



## **Avaya Solution & Interoperability Test Lab**

---

# **Application Notes for NetLert N-Focus Plus with Avaya Call Management System for Real-time Reporting – Issue 1.0**

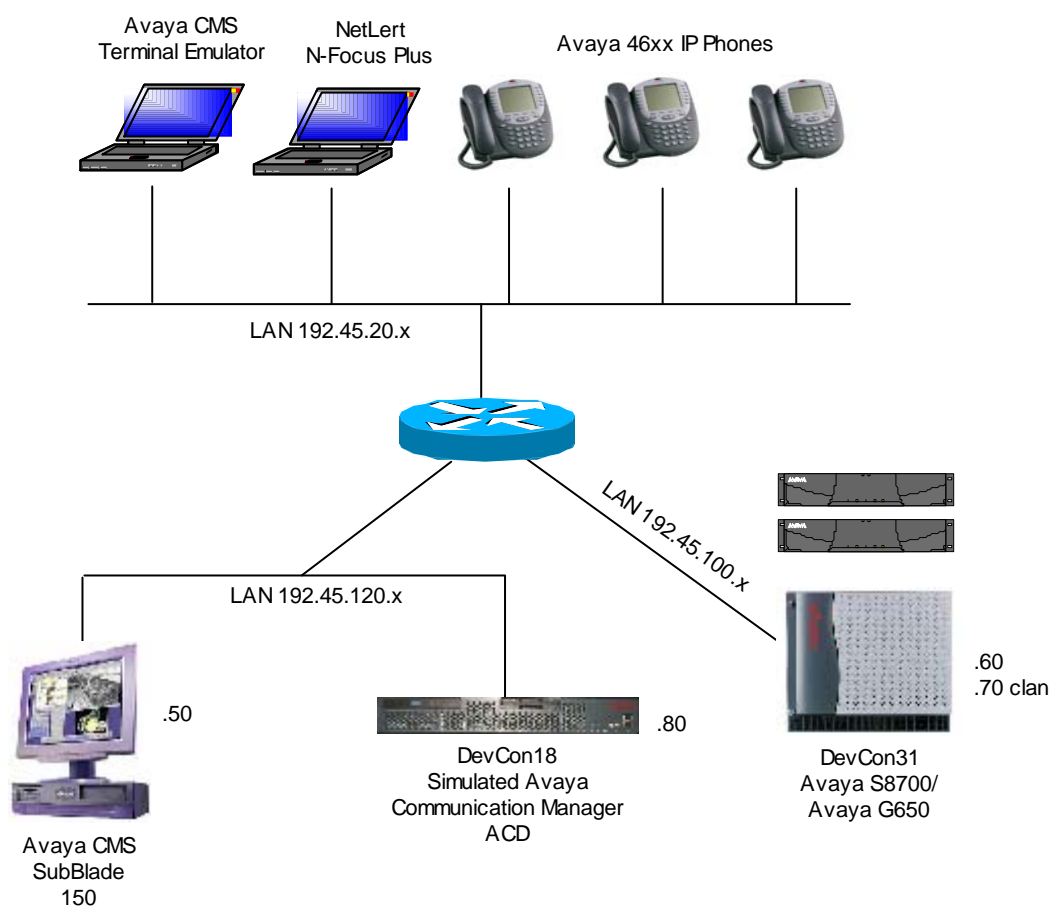
### **Abstract**

These Application Notes describe the configuration steps required for NetLert N-Focus Plus to interoperate with Avaya Call Management System via Generic RTA and Rt\_Socket interfaces. The Generic RTA and Rt\_Socket interfaces provide real-time contact data related to agent, skill, and VDN which are provided by Avaya Professional Services organization. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the *DeveloperConnection* Program at the Avaya Solution and Interoperability Test Lab.

# 1. Introduction

NetLert N-Focus Plus is a web based reporting application. N-Focus Plus utilizes real-time contact center data from Avaya Call Management System (CMS) for agent, skill, and Vector Directory Number (VDN) to generate reports for effective contact center management. The integration with Avaya CMS is achieved through the Generic RTA and Rt\_Socket interfaces which are provided by the Avaya Professional Services organization.

For the real-time reports to work, N-Focus Plus also accesses the ODBC interface of the Avaya CMS to retrieve the dictionary names of agents, skills, and VDNs as well as the service level objectives for skills and VDNs. The dictionary names are subsequently used for administration and reporting purpose. Figure 1 below shows the compliance testing configuration.



**Figure 1: NetLert N-Focus Plus with Avaya Call Management System**

On Avaya Communication Manager, relevant VDN/split/skill/agent objects are configured to be “measured” by Avaya CMS. When a call travels through a “measured” object on Avaya Communication Manager, the ACD related data are sent to the Avaya CMS. The Avaya CMS periodically updates the N-Focus Plus application with real-time data for agents, skills, and

VDNs. The frequency of the update is user configurable. During the compliance testing an Avaya Call Management System (CMS) Terminal Emulator client was utilized for report verification. The reports provided by N-Focus Plus were compared to the following real-time reports generated from the Avaya CMS Terminal Emulator:

- Agent Report
- Skill Report
- Skill Call Profile Report
- Queue/Agent Status Report
- VDN Report
- Custom Reports by Avaya Professional Services that map to the Rt\_Socket interfaces (netlert\_skill and netlert\_vdn)

## 2. Equipment and Software Validated

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

Equipment	Software
Avaya S8700 Server	Avaya Communication Manager 4.0, (R014x.00.0.730.5)
Avaya G650 Media Gateway <ul style="list-style-type: none"><li>• TN799DP C-LAN Circuit Pack</li></ul>	HW01 FW024
Avaya Call Management System server with Generic RTA and rt_socket provided by the Avaya Professional Services organization	r14aa.h
NetLert N-Focus Plus running on Gateway M325x PC Notebook	1.4 Windows XP Professional

### 3. Configure Avaya Communication Manager

The detailed administration of contact center objects and connectivity between Avaya Communication Manager and Avaya CMS are not the focus of these Application Notes and will not be described. For administration of contact center objects and connectivity to Avaya CMS, 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 form 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 10**.

### 4. Configure Avaya Call Management System

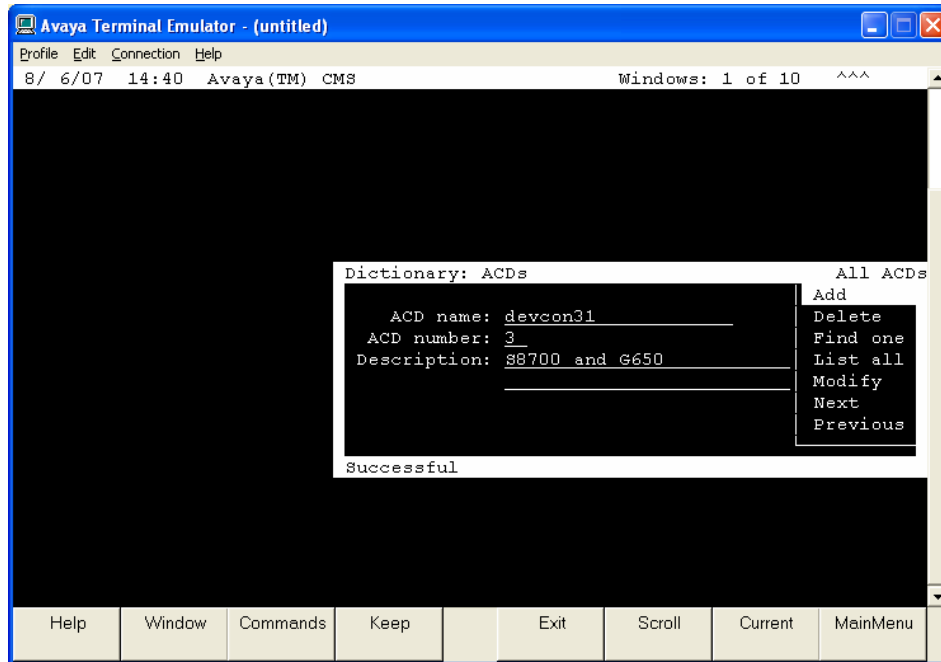
The configuration of the Avaya CMS Terminal Emulator is assumed to be in place and will not be described. In addition, these Application Notes assume a user name of “cmssite1” has been created with all the relevant permissions, and the intra-hour interval already administered.

This section provides the additional configuration as required for N-Focus Plus, which includes the following areas:

- Administer ACD dictionary names
- Administer VDN dictionary names
- Administer splits/skills dictionary names
- Administer agent dictionary names
- Activate Generic RTA and RT\_Socket interfaces

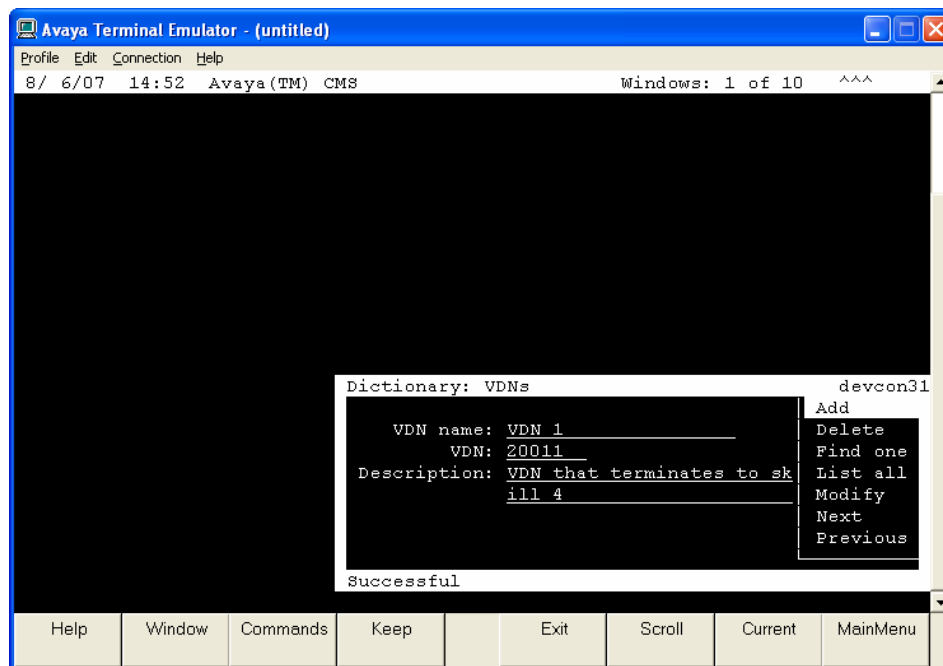
#### 4.1. Administer ACD Dictionary Names

Use the CMS Terminal Emulator to connect to the Avaya CMS server, and log in with the proper credentials. Enter “cms” at the command prompt. The **MainMenu** screen is displayed. Select **Dictionary > ACDs** to display the **Dictionary: ACDs** dialog box as shown below. Enter a descriptive name for **ACD name**, and a desired description for Avaya Communication Manager. For the **ACD number** field, enter an available ACD number, in this case “3”. Tab over to **Add** and press **Enter**.



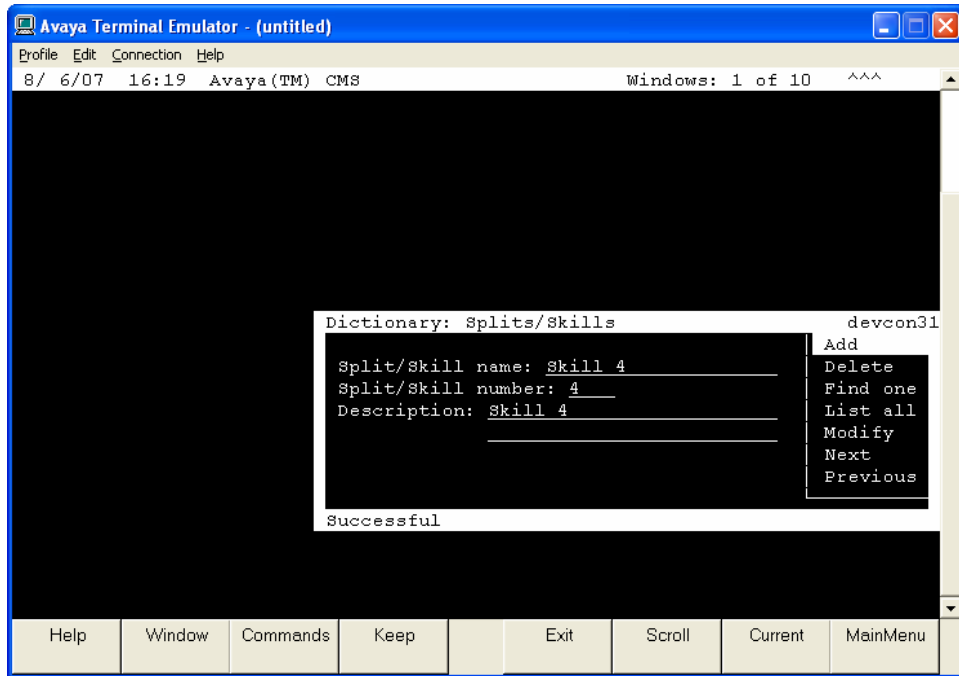
## 4.2. Administer VDN Dictionary Names

From the **MainMenu** screen, select **Dictionary > VDNs**. The **Dictionary: VDNs** dialog box is displayed as shown below. Enter a descriptive name in the **VDN name** field, a VDN extension in the **VDN** field, and a desired description. The VDN extension must match one of the VDNs that have been configured in Avaya Communication Manager for the compliance testing. Tab over to **Add** and press **Enter**. Repeat the procedure for all the VDN's to be used in the compliance test.



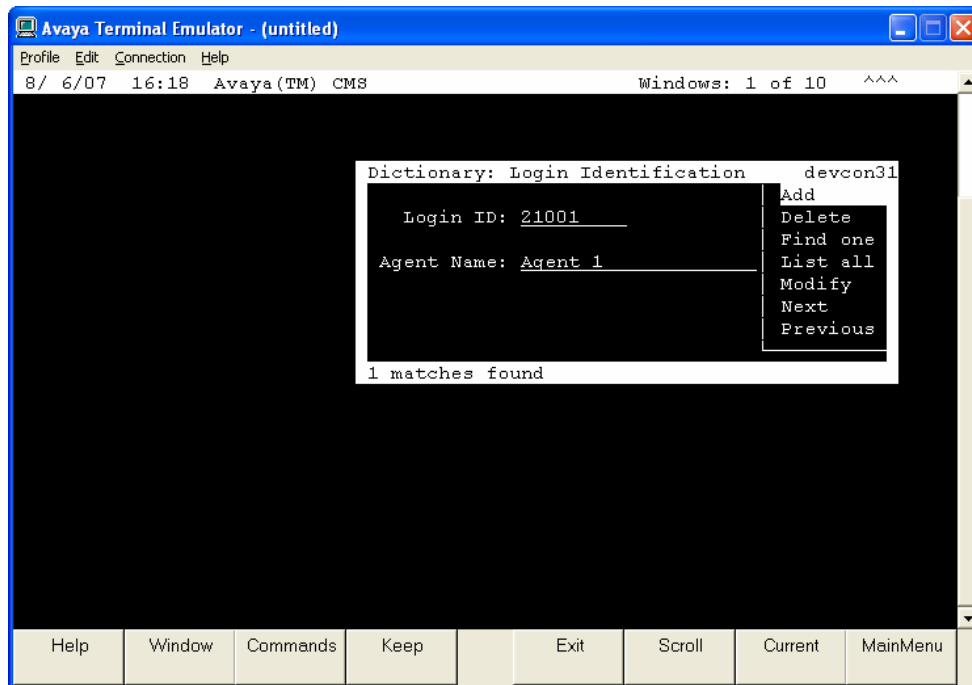
### 4.3. Administer Split/Skill Dictionary Names

From the **MainMenu** screen, select **Dictionary > Splits/Skills**. The **Dictionary: Splits/Skills** dialog box is displayed, as shown below. Enter a descriptive name for the **Split/Skill name** field, a split/skill number in the **Split/Skill number** field, and a desired description. The split/skill number must match one of the split/skill numbers that have been configured in the Avaya Communication Manager for the compliance testing. Tab over to **Add** and press **Enter**. Repeat the procedure for all the split/skill's to be used in the compliance test.



#### 4.4. Administer Agent Dictionary Names

From the **MainMenu** screen, select **Dictionary > Login Identifications**. The **Dictionary: Login Identification** dialog box is displayed, as shown below. Enter a descriptive name for **Agent Name** and a Login ID in **Login ID** field. The Login ID must match one of the Login IDs that have been configured in the Avaya Communication Manager for the compliance testing. Tab over to **Add** and press **Enter**. Repeat the procedure for all the agents to be used in the compliance test.



#### 4.5. Activate Generic RTA and RT\_Socket Interfaces

After an ACD is configured in N-Focus Plus (See Section 5), the user must start the corresponding Generic RTA and RT\_Socket interfaces on CMS as follows:

**Generic RTA interfaces:** From the **MainMenu** screen, select the **Generic-RTA** menu item. Enter **2** then **all** to stop all the sessions. Once all the sessions are stopped, enter **1** then **all** to start all the sessions. The screen capture below shows that all the sessions have been started.



```
Avaya Terminal Emulator - (untitled)
Profile Edit Connection Help

----- Generic-RTA Menu -----
1) Start Generic-RTA
2) Stop Generic-RTA
3) Change Split(s)/Skill(s) and/or ACD
4) View Maintenance Log
5) Show Version
6) Show Licensed Authorizations
7) Show Staffed Agents Count
0) Exit
=====
Choice ==> 1
Which RTA interface session do you want to start? [1-16] [all]
starttrta: 08/06/07 16:43:24 - Creating run file for RTA session 1
starttrta: 08/06/07 16:43:24 - Creating run file for RTA session 2
starttrta: 08/06/07 16:43:24 - Creating run file for RTA session 3
Starting RTA session 1, please wait...
Starting RTA session 2, please wait...
Starting RTA session 3, please wait...
Press Enter to continue:
```

**RT-Socket interfaces:** From the **MainMenu** screen, select the **RT\_Socket** menu item. Enter **2** then **all** to stop all the sessions. Once all the sessions are stopped, enter **1** then **all** to start all the sessions. The screen capture below shows that all the sessions have been started.

```
Avaya Terminal Emulator - (untitled)
Profile Edit Connection Help

1) Start RT_Socket Interface
2) Stop RT_Socket Interface
3) Change Input Parameters
4) View Maintenance Log
0) Exit
=====
Choice ==> 1
Which RT_Socket session do you want to start? [1-16] [all]
starttrta: 08/06/07 16:47:17 - Creating run file for rt_socket session 1
starttrta: 08/06/07 16:47:17 - Creating run file for rt_socket session 2
starttrta: 08/06/07 16:47:17 - Creating run file for rt_socket session 3
starttrta: 08/06/07 16:47:17 - Creating run file for rt_socket session 4
starttrta: 08/06/07 16:47:17 - Creating run file for rt_socket session 5
starttrta: 08/06/07 16:47:17 - Creating run file for rt_socket session 6
Starting session 1, please wait...
Starting session 2, please wait...
Starting session 3, please wait...
Starting session 4, please wait...
Starting session 5, please wait...
Starting session 6, please wait...
█

Help Window Commands Keep Exit Scroll Current MainMenu
```

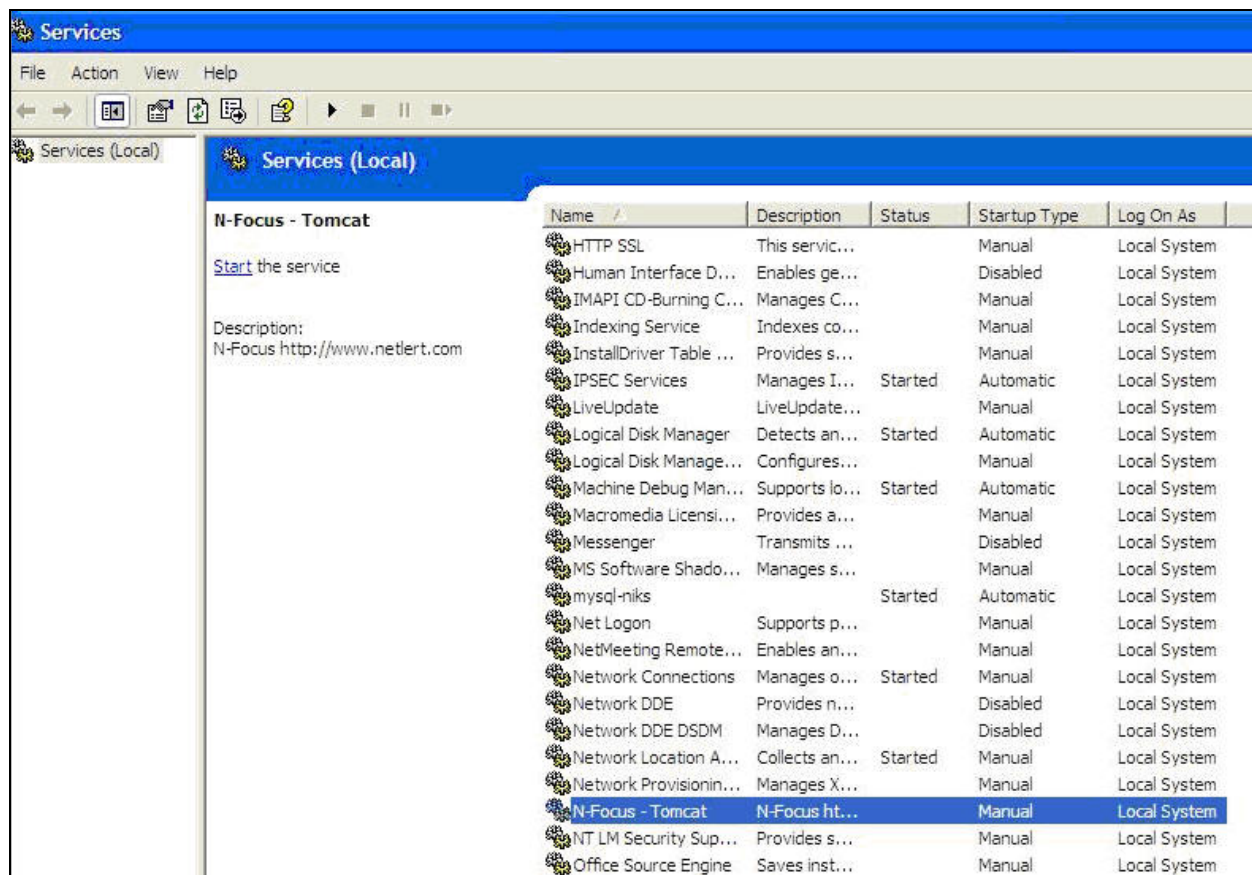
## 5. Configure NetLert N-Focus Plus

This section provides the procedures for configuring NetLert N-Focus Plus. The procedures fall into the following areas:

- Start N-Focus Tomcat service
- Administer PBX
- Administer database connections
- Administer real time connections
- Administer reports

### 5.1. Start N-Focus Tomcat Service

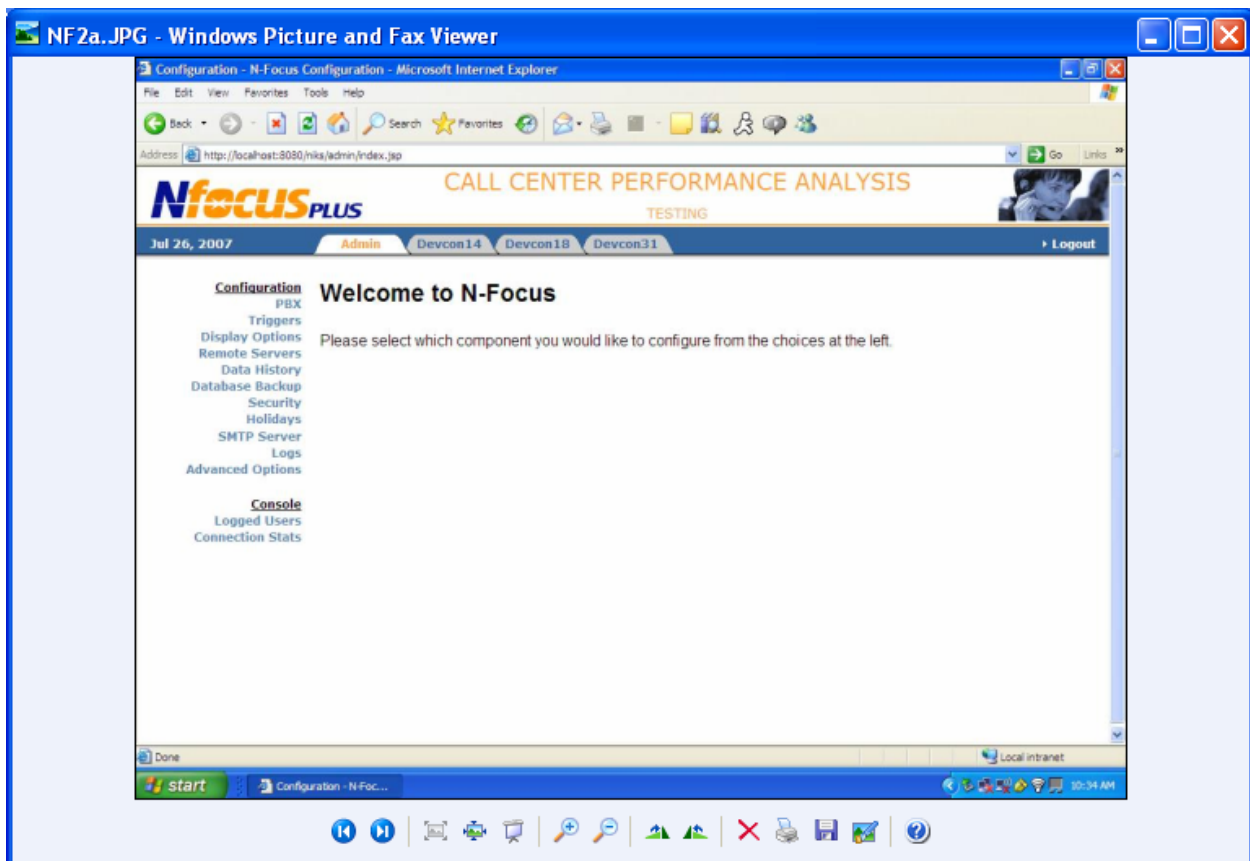
From the N-Focus Plus server, start the N-Focus Tomcat service by selecting **Start > Settings > Control Panel > Administrative Tools > Services**. In the **Services** screen shown below, right click on the **N-Focus Tomcat** service, and select “Start” from the drop down list (not shown below).



## 5.2. Administer PBX

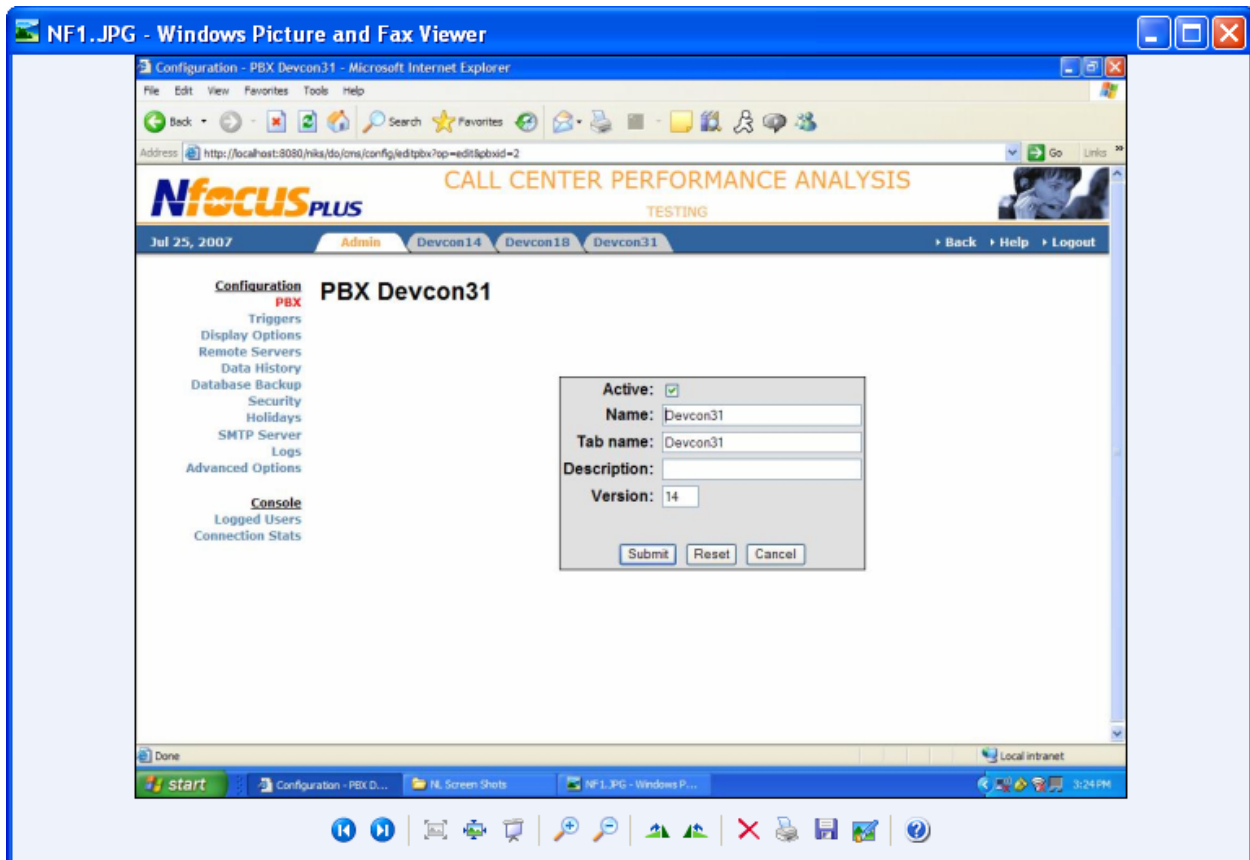
From the N-Focus Plus server, start the administrative web interface by using the URL “http://localhost:8080” in an Internet browser window. Note that the administrative web interface can also be accessed from other machines, by replacing the string “localhost” in the URL with the IP address of the N-Focus Plus server. The web pages will load slowly upon initial access for compilation reasons, and will load quickly on subsequent access.

On the login screen, log in using the administrative user name and password and click **Submit**. The **Welcome to N-Focus** screen is displayed, as shown below. Select **PBX** from the left pane.



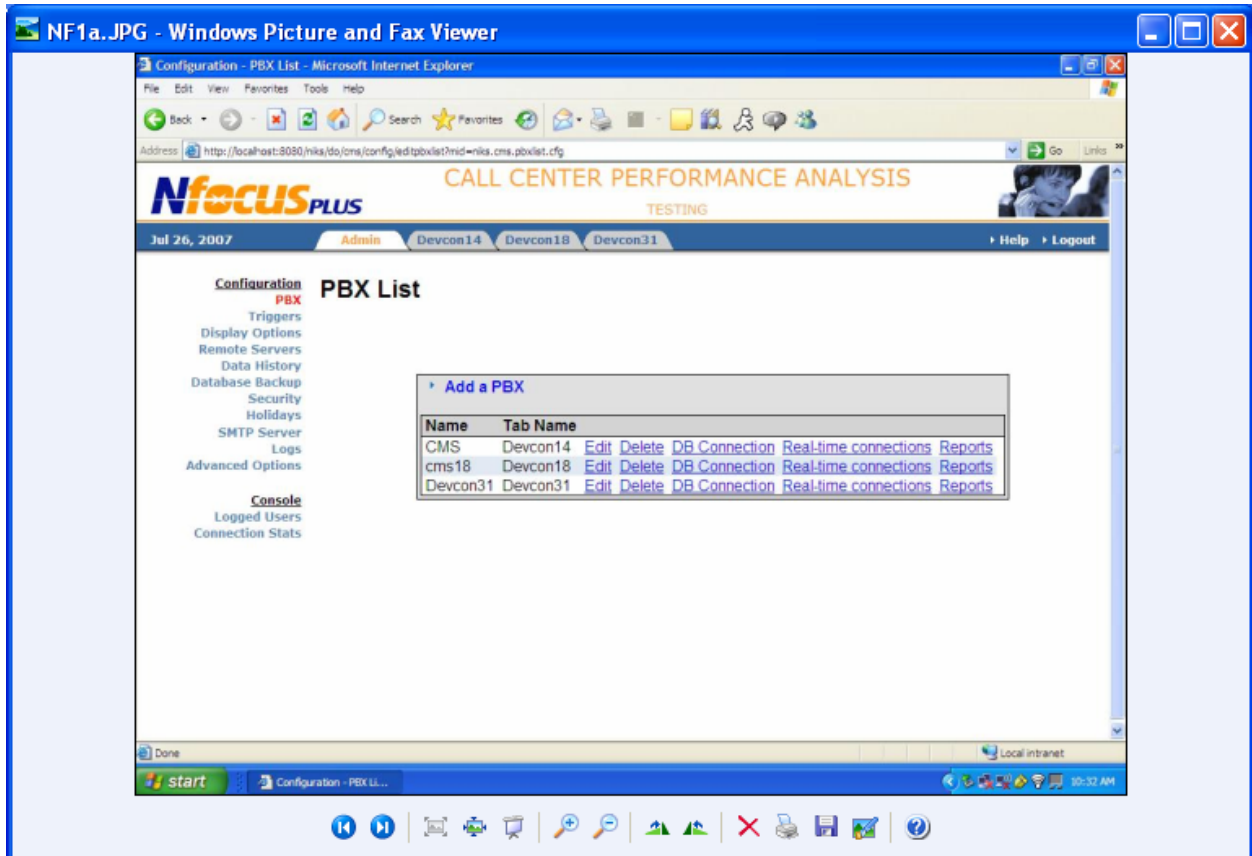
The **PBX List** screen is displayed. Click on **Add a PBX**. The **PBX** screen is displayed next, as shown below. Enter the following values for the specified fields, and click on **Submit**.

- **Active:** Retain the check.
- **Name:** A descriptive name to denote the Avaya ACD.
- **Tab name:** A desired tab name to be shown on the report screens, in this case “Devcon31”.
- **Description:** A desired description.
- **Version:** The software version of Avaya CMS, in this case “14”.

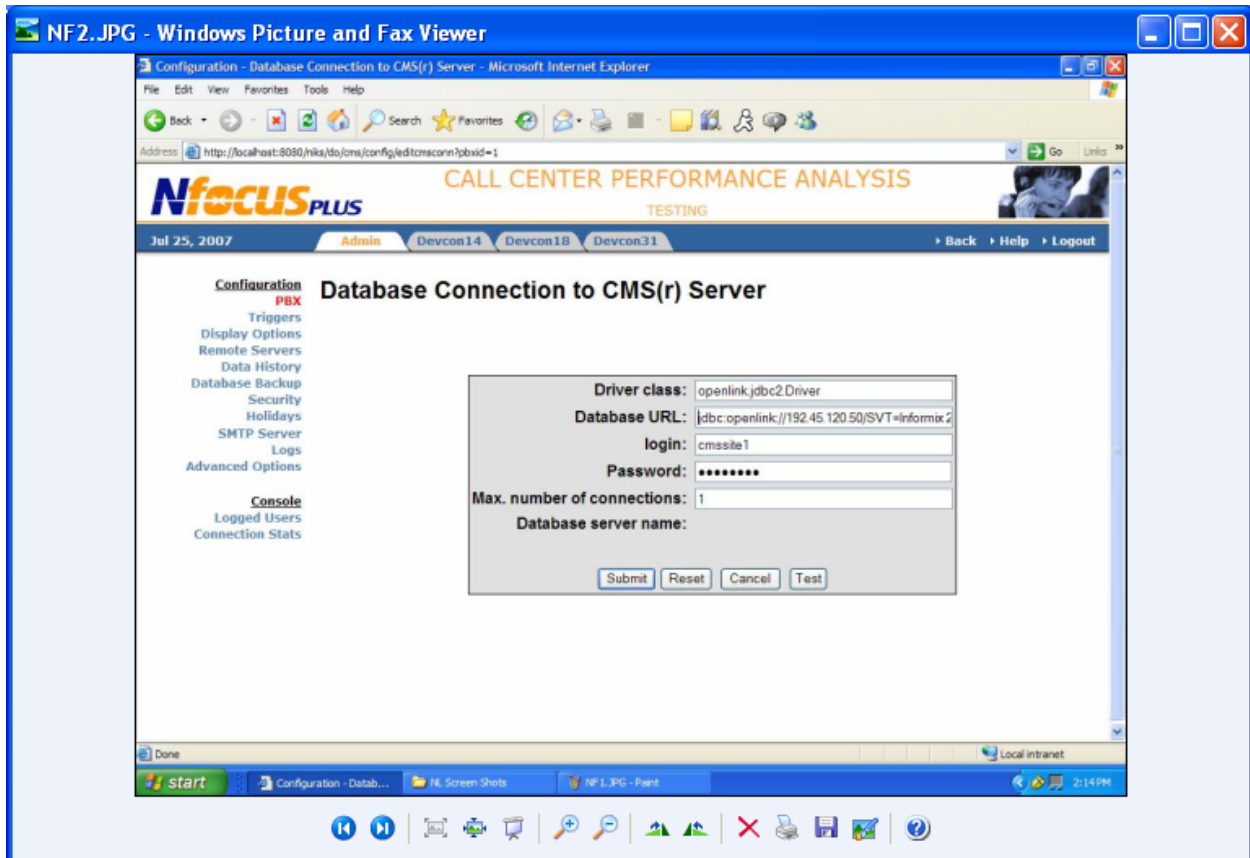


### 5.3. Administer Database Connection

The **PBX List** screen is displayed again as shown below, which has been updated with the newly added PBX. Click on **DB Connection** in the Devcon31 line to configure connectivity to Avaya CMS database. This connection allows the N-Focus Plus to access the CMS Dictionary information.



The **Database Connection to CMS(r) Server** screen is displayed next, as shown below, with the initial default values. Retain the default values for the **Driver class** and **Max. number of connections** fields. In the **Database URL** field, replace the string “CmsServerIpAddressHere” with the IP address of the Avaya CMS server, in this case “192.45.120.50”. In the **login** and **Password** fields, enter the “cmssite1” login and corresponding password already created on Avaya CMS. Click on **Submit** to save the configuration changes.



After saving the configuration changes, the N-Focus server will automatically connect with Avaya CMS database, and issue queries to obtain dictionary table information such as administered switch, VDN, split/skill, and agent data.

## 5.4. Administer Real-time Connections

N-Focus Plus receives real-time data from CMS via one Generic-RTA and two RT\_Socket interfaces. The three interfaces have to be installed on the CMS server by Avaya Professional Services organization prior to the DevConnect compliance testing. As part of the installation, the Avaya Professional Service organization will assign TCP ports for the N-Focus Plus to listen to.

On the **PBX List** screen, click on **Real-time Connections** in the Devcon31 line to configure connectivity to the real time interfaces on the Avaya CMS. The **Real-time Connections to CMS Server** screen is displayed as shown below. Enter the corresponding TCP ports assigned by Avaya Professional Services to the **Agent(Generic RTA)**, **Split (rt socket)**, and **VDN (rt socket)** fields. Click on **Submit** to save the configuration changes.

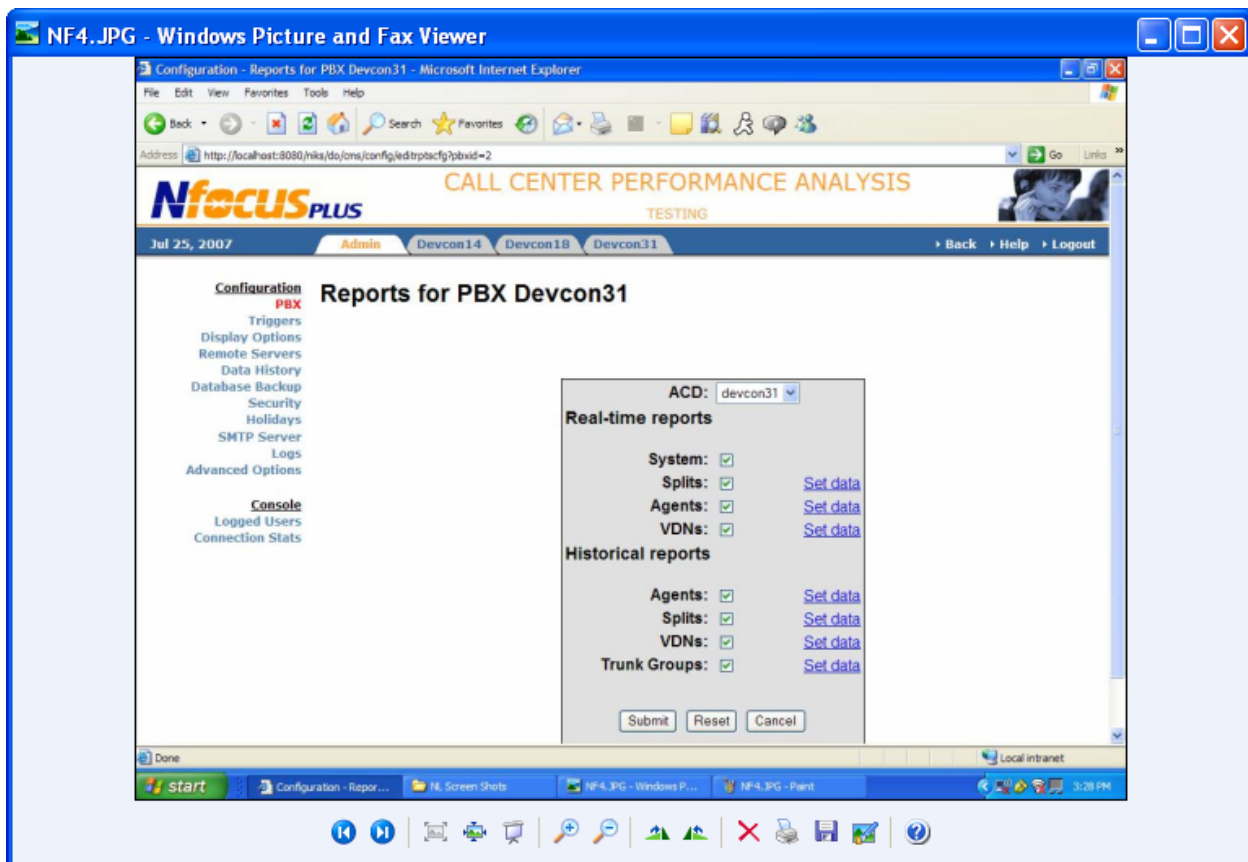
After this step, activate the Generic RTA and RT\_Socket interfaces on the CMS (procedure described in Section 4.5).





## 5.5. Administer Reports

The **PBX List** screen is displayed again, as shown below. Click on **Reports** to configure the reports. The **Reports for PBX Avaya CMS** screen is displayed. In the **ACD** drop down list, select the ACD name from **Section 4.1**, in this case “devcon31”. Check the desired real-time reports. For the compliance testing, all reports were checked. Click **Submit**.





## **6. Interoperability Compliance Testing**

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying NetLert N-Focus Plus processing and displaying of VDN, split/skill, and agent data from Avaya CMS.

The serviceability testing focused on verifying the ability of NetLert N-Focus Plus to recover from adverse conditions, such as disconnecting the Ethernet cables to N-Focus Plus and to Avaya CMS.

### **6.1. General Test Approach**

The feature test cases were performed manually. Incoming calls were made to the measured VDNs, split/skills, and agents to generate measurement data to Avaya CMS. Manual call controls and work mode changes from the agent telephones 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 NetLert N-Focus Plus and to Avaya CMS.

The verification of all tests included checking of proper display of data at the N-Focus Plus server, and of comparing the displayed data with the real-time reports from the Avaya CMS Terminal Emulator.

In addition to the manual call-by-call steps, N-Focus Plus reports were also run with a simulated Avaya Communication Manager ACD to verify the ability of N-Focus Plus to show a large quantity of calls and to deal with multiple ACD's.

### **6.2. Test Results**

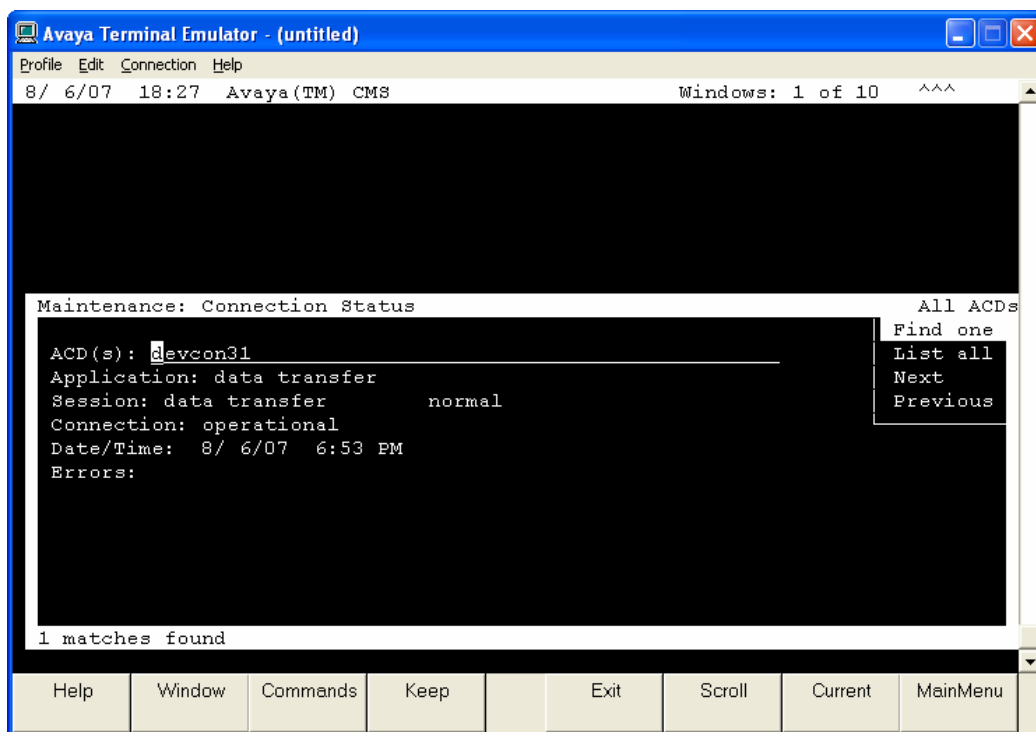
All test cases were executed and passed.

## 7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Call Management System and NetLert N-Focus Plus.

### 7.1. Verify Avaya Call Management System

Follow the procedures in **Section 4.1** to display the **MainMenu**. Verify the status of the connection to Avaya Communication Manager by selecting **Maintenance > Connection Status**, as shown below. In the **Maintenance: Connection Status** dialog box, enter the corresponding **ACD(s)** number from **Section 4.1**. For the compliance testing, the corresponding switch connection is ACD system “3”. Tab over to **Find one** and press **Enter**. 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.



## 7.2. Verify NetLert N-Focus Plus

In order to verify N-Focus Plus, make the necessary calls to the measured objects on Avaya Communication Manager, to enable measurement data to be sent and populated on Avaya CMS.

### 7.2.1. Verify System Status Report

Select the **ACD** tab from the top (Devcon18 in this case). Select **Real Time Stats > System** from the left pane, verify that the **System Status** report displays correct data, as shown below.

The screenshot shows a web browser window titled "NF5.JPG - Windows Picture and Fax Viewer" displaying the "System Status - Microsoft Internet Explorer" page. The page is for "Nfocus PLUS CALL CENTER PERFORMANCE ANALYSIS" and is dated "Jul 25, 2007". The "Devcon18" tab is selected. The "Real Time Stats" section is active, showing the "System Status" report for the date "07/25/2007 14:15". The report includes a table with columns: Split name, Num, Calls Waiting, Oldest Call, Avg Speed Ans, Avail Agents, Aband Calls, Avg Aband Time, Acd Calls, Avg Acd Time, Avg After Call, and % In Svc Lvl. The table lists data for various HuntGroups and Extensions.

Split name	Num	Calls Waiting	Oldest Call	Avg Speed Ans	Avail Agents	Aband Calls	Avg Aband Time	Acd Calls	Avg Acd Time	Avg After Call	% In Svc Lvl
HuntGroup1	1	10	0:01	0:01	41	0		121	0:21	0:00	1
HuntGroup2	2	0	0:00		21	0		0			
HuntGroup41	41	25	0:01	0:03	41	0		7234	0:19	0:00	0
HuntGroup42	42	0	0:00		21	0		0			
HuntGroup601	601	57	0:17	0:18	32	1360	0:20	977	0:03	0:00	0
HuntGroup602	602	0	0:00		32	0		0			
HuntGroup603	603	47	0:17		32	0		0			0
HuntGroup604	604	0	0:00		32	0		0			
HuntGroup701	701	35	0:17	0:02	0	11	0:21	1189	0:18	0:00	9
HuntGroup702	702	0	0:00		0	0		0			
HuntGroup703	703	0	0:00		0	0		0			
HuntGroup704	704	0	0:00		0	0		0			

### 7.2.2. Verify Split Status Report

Select the **ACD** tab from the top (Devcon18 in this case). Select **Real Time Stats > Split** from the left pane, verify that the **Split Status** report displays correct data, as shown below.

**NfocusPLUS CALL CENTER PERFORMANCE ANALYSIS**

TESTING

Jul 25, 2007 Admin Devcon14 **Devcon18** Devcon31 Back Logout

**Split HuntGroup601 Status** Auto Refresh Window Triggers Display Options

**Real Time Stats**

System

Split VDN

Split: 601 Date: 07/25/2007 14:16

Split name: HuntGroup601 Acceptable Service Level: 0

Calls Waiting: 55 % In Svc Lvl: 0

Oldest Call: 0:20 Aband Calls: 1401

Acad Calls: 1012

Staffed: 48 Avail: 34 ACD: 1 ACW: 0 AUX: 13 Extn Calls: 0 Other: 0

(1-48 / 48)

**Historical Analysis**

Agent

Split

VDN

Trunk Group

Agent name	Login Id	Ext	State	Elapsed Time	Reason	DA In Queue	Split name	Split	On Hold
AGENT610001	610001	600001	Avail	0:05		0		0	0
AGENT610002	610002	600002	Avail	0:30		0		0	0
AGENT610003	610003	600003	AUX	0:05	0	0		0	0
AGENT610004	610004	600004	Avail	0:33		0		0	0
AGENT610005	610005	600005	Avail	0:30		0		0	0
AGENT610006	610006	600006	Avail	0:23		0		0	0
AGENT610007	610007	600007	AUX	0:07	0	0		0	0
AGENT610008	610008	600008	Avail	0:13		0		0	0
AGENT610009	610009	600009	Avail	0:35		0		0	0
AGENT610010	610010	600010	Avail	0:33		0		0	0
AGENT610011	610011	600011	Avail	0:20		0		0	0
AGENT610012	610012	600012	Avail	0:16		0		0	0
AGENT610013	610013	600013	Avail	0:06		0		0	0
AGENT610014	610014	600014	AUX	0:09	0	0		0	0
AGENT610015	610015	600015	Avail	0:04	0	0		0	0
AGENT610016	610016	600016	Avail	0:32		0		0	0
AGENT610017	610017	600017	Avail	0:20		0		0	0

Local intranet

### 7.2.3. Verify VDN Status Report

Select the **ACD** tab from the top (Devcon18 in this case). Select **Real Time Stats > VDN** from the left pane, verify that the **VDN Status** report displays correct data, as shown below.

NF7.JPG - Windows Picture and Fax Viewer

VDNs Status - Microsoft Internet Explorer

Address: http://localhost:8080/nika/do/cms/savedx

## Nfocus PLUS

### CALL CENTER PERFORMANCE ANALYSIS

TESTING

Jul 25, 2007   Admin   Devcon14   **Devcon18**   Devcon31   Back   Logout

**VDNs Status**   Auto Refresh Window   Triggers   Display Options

**Real Time Stats**

System  
Split  
VDN

**Daily Activity**

VDN name	Ext	Calls Waiting	Oldest Call	Acid Calls	Avg Speed Ans	Aband Calls	Avg Aband Time	Avg Acid Time	Connect Calls	Flow Out	Call Busy / Disc	% In Svc Lvl
Agent	VDN 30001	30001	2	0:02	3889	0:03	0	0:20	0	0	0	2
Split	VDN630001	630001	45	0:23	2397	0:12	1449	0:22	0:11	0	0	0
VDN	VDN630002	630002	0	0:00	0		0			0	0	0
Trunk Group	VDN7300001	7300001	5	0:04	3847	0:05	0	0:18		0	0	0
	VDN7300002	7300002	0	0:00	0		0			0	0	0
	VDN7300003	7300003	0	0:00	0		0			0	0	0

**Historical Analysis**

Agent  
Split  
VDN  
Trunk Group

**Extensions**

Scheduled Tasks

Local intranet

start   VDNs Status - Micros...   N. Screen Shots   NF5.JPG - Paint   Local intranet   2:17 PM

## 8. Support

Technical support on NetLert can be obtained through the following:

- **Phone:** 1-866-NETLERT
- **Email:** [tech@netlert.com](mailto:tech@netlert.com)

## 9. Conclusion

These Application Notes describe the configuration steps required for NetLert N-Focus Plus 1.4 to interoperate with Avaya Call Management System R14 via the Generic RTA and RT\_Socket interfaces. All feature and serviceability test cases were completed successfully.

## 10. Additional References

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

- *Administrator Guide for Avaya Communication Manager*, Document 03-300509, Issue 3.1, Feb 2007, available at <http://support.avaya.com>
- *Avaya Call Management System Switch Connections, Administration, and Troubleshooting*, Document ID 07-601582, February 2006, available at <http://support.avaya.com>.
- *Avaya Call Management System Release 14 Software Installation, Maintenance, and Troubleshooting Guide*, Document ID 07-601578, February 2007, available at <http://support.avaya.com>.
- *N-Focus Plus Install Guide*, available at upon email request to [tech@netlert.com](mailto:tech@netlert.com).
- *N-Focus Plus User Guide*, Issue 1.4.8, March 2007, available as part of the N-Focus Plus software download.

---

**©2007 Avaya Inc. All Rights Reserved.**

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya Developer*Connection* Program at [devconnect@avaya.com](mailto:devconnect@avaya.com).