Application Notes for IVS Enterprise Server by RMG Networks with Avaya Call Management System R17.0.x – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for IVS Enterprise Server by RMG Networks to interoperate with Avaya Call Management System via rt_socket interfaces. The rt_socket interfaces, developed by the Avaya Professional Services organization, provide real-time data related to Agents, Skills, and Vector Directory Numbers.

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 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 IVS Enterprise Server by RMG Networks with Avaya Call Management System (CMS).

As an Avaya contact center reporting product, CMS collects and reports contact center data from the ACD feature (Automatic Call Distributor) of Avaya Aura® Communication Manager. Avaya Professional Services has developed a line of adapters called rt_socket to facilitate integration of CMS with third party products.

IVS Enterprise Server is the engine that drives RMG Networks’ content management system. IVS Enterprise Server is responsible for collecting content from various sources, repurposing it according to pre-defined business rules and then distributing the repurposed content to the visual solution endpoints. IVS Enterprise Server uses internal TCP/IP Collectors to integrate with CMS via rt_socket adapters. With the integration, IVS Enterprise Server can monitor a wide range of real time statistics that are available from CMS. The TCP/IP Collector is a part of IVS Enterprise Server and is configured via Portal Administrator which runs either on IVS Enterprise Server or as a remote client. Data received by IVS Enterprise Server can be viewed using Portal Data Viewer, which is another element of IVS Enterprise Server.

Various rt_socket adapters are built on CMS custom reports to provide real-time contact center data required by IVS Enterprise Server. The rt_socket adapters, developed for RMG Networks, that were used in this compliance test included:

- Agent Performance Interface
- Skill Performance Interface
- VDN 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 interoperability compliance test included feature and serviceability testing.

On Communication Manager, relevant skills and Vector Directory Number (VDN) objects are configured to be “measured” for CMS. When a call travels through a “measured” object on Communication Manager, the ACD related data is sent to CMS. CMS sends updates for agents, skills, and VDNs to IVS Enterprise Server. During compliance testing data was sent every 5 seconds.
The feature test cases were performed manually. Incoming calls were made to the measured VDNs, skills, and agents to generate data to the IVS Enterprise Server. 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. Additional call scenarios such as call waiting time longer than service level target, abandoned calls, inbound extension calls to an agent in auxwork or after call work mode, and outbound extension calls from an agent in auxwork or after call work mode were also exercised.

The serviceability test cases were performed manually by disconnecting and reconnecting the LAN cable to IVS Enterprise Server, rebooting IVS Enterprise Server, and by restarting the CMS adapters.

For each data field in the tested interfaces, the corresponding CMS custom report was used to validate the accuracy of data generated by CMS and displayed by the Portal Data Viewer of IVS Enterprise Server.

### 2.2. Test Results

The IVS Enterprise Server successfully passed the compliance test. All the fields in the three rt_socket interfaces including Agent Performance Interface, Skill Performance Interface, and VDN Performance Interface were verified.

### 2.3. Support

Technical support from RMG Networks can be obtained through the following:

- **Phone:** 877-789-TECH (8324)
- **Email:** support@rmgnetworks.com
3. Reference Configuration

Figure 1 below shows the compliance test configuration. Communication Manager, CMS, and 9600 Series IP Deskphones reside in one subnet. IVS Enterprise Server was installed on a virtual machine on a blade server which resides on a different subnet.

Figure 1: IVS Enterprise Server with Avaya Call Management System
4. Equipment and Software Validated

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

<table>
<thead>
<tr>
<th>Equipment/Software</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avaya S8300D Server running Avaya Aura® Communication Manager</td>
<td>Release 6.3 (R016x.03.0.124.0)</td>
</tr>
<tr>
<td>Avaya G450 Media Gateway</td>
<td>31.20.1</td>
</tr>
<tr>
<td>Avaya Call Management System</td>
<td>R17.3</td>
</tr>
<tr>
<td>IVS Enterprise Server running on Windows Server 2008 R2 SP1</td>
<td>12</td>
</tr>
<tr>
<td>Avaya 96x1 H.323 Telephones</td>
<td>6.3.1</td>
</tr>
<tr>
<td>Avaya 96x0 H.323 Telephones</td>
<td>3.2.2</td>
</tr>
</tbody>
</table>

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

This section provides the CMS configuration required for supporting IVS Enterprise Server integration, which includes the following:

- Configure real-time adapter parameters
- Activate the real-time adapter

6.1. Configure Real-Time Adapter Parameters

Three rt_socket real-time adapters are installed in CMS to support IVS Enterprise Server integration. The parameters associated with the adapters are described below along with the values assigned shown in the screenshot. It is advised, however, that CMS adapter configuration should only be performed by the Avaya Professional Services organization. Questions about adapter configuration should be directed to the Avaya Professional Services.
Sessions 1, 2, and 3 in the screenshot below specify the parameter values for the Agent, Skill, and VDN adapters respectively.

HOST: hostname or IP address of the IVS Enterprise Server. If a hostname is used, the name needs to be added to /etc/hosts file as well.

PORT: TCP port

ACD: ACD being monitored

OPTS: list of options include –E for end of record string and –u for the user representing IVS Enterprise Server permissions

REPORT: custom report name for this adapter

MONITOR_LISTS: objects ids to monitor

REFRESH: refresh rate

```
#----------------------------- Session 1 ------------------------------------
HOST1=symon                # the receiving server's host name in /etc/hosts
PORT1=7011                    # the receiving server's port
ACD1=3                        # ACD being monitored
OPTS1="-E ==EOD== -u cms4"  # applicable command line options
REPORT1=agent_symon           # respective custom report name
MONITOR_LIST1="1-999"  # skills to monitor
REFRESH1=5                   # respective report refresh rate
DEST_APP1="Symon"    # destination app for rt_socket or Generic-RTA
#----------------------------- Session 2 ------------------------------------
HOST2=symon
PORT2=7012
ACD2=3
OPTS2="-E ==EOD== -u cms4"
REPORT2=skill_symon
MONITOR_LIST2="1-999"
REFRESH2=5
DEST_APP2="Symon"    # destination app for rt_socket or Generic-RTA
#----------------------------- Session 3 ------------------------------------
HOST3=symon
PORT3=7013
ACD3=3
OPTS3="-E ==EOD== -u cms"
REPORT3=vdn_symon
MONITOR_LIST3="25900-25999"
REFRESH3=5
DEST_APP3="Symon"    # destination app for rt_socket or Generic-RTA
```
6.2. Activate Real-time Adapters

This section describes how to activate the rt_socket adapters. Logging in to CMS using an SSH client and proper credentials. Change directory to /export/home/pserv/rt_socket. Run the “./menurta” command to access the RT_Socket Menu. From the menu, choose 2 to stop all sessions. Each session corresponds to one real-time interface for CMS.

```
------- RT_Socket Menu -------
1) Start RT_Socket Interface
2) Stop RT_Socket Interface
3) Check Status
4) Display License Info
5) View Maintenance Log
6) Show Version
7) Change Input Parameters
8) Display Configuration
0) Exit
==========
Choice ==> 2
Which rt_socket session do you want to stop? [1-32] [all]
stopping rt_socket session: all
Stopping rt_socket session 1, please wait...
Stopping rt_socket session 2, please wait...
Stopping rt_socket session 3, please wait...
Press Enter to return to menu:
```

Once all sessions are stopped, press Enter to return to the RT_Socket menu screen. Choose 1 from the menu to start all sessions.

```
------- RT_Socket Menu -------
1) Start RT_Socket Interface
2) Stop RT_Socket Interface
3) Check Status
4) Display License Info
5) View Maintenance Log
6) Show Version
7) Change Input Parameters
8) Display Configuration
0) Exit
==========
Choice ==> 1
Which RT_Socket session do you want to start? [1-32] [all]
Starting session 1, please wait...
Starting session 2, please wait...
Starting session 3, please wait...
Press Enter to return to menu:
```

Once all sessions are started, press Enter to return to the RT_Socket menu screen and then 0 to exit.
7. Configure IVS Enterprise Server
This section describes how to configure IVS Enterprise Server.

7.1. Launch IVS Portal Administrator
Start IVS Portal Administrator by clicking Start → All Programs → RMG Networks → IVS Portal Administrator. The PortalAdmin – Server : Local page is displayed.
7.2. Configure TCP/IP Collector

IVS Enterprise Server uses three data feeds from CMS. Each data feed needs a TCP/IP Collector defined in IVS Enterprise Server. To create a TCP/IP collector, click the **Add TCP/IP** icon in the **Collectors** section of the left pane. After the **Add TCP/IP Collector** screen pops up, enter the name of the collector, in this case “Symon Agents”, and click **Next**.
On the next screen enter the port number configured in Section 6.1 for this adapter 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 rt_socket adapters.
On the next screen set the **Section Header**. The **Section Header** is the first field in each data record. It will be used to identify a group of fields to be monitored. The three collectors, “Symon Agents”, “Symon Skills”, and “Symon VDN” use “AGENT”, “SKILL”, and “VDN” as the section headers respectively. Enter the section header value. Click **Add to List**, and 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 **Field Name**, select a **Data Type**, define the **order**, and click **Add**. Repeat this process on the same page until all the fields have been added. The screen below shows a partial list of the fields for “Symon Agents”. Please note that the section header is also defined as the first field in the Section.

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. In this case, the **LOGID** field is configured as a key.

Click **Finish**. The newly configured collector will show up in the middle pane with the state being “Inactive” (not shown).
Repeat the process for all the data feeds. The screenshot below shows that three TCP/IP Collectors, “Symon Agents”, “Symon Skills”, and “Symon VDN”, have been added to the system.
Right-click newly added collector and then select **Activate**.

The state will change to **Open** then to **Active** (not shown).
7.3. Publish Keys for TCP/IP Collector

From the list of collectors double click "Symon Agents" collector to show the section header "AGENT". Click the section header. The FIELDS window is displayed.
From the **FIELD** window click the **View Keys** button. The **KEYS** window shown below is displayed. Check the **Publish All Keys** box, and click **Save**.

Repeat the steps for "Symon Skills" and "Symon VDN" collectors.

**Note:** All keys are now automatically published by the collector.
8. Verification Steps
This section describes the steps to verify proper configuration of CMS and IVS Enterprise Server.

8.1. Verify CMS Adapters
From the RT_Socket Menu screen, choose 3 to check the status of the sessions. Each session corresponds to a rt_socket interface to IVS Enterprise Server. Ensure that all three sessions defined for IVS Enterprise Server are running.

--- RT_Socket Menu ---
1) Start RT_Socket Interface
2) Stop RT_Socket Interface
3) Check Status
4) Display License Info
5) View Maintenance Log
6) Show Version
7) Change Input Parameters
8) Display Configuration
0) Exit

Choice ==> 3

Checking status of all configured sessions...
RT_Socket session 1 is running and is connected
RT_Socket session 2 is running and is connected
RT_Socket session 3 is running and is connected

Press Enter to return to menu:
8.2. Verify IVS Enterprise Server
This section describes how to verify proper functionality of IVS Enterprise Server.

8.2.1. 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.

In the middle pane make sure that the three collectors used by this test are in “Active” state.
8.2.2. Verify Collector Data Using Debug

Right-click on a collector used for this test (not shown) with an “Active” state and select **Properties**. A window will pop up to ask the user to deactivate the collector if a change is to be made to the collector. Click **OK** to move forward. The **TCP/IP Properties** screen will be displayed. Select the **Debug Tracking Page** tab.
Click the **Start Debug Log** button to show the data this collector is receiving. Verify that the data is exactly the same as the output of the corresponding CMS custom report.

The following example is a snapshot of the **Symon Skills** data. Repeat the process for all three collectors.
8.2.3. Verify Collector Data Using Portal Data Viewer

Start the **Portal Data Viewer** by clicking **Start → All Programs → RMG Networks → IVS Portal Data Viewer**. Select a particular collector to view the real-time update of data. Verify that the data is the same as the output of the corresponding CMS custom report.

The following example is a snapshot of the **Symon Agent** data. Repeat the process for all the three collectors.

![Portal Data Viewer](image)

9. **Conclusion**

These Application Notes describe the configuration steps required for IVS Enterprise Server Version 12 to interoperate with CMS Release 17.0.x via custom developed real-time rt_socket interfaces. Compliance testing based upon the specified configuration has been completed successfully.

10. **Additional References**

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


Documentation related to IVS Enterprise Server may be directly obtained from RMG Networks.