



Avaya Solution & Interoperability Test Lab

Application Notes for Symon Enterprise Server with Avaya IQ 5.2 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Symon Enterprise Server to interoperate with Avaya IQ via `rt_socket` interfaces. The `rt_socket` interfaces, developed by Avaya Professional Services organization, provide real-time data related to agents, queues, and routing points.

Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

The following diagram provides an overview of Symons' products and the integration with the Avaya IQ.

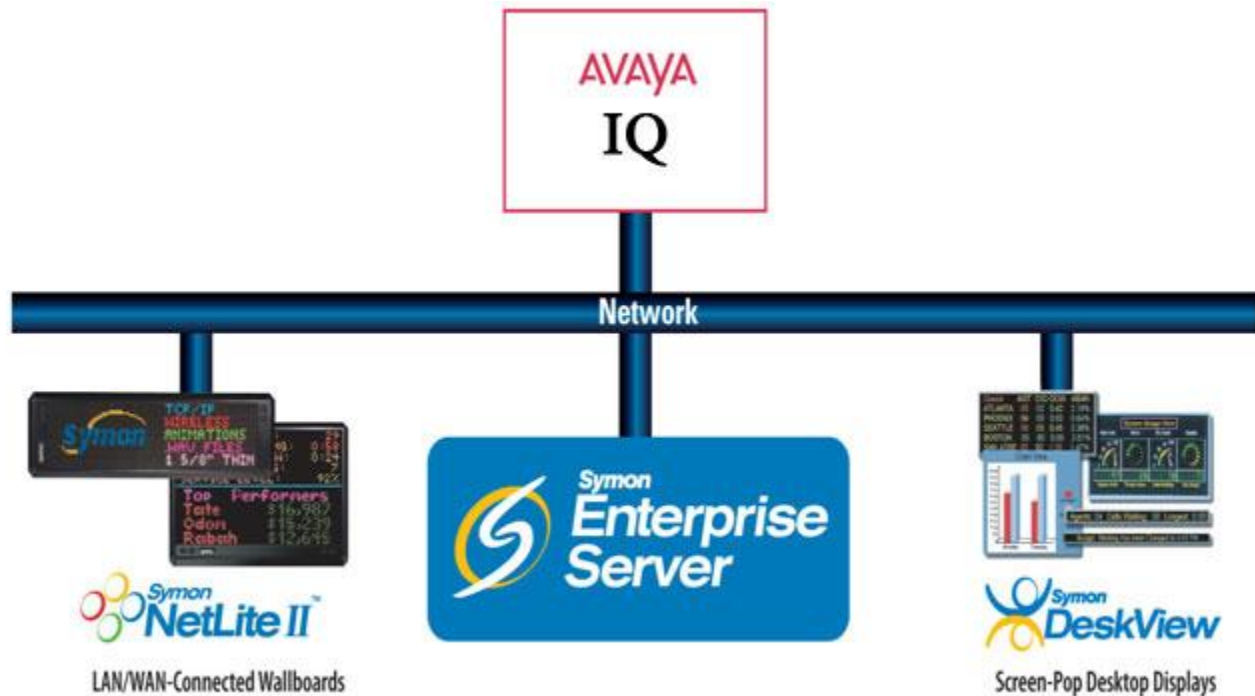


Figure 1: Symon Enterprise Server Integration to Avaya IQ

Symon Enterprise Server (SES) 11.2.1 integrates with an Avaya Aura® Communication Manager (functioning as an Automatic Call Distributor (ACD)) via Avaya IQ. The integration is done using the TCP/IP Collector in SES and custom adapters on Avaya IQ. SES can monitor real time statistics that are available from Avaya IQ. The TCP/IP Collector on SES is configured via Portal Administrator which can run on SES or as a remote client.

The `rt_socket` adapters on Avaya IQ, developed by the Avaya Professional Services organization, open custom reports that contain the statistics SES uses for real time monitoring (e.g. wallboard). All statistics received by SES can be viewed using the Portal Data Viewer, a debugging tool provided as part of SES.

The following `rt_socket` adapters covered in this compliance test included:

- Agent Adherence Interface
- Agent Performance Interface
- Queue Performance Interface
- Routing Point Performance Interface

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.

2.1. Interoperability Compliance Testing

The feature test cases were performed manually. Incoming calls were made to the measured routing points, queues, and agents to generate data to the SES. Manual call control functions such as answer, hold, resume, and disconnect, along with agent work mode changes including login, auto-in, manual-in, after call work, auxwork, and logout were exercised as necessary to populate specific fields in the reports.

The serviceability test cases were performed manually by disconnecting and reconnecting the LAN cable to SES, rebooting SES, and by restarting the Avaya IQ adapters.

For each field in the tested interfaces, the displayed data was compared between the Avaya IQ standard reports, the data generated by the Avaya IQ adapters, and the data displayed at SES.

The data generated by the Avaya IQ adapters was monitored using a utility provided with the rt_socket adapters. SES was monitored using their portal data viewer.

The interoperability compliance test included feature and serviceability testing.

2.2. Test Results

The Symon Enterprise Server successfully passed the compliance test. All the four rt_socket interfaces including Agent Adherence Interface, Agent Performance Interface, Queue Performance Interface, and Routing Point Performance Interface were verified.

The following observations were made during the compliance test:

- All data sent by the Avaya IQ rt_socket adapters is sent as ASCII text.
- If Symon report fields are configured as integers. The field is limited to 4bytes. If the field value is exceeded, the received data will be mismatched and cause the report to be improperly displayed.
- Activation of SES Debug occasionally crashes Portal Admin and will require a restart of the Portal Admin.

Note: *This event does not have any service impact on data collection.*

All the fields above refer to the data received by SES from Avaya IQ.

2.3. Support

Technical support from Symon can be obtained through the following:

- **Phone:** 1 (877) 789-TECH (8324)
- **Email:** support@symon.com

3. Reference Configuration

Figure 2 below shows the compliance testing configuration. The Avaya IQ, Oracle database server for Avaya IQ, Avaya Communication Manager ACD, telephones, user PCs and SES all reside in the same network.

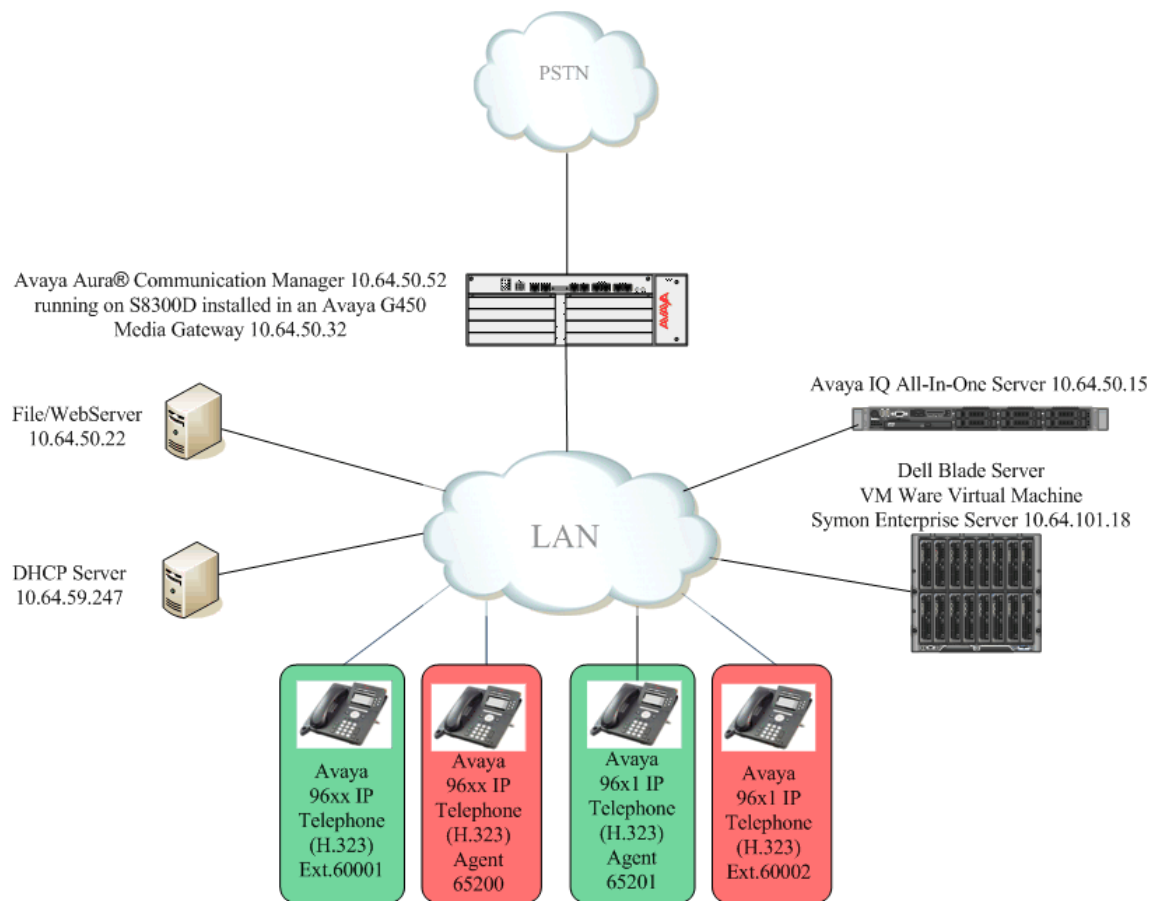


Figure 2: Symon Enterprise Server with Avaya IQ Test Configuration

On the Avaya Aura® Communication Manager, relevant skills and Vector Directory Number (VDN) objects are configured to be “measured” for Avaya IQ. When a call travels through a “measured” object on Avaya Aura® Communication Manager, the ACD related data is sent to the Avaya IQ. Avaya IQ sends updates for agents, queues, and routing points to SES periodically. During the compliance testing data was sent every 5 seconds. The Avaya IQ

standard reports and a utility tool included with the Avaya adapter software were used to validate the accuracy of data generated by Avaya IQ and displayed by SES.

4. Equipment and Software Validated

The following equipment and software were used for the test configuration:

Equipment	Software
Avaya S8300D Server running Avaya Aura® Communication Manager	Avaya Aura® Communication Manager 6.0.1 with service pack (00.1.510.1-19271)
Avaya G450 Media Gateway MGP MM710 T1 Module MM712 DCP Media Module MP80 VoIP-DSP	HW 2 FW 31.22.0 HW 5 FW 22 HW 7 FW 14 HW 6 FW 67
Dell R610 Avaya IQ All-In-One server	Avaya IQ 5.2.2.0.590_10991_14975_SP2 Red Hat Enterprise Linux Server release 5.5 (Tikanga) RT_Socket Interface Version 1.0.10 (26 March 2012) Oracle Version 11.1.0
Symon Enterprise Server	11.2.1
Avaya 96xx H.323 Telephones	Avaya one-X Deskphone Edition S3.104S
Avaya 96x1 H.323 Telephones	Avaya one-X Deskphone Edition S6.2009

5. Configure Avaya Aura® Communication Manager

The detailed administration of contact center objects and connectivity between Communication Manager and Avaya IQ are not the focus of these Application Notes and are not described here. For administration of contact center objects and connectivity to Avaya IQ, refer to the appropriate documentation listed in **Section 11**.

In order for the data of a queue or a routing point to be collected and forwarded to Avaya IQ, the “measured” field on the corresponding skill and VDN forms must be set to “external”. For administration of the “measured” field for a skill and a VDN, refer to the appropriate documentation listed in **Section 11**.

6. Configure Avaya IQ

The administration of Avaya IQ to support its normal functions is not the focus of these Application Notes and is not described here. This section provides the additional configuration as required for supporting Symon Enterprise Server integration, which includes the following:

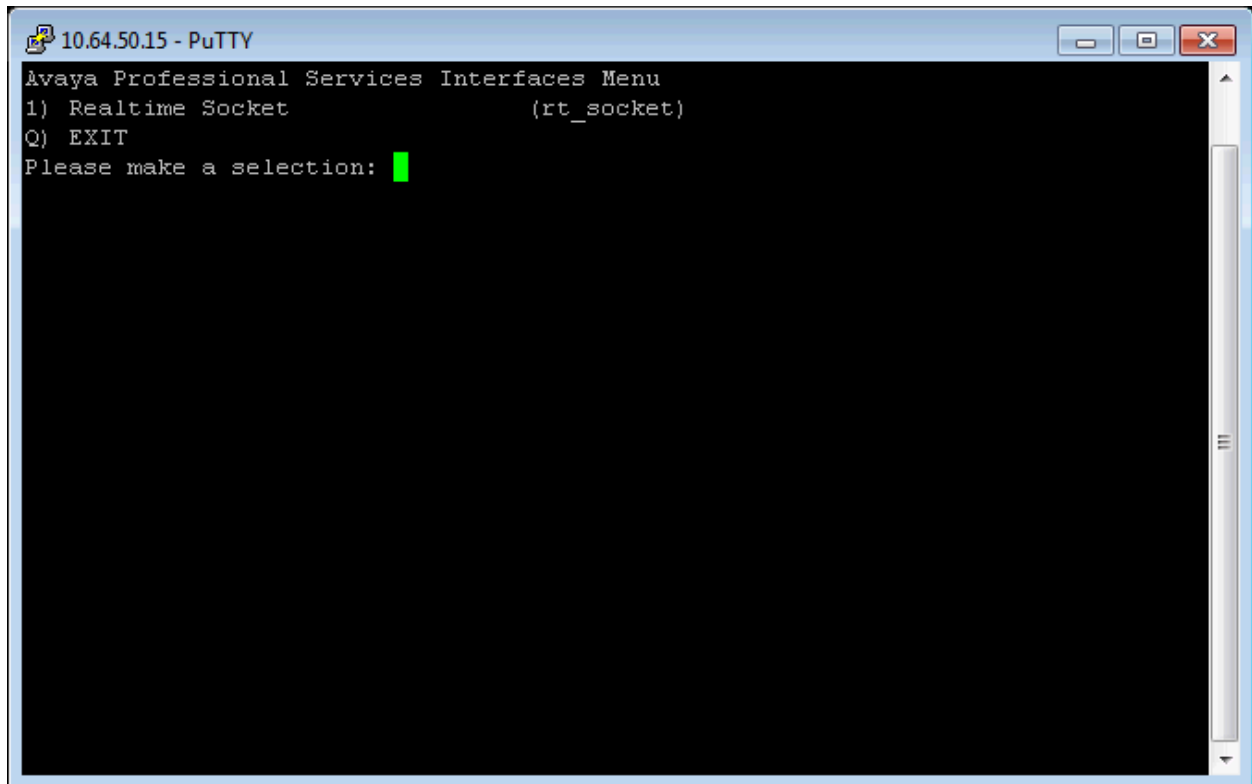
- Activate the real-time socket adapter

6.1. Activate real-time socket Adapter

Four rt_socket real-time adapters are installed in Avaya IQ to support SES integration.

Activate adapters:

- Start the APS Interfaces Menu by logging in to Avaya IQ as “psadmin” using an SSH client.
- Select **1** for the Realtime Socket Menu

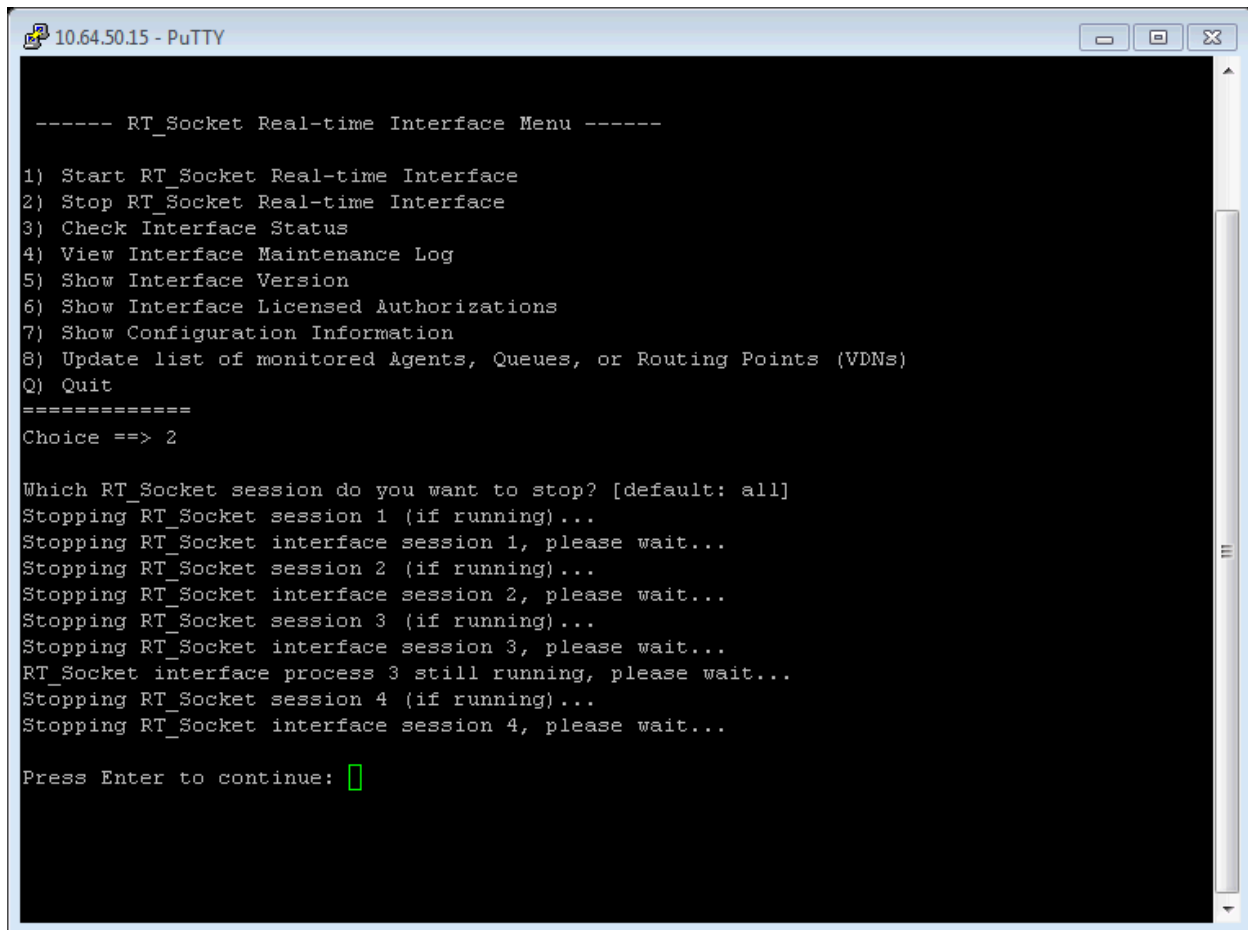


The screenshot shows a PuTTY terminal window titled "10.64.50.15 - PuTTY". The terminal displays the "Avaya Professional Services Interfaces Menu" with the following options:

```
Avaya Professional Services Interfaces Menu
1) Realtime Socket                (rt_socket)
Q) EXIT
Please make a selection: █
```

The cursor is positioned at the end of the "Please make a selection:" prompt, indicated by a green block character (█).

From the **RT_Socket menu** screen, choose **2** to stop all sessions. Each session corresponds to one real-time interface for an ACD data source.



```
10.64.50.15 - PuTTY

----- RT_Socket Real-time Interface Menu -----

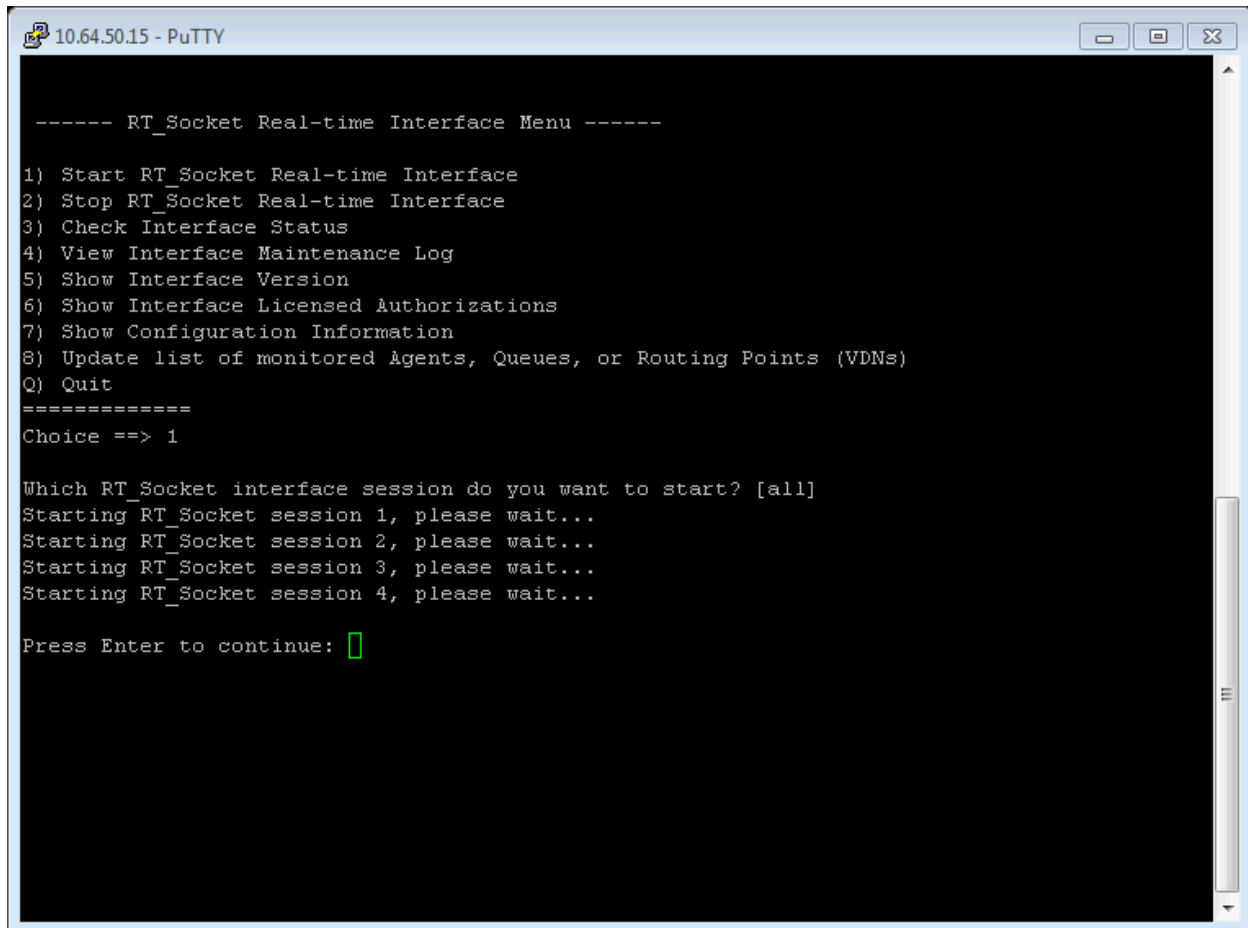
1) Start RT_Socket Real-time Interface
2) Stop RT_Socket Real-time Interface
3) Check Interface Status
4) View Interface Maintenance Log
5) Show Interface Version
6) Show Interface Licensed Authorizations
7) Show Configuration Information
8) Update list of monitored Agents, Queues, or Routing Points (VDNs)
9) Quit
=====
Choice ==> 2

Which RT_Socket session do you want to stop? [default: all]
Stopping RT_Socket session 1 (if running)...
Stopping RT_Socket interface session 1, please wait...
Stopping RT_Socket session 2 (if running)...
Stopping RT_Socket interface session 2, please wait...
Stopping RT_Socket session 3 (if running)...
Stopping RT_Socket interface session 3, please wait...
RT_Socket interface process 3 still running, please wait...
Stopping RT_Socket session 4 (if running)...
Stopping RT_Socket interface session 4, please wait...

Press Enter to continue: 
```

Once all sessions are stopped, press **Enter** to continue.

From the **RT_Socket menu** screen, choose **1** to start all sessions.



```
10.64.50.15 - PuTTY

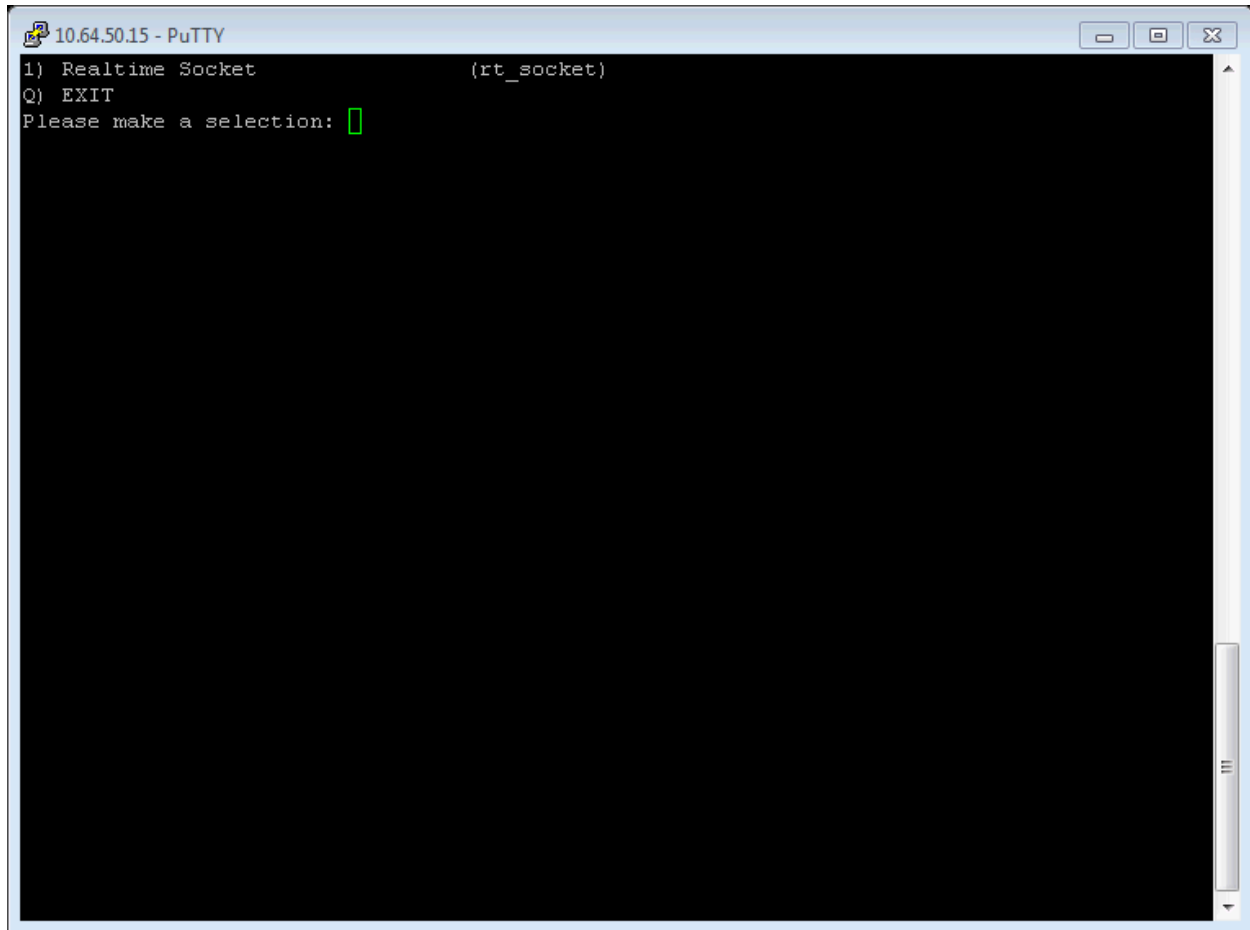
----- RT_Socket Real-time Interface Menu -----

1) Start RT_Socket Real-time Interface
2) Stop RT_Socket Real-time Interface
3) Check Interface Status
4) View Interface Maintenance Log
5) Show Interface Version
6) Show Interface Licensed Authorizations
7) Show Configuration Information
8) Update list of monitored Agents, Queues, or Routing Points (VDNs)
9) Quit
=====
Choice ==> 1

Which RT_Socket interface session do you want to start? [all]
Starting RT_Socket session 1, please wait...
Starting RT_Socket session 2, please wait...
Starting RT_Socket session 3, please wait...
Starting RT_Socket session 4, please wait...

Press Enter to continue: █
```


Once all sessions are started, press **Enter** to continue and then **Q** to quit and return to the APS Interfaces Menu.



```
10.64.50.15 - PuTTY
1) Realtime Socket          (rt_socket)
Q) EXIT
Please make a selection: █
```

7. Configure Avaya IQ Adapters

The following parameters are configurable for the Avaya IQ adapters and are customized for each different environment.

- Timezone for the reports
- Sliding window size
- Avaya IQ login/password
- Delimeter
- Data source name
- Report type : agent, queue, or routing point
- IP address and port of the application

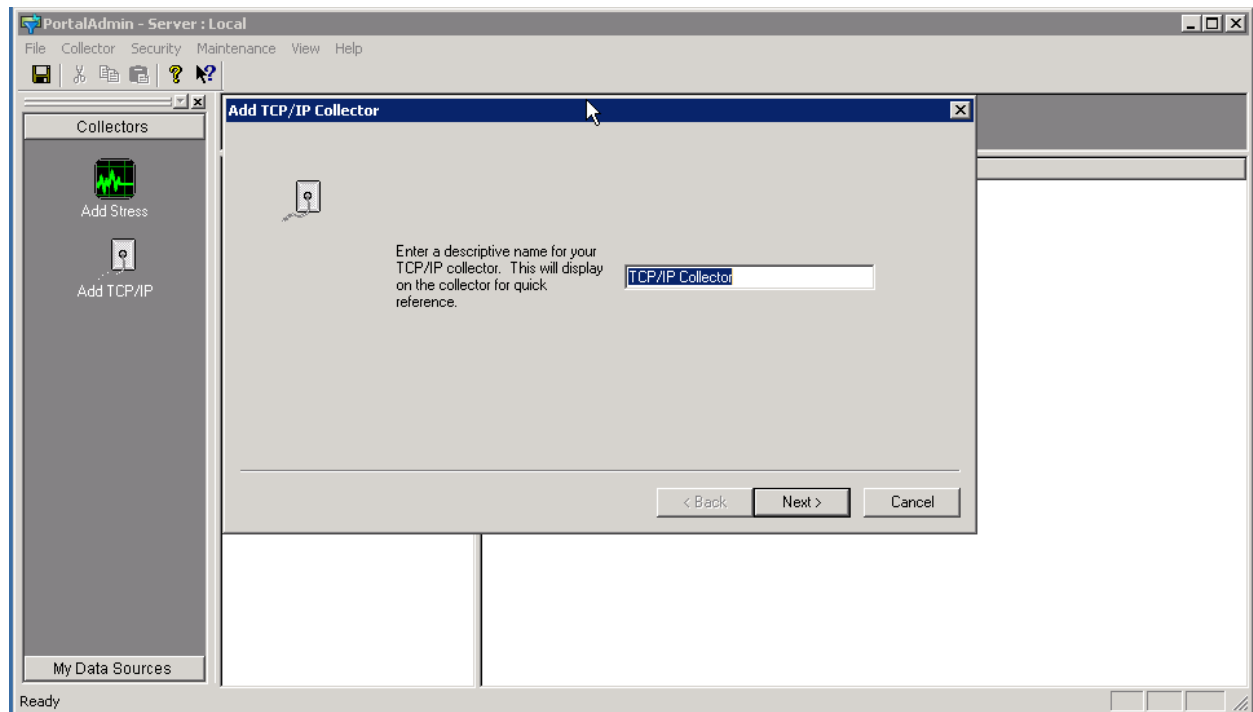
Avaya IQ adapter configuration should only be performed by the Avaya Professional Services organization. Please refer any questions about adapter configuration to Avaya Professional Services.

8. Configure Symon Enterprise Server (SES)

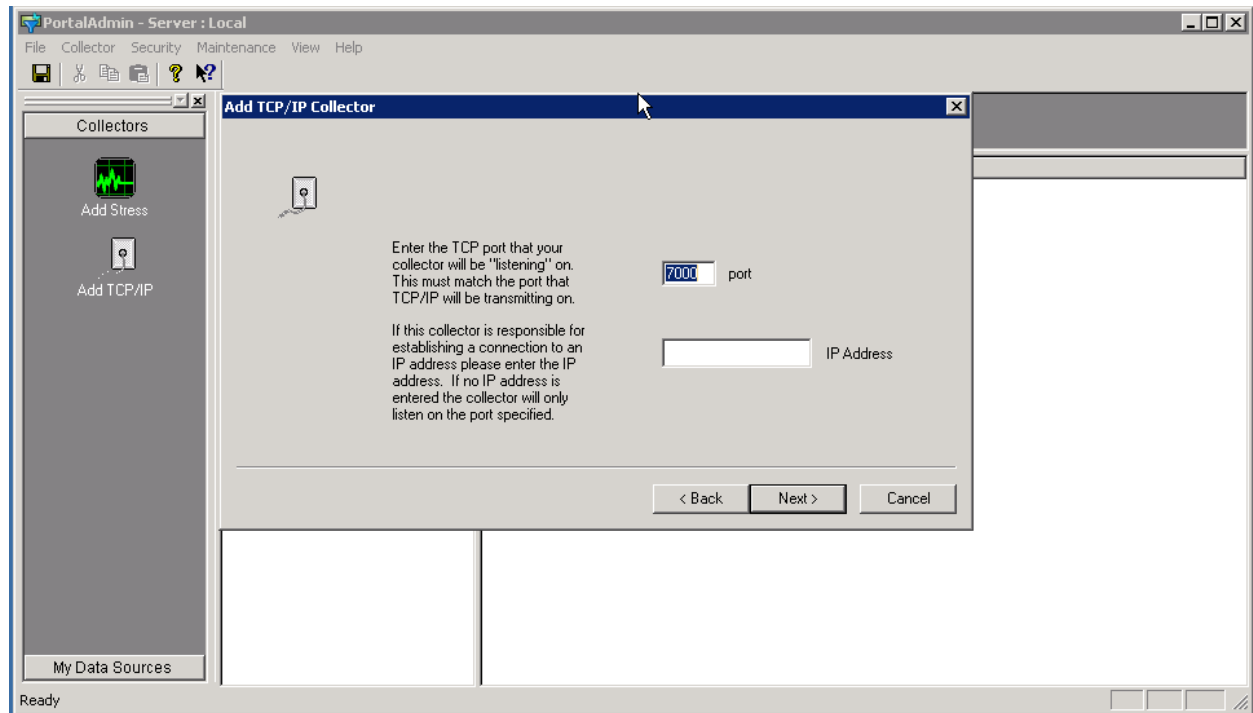
This section describes how to configure the Symon Enterprise Server.

8.1. Configure TCP/IP Collector

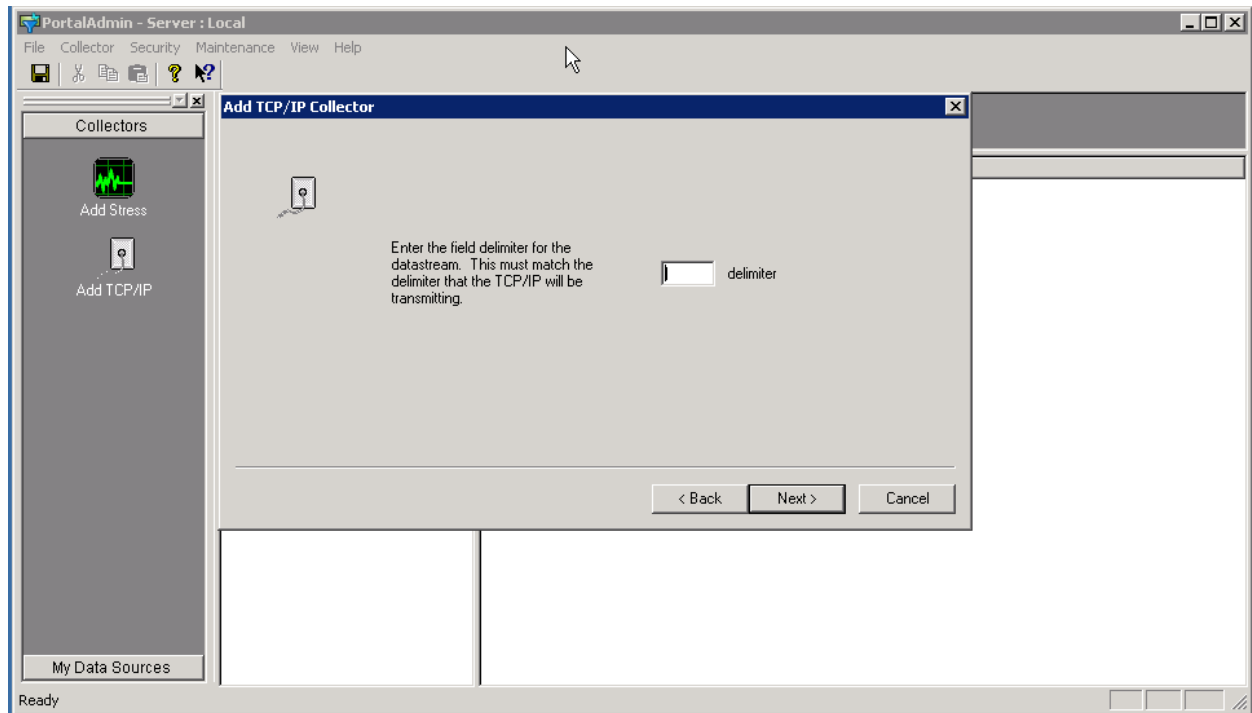
Start Portal Administrator by clicking “Start” → “All Programs” → “Symon Enterprise Software” → “Portal Admin”. In the PortalAdmin-Server: Local page, select the “Add TCP/IP” button in the left pane to add a TCP/IP Collector. After the “Add TCP/IP Collector” screen pops up, enter the name of the collector and click “Next”.



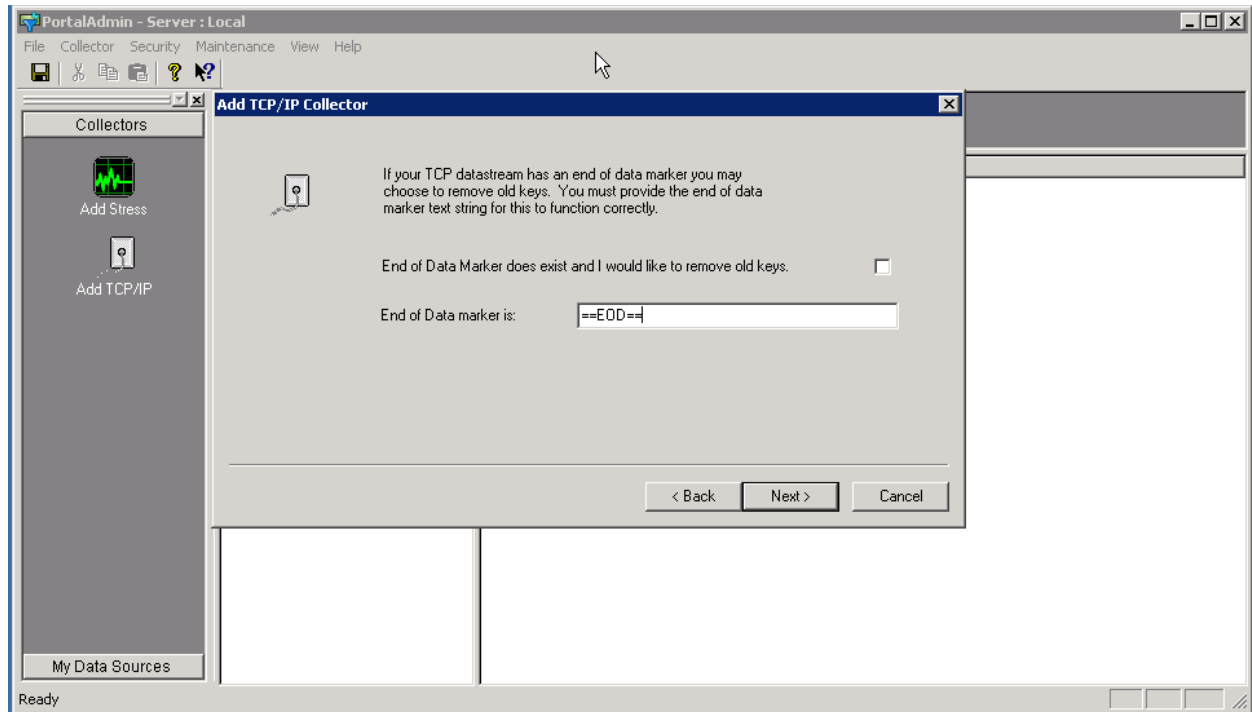
On the next screen enter the port number and click “Next”.



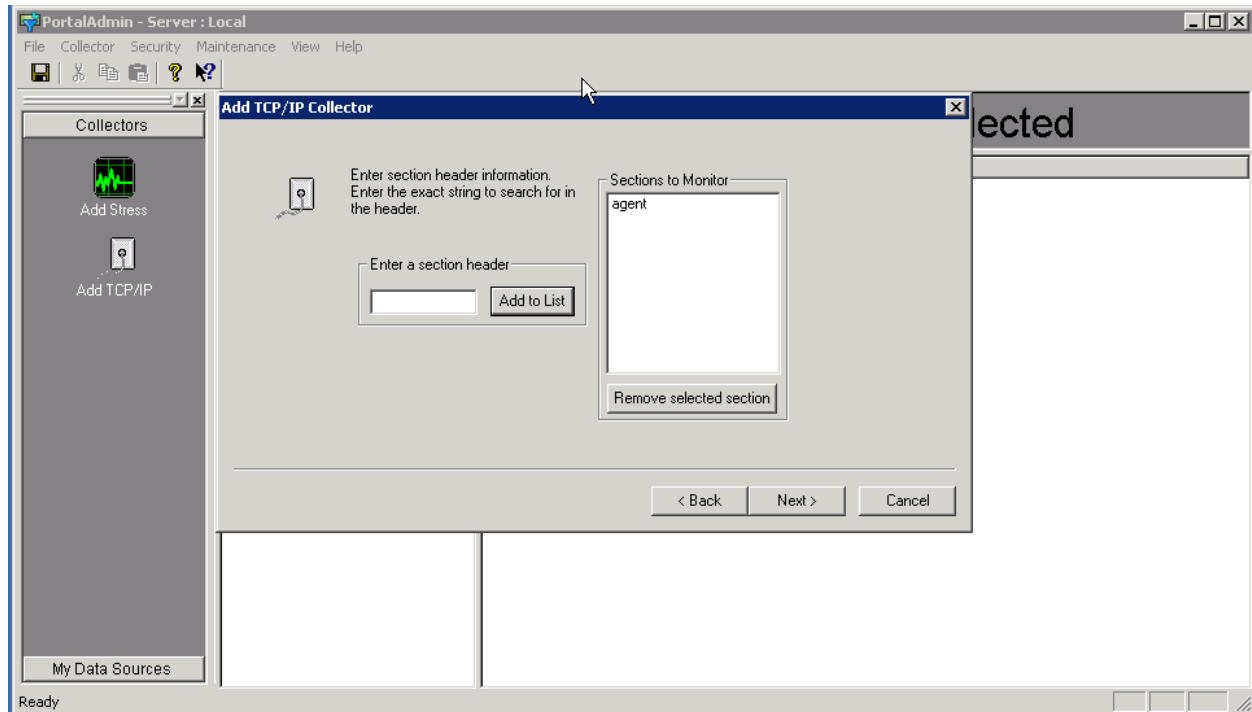
On the next screen enter the delimiter (“|”) and click “Next”.



On the next screen enter the End of Data marker and click “Next”. In this compliance test “==EOD==” is sent as the End of Data marker by the Avaya IQ rt_socket adapters.



On the next screen set the Section Header. This will be used to identify a group of fields to be monitored. Enter the name of the Section Header. Click “Add to List”, then click “Next”.



On the next screen add the fields that will be monitored in the Section. Select the Section Header for this field, enter a name, select a Data Type and define the order, then click “Add”. Repeat this process on the same page until all of your fields have been added.

PortalAdmin - Server : Local

File Collector Security Maintenance View Help

Collectors

Add Stress

Add TCP/IP

My Data Sources

Ready

Add TCP/IP Collector

Enter the field names for each section in the order that TCP/IP will be sending them. If you are unsure what fields will be sent, you need to consult the switch administrator.

Section Header: agent

Add Field

Field Name:

Data Type: Text

Order: 2 ☐ Key

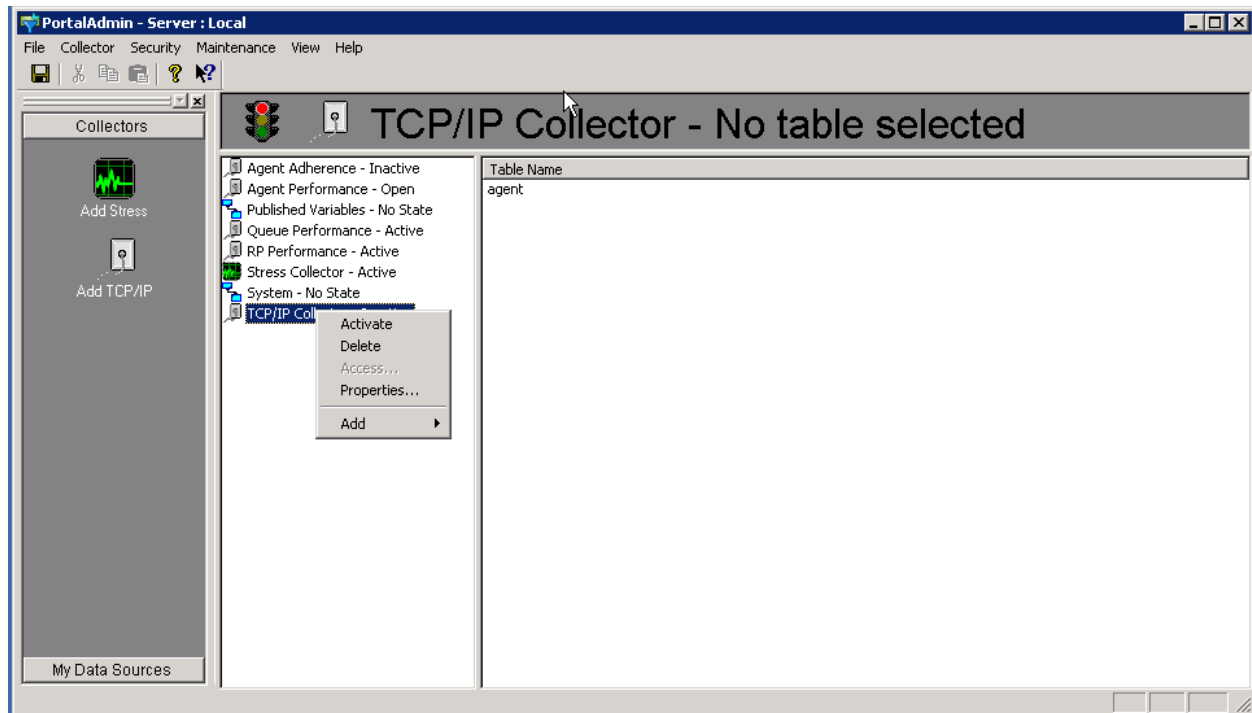
FieldNames	Order
abc agentid	1

< Back Finish Cancel

Note: Check the Key box if this field will be used by the collector to associate incoming data with this report. At least one key is required for each section.

Click Finish after all of your fields have been added. You should see the newly configured collector show up in the pane right of the Collectors bar.

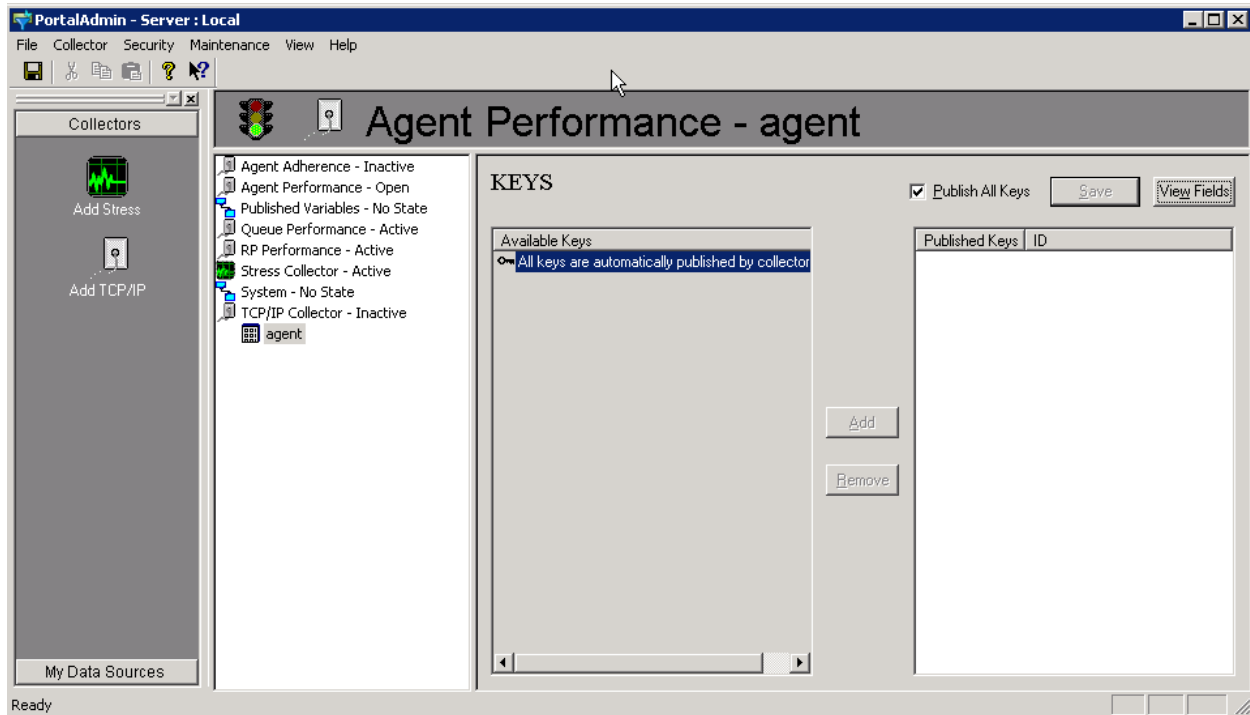
Right-click on “TCP/IP Collector” and select “Activate”.



In this compliance test 4 collectors were configured and verified. See **Section 9** for verification steps.

8.2. Publish Keys for TCP/IP Collector

From the list of collectors double click "TCP/IP Collector" and highlight the section. In this example the section name is agent. From the right most pane click "View Keys" button, (Not Shown). The KEYS window shown below is displayed. Check the Publish All Keys box, and click "Save".



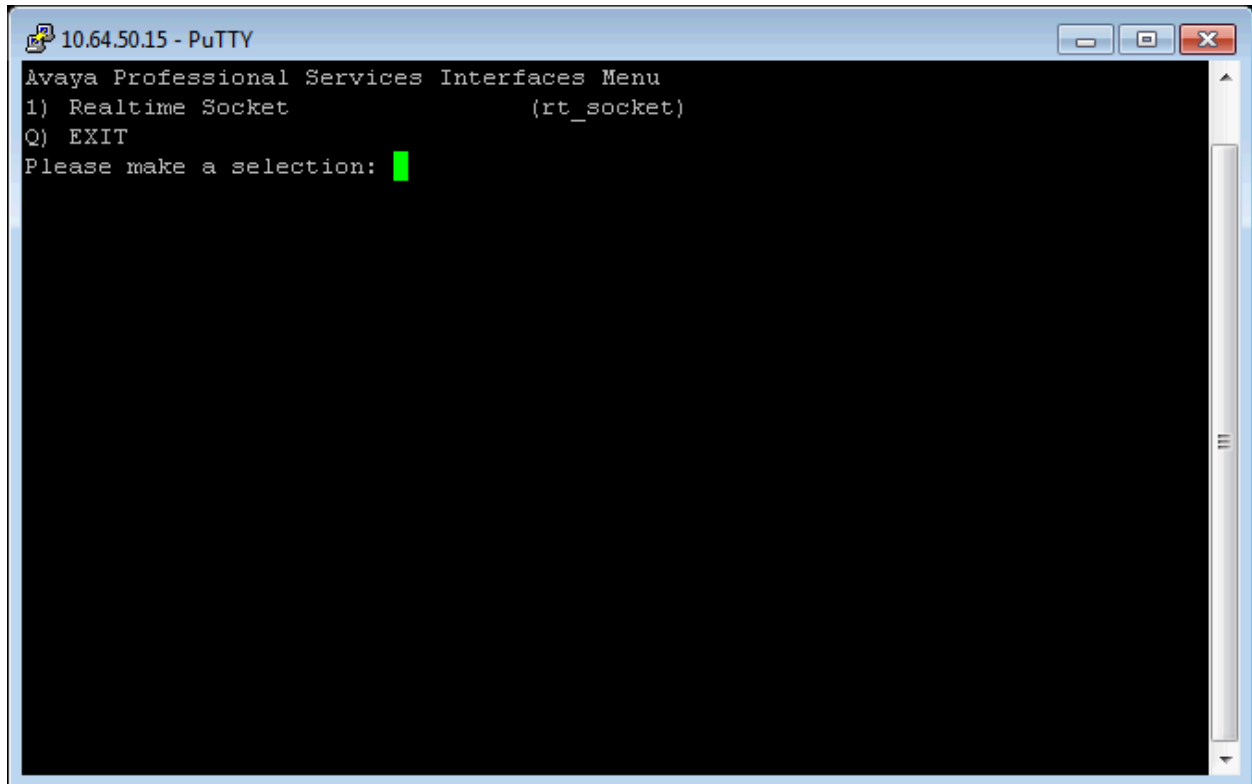
Note : All keys are now automatically published by the collector.

9. Verification Steps

This section describes the steps to use to verify proper configuration of Avaya IQ and the Symon Enterprise Server.

9.1. Verify Avaya IQ Adapters

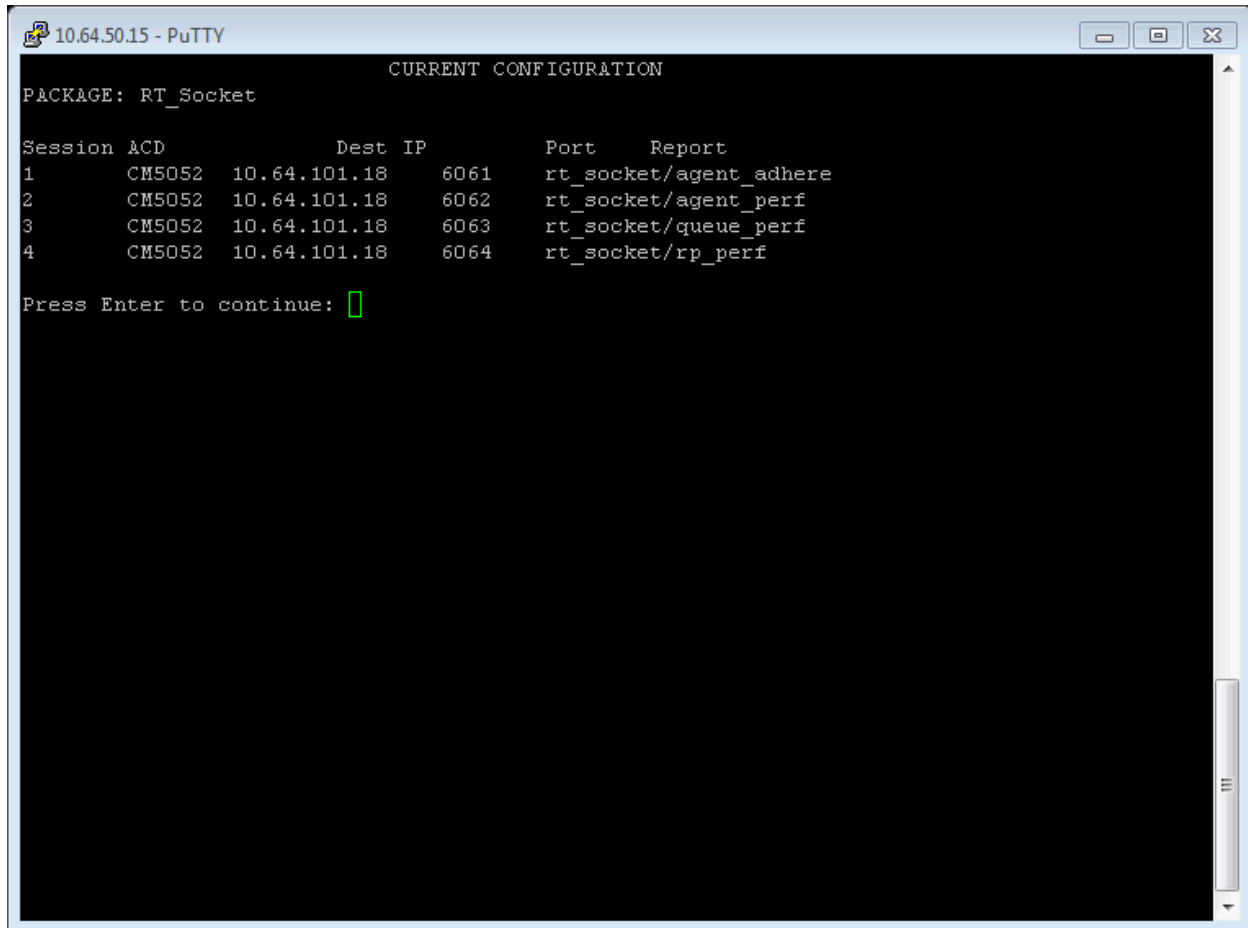
Use an SSH client to verify the real-time interface, Start the APS Interfaces Menu by logging in to Avaya IQ as the “psadmin” user.



Select **1** for the Realtime Socket Menu

9.2. Verify Avaya IQ Adapters

From the **RT_Socket Menu** screen (not shown), choose **7** to verify the each of the rt_sockets are configured to connect to SES. Validate the IP address, port, and report for each connection. The screen capture below shows each of the four sessions used in this compliance test.



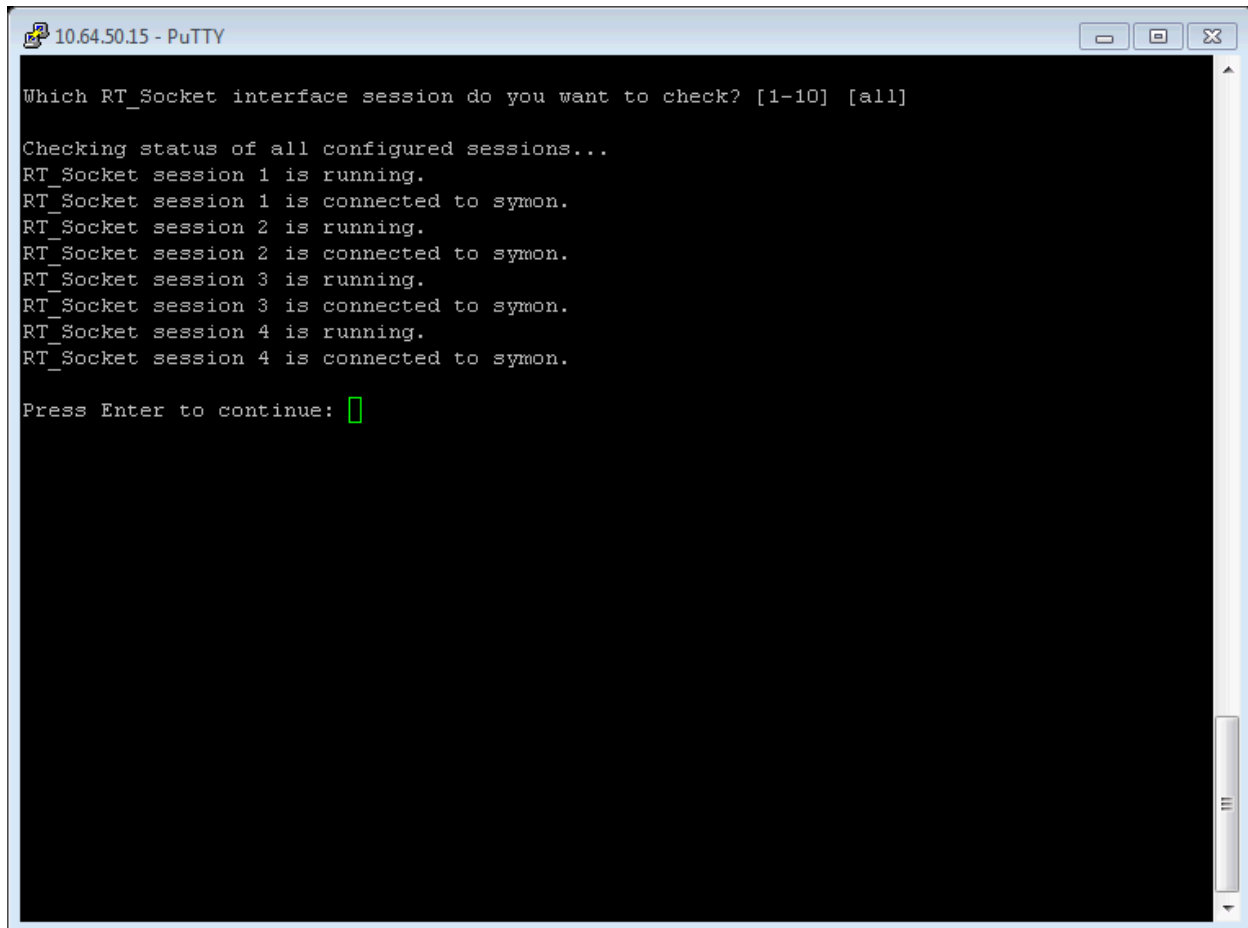
```
10.64.50.15 - PuTTY
CURRENT CONFIGURATION
PACKAGE: RT_Socket

Session ACD      Dest IP      Port      Report
1       CM5052    10.64.101.18 6061      rt_socket/agent_adhere
2       CM5052    10.64.101.18 6062      rt_socket/agent_perf
3       CM5052    10.64.101.18 6063      rt_socket/queue_perf
4       CM5052    10.64.101.18 6064      rt_socket/rp_perf

Press Enter to continue: [ ]
```

Press **Enter** to continue. From the **RT_Socket Menu** screen, choose **3** to check the status of the sessions. Each session corresponds to an interface for an ACD data source. Ensure that each session required is running and connected to the Symon Enterprise Server application.

The screen capture below shows sessions one through four running and connected to Symon.



```
10.64.50.15 - PuTTY
Which RT_Socket interface session do you want to check? [1-10] [all]

Checking status of all configured sessions...
RT_Socket session 1 is running.
RT_Socket session 1 is connected to symon.
RT_Socket session 2 is running.
RT_Socket session 2 is connected to symon.
RT_Socket session 3 is running.
RT_Socket session 3 is connected to symon.
RT_Socket session 4 is running.
RT_Socket session 4 is connected to symon.

Press Enter to continue: 
```

9.3. Verify Symon Enterprise Server

This section describes how to verify proper functionality of SES.

9.3.1. Verify Collector State

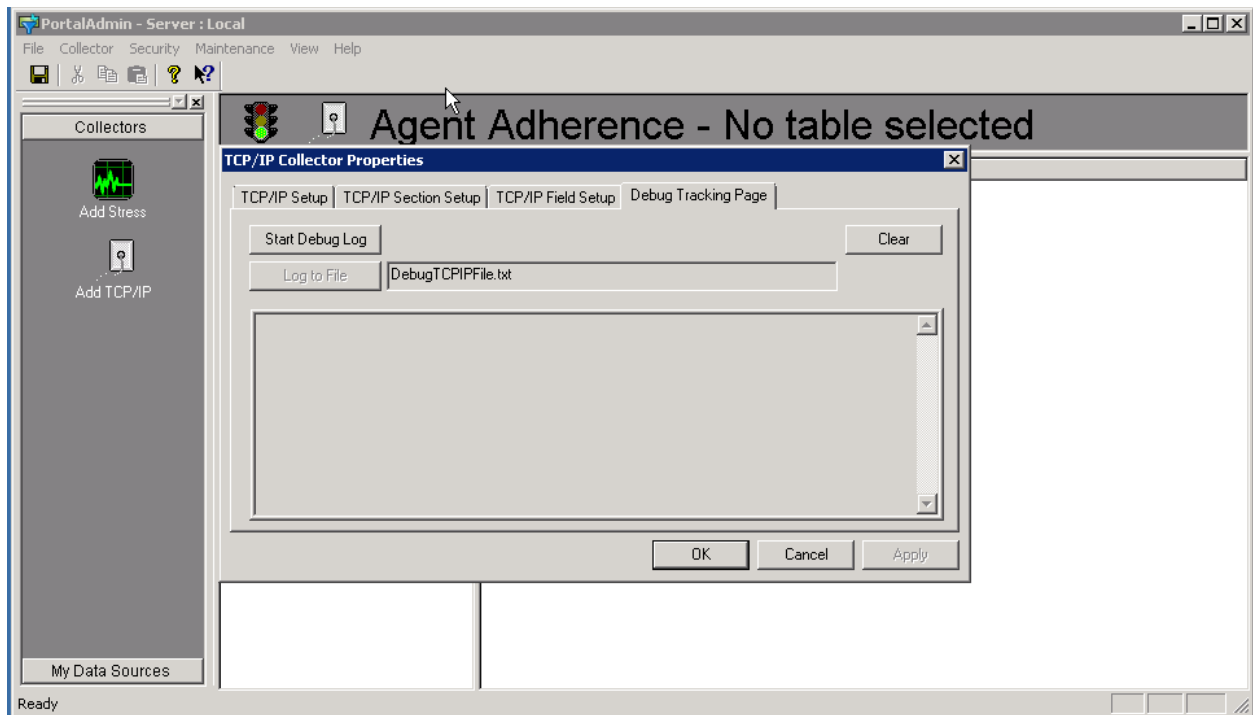
The Collectors can have the following states:

- Inactive – Collector is administratively inactive.
- Open – Collector is administratively active but not receiving data.
- Active - Collector is administratively active and receiving data.
- No State – Collector has no state.

Note: *For proper functionality Collector should be in Active state.*

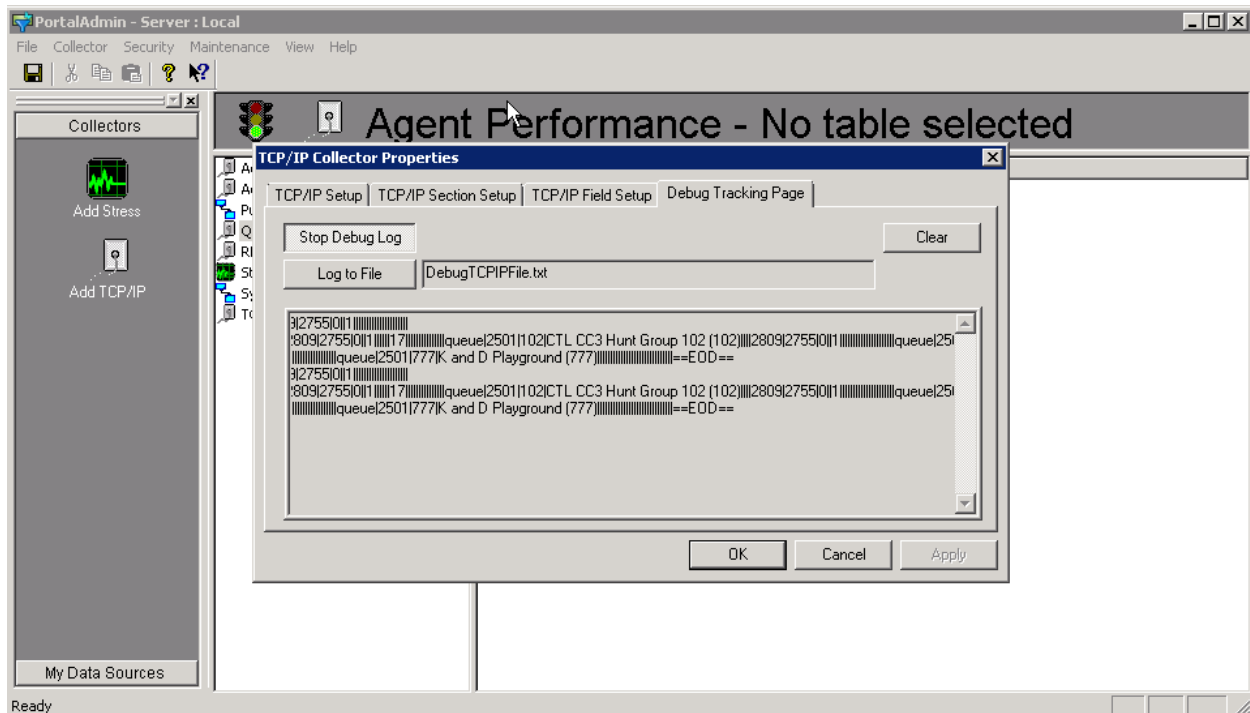
9.3.2. Verify Collector Data Using Debug

Right-click on the “TCP/IP Collector” (Not Shown) to go to “TCP/IP Collector Properties”, and select “Debug Tracking Page”.



Click the “Start Debug Log” button to verify the data coming from Avaya IQ.

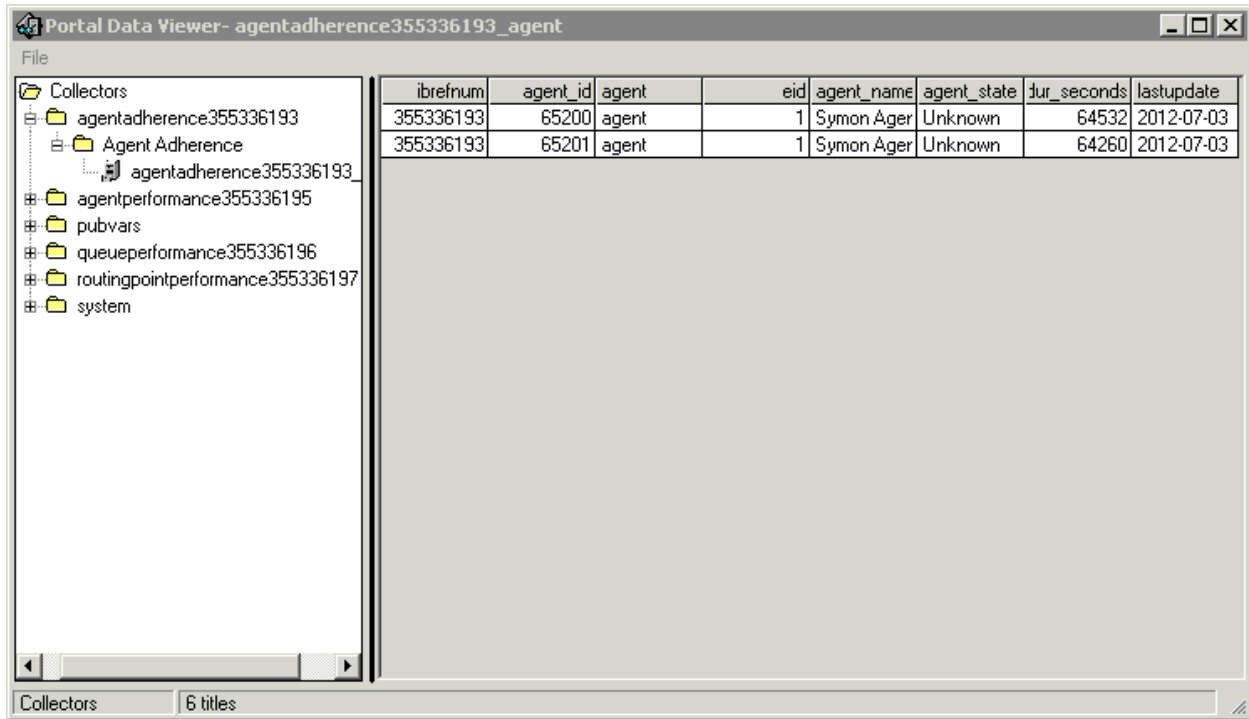
Note: This example shows data received from the Avaya IQ rt_socket adapters. The pipe symbol, field names, and ==EOD== were set earlier in the Symon TCP/IP Collector configuration to match what is being sent by Avaya IQ.



9.3.3. Verify Collector Data Using Portal Data Viewer

Start the Portal Data Viewer by clicking “Start” → “All Programs” → “Symon Enterprise Software” → “Portal Data Viewer”. Open the appropriate folders for viewing data.

The following example displays the agent adherence values.



The screenshot shows the 'Portal Data Viewer- agentadherence355336193_agent' window. On the left is a tree view under 'Collectors' with folders: 'agentadherence355336193', 'Agent Adherence', 'agentadherence355336193_...', 'agentperformance355336195', 'pubvars', 'queueperformance355336196', 'routingpointperformance355336197', and 'system'. The 'Agent Adherence' folder is expanded. The main area displays a table with the following data:

ibrefnum	agent_id	agent	eid	agent_name	agent_state	dur_seconds	lastupdate
355336193	65200	agent	1	Symon Ager	Unknown	64532	2012-07-03
355336193	65201	agent	1	Symon Ager	Unknown	64260	2012-07-03

At the bottom, a status bar shows 'Collectors' and '6 titles'.

10. Conclusion

These Application Notes describe the configuration steps required for Symon Enterprise Server 11.2.1 to interoperate with Avaya IQ Release 5.2 via custom developed real-time rt_socket interfaces. Compliance testing that was based upon the specified configuration has been completed successfully.

11. Additional References

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

- [1] *Administering Avaya Aura® Communication Manager*, June 2010, Release 6.0, Issue 6.0, Document Number 03-300509, available at <http://support.avaya.com>.
- [2] *Avaya IQ Standard Reports, Release 5.2*, April 2012, available at <http://support.avaya.com>.
- [3] *Administering Avaya IQ, Release 5.2*, August 2011, available at <http://support.avaya.com>.
- [4] *Symon*-<http://support.symon.com>

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