Avaya Solution & Interoperability Test Lab

Application Notes for Integrated Research's Prognosis IP Telephony Manager 10 with Avaya Communication Server 1000E Release 7.6 – Issue 1.0

Abstract

These Application Notes describe a solution comprised of Avaya Communication Server 1000E Release 7.6 and Prognosis IP Telephony Manager 10. During the compliance testing, the Prognosis IP Telephony Manager was able to provide a monitoring and management solution for IP telephony networks by collecting data and filtering it as required and then presenting it in a user-friendly format. This test was performed to verify that the Prognosis IP Telephony Manager software also presented the information and data of Avaya Communication Server 1000E correctly and also has no adverse impact on the Avaya Communication Server 1000E system when used to monitor and manage the Avaya Communication Server 1000E.

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.

©2014 Avaya Inc. All Rights Reserved.

1. Introduction

This is the interoperability Application Notes for Avaya Communication Server 1000E Release 7.6 (herein after referred to as CS1000) and the Prognosis IP Telephony Manager 10 (herein after referred to as Prognosis). During the compatibility testing session, the Prognosis was able to provide a wide range of metrics for monitoring performance and troubleshooting IP telephony networks by collecting data, filtering it as required and then presenting it in a user-friendly format. It was also able to collect data into databases for further analysis and reporting.

2. General Test Approach and Test Results

The general test approach was to connect Prognosis to the CS1000 system via Secure Shell (SSH) to monitor activity and to manage the CS1000 IP telephony networks by placing various telephone calls within the CS1000.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute a full product performance or feature testing performed by third party vendors, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a third party solution.

2.1 Interoperability Compliance Testing

Interoperability compliance testing covered the following features and functionality:

- The operational status report of all CS1000 modules such as: Signaling Server, Media Gateway (MGC), all IP Phones, all routes, all zones and the status of all commands executed on the CS1000 PBX.
- CS1000 Hardware configuration report such as Signaling Server, MGC, etc.
- All processes running on a Signaling Server.
- All IP Phones are registered to a Signaling Server. All IP Phones are configured on the CS1000 PBX.
- UNSTim/SIP Gateway Calls
- The channel utilization report on a Route.
- The inter-zone bandwidth usage report for a Zone.
- CPU utilization.

©2014 Avaya Inc. All Rights Reserved.

2.2 Test Results

The objectives outlined in **Section 2.1** were verified and met. All tests were executed and passed. However, there are number of observations during the testing:

The following limitations are known at the time of the compliance testing:

1. The phone status update is only applicable for IP and IP soft-phone. All other type of phones such as Digital sets, Analog Sets, SIP clients will have "unknown" status. The command isetShow is used for determining the status of the telephone sets, up/down.

2. Only prime DN of a telephone set is discovered and associated with that telephone.

3. After disconnecting and re-connecting the LAN interface to the Prognosis server, the connection is automatically re-established but Prognosis cannot continue monitoring the PBX, and requires a restart of Prognosis.

4. The route utilization is just updated after making a call for 2 minutes.

5. If a command is executed by Prognosis when an overlay is in progress, the command is unsuccessful due to overlay conflict. The command will not run till its next scheduled time to execute (which could be up to 24hrs). To execute the command immediately, the user must restart Prognosis and the command will be executed.

6. When a new card is added to the system, it is not recognized by Prognosis until the user runs command "INV Generate Cards" first and then runs "INV PRT CARDS" to print it. We recommend customers enable automatic execution of "INV Generate All" every 24 hours to ensure that the PBX regenerates its inventory before Prognosis performs an inventory update.

7. If an error is received when clicking on the Status of MGC, it may be due to NTL-Status Log database not being started. Start the database via the GUI and it will update the status on the card.

8. In CS1000 Release 7.6 the main IP Address of MGC cards are not shown. This is due to the existing command "PRT CAB" under LD 117 not being supported by these versions.

9. Information about members of a route which has more than 32 members within it, is shown incorrectly. This is a performance limitation where Prognosis shows these records in two fields: LD 21/LTM reports a route may contain, for example:

- 32 channels in loop 100 1 01 with member number 1-32
- 32 channels in loop 100 1 02 with member number 128-159.

10. Model of CPPM SS servers are shown incorrectly. This is due to the HostType field size being restricted to 10 characters for performance reasons.

©2014 Avaya Inc. All Rights Reserved.

11. Routes status update is only applicable to routes that are configured with a Node that reside on the Call Server, ISDN trunk. All other routes that belong to a Node that reside on other servers, such as on SIPLine Server, will not show their status and will be marked as Unknown. The command vtrkShow all and LD 60 – stat is used for determining the status of the routes.

The following items were not tested during the compliance testing:

- Generating alerts when predefined conditions are exceeded, and automatically running commands to rectify system problems.
- Media Cards test cases are not tested as there is no Media Card installed in the Avaya lab.
- **"Down"** status of Signaling Server, Media Gateway, Phones are Zones was not tested.

2.3 Support

For technical support on Prognosis, please contact Prognosis technical support team:

- **Telephone:** 1 800 942 7382
- **Email:** support.usa@prognosis.com
- **Web Site:** www.prognosis.com

©2014 Avaya Inc. All Rights Reserved.

3. Reference Configuration

Figure 1 illustrates a sample configuration between the CS1000 and the Prognosis application server. In the configuration, the Prognosis is connecting to the CS1000 system via SSH for accessing the Command Line Interface on the Call Sever. There is IP connectivity for sending SNMP requests and receiving traps between Prognosis and the CS1000.

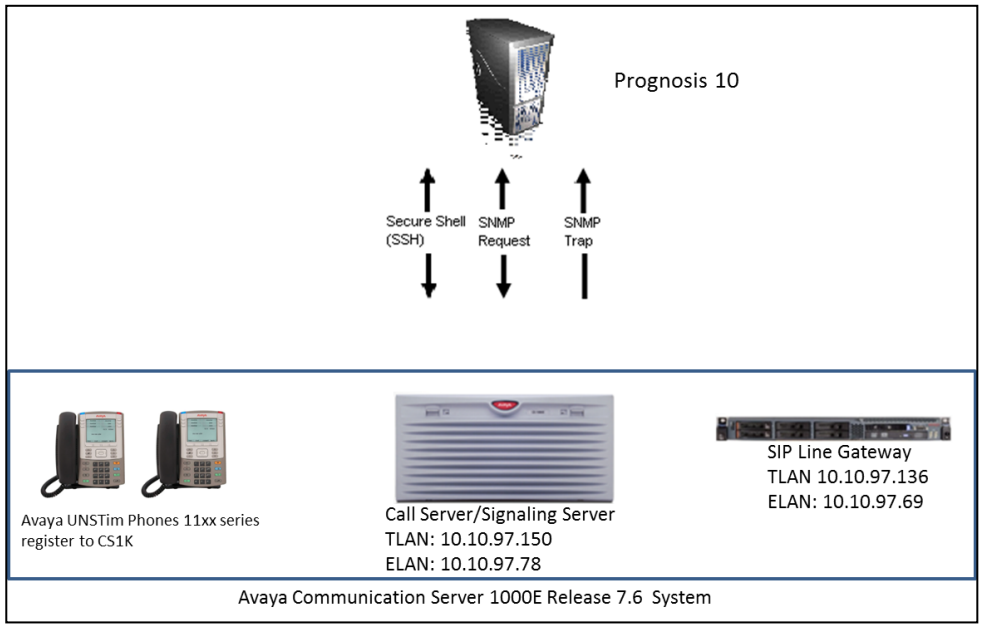


Figure 1: Avaya Communication Server 1000E System and Prognosis 10

©2014 Avaya Inc. All Rights Reserved.

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Communication Server 1000E running on CPPM	Call Server: 765P Service Packs date created Sep 24, 2013. DEPLISTS date created Sep 24, 2013. DEPLIST Signaling Server: 765 P plus latest Service Update SIP Line Gateway: 765 P plus latest Service Update
Avaya UNIStim IP deskphones	1140E - Model NTYS05 2004 – Model NTDU82
Prognosis Server	Software release 10

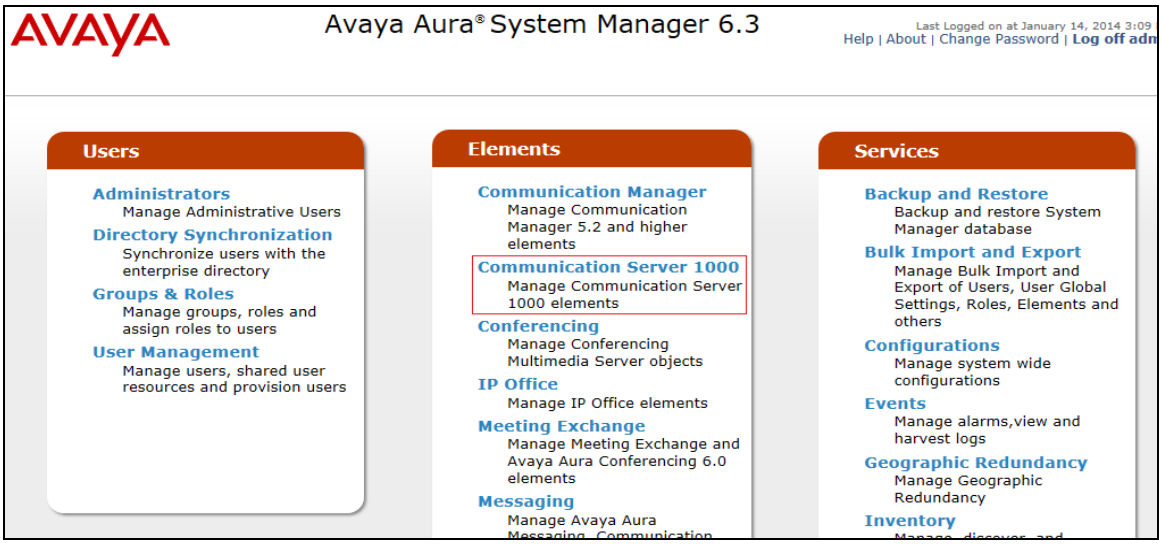
5. Configure Avaya Communication Server 1000E

These Application Notes assume that CS1000 is installed, configured and operational. For detailed information on how to configure and administer the Avaya Systems, please refer to **Section 9**.

The following section will describe how to configure the SNMP profile on the CS1000 for receiving the SNMP requests and sending traps to Prognosis server.

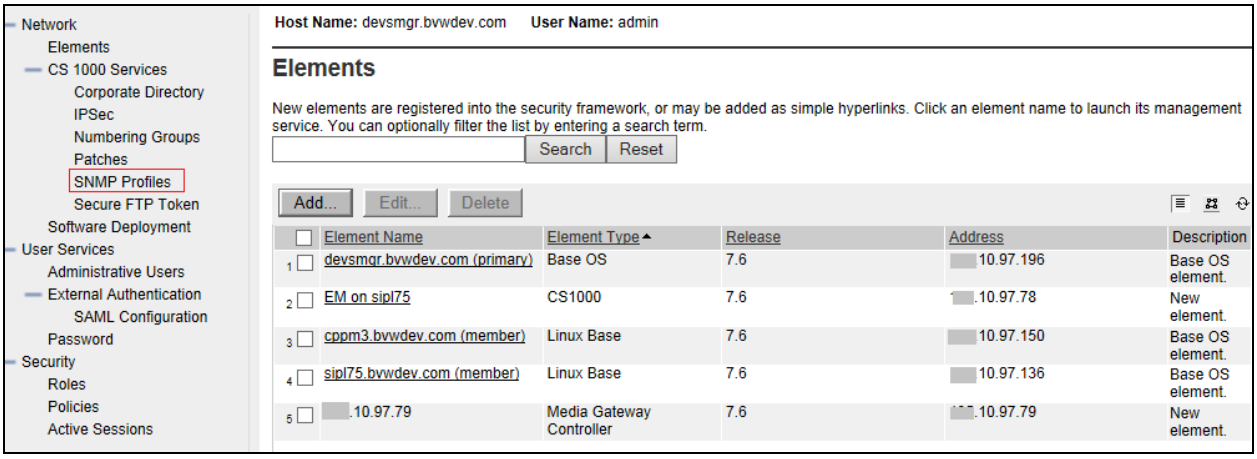
5.1 Log on to Unified Communication Manager of Avaya CS1000

Log on to System Manager (not shown), click on Communication Server 1000 to access the UCM Common Services of the Avaya CS1000.



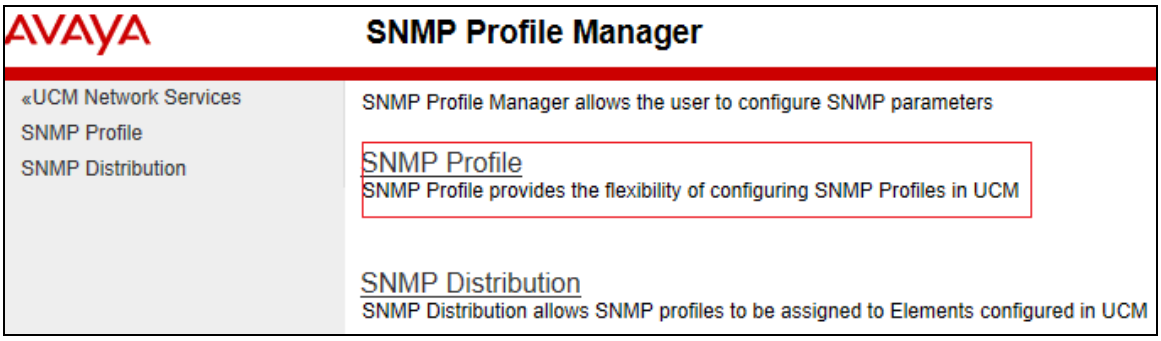
©2014 Avaya Inc. All Rights Reserved.

The **Avaya Communication Server 1000 Elements** page is displayed.

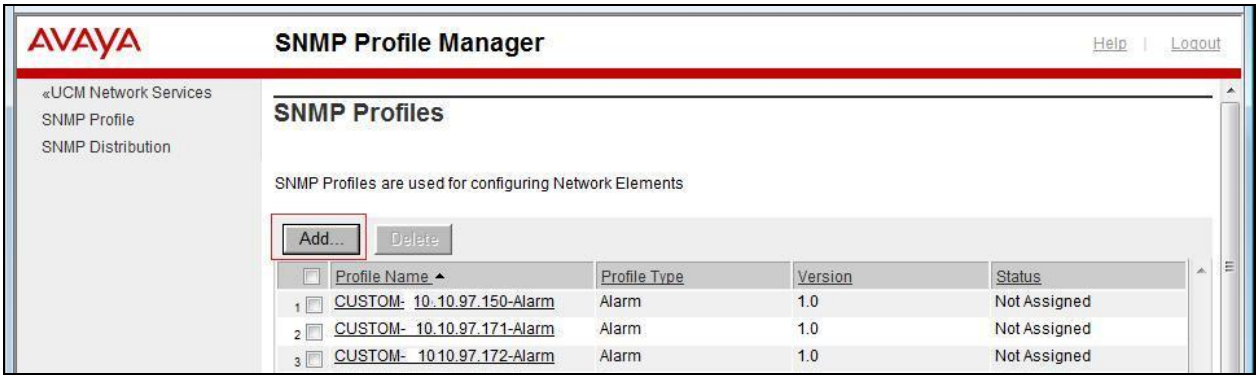


5.2 Create SNMP Profile

Click on **SNMP Profiles** in the left hand pane, as shown above**,** the **SNMP Profile Manager** will appear as shown below. Click on **SNMP Profile** in the right hand pane**.**



Click on the **Add** button to create a new profile

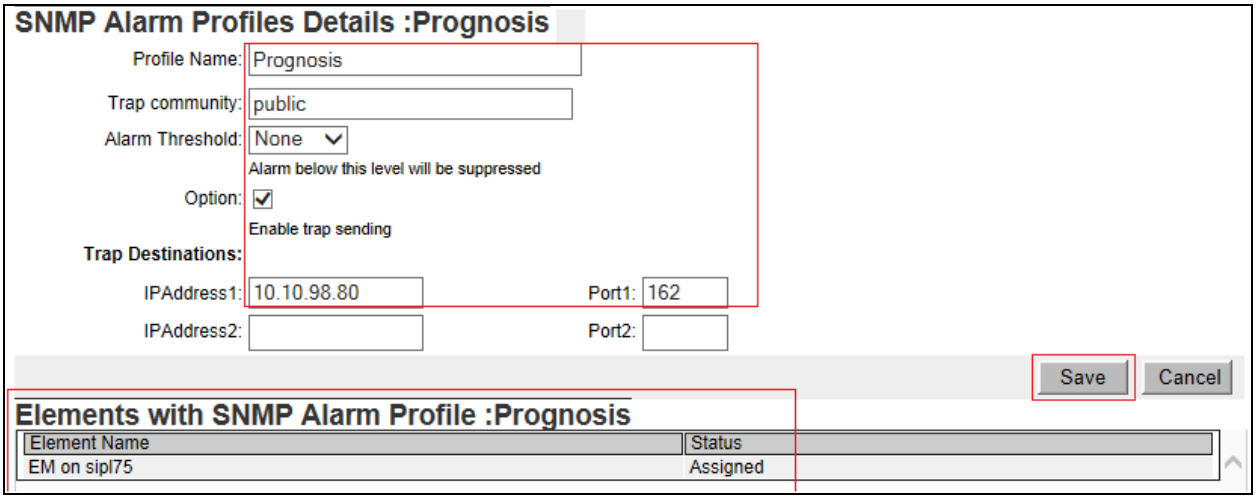


©2014 Avaya Inc. All Rights Reserved.

The new SNMP Profile page will appear. Enter the following information:

- **Profile Name**: enter name for the new profile.
- **Trap community**: enter public.
- **Alarm Threshold**: None.
- **Trap destinations**: enter IP address of Prognosis 10.

Other fields are left as default as shown below. Click Save. Below is the screenshot of profile created during the compliance test.



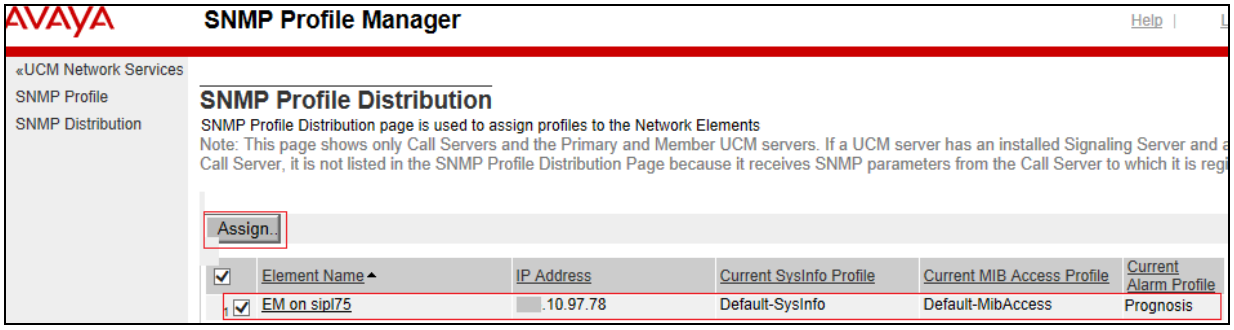
5.3 Assign newly created SNMP profile to an Element

On the left menu panel, click on **SNMP Distribution**, the **SNMP Target Selection** page will appear as shown below. Select the check box as shown below and click **Next.**

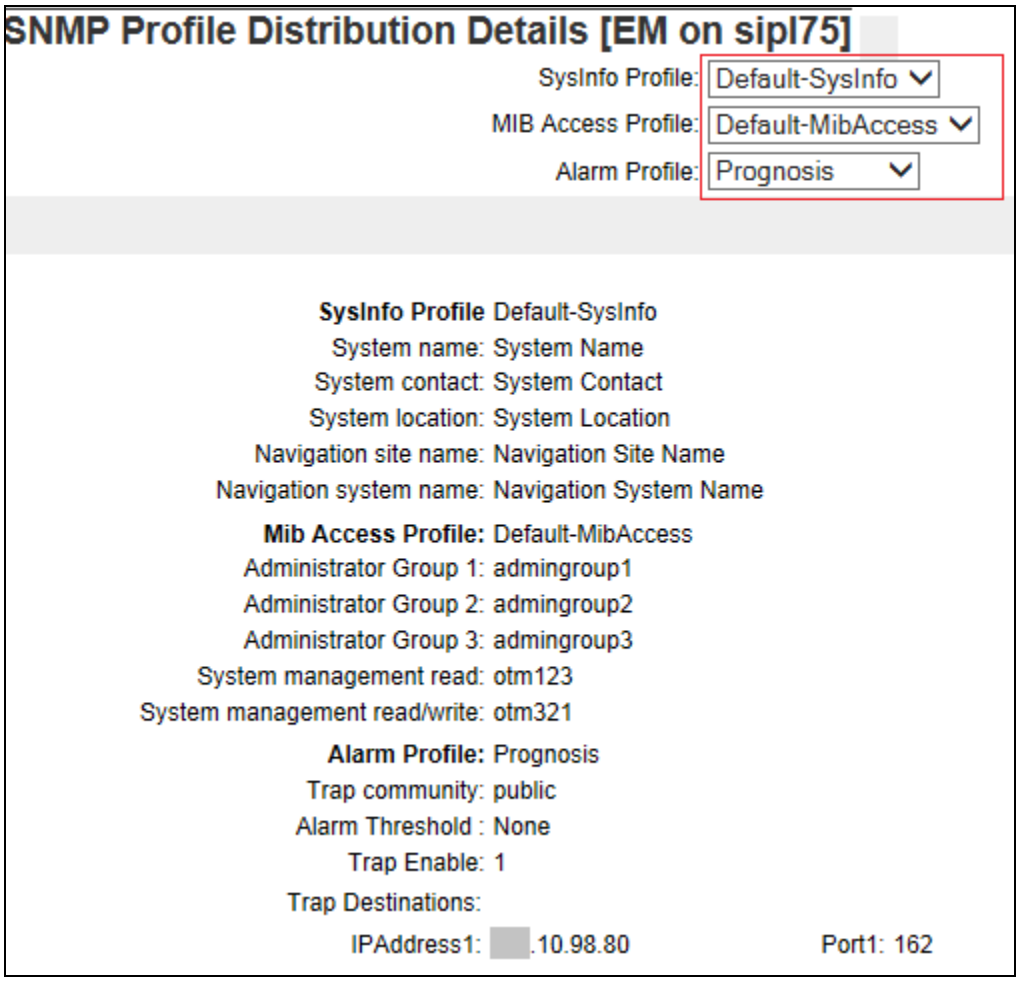


©2014 Avaya Inc. All Rights Reserved.

The **SNMP Profile Distribution** page will appear as shown below. Click **Assign.**

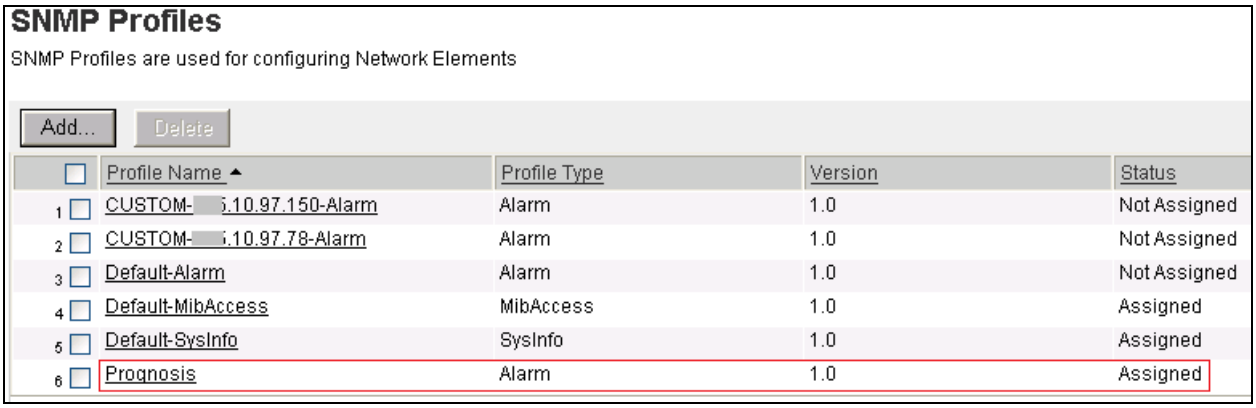


The SNMP Profile Distribution Details page will appear. Select and enter the information as highlighted in red-boxes as shown below. Others are left at default. Click **Save** (not shown).



©2014 Avaya Inc. All Rights Reserved.

The newly created ***prognosis*** SNMP profile has now been assigned to the call server of the CS1000 as shown below.



©2014 Avaya Inc. All Rights Reserved.

6. Configure Prognosis IP Telephony Manager

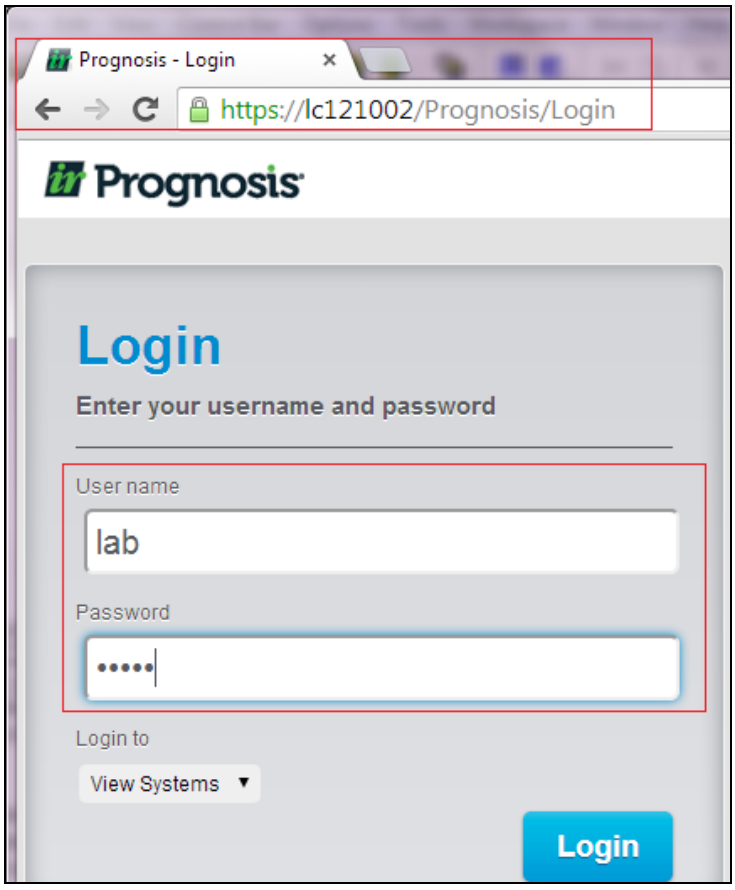
The assumption here is that the Prognosis has been installed and operational. Please refer to **Section 9** for more information. This section describes the steps to configure Prognosis for monitoring the CS1000.

Since the PBX is already added into Prognosis before the screenshots were captured, the following screenshots are listed here for purpose of information on detail of PBX setup during compliance test.

6.1 Add PBX system

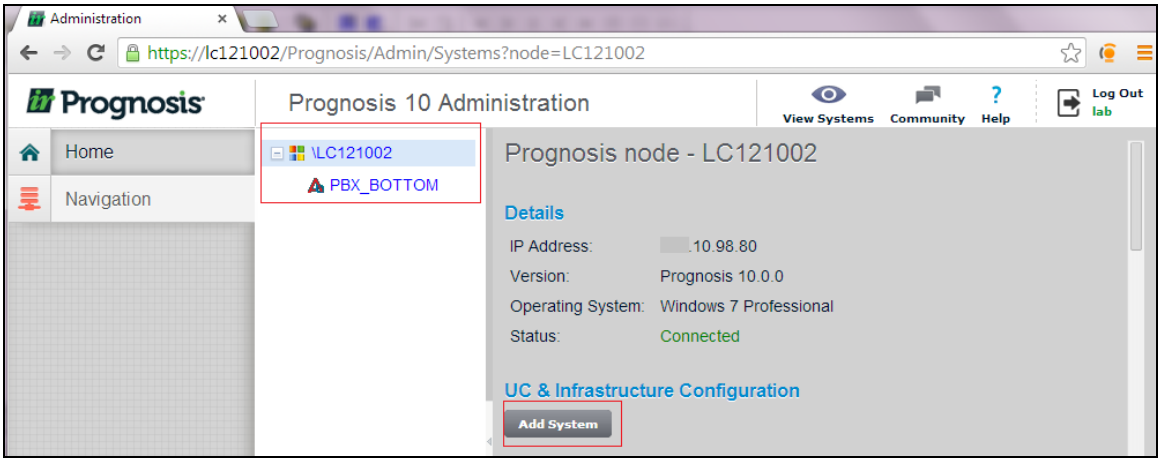
Open **Prognosis webpage** and login as shown in below.

- **User Name**: enter name used to login local PC.
- **Password**: enter password of user.

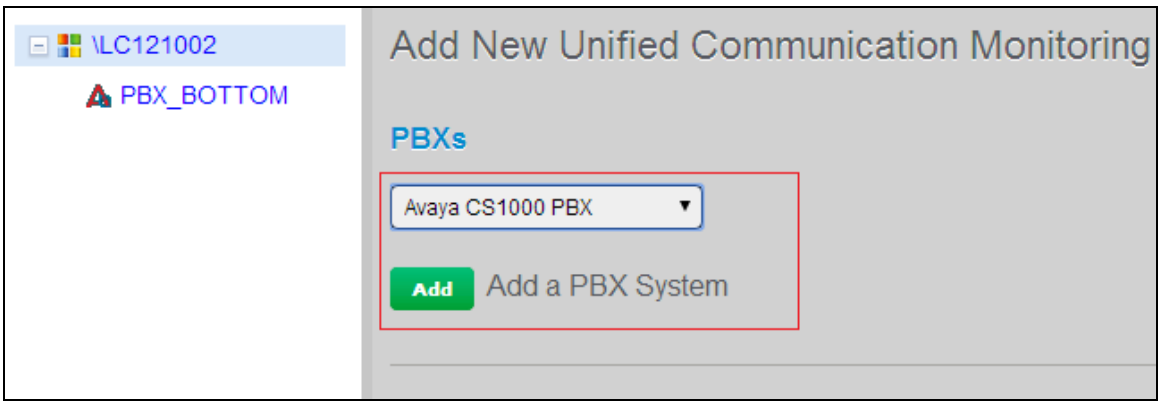


©2014 Avaya Inc. All Rights Reserved.

Click on **Add System** to add a new PBX into Prognosis to monitor it. The second screenshot below shows the system has been added and been given the name PBX_Bottom.



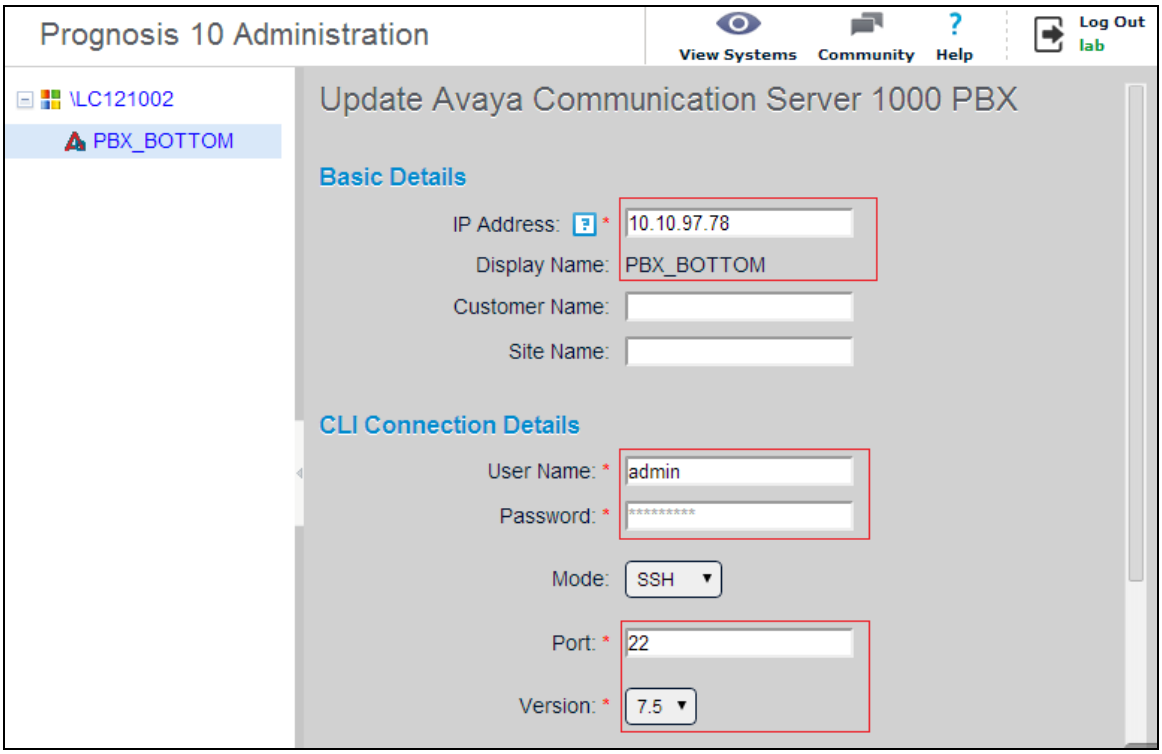
In the **Add New Unified Communication Monitoring** window, select **Avaya CS1000 PBX** system then click **Add**.



Enter PBX detail:

- **IP Address**: ELAN of Call Server, example: 10.10.97.78.
- **Display Name**: Enter any descriptive name for the PBX, example: PBX_Bottom.
- **User Name**: enter user name used to login to CS1000 system.
- **Password**: enter password of user.
- **Mode**: SSH
- **Port**: 22
- **Version**: select **7.5**. This version is incorrect and is updated to 7.6 as shown in **Section 6.3**.

©2014 Avaya Inc. All Rights Reserved.

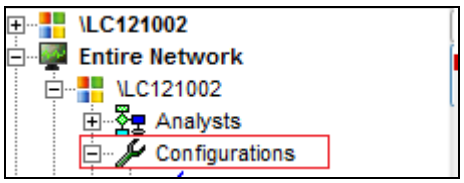


Select SNMP Connection Details; check "**Use SNMP Version 1**". Click Create if user add a new PBX. In this case as PBX already added, click Update to save changes.



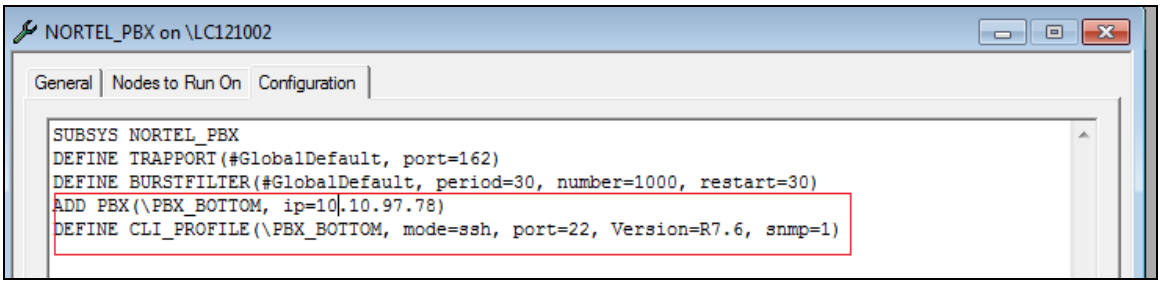
6.2 Update Nortel_PBX

In the left hand side menu, expand Configurations menu.



©2014 Avaya Inc. All Rights Reserved.

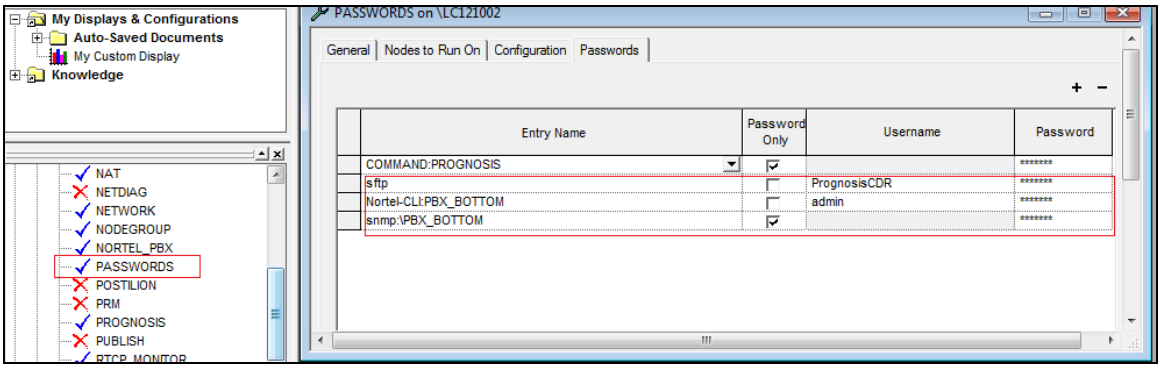
Right click on NORTEL_PBX (not shown) and select properties. In the properties window, update **Version=R7.6** as shown in below.



6.3 Add new password entry

This section describes steps on how to add password in order for Prognosis to communicate with CS1000.

In the Configurations menu, right click on PASSWORDS (not shown), add password entry for Call Server and snmp as shown below:

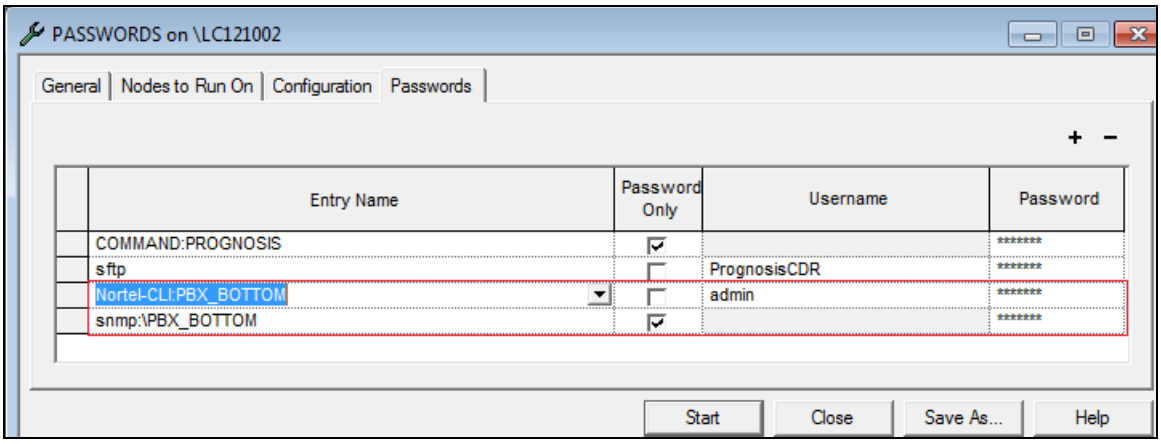


©2014 Avaya Inc. All Rights Reserved.

6.3.1 Add a password entry for PBX password

1. Create a new password entry name of "***Nortel-CLI:<pbx-name>***".
2. The password **Entry Name** can be selected from the drop down list in the **Entry Name** column.
3. Ensure that the **Password Only** column is not selected.
4. Enter the **Username** (**User ID**) to be used for login to the CS1000.
5. **Note:** The **Username** (**User ID**) and **Password** is used for login to the Call Server and all Signaling Servers within the CS1000.
6. Enter the **Password** (with verification).

See below screenshot for detail:



6.3.2 Add a password entry for snmp

1. Create new entry name of "**snmp:\PBX_BOTTOM**"
2. Ensure that the **Password Only** column is checked.
3. Enter the Password as listed in CS1K SNMP Profile Distribution Detail screenshot in **Section 5.3**; it is System Management read/write: otm321.

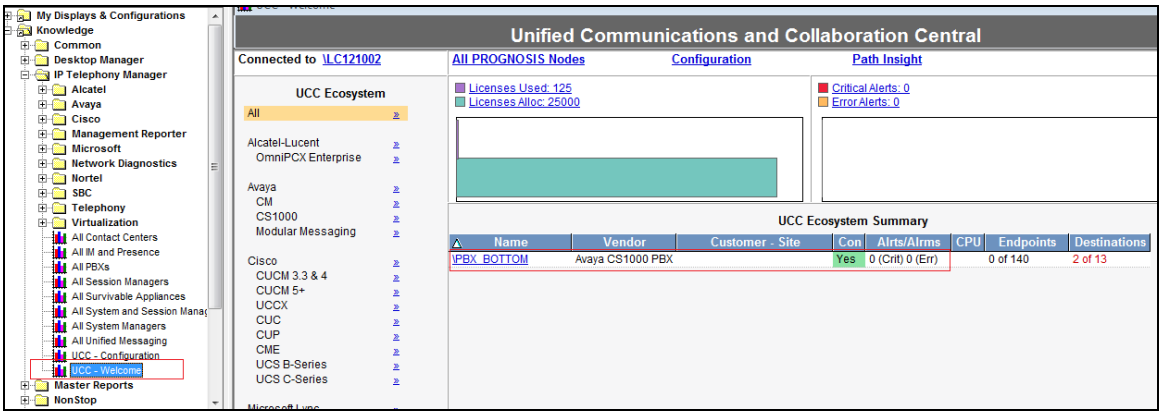
See above screenshot for detail.

©2014 Avaya Inc. All Rights Reserved.

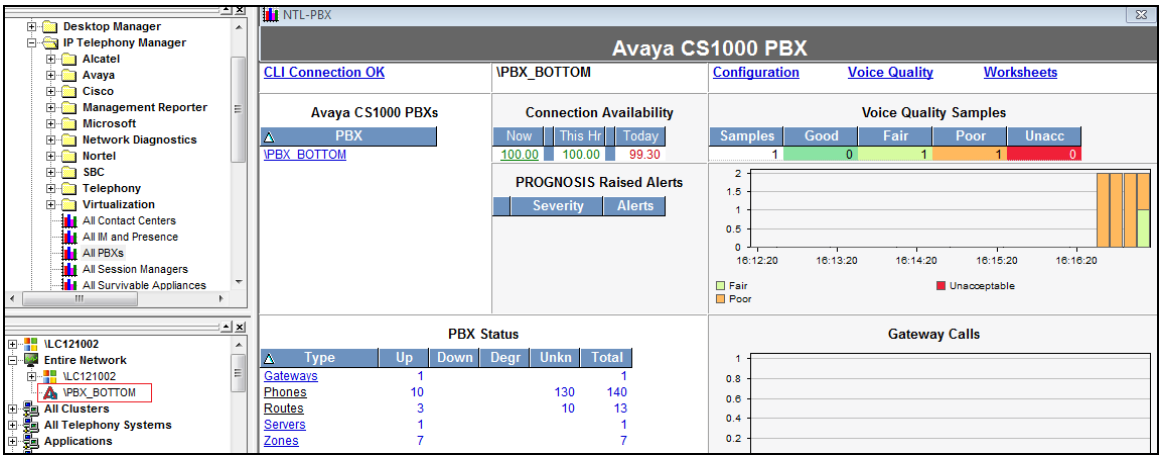
6.3.3 Manage PBX on Prognosis

Click **View** > **Document Folders > UCC-Welcome** (not shown), the **Unified Communications and Collaboration Central** page will display (not shown).

Observe that the new CS1000 node appears in the Entire Network and in the UCC Ecosystem Summary window of the UCC- Welcome display.



In the UCC Ecosystem Summary, click on PBX node added in Section 6.1, in this case it is PBX_BOTTOM. This display provides a summary of the configured CS1000.



©2014 Avaya Inc. All Rights Reserved.

7. Verification Steps

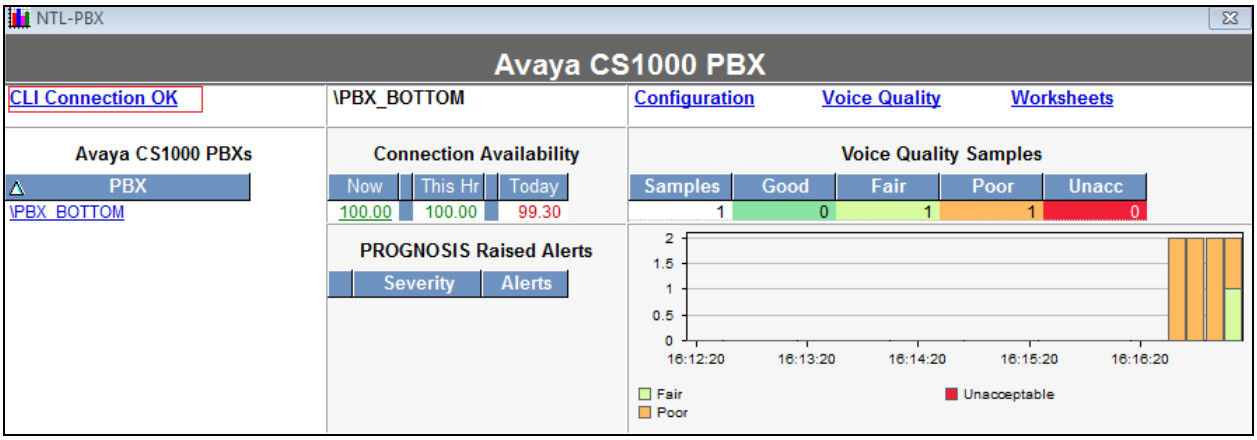
This section provides some steps that can be followed to verify the CS1000 system and Prognosis are working correctly.

7.1 Measure the CS1000 PBX performance under test conditions

1. Establish a SSH connection to the CS1000 Signaling Server.
2. Login to the Signaling Server (not shown).
3. At a frequency of once every minute for a period of 10 minutes perform the following:
    a. Enter the command ***memShow*** (not shown) and note the memory usage.
    b. Check CPU load on PBX.
    c. Login to the Call Server by executing "***cslogin***" command (not shown).
    d. Enter ***pdt*** mode on the Call Server by holding down <**Ctrl**> and typing **PDT** (not shown).
4. At a frequency of once every minute for a period of 10 minutes perform the following:
    a. Enter the command ***memShow*** and note the memory usage (not shown).
    b. Check CPU load on PBX.
    c. Exit pdt mode by typing ***exit*** (not shown)..

7.2. The status of all commands executed on the Avaya Communication Server 1000

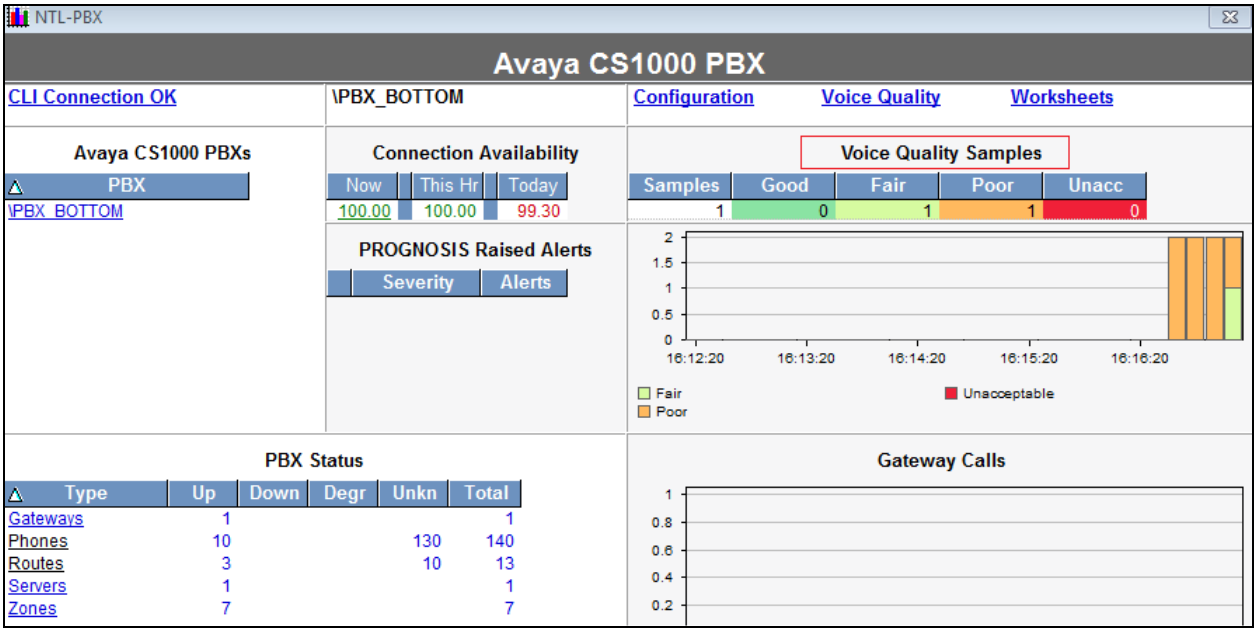
1. In the **NTL-PBX** display, click on **Node Name → CLI Connection OK** (screenshot shown below).
2. Drill down on **Commands** to open the **Avaya CS1000 Commands** display (not shown).
3. Select "**View All Cmds**" to show all commands executed (not shown).
4. Observe that all commands being executed in the list.
5. Observe that execution status for all commands is displayed and successful.



©2014 Avaya Inc. All Rights Reserved.

7.3. Observe Voice Quality sample

In Prognosis client, navigate to the **NTL-PBX** page of ***\PBX_BOTTOM*** node (not shown), this is shown in **Section 6.3.3**. Make a call and observe the call quality report. As shown below the chart displays a call with Poor Quality.



8. Conclusion

These Application Notes describe a solution comprised of Avaya Communication Server 1000E Release 7.6 and Prognosis 10. All interoperability compliance test cases executed against such a configuration were completed successfully. All of the executed test cases have passed and met the objectives outlined in **Section 2.2**.

9. References

This section references the Avaya documentation relevant to these Application Notes. The following Avaya product documentation is available at http://support.avaya.com.

[1] *Linux Platform Base and Applications Installation and Commissioning Avaya Communication Server 1000 Release 7.6*, NN43001-315, Issue 06.04, December 2013.

[2] *Signaling Server IP Line Applications Fundamentals Avaya Communication Server 1000* Release 7.6 NN43001-125, Issue 04.05 November 2013

Product documentation for Prognosis may be found in the Prognosis release CD.
For more information, please refer to the link www.prognosis.com

©2014 Avaya Inc. All Rights Reserved.

©2014 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 DevConnect Program at devconnect@avaya.com.