



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

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# **Application Notes for Lenovo ThinkCentre M58 Desktop with Avaya Aura™ Communication Manager and Avaya IP Agent – Issue 1.0**

### **Abstract**

These Application Notes describe a solution comprised of Avaya IP Agent running on Lenovo ThinkCentre M58 Desktop and Avaya Aura™ Communication Manager. During compliance testing, the features of Avaya IP Agent were verified.

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 a solution comprised of Avaya IP Agent running on Lenovo ThinkCentre M58 Desktop and Avaya Aura™ Communication Manager. The Lenovo ThinkCentre M58 Desktop is an enterprise-friendly desktop designed to give users the power they need to be productive, while granting IT managers the tools they need to maximize efficiency and manage total cost of ownership.

## 1.1. Interoperability Compliance Testing

The compliance testing focused on evaluating the features of Avaya IP Agent while running on the Lenovo ThinkCentre M58 Desktop in a contact center environment. Avaya IP Agent was configured to run in the Road Warrior configuration (Voice-over-IP) during testing. A headset with integrated microphone connected to the Lenovo desktop's on-board sound card allows the agent to converse in a call. The following features were tested:

- Installation, removal and upgrade of Avaya IP Agent.
- Performing call operations using the default and alternate user interfaces (Auto-Answer, Mini and Titlebar).
- Performing call operations using the buttons and drag-and-drop (where applicable).
- Accessing voicemail using the Avaya IP Agent Dialpad.
- Displaying contact center queue information using VuStats.
- Instant messaging between the agents and tracking the presence states of agents.
- Launching applications using Launch Toolbar.
- Create and use of agent greetings for incoming calls.

The following call operations were tested:

- Agent Login / Logout
- Changing agent work modes (Auto-In, Manual-In, ACW, AUX)
- Answer
- Release
- Hold / Reconnect
- Transfer (Basic, Unsupervised, Enhanced)
- Conference (Basic, Enhanced)
- Making calls using Recent Calls list, Contact Directory and Click-to-Dial in Internet Explorer

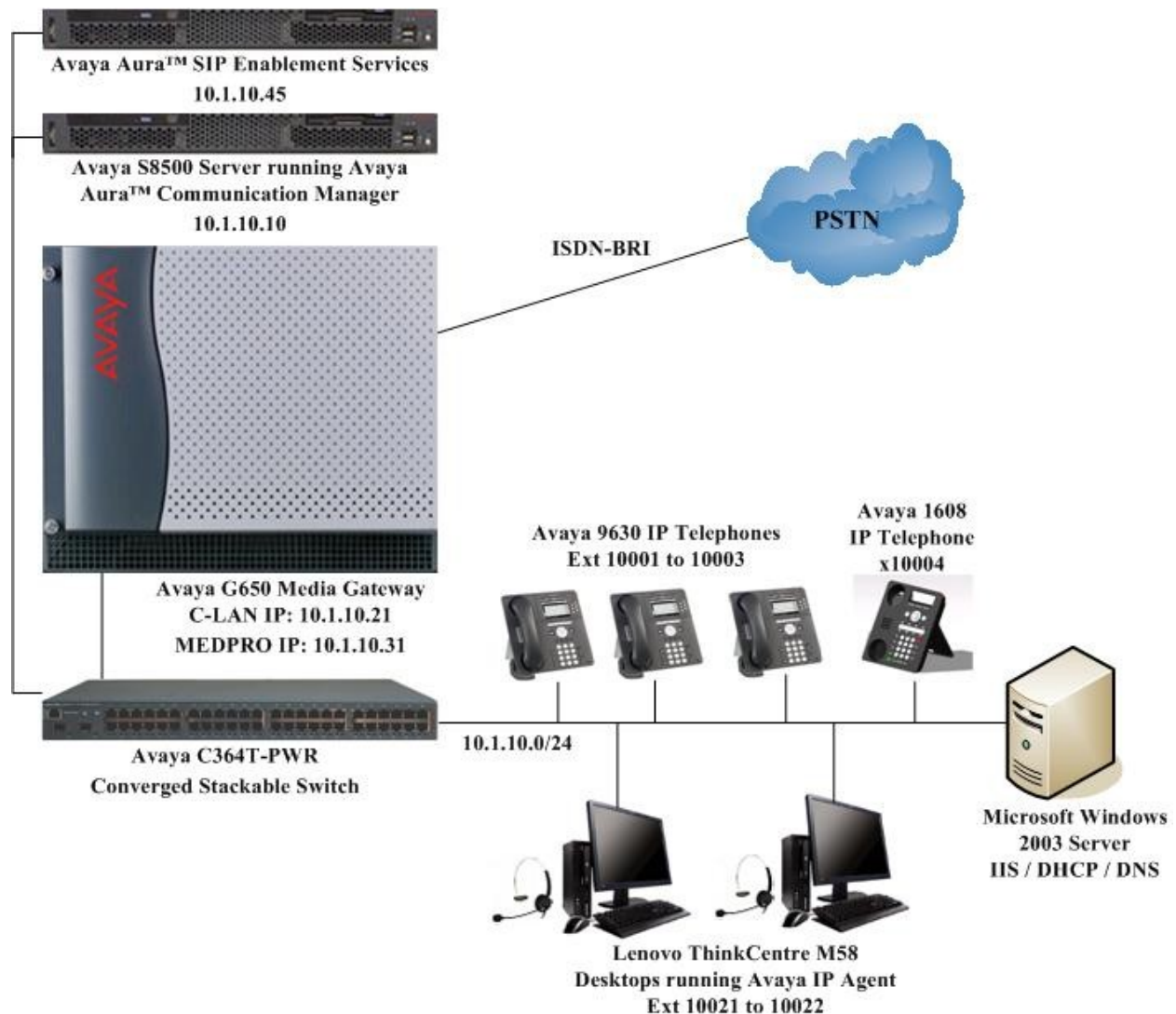
For serviceability testing, network problems such as LAN cable disconnect at different points were simulated and the recovery of Avaya IP Agent was verified.

## 1.2. Support

For technical support on ThinkCentre M58 Desktop, contact Lenovo by visiting the website <http://www.lenovo.com/> to obtain the customer support telephone number in the country of residence.

## 2. Reference Configuration

**Figure 1** illustrates a sample configuration consisting of Communication Manager running on an Avaya S8500 Server with the Avaya G650 Media Gateway and the Lenovo ThinkCentre M58 Desktops running Avaya IP Agent. The Avaya Aura™ SIP Enablement Services was included to provide Instant Messaging feature to the Avaya IP Agent. For completeness, Avaya 9630 IP Telephones and an Avaya 1608 IP Telephone were included to demonstrate calls between Avaya IP Agent and the Avaya telephones. An Avaya C364T-PWR Converged Stackable Switch provides network connectivity to the Avaya servers, Lenovo desktops and IP telephones.



**Figure 1: Sample Configuration**

### 3. Equipment and Software Validated

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

Equipment	Software / Firmware
Avaya S8500 Server	Communication Manager 5.2 (Service Pack 02.0.947.3-17250)
Avaya G650 Media Gateway <ul style="list-style-type: none"><li>- TN2312BP IP Server Interface</li><li>- TN799DP C-LAN</li><li>- TN2602AP IP Media Processor</li><li>- TN2302AP IP Media Processor</li></ul>	HW07, FW046 HW01, FW032 HW02, FW048 HW20, FW120
Avaya Aura™ SIP Enablement Services	5.2
Avaya 9630 IP Telephone	3.0 (H.323)
Avaya 1608 IP Telephone	1.1.0.0 (H.323)
Avaya IP Agent	7.0.32.198
Avaya C364T-PWR Converged Stackable Switch	4.5.18
Lenovo ThinkCentre M58 Desktop (Small Form Factor)	Microsoft Windows Vista Business with Service Pack 1
Lenovo ThinkCentre M58 Desktop (Eco Ultra-Small Form Factor)	Microsoft Windows XP Professional with Service Pack 3

### 4. Configure Avaya Aura™ Communication Manager

Communication Manager provided connectivity to the PSTN and ACD contact center functionality. For PSTN connectivity, an ISDN-BRI trunk was used. This required the BRI trunk board and a trunk group to be configured. For all calls between the Avaya IP Agent and IP telephones, the G.711MU IP codec was used.

Communication Manager also required the configuration of a Vector Directory Number (VDN), Vector, Hunt Group/Skill, and Agent Login IDs for the ACD contact center functionality. In addition, an IP station was required for each Avaya IP Agent user.

The configuration of Communication Manager is outside the scope of these Application Notes, refer to [1], [2], [3] and [4] for information on configuring an ACD contact center and the station for Avaya IP Agent. For this configuration, stations with the **Type** field set to the recommended **8434D** were used, but other supported telephone types can also be used. For a list of supported telephone types, refer to [5].

## 5. Configure Avaya IP Agent

Avaya IP Agent is a software application with advanced telephony features for agents in a contact center. Avaya IP Agent was configured to run in the Road Warrior configuration (Voice-over-IP) during testing. This allows the network and audio features of the Lenovo desktops to be exercised during testing. The installation, configuration and usage of the Avaya IP Agent on the Lenovo ThinkCentre M58 Desktop follow the standard procedure and are described in detail in [5].

## 6. Configure Lenovo ThinkCentre M58 Desktop

The Lenovo ThinkCentre M58 Desktops are pre-loaded with either Microsoft Windows XP Professional or Microsoft Windows Vista Business. No additional software and configurations are required to run the Avaya IP Agent software.

## 7. General Test Approach and Test Results

The general test approach was to exercise the various features of the Avaya IP Agent using its graphical user interface (GUI) and verifying that the required operations were performed correctly and without any errors while running on the Lenovo ThinkCentre M58 Desktop. All feature tests were performed manually.

For serviceability testing, failures such as disconnecting the LAN cables to the Lenovo desktops and Communication Manager were applied to verify that Avaya IP Agent recovers gracefully.

All test cases were successfully completed.

## 8. Verification Steps

From the Communication Manager System Access Terminal (SAT) interface, verify that Avaya IP Agent users were successfully registered by using the **list registered-ip-stations** command.

```
list registered-ip-stations
```

### REGISTERED IP STATIONS

Station Ext or Orig Port	Set Type/ Net Rgn	Prod ID/ Release	TCP Skt	Station IP Address/ Gatekeeper IP Address
10001	9630 1	IP_Phone 3.0020	y	10.1.10.161 10.1.10.21
10021	8434D 1	IP_Agent 7.0	y	10.1.10.153 10.1.10.21
10022	8434D 1	IP_Agent 7.0	y	10.1.10.152 10.1.10.21

Placed incoming and outgoing calls using the Avaya IP Agent and verify that the calls were placed successfully.

## 9. Conclusion

These Application Notes describe a compliance tested solution comprised of Avaya IP Agent running on Lenovo ThinkCentre M58 Desktop and Avaya Aura™ Communication Manager. All test cases were completed successfully.

## 10. Additional References

The following document can be found at <http://support.avaya.com>:

- [1] *Avaya Aura™ Communication Manager Feature Description and Implementation*, Release 5.2, Issue 7, May 2009, Document Number 555-245-205.
- [2] *Administering Avaya Aura™ Communication Manager*, Release 5.2, Issue 5.0, May 2009, Document Number 03-300509.
- [3] *Avaya Aura™ Call Center 5.2 Automatic Call Distribution Reference*, Release 5.2, April 2009, Document Number 07-602568.
- [4] *Avaya Aura™ Call Center 5.2 Call Vectoring and Expert Agent Selection (EAS) Reference*, Release 5.2, April 2009, Document Number 07-602568.
- [5] *Avaya IP Agent Installation and User Guide*, Release 7.0, Issue 1.1, August 2007.

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