

LightLink Data Source Installation Guide

Avaya Aura Call Center Elite
Incorporating Avaya CMS

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971 2nd ST S.E.

Charlottesville, VA 22902

434.817.8000

www.inovasolutions.com

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1. Introduction

Inova Solutions is a global provider of real-time reporting, alerting and display solutions for contact centers. Inova helps customers identify and measure contact center KPIs, quickly react when KPIs fall out of compliance, and gain insight into the relationship between the call center and overall organizational performance.

Inova's contact center solutions are built on Inova LightLink®, a powerful middleware that extracts, calculates, and unifies data from multiple contact center and enterprise operating systems and prepares it for display to an array of output options. Visual output options include LCD and LED digital signage and wallboards, agent desktop applications, and web-based dashboards. LightLink also allows you to program KPI thresholds that trigger alerts, such as a messages, texts, emails, color changes, or audio notifications, ensuring that you're instantly aware of changing conditions that need your attention. With these capabilities, LightLink-based solutions provide a foundation for contact center performance management by managing your center's data, unifying your reporting, and ensuring the right people receive the right information when and how they want to see it.

Inova's real-time solutions extend Avaya's reporting value and allow you to:

- Deliver unified real-time reporting across Avaya Aura® Call Center Elite and multi-vendor platforms
- Create custom KPIs that map to your organizational goals
- Integrate enterprise data to gauge the impact of your contact center on the top line

1.1. Executive Summary

Avaya Aura Call Center Elite is Avaya's voice-centric platform that encompasses Avaya Call Management System (CMS), which is Avaya's real-time and historical reporting application for inbound calls

LightLink connects to Avaya CMS using the Avaya developed Real-Time Socket and the Historical Socket connections:

- **Avaya Real-Time Socket (RT Socket)** enables LightLink to retrieve an array of data from the CMS reporting applications for real-time processing and display.
- **Historical Socket / Avaya Pro APS Bundle** enables LightLink to retrieve historical statistics for three categories of information: Previous Interval, Daily, and Previous Day.

Once connected to Avaya CMS, LightLink can be used to:

- View real time and historical data from the Avaya system in data grids and messages, and to trigger events.
- Create new real-time and historical metrics from mathematical combinations of Avaya data, data from other ACDs, or business systems.
- Help Inova Solutions Professional Services develop lists of Agents or detailed Agent daily summary information based on performance criteria derived from Avaya data, data from other ACDs, or business systems.

2. Data Fields

Refer to Table 1 for the available real-time and historical skill/queue statistics.

Queue Statistics	Avaya RT Socket for Real-Time License		Avaya Inova Historical License		
	Real-Time	For Current Interval	Previous Interval	Today through Previous Interval	Yesterday
Calls waiting	✓*				
Agents available	✓*				
Oldest call waiting	✓*				
Direct agent calls waiting	✓				
Number of agents ringing	✓*				
Number of agents on ACD calls	✓*				
Number of agents in after call work	✓*				
Number of agents in other	✓*				
Number of agents in aux work	✓*				
Number of agents staffed	✓*				
Avg. speed of answer		✓*	✓	✓	✓
Abandoned calls		✓*	✓	✓	✓
ACD calls (call volume)		✓*	✓	✓	✓
Avg. ACD talk time		✓*	✓	✓	✓
Avg. time to abandon		✓*			
Service level %		✓	✓	✓	✓

Queue Statistics	Avaya RT Socket for Real-Time License		Avaya Inova Historical License		
	Real-Time	For Current Interval	Previous Interval	Today through Previous Interval	Yesterday
Service Level		✓	✓	✓	✓
Calls Offered		✓	✓	✓	✓
Expected wait time (high)		✓			
Expected wait time (medium)		✓			
Expected wait time (low)		✓			
ACD time			✓	✓	✓
ACW IN time			✓	✓	✓
ACW OUT time			✓	✓	✓
ACW time			✓	✓	✓
Answer time			✓	✓	✓
Busy calls			✓	✓	✓
Hold time			✓	✓	✓
Staff time			✓	✓	✓
Backup calls			✓	✓	✓
Staffed			✓	✓	✓
Avg. handle time			✓	✓	✓
Avg. position staffed			✓	✓	✓

**This value is available in the Avaya Standard Report.*

Table 1: Queue Statistics

Refer to Table 2 for the available real-time and historical routing point statistics. Routing Point Statistics refer to VDN (Vector Directory Number) properties of the ACD. These statistics are often used to trigger email and other messaging that some component within the system is not operating properly.

Routing Point Statistics	Avaya RT Socket for Real-Time License		Avaya Inova Historical License		
	Real-Time	For Current Interval	Previous Interval	Today through Previous Interval	Yesterday
In Process at agent (calls waiting)	✓				
Oldest call	✓				
Active calls	✓				
Avg. speed of answer		✓	✓	✓	✓
Abandoned calls		✓	✓	✓	✓
Avg. abandon time		✓			
ACD calls		✓	✓	✓	✓
Avg. ACD talk time		✓			
Acceptable			✓	✓	✓
ACD time			✓	✓	✓
ACW time			✓	✓	✓
Answer time			✓	✓	✓
Busy calls			✓	✓	✓
In calls			✓	✓	✓
In flow calls			✓	✓	✓
Out flow calls			✓	✓	✓
Hold time			✓	✓	✓
Service level			✓	✓	✓
Avg. handle time			✓	✓	✓
PSL			✓	✓	✓
Busy & disconnect calls			✓	✓	✓
Connected calls			✓	✓	✓
Backup calls			✓	✓	✓
Disconnected calls			✓	✓	✓

Table 2: Routing Point Statistics

Refer to Table 3 for available real-time and historical agent statistics. The real-time statistics will appear in LightLink as do the skill/queue and VDN statistics, while the historical statistics have a deeper key set, being related per agent per skill, and will not normally appear in LightLink, but rather should be handled through a contract data set or through the Inova Solutions Manager’s Dashboard.

Agent Statistics	Avaya RT Socket for Real-Time License		Avaya Inova Historical License		
	Real-Time	For Current Interval	Previous Interval	Today through Previous Interval	Yesterday
Agent Name (possible key value in Historical report)	✓		✓	✓	✓
Skill (first skill agent logged in to)	✓				
Workmode	✓				
Direction	✓				
Duration	✓				
Worksplit	✓				
ACD calls		✓	✓	✓	✓
ACD time		✓	✓	✓	✓
Hold time		✓	✓	✓	✓
Available time		✓	✓	✓	✓
ACW time		✓	✓	✓	✓
AUX time		✓	✓	✓	✓
Staff time		✓	✓	✓	✓
Agent time		✓			
AUX reason		✓			
AUX In time		✓	✓	✓	✓
AUX Out time		✓	✓	✓	✓
ACW In time		✓	✓	✓	✓
ACW Out Time		✓	✓	✓	✓
Abandoned Calls		✓	✓	✓	✓
Abandoned time			✓	✓	✓
Period (PreDay, PreInt, Today- key value)			✓	✓	✓
ACD			✓	✓	✓

Agent Statistics	Avaya RT Socket for Real-Time License		Avaya Inova Historical License		
	Real-Time	For Current Interval	Previous Interval	Today through Previous Interval	Yesterday
LogID (Agent ID, possible key value)			✓	✓	✓
Extension			✓	✓	✓
Skill ID (key value)			✓	✓	✓
Event Date			✓	✓	✓
Event Interval			✓	✓	✓
Interval Start			✓	✓	✓
Interval End			✓	✓	✓
Answered Calls			✓	✓	✓
Staff time			✓	✓	✓
AUX In Calls			✓	✓	✓
AUX Out Calls			✓	✓	✓
ACW In Calls			✓	✓	✓
ACW Out Calls			✓	✓	✓
AUX time 0			✓	✓	✓
AUX time 1 - 9			✓	✓	✓
Other time			✓	✓	✓
Agent Ring time			✓	✓	✓
Direct ACD Calls			✓	✓	✓
Direct ACD Call time			✓	✓	✓
Direct ACD ACW time			✓	✓	✓

Table 3: Agent Statistics

3. Prerequisites

Inova Solutions requires the customer to provide the following information:

- The IP Address or Hostname of the appropriate CMS server.
- The RT Socket and Inova Historical Socket TCP port number(s) per report, provided by Avaya Professional Services. Each Skill, VDN, and Agent report will have its own port number, so a full set of Realtime and Historical reports will be six port numbers.

In addition, these system requirements must be met:

- A clear network path for a TCP connection without firewalls or proxy servers between the Avaya system and the LightLink system.
- Avaya CMS version 6 or higher.

4. Product Specifications

4.1. Capacity and Limitations

Each Socket can be configured with a maximum of 16 sessions. Each session can provide skill group, VDN, or agent data, either real-time or historical, in accordance with the limits in Table 3. In addition to these limits, there is a hard limit of 10,000 data fields per Socket.

Statistic Type	Real-Time	Historical
Split/Skill Data	200 skills per session	200 skills per session
VDN Data	400 VDNs per session	400 VDNs per session
Agent Data	300 agents per session	Variable by skills per agent

Table 3: Session Limitations

4.2. Compatibility

The LightLink system is compliance tested with released versions of CMS on an ongoing basis as part of the Inova Solutions and Avaya partnership.

4.3. Licensing

Avaya Licensing – The Avaya interfaces are licensed packages provided and deployed by Avaya Professional Services. Avaya indicates that customers must purchase these interface packages prior to the Inova deployment. Avaya licenses must be purchased separately for access to real-time data and historical data for each Avaya ACD. Licenses are available for Real-Time Avaya Data via Avaya RT Socket and Historical Avaya Data via Avaya Socket.

- The **Avaya RT Socket interface** provides for real-time Split/Skill (Queue), VDN, and specific Agent information in a data stream accepted by Inova LightLink. Inova customers typically enable only the Split/Skill data stream, leaving the VDN and Agent information disabled.
 - The Avaya RT Socket interface provides the Split/Skill, VDN, and individual Agent information in unique socket data streams to Inova LightLink. Although Avaya bundles these three sources, Inova licenses each separately for Inova LightLink. VDN and Agent information are disabled for projects where this data is not displayed.
- **Historical Socket / Avaya Pro APS Bundle** provides historical Split/Skill (Queue), VDN, and specific Agent information in an historical data stream accepted by Inova LightLink for previous interval, current day, and previous day. Although Avaya bundles these three sources, Inova licenses each separately for Inova LightLink. Historical VDN and Historical Agent information feeds are disabled for projects where this data is not displayed. A Pro APS Bundle is required for the Historical interface setup from Avaya.
 - Note: In some cases the Avaya Historical database(s) may be utilized for capturing limited historical data. The database connection method for gathering historical information is only available when Avaya High Availability (HA) *is not* present. If Avaya HA Primary and HA Secondary CMS systems are in production at your location, Inova must utilize the Historical Socket with Avaya Pro APS bundle to seamlessly failover between systems without intervention.

Refer to Table 4 for Avaya material codes.

	R18.X and lower	R19.0 and higher
RT Socket Real-Time	185292	392057
Add-on sessions (for additional ACDs or if RT Socket already exists)	<i>Requested at order</i>	392059
Historical Socket / Avaya Pro APS Bundle	185285	185285

Table 4: Avaya Material Codes

4.4. Firewall

The Windows Firewall on the Inova LightLink Middleware host machine needs to be configured to allow the Avaya socket connections to connect. The allowance is configured as an “Inbound” firewall rule and can be created as port number exceptions or an exception for the `i_dsm.exe` process. Port number exceptions can be written to cover a range of numbers, and Avaya engineers usually send the RT and Historical reports on a set of contiguous port numbers.

1. Open Windows Control Panel and select *Windows Firewall*.
2. Once that dialog is open, select *Advanced Setting* on the left panel.
3. Select *Inbound Rules* on the left and then *New Rule...* on the right to open the wizard to create an appropriate firewall rule (Figure 1).

Note that the RT and Historical Socket connection originate at the Avaya server and seek to connect to the LightLink DSM, thus the reason to use an inbound rule.

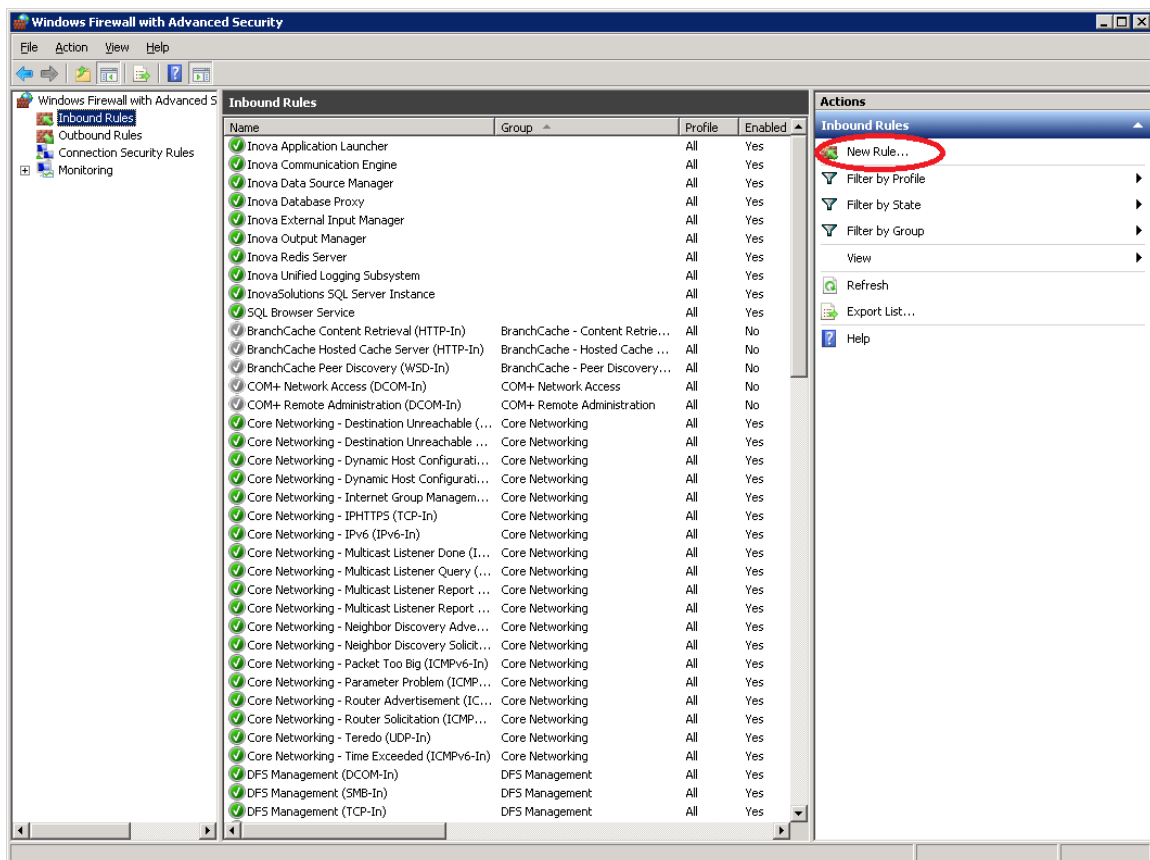


Figure 1

5. Installation and Basic Configuration

1. Configure one Data Source Manager (DSM) per Avaya socket connection to be used by LightLink. For example, if you have real-time and historical Skill sockets as well as an historical Agent socket, you would need three DSMs.
2. Secure Config Permission in LightLink Administrator.
3. From the Input Manager context menu, select *New Data Source Connection*.
4. This New Data Source dialog will open. Select the *Avaya RT Socket* connection for both RT and Historical socket connections.
5. On the Connection tab, enter the IP address or hostname for the LightLink host machine; localhost may work as well. Also enter the Port number for the given socket connection, which the Avaya engineering team should provide.
6. On the Settings tab, you will need to configure three things: the SDF file, the DSS file, and the Advance properties. For the SDF file, select the following:
 - **RT Socket Skill:** `avaya_realtime_socket_skill.sdf`
 - **RT Socket VDN:** `avaya_realtime_socket_vdn.sdf`
 - **RT Socket Agent:**
 - For a standard report with LogID and no agent names present: `avaya_rtsocket_realtime_agent.sdf`.
 - For a report including agent names from the Synonyms table: `avaya_realtime_socket_agent_names.sdf`
 - **Historical Socket Skill:** `avaya_historical_socket_skill.sdf`
 - **Historical Socket VDN:** `avaya_historical_socket_vdn.sdf`
 - **Historical Socket Agent:** `avaya_historical_socket_agent_names.sdf`

This SDF file is specifically to enable data output for Inova Solution’s Manager Dashboard application, and will not result in LightLink Datafields available for traditional LightLink output. Previously this data was handled only via contract data sets.
7. For the DSS file, select the following:
 - **For all RT Socket connections:** `avaya_realtime_socket.dss`
 - **For all Historical Socket connections:** `avaya_historical_socket.dss`

8. 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 Avaya Socket.
9. Click *OK* on the DSM Configuration dialog to start the DSM.

6. Known Configuration Issues

Some data may not become available until calls are placed in the system; without data LightLink cannot create the associated LightLink datafields.

7. Best Practices

When configuring any RT or Historical Socket DSMs, it is also worthwhile to enable raw value logging for the data stream. While you have the Advanced Properties dialog open to set the *ActAsServer* parameter, also set the *RecordData* parameter from 0 to 1 and the indicated log file (named after DSM ID number) will show the raw input data. You may wish to turn off raw data logging after the DSM is correctly configured, for performance reasons.

8. Troubleshooting

Aside from enabling the *RecordData* option to verify the format of data from the Avaya stream, you may need to also ask the customer/Avaya engineer to reset the data stream.