

## Avaya Solution & Interoperability Test Lab

Application Notes for configuring blackchair Spotlight Release Management V6 with Single Sign-on AAA Authentication with Avaya Aura® Communication Manager R7.0 and Avaya Aura® Application Enablement Services R7.0 – Issue 1.0

#### **Abstract**

These Application Notes describe the configuration steps required to integrate Spotlight Release Management V6.0 with Single Sign-on AAA Authentication from blackchair with Avaya Aura® Communication Manager R7.0 using the SMS SDK from Avaya Aura® Application Enablement Services R7.0. Release Management is capable of publishing changes into Avaya Aura® Communication Manager.

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 configuration steps required to integrate Spotlight Release Management V6.0 with Single Sign-on AAA Authentication from blackchair with Avaya Aura® Communication Manager R7.0 using the SMS SDK from Avaya Aura® Application Enablement Services R7.0. Spotlight Release Management is capable of publishing changes into Avaya Aura® Communication Manager using packages of objects built from the Spotlight Audit model. Packages can be built and published into the same Communication Manager to reconfigure that Communication Manager or into a different Communication Manager for example from test to production. The single sign-on AAA Authentication option provides for a user to login to Spotlight and have their Communication Manager login automatically derived from a secure table in Spotlight, with changes they make using Release Management attributed to their Spotlight login within the audit trail.

Spotlight Release Management is an expansion of a previous product called Spotlight Audit and uses Spotlight Audit to facilitate adds/moves and changes. Further information on Spotlight Audit can be found on *Application Notes for configuring blackchair Spotlight V5 with Avaya Aura® Communication Manager R6.2 and Avaya Aura® Application Enablement Services R6.2 to monitor moves and changes*, or contact blackchair directly using the information provided in **Section 2.3**.

System Management Service (SMS) is a web service on Avaya Aura® Application Enablement Services (AES) that exposes selected management features of Communication Manager. SMS enables clients to display, list, add, change and remove specific managed objects on Communication Manager. SMS allows programmatic access, via a standard protocol, SOAP, to functionality that is otherwise only accessible via a Avaya proprietary low-level protocol called Operation Support System Interface (OSSI) or terminal emulation via System Administration Terminal (SAT). Spotlight Release Management utilises the SMS web service to display changes that occur on Communication Manager.

## 2. General Test Approach and Test Results

All feature test cases were performed manually. All fields and values in Communication Manager are copied onto the Spotlight Release Management database. This database is then used to compose Release Management packages that can be uploaded to either the same Communication Manager or a secondary Communication Manager. Using System Administration Terminal these new changes can be observed to ensure they were made correctly.

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

blackchair Spotlight Release Management, which will be referred to as either Release Management or Spotlight throughout the remainder of this document, was installed on a virtual server running Microsoft Windows 2008 Server R2 and Microsoft SQL Server 2008 R2. A client PC using the FireFox web browser was used to access the Spotlight Release Management Interface. All information on Communication Manager was recorded using the SAT, changes were then published using Spotlight Release Management and these changes were verified, again using SAT.

Test cases that were executed used objects listed in the SDK documentation as updatable through the SDK. A list of these relevant objects is included in the **Appendix** of these Application Notes and further information on the SDK can be obtained from the Avaya DevConnect outlined in **Section 10**.

During compliance testing two Communication Managers were used, one installed in Galway, Ireland set to GMT time, and a second operating as a Communication Manager in Denver, Colorado on GMT -7. Objects were then copied from one to the other. The following objects were moved from the Galway Communication Manager to Denver during compliance testing.

- AARAnalysis
- AbbreviatedDialingEnhanced
- Agent
- Announcement
- COR
- COS
- CoveragePath
- Hunt Group/Skill
- RoutePattern
- Station (H323 and SIP only)
- VDN
- Vector

Using the following rules when moving/copying the objects,

- This object MAY exist in the target; if it DOES NOT exist it is to be CREATED, if it DOES exist it is to be MODIFIED.
- This object MUST NOT exist in the target and is to be CREATED.
- This object MUST exist in the target and is to be MODIFIED.
- This object is to be DELETED from the target if it exists; if it does not exist, no action.

#### 2.2. Test Results

All test cases passed and the following exceptions were noted.

• Digital sets were not moved due to different port arrangements on each media gateway.

#### 2.3. Support

For technical support on Spotlight Release Management, contact blackchair as shown below.

• Web: http://www.theblackchair.com/contact-us/

• Tel: +44 845 456 6751

• Email: enquiries@theblackchair.com

# 3. Reference Configuration

**Figure 1** shows the network topology during compliance testing. The Spotlight Release Management server was placed on the Avaya telephony LAN. The SMS SDK on the AES offers the Spotlight Release Management server an interface to make changes on Communication Manager. A user browsing to the Spotlight Release Management server using a web browser is capable of publishing changes into Communication Manager using packages of objects built from the Spotlight Audit environment.

**Note:** Two Communication Managers were used for testing copying information between Communication Managers. Communication Manager 1 was setup in time zone GMT (Galway, Ireland) and Communication Manager 2 is setup in time zone GMT – 7 (Denver, Colorado).

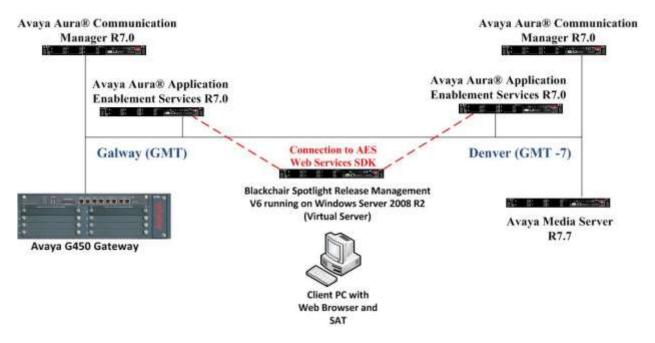


Figure 1: Network solution of blackchair Spotlight Release Management V6 and Avaya Aura® Communication Manager R7.0 with Avaya Aura® Application Enablement Services R7.0

# 4. Equipment and Software Validated

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

| Equipment/Software  | Release/Version                 |  |  |
|---|---------------------------------|--|--|
| Avaya Aura® Communication Manager running on a virtual server           | R7.0 SP1<br>00.0.441.0-22684    |  |  |
| Avaya Aura® Application Enablement Services running on a virtual server | R7.0<br>Build No – 7.0.0.0.1.13 |  |  |
| Avaya G450 Gateway  | 37.20.0 /1                      |  |  |
| Avaya Aura® Communication Manager running on a                          | R7.0 SP1                        |  |  |
| virtual server  | 00.0.441.0-22684                |  |  |
| Avaya Aura® Application Enablement Services                             | R7.0                            |  |  |
| running on a virtual server   | Build No – 7.0.0.0.1.13         |  |  |
| Avaya Media Server  | R7.7                            |  |  |
| blackchair Spotlight Release Management running on                      |                                 |  |  |
| a Virtual Server  | V6.0.43505.1202                 |  |  |
| - Windows 2008 R2 O/S   | Windows 2008 Server R2          |  |  |
| - MS SQL 2008 R2  | MSSQL 2008 R2                   |  |  |

## 5. Configure Avaya Aura® Communication Manager

A new user for blackchair needs to be created on Communication Manager. Open a browser session to Communication Manager and log in as shown below. Enter the appropriate credentials and click on **Logon**.



Once logged in click on **Administration** at the top of the page and select **Server (Maintenance)** from the drop-down menu.

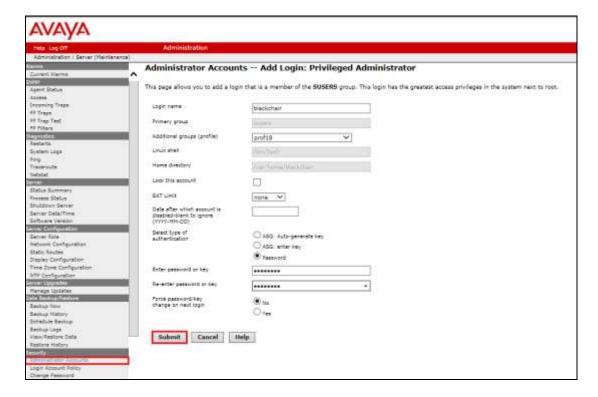


## 5.1. Create a user for Spotlight Release Management

In the left window select **Security** → **Administrator Accounts**. In the main window Select **Add Login**; for compliance testing, **Privileged Administrator** was chosen, but any account with privileges to use SAT is all that is required in order for a Spotlight user to read and write to the fields in Communication Manager. Select **Submit** when done.



Enter the **Login name** and a suitable **Password**. Click on **Submit** when done.



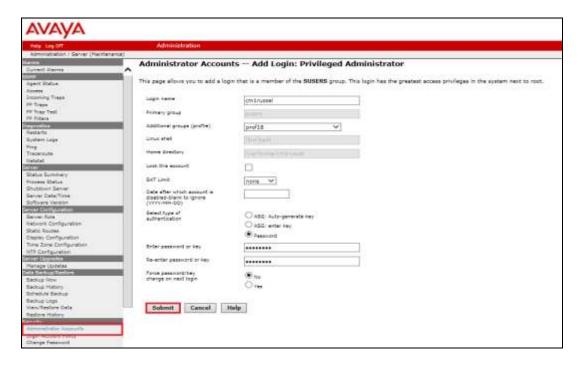
## 5.2. Create a user for Single Sign on with AAA Authentication

A second user was also created for the verification of Spotlight Release Management Single Sign on with AAA Authentication. Using the same procedure as above in **Section 5.1** another Communication Manager user is created.



**Note:** The user name cannot be greater than 9 characters this is the limit for Spotlight Release Management.

Therefore the user called **cm1russel**, this was added and will be used again in the configuration of Single Sign on with AAA Authentication in **Section 7.1** and to verify this in **Section 8.3**.

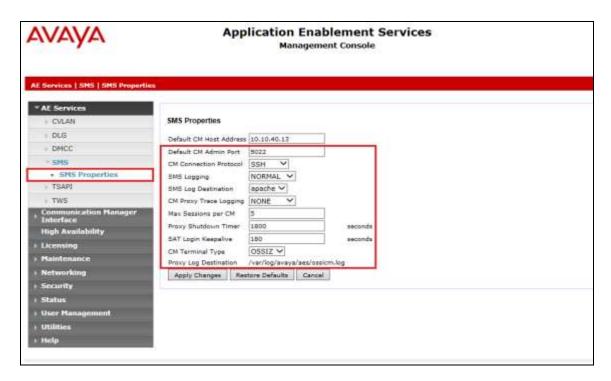


## 6. Configure Avaya Aura® Application Enablement Services

Although the Spotlight servers' connection to the Avaya solution uses the SMS SDK on Avaya Aura® Application Enablement Services (AES) there is no specific configuration required on the AES server. The username and password utilised by Spotlight is that which was created previously in **Section 5**. The following screen shots show how to access the SMS Web Service on the AES. Log in to the AES using the appropriate credentials.



Navigate to **AE Services** → **SMS** → **SMS Properties** in the left window. The setting for the SMS can be left as default. However in the example below the only change that was made was to set the **Default CM Host Address** to the IP Address of the Communication Manager associated with this AES. Note that if one AES was being used for both Communication Managers then this would be set to localhost.



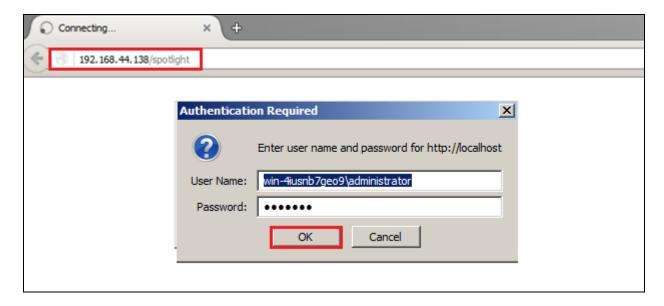
## 7. Configure blackchair Spotlight Release Management

The installation and configuration of the Spotlight Release Management server from blackchair is performed by a blackchair engineer and is therefore outside the scope of these Application Notes. The configuration steps involve the manipulation of specific database configuration tables on the Spotlight Release Management server and this is not something that can be documented here. All information for support for blackchair can be found in **Section 2.3**.

## 7.1. Configure Single Sign on with AAA Authentication

The addition of Single Sign on with AAA Authentication allows the association of the Communication Manager username and password with the windows domain username and password. The user will then log in to Spotlight Release Management using the windows domain username and password and when using Release Management to make changes the associated Communication Manager username and password is used to gain access to the relevant Communication Manager. When looking at the audit trail in Release Management the windows username is what is displayed as the change maker. The Windows username can be associated with different Communication Manager Usernames for each Communication Manager instance connected to Spotlight.

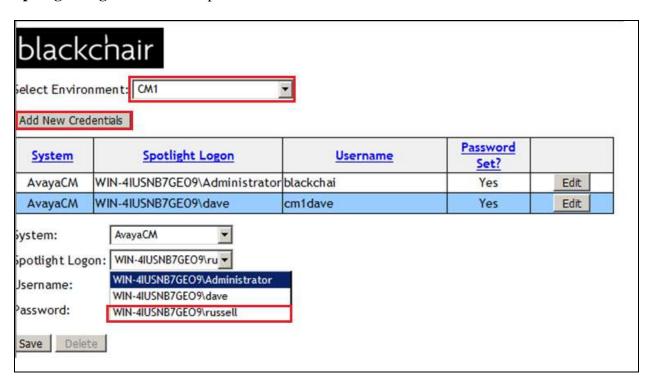
To associate a windows user with a Communication Manager user the following must be setup. Open a browser such as Firefox to the Spotlight server IP address in the form http://<**Serveraddress**>/**spotlight** and log in to Spotlight with administrative rights as shown below.



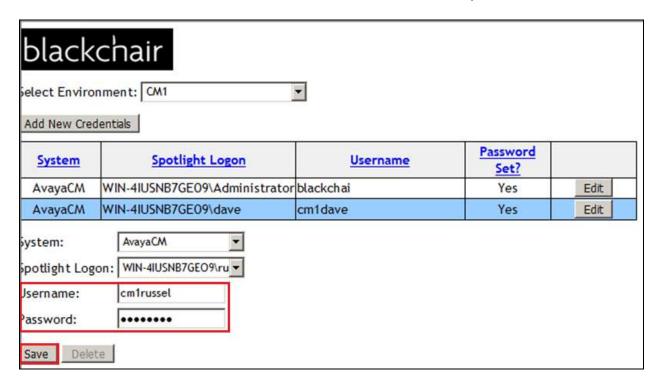
An external credentials maintenance page is available to Spotlight administrators to associate a Communication Manager login/password for each connected Communication Manager instance to the Windows user. Click on **Admin** at the top right corner of the screen and select **External Credentials** from the left window.



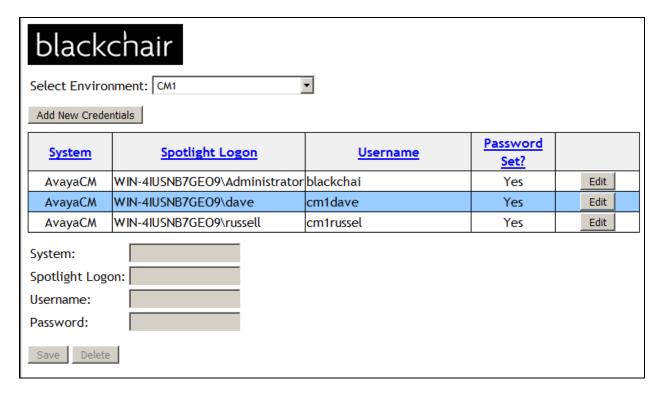
Select the correct Communication Manager from the **Select Environment** drop-down box at the top of the screen. To associate a windows user with a Communication Manager user on this environment (i.e. **CM1**) click on **Add New Credentials**. Select the correct **System** and **Spotlight Logon** from the drop-down menus as shown.



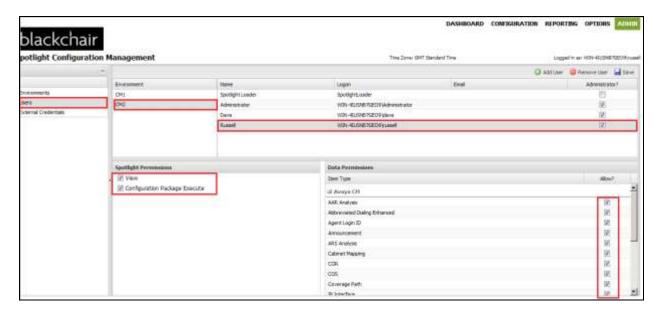
With the correct **Spotlight Logon** chosen, enter the corresponding Communication Manager information for the **Username** and **Password**, note that this will be the information entered in **Section 5.2**. Click on **Save** once all the information is filled in correctly.



The password entered above is stored encrypted and not displayed.



Close the window above and the original window is once again displayed. Select **Users** from the left window and select the correct **Environment** and **Name** from the main window. With the correct user selected, tick the **Spotlight Permissions** and the **Data Permissions** that are required for this user. Click on **Save** at the top right of the screen.



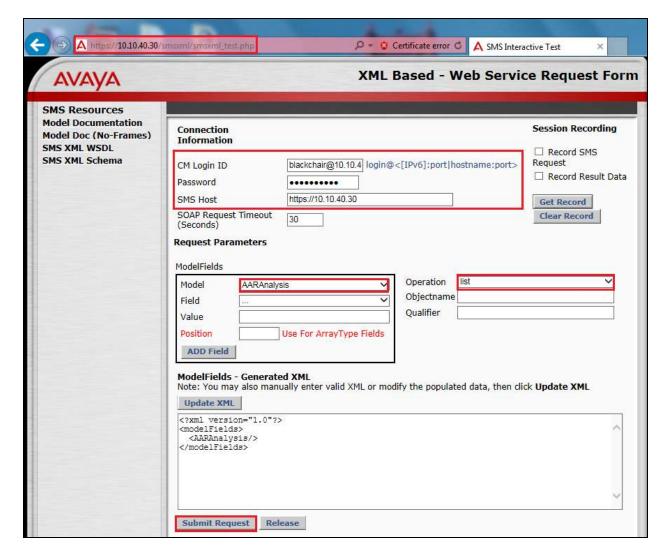
## 8. Verification Steps

This section provides the tests that can be performed to verify that blackchair Spotlight Release Management has successfully connected with the Avaya solution.

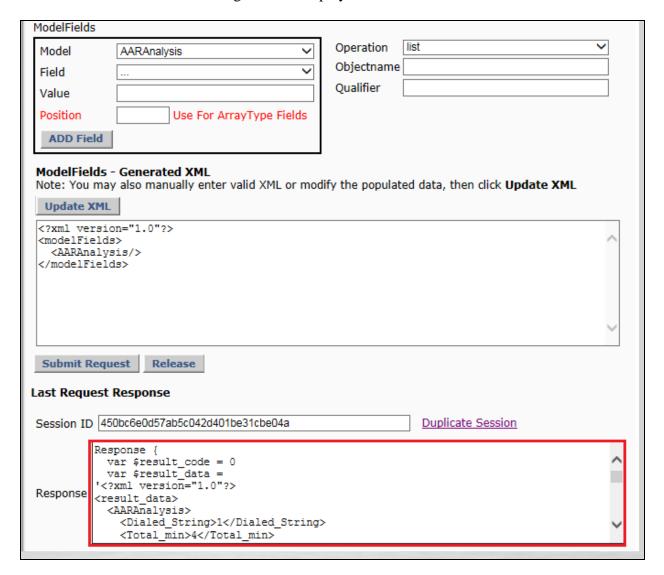
# 8.1. Verify connection to Avaya Aura® Application Enablement Services Web Services SDK

Open a browser session to **https://<AES Address>/smsxml/smsxml\_test.php** this will open a web services test page as shown below.

Enter the proper credentials for the **CM Login ID** and **Password**. This will be the same username and password for the user created in **Section 5.1**. The CM Login ID should be in the format username@CMIPAddress. The **SMS Host** will be the IP Address of the AES server. Any **Model** and **Operation** can be selected from **ModelFields**. In the example below **AARAnalysis** and **List** were chosen, simply to list the AAR Analysis. Click on **Submit Request** at the bottom of the screen.



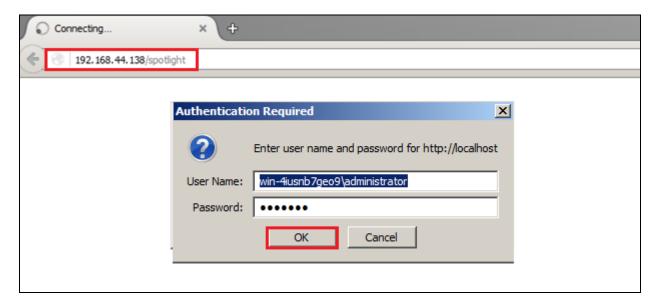
If the SMS SDK is operational it should come back with a **Response** such as that shown below. If there is an issue an error message will be displayed.



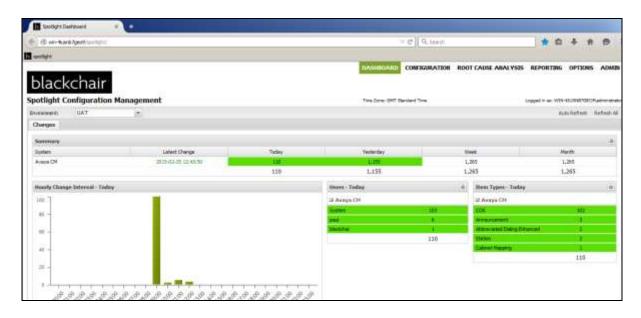
## 8.2. Verify Spotlight Release Management

This section will outline the steps necessary to place a configuration object into a Spotlight Release Management package, tailor the package, test the package and publish this package into a different Communication Manager environment. In this section the dialogue in a system without the single sign-on AAA authentication feature enabled is described.

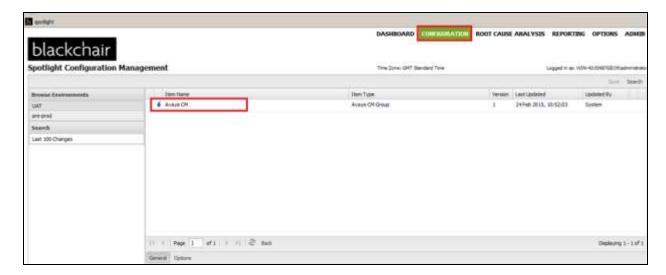
Open a web browser to the Spotlight Release Management server [http://<IPAddressSpotlightRMServer>/spotlight] and enter the proper credentials, this will be the windows domain\username and password. Spotlight Release Management uses pass-through windows authentication. Click on **OK** as shown below.



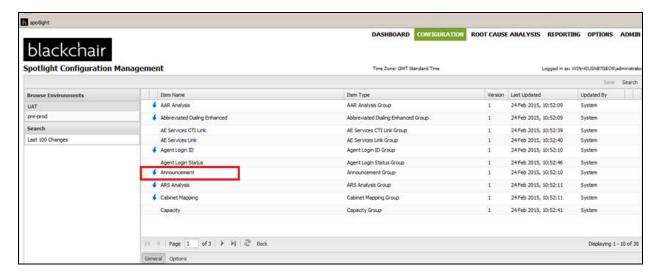
Once logged in the screen below is presented to the user.



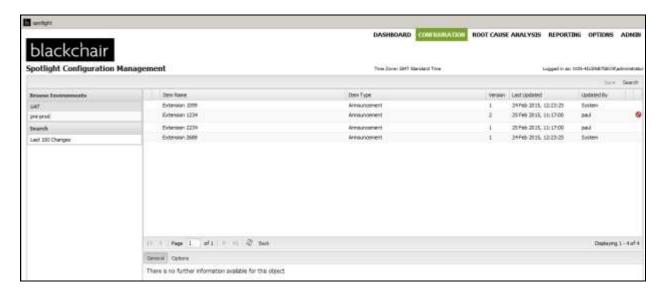
Select the **CONFIGURATION** tab from the top of the page. Double click on the **Avaya CM** item highlighted; note this may be a different name depending on the system.



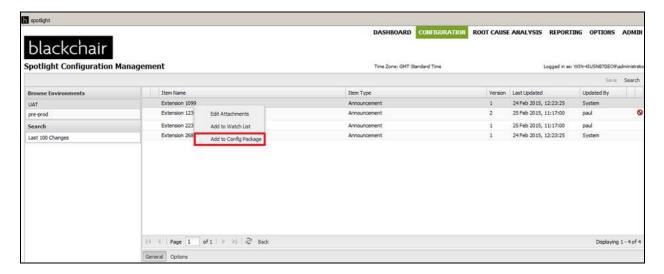
Double click on which ever item needs to be changed. In the example shown below this item is **Announcement**. The following steps will show an Announcement being copied from one Communication Manager system to another.



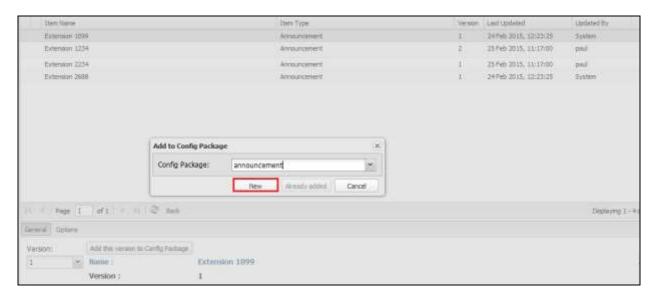
A list of announcements is then shown that exist on the source Communication Manager.



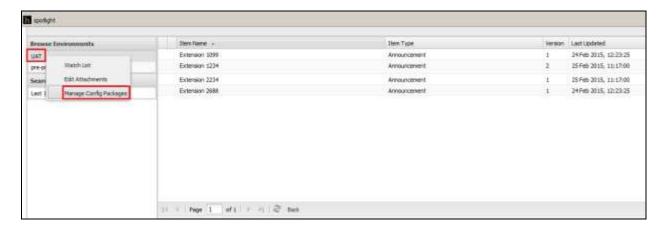
Right click on the announcement that is to be copied across to the target Communication Manager. In the example below this is **Extension 1099**. Select **Add to Config Package**.



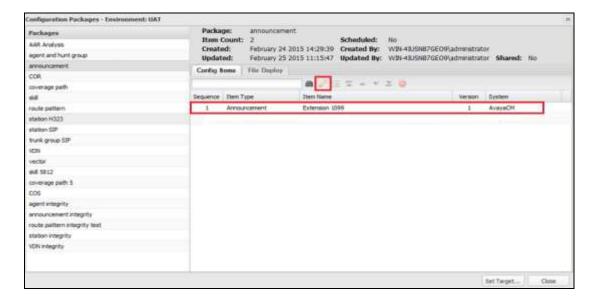
Add a suitable name for the **Config Package**, in this case simply **announcement**. Click on **New**.



The left pane shows the two environments, UAT represents the source Communication Manager and pre-prod represents the target Communication Manager. Right click on the source environment, in this case **UAT**, and select **Manage Config Packages**.



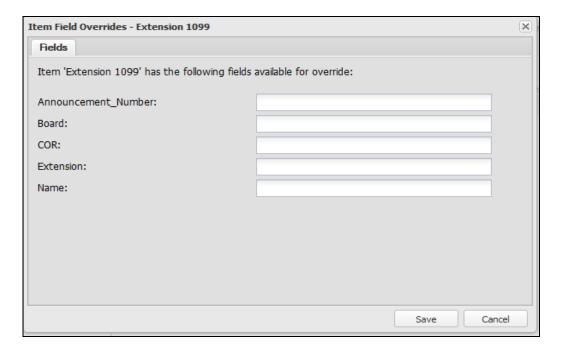
Highlight the announcement and click on the edit icon in the toolbar as highlighted below.



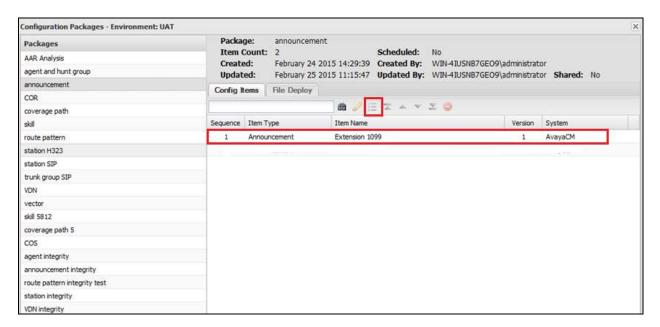
The following fields can be altered before the package is then sent to the target Communication Manager.

- Announcement\_Number
- Board
- COR
- Extension
- Name

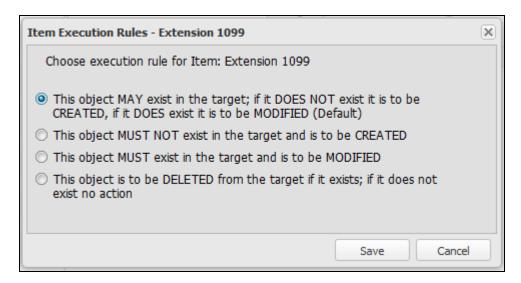
Click on **Save** at the bottom of the screen.



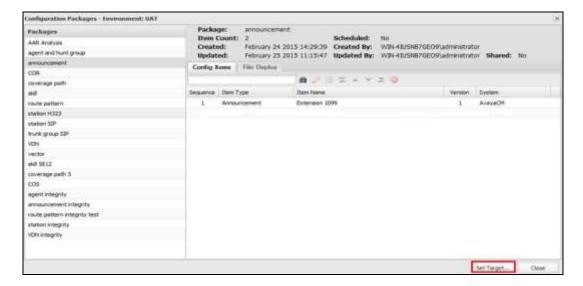
The package contents screen is again shown. Click on the **execution rules** button highlighted.



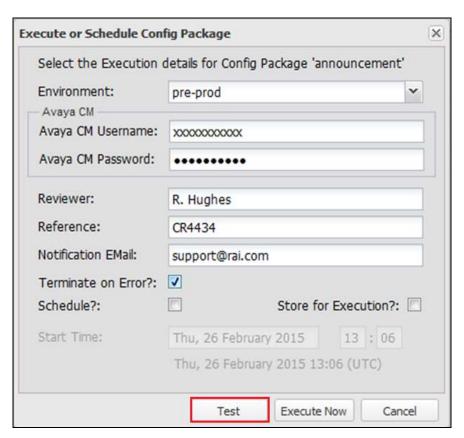
This brings up the execution rules window. Select the necessary rule that applies to this system, typically the following rule is selected, so as the specified announcement is created if it does not exist on the target system. Click on **Save** to continue.



Click on **Set Target** at the bottom of the screen as shown below.



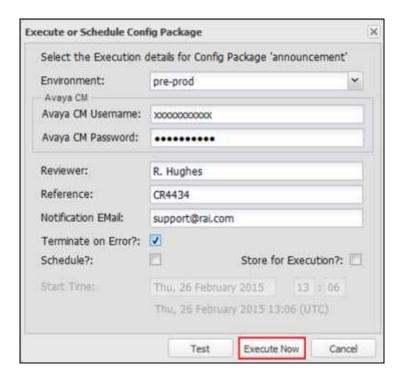
Enter the correct information for the target system, including the target system in our **case pre- prod** and the correct **CM Username** and **CM Password**. The other fields can be left blank but are used to keep records of the changes that are made by sending an email to a specified address. This package can be executed immediately, scheduled or tested prior to any execution. In the example below this was tested first, click on **Test**.



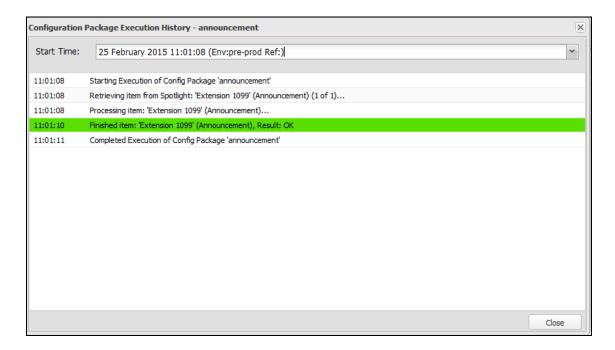
When the package is tested for errors and none are present the following window is displayed with a green tick on the right hand side as shown below.



Once the test has completed successfully and the previous screen is closed, click on **Execute Now** at the bottom of the screen shown below to initiate the change to be made on pre-prod.



The following screen then appears showing the changes that are being made. This change can then be viewed on the target system using a program such as SAT to display the new announcement.

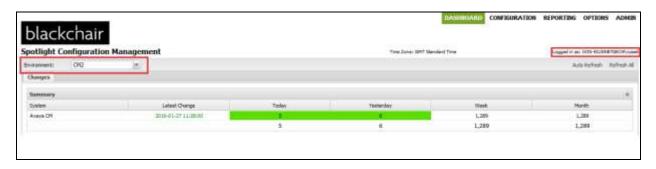


## 8.3. Verify Single Sign on with AAA Authentication

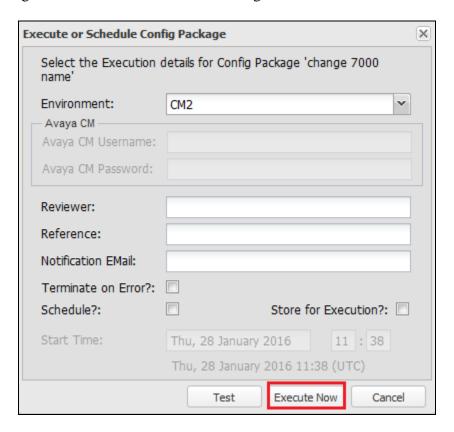
Log in to Spotlight Release Management with a Windows **User Name/Password** associated with the Communication Manager login.



The Spotlight screen should show the correct user logged in and the correct **Environment** should be selected from the dropdown box as shown below.



When a user tests or executes a Release Management package the system finds the associated Communication Manager login/password for the target environment and invokes the AES SMS web service using those credentials to make the changes.



When the details of the change come back into the Spotlight audit model the actual Windows username is associated with the change and not the Communication Manager user which is associated with the Windows user.



#### 9. Conclusion

These Application Notes describe the configuration steps required for Spotlight Release Management V6 from blackchair to successfully interoperate with Avaya Aura® Communication Manager R7.0 using the SMS SDK on Avaya Aura® Application Enablement Services R7.0. Please refer to **Section 2.2** to see the compliance test results and observations.

#### 10. Additional References

The following documents are available at http://support.avaya.com.

- [1] Administering Avaya Aura® Communication Manager, Document ID 03-300509
- [2] Avaya Aura® Communication Manager Feature Description and Implementation, Document ID 555-245-205
- [3] Avaya Aura® Application Enablement Services Administration and Maintenance Guide Release 7.0

Information on the Avaya Aura® Application Enablement Services SMS SDK can be found by navigating to this link,

https://www.devconnectprogram.com/fileMedia/download/021e2e74-3726-4ce9-b3be-0edf5e4d4599

Other information on the Avaya Aura® Application Enablement Services SMS Web Services can be found by navigating to this link,

 $\underline{\text{https://www.devconnectprogram.com/site/global/downloads/index.gsp?item=9c899e0e-e0c8-48eb-bd9d-3d1ea5db52c8}$ 

Product information on blackchair Spotlight Release Management can be found at http://www.theblackchair.com

# Appendix

| Object Type                        | Add | Edit | Delete |
|------------------------------------|-----|------|--------|
| AvayaSDKAARAnalysis                | No  | Yes  | No     |
| AvayaSDKAbbreviatedDialingEnhanced | Yes | Yes  | Yes    |
| AvayaSDKAgent                      | Yes | Yes  | Yes    |
| AvayaSDKAnnouncement               | Yes | Yes  | Yes    |
| AvayaSDKConfiguration              | No  | No   | No     |
| AvayaSDKCOR                        | No  | Yes  | No     |
| AvayaSDKCOS                        | No  | Yes  | No     |
| AvayaSDKCoveragePath               | Yes | Yes  | Yes    |
| AvayaSDKHuntGroup                  | No  | Yes  | Yes    |
| AvayaSDKRoutePattern               | No  | Yes  | Yes    |
| AvayaSDKStation                    | Yes | Yes  | No     |
| AvayaSDKVDN                        | Yes | Yes  | Yes    |
| AvayaSDKVector                     | No  | Yes  | No     |

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