



## **Avaya Solution & Interoperability Test Lab**

---

# **Application Notes for Resource Software International Shadow CMS with Avaya IP Office – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for Resource Software International Shadow CMS to interoperate with Avaya IP Office. Resource Software International Shadow CMS is a telephone reporting solution that uses the Station Message Detail Recording records from Avaya IP Office to track phone calls and produce detailed reports.

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 Resource Software International (RSI) Shadow CMS to interoperate with Avaya IP Office. RSI Shadow CMS is a telephone reporting solution that uses the Station Message Detail Recording (SMDR) records from Avaya IP Office to track phone calls and produce detailed reports.

## 2. General Test Approach and Test Results

Different types of calls were made, along with different actions initiated from the user telephones, to verify proper parsing and displaying of received SMDR data by RSI Shadow CMS. The feature test cases were performed manually.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet cables on the RSI Shadow CMS server.

### 2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the proper parsing and displaying of SMDR data received from Avaya IP Office by RSI Shadow CMS for call scenarios including internal calls, voicemail, inbound PSTN, outbound PSTN, hold, reconnect, transfer, conference, park, account codes, and authorization codes. The verification also included a sanity check on the report that can be generated from the received SMDR data.

The serviceability testing focused on verifying the ability of RSI Shadow CMS to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable on the RSI Shadow CMS server.

### 2.2. Test Results

All test cases were executed and passed.

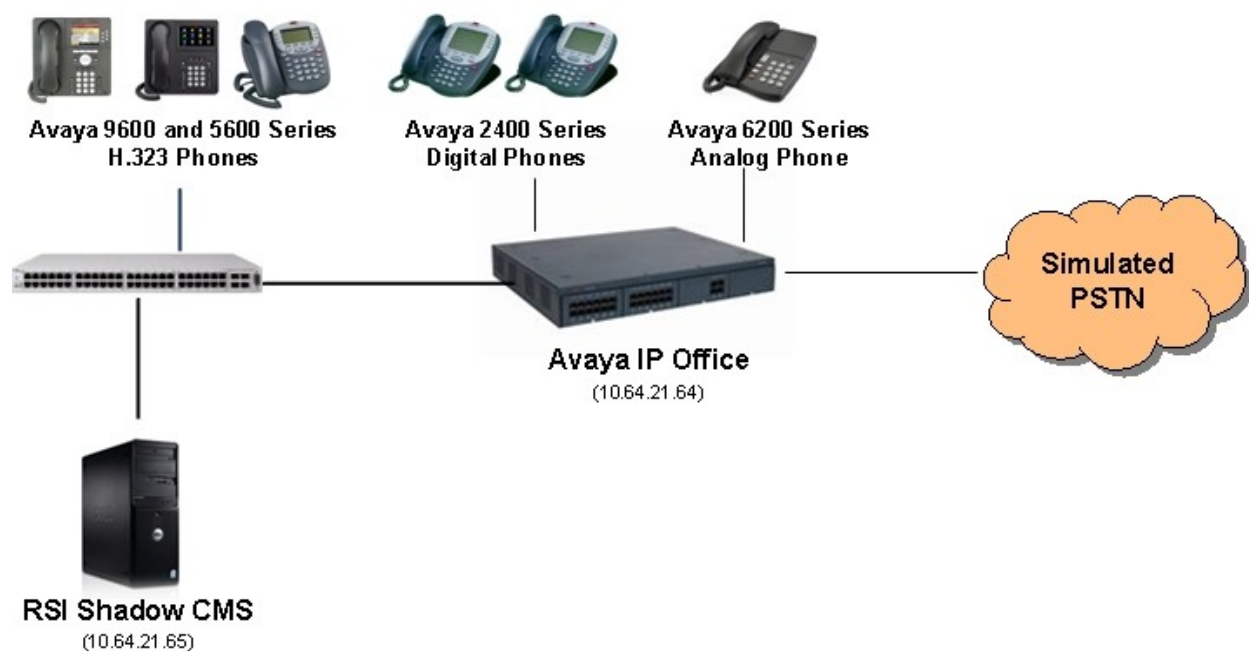
### 2.3. Support

Technical support on RSI Shadow CMS can be obtained through the following:

- **Phone:** 905-576-4575
- **Email:** [support@telecost.com](mailto:support@telecost.com)
- **Web:** [www.telecost.com](http://www.telecost.com)

### 3. Reference Configuration

The configuration used for the compliance testing is shown below.



### 4. Equipment and Software Validated

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

Equipment	Software
Avaya IP Office 500 <ul style="list-style-type: none"><li>DIGSTA8/PRIS U</li><li>VCM32</li><li>ANALOG POTS30V2</li></ul>	8.0 (13) <ul style="list-style-type: none"><li>8.0 (13)</li><li>8.0 (13)</li><li>10.0 (13)</li></ul>
Avaya 6200 Series Analog Telephone	—
Avaya 2400 Series Digital Telephones	Release 6
Avaya 5600 Series IP Telephones (H.323)	2.9.1
Avaya 9600 Series IP Telephones (H.323) <ul style="list-style-type: none"><li>96x0</li><li>96x1</li></ul>	3.1 SP2 6.0 SP5
RSI Shadow CMS on Windows XP Professional Service Pack 3 PC	4.3.0.003

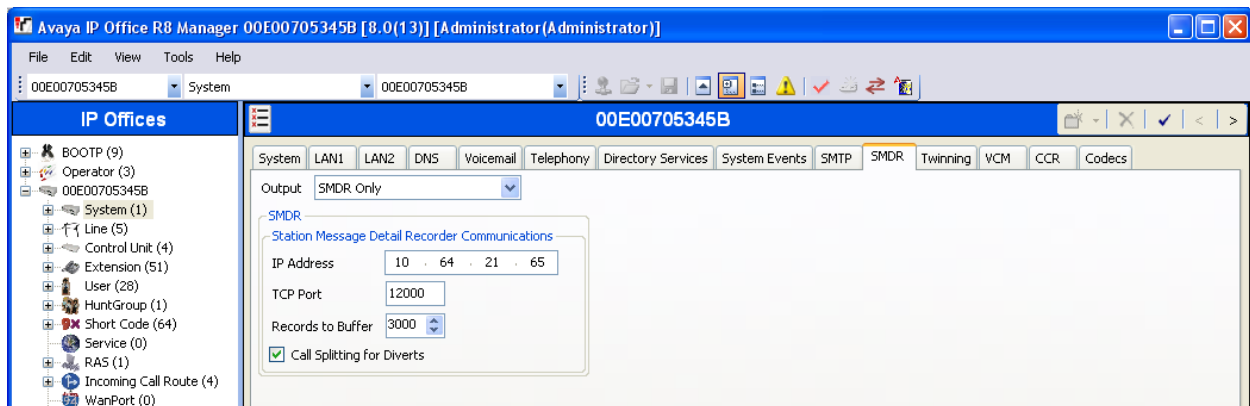
## 5. Configure Avaya IP Office

This section provides the procedures for configuring Avaya IP Office.

From a PC running the Avaya IP Office Manager application, select **Start > Programs > IP Office > Manager** to launch the Manager application. Select the proper IP Office system, and log in with the appropriate credentials (not shown).

From the configuration tree in the left pane, select the appropriate **System** to display the system screen tabs in the right pane. Select the **SMDR** tab. Select “SMDR Only” from the **Output** drop-down list, to display the **SMDR** section.

For **IP Address**, enter the IP address of RSI Shadow CMS server. For **TCP Port**, enter a desired port, in this case “12000”. Modify **Records to Buffer** if desired, and check **Call Splitting for Diverts**. The record buffer is used by IP Office to cache SMDR records in the case of a communication failure with RSI Shadow CMS.



## 6. Configure RSI Shadow CMS

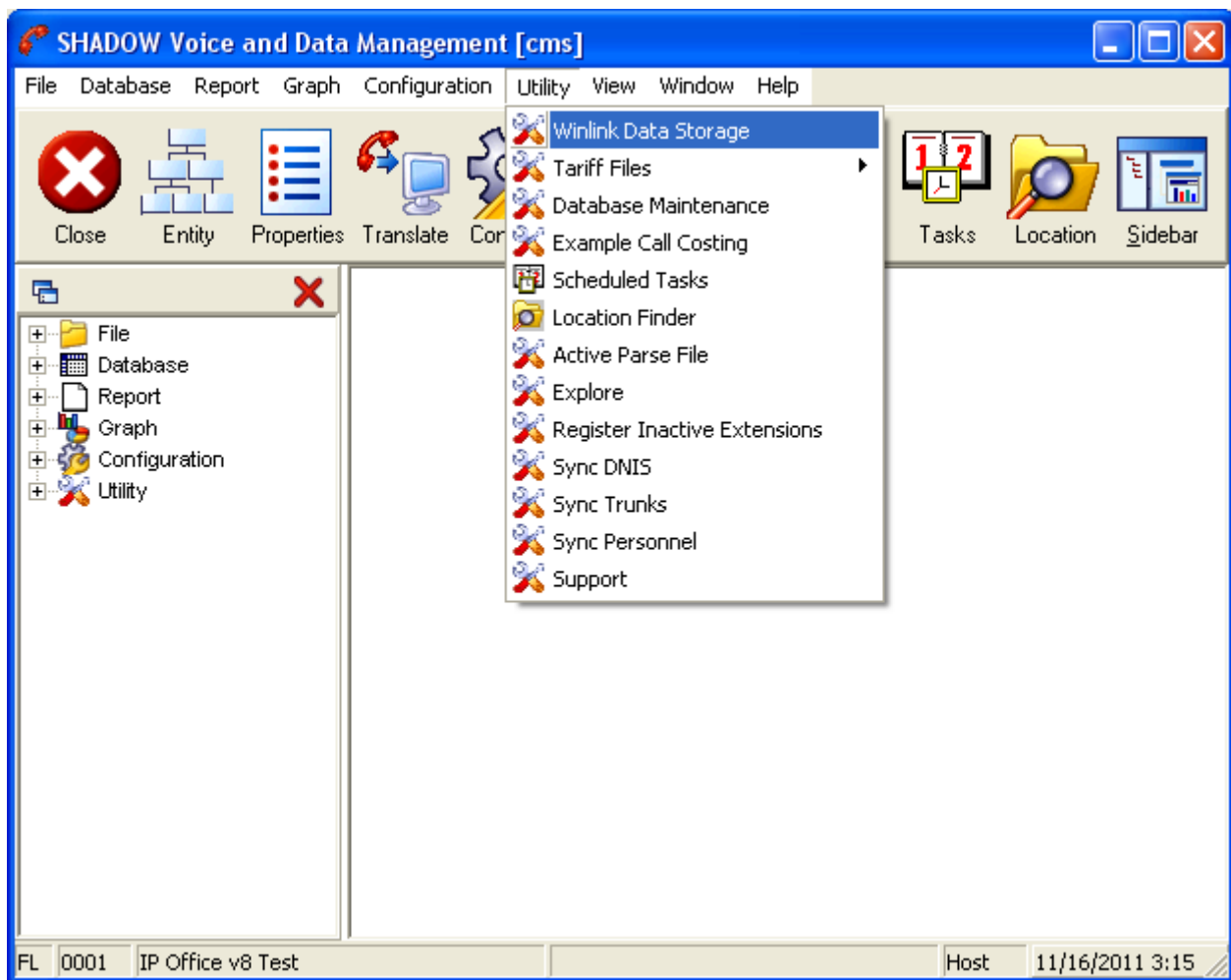
This section provides the procedures for configuring RSI Shadow CMS. The procedures include the following areas:

- Launch application
- Administer data source
- Administer socket settings

### 6.1. Launch Application

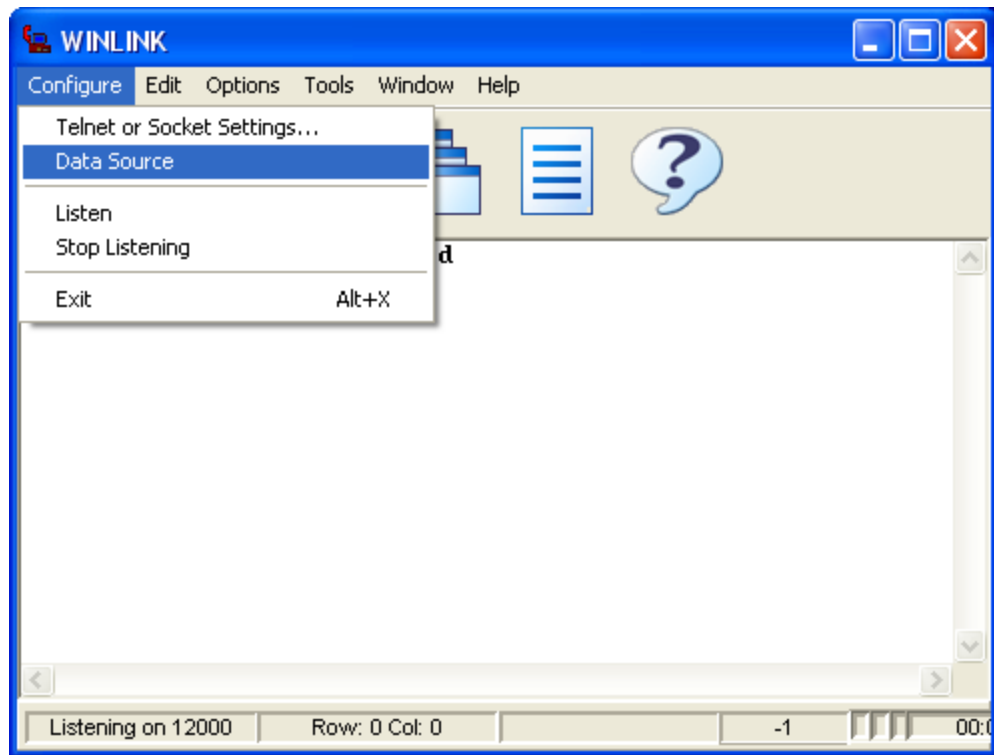
From the Shadow CMS server, select **Start > All Programs > RSI > CMS > CMS** to display the **SHADOW Voice and Data Management** screen.

Select **Utility > Winlink Data Storage** from the top menu.

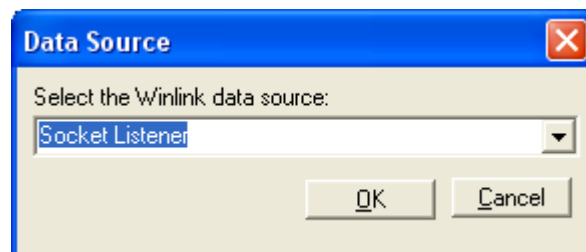


## 6.2. Administer Data Source

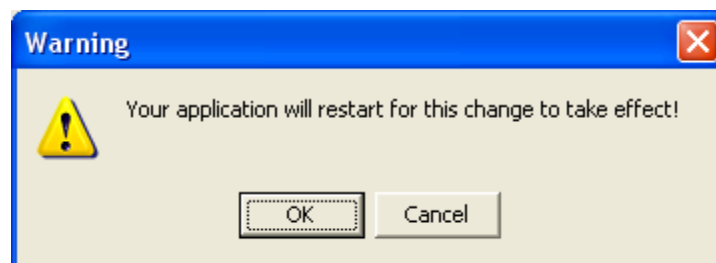
The **winlink** screen is displayed. Select **Configure > Data Source** from the top menu.



The **Data Source** screen is displayed next. Select “Socket Listener” from the drop-down list, as shown below. Click **OK**.

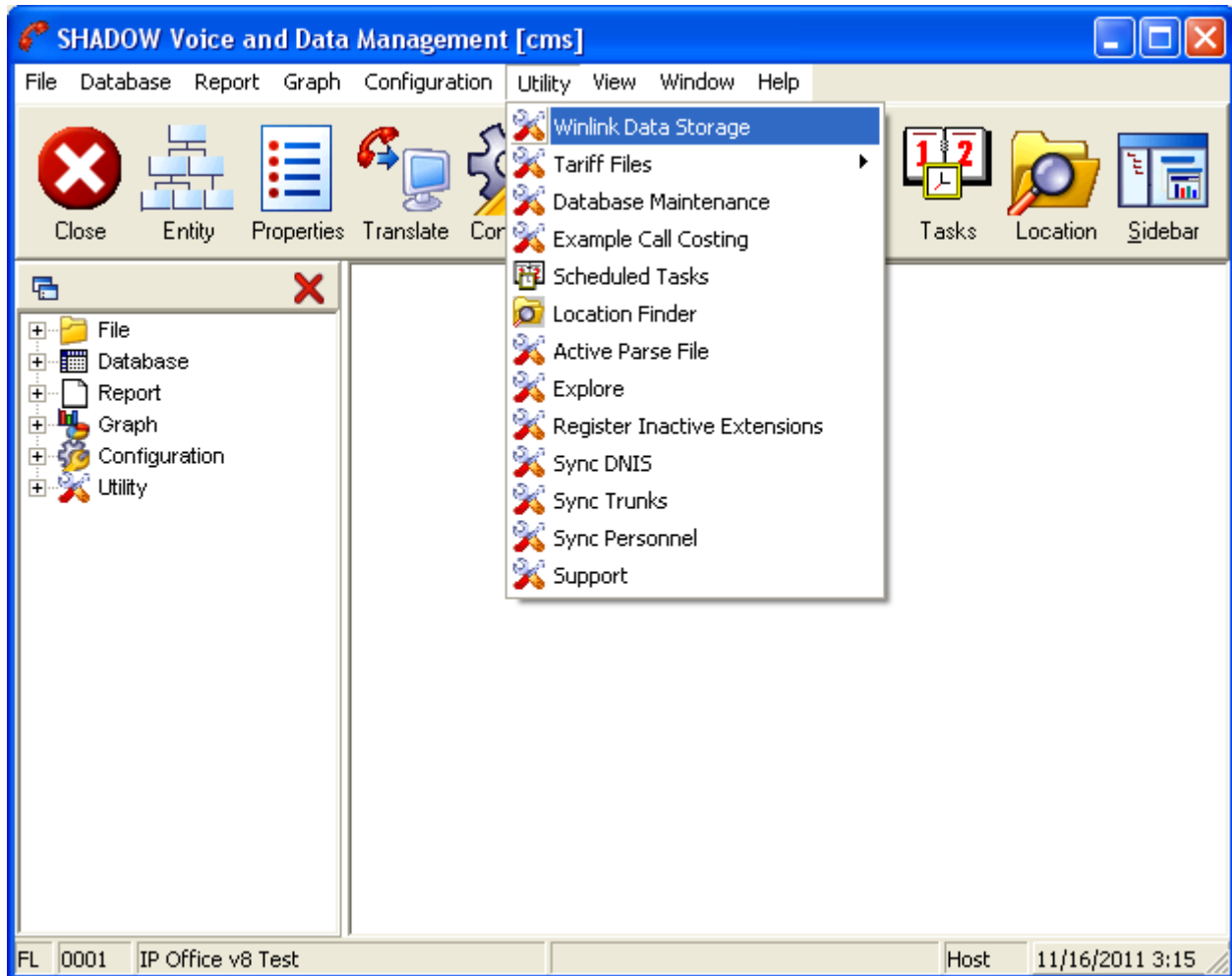


The **Warning** screen is displayed. Select **OK** to restart the application.

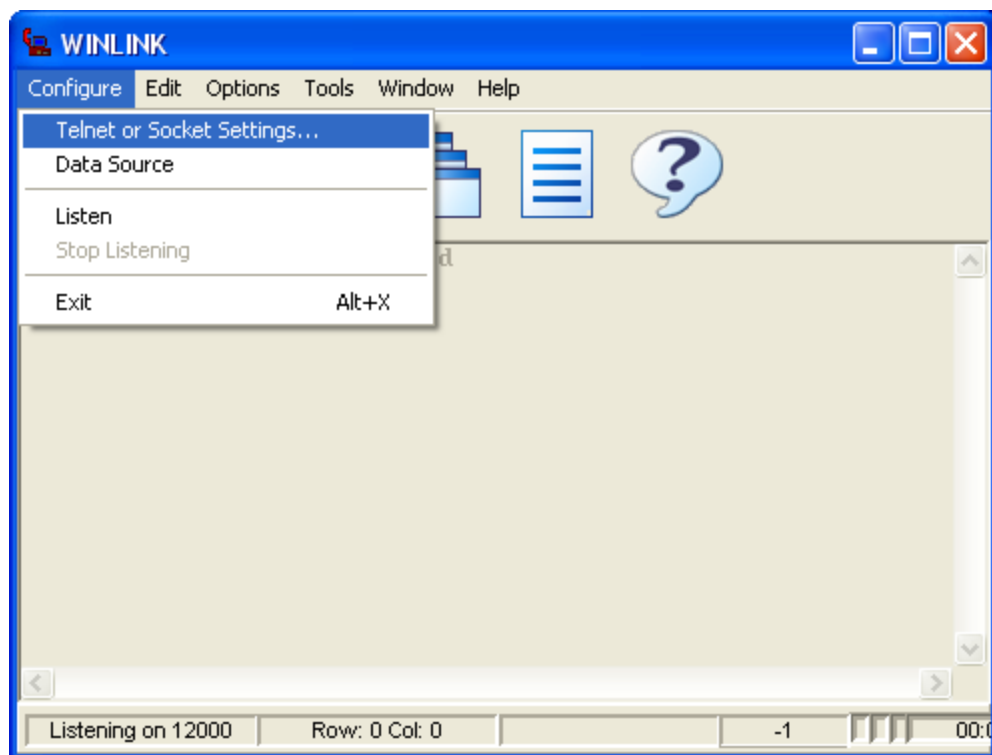


### 6.3. Administer Socket Settings

The **SHADOW Voice and Data Management** screen is displayed again. Select **Utility > Winlink Data Storage** from the top menu.



The **winlink** screen is displayed. Select **Configure > Telnet or Socket Settings** from the top menu.

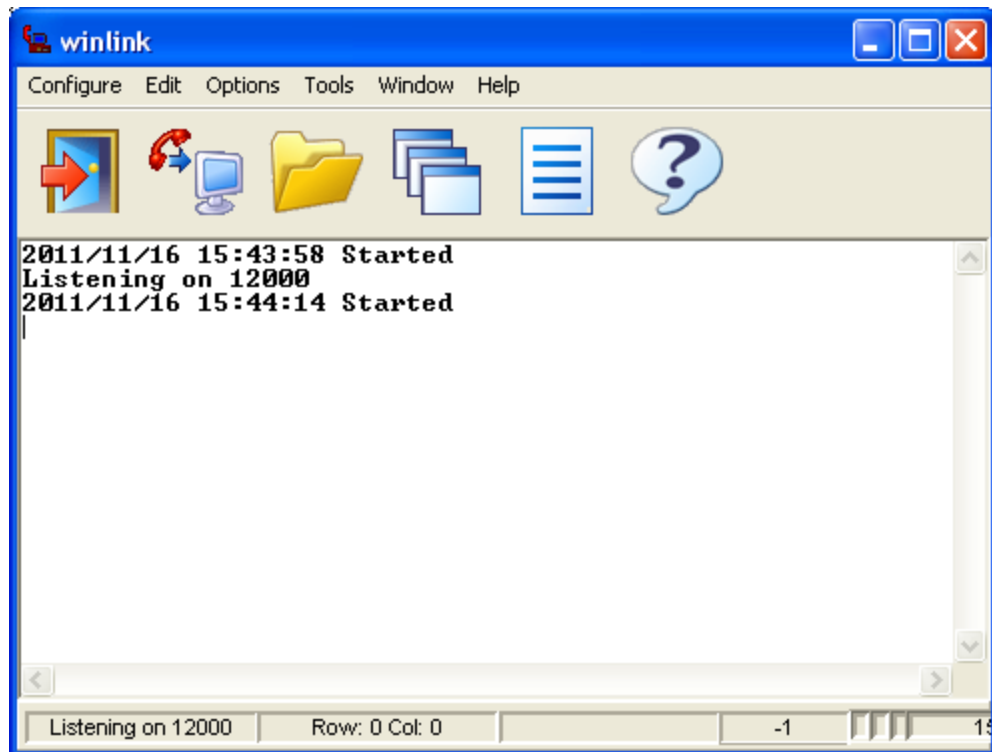


The **IP Configuration** screen is displayed. For **Name (or IP address)**, enter the IP address of the Shadow CMS server. For **Port**, enter the TCP port from **Section 5**. Retain the default values in the remaining fields. Click **OK**.

A screenshot of the 'IP Configuration' dialog box. It has a blue title bar with the text 'IP Configuration' and a close button. The dialog contains a 'Settings' section with the following fields: 'Name (or IP address):' with the value '10.64.21.65', 'Port' with the value '12000', 'User Name:' (empty), and 'Password:' (empty). To the right of these fields is a 'Protocol' section with three radio buttons: 'TCP' (selected), 'UDP', and 'Proprietary'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.



The **winlink** screen is displayed next. In the lower left portion of the screen, verify that the application is listening on the proper TCP port, as shown below.

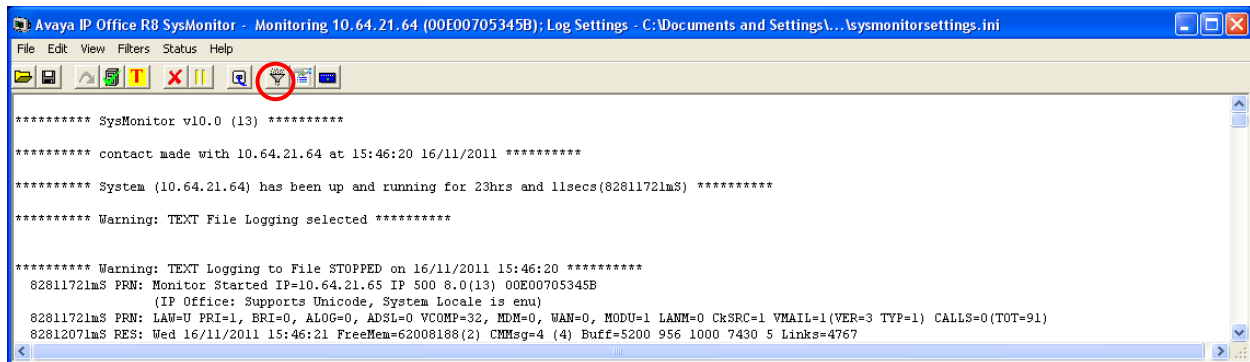


## 7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and RSI Shadow CMS.

### 7.1. Verify Avaya IP Office

From a PC running the Avaya IP Office Monitor application, select **Start > Programs > IP Office > Monitor** to launch the application. The **Avaya IP Office R8 SysMonitor** screen is displayed, as shown below. Click on the **Filter** icon.



The **All Settings** screen is displayed. Check **Call Detail Records** and **CDR Extra diagnostics**, as shown below. Click **OK**.

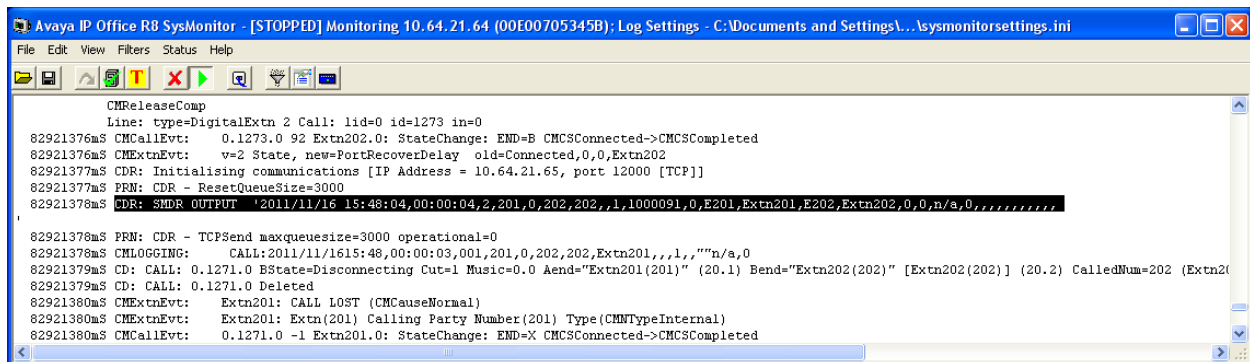
The screenshot shows the 'All Settings' window with the following tabs and settings:

ISDN	Key/Lamp	Directory	Media	PPP	R2	Routing	Services	SIP	System
T1		VPN		WAN		SCN			
ATM	Call	DTE	EConf	Frame Relay	GOD	H.323	Interface		

<b>Events</b> <input checked="" type="checkbox"/> Call <input checked="" type="checkbox"/> Call Delta <input type="checkbox"/> Call Delta2 <input checked="" type="checkbox"/> Call Logging <input checked="" type="checkbox"/> Extension <input type="checkbox"/> Line <input type="checkbox"/> MonCM <input type="checkbox"/> MonIVR <input checked="" type="checkbox"/> <b>Targeting</b> <input checked="" type="checkbox"/> <b>ARS</b> <input checked="" type="checkbox"/> <b>LRQ</b> <input type="checkbox"/> ACD <input type="checkbox"/> <b>IP Dect</b> <input checked="" type="checkbox"/> Call Detail Records <input checked="" type="checkbox"/> CDR Extra diagnostics  Trace Colour <span style="background-color: black; color: black;"> </span>	<b>Packets</b> <input type="checkbox"/> Call <input checked="" type="checkbox"/> Extension Send <input checked="" type="checkbox"/> Extension Receive <input type="checkbox"/> Extension TxC <input type="checkbox"/> Extension RxP <input checked="" type="checkbox"/> Extension TxP <input checked="" type="checkbox"/> Extension RxP <input checked="" type="checkbox"/> Line Send <input checked="" type="checkbox"/> Line Receive <input type="checkbox"/> Short Code Msgs <input type="checkbox"/> Supplementary services <input type="checkbox"/> <b>IP Dect Msgs</b>	<b>Embedded Voicemail</b> <input type="checkbox"/> Voicemail Client <input type="checkbox"/> Audio Response <input type="checkbox"/> Message Recorder <input type="checkbox"/> Housekeeping <input type="checkbox"/> Flash Storage <input type="checkbox"/> Silence <input type="checkbox"/> Email  <b>PC Voicemail</b> <input type="checkbox"/> Voicemail Events <input type="checkbox"/> Voicemail Messaging
---	--	---

Make and complete a few phone calls, including internal, inbound from the PSTN, and outbound to the PSTN. Verify that raw SMDR data is displayed on the **Avaya IP Office R8 SysMonitor** screen, as shown below.



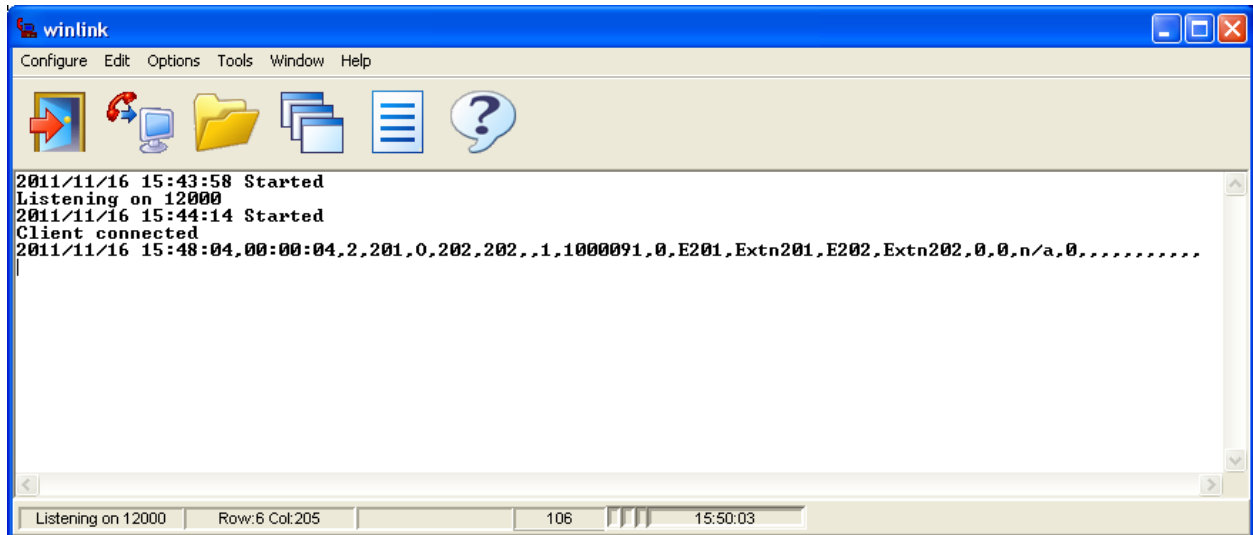
The screenshot shows the Avaya IP Office R8 SysMonitor application window. The title bar reads "Avaya IP Office R8 SysMonitor - [STOPPED] Monitoring 10.64.21.64 (00E00705345B); Log Settings - C:\Documents and Settings\...\sysmonitorsettings.ini". The window contains a log of SMDR data with the following entries:

```

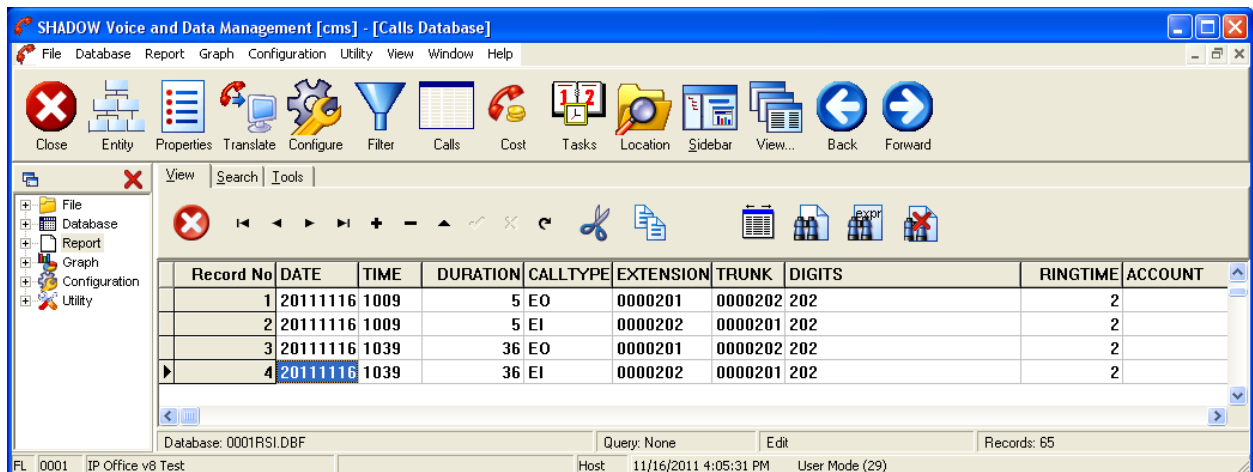
CMReleaseComp
Line: type=DigitalExtn 2 Call: lid=0 id=1273 in=0
82921376mS CMCallEvt: 0.1273.0 92 Extn202.0: StateChange: END=B CMCSConnected->CMCSCompleted
82921376mS CMExtnEvt: v=2 State, new=PortRecoverDelay old=Connected,0,0,Extn202
82921377mS CDR: Initialising communications [IP Address = 10.64.21.65, port 12000 [TCP]]
82921377mS PFM: CDR - ResetQueueSize=3000
82921378mS CDR: SMDR OUTPUT '2011/11/16 15:48:04,00:00:04,2,201,0,202,202,,1,1000091,0,E201,Extn201,E202,Extn202,0,0,n/a,0,.....'
82921378mS PFM: CDR - TCPSend maxqueueSize=3000 operational=0
82921378mS CMLOGGING: CALL:2011/11/1615:48,00:00:03,001,201,0,202,202,Extn201,,,1,,,"n/a,0
82921379mS CD: CALL: 0.1271.0 BState=Disconnecting Cut=1 Music=0.0 Aend="Extn201(201)" (20.1) Bend="Extn202(202)" [Extn202(202)] (20.2) CalledNum=202 (Extn202)
82921379mS CD: CALL: 0.1271.0 Deleted
82921380mS CMExtnEvt: Extn201: CALL LOST (CMCauseNormal)
82921380mS CMExtnEvt: Extn201: Extn(201) Calling Party Number(201) Type(CMNTTypeInternal)
82921380mS CMCallEvt: 0.1271.0 -1 Extn201.0: StateChange: END=X CMCSConnected->CMCSCompleted
  
```

## 7.2. Verify RSI Shadow CMS

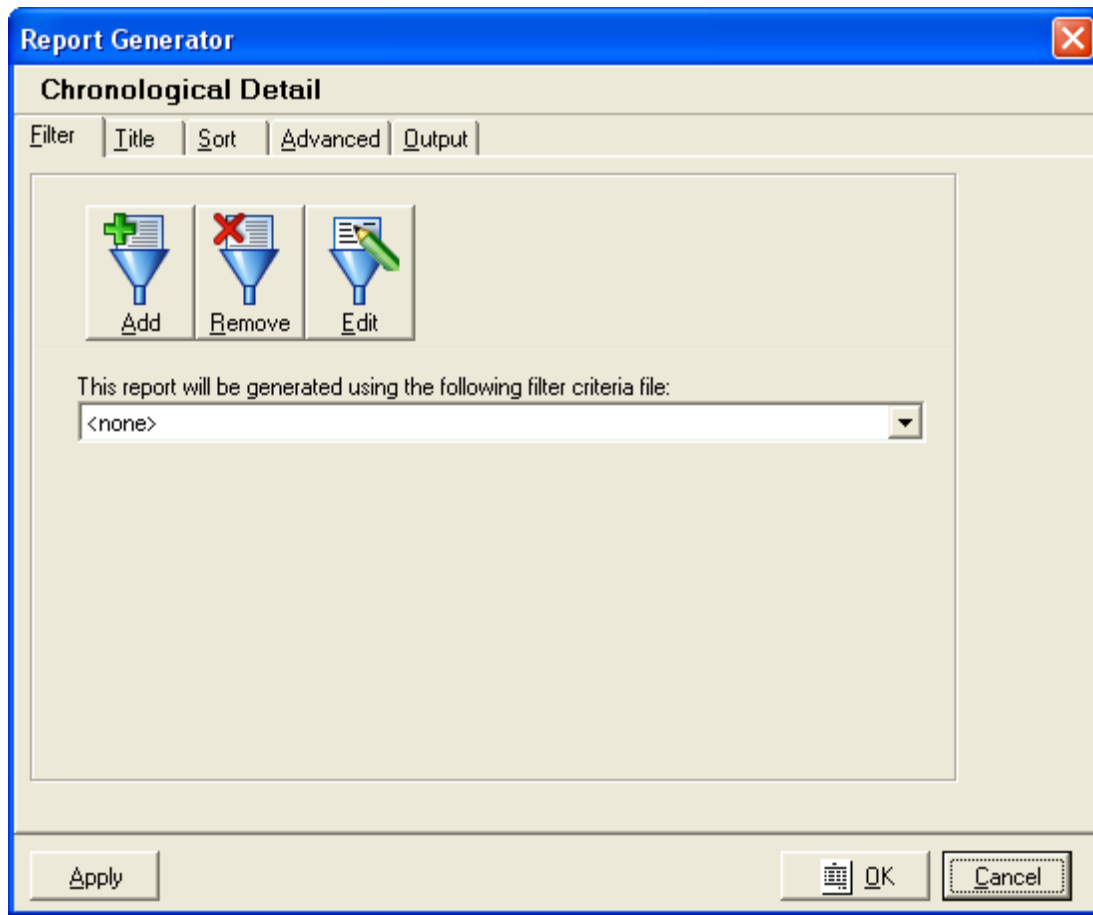
From the RSI Shadow CMS server, follow the navigation in **Section 6.1** to display the **winlink** screen. Verify that an entry is displayed for each SMDR record output from **Section 7.1**.



Follow the navigation in **Section 6.1** to display the **SHADOW Voice and Data Management** screen. Click on the **Calls** icon, followed by **Translate** icon to display the translated SMDR records. Verify that the appropriate number of entries is created for the SMDR records from **Section 7.1**, and note that two translated records are created by Shadow CMS for a call between two internal parties.



Select **Report > Chronological > Chronological Detail** from the top menu, and click **OK** in the Report Generator screen.



The **Chronological Detail** report is displayed, as shown below. Verify that the report entries match to the entries from **Section 7.1**.

**SHADOW Voice and Data Management [cms] - [Chronological Detail]**

File Database Report Graph Configuration Utility View Window Help

Close Entity Properties Translate Configure Filter Calls Cost Tasks Location Sidebar View... Back Forward

1 of 1 90% Total:38 100% 38 of 63

**RSI**

Page 1 of 1  
**Chronological Detail**  
<no no>  
IP Office v8 Test

Report Date: All Print Date: 2011-11-16

Date	Time	Dir	From	To	Location	Digit	Duration	Cost	Route	Comment
2011/11/16	12:57	Int	E0000202	E0000000	Internal	201	00:00:00	0.00		Local-to-Local
2011/11/16	12:55	Int	E0000202	E0000201	Internal	201	00:00:02	0.00		Local-to-Local
2011/11/16	12:55	Int	E0000203	E0000202	Internal	202	00:00:06	0.00		Local-to-Local
2011/11/16	12:55	Int	E0000202	E0011002	Internal	201	00:00:07	0.00		Local-to-Local
2011/11/16	12:55	Int	E0000201	E0011001	Internal		00:00:10	0.00		Local-to-Local
2011/11/16	12:55	Int	E0000203	E0011003	Internal	202	00:00:10	0.00		Local-to-Local
2011/11/16	12:51	Int	E0000202	E0000201	Internal	200	00:00:03	0.00		Local-to-Local
2011/11/16	12:47	Inc	T0009001	E0000201	Incoming	53005	00:00:03	0.00	INC	
2011/11/16	12:45	Inc	T0009001	E0000201	Incoming	53005	00:01:11	0.00	INC	
2011/11/16	12:43	Out	E0000000	T0009001	Outgoing		00:00:00	0.00	INV	Other
2011/11/16	12:43	Tdm	T0009001	T0009001	Outgoing	201	00:00:07	0.00	INV	
2011/11/16	12:40	Tdm	T0009001	T0009000	Outgoing		00:00:00	0.00	INV	Other
2011/11/16	12:40	Tdm	T0009001	T0009001	Outgoing	201	00:00:12	0.00	INV	
2011/11/16	12:39	Inc	T0009001	E0000201	Incoming	53004	00:00:00	0.00	INC	
2011/11/16	12:34	Out	E0000201	T0009001	Outgoing	53002	00:00:00	0.00	INV	
2011/11/16	12:34	Int	E0000202	E0000201	Internal	201	00:00:04	0.00		Local-to-Local
2011/11/16	12:34	Out	E0011001	T0009001	Outgoing	53002	00:00:11	0.00	INV	
2011/11/16	12:34	Int	E0000201	E0011002	Internal	53002	00:00:10	0.00		Local-to-Local
2011/11/16	12:34	Int	E0000202	E0011003	Internal	201	00:00:10	0.00		Local-to-Local
2011/11/16	12:32	Out	E0000202	T0009001	Outgoing	53002	00:00:00	0.00	INV	
2011/11/16	12:32	Int	E0000201	E0000202	Internal	202	00:00:14	0.00		Local-to-Local
2011/11/16	12:32	Out	E0000201	T0009001	Outgoing	53002	00:00:09	0.00	INV	
2011/11/16	11:40	Out	E0000202	T0009001	Outgoing	53002	00:00:10	0.00	INV	
2011/11/16	11:39	Int	E0000202	E0000201	Internal	201	00:00:00	0.00		Local-to-Local

Read: 63 Found: 38

FL 00001 IP Office v8 Test Host 11/16/2011 3:57:54 PM User Mode (29)

## 8. Conclusion

These Application Notes describe the configuration steps required for RSI Shadow CMS to successfully interoperate with Avaya IP Office. All feature and serviceability test cases were executed and passed.

## 9. Additional References

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

- [1] *IP Office 8.0, IP Office Installation*, November 2011, available at <http://support.avaya.com>.
- [2] *IP Office Manager 10.0*, November 2011, available at <http://support.avaya.com>.
- [3] *Resource Software International Ltd. Avaya IP Office RSI CMS Integration Guide*, available from RSI Support.



---

**©2012 Avaya Inc. All Rights Reserved.**

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

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](mailto:devconnect@avaya.com).