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 Consulting and Systems Integration organization, provide real-time data related to agent, queue, and routing point.

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 with Symon Enterprise Server located remotely in a Symon lab.
1. Introduction

The following diagram provides an overview of Symon’s products and the integration with the Avaya IQ.

![Diagram of Symon Enterprise Server Integration to Avaya IQ](image)

Figure 1: Symon Enterprise Server Integration to Avaya IQ

Symon Enterprise Server 9.2.01 integrates with the Avaya Communication Manager - as an Automatic Call Distributor (ACD) - via an Avaya IQ. The integration is done via the TCP/IP Collector in the Symon Enterprise Server and custom adapters on Avaya IQ. Symon Enterprise Server can monitor a wide range of real time statistics that are available from Avaya IQ. The TCP/IP Collector on Symon Enterprise Server is configured via Portal Administrator which runs on the Symon Enterprise Server or as a remote client.

The rt_socket adapters on Avaya IQ, developed by Avaya C&SI organization, open custom reports that contains the statistics Symon uses for real time monitoring (e.g. wallboard). All statistics received by Symon Enterprise Server can be viewed using a Portal Data Viewer, which is a debugging tool provided as part of the Symon Enterprise Server.

The following are the rt_socket adapters covered in this compliance test:

- Agent Adherence Interface
- Agent Performance Interface
- Queue Performance Interface
- Routing Point Performance Interface
Figure 2 below shows the compliance testing configuration. The Avaya IQ, Oracle database server for Avaya IQ, Devcon13 Avaya Communication Manager ACD, telephones, and user PCs all reside in the same 192.45.120.x network. The Symon Enterprise Server is connected to the network via a VPN over Internet.

On Avaya 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 Communication Manager, the ACD related data are sent to the Avaya IQ. The Avaya IQ provides updates for agents, queues, and routing points to the Symon Enterprise Server every 30 seconds. During the compliance testing the Avaya IQ standard reports and a utility tool that was part of the adapter software were used to validate the accuracy of data generated by Avaya IQ and displayed by the Symon Enterprise Server.
### 2. Equipment and Software Validated

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

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avaya S8700 Server</td>
<td>Avaya Communication Manager 4.0, load R014x.00.1.732.1, patch 14300</td>
</tr>
<tr>
<td>Avaya G650 Media Gateway</td>
<td>HW01 FW024</td>
</tr>
<tr>
<td>• TN799DP C-LAN Circuit Pack</td>
<td></td>
</tr>
<tr>
<td>Avaya IQ server with rt_socket adapters provided by the Avaya</td>
<td>IQ R4.0 Update 2</td>
</tr>
<tr>
<td>Consulting and System Integration organization</td>
<td>Red Hat Enterprise Linux ES V4 Update 5</td>
</tr>
<tr>
<td></td>
<td>rt_socket version: 0.1.2</td>
</tr>
<tr>
<td>Oracle Database</td>
<td>10g 2</td>
</tr>
<tr>
<td>Symon Enterprise Server</td>
<td>9.2.01</td>
</tr>
<tr>
<td>Avaya 4610 H.323 Telephones</td>
<td>load a10d01b2_3.bin</td>
</tr>
<tr>
<td>Avaya 4620 H.323 Telephones</td>
<td>load a20d01b281.bin</td>
</tr>
</tbody>
</table>
3. Configure Avaya Communication Manager
The detailed administration of contact center objects and connectivity between Avaya 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.

4. Configure Avaya IQ
The administration of the 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:

- Administer Auxwork codes
- Activate the adapter

4.1. Administer Auxwork Codes
In the Avaya IQ 4.0, the Auxwork Codes need to be added manually in Avaya IQ. In a future release the Avaya IQ will automatically create the codes and this manual step will not be needed any more.

To manually add the Aux codes, use an Internet Explorer or Firefox web browser to log in to the Avaya IQ administration with the proper credentials. Click the Enterprise tab at the upper left corner. Use the expand icon to expand the menu and select Resources → All Resources → Reporting → Reporting: AgentActivityStates.
Click the **Add** icon (i.e. the icon with the “+” sign). A **New Agent Activity State** screen will pop up. Enter 1 in the **Source Identifier** field and Aux 1 in the **Name** field. Click **OK**.
Click the **Refresh** icon. The newly added aux code will be displayed. Repeat the procedure for Aux code 2 to 10. If there are more Aux codes used in the ACD, creating such Aux codes as well.

### 4.2. Activate The Real-time Adapter

Four `rt_socket` real-time adapters are installed in Avaya IQ to support the Symon Enterprise Server integration. To activate the adapters, use SSH (Secured Shell) to login to the Avaya IQ. Change directory to `/opt/Avaya/pserv/rt_socket`. Run `./menurta`.

From the **Rt_Socket menu** screen, enter 2 then **all** to stop all the sessions. Each session corresponds to one real-time interface for an ACD data source. Once all the sessions are stopped, enter **Enter** to continue. Enter 1 then **all** to start all the sessions. Once all the sessions are started, enter **Enter** to continue and 0 to quit. The screen capture below shows that there are eight sessions established and all the sessions have been started. Among the eight sessions, four are associated with the Devcon13 ACD and another four are associated with the Devcon18 ACD.
5. Configure Avaya IQ Adapters

The following parameters are configurable for the Avaya IQ adapters to fit into the customer 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

The configuration of the above parameters should only be done by the Avaya Consulting and System Integration organization. Questions about adapter configuration should be directed to Avaya Consulting and System Integration.
6. Configure Symon Enterprise Server

This section describes how to configure the Symon Enterprise Server:

Start Portal Administrator by clicking “Start” → “All Programs” → “Symon Enterprise Server” → “Portal Admin”. In Portal Administrator, select the “add collector” option to add TCP/IP Collector (not shown). After the “Add TCP/IP Collector” screen pops up, enter the name of the collector and click “Next”.

![Add TCP/IP Collector window]
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 Section header (“EID”) and click Next. Additional screens for adding a TCP/IP Connector are not shown.
Once the TCP/IP Collector is added, it will show up in the left hand panel. Right-click on “TCP/IP Collector Collector” and select “Activate”.

![TCP/IP Collector](image-url)
The next step is to specify the data that the TCP/IP collector will publish to the Symon applications. The screenshot below shows the published fields for the Queue Performance Interface for the test configuration.
The next step determines the queues of which the data will be published. Click the “View Keys” button on the previous screen. The KEYS screen will be displayed with Queue identifiers as the keys. In the Keys list box, select the desired keys (Queues). Click the “Add” button.

- Click on “Publish Data” button (not shown), and then click the OK button (not shown).

7. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focuses on verifying the accuracy of data collection, processing, and display within the Symon Enterprise Server.

The serviceability testing focused on verifying the ability of Symon Enterprise Server to recover from adverse conditions, such as network outage and Avaya IQ adapter out of service.

7.1. General Test Approach

The feature test cases were performed manually. Incoming calls were made to the measured routing points, queues, and agents to generate data to the Symon Enterprise Server. Manual call control functions such as answer, hold, unhold, and disconnect and work mode changes from the agent phones such as 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 Symon Enterprise Server and to stop and restart the Avaya IQ adapters.

For each field in the tested interfaces, the tester compared the data displayed by the Symon Enterprise Server against the source data including the data in the Avaya IQ standard reports, the data generated by the Avaya IQ adapters, and the data derived by the tester based upon the test scenarios. The tester also verified that data was displayed properly by the Symon Enterprise Server.

The data generated by the Avaya IQ adapters was monitored using a utility provided with the adapters.

### 7.2. Test Results

The Symon Enterprise Server successfully passes 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:

- The Interaction field in the Agent Performance Interface, Queue Performance Interface, and Routing Point Performance Interface was updated after the wrap-up phase was completed.
- The Active Duration Seconds field in the Agent Performance Interface and the Avg. Active Duration Seconds field in the Routing Point Performance Interface were updated after the wrap-up phase was completed.
- The Avg. Duration to Accept Seconds field in the Queue Performance Interface and Routing Point Performance Interface was calculated with abandoned calls included.
- The Active Calls field in the Routing Point Performance Interface showed incorrect value.

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

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

8.1. Verify Avaya IQ Adapters

To verify the real-time interface, use SSH to login to the Avaya IQ. Change directory to /opt/Avaya/pserv/rt_socket. Run “./menurta”.

From the Rt_socket Menu screen, enter 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 that the session one through four are not connected and session five through eight are connected to the Symon Enterprise Server.

```
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 not connected.
RT_Socket session 2 is running.
RT_Socket session 2 is not connected.
RT_Socket session 3 is running.
RT_Socket session 3 is not connected.
RT_Socket session 4 is running.
RT_Socket session 4 is not connected.
RT_Socket session 5 is running.
RT_Socket session 5 is connected to symon.
RT_Socket session 6 is running.
RT_Socket session 6 is connected to symon.
RT_Socket session 7 is running.
RT_Socket session 7 is connected to symon.
RT_Socket session 8 is running.
RT_Socket session 8 is connected to symon.
Press Enter to continue: [ ]
```

8.2. Verify Symon Enterprise Server

This section describes the procedure to verify that the connection between Symon and Avaya IQ for a particular interface is up and running.

Right-click on the TCP/IP Collector, go to “Properties” and the right-most tab is called “Debug Tracking Page”. Verify that there is data coming across every time when there is an update from Avaya IQ.
8.2.1. Verify the Agent Adherence Interface

In the Symon Portal Data Viewer, which is a tool provided as part of the Symon Enterprise Server, monitor for the real-time statistics values.
8.2.2. Verify the Agent Performance Interface
In the Symon Portal Data Viewer, monitor for the real-time statistics values.

8.2.3. Verify the Queue Performance Interface
In the Symon Portal Data Viewer, monitor for the real-time statistics values.

8.2.4. Verify the Routing Point Performance Interface
In the Symon Portal Data Viewer, monitor the real-time statistics values.
9. Support

Technical support from Symon can be obtained through the following:

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

10. Conclusion

These Application Notes describe the configuration steps required for Symon Enterprise Server 9.x to interoperate with Avaya IQ Release 4.0 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.

- *Avaya IQ Standard Reports, Release 4.0,* August 2007, available at [http://support.avaya.com](http://support.avaya.com)
- *Avaya IQ Administration, Release 4.0,* August 2007, available at [http://support.avaya.com](http://support.avaya.com)
- *Symon-* [http://support.symon.com](http://support.symon.com)