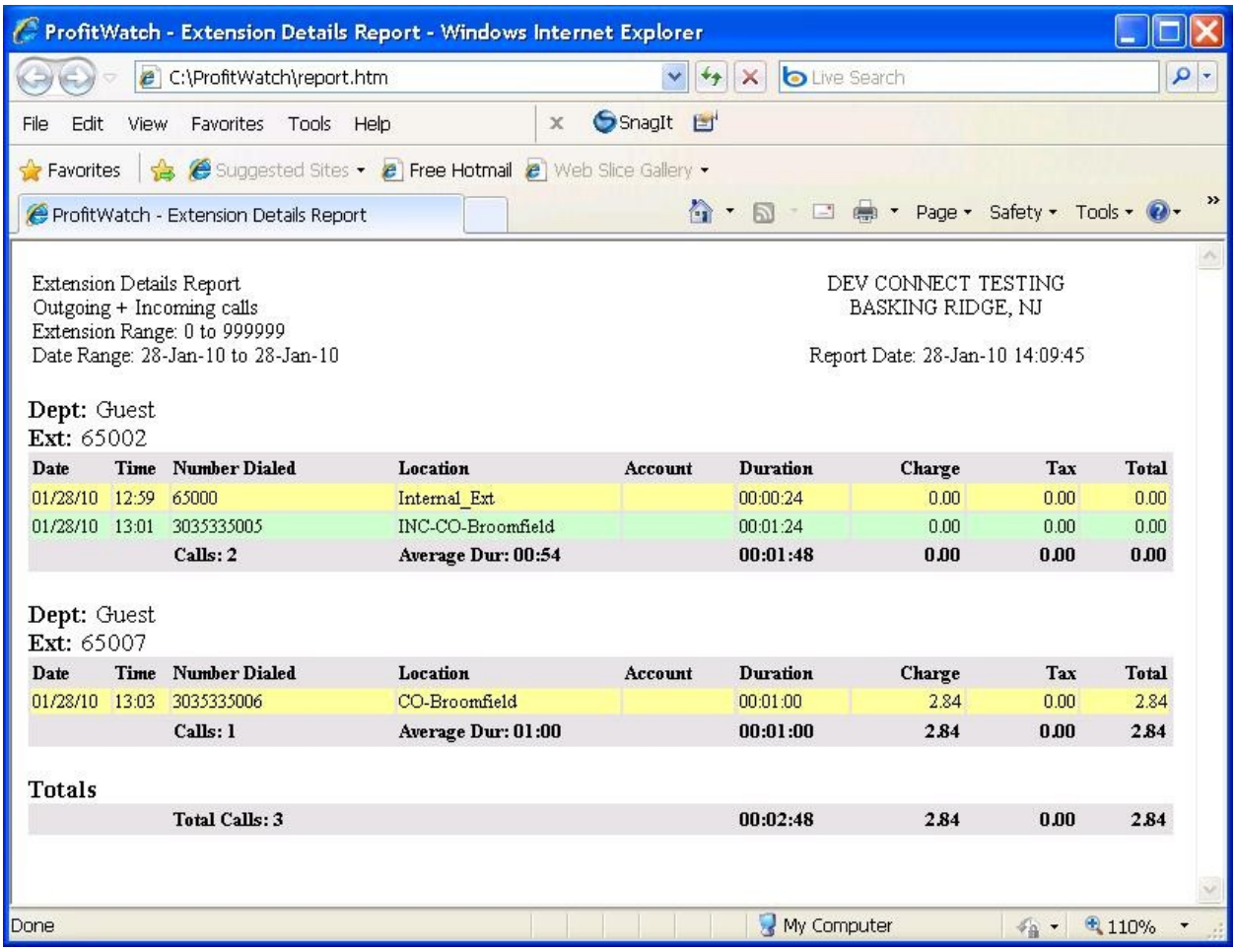
Follow the navigation in **Section 5.1** to display the **Modify PBX** screen. In the top portion of the screen, verify that an entry is displayed for each completed call with proper values.



From the **ProfitWatch Call Accounting 2010** screen (not shown below), select **Reports > Report Generator** from the top menu. The **Reports Generator** screen is displayed. Select **Extension > Extension Details Report** from the top menu, and click **Report**.



The **Extension Details Report** automatically pops up in a browser window. Verify that the report entries match to the entries on the **ProfitWatch Call Accounting 2010** screen.



8. Conclusion

These Application Notes describe the configuration steps required for the Metropolis ProfitWatch Hotel Call Accounting to successfully interoperate with Avaya Aura™ Communication Manager. All feature and serviceability test cases were completed with three observations noted in **Section 6**.

9. Additional References

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

1. *Administrator Guide for Avaya Aura™ Communication Manager*, Document 03-300509, Issue 5.0, Release 5.2, May 2009, available at http://support.avaya.com.

2. *Call Accounting User Guide*, Version 2010.01.13, available upon request to info2010@metropolis.com.

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.