



Avaya Solution & Interoperability Test Lab

Application Notes for Integrated Research Prognosis Unified Communication 10 with Avaya IP Office Server Edition 9.1 - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Integrated Research Prognosis Unified Communication 10 (Prognosis) to interoperate with Avaya IP Office Server Edition. Prognosis provides real-time monitoring and displays Avaya IP Office Server Edition statistic data such as Phones, Inventory and Call Traffic using Simple Network Management Protocol (SNMP) and Real Time Transport Control Protocol (RTCP) connections.

Readers should pay attention to Section 2, in particular the scope of testing as outlined in Section 2.1 as well as the observations noted in Section 2.2, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the compliance tested configuration used to validate Prognosis Unified Communications 10 (herein after referred to as Prognosis) with Avaya IP Office Server Edition 9.1. Test configuration included deploying Avaya IP Office on a Primary Linux Server and on a 500 V2 Expansion server.

During compliance test, one Prognosis server manages a Primary IP Office Linux Server and an IP Office 500 V2 Expansion as separate systems, one instance of each must be added on Prognosis. Prognosis uses SNMP Version 2c connection to monitor Primary Linux Server and SNMP Version 1 to monitor 500 V2 Expansion server.

Prognosis uses SNMP messages received from IP Office systems to monitor system status such as Phones, Inventory, SNMP traps and displays them on web-based application. Prognosis also collects RTCP packets from H323 phones and displays detail call traffic.

2. General Test Approach and Test Results

The feature test cases were performed manually. Manually perform calls using H323 phones which register to Primary Server and other H323 phones which register to 500 V2 expansion server to verify the proper call traffic detail is displayed. Verify general information of IP Office such as inventory, system status and phones details were display correctly.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet connection to the Prognosis server.

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

2.1. Interoperability Compliance Testing

The compliance testing verified the use of the Prognosis web interface to display correct information of the IP Office configuration.

- Verify IP Office is successfully configured to be monitored by Prognosis.
- Verify overall IP Office health included system Up Time, IP Office IP address, Routing Table, ARP table, Interfaces and Total Packets Per Interval.
- Verify Avaya IP Office PBX Status such as phones inventory, browse by phone status, browse by extension range, phone details along with its IP address, type, name and active voice stream detail.

- Verify SNMP traps received from IP Office such as Alarms (Critical, Major, Minor and Warning), SNMP Availability, Voice Stream, Network Hops and Prognosis raised Alerts.
- Verify IP Office Call Traffic detail information such as Time Start/End of Call, Local/Remote PBX, Phone Type, MOS Cost, Phone Firmware and Quality of Service.

2.2. Test Results

All test cases were passed and met the requirements as shown in **Section 2.1** with following observation: There is a limitation in showing the detail diagram of network hop of call traffic since Prognosis does not receive complete list of RTCP events from H323 phones. This observation has been forwarded to the Avaya IP Office team as a feature enhancement request to be considered for implementation in a future version of IP Office.

2.3. Support

For technical support on Integrated Research Prognosis, contact the Integrated Research Support Team at:

- Hotline: +61 (2) 9921 1524
- Email: support@prognosis.com

3. Reference Configuration

Figure 1 illustrates the test configuration used to verify the Prognosis application with Avaya IP Office Server Edition including a Primary Linux Server and a 500 V2 Expansion server. Each system has its own SNMP connection to Prognosis.

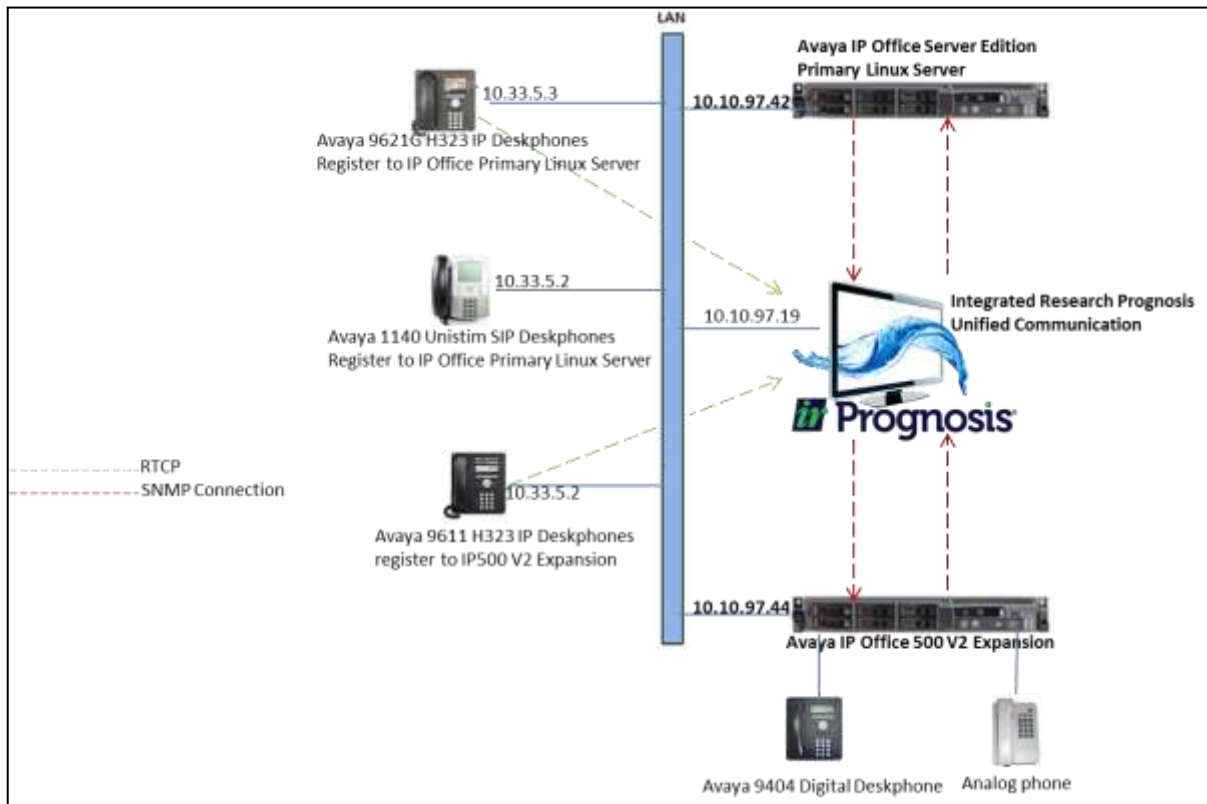


Figure 1: Test Configuration Diagram

4. Equipment and Software Validated

The following equipment and software were used for the compliance test provided:

Equipment/Software	Release/Version
Avaya IP Office Server Edition on Primary Linux server	9.1 Build 437
Avaya IP Office 500 V2 Expansion	9.1 Build 437
Avaya 9621G SIP IP Deskphone	6.4
Avaya 1140 SIP IP Deskphone	4.4.18
Avaya 9611 H323 IP Deskphone	6.4
Avaya 9404 Digital Deskphone	2.2
Integrated Research Prognosis Unified Communication	Version 10.3

Note: Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 and also when deployed with IP Office Server Edition in all configurations.

5. Configure Avaya IP Office Server Edition

The initial administration of IP Office is assumed to be in place and will not be covered here. This section only covers the following configuration that is required for the purpose of administering connections to Prognosis:

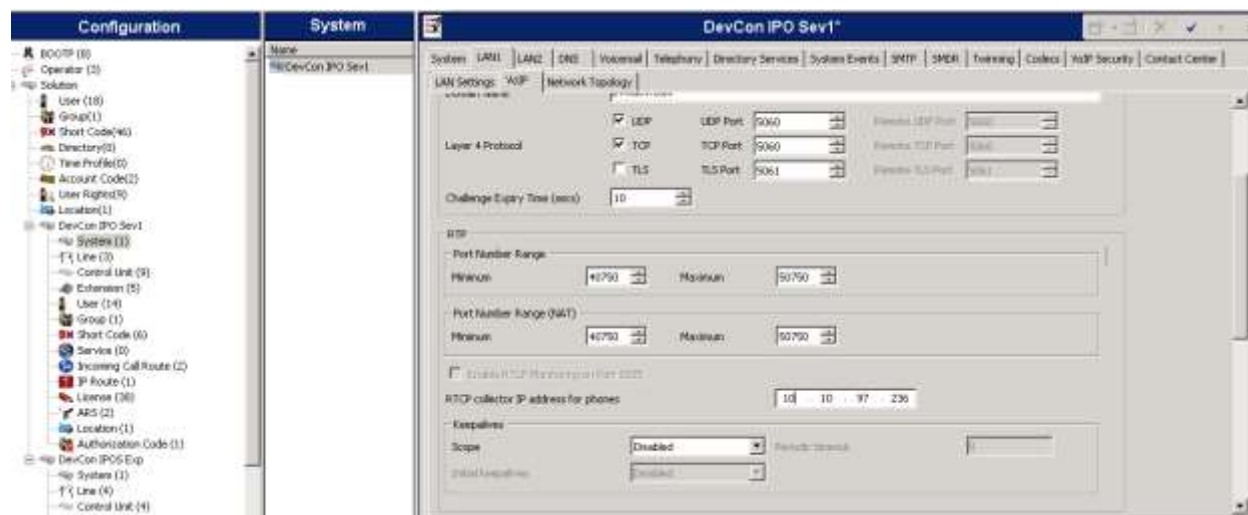
- Configure RTCP
- Configure SNMP

5.1. Configure RTCP

This section describes step to configure the dual-unicast functionality to send RTCP packets to Prognosis.

On system window, click **LAN1 → VoIP**. In the **RTCP collector IP Address for phones** section, enter Prognosis IP address, in this example it is: **10.10.97.236**. This will instruct Avaya H323 phones at registration to send their RTCP monitoring messages to Prognosis as shown below. Click **OK** (not shown) to save any changes.

Repeat same steps on the 500 V2 Expansion server.



5.2. Configure SNMP

This section describes steps to configure SNMP Agent and to configure IP Office to send traps to Prognosis.

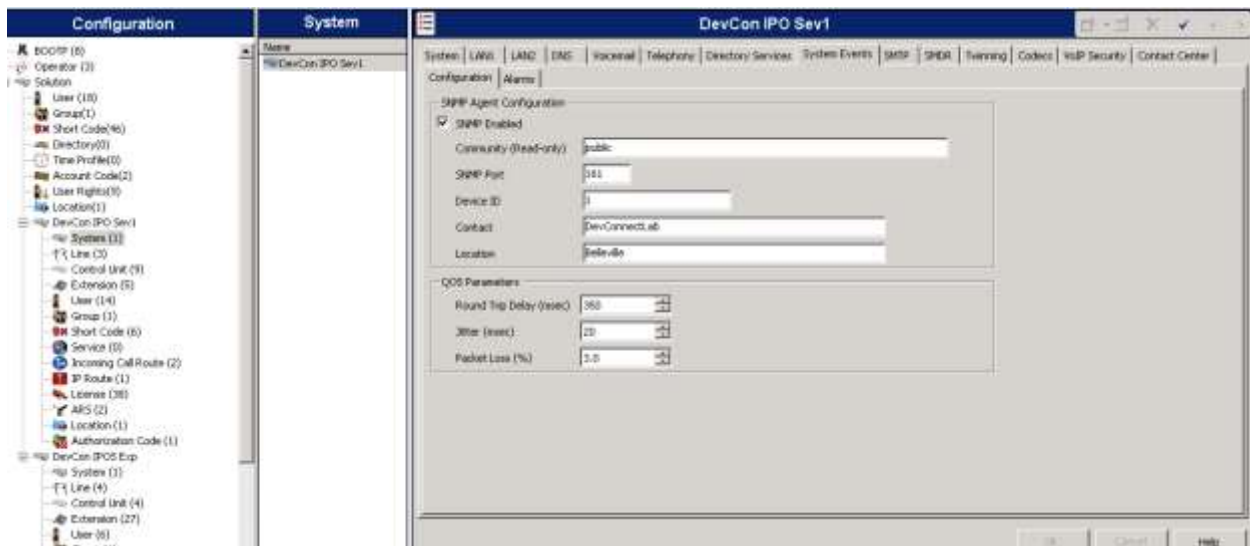
5.2.1. Configure SNMP Agent

On system window, click on **System Events** → **Configuration**, check **SNMP Enabled** checkbox. Enter the following information:

- **Community (Read-only):** enter community string, example: **public**.
- **SNMP Port:** use default port **161**.
- **Device ID:** use default value.
- **Contact:** enter any descriptive name, example: **DevConnectLab**.
- **Location:** enter any descriptive name for location, example: **Belleville**.

Click **OK** and save the configuration to apply the change.

Repeat same steps on the 500 V2 Expansion.



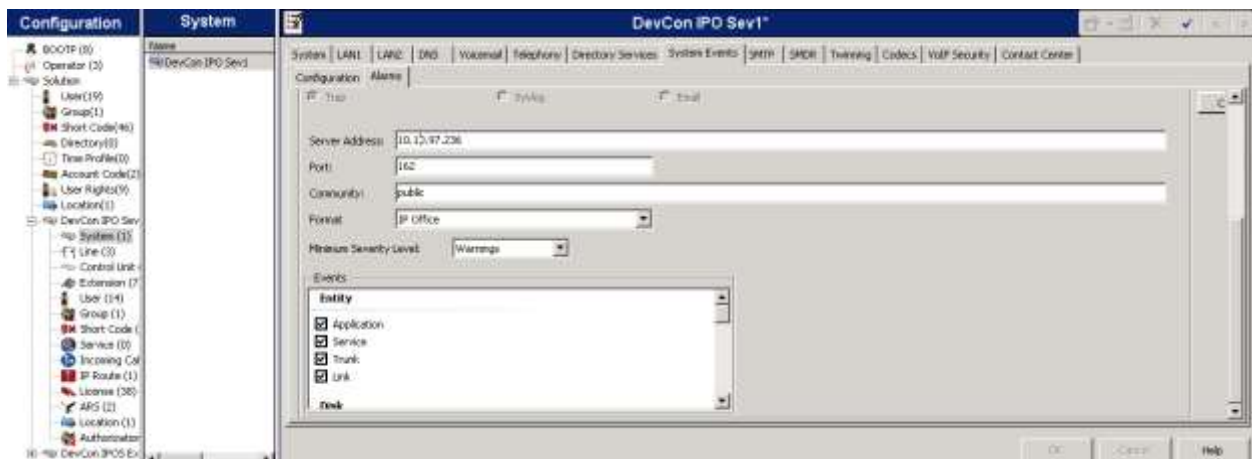
5.2.2. Configure Avaya IP Office to send SNMP traps to Prognosis

On system window, click **System Events** → **Alarms**, click on **Add ...** button to add new trap. Enter the following detail for alarm:

- **Destination:** select type **Trap**.
- **Server Address:** enter the IP address of the Prognosis.
- **Port:** use default value **162**.
- **Community:** enter string configured above, ex: **public**.
- **Minimum Severity Level:** select **Warnings**. The events with severity level lower than this will not be collected and sent.
- **Events:** Select types of system events that should be collected and sent, example: all events are selected.

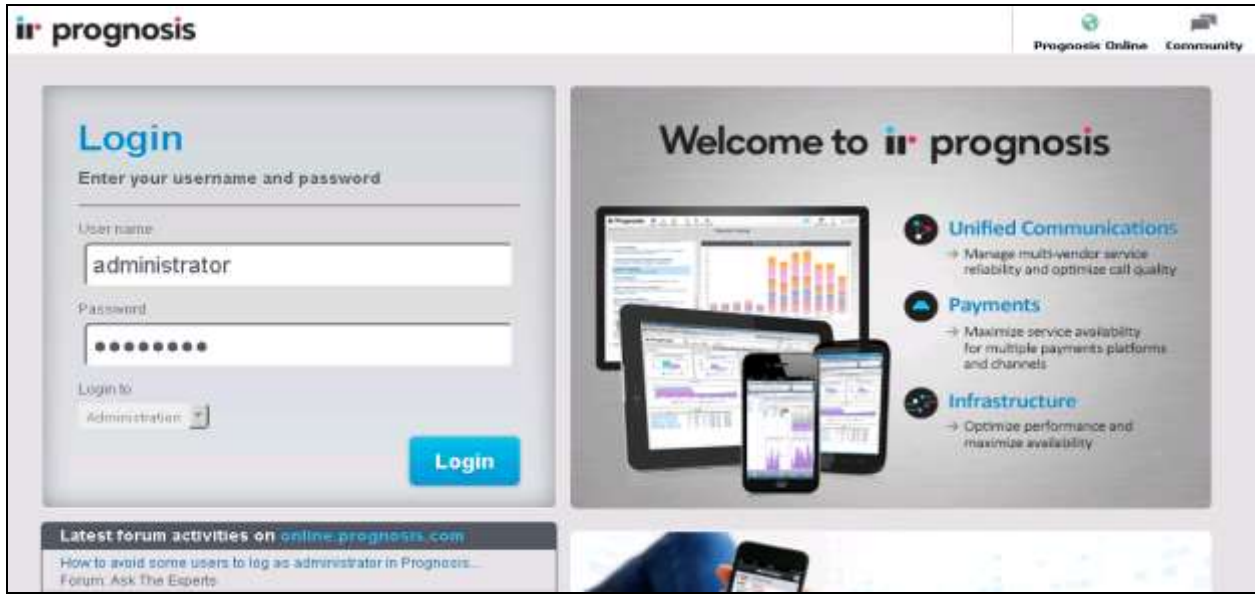
To activate the new trap, make sure that the configuration is saved (**File** → **Save Configuration** or **Ctrl + S**) and choose the option to reboot the physical box immediately.

Repeat same steps on the 500 V2 Expansion.

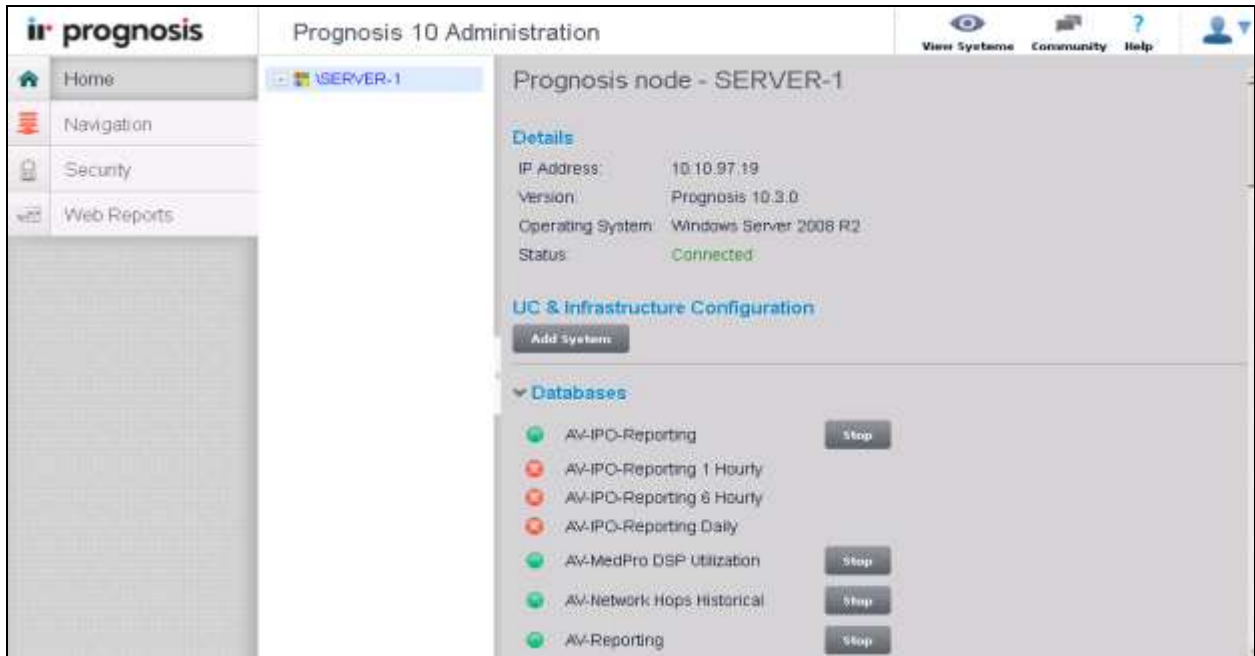


6. Configure Prognosis

This section describes the configuration of Prognosis required to interoperate with IP Office. Log in to the Prognosis with administrative privileges. Launch the Prognosis Administration by clicking **Start → All Programs → Prognosis → Administration** and log in with the appropriate password.



The **Prognosis 10 Administration** homepage is displayed as shown below.



Click **Add System** button. In the resulting page, select Avaya IP Office from the PBXs drop down list and click on **Add** button. In the **Add Avaya IP Office** page, enter the following details:

- **Display name:** enter any descriptive name
- **IP Address:** enter IP Office IP address, example: **10.10.97.42**
- **Platform:** select **Server Edition** from the drop down list.
- **SNMP Connection Details:** check **Use SNMP version 2c** option.
- **Community String:** enter string configured in Section **5.2.1**, ex: **public**.

Press **Add** at the bottom to add the Avaya IP Office (not show). The following screen was captured after IP Office Primary was added.

The screenshot shows the Prognosis 10 Administration interface. The left sidebar contains navigation links for Home, Navigation, Security, and Web Reports. The main content area is titled 'Prognosis 10 Administration' and displays a tree view of systems including 'IPOSer42'. The 'Update Avaya IP Office' configuration page is active, showing the following details:

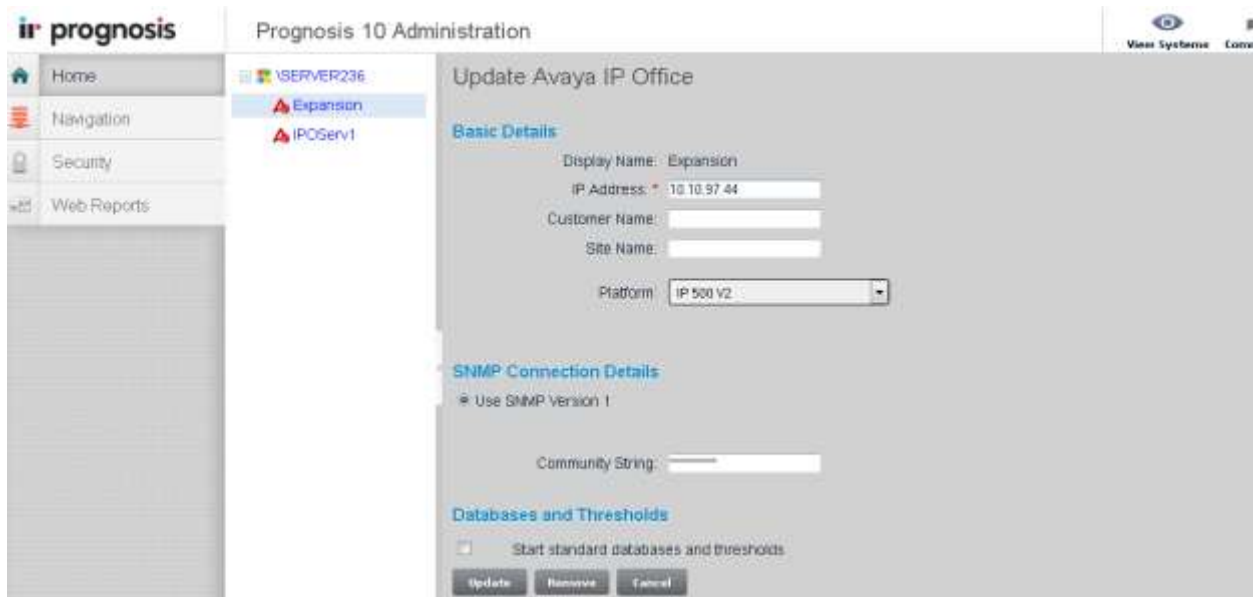
- Basic Details:**
 - Display Name: IPOSer42
 - IP Address: * 10.10.97.42
 - Customer Name: [Empty field]
 - Site Name: [Empty field]
 - Platform: Server Edition (dropdown menu)
- SNMP Connection Details:**
 - Use SNMP Version 1:
 - Use SNMP Version 2c:
 - Use SNMP Version 3:
 - Community String: [Masked field]
- Databases and Thresholds:**
 - Start standard databases and thresholds:

Buttons at the bottom: Update, Remove, Cancel.

Click **Add System** button. In the resulting page, select Avaya IP Office from the PBXs drop down list and click on **Add** button. In the **Add Avaya IP Office** page, enter the following details:

- **Display name:** enter any descriptive name, example: **Expansion**
- **IP Address:** enter IP Office IP address, example: **10.10.97.44**
- **Platform:** select **IP 500 V2** from the drop down list.
- **SNMP Connection Details:** check **Use SNMP version 1** option.
- **Community String:** enter string configured in Section **5.2.1**, ex: **public**.

Press **Add** at the bottom to add the Avaya IP Office (not shown). The following screen was captured after IP Office Expansion was added.



7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of IP Office and Prognosis. Launch Prognosis View System to open the Prognosis web user interface, by entering <https://ip-address:8081> in browser address bar where **ip-address** is Prognosis IP address. Enter appropriated login credential to login (not shown).

Browse to **PBXs → Avaya IP Offices** in the left navigation pane. The IP Office server instances are displayed in the middle column, one item for Primary Server and one for 500 V2 Expansion server. The **Avaya IP Office Overview** page shows general status of all monitored IP Office systems such as IP Office Server name, IP Address, Cont (Contactable), etc ... as shown below.

Verify the **Cont** column has **Yes** status displayed for all the systems, which indicates that Prognosis is able to contact each IP Office system via SNMP.



Avaya IP Office Systems						
Name	Customer	Site	Cont	This Hour	ToGo	IP Address
EXPANSION			Yes	100.00	100.00	10.10.97.44
IPOSERV1			Yes	100.00	100.00	10.10.97.41

8. Conclusion

These Application Notes describe the procedures for configuring the Integrated Research Prognosis for Unified Communications 10 to interoperate with Avaya IP Office Server Edition. During compliance testing, all test cases were completed successfully.

9. Additional References

The following Avaya documentations can be obtained on the <http://support.avaya.com>.

1. *Administering Avaya IP Office™ Platform with Manager Release 9.1.0 Issue 10.04 February 2015*

The following Prognosis documentations are provided by Integrated Research. Documents are also provided in the online help that comes with the software Package.

2. *Prognosis_Avaya_IP Office Test Plan v1.1.docx.*

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