



Avaya Solution & Interoperability Test Lab

Application Notes for Spectrum NeXorce with Avaya Call Management System – Issue 1.0

Abstract

These Application Notes contain instructions for Spectrum NeXorce and Avaya Call Management System to successfully interoperate. Spectrum NeXorce consists of co-resident software that runs on Avaya Call Management System (CMS) server and Spectrum NeXorce Suite.

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

This document contains a sample configuration that was used for interoperability compliance testing between Spectrum NeXorce and Avaya Call Management System.

Spectrum NeXorce consists of co-resident software that runs on Avaya Call Management System (CMS) server and Spectrum NeXorce Suite.

The co-resident software includes the following that can be installed independently on CMS:

- Ultra-Link Socket (ULS) – used for Split/Skill reports
- VDN Ultra-Link Socket (VULS) – used for VDN reports
- NeXorce Agent Data Socket (NADS) – used for Agent reports

The sockets mentioned above gather data from CMS using Clint interface and send it to Spectrum NeXorce Suite. These sockets are used for real-time data. Spectrum NeXorce Suite uses Open Database Connectivity (ODBC) interface to collect historical data for Agent Summary Report.

2. General Test Approach and Test Results

Interoperability Compliance testing contained testing for the following reports generated by Spectrum NeXorce Suite:

Real Time Reports:

- Agent Summary Report
- VDN Report
- Split/Skill Report

Historical Report:

- Agent Summary Report

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

During the Interoperability Compliance Testing, several call scenarios, using Avaya Aura® Communication Manager, were executed to generate CMS data:

- Call queuing
- Various agent states
- Calls answered by agents

To verify the data gathered by Spectrum NeXorce Suite is accurate, reports on CMS Web were used to compare the data.

Serviceability tests were performed to ensure that in an event of a failure, Spectrum NeXorce is able to recover without any issues.

2.2. Test Results

All planned test cases were passed.

2.3. Support

Support for Spectrum NeXorce can be obtained from the following locations:

Web: <http://support.specorp.com>

Email: techsupport@specorp.com

Phone: (713) 551-4701 Direct Support Q
(800)-392-5050 ext 8501

3. Reference Configuration

The following diagram illustrates a sample configuration that was used during Interoperability Compliance Testing.

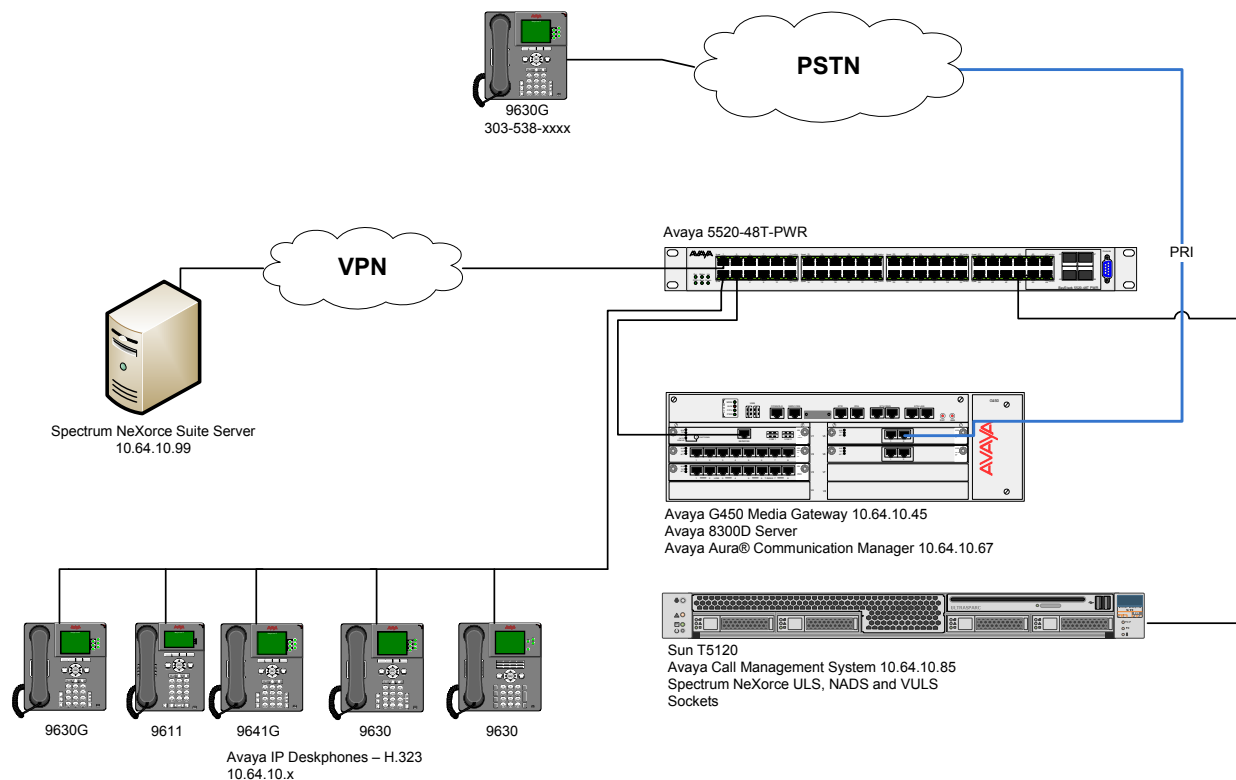


Figure 1: Reference Configuration

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 Avaya S8300D Server	R6.2 SP6
Avaya G450 Media Gateway	3.20.1
Avaya Call Management System	R17.0
Spectrum NeXorce Suite	1.2.1.5
Spectrum NeXorce Ultra-Link Socket	1.5.4
Spectrum NeXorce VDN Ultra-Link Socket	1.3.5
Spectrum NeXorce NeXorce Agent Data Socket	1.0.3.2

5. Configure Avaya Aura® Communication Manager

During the compliance testing, a standard call center environment was configured. This configuration is out of scope for this document, and is not covered in this document. Please refer to the reference document in **Section 10** for additional information.

6. Configure Avaya Call Management System

This section covers the configuration of Call Management System to communicate to Communication Manager

6.1. Configure ACD for Communication Manager

Telnet or SSH into CMS, using proper credentials and log in using appropriate credentials.

- Type in **cmssvc** command to view the Avaya Call Management System Service Menu.
- Select **4, Turn Avaya CMS on or off**, to go to the CMS service menu.

```
BDL093562F# cmssvc
```

```
Avaya(TM) Call Management System Services Menu
```

```
Select a command from the list below.
```

- 1) auth_display Display feature authorizations
- 2) auth_set Authorize capabilities/capacities
- 3) run_ids Turn Informix Database on or off
- 4) run_cms Turn Avaya CMS on or off**
- 5) setup Set up the initial configuration
- 6) swinfo Display switch information
- 7) swsetup Change switch information
- 8) patch_inst Install a single CMS patch from CD
- 9) patch_rmv Backout an installed CMS patch
- 10) load_all Install all CMS patches found on CD
- 11) back_all Backout all installed CMS patches from machine

```
Enter choice (1-11) or q to quit: 4
```

- Select **2**, Turn off CMS but Leave IDS running.

```
Select one of the following
1) Turn on CMS
2) Turn off CMS but Leave IDS running
3) Turn off both CMS and IDS
Enter choice (1-3): 2
```

- Wait until CMS is shut down; **CMS is now off** message will be displayed when CMS is shutdown.

```
Notifying users of impending shutdown...
. . . . .
Proceeding with cms shutdown.

*** Turning off CMS, Please wait ***
. . . . .

*** Cleaning up, Please wait ***

*** CMS is now off ***
```

- Type in **cmsadm** command and select **1, acd_create**, from the service menu. At each prompt type in information as follows:
 - **Enter switch name:** Type in a descriptive name
 - **Select the model of switch for this ACD:** Select **6**
 - For next three prompts, type **y**
 - **Enter the local port assigned to switch:** Type **1**
 - **Enter the remote port assigned to switch:** Type **1**
 - **Select the transport to the switch:** Select **1**
 - **Enter switch host name or IP Address:** Type in Communication Manager's IP Address
 - **Enter switch TCP port number:** Set it to default
 - For rest of the prompts leave the values at default or enter desired values

```
BDL093562F# cmsadm
```

```
Avaya(TM) Call Management System Administration Menu
```

```
Select a command from the list below.
```

```
1) acd_create Define a new ACD
2) acd_remove Remove all administration and data for an ACD
3) backup Filesystem backup
4) pkg_install Install a feature package
5) pkg_remove Remove a feature package
6) run_pkg Turn a feature package on or off
7) run_ids Turn Informix Database on or off
8) run_cms Turn Avaya CMS on or off
9) passwd_age Set password aging options
10) dbaccess Change Informix DB access permissions
Enter choice (1-10) or q to quit: 1
```

```
Information for ACD 3
```

```
Enter switch name (up to 20 characters): S8300_TR1
```

```
Select the model of switch for this ACD
```

```
1) Communication Mgr 2
2) Communication Mgr 3.0
3) Communication Mgr 3.1
4) Communication Mgr 4/5
5) Communication Mgr 5.2
6) Communication Mgr 6.x
Enter choice (1-6): 6
```

```
Is Vectoring enabled on the switch? (y/n): y
```

```
Is Expert Agent Selection enabled on the switch? (y/n): y
```

```
Does the Central Office have disconnect supervision? (y/n): (default: y) y
```

```
Enter the local port assigned to switch (1-64): 1
```

```
Enter the remote port assigned to switch (1-64): 1
```

```
Select the transport to the switch
1) TCP/IP
Enter choice (1-1): 1

Enter switch host name or IP Address: 10.64.10.67

Enter switch TCP port number (5001-5999): (default: 5001)

Number of splits/skills (0-8000): (default: 500)

Total split/skill members, summed over all splits/skills (0-1250): (default: 1250)

Number of shifts (1-4): (default: 1)

Enter the start time for shift 1 (hh:mmXM): (default: 8:00 AM)

Enter the stop time for shift 1 (hh:mmXM): (default: 5:00 PM)

Number of agents logged into all splits/skills during shift 1 (0-1250): (default:
1250)

Number of trunk groups (0-2000): (default: 500)

Number of trunks (0-12000): (default: 1000)

Number of unmeasured facilities (0-6000): (default: 500)

Number of call work codes (1-500): (default: 500)

Enter number of vectors (0-8000): (default: 500)

Enter number of VDNs (0-18000): (default: 4000)

Updating database.

Computing space requirements and dbspace availability.

ACD S8300_TR1 (3) created successfully.
```

- Type in **cmssvc** command and select **4** from the service menu.
 - Select **1** to **Turn on CMS**

```
BDL093562F# cmssvc
```

```
Avaya(TM) Call Management System Services Menu
```

```
Select a command from the list below.
```

- 1) auth_display Display feature authorizations
- 2) auth_set Authorize capabilities/capacities
- 3) run_ids Turn Informix Database on or off
- 4) run_cms Turn Avaya CMS on or off
- 5) setup Set up the initial configuration
- 6) swinfo Display switch information
- 7) swsetup Change switch information
- 8) patch_inst Install a single CMS patch from CD
- 9) patch_rmv Backout an installed CMS patch
- 10) load_all Install all CMS patches found on CD
- 11) back_all Backout all installed CMS patches from machine

```
Enter choice (1-11) or q to quit: 4
```

```
Select one of the following
```

- 1) Turn on CMS
- 2) Turn off CMS but Leave IDS running
- 3) Turn off both CMS and IDS

```
Enter choice (1-3): 1
```

```
Please wait for initialization
```

```
. .
```

```
*** CMS is now up ***
```


7. Configuration for Spectrum NeXorce

There are three different sockets that can be configured to work with CMS; ULS, VULS and NADS. For each socket, configuration is performed on CMS server and NeXorce Suite, which collects the data.

7.1. NeXorce Agent Data Socket (NADS) for CMS

Configuration file for NADS is located in /opt/voast/nad/conf/ nad.conf. Edit the nad.conf file and make changes as mentioned below:

- **protocol:** tcp for NeXorce listener.
- **server:** ip address or hostname of the NeXorce server listening.
- **service:** Port on which to send the output data to NeXorce. i.e., 7335.
- **rpt_name:** name of the custom realtime report for NADS. i.e., AGCUST.
- **rpt_type:** type of the report, Real-Time.
- **field_1:** ACD number to be monitored. ACD number must match, as configured in Section 6.
- **field_2:** Split/Skill range to be monitored (max 50 characters).
- **field_3:** Refresh time in seconds.

```
#####
# Nexource Agent Data Interface
#
# Configuration file
#
# *Notes on Historical refresh
# If the first letter is "t" specify a time
# in the format HHMM following the t
# If the first letter is an "m" specify
# a comma delimited list of minute values
# to run the report on. example m01,31
#####

#
#Network Options
#
protocol=tcp
#server=127.0.0.1
server=10.10.102.124
service=7335

#
#Report Information
#
rpt_name=AGCUST
rpt_type=Real-Time
rpt_category=Custom
field_1=3
field_2=1-5
field_3=10
```

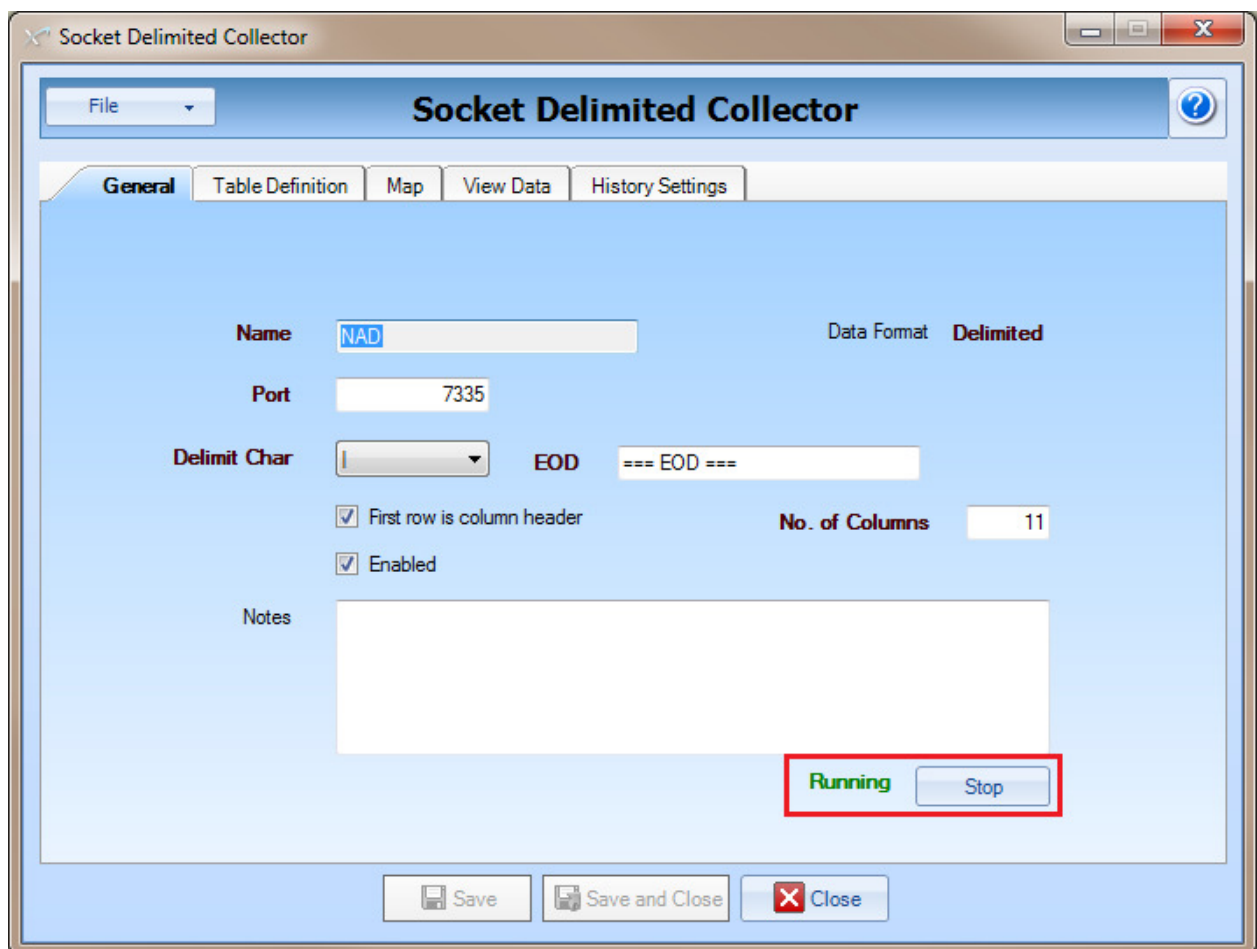
7.1.1. NeXorce Agent Data Socket (NADS) for NeXorce Suite

NeXorce Suite is configured to listen for incoming data on the configured port 7335. Open the NADS Collector using the NeXorce Suite (not shown) and configure as follows:

- **Name:** name of the collector
- **Port:** must match **what** NADS was configured to send in **Section 7.1**
- **Delimit Char:** Pipe symbol for AGCUST report
- **EOD:** end of data **tag** generated by NADS
- **No. of Columns:** **Number** of columns generated and sent

Status of the collector is displayed at the bottom of the screen, as shown in the screen capture below.

- Running indicates the collector is listening for incoming data
- Stopped means the collector and port is no longer open



Source data is then mapped to a destination table within the collector as shown below. **Source Column Name** refers to data coming from NADS on CMS and **Target Column** refers to name of column in Collector table.

The screenshot shows the 'Socket Delimited Collector' application window with the 'Map' tab selected. The window has a menu bar with 'File' and a toolbar with a help icon. Below the tabs, there is a table mapping source columns to target columns. The table has four columns: 'Column No.', 'Included', 'Source Column Name', and 'Target Column name'. All 11 source columns are included. The target column names are AGName, AGTime, DAIQ, Direction, LogID, LogonSkill, OnHold, Reason, Skill, State, and WorkSkill. A 'Save Map' button is located at the bottom right of the table area. At the very bottom of the window are three buttons: 'Save', 'Save and Close', and 'Close'.

Column No.	Included	Source Column Name	Target Column name
Column 1	<input checked="" type="checkbox"/>	SourceColumn-1	AGName
Column 2	<input checked="" type="checkbox"/>	SourceColumn-4	AGTime
Column 3	<input checked="" type="checkbox"/>	SourceColumn-6	DAIQ
Column 4	<input checked="" type="checkbox"/>	SourceColumn-3	Direction
Column 5	<input checked="" type="checkbox"/>	SourceColumn-11	LogID
Column 6	<input checked="" type="checkbox"/>	SourceColumn-10	LogonSkill
Column 7	<input checked="" type="checkbox"/>	SourceColumn-8	OnHold
Column 8	<input checked="" type="checkbox"/>	SourceColumn-5	Reason
Column 9	<input checked="" type="checkbox"/>	SourceColumn-9	Skill
Column 10	<input checked="" type="checkbox"/>	SourceColumn-2	State
Column 11	<input checked="" type="checkbox"/>	SourceColumn-7	WorkSkill

7.2. Ultra-Link Socket (ULS) for CMS

Configuration file for ULS is located in /opt/voast/uls/conf/uls.conf.

Edit the uls.conf file and make changes as mentioned below:

- **inputs:** skill range for monitoring, values as configured for CMS in this document.
- **acd:** acd number to be monitored, values as configured for CMS in this document.
- **cmdLine:** parameter for clint process.
- **rt_rpt_name:** custom realtime report name used for ULS.
- **hist_rpt_name:** custom historical report name used for ULS.
- **refresh:** refresh rate in seconds.
- **server:** NeXorce server IP address or hostname.
- **service:** port that ULS collector in NeXorce is configured to listen to.
- **ans_secs_only=yes** indicates that the answer time is sent as integer.
- **acd_secs_only=yes** indicates that the ACD time is sent as integer.
- **abn_secs_only=yes** indicates that the time to abandon is sent as integer.
- **oldest_secs_only=yes** indicates that oldest call waiting is sent as integer.
- **asa_secs_only=yes** indicates that average speed of answer is sent as integer.
- **target=standard** indicates that format of output is delimited for NeXorce.

```
#####

#*****
#Application configurations
#*****

#*****
#Initial skills are set to 1-10 semicolons seperate single
#values and value set to 1 by default
#*****

inputs=1-5
acd=3

#*****
#Clint values.
# cmdLine is the command to be executed to gather the data
# using the input files rtCline and histClint
#
# refresh is the rate at which the data is to be refreshed
# rt_rpt_name is the name of the real-time report
# hist_rpt_name is the name of the historical report
#*****

cmdLine=/cms/toolsbin/clint -u cms
rt_rpt_name=ULS-RT
hist_rpt_name=ULS-HIST
refresh=15

#*****
#Network configuration
#server is the ip address of the device you are sending data
#to. This would be the Ultra-Link II pc.
#service is either a port or a service name (IE ftp) default
#is 7331, but the Ultralink II application can receive on
#ports 7331, 7332, 7333, 7334, and 8335.
#*****

server=10.10.102.124
service=7331

#*****
#seconds_only shows all times as just second must be set to
#"yes" or just uncommit the line
#*****

ans_secs_only=yes
acd_secs_only=yes
abn_secs_only=yes
oldest_secs_only=yes
asa_secs_only=yes

#*****
#Ultralink extra options
#*****
#target is the ulink or standard

target=standard
```

7.2.1. Ultra-Link Socket (ULS) for NeXorce Suite

NeXorce is configured to listen for incoming data from ULS on the configured port 7331. Open the ULS Collector from NeXorce Suite (not shown) and configure as follows:

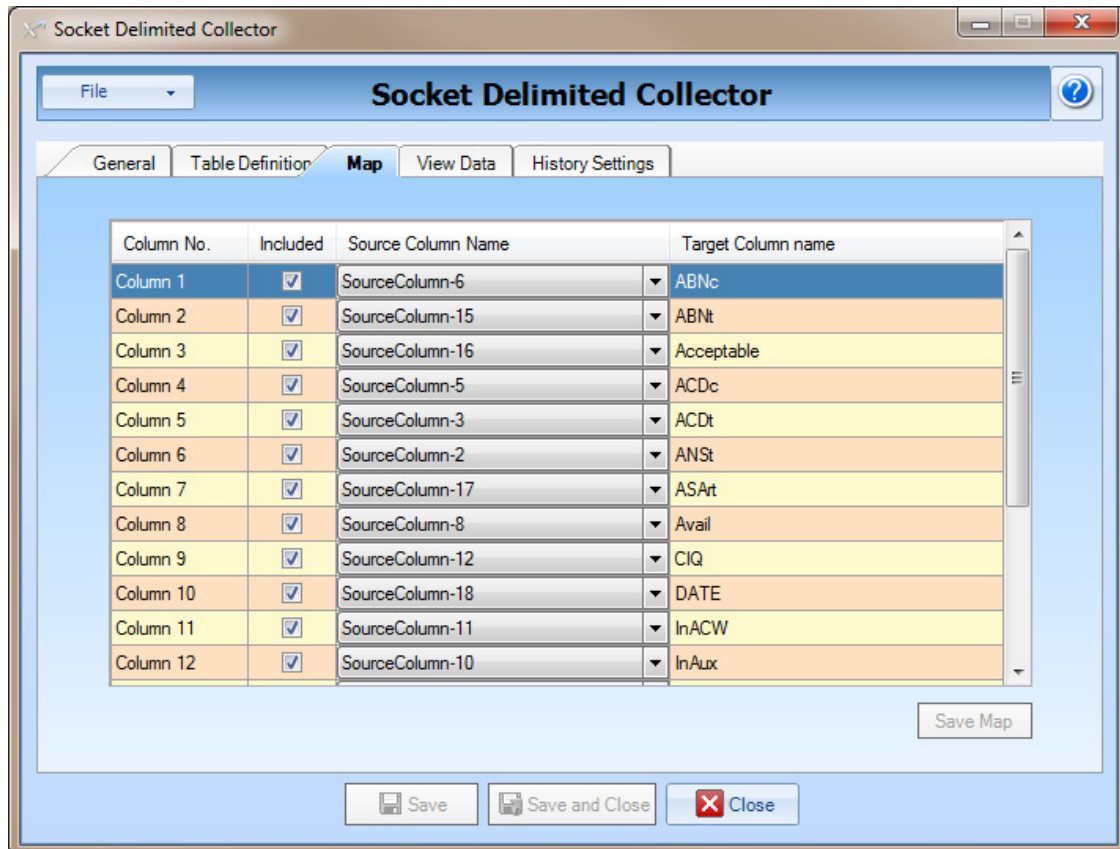
- **Name:** Name of the collector configured (ULS)
- **Port:** Port that this collector will listen on for data from CMS, as configured in **Section 7.2**
- **Delimit Char:** Delimiter in the output from CMS to separate data (comma)
- **EOD:** End of data tag sent to indicate end of data transmission. NeXorce uses this to write the data to the table
- **Enabled:** Checked to enable the collector
- **No. of Columns:** ULS sends a total of 19 columns
- **Status:**
 - Running indicates collector is listening for incoming data
 - Stopped indicates collector is no longer listening for data

The screenshot shows the 'Socket Delimited Collector' configuration window. The window has a title bar with standard Windows controls. Below the title bar is a 'File' dropdown menu and a 'Socket Delimited Collector' header with a help icon. The main area contains several tabs: 'General', 'Table Definition', 'Map', 'View Data', and 'History Settings'. The 'General' tab is active. It contains the following fields and controls:

- Name:** A text box containing 'ULS'.
- Port:** A text box containing '7331'.
- Delimit Char:** A dropdown menu showing a comma character.
- EOD:** A text box containing '=== EOD ==='.
- Data Format:** A label 'Data Format' followed by the text 'Delimited'.
- First row is column header:** A checked checkbox.
- No. of Columns:** A text box containing '19'.
- Enabled:** A checked checkbox.
- Notes:** A large empty text area.
- Status:** A green label 'Running' and a 'Stop' button.

At the bottom of the window are three buttons: 'Save', 'Save and Close', and 'Close'.

Source data is then mapped to a destination table within the collector as shown below. **Source Column** refers to data coming from ULS on CMS and **Target Column** refers to name of column in Collector table.



7.3. VDN Ultra-Link Socket (VULS) for CMS

Configuration file is located in /opt/voast/uls/conf/vuls.conf. Edit the vuls.conf file and make changes as mentioned below:

- **inputs:** skill range for monitoring
- **acd:** acd number to be monitored
- **rt_rpt_name:** custom realtime report name used for ULS
- **hist_rpt_name:** custom historical report name used for ULS
- **refresh:** refresh rate in seconds
- **server:** NeXorce server IP address or hostname
- **service:** port that ULS collector in NeXorce is configured to listen to
- **ans_secs_only=yes** indicates that the answer time is sent as integer
- **acd_secs_only=yes** indicates that the ACD time is sent as integer
- **abn_secs_only=yes** indicates that the time to abandon is sent as integer
- **oldest_secs_only=yes** indicates that oldest call waiting is sent as integer
- **asa_secs_only=yes** indicates that average speed of answer is sent as integer
- **target=standard** indicates that format of output is delimited for NeXorce


```

#####
#Application configurations
#####

#####
#Initial skills are set to 1-10 semicolons seperate single
#values acd value set to 1 by default
#####

inputs=10001-10005
acd=3

#####
#Clint values.
# cmdLine is the command to be executed to gather the data
# using the input files rtCline and histClint
#
# refresh is the rate at which the data is to be refreshed
# rt_rpt_name is the name of the real-time report
# hist_rpt_name is the name of the historical report
#####

cmdLine=/cms/toolsbin/clint -u cms
rt_rpt_name=VDN_ULS_RT
hist_rpt_name=VDN_ULS_HIST
refresh=15

#####
#Network configuration
#server is the ip address of the device you are sending data
#to. This would be the Ultra-Link II pc.
#service is either a port or a service name (IE ftp) default
#is 7331, but the Ultralink II application can receive on
#ports 7331, 7332, 7333, 7334, and 8335.
#####

server=10.10.102.124
service=7332

#####
#seconds_only shows all times as just second must be set to
#"yes" or just uncommit the line
#####

ans_secs_only=yes
acd_secs_only=yes
abn_secs_only=yes
oldest_secs_only=yes
asa_secs_only=yes

#####
#Ultralink extra options
#####
#target is the ulink or standard

target=standard

```

7.3.1. VDN Ultra-Link Socket (VULS) for NeXorce Suite

NeXorce is configured to listen for incoming data from ULS on the configured port 7332. Open the ULS Collector and configure as follows:

- **Name** : Name of the collector configured (VDN)
- **Port** : Port that this collector will listen on for data from CMS, as configured in **Section 7.3**
- **Delimit Char**: Delimiter in the output from CMS to separate data (comma)
- **EOD**: End of data tag sent to indicate end of data transmission
 - NeXorce uses this to write the data to the table
- **Enabled**:—Checked to enable the collector
- **No. of Columns**: VULS sends a total of 12 columns
- **Status**:
 - Running indicates collector is listening for incoming data
 - Stopped indicates collector is no longer listening for data



Source data is then mapped to a destination table within the collector as shown below. **Source Column** refers to data coming from VULS on CMS and **Target Column** refers to name of column in Collector table.

The screenshot shows the 'Socket Delimited Collector' application window with the 'Map' tab selected. The window has a menu bar with 'File' and a toolbar with a help icon. Below the tabs, there is a table for mapping source columns to target columns. The table has four columns: 'Column No.', 'Included', 'Source Column Name', and 'Target Column name'. There are 12 rows of data. At the bottom right of the table area is a 'Save Map' button. At the bottom of the window are three buttons: 'Save', 'Save and Close', and 'Close'.

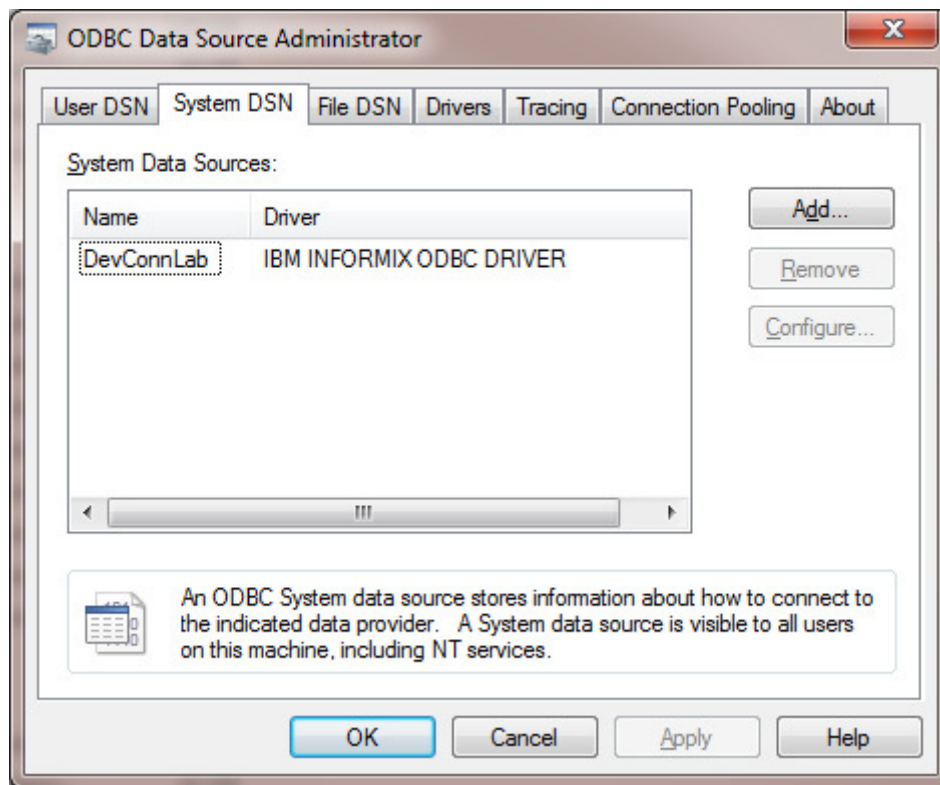
Column No.	Included	Source Column Name	Target Column name
Column 1	<input checked="" type="checkbox"/>	SourceColumn-6	ABNc
Column 2	<input checked="" type="checkbox"/>	SourceColumn-11	ABNt
Column 3	<input checked="" type="checkbox"/>	SourceColumn-12	Acceptable
Column 4	<input checked="" type="checkbox"/>	SourceColumn-2	ACD
Column 5	<input checked="" type="checkbox"/>	SourceColumn-5	ACDc
Column 6	<input checked="" type="checkbox"/>	SourceColumn-4	ACDt
Column 7	<input checked="" type="checkbox"/>	SourceColumn-3	ANSt
Column 8	<input checked="" type="checkbox"/>	SourceColumn-10	InCalls
Column 9	<input checked="" type="checkbox"/>	SourceColumn-9	OCW
Column 10	<input checked="" type="checkbox"/>	SourceColumn-7	SvcLvl
Column 11	<input checked="" type="checkbox"/>	SourceColumn-1	VDN
Column 12	<input checked="" type="checkbox"/>	SourceColumn-8	Waiting

7.4. Agent Summary

Agent summary is a collection of statistics on each agent within a particular skill range for the current day by interval. This data is obtained via ODBC connection from a System Data Source Name (DSN).

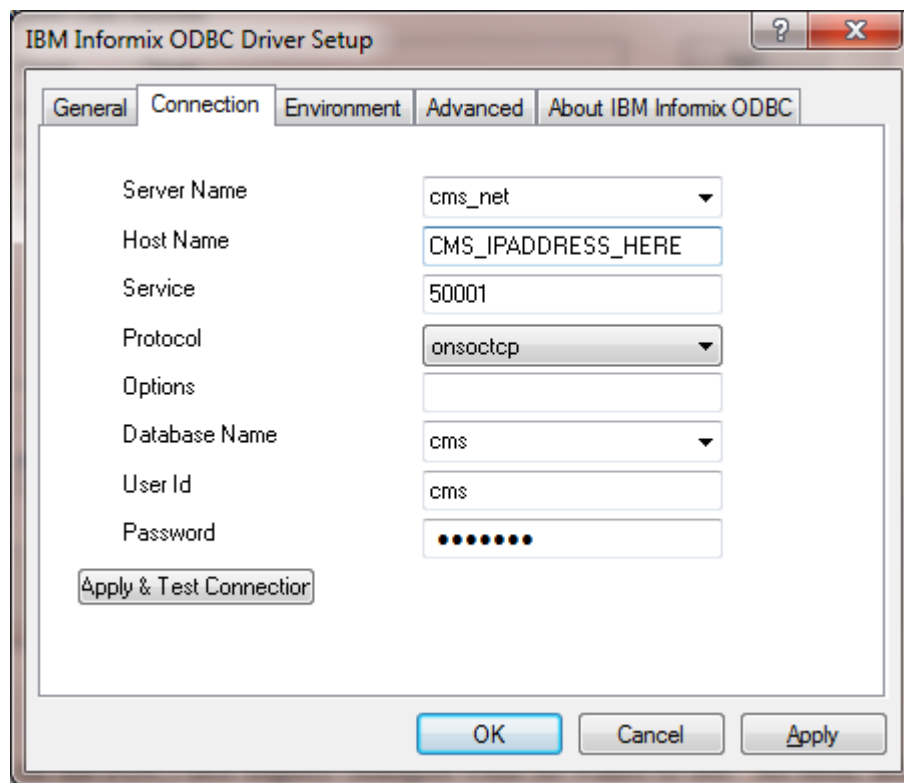
7.4.1. DSN Configuration

DSN configuration is performed on NeXorce Suite server. ODBC Data Source is configured via ODBC Data Source Administrator, which can be found on Administrative Tools of Windows operating system. The screen capture below shows the name of the DSN that is defined for connection to the Avaya Lab. Installation of IBM Informix driver is required for this setup. Once the installation is completed, select **Configure...**



Configure the DSN as shown below:

- **Server name:** Provide server name for CMS, this is the hostname of the CMS.
- **Hostname:** Host name of CMS, or IP Address of CMS.
- **Service:** Service port as configured in CMS. Default port is 50001.
- **Protocol:** onsoctcp (On Socket TCP connection).
- **Options:** leave blank.
- **Database Name:** Provide CMS Database name.
- **Userid:** CMS or other user that has permission to CMS database.
- **Password:** Password for the user defined on User ID line.



NeXorce will then use this DSN to connect to CMS and retrieve statistics for the Agent Summary information.

Open ODBC collector from NeXorce Suite (not shown) and configure NeXorce ODBC Collector as shown below:

- **Name:** Provide a descriptive name of the Collector (AGSummary)
- **Data Source Name:** Name of the DSN defined in ODBC configured earlier in this section (DevConnLab)
- **Username:** Same as defined in DSN, as configured earlier in this section (passed to DSN)
- **Password:** Same as defined in DSN, as configured earlier in this section (passed to DSN)
- **Query Timeout:** Query will stop executing if threshold is met.
- **Collect Every:** Refresh time to obtain fresh data (run the query again)
 - Note: Interval Summary stats are updated every 30 minutes.

The screenshot shows the 'ODBC Collector' configuration window. The 'General' tab is selected. The 'Name' field is set to 'AGSummary'. The 'Data Source Name' dropdown is set to 'DevConnLab'. The 'User Name' field is set to 'cms'. The 'Password' field is masked with asterisks. The 'Query Timeout' is set to '300' seconds. The 'Collect Every' is set to '30' seconds. The 'Enabled' checkbox is checked. There is a 'Notes' text area. At the bottom, there is a 'Test Connection' button, a 'Running' status indicator, and a 'Stop' button. The bottom of the window has 'Save', 'Save and Close', and 'Close' buttons.

7.4.2. Data Query

The AGSummary collector uses a pre-defined data query to obtain the data from CMS. This query is shown below.

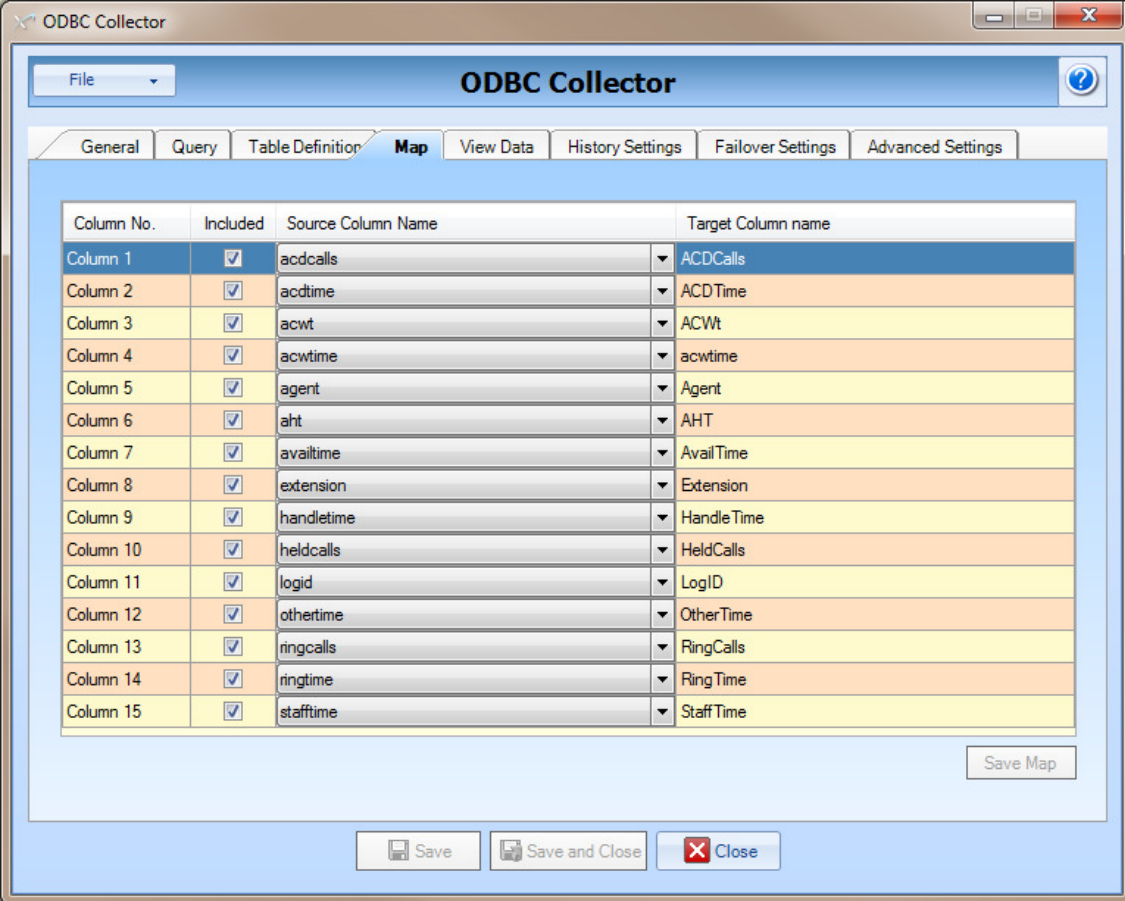
```
SELECT
TRIM(synonyms.item_name) agent
, hagent.logid logid
, SUM(hagent.da_acdcalls + hagent.acdcalls) acdcalls
, SUM(hagent.ti_stafftime) stafftime
, SUM(hagent.ti_availtime) availtime
, SUM(hagent.ti_othertime) othertime
, SUM(hagent.i_acdtime) acdtime
, SUM(hagent.ti_stafftime-hagent.ti_availtime) handletime,
SUM(hagent.ti_stafftime-hagent.ti_availtime-hagent.ti_othertime-hagent.i_acdtime) acwtime,
CASE WHEN SUM(hagent.acdcalls)=0 THEN 0
ELSE CAST(SUM(hagent.ti_stafftime-hagent.ti_availtime)/SUM(hagent.acdcalls) AS int)
END aht
,(CASE WHEN SUM(hagent.acdcalls)=0 THEN 0
ELSE CAST(SUM(hagent.ti_stafftime-hagent.ti_availtime-hagent.ti_othertime-
hagent.i_acdtime)/SUM(hagent.acdcalls) AS int) END) acwt
, SUM(hagent.holdcalls) heldcalls
, SUM(hagent.ringcalls) ringcalls
, SUM(hagent.ringtime) ringtime,
TRIM(hagent.extension)extension
FROM
synonyms, hagent
WHERE
hagent.row_date=today
AND
hagent.logid=synonyms.value
and hagent.split between 1 and 5
and synonyms.acd_no = 3
GROUP BY synonyms.item_name, hagent.logid, hagent.logid,hagent.extension
```

This above shown data query produces the most requested results from CMS for Agent Summary information.

7.4.3. Data Map

After the query has been added to the AGSummary collector, a map from Source Column to Destination column must also be completed as shown below.

Each Source column does not have to retain its name, and can be named differently if desired.



The screenshot shows the 'ODBC Collector' application window with the 'Map' tab selected. The window contains a table for mapping source columns to target column names. The table has four columns: 'Column No.', 'Included', 'Source Column Name', and 'Target Column name'. There are 15 rows, each representing a column to be mapped. All 'Included' checkboxes are checked. The 'Source Column Name' and 'Target Column name' columns show the mapping for each source column.

Column No.	Included	Source Column Name	Target Column name
Column 1	<input checked="" type="checkbox"/>	acdcalls	ACDCalls
Column 2	<input checked="" type="checkbox"/>	acdtime	ACDTime
Column 3	<input checked="" type="checkbox"/>	acwt	ACWt
Column 4	<input checked="" type="checkbox"/>	acwtime	acwtime
Column 5	<input checked="" type="checkbox"/>	agent	Agent
Column 6	<input checked="" type="checkbox"/>	aht	AHT
Column 7	<input checked="" type="checkbox"/>	availtime	AvailTime
Column 8	<input checked="" type="checkbox"/>	extension	Extension
Column 9	<input checked="" type="checkbox"/>	handletime	HandleTime
Column 10	<input checked="" type="checkbox"/>	heldcalls	HeldCalls
Column 11	<input checked="" type="checkbox"/>	logid	LogID
Column 12	<input checked="" type="checkbox"/>	othertime	OtherTime
Column 13	<input checked="" type="checkbox"/>	ringcalls	RingCalls
Column 14	<input checked="" type="checkbox"/>	ringtime	RingTime
Column 15	<input checked="" type="checkbox"/>	stafftime	StaffTime

At the bottom right of the table area is a 'Save Map' button. At the bottom of the window are three buttons: 'Save', 'Save and Close', and 'Close'.

8. Verification Steps

To verify all NeXorce data collection is configured properly, there are several places where this can be accomplished. All collectors have similar properties where proper configuration can be confirmed and verified.

8.1. Status and Refresh

All collectors will have either a source refresh rate, or a refresh rate defined within NeXorce. For socket collection such as ULS, VULS, and NAD, the refresh is defined on CMS within the corresponding configuration file. ODBC collector is defined on the collector level.

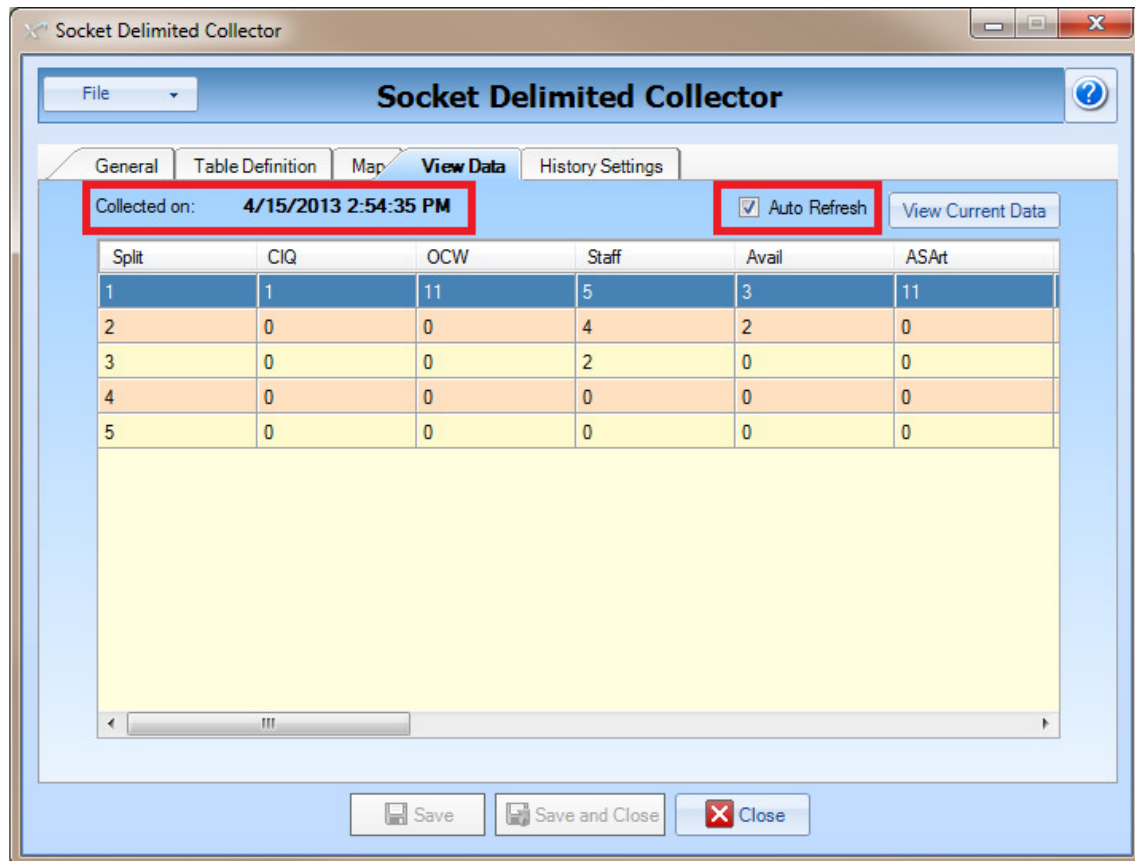
Verify the refresh times for each of the configuration files in CMS. A list is provided with default settings.

- ULS – Default is 15 seconds
- VULS – Default is 15 seconds
- NAD – Default is 10 Seconds
- AGSummary – Default is 30 seconds

8.1.1. Collected On

The **Collected on** timestamp in the “View Data” tab on each collector provides an accurate time stamp on the last time that data was successfully received or obtained from CMS. Depending on the collector that one is looking at, the **Collected on** time stamp should change regularly with the refresh interval defined.

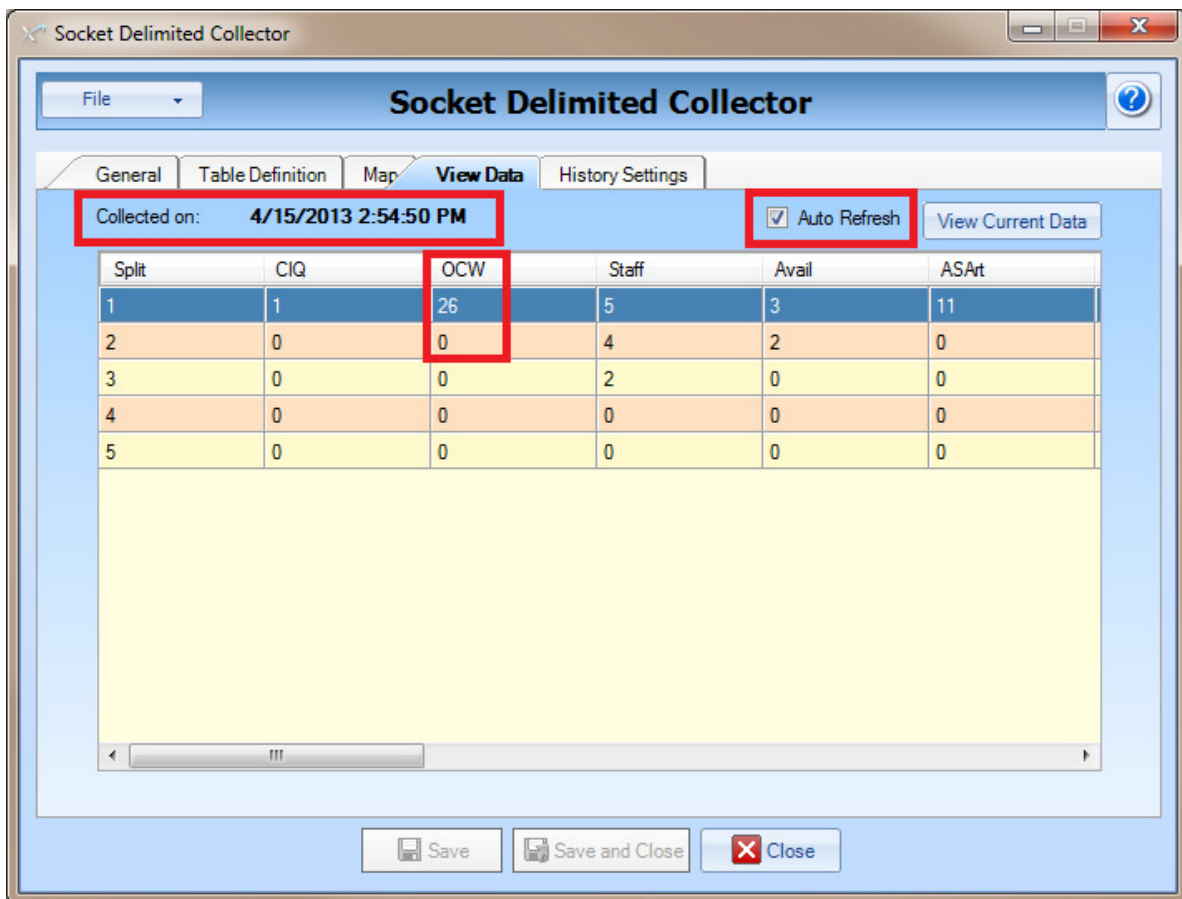
For each collector on NeXorce Suite, there is a tab called **View Data**, An Example is as follows:



This collector is ULS. It's last **Collected on** timestamp indicates that it was updated at 4/15/2013 at 2:54:35 PM. With the **Auto Refresh** box checked, the time will update when new data is obtained from CMS.

By watching this time stamp, one can verify that data is updating, and that the collector is properly configured. This time stamp should change every 15 seconds as indicated by the configured refresh rate.

The second image below shows the time stamp has increased by 15 seconds, as well as the value for the **OCW** field for **Split 1**. This indicates that the collector is receiving data and has been configured properly.



8.1.2. Connection Status

Additional verification can be done on CMS to show that a connection for each of the sockets is active and connected to the NeXorce server from CMS. This is simply done by performing a netstat command and looking for an established connection from the CMS to the NeXorce server on the configured port.

Example: the command **netstat -a |grep 733** will pickup any connections that have a port number of 733 in them. Since all NeXorce ports start with 733, one should see all connections in the list.

```
$ netstat -a |grep 733
BDL093562F.43226    10.10.102.124.7331    17152    0 50320    0 ESTABLISHED
BDL093562F.43235    10.10.102.124.7332    16128    0 50320    0 ESTABLISHED
BDL093562F.43243    10.10.102.124.7335    17408    0 50320    0 ESTABLISHED
$
```

The **ESTABLISHED** portion shows that there are 3 programs currently connected to IP Address 10.10.102.124 on ports 7331, 7332 and 7335. This indicates that the programs are running, and a connection is currently active with NeXorce from the CMS.

9. Conclusion

Spectrum NeXorce successfully interoperated with Avaya Call Management System. All tests mentioned in **Section 2.2**, were successful.

10. Additional References

Documentation for Avaya can be obtained from <http://support.avaya.com>.

[1] Avaya Call Management System Administration, Release 16.3, July 2013

Documentation for Spectrum NeXorce Software can be found at <http://support.specorp.com> under the knowledgebase section of the NeXorce category.

Specific documents related to Avaya Collector configuration and data item creation are listed below and available from support.specorp.com.

- [1] Configuring NX ODBC Collector
- [2] Configuring NX Socket Collector
- [3] Data Items Configuration
- [4] NeXorce-UserGuidw

Additionally, all configuration of NeXorce is integrated into the HELP file which can be accessed from the NeXorce Configurator by clicking on HELP.

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