



Avaya Solution & Interoperability Test Lab

Application Notes for Inova LightLink Middleware with Avaya Aura® Communication Manager and Avaya Call Management System using Inova Historical Interface – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate Inova LightLink Middleware with Avaya Call Management System using the Inova Historical interface to capture ACD call center data from Avaya Aura® Communication Manager. The Inova Historical interface is used to obtain historical splits/skills, Vector Directory Numbers (VDNs), and agents data periodically. This interface is provided by Avaya Professional Services.

Readers should pay attention to section 2, in particular the scope of testing as outlined in Section 2.1 as well as the observations noted in Section 2.2, to ensure that their own use cases are adequately covered by this scope and results.

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 to integrate Inova LightLink Middleware with Avaya Call Management System (CMS) using the Inova Historical interface to capture ACD call center data from Avaya Aura® Communication Manager. The Inova Historical interface is used to obtain historical splits/skills, Vector Directory Numbers (VDNs), and agents data periodically. This interface is provided by Avaya Professional Services.

LightLink is a platform that supports the integration, management, and delivery of real-time data. LightLink utilizes the real-time call center data from Avaya Aura® Communication Manager for splits/skills, VDNs, and agents, and provides the information to applications or contact center organizations for effective management.

The data streams of ACD call center historical data are obtained by LightLink from CMS. A TCP client-server model is used for the connection, with CMS being the “client” and LightLink being the “server”. LightLinks Data Source Manager runs a TCP “listener” process to accept the data connection from the Inova Historical interface of CMS.

Avaya Professional Services installs and configures the Inova Historical interface on CMS, and provides the TCP port number associated with each historical interface session to Inova for configuring LightLink. LightLink parses the raw data streams received and makes the data available on various output devices. The historical data can be monitored by customers via customized viewing models.

2. General Test Approach and Test Results

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.

The feature test cases were performed manually. Incoming calls were made to the monitored ACD/Skill and VDN groups to enable data streams to be sent to LightLink. Manual call controls and work mode changes from the Agent telephones were exercised as necessary to populate specific fields in the data streams.

The serviceability test cases were performed manually by stopping and restarting the Inova Historical interface, and by disconnecting and reconnecting the network connection to the LightLink server.

The verification of all tests included checking of proper display of historical data at the LightLink server, and comparing the displayed data with reports from the CMS server.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing focused on verifying LightLink parsing and displaying of ACD/Skill, VDN, and Agent data from CMS.

The serviceability testing focused on verifying the ability of LightLink to recover from adverse conditions, such as restarting the Historical interface.

2.2. Test Results

The test objectives listed in **Section 2.1** were verified and all test cases were executed and passed.

2.3. Support

Contact Inova Solutions for technical support via the following means:

- **Web:** <http://www.inovasolutions.com>
- **Phone:** 1-800-637-1077
- **Email:** info@inovasolutions.com

3. Reference Configuration

Figure 1 illustrates the configuration used for compliance testing. The network consisted of Communication Manager running on an S8300D card that was installed in the G450 Media gateway, Avaya Call Management System and Inova LightLink Middleware.

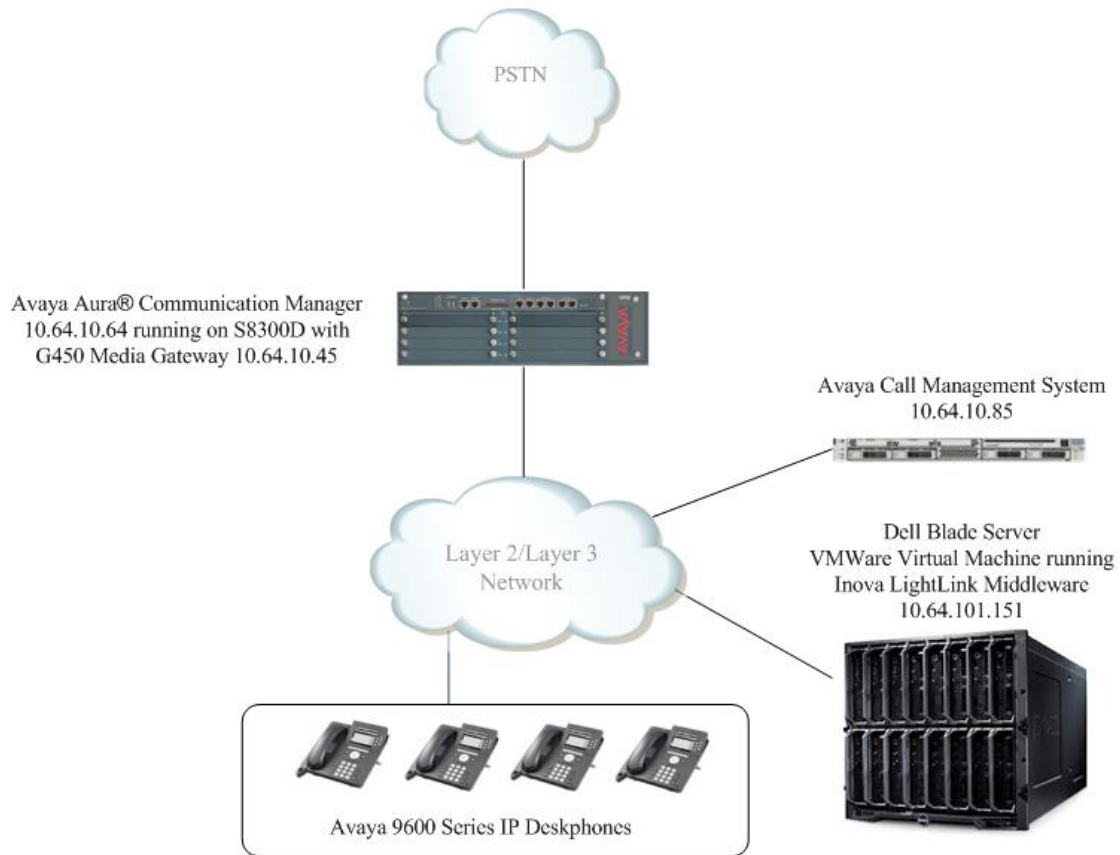


Figure 1: Network Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
<i>Avaya PBX Products</i>	
Avaya S8300D Server running Avaya Aura® Communication Manager	6.3
Avaya G450 Media Gateway MGP MM710 T1 Module MM711 Analog Module MM712 DCP Media Module MP80 VoIP-DSP	HW 2 FW 31.20.0 HW 5 FW 22 HW 23 FW 73 HW 7 FW 14 HW 6 FW 67
<i>Avaya Call Management System</i>	
SUN SPARC Enterprise T5120 running Avaya Call Management System	R17
<i>Inova LightLink</i>	
Windows Server 2008 R2 Enterprise SP1 VMware Virtual Machine running Inova LightLink Middleware	v5.11

5. Configure Avaya Aura® Communication Manager

The administration of contact center objects and connectivity between Communication Manager and CMS are not the focus of these Application Notes and are not described here. For the details, refer to the appropriate documentation listed in **Section 10**.

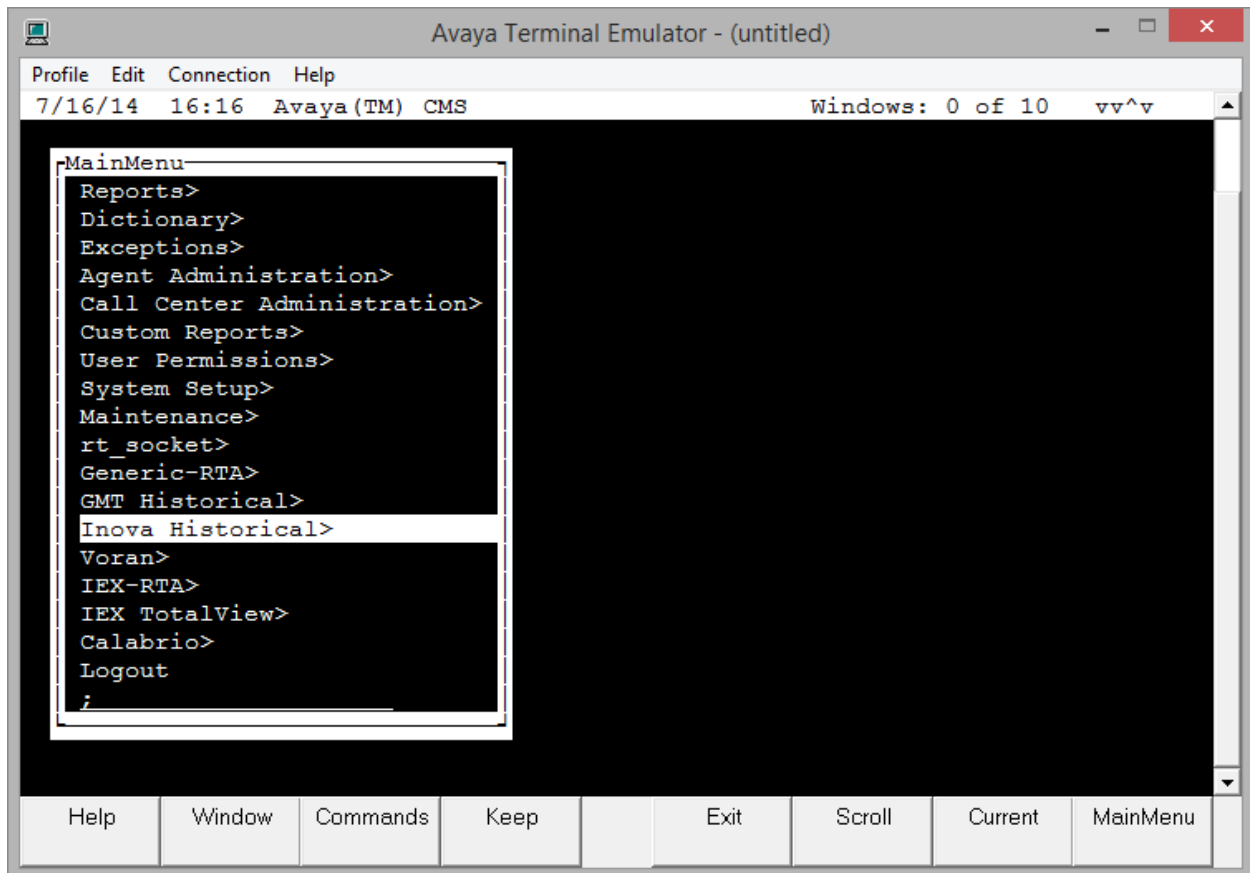
In order for the data of a skill or a VDN to be collected and forwarded to CMS, the “measured” field on the corresponding skill and VDN forms must be set to “external” or “both”. For administration of the “measured” field for a skill and a VDN, refer to the appropriate documentation listed in **Section 10**.

6. Configure Avaya Call Management System

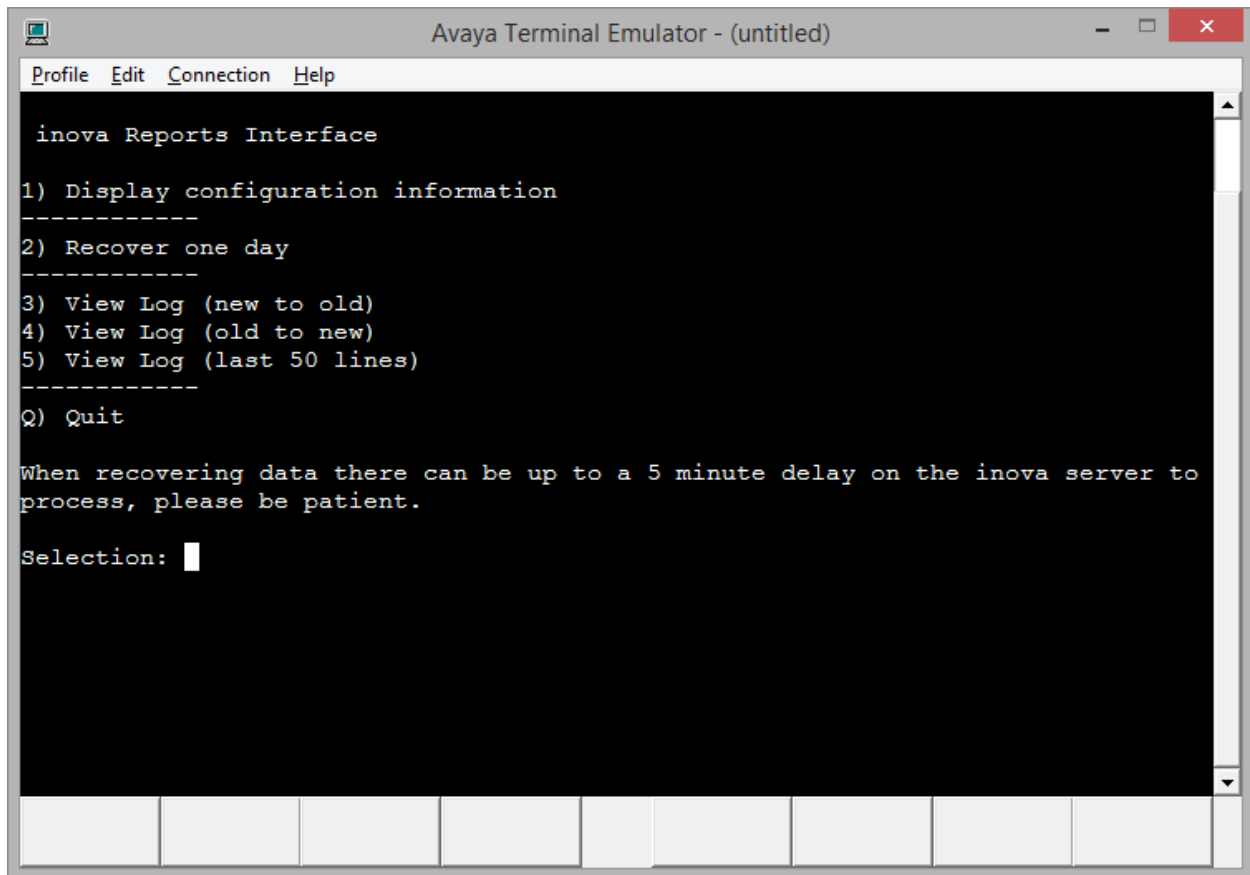
Configuration of the Inova Historical interface is performed by Avaya Professional Services and is outside the scope of these Application Notes. After the interfaces are configured, the user can follow the procedures below to enable the interface.

6.1. Verify Inova Historical Interface

The Inova Historical interface is always enabled and monitors splits/skills, VDNs, and agents on Communication Manager. To verify that ACD call center data is being monitored, use a terminal emulator to connect to CMS and log in with the proper credentials. The **MainMenu** is displayed as shown below. Select **Inova Historical** from the **MainMenu**.



After selecting the **Inova Historical** option, the **inova Reports Interface** menu appears as shown below.



The screenshot shows a terminal window titled "Avaya Terminal Emulator - (untitled)". The menu displayed is as follows:

```
Profile Edit Connection Help

inova Reports Interface

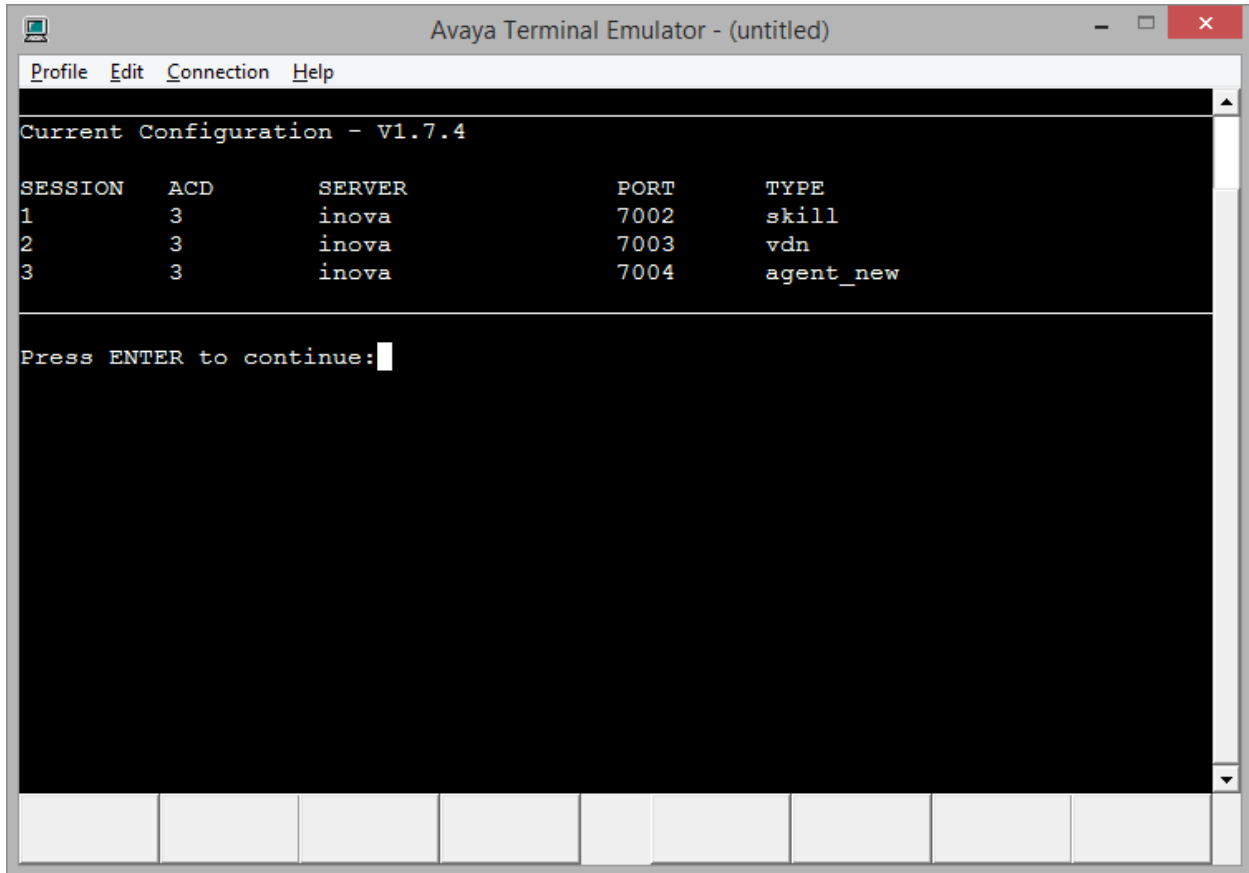
1) Display configuration information
-----
2) Recover one day
-----
3) View Log (new to old)
4) View Log (old to new)
5) View Log (last 50 lines)
-----
Q) Quit

When recovering data there can be up to a 5 minute delay on the inova server to
process, please be patient.

Selection: █
```

Enter “1” to display the configuration information, followed by the **Enter** key. The **Current Configuration** screen appears. Below is a description of the screenshot fields.

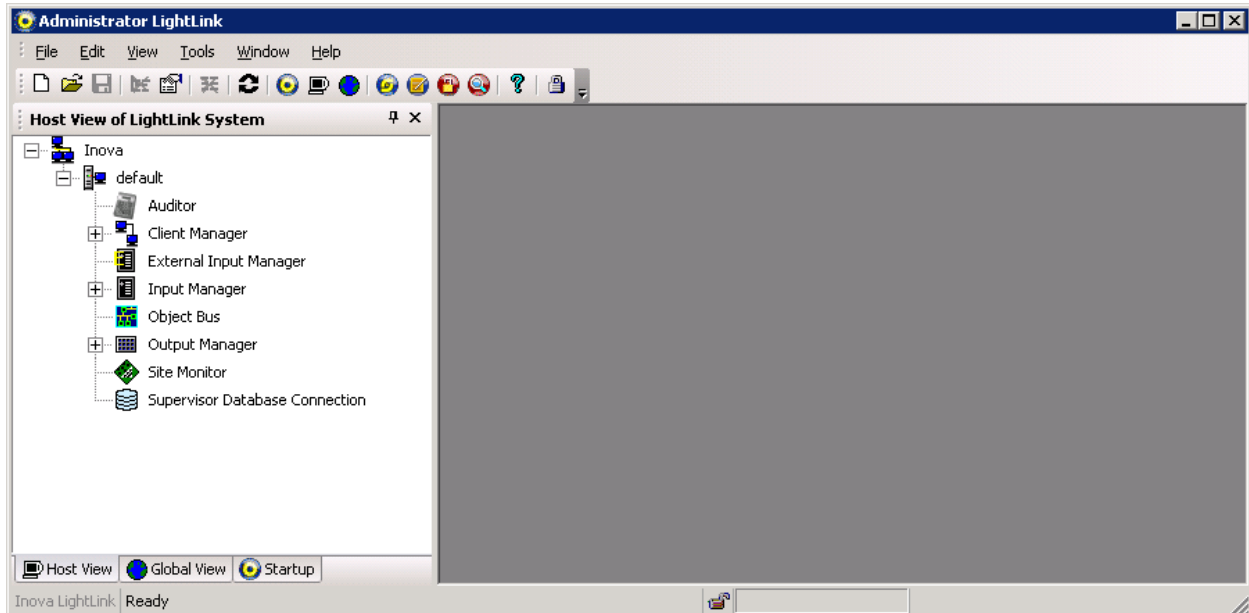
- **SESSION:** Each session defines a connection that CMS establishes with LightLink.
- **ACD:** This column displays the ACD number associated with Communication Manager as configured on CMS.
- **SERVER:** Always displays “inova” as the name for LightLink.
- **PORT:** Shows the TCP port that will be used to transfer data during each session.
- **TYPE:** This column defines what type of data will be transferred during each session.



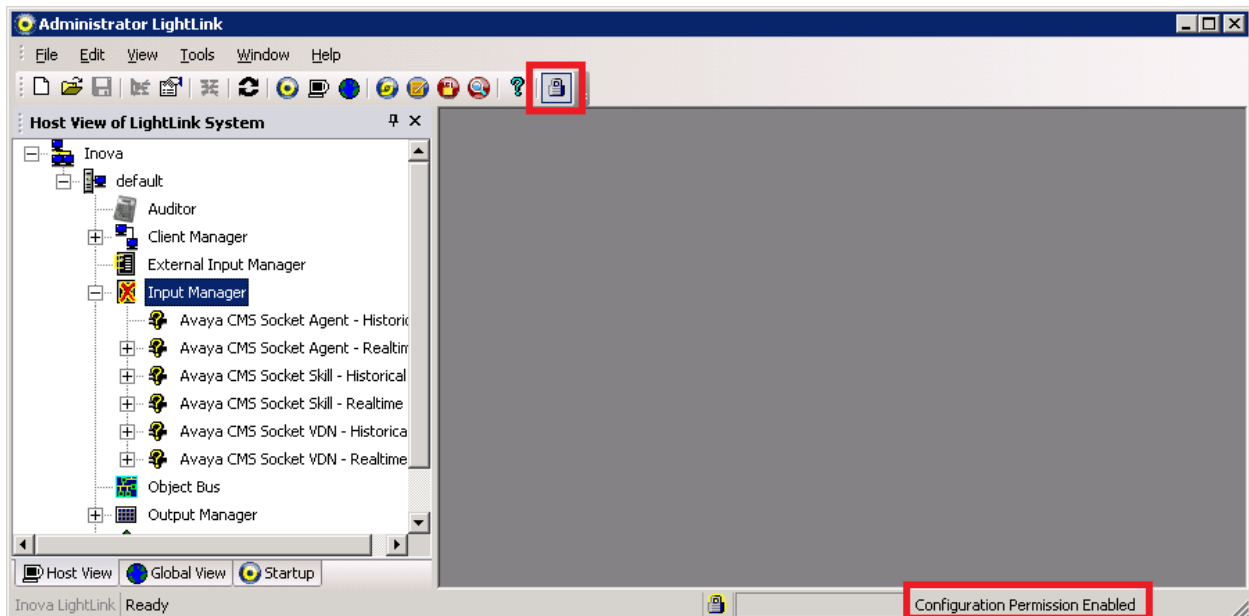
```
Avaya Terminal Emulator - (untitled)
Profile Edit Connection Help
Current Configuration - V1.7.4
SESSION  ACD      SERVER  PORT    TYPE
1         3        inova   7002    skill
2         3        inova   7003    vdn
3         3        inova   7004    agent_new
Press ENTER to continue:
```


7. Configure Inova LightLink Middleware

Configuration for LightLink is performed via Administrator. To open Administrator, on the server running LightLink Middleware, navigate to **Start → All Programs → Inova Solutions → LightLink Middleware → Administrator**.

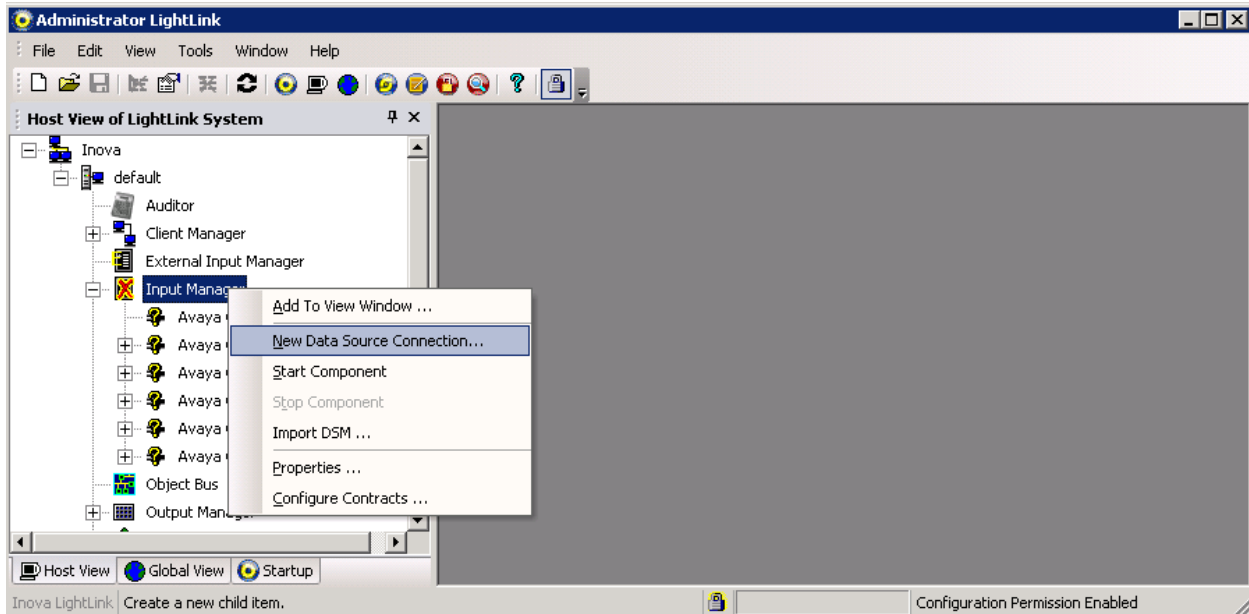


Secure configuration permissions in LightLink Administrator to enable administration. Click on the **lock icon** on the Administrator. Verify at the bottom of the window, **“Configuration Permission Enabled.”**

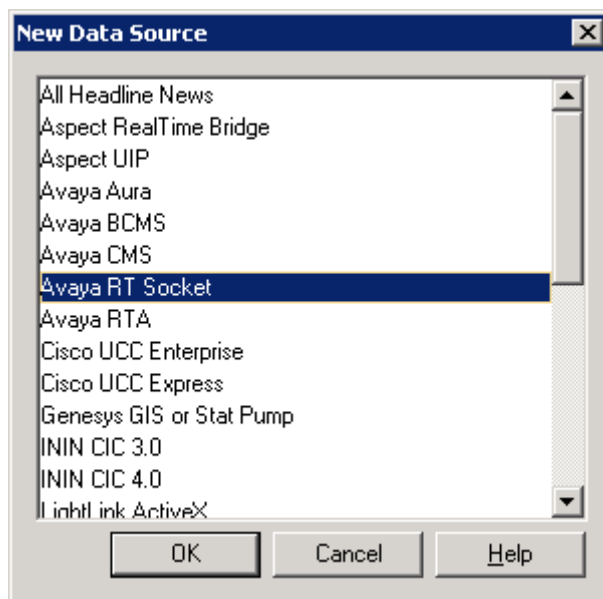


Configure one Data Source Manager (DSM) per Avaya socket connection to be used by LightLink.

Right-click the **Input Manager** and select **New Data Source Connection...**



A new window, **New Data Source** will open. Select the **Avaya RT Socket** connection, and click **OK**.



On the **General** tab, provide a descriptive name in **Name**.

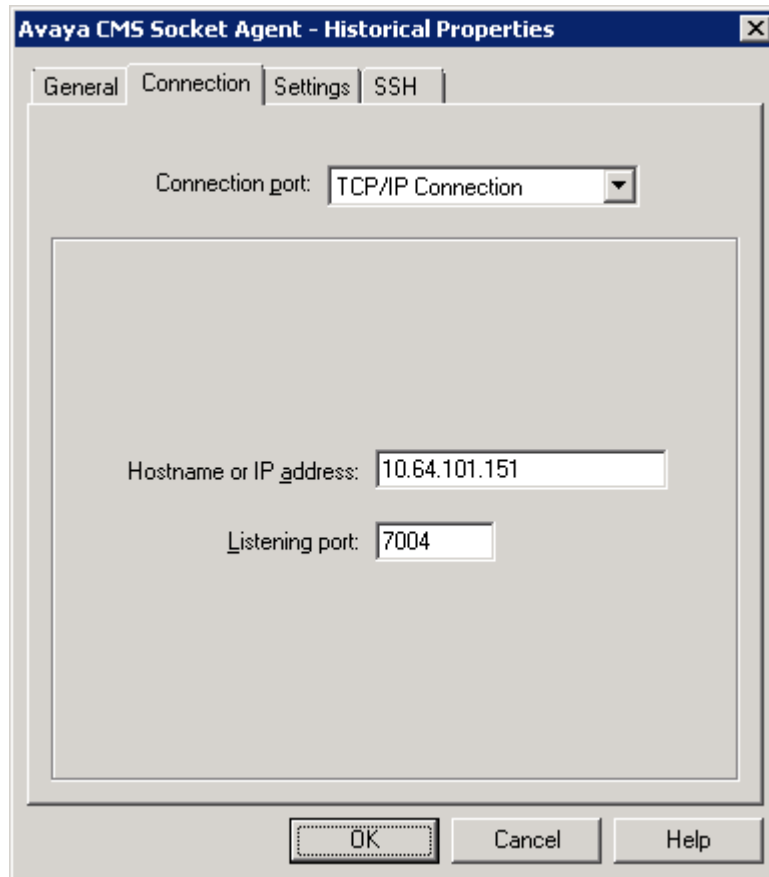
The screenshot shows a dialog box titled "Avaya CMS Socket Agent - Historical Properties" with a close button (X) in the top right corner. The dialog has four tabs: "General", "Connection", "Settings", and "SSH". The "General" tab is selected. Inside the dialog, there are several input fields and a dropdown menu:

- Name:** A text box containing "Avaya CMS Socket Agent - Historical".
- Server ID:** A text box containing "777".
- Preferred ID:** A text box containing "8".
- Remote:** A section containing a dropdown menu labeled "Host" with "default" selected.

At the bottom of the dialog, there are three buttons: "OK", "Cancel", and "Help".

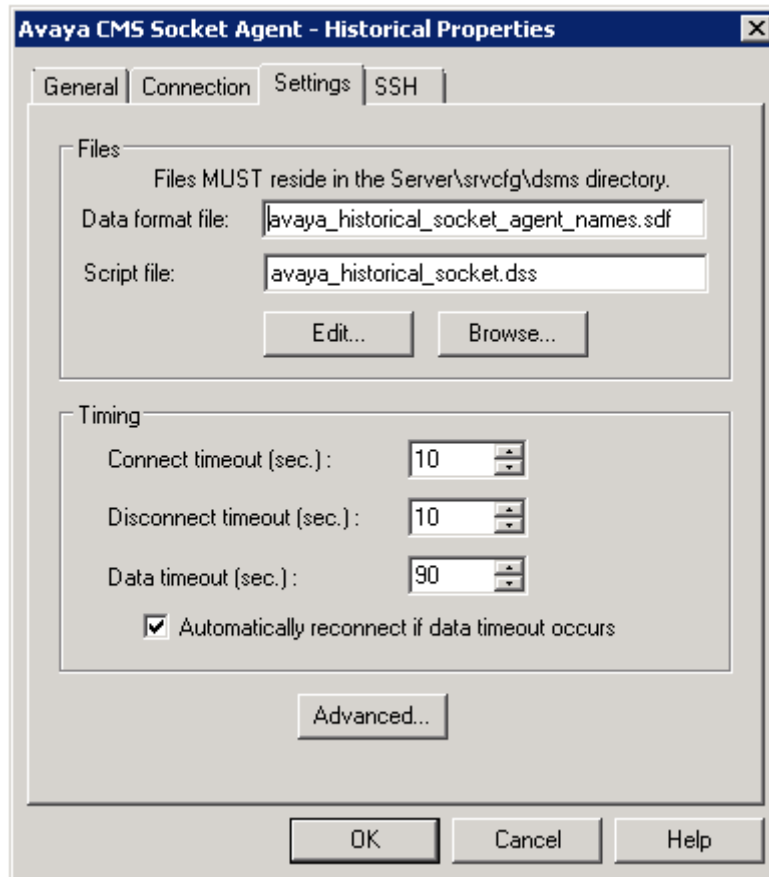
On the **Connection** tab:

- Select **TCP/IP Connection** for **Connection port**.
- Set **Hostname or IP address** to LightLink host machine's IP address or hostname, (localhost or local works as well).
- Set **Listening Port** to the port number for the given socket connection, as configured in CMS **Section 6.1**.

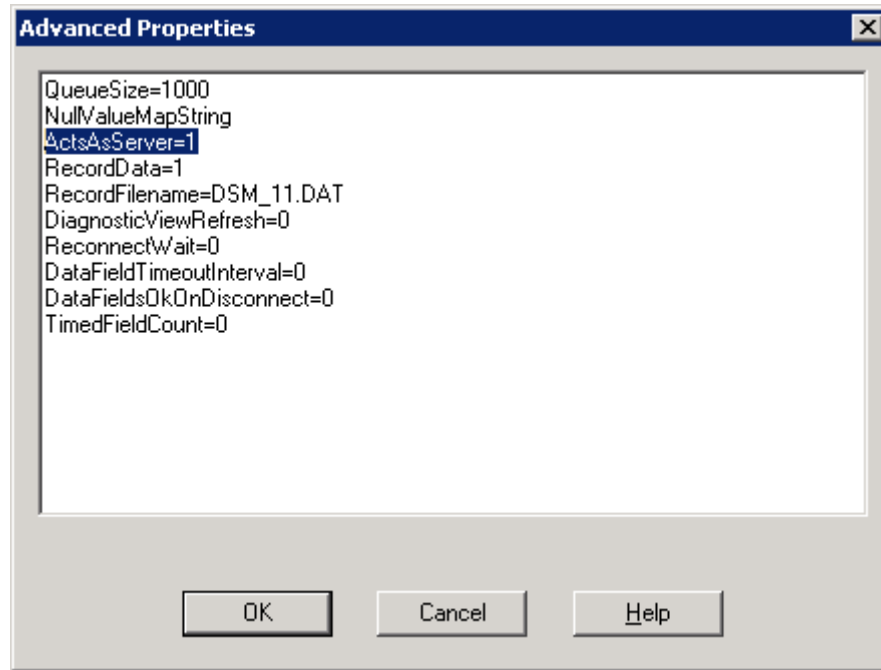


On the **Settings** tab, one will need to configure three things:

- For the **Data format file**, select the following:
 - RT Socket Skill: avaya_historical_socket_skill.sdf
 - RT Socket VDN: avaya_historical_socket_vdn.sdf
 - RT Socket Agent: avaya_historical_socket_agent_names.sdf
- For the **Script file**, select the following: avaya_historical_socket.dss



- Click the **Advanced...** button to open the **Advanced Properties** dialog and change the value of the **ActAsServer** parameter from **0** to **1** so that the DSM accepts connections from the CMS.



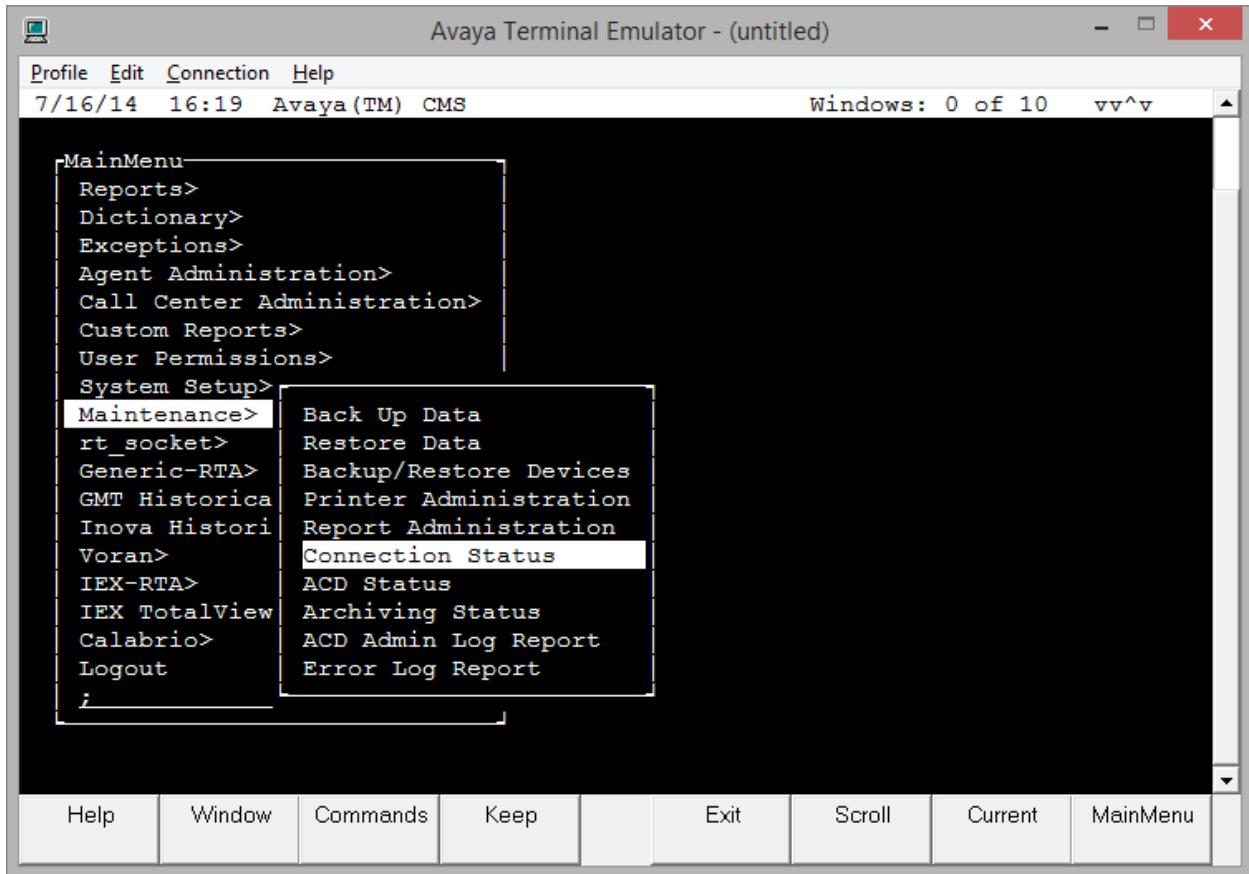
Click **OK** on the **Advanced Properties** window to close it, and then click **OK** on the DSM Configuration dialog to start the DSM.

8. Verification Steps

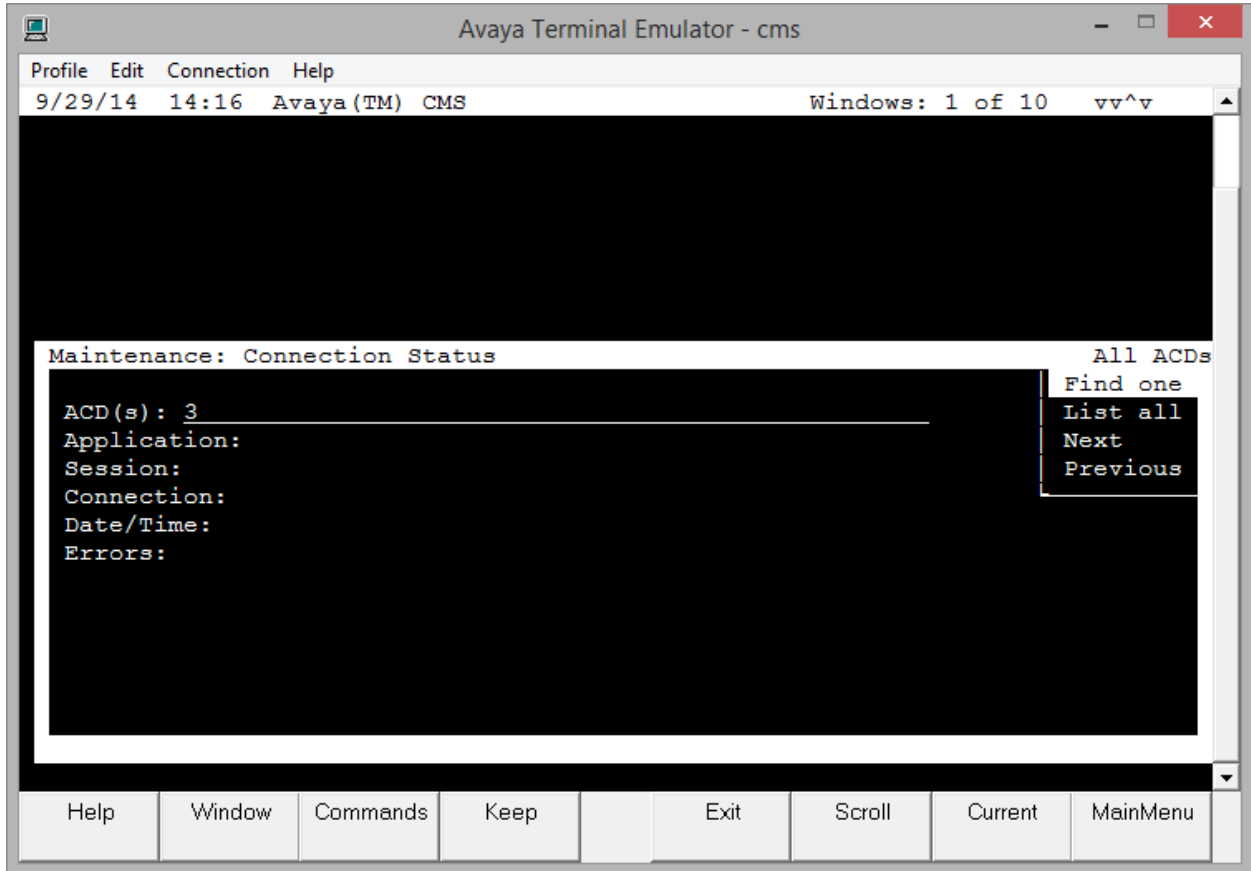
This section provides the tests that can be performed to verify proper configuration of Communication Manager, CMS, and LightLink.

8.1. Verify Avaya Call Management System

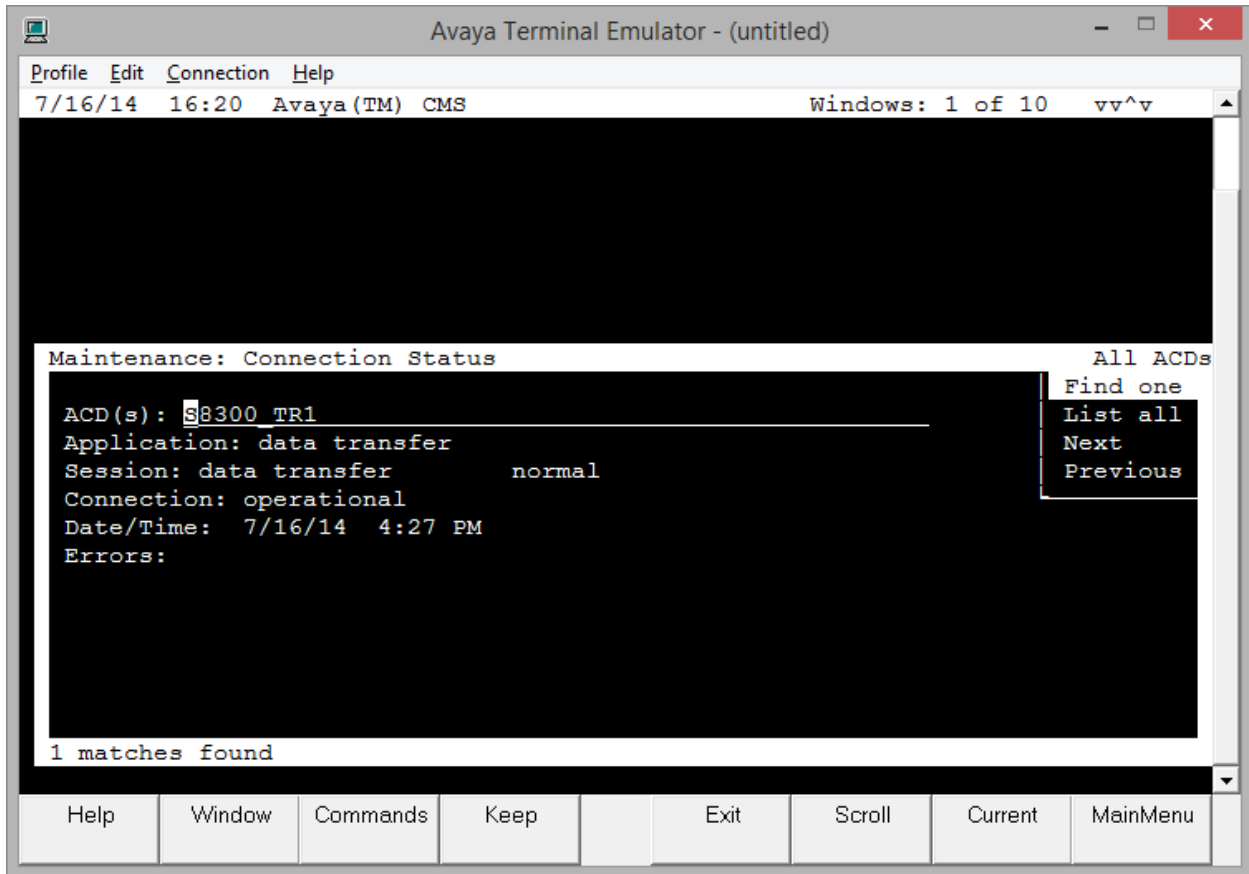
From the **MainMenu**, verify the status of the connection to Communication Manager by selecting **Maintenance** → **Connection Status**, as shown below.



Enter the corresponding **ACD(s)** number, which is provided by Avaya Professional Services. For the compliance testing, the corresponding switch connection is ACD system “3”. Tab over to **Find one** and press **Enter**.

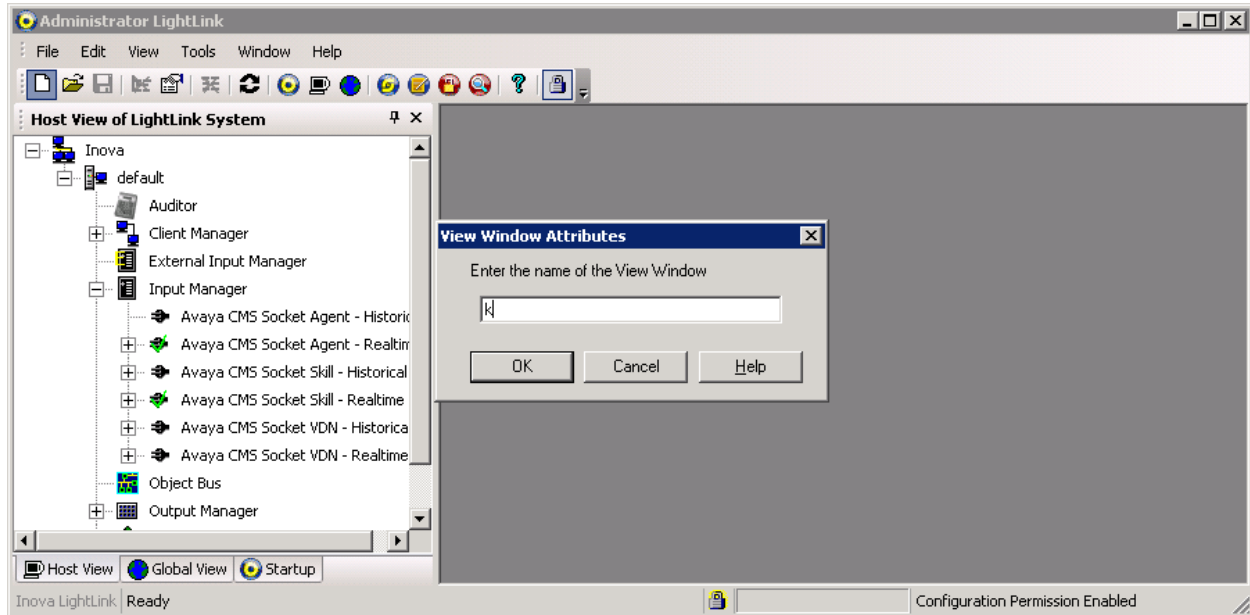


The switch connection status is displayed. Check the status in the **Session** and **Connection** fields as **data transfer normal** and **operational**, respectively.



8.2. Verify Inova LightLink Middleware

To verify, LightLink is receiving data from CMS, open **Administrator** and click **New** to add a new View Window. Provide a name and click **OK**.



Navigate to a report under **Input Manager** and collapse it to view all the fields. In this case, **Avaya CMS Socket Agent – Historical** report for **Agent 2504**. Select all the fields and drag to the View Window (not shown).

If data from CMS is being received correctly, **Field Value** column will contain data specific to each field.

The screenshot shows the 'Host View of LightLink System' interface. On the left, there is a list of fields for 'AgentHistorical:Today'. On the right, a table displays the 'Field Value' for each of these fields. The table has two columns: 'Item Name' and 'Field Value'.

Item Name	Field Value
AgentHistorical:Today:Abandoned_Calls	0
AgentHistorical:Today:Abandoned_Time	0:00:00
AgentHistorical:Today:ACD	3
AgentHistorical:Today:ACD_Talk_Time	0:00:00
AgentHistorical:Today:ACW_Inbound	0
AgentHistorical:Today:ACW_Inbound_Time	0:00:00
AgentHistorical:Today:ACW_Outbound	0
AgentHistorical:Today:ACW_Outbound_Time	0:00:00
AgentHistorical:Today:ACW_Time	0:00:00
AgentHistorical:Today:Answered_Calls	0
AgentHistorical:Today:AUX0_Time	0:06:14
AgentHistorical:Today:AUX1_Time	0:00:00
AgentHistorical:Today:AUX2_Time	0:00:00
AgentHistorical:Today:AUX3_Time	0:00:00
AgentHistorical:Today:AUX4_Time	0:00:00
AgentHistorical:Today:AUX5_Time	0:00:00
AgentHistorical:Today:AUX6_Time	0:00:00
AgentHistorical:Today:AUX7_Time	0:00:00
AgentHistorical:Today:AUX8_Time	0:00:00
AgentHistorical:Today:AUX9_Time	0:00:00
AgentHistorical:Today:AUX_Inbound	0
AgentHistorical:Today:AUX_Inbound_Time	0:00:00
AgentHistorical:Today:AUX_Outbound	15
AgentHistorical:Today:AUX_Outbound_Time	0:06:14
AgentHistorical:Today:AUX_Total_Time	0:06:14
AgentHistorical:Today:Available_Time	13:53:28
AgentHistorical:Today:Direct_ACD_Calls	0
AgentHistorical:Today:Direct_ACD_Calls_ACW_Time	0:00:00
AgentHistorical:Today:Direct_ACD_Calls_Time	0:00:00
AgentHistorical:Today:Event_Date	05/13/2014
AgentHistorical:Today:Event_Interval	30
AgentHistorical:Today:Extension	25004
AgentHistorical:Today:Hold_Time	0:00:00
AgentHistorical:Today:Interval_End	1359
AgentHistorical:Today:Interval_Start	0
AgentHistorical:Today:Item_Name	IP Agent 4
AgentHistorical:Today:LogID	2504

9. Conclusion

These Application Notes describe the configuration steps required for Inova LightLink Middleware to successfully interoperate with Avaya Aura® Communication Manager and Avaya Call Management System using the Inova Historical interface. All feature and serviceability test cases were completed successfully.

10. References

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

- [1] *Administering Avaya Aura® Communication Manager*, Release 6.3, Issue 10, June 2014, Document Number 03-300509, available at <http://support.avaya.com>.
- [2] *Avaya Call Management System Administration*, Release 17, June 2014, available at <http://support.avaya.com>.

Documentation related to Inova products can be obtained directly from Inova.

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