



## Avaya Solution & Interoperability Test Lab

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# Application Notes for eMetrix The Reporting Engine Version 2.0.0.1 with Avaya Call Management System R19.2 – Issue 1.0

### Abstract

These Application Notes describe the configuration steps required for eMetrix The Reporting Engine to interoperate with Avaya Call Management System. eMetrix The Reporting Engine (TRE) uses historical call measurement data from Avaya Call Management System (CMS) to produce productivity statistics and call anatomy reports for contact center agents, and real-time call measurement data from Avaya Call Management System to view agent and queue metrics in real-time. Adding Avaya Call Management System solutions to the core list of The Reporting Engine, pre-built solutions, and customers can speed up the data collection process and eliminate reporting errors with a single source of information and visualize that data alongside other solutions.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any 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

On Avaya Aura® Communication Manager, relevant contact center resources consisting of Vector Directory Number (VDN), Skill, and Agents are configured to be “measured” by Avaya Call Management System. When a call travels through a “measured” resource on Avaya Aura® Communication Manager, the call measurement data is sent to Avaya Call Management System, which in turn provides the data to The Reporting Engine.

The Reporting Engine is cloud-based simplified business intelligence, analytics and reporting tool for contact centers with a user-interface that is user-friendly and offers reporting from multiple data sources with customizable demographics. The solution uses its own API and DLL to interface to Avaya Call Management System.

eMetrix/Avaya integration also includes a real-time connection between The Reporting Engine and Avaya Call Management System, to supply real-time agent state information, real-time skill information and real-time VDN information to The Reporting Engine. The real-time connection is achieved through the RT Socket (Skill & VDN) developed by Avaya Professional Services and installed on Avaya Call Management System. A TCP client-server model is used for the connection, with Avaya Call Management System being the “client”, and the Reporting Engine server being the “server”.

## 2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. The feature test cases were performed manually. Incoming calls were made within a measured interval to the measured VDNs, Skills, and Agents to enable measurement data to be sent to CMS. Manual call controls and work mode changes from the agent telephones were exercised to populate specific fields in the data stream. In the compliance test, the measured interval is fixed at 30 minutes per requirement of The Reporting Engine.

At the end of a measured interval, custom historical reports were generated and transferred to The Reporting Engine server. The Reporting Engine reports were brought up through a web browser to check proper display and correctness of each field against the data in the CMS custom reports.

The serviceability test cases were performed manually by forcing solution components to go out of service and come back in service and verifying The Reporting Engine's ability to recover.

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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with this Application Note, the interface between Avaya systems and the Reporting Engine did not include use of any specific encryption features.

This test was conducted in a lab environment simulating a basic customer enterprise network environment. The testing focused on the standards-based interface between the Avaya solution and the third party solution. The results of testing are therefore considered to be applicable to either a premise-based deployment or to a hosted or cloud deployment where some elements of the third party solution may reside beyond the boundaries of the enterprise network, or at a different physical location from the Avaya components.

Readers should be aware that network behaviors (e.g. jitter, packet loss, delay, speed, etc.) can vary significantly from one location to another, and may affect the reliability or performance of

the overall solution. Different network elements (e.g. session border controllers, soft switches, firewalls, NAT appliances, etc.) can also affect how the solution performs.

If a customer is considering implementation of this solution in a cloud environment, the customer should evaluate and discuss the network characteristics with their cloud service provider and network organizations, and evaluate if the solution is viable to be deployed in the cloud.

The network characteristics required to support this solution are outside the scope of these Application Notes. Readers should consult the appropriate Avaya and third party documentation for the product network requirements. Avaya makes no guarantee that this solution will work in all potential deployment configurations.

## **2.1. Interoperability Compliance Testing**

The feature testing focused on verifying The Reporting Engine correctly parses and displays VDN, Skill, and Agent data from CMS. A number of call center scenarios including agent login, agent mode change, agent logout, incoming call to VDN, abandon call, call waiting in queue, call waiting at agent, hold/resume, transfer, conference, direct agent call, extension call from agent, incoming call to agent extension, and redirect on no answer were exercised and a number of vector commands such as queue-to, busy, disconnect, and route-to were executed to generate data for specific fields in the historical reports and real-time supervisor interface.

The serviceability testing focused on verifying the ability of The Reporting Engine SOLUTION application server to recover from adverse conditions, such as stopping the RT\_Socket adapter on CMS, disconnecting the Reporting Engine server from the network, and rebooting The Reporting Engine server. The serviceability testing also included recovery of historical data.

## **2.2. Test Results**

All test cases were executed successfully.

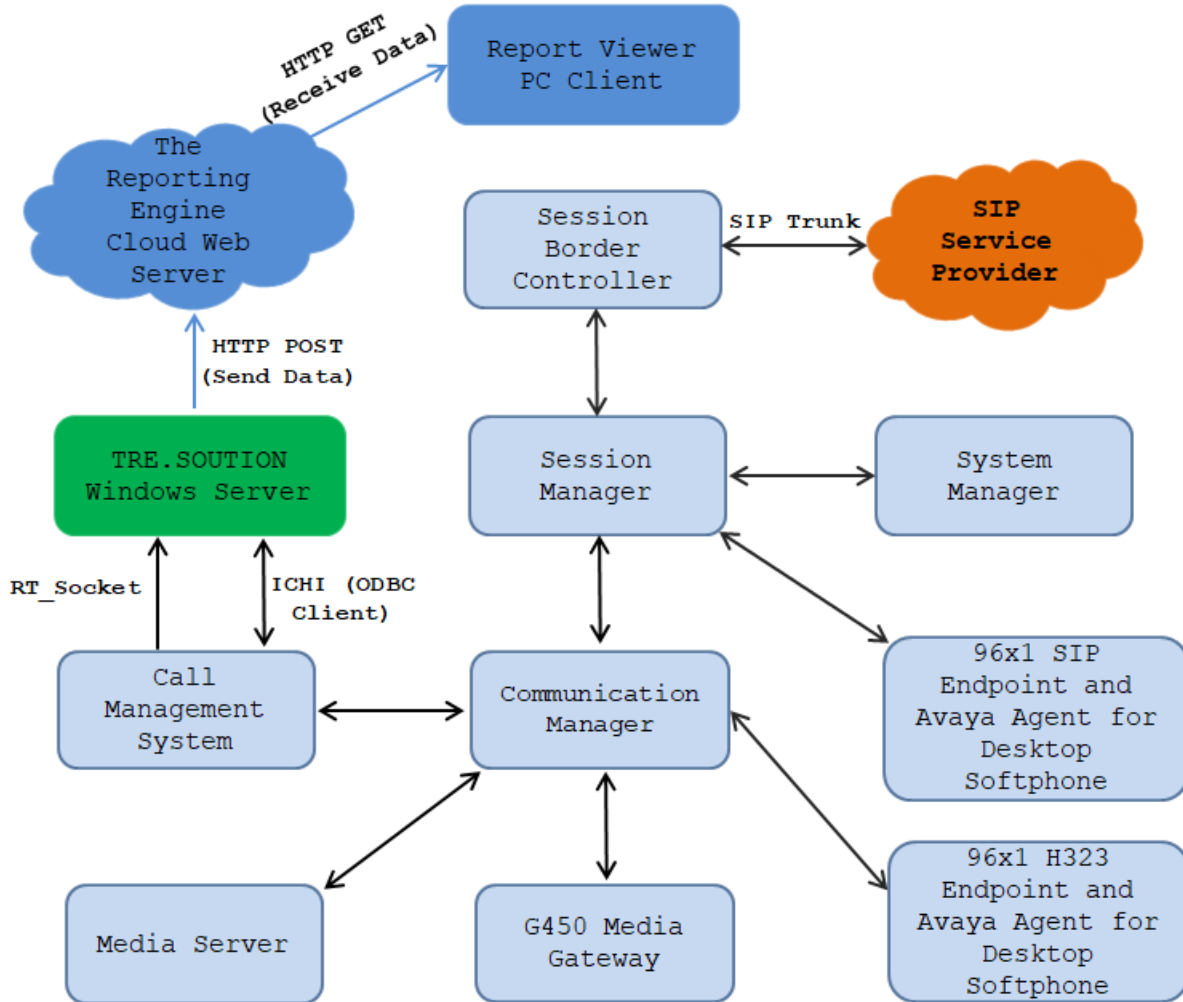
## **2.3. Support**

Technical support on The Reporting Engine can be obtained through the following:

- Phone: 1-844-296-4177
- Email: [clientcare@thereportingengine.com](mailto:clientcare@thereportingengine.com)

### 3. Reference Configuration

The compliance test was done with The Reporting Engine using the TRE.SOLUTION application installed on a Windows virtual machine server that was installed and configured locally in the DevConnect Lab. The TRE.SOLUTION application posted real-time and call historical data to cloud web server and the reports were reviewed from client PC. The Avaya side equipment included Communication Manager, Call Management System, and several IP phones. All calls to and from the public network were routed through Avaya Session Border Controller for Enterprise via SIP trunks.



**Figure 1: The Reporting Engine with Avaya Call Management System**

## 4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on Virtual Environment	8.1.3 (8.1.3.2.0.890.26989)
Avaya G450 Media Gateway	41.34.0
Avaya Aura® Media Server running on Virtual Environment	8.0 (8.0.2.163)
Avaya Call Management System <ul style="list-style-type: none"><li>• Avaya Real-Time Socket</li></ul>	19.2.0 4.5.19
Avaya Aura® System Manager running on Virtualized Environment	8.1.3 (8.1.3.0.1011784)
Avaya Aura® Session Manager running on Virtualized Environment	8.1.3 (8.1.3.0.813014)
Avaya Session Border Controller for Enterprise	8.1.2 (8.1.2.0-37-21065)
Avaya 9611G IP Deskphone (SIP)	7.1.9.0.8
Avaya Agent for Desktop Softphone (H.323 and SIP)	2.0.6.0.10
Avaya 9641G IP Deskphone (H.323)	6.8304
eMetrix The Reporting Engine running in Windows Server 2016 with TRE.SOLUTION Application	v2.0.0.1

## 5. Configure Avaya Aura® Communication Manager

This section provides the procedures for how to enable VDN, Skill, and Agent measurement data to be sent to CMS. The procedures include the following areas:

- Administer measured VDN
- Administer measured Skill and Agent

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

### 5.1. Administer measured VDN

Use the “change vdn n” command, where “n” is the extension of the VDN to be measured by CMS. Set the **Measured** field to “both” to enable measurement data on the VDN to be sent to CMS. Repeat this step for all VDNs that will be measured by CMS.

```
change vdn 3340                                     Page 1 of 3
                                                    VECTOR DIRECTORY NUMBER
                                                    Extension: 3340                               Unicode Name? n
                                                    Name*: Contact Center 1
                                                    Destination: Vector Number 1
Attendant Vectoring? n
Meet-me Conferencing? n
Allow VDN Override? n
COR: 1
TN*: 1
Measured: both                               Report Adjunct Calls as ACD*? n
Acceptable Service Level (sec): 20

VDN of Origin Annc. Extension*:
1st Skill*:
2nd Skill*:
3rd Skill*:

SIP URI:

* Follows VDN Override Rules
```

## 5.2. Administer Measured Skill and Agent

Use the “change hunt-group n” command, where “n” is the number of the Skill group to be measured by CMS. Navigate to **Page 2**, and set the **Measured** field to “both” to enable measurement data on the Skill group and the associated Agents to be sent to CMS. Repeat this step for all Skill groups that will be measured by CMS.

```
change hunt-group 1                                     Page 2 of 4
                                                    HUNT GROUP
                Skill? y      Expected Call Handling Time (sec): 180
                AAS? n        Service Level Target (% in sec): 80 in 20
                Measured: both
Supervisor Extension:

Controlling Adjunct: none

VuStats Objective:

Multiple Call Handling: none

Timed ACW Interval (sec):          After Xfer or Held Call Drops? n
```

For the compliance testing, two Skill groups with group numbers 1 and 2 were configured to be measured. In addition, four agents with extensions 3301, 3302, 3401 and 3402 and agent id 1000, 1001, 1002 and 1003 were used as available agents for the above Skill groups.

```
list agent-loginID                                     Page 1
```

Login ID	AGENT LOGINID							
	Name	Extension		Dir Agt	AAS/AUD	COR	AgPr	SO
	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv	Skil/Lv
1000	Agent 1000	3301					1	lv1
	1/01	/	/	/	/	/	/	/
1001	Agent 1001	3401					1	lv1
	1/01	/	/	/	/	/	/	/
1002	Agent 1002	3302					1	lv1
	1/01	/	/	/	/	/	/	/
1003	Agent 1003	3402					1	lv1
	1/01	2/01	/	/	/	/	/	/



## 6. Configure Avaya Call Management System

This section provides the procedures for the following:

- Configure RT\_Socket Adapter
- Check Intra-hour Interval
- Configure Internal Call History Interface

Note that no special procedure is required to enable the customized historical data interface.

The connectivity between CMS and Communication Manager is assumed to be in place and will not be described. In addition, these Application Notes assume the intra-hour interval is already configured to be 30 minutes.

### 6.1. Configure Real-Time Socket Adapter

The RT Socket adapter is configured through a configuration file named **rta.conf** located in the directory where the adapter software is installed. In the compliance test configuration, the path to the directory was **/export/home/pserv/rt\_socket**. In the **rta.conf** file, select a Session number and configure the following items:

- **HOST**: hostname of the Reporting Engine server which is defined in **/etc/hosts**.
- **PORT**: Receiving port on The Reporting Engine server to receive data.
- **ACD**: ACD that sources the real-time data, 1 in this case, as preconfigured.
- **REFRESH**: real-time report refresh rate in seconds.

There was only one sessions configured in the **rt\_socket** adapter for VDN with the report name “**vdnrpt**” as shown in the table below.

```
#----- Session 1 -----  
HOST1=10.33.1.60  
PORT1=11000  
ACD1=1  
OPTS1=""  
REPORT1=vdnrpt  
MONITOR_LIST1="1-2000"  
REFRESH1=5  
EXT_CLINT_LIC1=no  
ENCRYPTED1=no  
DEST_APP1="TheReportingEngine"
```

Use Avaya Terminal Emulator to connect to CMS, and log in with proper credentials. Enter “cms” at the command prompt to display the **MainMenu** screen. Select the option that corresponds to the customized real-time agent interface created by Avaya Professional Services for The Reporting Engine, in this case the option is **RT\_Socket**. Note that the actual option name may vary.

Press the **Enter** key.

```
10/ 1/21 09:53 Avaya(TM) CMS
lMainMenuqqqqqqqqqqqqqqqqqqqqqqqqk
x Reports> x
x Dictionary> x
x Exceptions> x
x Agent Administration> x
x Call Center Administration> x
x Custom Reports> x
x User Permissions> x
x System Setup> x
x Maintenance> x
x CALA-RTA> x
x Generic-RTA> x
x RT_Socket> x
x ECH Handler> x
x Logout x
x ; x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

The **RT\_Socket Menu** is displayed. Enter “1” followed by the **Enter** key, to start the interface.

```
----- RT_Socket Menu -----
1) Start RT_Socket Interface
2) Stop RT_Socket Interface
3) Check RT_Socket Status
4) View Maintenance Log
5) Show RT_Socket Version
6) Show/Verify Licensed Authorizations
7) Show Staffed Agents Count
8) Change RT_Socket Split(s)/Skill(s) and/or ACD
9) Show RT_Socket Configuration
Q) Quit
-----
Selection:1
```

The system will prompt for the session number. Enter the session number 1 as configured for The Reporting Engine and the **Enter** key. Press the **Enter** key followed by “Q” to return to the CMS MainMenu.

```
Current Status of Configured Sessions:
-----
RT_Socket session 1 is not running.
RT_Socket session 2 is not running.
RT_Socket session 3 is running, not encrypted, and connected.

Which RT_Socket session(s) do you want to start?
  Input range must be between 1 and 32.
  Input entries allowed:
    - Enter a single session number (e.g. 5).
    - Enter a range of session numbers separated by a dash (e.g. 6-11).
    - Enter 'all' or just press Enter to select ALL configured sessions.
    - Enter 'q' or 'Q' to quit.
Enter RT_Socket session(s) to start: 1
Starting session(s): 1

Starting RT_Socket session 1, please wait ...
WARN: License VALUE_ACMS_3RD_PARTY_REAL_TIME is in the 30-day grace period.
Verify that the WebLM interface is working correctly.
WARN: License VALUE_ACMS_3RD_PARTY_REAL_TIME_ADDL_SESSIONS is in the 30-day
grace period.
Verify that the WebLM interface is working correctly.

License check: Successful
```

## 6.2. Check Intra-hour Interval

From the **MainMenu** screen, select **System Setup** → **Storage Intervals** and press **Enter**.

```
10/ 1/21  10:05  Avaya(TM) CMS

lMainMenuqqqqqqqqqqqqqqqqqqqqqqqqk
x Reports>                                x
x Dictionary>                             x
x Exceptions>                             x
x Agent Administration>                   x
x Call Center Administration>             x
x Custom Reports>                         x
x User Permissilqqqqqqqqqqqqqqqqqqqqk
x System Setup>x Switch Setup            x
x Maintenance> x Pseudo-ACD Setup         x
x CALA-RTA>    x Load Pseudo-ACD Data     x
x Generic-RTA> x Data Storage Allocation  x
x RT_Socket>   x Free Space Allocation    x
x Calabrio>    x Storage Intervals       x
x ECH Handler> x Main Menu Addition       x
x Logout      x CMS State                 x
x ;           x Data Collection           x
mqqqqqqqqqqqqqqx External Application Status x
                  x Data Summarizing      x
                  x Migrate Data          x
                  x Data Summarization Time Zone x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

The **System Setup: Storage Intervals** screen is displayed. Make certain that the administered **intra-hour interval** for the historical data is “30 minutes”, as it is required by The Reporting Engine.

```
System Setup: Storage Intervals      interopcm
Intrahour interval (Select one):    x Modify
    < > 15 minutes                  mqqqqbbbbb
    <x> 30 minutes
    < > 60 minutes

Data summarizing time: 12:35 AM
Switch time zone offset (-23 to +23): 0

Week start day      Week stop day
(Select one):      (Select one):
    <x> Sunday      < > Sunday
    < > Monday      < > Monday
    < > Tuesday     < > Tuesday
    < > Wednesday   < > Wednesday
    < > Thursday    < > Thursday
    < > Friday      < > Friday
    < > Saturday    <x> Saturday

Daily start time: 12:00 AM
Daily stop time: 11:59 PM
```

### **6.3. Configure Internal Call History Handler**

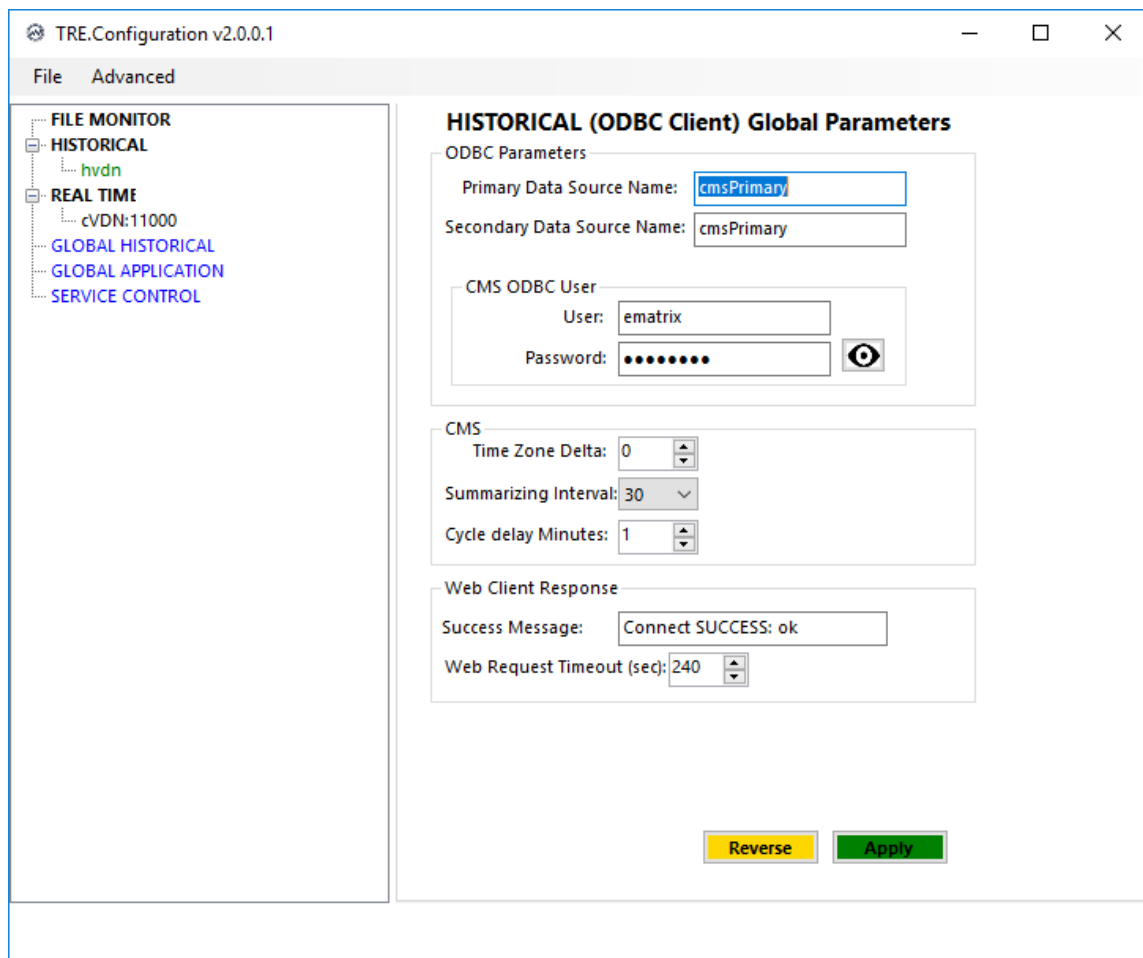
The Internal Call History Interface (ICHI) feature is the default call history recording application that is delivered with Avaya CMS, during the compliance test the ICHI was used to collect and process call records directly from the Informix database using ODBC application.

## 7. Configure The Reporting Engine

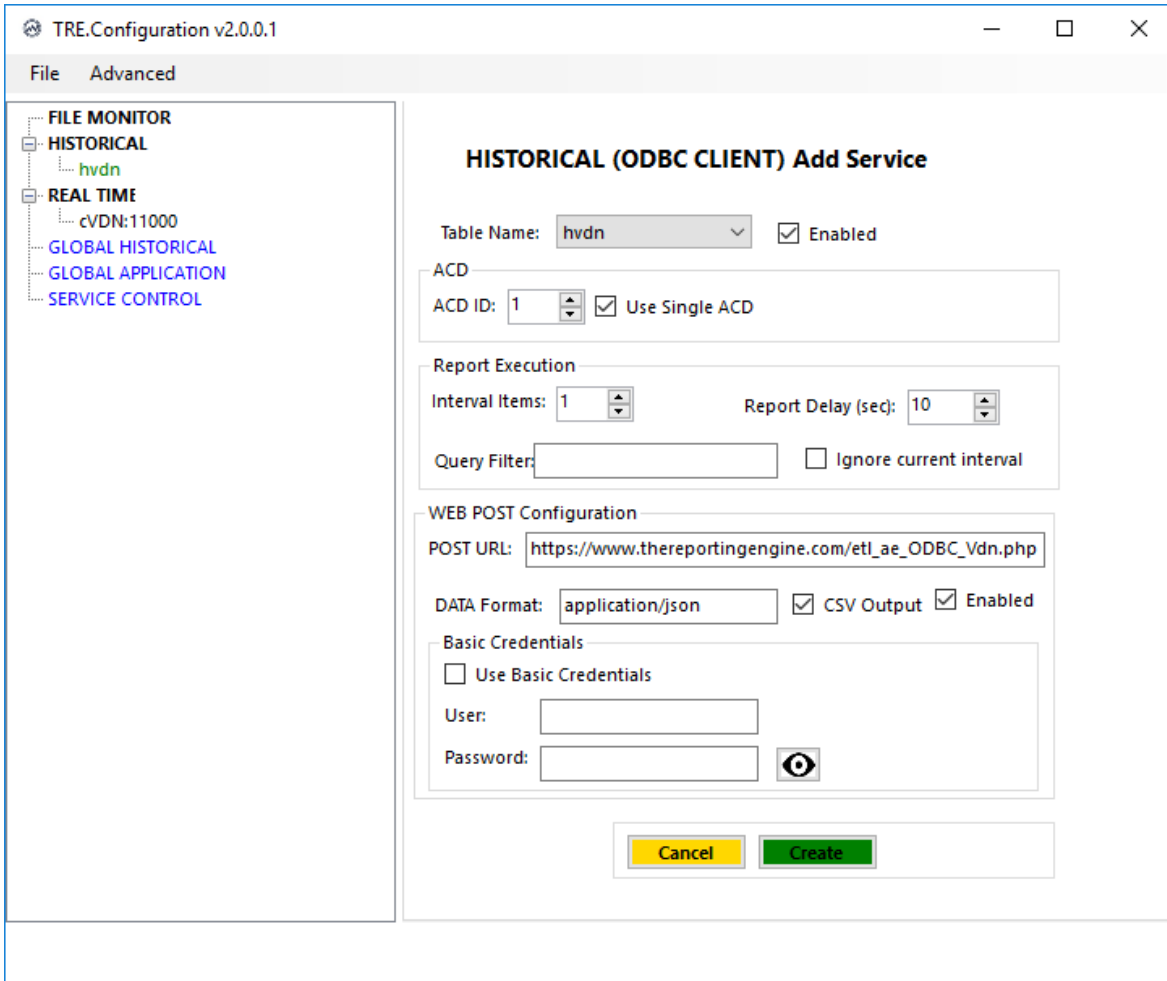
This section shows the basic configuration of The Reporting Engine server that located in the DevConnect lab. The Reporting Engine used the TRE.SOLUTION application to collect the call data from Avaya CMS and post it to the cloud web server and viewer with internet connection was able to view the reports.

### 7.1. Configure Historical ODBC Client

Launch the **TRE.Configuration** application from the Start menu and navigate to **GLOBAL HISTORICAL** from the left menu. The HISTORICAL (ODBC Client) Global Parameters section displays in the right side of the window and provide the following parameters as shown in the screenshot below.



Continue to select the **HISTORICAL** from the left menu, the **HISTORICAL (ODBC CLIENT) Add Service** section displays in the right side. Provide the parameters as shown in the screenshot below.



## 7.2. Configure Real-Time Server

Launch the **TRE.Configuration** application from the Start menu and navigate to **REAL TIME** from the left menu. The **REAL TIME (RT SOCKET SERVER) Configuration** section displays in the right side of the window and provide the following parameters as shown in the screenshot below.

The screenshot shows the TRE.Configuration v2.0.0.1 application window. The left sidebar contains a tree view with the following items: FILE MONITOR, HISTORICAL (with sub-item hvdn), REAL TIME (with sub-item cVDN:11000), GLOBAL HISTORICAL, GLOBAL APPLICATION, and SERVICE CONTROL. The main area is titled "REAL TIME (RT SOCKET SERVER) Configuration" and contains the following fields and controls:

- Unique Name:
- Stream: EOF:
- Server Configuration: This server IP:  Port:
- POST Configuration: POST URL:   
Request Timeout (ms):   Include EOF on POST
- Basic Credentials:  Use Basic Credentials  
User:   
Password:

At the bottom right, there are three buttons: Reverse (yellow), Apply (green), and Delete (red).



## 8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of CMS and The Reporting Engine.

### 8.1. Verify Call Management System

From the CMS server, follow the procedures in **Section 6.1** to display the **MainMenu**. Verify the status of the connection to Communication Manager by selecting **Maintenance Connection Status**, and press the **Enter** key.

```
10/ 4/21 10:21 Avaya(TM) CMS
Windows: 0 of 10 ^

lMainMenuqqqqqqqqqqqqqqqqqqqqqqk
x Reports> x
x Dictionary> x
x Exceptions> x
x Agent Administration> x
x Call Center Administration> x
x Custom Reports> x
x User Permissions> x
x System Setup>lqqqqqqqqqqqqqqqqqqqqk
x Maintenance> x Back Up Data x
x CALA-RTA> x Restore Data x
x Generic-RTA> x Backup/Restore Devices x
x RT_Socket> x Printer Administration x
x Calabrio> x Report Administration x
x ECH Handler> x Connection Status x
x Logout x ACD Status x
x ; x Archiving Status x
mqqqqqqqqqqqqqqqqqqqqqx ACD Admin Log Report x
x Error Log Report x
x Firewall Status x
x License Status x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

In the **Maintenance: Connection Status** dialog box, enter the corresponding ACD(s) number followed by the Enter key. For the compliance testing, the corresponding switch connection is ACD “1”. Select **Find one** in the right window and press Enter.

```
Maintenance: Connection Status All ACDs

ACD(s) : 1 x Find one
Application: x List all
Session: x Next
Connection: x Previous
Date/Time: mqqqqqqqqqqqqq
Errors:
```

The Maintenance: Connection Status dialog box is updated with status information. Verify that the Session status is “**data transfer**” and “**normal**”, and that the **Connection** status is “**operational**”, as shown below.

```
Maintenance: Connection Status All ACDs
ACD(s): interopcm X Find one
Application: data transfer x List all
Session: data transfer x Next
Connection: operational x Previous
Date/Time: 1/ 2/22 10:07 AM mqqqqqqqqqqq
Errors:
```

## 8.2. Verify Call Management System Real-Time Socket Adapter

From the **MainMenu** screen, select the **RT\_Socket** option and press Enter.

```
1/ 2/22 10:10 Avaya(TM) CMS
Windows: 0 of 10 ^

lMainMenuqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
x Reports> x
x Dictionary> x
x Exceptions> x
x Agent Administration> x
x Call Center Administration> x
x Custom Reports> x
x User Permissions> x
x System Setup> x
x Maintenance> x
x CALA-RTA> x
x Generic-RTA> x
x RT_Socket> x
x Calabrio> x
x ECH Handler> x
x Logout x
x ; x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

The **RT\_Socket** Menu is displayed. Enter **3** to check the status of the RT\_Socket session.

```
----- RT_Socket Menu -----  
1) Start RT_Socket Interface  
2) Stop RT_Socket Interface  
3) Check RT_Socket Status  
4) View Maintenance Log  
5) Show RT_Socket Version  
6) Show/Verify Licensed Authorizations  
7) Show Staffed Agents Count  
8) Change RT_Socket Split(s)/Skill(s) and/or ACD  
9) Show RT_Socket Configuration  
Q) Quit  
-----  
Selection:
```

Verify that the session is running and is connected.

```
Current Status of Configured Sessions:  
-----  
RT_Socket session 1 is running, not encrypted, and connected.  
RT_Socket session 2 is running, not encrypted, and connected.  
  
Press Enter to return to menu:
```

### 8.3. Verify Real-Time Report on The Reporting Engine

From a client PC with internet connection, launch the http link below:

<https://www.thereportingengine.com/avaya-test-vdn.php>

The webpage shows the real-time data report for VDN.

Avaya RT-Socket - VDN											
Show <input type="text" value="25"/> entries											Search: <input type="text"/>
DateTime	VDN Number	VDN Synonym	Calls Waiting	Oldest Call	Average Answer Speed	Abandoned Calls	Average Abandon Time	ACD Calls	Average ACD Talk Time	Active Calls	FO
2021-12-03 22:56:43	3340	3340	1	:53	:56	8	:48	7	2:46	5	
2021-12-13 13:06:25	3340	3340	0	:00	:55	0	0	1	33:29	0	
2021-12-13 13:05:48	3340	3340	0	:00	:55	0	0	1	33:29	1	
2021-12-13 13:05:11	3340	3340	0	:00	:55	0	0	1	33:29	1	
2021-12-13 13:04:52	3340	3340	0	:00	:55	0	0	1	33:29	1	
2021-12-13 13:06:30	3340	3340	0	:00	:55	0	0	1	33:29	0	
2021-12-13											

### 8.4. Verify Call Historical Report on The Reporting Engine

From a client PC with internet connection, launch the http link below:

<https://www.thereportingengine.com/avaya-test-vdn-odbc.php>

The webpage shows the call historical data report for VDN.

Avaya ODBC - VDN												
Show <input type="text" value="10"/> entries												Search: <input type="text"/>
row_date	starttime	starttime_utc	intrvl	acd	vdn	vector	tenant	inflowcalls	anstime	acdcalls	acdtime	backupcal
12/6/2021	800	1638802800	30	1	3340	1	0	0	20	2	125	0
12/6/2021	800	1638802800	30	1	3340	1	0	0	20	2	125	0
12/6/2021	800	1638802800	30	1	3340	1	0	0	20	2	125	0
12/3/2021	2100	1638590400	30	1	3340	1	0	0	24	1	1079	0
12/3/2021	2100	1638590400	30	1	3340	1	0	0	24	1	1079	0
12/3/2021	2100	1638590400	30	1	3340	1	0	0	24	1	1079	0
12/3/2021	2030	1638588600	30	1	3340	1	0	0	581	11	1771	0
12/3/2021	2030	1638588600	30	1	3340	1	0	0	581	11	1771	0
12/3/2021	2030	1638588600	30	1	3340	1	0	0	581	11	1771	0
12/3/2021	400	1638529200	30	1	3340	1	0	0	31	1	28566	0

## 9. Conclusion

These Application Notes describe the configuration steps required for eMetrix The Reporting Engine to interoperate with Avaya Call Management System R19.2, via Real-Time Socket and internal call history interface. All feature and serviceability test cases were completed successfully.

## 10. Additional References

Product documentation for Avaya products may be found at <http://support.avaya.com>.

[1] *Administering Avaya Aura® Communication Manager*, Release 8.1.x, Issue 12, July 2021.

[2] *Administering Avaya Aura® Session Manager*, Release 8.1.x, Issue 10, September 2021.

[3] *Administering Avaya Call Management System*, Release 19.x, Issue 11, March 2021.

Product documentation related to The Reporting Engine can be obtained directly from eMetrix.

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