



## Avaya Solution & Interoperability Test Lab

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# **Application Notes for ProTel Communications spotlight Agile Workspace Management with Avaya Communication Manager and Avaya Application Enablement Services - Issue 1.0**

### **Abstract**

These Application Notes describe the procedures for configuring ProTel Communications spotlight Agile Workspace Management (AWM) to successfully interoperate with Avaya Communication Manager 3.0 and Avaya Application Enablement Services (AES).

ProTel spotlight AWM is an Enterprise Collaboration Portal solution. spotlight AWM offers tight integration with the Avaya Communication Manager through TSAPI Services. During compliance testing, feature functionalities were validated and performance testing was conducted to verify operation under load.

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

# 1. Introduction

These Application Notes describe a compliance-tested configuration of Avaya Communication Manager 3.0 and Avaya Application Enablement Services 3.0 with ProTel Communications spotlight Agile Workspace Management (AWM) 3.0.

The table below summarizes spotlight AWM customer benefits:

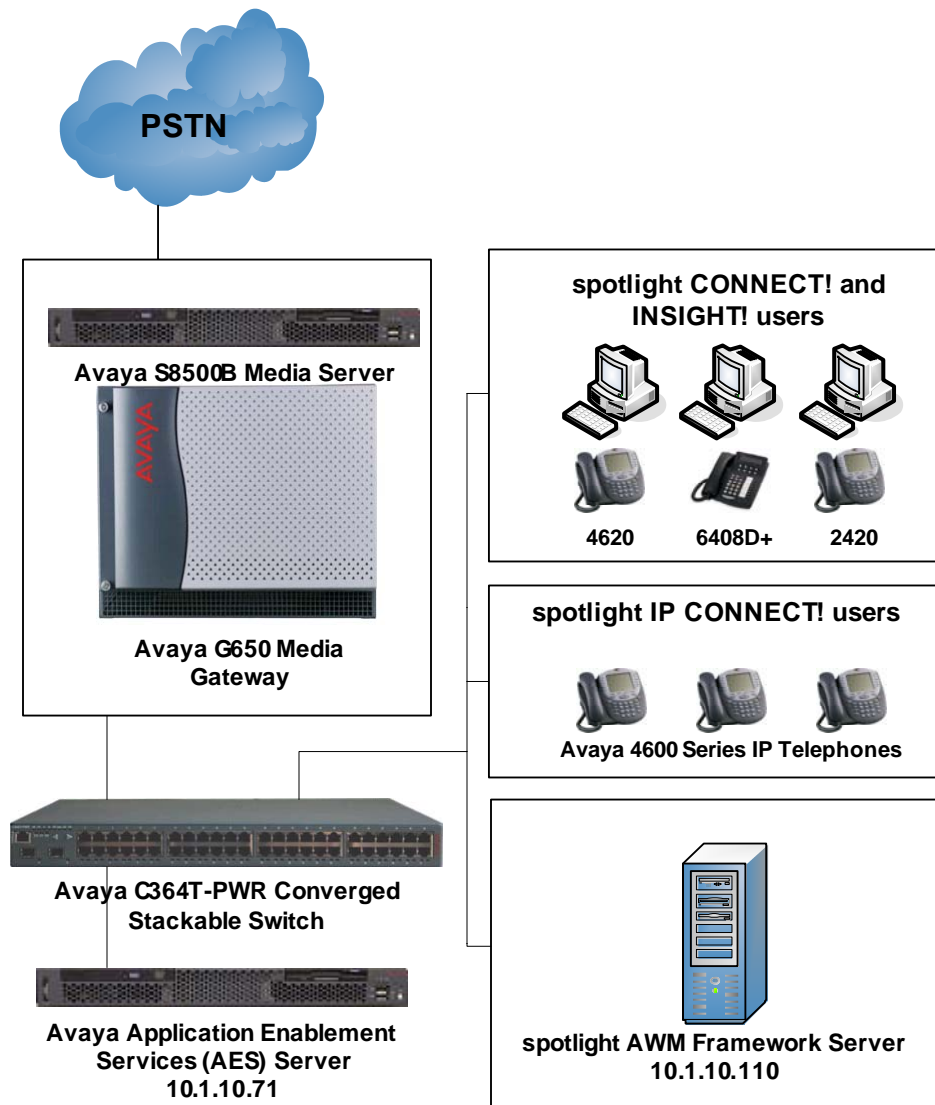
Call Center Environment	Enterprise Environment
<ol style="list-style-type: none"><li>1. Allowing Supervisors to <b>broadcast messages</b> to individual or group of agents based on the skills and status of the agents, (e.g. send a text message to all agents in not-ready mode to make themselves ready)</li><li>2. Non-intrusively, supervisors can <b>coach</b> the agents via Instant Messaging on an individual or group basis in a lively and interactive manner.</li><li>3. Without putting the customers on hold, Agents can request via IM for help from Supervisors, other agents or from <b>Knowledge Workers</b> in the back-office.</li><li>4. Other advantages include;<ul style="list-style-type: none"><li>• Zero installations/upgrades/service at agent desktops,</li><li>• Integration with Avaya CMS agents skill profiles and groups,</li><li>• Support for both ACD and PDS agents,</li><li>• Messaging Audit Trails, and</li><li>• Searching and Grouping agents based on skills and organization units.</li></ul></li></ol>	<ol style="list-style-type: none"><li>1. Allowing Sales Managers to <b>broadcast important messages</b> to members of sales team in both <b>on-line</b> and <b>off-line</b> manner, or even to mobile phones via <b>SMS</b>.</li><li>2. When the called party is engaged on a phone conversation, a <b>text-message</b> can be sent to <b>notify important information</b>. Text-messages can be sent to a PC or to an <b>IP Telephone</b> (i.e. Avaya 4620 or above).</li><li>3. <b>Virtual IM meeting rooms</b> setup between colleagues can be a good alternative to a long distance conference calls for <b>internal meetings</b>, whilst the phones remains available for receiving calls from important customers.</li><li>4. Other advantages include;<ul style="list-style-type: none"><li>• Browser-based UI allowing easy access from Home and Overseas,</li><li>• Messaging Audit Trails,</li><li>• integration with Avaya S8300/S8700 and Avaya DEM,</li><li>• Call Logs,</li><li>• Phone Book,</li><li>• Soft phone,</li><li>• Multi-user Chat Rooms, and</li><li>• Search for Colleagues based on skill set.</li></ul></li></ol>

The three primary spotlight applications are:

- spotlight CONNECT! – provides browser-based access to the spotlight AWM features from PCs.
- spotlight IP CONNECT! – provides access to a specific set of spotlight AWM features from Avaya 4600 Series IP Telephones.
- spotlight INSIGHT! – provides browser-based access to spotlight AWM manager or call center supervisor specific features.

For more detailed product information, please refer to <http://www.protelnet.com/spotlight.htm>.

As shown in Figure 1, the spotlight AWM Framework Server uses TSAPI services through its interface to the Avaya AES to provide telephony-related services via its browser-based user interface to spotlight users. It also runs a TFTP server for the 4600 Series IP Telephones to download script files, application files, and settings files. In this example configuration, seven PCs and various models of the Avaya 4600 Series IP Telephones were used to emulate the user desktop environment.



**Figure 1: spotlight AWM Compliance Test Sample Configuration**

## 2. Equipment and Software Validated

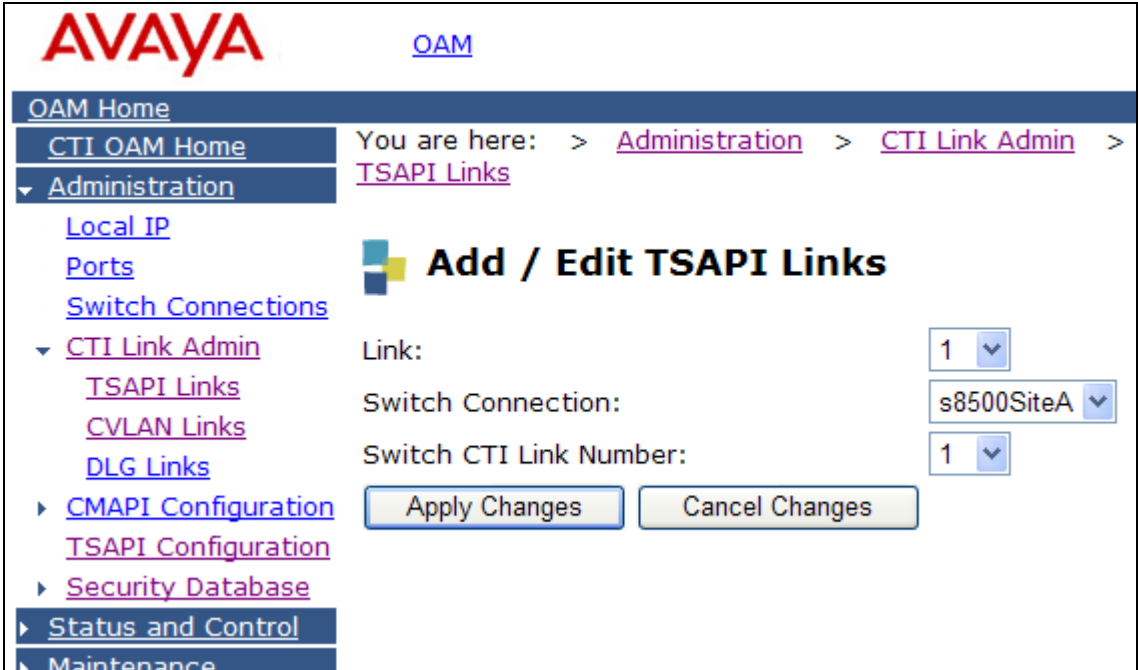
The following equipment and software were used for the sample configuration provided:

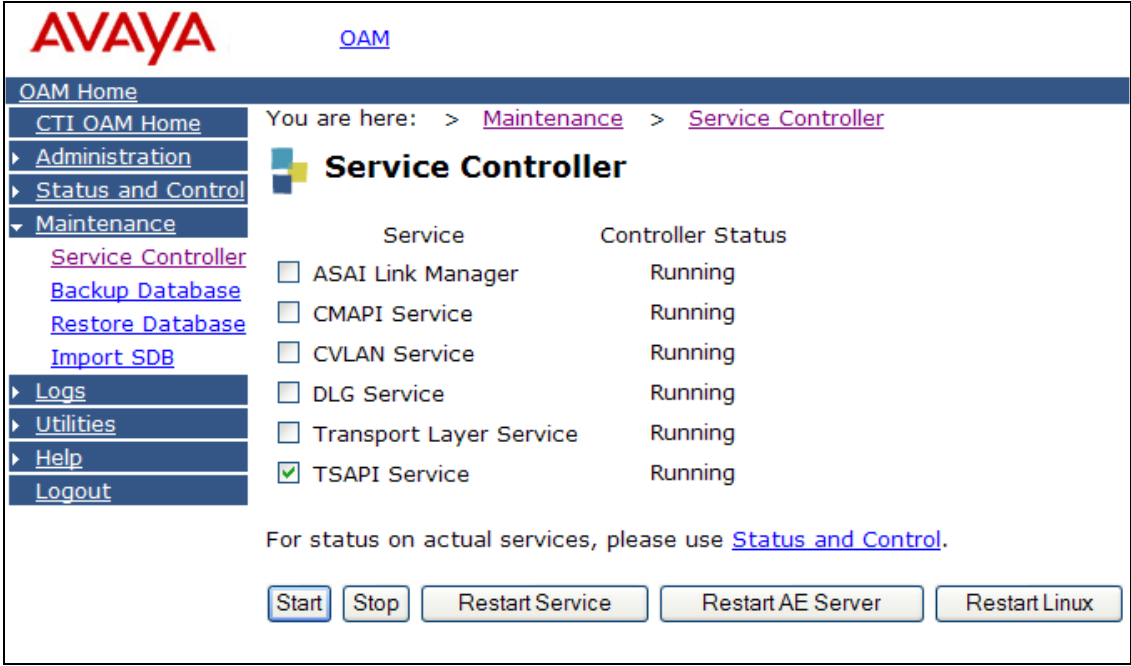
Equipment	Software
Avaya S8500B Media Server	3.0 (R013x.00.1.346.0)
Avaya G650 Media Gateway <ul style="list-style-type: none"><li>TN2312BP IP Server Interface</li><li>TN799DP C-LAN Interface</li><li>TN2302AP IP Media Processor</li></ul>	- HW07, FW022 HW01, FW015 HW20, FW107
Avaya Application Enablement Services	r3-0-0-build-50-1-0
Avaya 4600 Series IP Telephones	2.3 (4610SW) 2.3 (4620SW) 2.3 (4621SW) 2.5 (4625SW)
Avaya 6400/2400 Series Digital Phones	-
Avaya C364T-PWR Converged Stackable Switch	4.3.12
ProTel spotlight Agile Workspace Management	3.0

### 3. Configure the Avaya Communications Manager and Avaya Application Enablement Services TSAPI Link Support

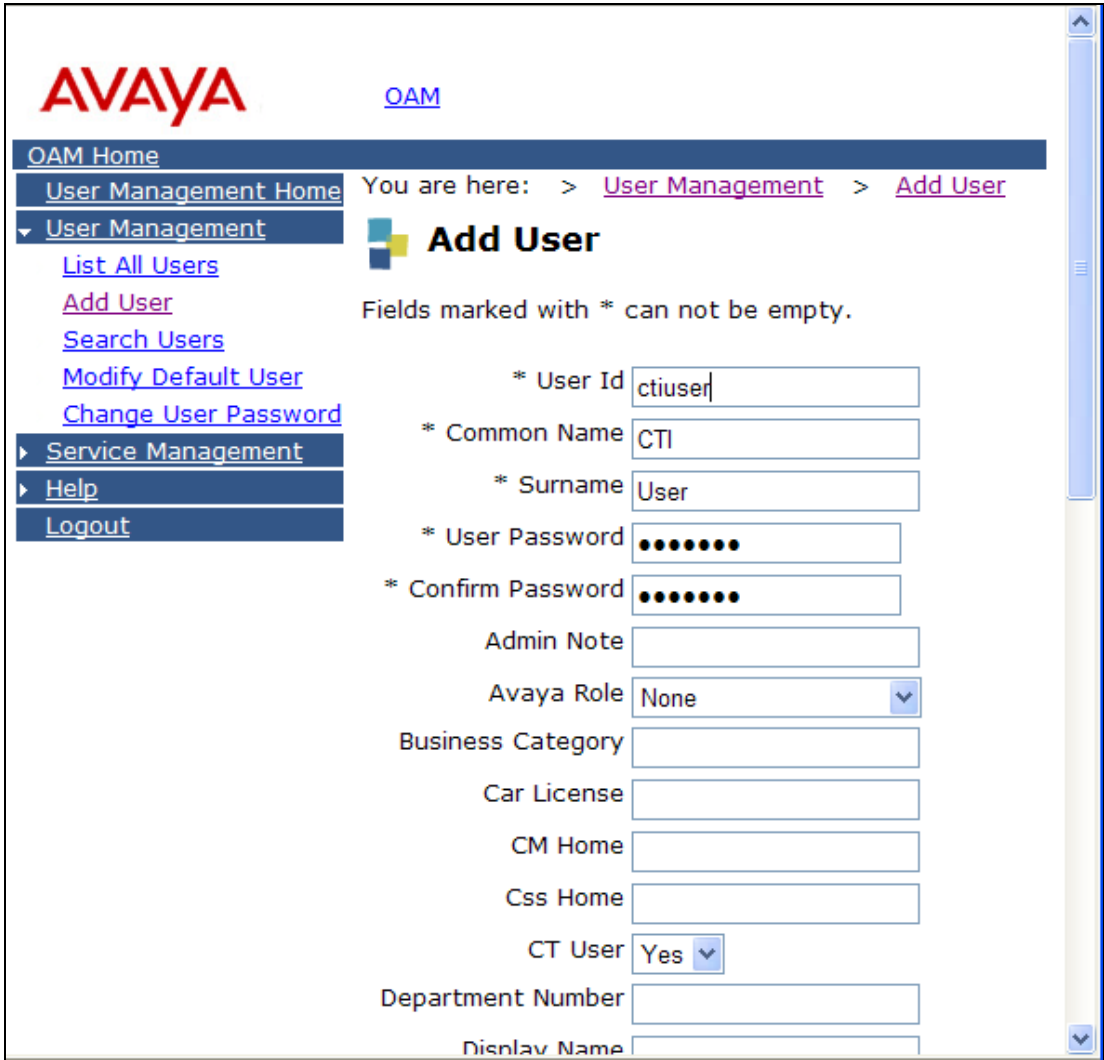
The section shows the configuration of the TSAPI services link and user configuration for spotlight AWM access to the TSAPI services. Please see **Application Notes for the Mercom Audiolog 3.3 Call Recording Server with Avaya Communication Manager 3.0 and Avaya Application Enablement Services 3.0 – Issue 1.0<sup>1</sup>** for a more detailed example of Avaya Communication Manager and Avaya AES configuration for TSAPI.

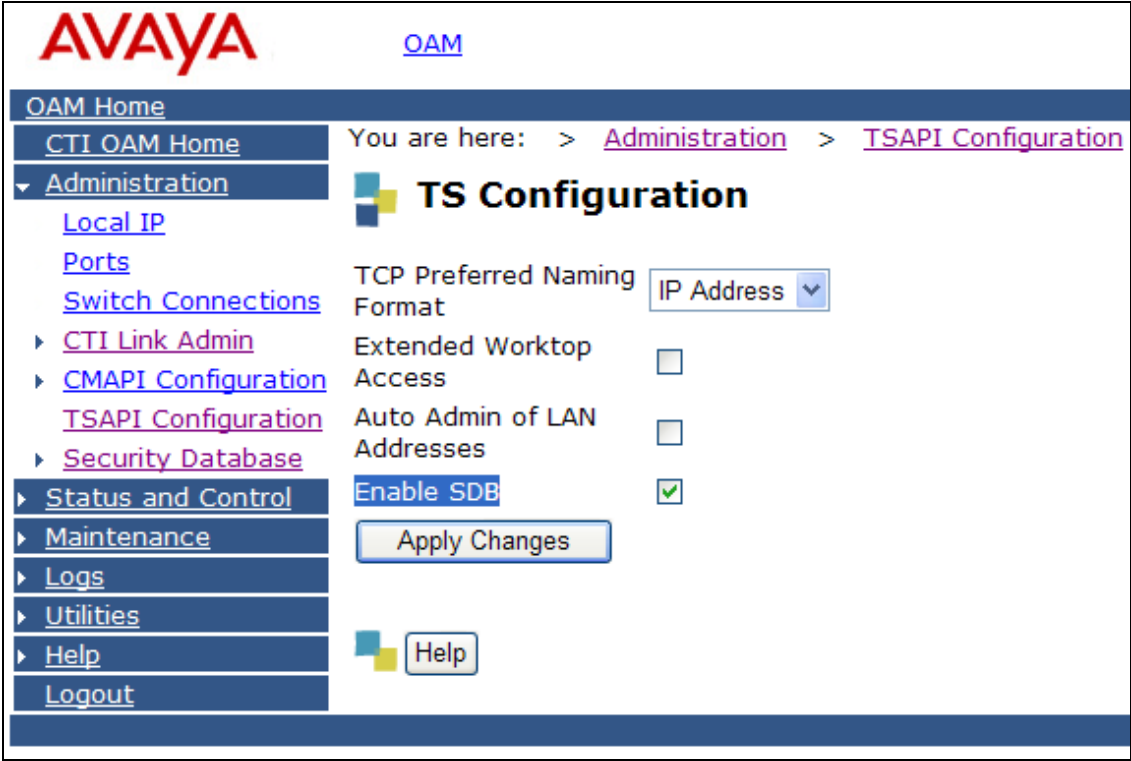
Step	Description
	<b>Administer the CTI Link on Avaya Communication Manager</b>
1.	<p>Log in to Avaya Communication Manager. Type the command <b>add cti-link next</b>. On page 1 of the form, note down the <b>CTI Link</b> number, which must match the <b>Switch CTI Link Number</b> field in Step 2. Assign a <b>Name</b> and <b>Extension</b> valid under the provisioned dial plan and set <b>Type</b> to <b>ADJ-IP</b>.</p> <div><div>add cti-link next</div><div>CTI LINK</div><div>Page 1 of 2</div><div>CTI Link: 1</div><div>Extension: 19001</div><div>Type: ADJ-IP</div><div>COR: 1</div><div>Name: AES TSAPI Svc</div></div>

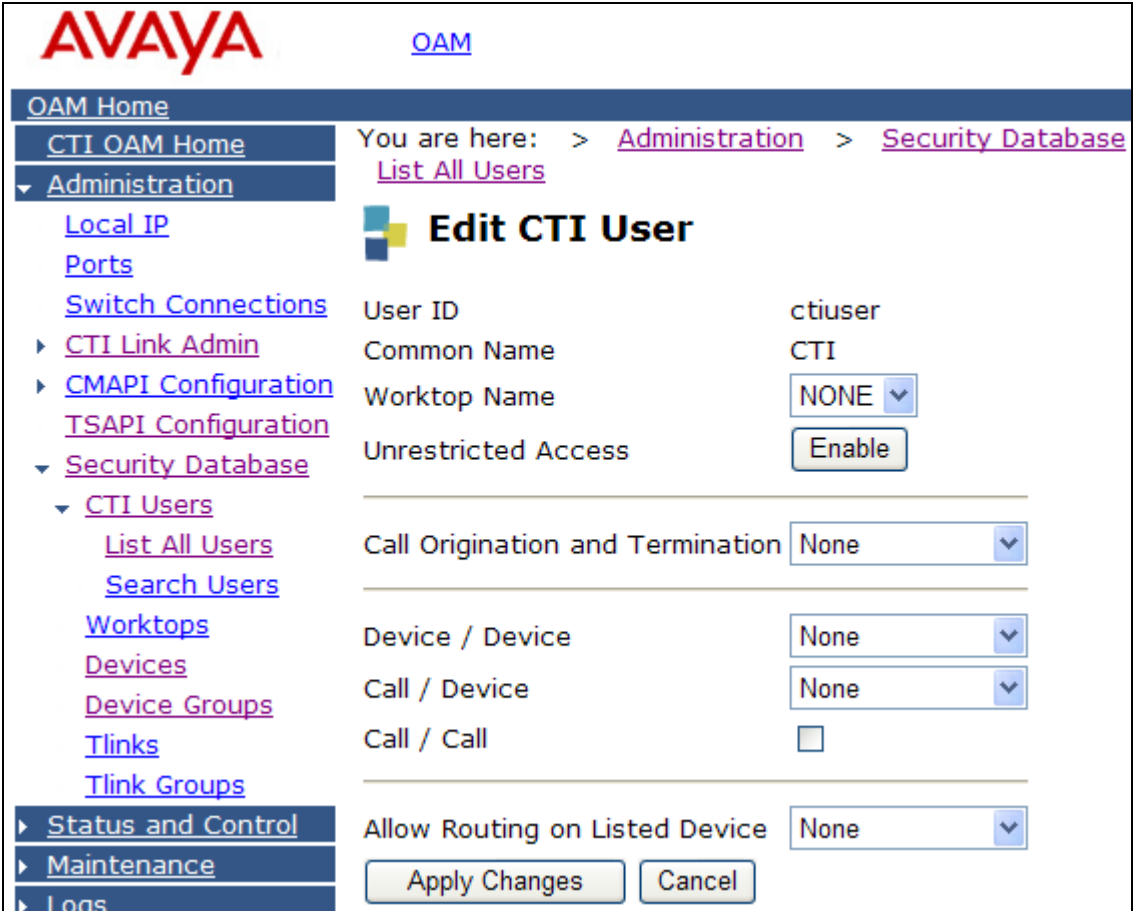
Step	Description
	<b>Administer the TSAPI Link on Avaya Application Enablement Services</b>
2.	<p>The Avaya AES is configured using a web browser. Set the URL of the browser to <a href="https://&lt;AES IP Address&gt;:8443/MVAP">https://&lt;AES IP Address&gt;:8443/MVAP</a> and log in with a valid username and password. Select <b>CTI OAM Admin</b> → <b>Administration</b> → <b>CTI Link Admin</b> → <b>TSAPI Links</b> and click <b>Add Link</b>. Select an available Link and the appropriate <b>Switch Connection</b>. Select the <b>Switch CTI Link Number</b> corresponding to the CTI Link number in Step 1. Click <b>Apply Changes</b>. In the <b>Apply Changes to Link</b> page that follows, click <b>Apply</b>.</p> 

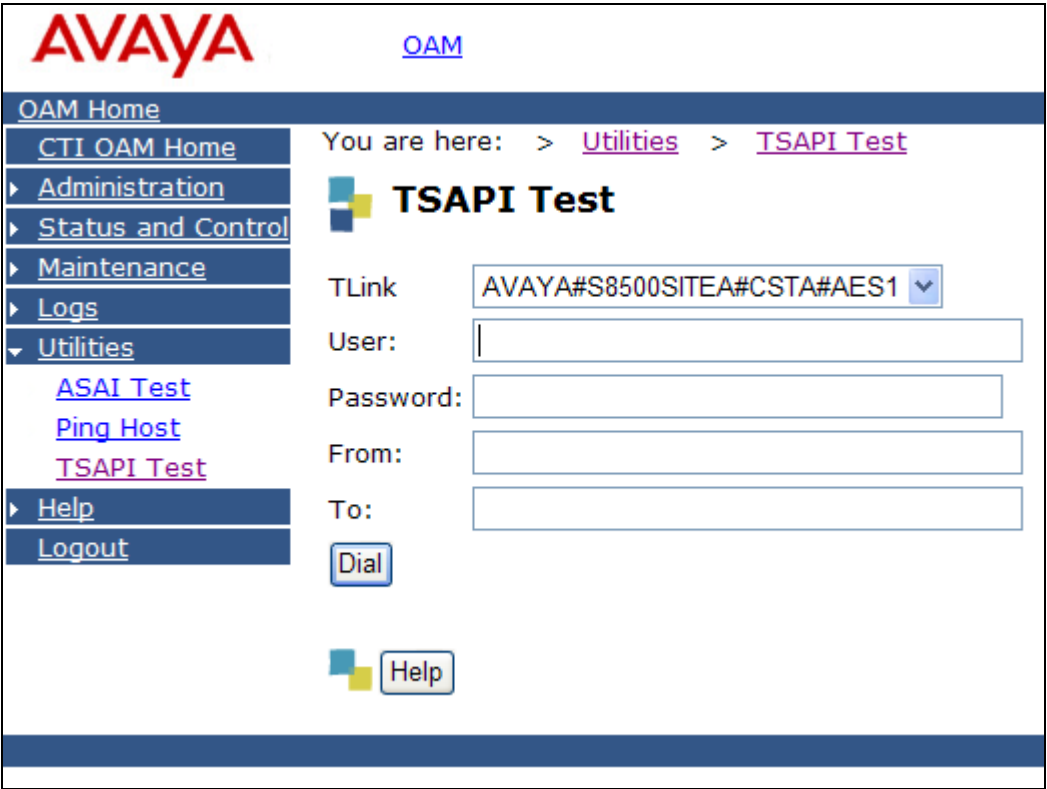
Step	Description														
3.	<p>To restart the TSAPI Service, select <b>Maintenance</b> → <b>Service Controller</b>. From the <b>Service Controller</b> page, select <b>TSAPI Service</b>, and click <b>Restart Service</b>. In the Restart Service page that follows, click <b>Restart</b> to confirm the action. This completes the procedure to administer the TSAPI link on Avaya Enablement Services.</p>  <p>The screenshot shows the Avaya OAM interface. At the top is the Avaya logo and a link to OAM. Below is a navigation bar with 'OAM Home' and a breadcrumb trail: 'You are here: &gt; Maintenance &gt; Service Controller'. A left-hand menu is expanded to 'Maintenance', showing sub-links like 'Service Controller', 'Backup Database', 'Restore Database', 'Import SDB', 'Logs', 'Utilities', 'Help', and 'Logout'. The main content area is titled 'Service Controller' and contains a table with the following data:</p> <table border="1"> <thead> <tr> <th>Service</th> <th>Controller Status</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> ASAI Link Manager</td> <td>Running</td> </tr> <tr> <td><input type="checkbox"/> CMAPI Service</td> <td>Running</td> </tr> <tr> <td><input type="checkbox"/> CVLAN Service</td> <td>Running</td> </tr> <tr> <td><input type="checkbox"/> DLG Service</td> <td>Running</td> </tr> <tr> <td><input type="checkbox"/> Transport Layer Service</td> <td>Running</td> </tr> <tr> <td><input checked="" type="checkbox"/> TSAPI Service</td> <td>Running</td> </tr> </tbody> </table> <p>Below the table, a note states: 'For status on actual services, please use <a href="#">Status and Control</a>.' At the bottom, there are five buttons: 'Start', 'Stop', 'Restart Service', 'Restart AE Server', and 'Restart Linux'.</p>	Service	Controller Status	<input type="checkbox"/> ASAI Link Manager	Running	<input type="checkbox"/> CMAPI Service	Running	<input type="checkbox"/> CVLAN Service	Running	<input type="checkbox"/> DLG Service	Running	<input type="checkbox"/> Transport Layer Service	Running	<input checked="" type="checkbox"/> TSAPI Service	Running
Service	Controller Status														
<input type="checkbox"/> ASAI Link Manager	Running														
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<input type="checkbox"/> CVLAN Service	Running														
<input type="checkbox"/> DLG Service	Running														
<input type="checkbox"/> Transport Layer Service	Running														
<input checked="" type="checkbox"/> TSAPI Service	Running														



Step	Description
	<b>Adding a user to the Avaya AES TSAPI Service Security Database</b>
4.	<p>From the OAM main menu, select <b>User Management</b> → <b>Add User</b>. In the <b>Add User</b> page, assign values for the fields <b>User Id</b>, <b>Common Name</b>, <b>Surname</b>, <b>User Password</b> and <b>Confirm Password</b>. Select <b>Yes</b> for <b>CT User</b>. Click <b>Apply</b>. The user created will be used to configure the spotlight AWM Framework server in Section 4 Step 2.</p> 

Step	Description
5.	<p>Select <b>CTI OAM Admin</b> → <b>Administration</b> → <b>TSAPI Configuration</b>. Ensure that <b>Enable SDB</b> is checked. Click <b>Apply Changes</b>.</p> 

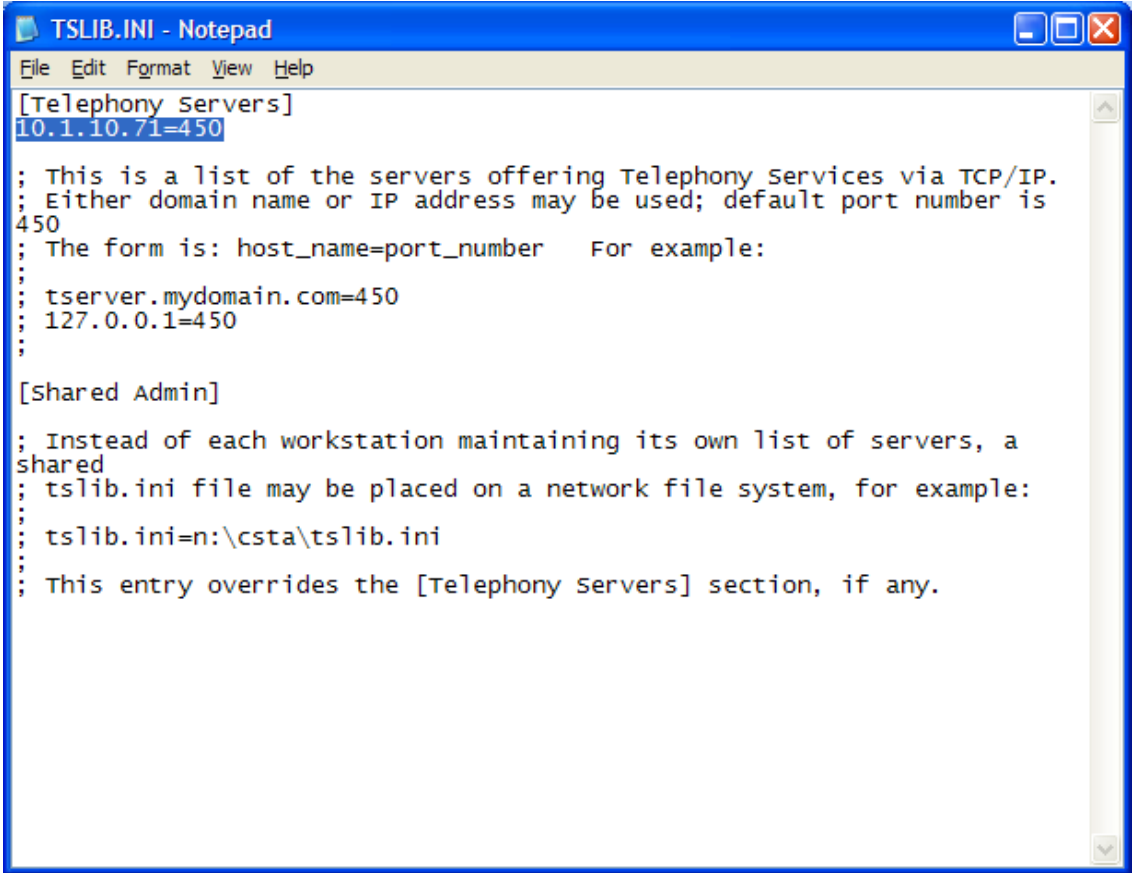
Step	Description
6.	<p>Select <b>CTI OAM Admin</b> → <b>Administration</b> → <b>Security Database</b> → <b>CTI Users</b> → <b>List All Users</b>. Select the <b>User ID</b> <b>ctiuser</b> and click <b>Edit</b>. In the <b>Edit CTI User</b> page, click <b>Enable</b> for the field <b>Unrestricted Access</b>. Click <b>Apply</b> to confirm the change.</p> <p>SECURITY ALERT: Be aware that if an application login to the TSAPI Service has Unrestricted Access Rights enabled, it might impact the security of the entire system.</p> 

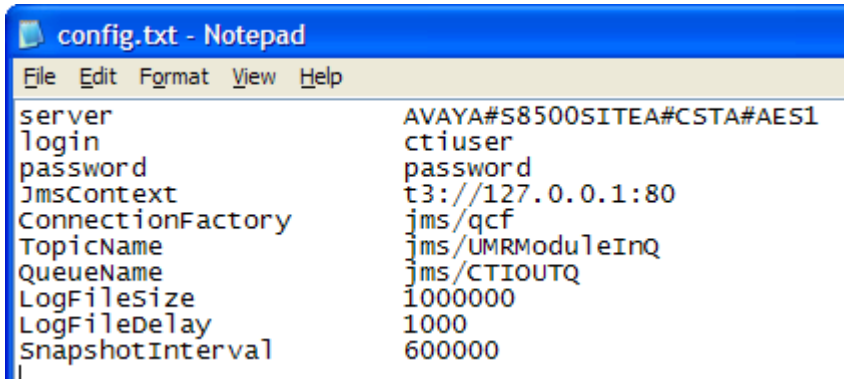
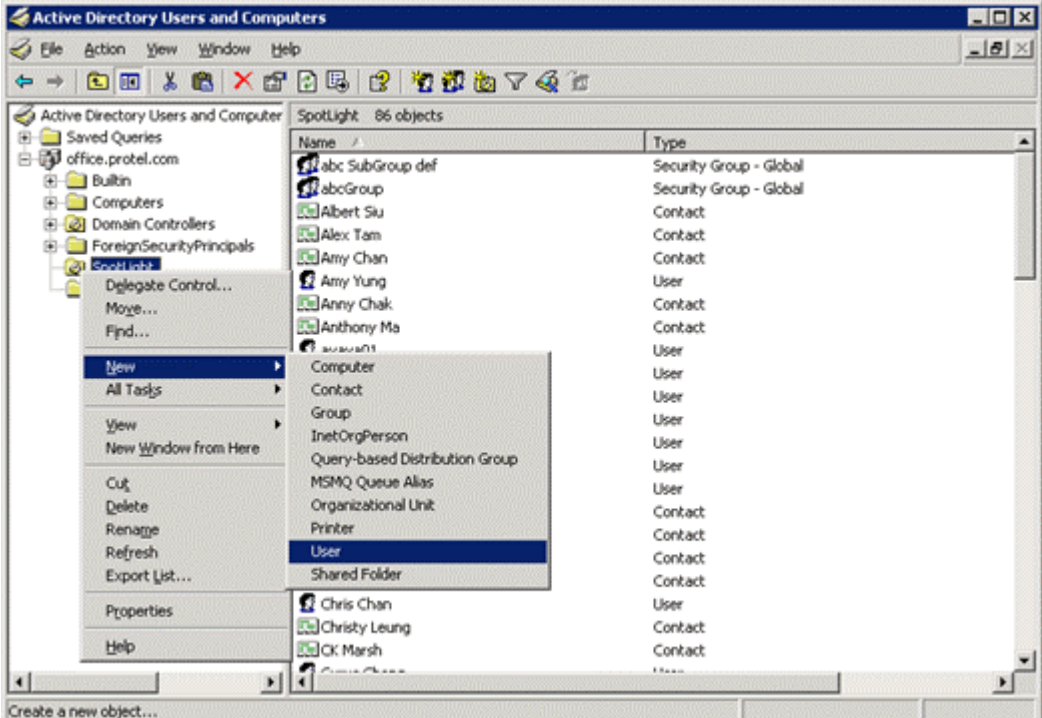
Step	Description
7.	<p>Select <b>CTI OAM Admin</b> → <b>Utilities</b> → <b>TSAPI Test</b>. Note down the <b>TLink</b> that has been configured. The <b>TLink</b> will be used to configure the spotlight AWM Framework server in Section 4 Step 2.</p>  <p>The screenshot displays the Avaya OAM Admin web interface. At the top, the Avaya logo and 'OAM' link are visible. Below is a navigation menu with 'OAM Home' and a list of links including 'CTI OAM Home', 'Administration', 'Status and Control', 'Maintenance', 'Logs', 'Utilities', 'ASAI Test', 'Ping Host', 'TSAPI Test', 'Help', and 'Logout'. The 'Utilities' section is expanded, showing 'ASAI Test', 'Ping Host', and 'TSAPI Test'. The 'TSAPI Test' page is active, showing a breadcrumb trail: 'You are here: &gt; Utilities &gt; TSAPI Test'. The main content area is titled 'TSAPI Test' and contains several input fields: 'TLink' (pre-filled with 'AVAYA#S8500SITEA#CSTA#AES1'), 'User:', 'Password:', 'From:', and 'To:'. There are 'Dial' and 'Help' buttons at the bottom of the form area.</p>

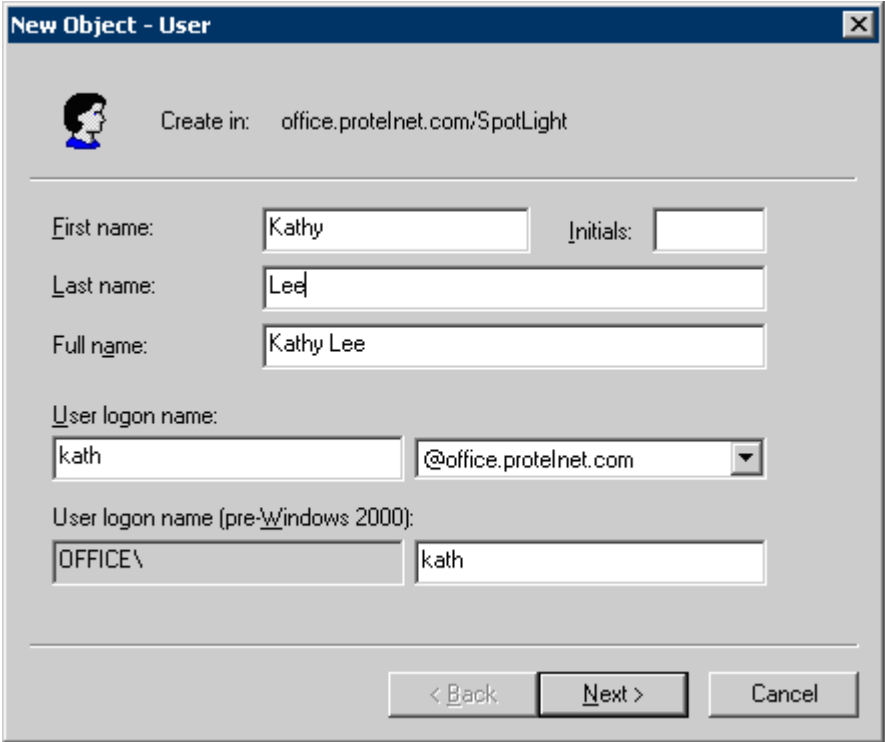
## 4. Configure the spotlight AWM Framework Server

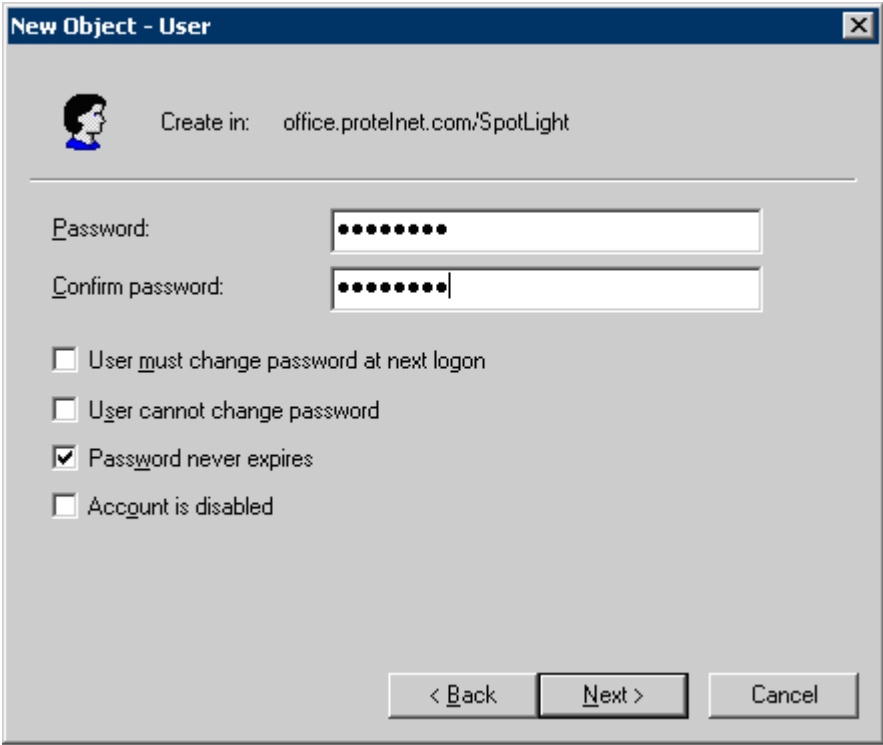
This section explains the file modifications and configuration steps necessary to implement the spotlight AWM Framework server.

Note: The spotlight AWM Framework server is deployed as a bundled solution together with the server hardware. As such, no installation of software will be described here.

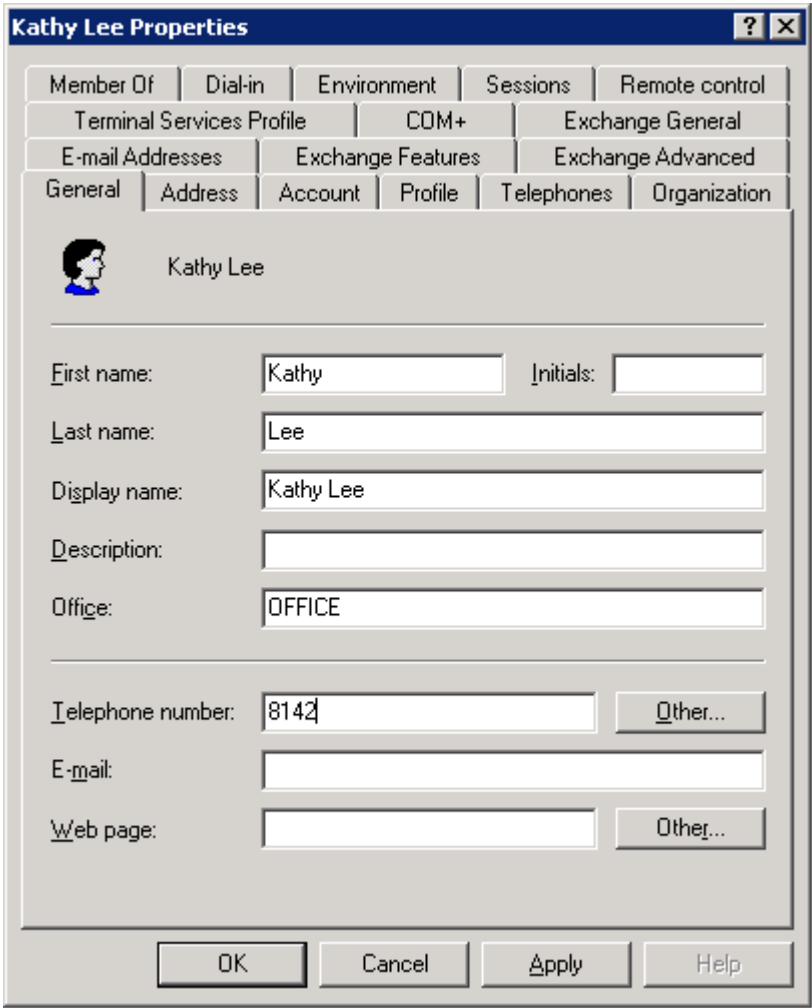
Step	Description
	<b>Configure the TSAPI Adapter</b>
1.	<p>Log in to the spotlight AWM Framework server as an administrator. Using Notepad, edit the file TSLIB.INI in the WINNT or WINDOWS folder. Insert the line <b>10.1.10.71=450</b> into the <b>[Telephony Servers]</b> section, where 10.1.10.71 is the IP address of the Avaya AES server. Save and close the file.</p> 

Step	Description
2.	<p>Edit the file config.txt in the <b>C:\UIM\TSAPIAdapter\</b> folder. Enter the <b>TLink</b> information obtained in Section 3 Step 7 for the server. Enter the <b>login</b> and <b>password</b> configured in Section 3 Step 4.</p> 
3.	<p>To start the TSAPI Adapter, go to the <b>C:\UIM\TSAPIAdapter\</b> folder and execute <b>run_Adapter.bat</b>.</p>
<b>Add User Extensions</b>	
4.	<p>Go to <b>Start → All Programs → Administrative Tools</b> and select <b>Active Directory Users and Computers</b>. Select the <b>SpotLight</b> Object in the tree view and right-click to add a new user.</p> 

Step	Description
5.	<p>Fill in the corresponding information for the new user. Click <b>Next</b>.</p>  <p>The screenshot shows a 'New Object - User' dialog box. At the top, it says 'Create in: office.protelnet.com/SpotLight'. Below this are several input fields: 'First name:' with 'Kathy', 'Initials:' (empty), 'Last name:' with 'Lee', 'Full name:' with 'Kathy Lee', 'User logon name:' with 'kath' and a dropdown menu showing '@office.protelnet.com', and 'User logon name (pre-Windows 2000):' with 'OFFICE\' and 'kath'. At the bottom are three buttons: '&lt; Back', 'Next &gt;' (which is highlighted with a black border), and 'Cancel'.</p>

Step	Description
6.	<p>Set the password of the new user and click <b>Next</b>. Click <b>Finish</b> when the final screen appears.</p> 



Step	Description
7.	<p>Select the newly added user again and view the properties of the user. In the General tab, add <b>OFFICE</b> to the <b>Office</b> field and add the extension number to the <b>Telephone number</b> field. Click <b>OK</b>. Repeat Steps 4 to 7 for each new user.</p> 

Step	Description
	<b>Configure the IP Telephone Settings file (46xxSettings.txt)</b>
8.	In the IP Telephone Settings file (46xxSettings.txt), add the spotlight AWM Framework server IP address to the <b>TPSLIST</b> for all IP Telephone models that will be used for spotlight IP CONNECT!. Set the <b>WMLHOME</b> to the spotlight IP CONNECT! home page and set <b>WMLCODING</b> to <b>Unicode</b> . Below is an example for the 4620 IP Telephone.
	<pre> ##### # SETTINGS4620 #####  SET WMLHOME http://10.1.10.110:9090/spotlight/IPRequest.jsp SET WMLCODING Unicode SET TPSLIST 10.1.10.110 goto END  ##### END OF 4620 IP Phone Settings ##### </pre>

## **5. Interoperability Compliance Testing**

The Interoperability Compliance Testing included both feature functionality and serviceability testing.

The features of spotlight CONNECT!, INSIGHT! and IP CONNECT! were tested based on scenarios common to the daily use of the applications.

Instant Messaging (IM) features were tested by sending IM messages between CONNECT!, INSIGHT! and IP CONNECT! users. A 10-party Group IM session was also set up and tested. Users' IM statuses were toggled and the changes in the status display were verified from other users.

Telephony features were also tested by making calls between users and to external numbers with the corresponding display status verified. The Call Log feature was also verified. A call generator was also used to place 200 calls to the users to verify the stability of the system.

For serviceability testing, various failure scenarios such as AES failure and Avaya Communication Manager reboot were tested to see if spotlight AWM could resume operation after failure recovery.

### **5.1. Test Results**

All test cases passed successfully.

## 6. Verification Steps

The following steps can be used to verify system operation:

Step	Description
1.	<p>Open the following URL using Microsoft Internet Explorer and verify that the login page loads successfully:</p> <p>http://&lt;IP address of spotlight AWM framework server&gt;:&lt;port number&gt;/UIMFlex/spotlightConnect/index.jsp</p> <p>This will verify that spotlight CONNECT! has been installed properly.</p>
2.	<p>Login to spotlight CONNECT! using one of the users created. Verify that the login is successful. This will verify that the LDAP integrations to the Microsoft Active Directory are successful.</p>
3.	<p>Verify whether the 'buddy list' is displayed. This will verify that the spotlight Interaction &amp; Presence Engine is functioning properly.</p>
4.	<p>Identify the extension number of a second logged in user from the 'buddy list'. Make a call from the second user's phone extension to the first user. If there is an incoming call alert in the spotlight client application, this will verify that the spotlight TSAPI Adapter is functioning properly.</p>
5.	<p>Verify whether the Call Log contains a record of the incoming call. This will verify whether the Call Log feature is functioning properly.</p>
6.	<p>Open the Phone Book and verify the users in the Microsoft Active Directory are visible. If so, click one of the users and view the details. This will verify whether the Phone Book is functioning properly.</p>

## 7. Support

For technical support on ProTel spotlight AWM, contact ProTel Support Team at:

- Phone: +852 2534-8111
- Email: [cs@protelnet.com](mailto:cs@protelnet.com)

## 8. Conclusion

These Application Notes describe the compliance-tested configuration used to validate Avaya Communication Manager 3.0 and Avaya Application Enablement Services 3.0 with ProTel spotlight Agile Workspace Management (AWM) 3.0. All test cases were completed successfully.

## 9. Additional References

1. Application Notes for the Mercom Audiolog Call Recording Server with Avaya Communication Manager and Avaya Application Enablement Services – Issue 1.0

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

2. Application Enablement Services 3.0 Administration and Maintenance Guide, 02-300357, Issue 1, June 2005
3. 4600 Series IP Telephone R2.3 LAN Administrator Guide, 555-233-507, Issue 2.3, November 2005

The following documents are available from ProTel:

- ProTel spotlight AWM Administration & Configuration Guide
- ProTel spotlight CONNECT! User Guide
- ProTel spotlight INSIGHT! User Guide

ProTel Communications website: <http://www.protelnet.com/spotlight.htm>

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