



Application Notes for configuring blackchair Spotlight V6 with Avaya Aura® Communication Manager R7.1 and Avaya Aura® Application Enablement Services R7.1 to monitor moves and changes – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate Spotlight from blackchair with Avaya Aura® Communication Manager using the SMS SDK from Avaya Aura® Application Enablement Services. Spotlight is capable of monitoring changes that are made on Avaya Aura® Communication Manager along with other Contact Centre environments and compiling data from these different sources to generate reports in a single desired format.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any 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 V6 from blackchair with Avaya Aura® Communication Manager R7.1 using the System Management Service (SMS) Software Development Toolkit (SDK) on Avaya Aura® Application Enablement Services (AES) R7.1. Spotlight is capable of monitoring changes that are made on Avaya Aura® Communication Manager along with other Contact Centre environments and compiling data from these different sources to generate reports in a single desired format.

System Management Service (SMS) is a web service that exposes selected management features of Communication Manager. SMS enables SOAP 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 proprietary low-level protocol (OSSI) or terminal emulation via system administration (SAT) forms. Spotlight utilises the SMS web service to display changes that occur on Avaya Aura® Communication Manager. Spotlight does not make the adds moves and changes but only reports on them.

2. General Test Approach and Test Results

All feature test cases were performed manually. Specific changes were made to various fields, referred to as service models, on Communication Manager; these changes were noted and compared to the report produced by Spotlight.

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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and blackchair Spotlight did not include use of any specific encryption features.

2.1. Interoperability Compliance Testing

blackchair Spotlight was installed on a Microsoft Windows 2008 Server R2 virtual server, with a client PC using the Microsoft Internet Explorer to access the web browser on the Spotlight server. Changes were made manually on Communication Manager and Spotlight shows the initial value and the changed value giving the user an option to see both the changed value and the initial value and also allowing the user the option to revert back to the original value by manually entering the data on Communication Manager.

The test cases that were performed were conducted according to the fields or service models described on the SDK. There were a number of service models on Communication Manager listed in the SDK document that are not displayed by the SDK and were therefore unable to be tested. A list of the service models tested is shown in the **Appendix** of these Application Notes.

Note: The Spotlight application has only “read” capabilities on Communication Manager.

2.2. Test Results

Because of the nature of the testing not every single service model change in Communication Manager was tested. A broad slice of testing across a range of fields was conducted to prove that compliance was achieved. The following observation was noted.

1. Dialplan Parameters - Only Inter-location and Intra-location changes are shown, the SAT or other fields are not updated, this may be as the SDK only offers these updates.
2. ListSurvivable – There are no fields that get updated on “change” only add and remove show any changes and that is because there are no “changeable” fields on the SDK.
3. Public Unknown Numbering – This is currently not supported by blackchair as there is no usable unique identifier of an entry.
4. System Features – There are two SDK objects, System Parameters Features and System Features. Information in both of these SDK’s comes from the “System Parameters Features” pages. So, the ‘SystemFeatures’ only contains a portion of the fields displayed from Communication Manager System Parameters Features and the ‘System Parameter Features’ only contains a portion of the fields displayed on Communication Manager System Parameters Features. Blackchair is displaying everything that the SDK allows.

2.3. Support

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

- Web: <https://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 server was placed on the Avaya Telephony LAN. The SMS SDK on the AES provides the Spotlight server a history of moves and changes from Communication Manager. A user browsing to the Spotlight server using a web browser can then view these statistics for all changes that was made on Communication Manager.

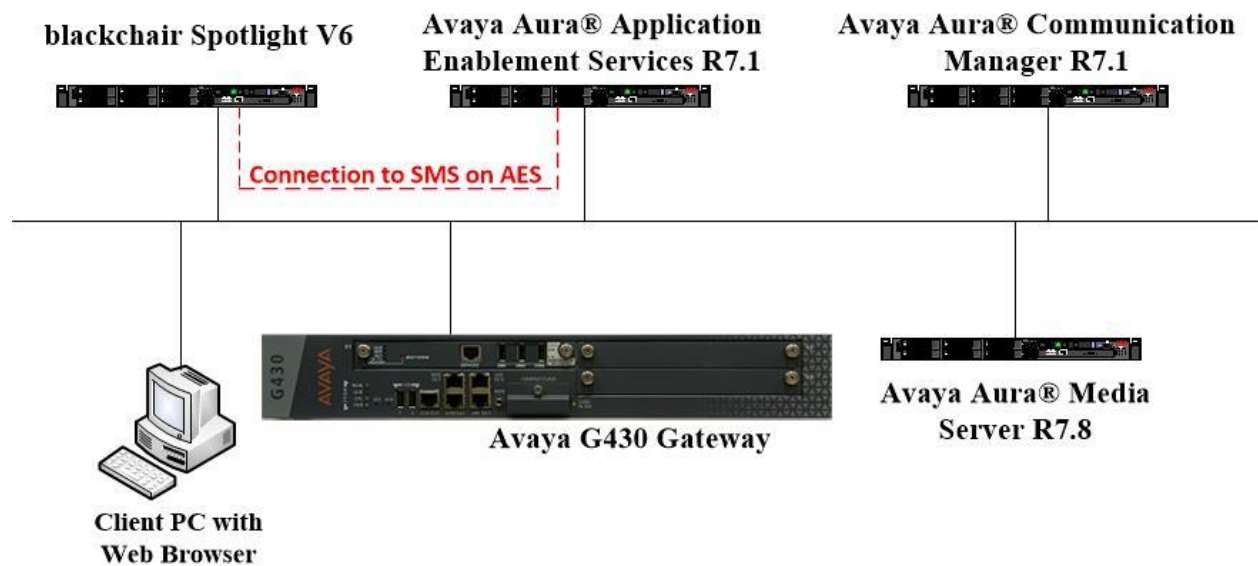


Figure 1: Network solution of blackchair Spotlight V6 and Avaya Aura® Communication Manager R7.1 with Avaya Aura® Application Enablement Services R7.1

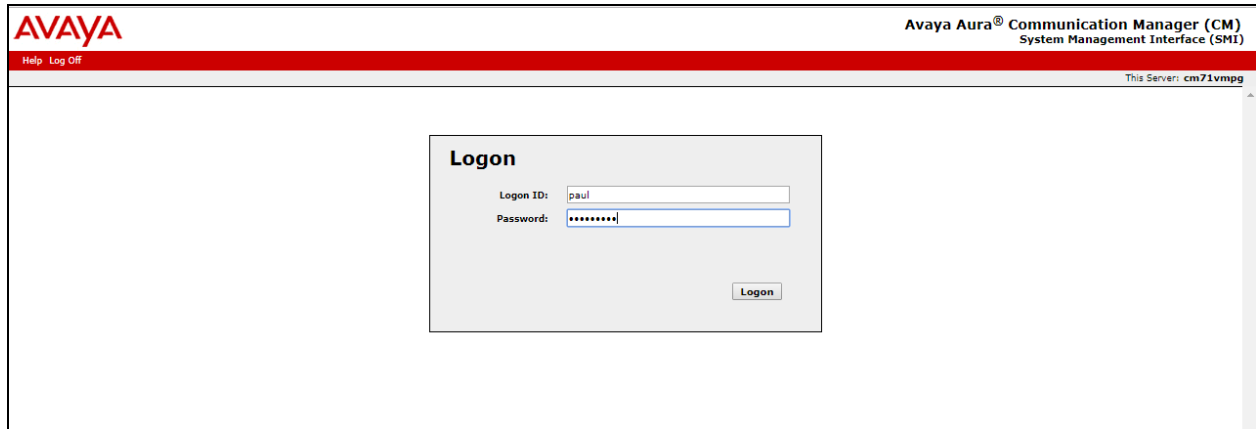
4. Equipment and Software Validated

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	Release 7.1 (R017x.01.0.532.0)
Avaya Aura® Application Enablement Services running on a virtual server	R7.1.2.0.0.3-0
Avaya G430 Media Gateway	R37.42.0 /1
Avaya Aura® Media Server running on a virtual server	R7.8.0.10
blackchair Spotlight running on a virtual server with Windows 2008 R2 OS	V6.41

5. Configure Avaya Aura® Communication Manager

A new user for a connection from Spotlight is created on Communication Manager. Open a browser session to Communication Manager and log in with the appropriate credentials as shown below.



AVAYA

Avaya Aura® Communication Manager (CM)
System Management Interface (SMI)

Help Log Off

This Server: cm71vmpg

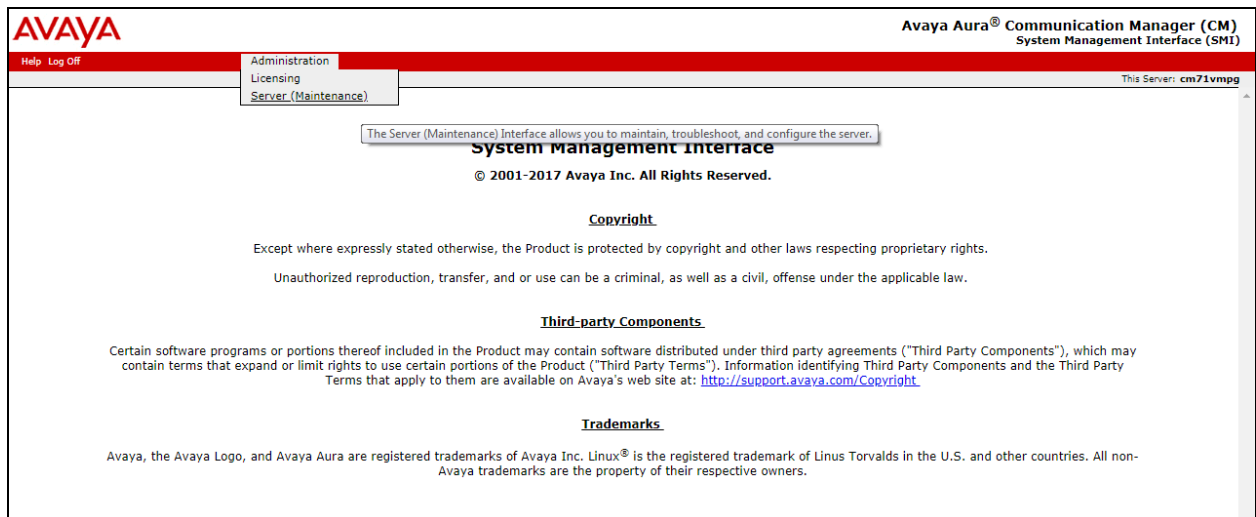
Login

Logon ID: paul

Password: *****

Logon

Navigate to **Server (Maintenance)** as shown below.



AVAYA

Avaya Aura® Communication Manager (CM)
System Management Interface (SMI)

Help Log Off

Administration
Licensing
Server (Maintenance)

This Server: cm71vmpg

The Server (Maintenance) Interface allows you to maintain, troubleshoot, and configure the server.

System Management Interface

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In the left window select **Security**→**Administrator Accounts**. In the main window select **Add Login**. For the 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 the fields in Communication Manager. Select **Submit** when done.

The screenshot shows the Avaya Aura Communication System Management interface. The top navigation bar includes 'Help', 'Log Off', 'Administration', and 'Upgrade'. The left sidebar lists various system management tasks, with 'Security' and 'Administrator Accounts' highlighted. The main content area is titled 'Administrator Accounts' and contains the following text: 'The Administrator Accounts SMI pages allow you to add, delete, or change administrator logins and Linux groups. Select Action:'. Below this, there are several radio button options: 'Add Login' (selected), 'Unprivileged Administrator', 'SAT Access Only', 'Web Access Only', 'CDR Access Only', 'Business Partner Login (dadmin)', 'Business Partner Craft Login', and 'Custom Login'. There are also fields for 'Change Login', 'Remove Login', 'Lock/Unlock Login', and 'Add Group', each with a 'Select Login' dropdown. At the bottom, there are 'Submit' and 'Help' buttons.

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

The screenshot shows the 'Add Login: Privileged Administrator' page in the Avaya Aura Communication System Management interface. The left sidebar lists various system management tasks, with 'Alarms', 'SNMP', 'Diagnostics', 'server', 'Server Configuration', 'Server Upgrades', and 'Data Backup/Restore' highlighted. The main content area is titled 'Administrator Accounts -- Add Login: Privileged Administrator' and contains the following text: 'This page allows you to add a login that is a member of the SUSERS group. This login has the greatest access privileges in the system next to root.' Below this, there are several form fields: 'Login name' (blackchair), 'Primary group' (susers), 'Additional groups (profile)' (prof18), 'Linux shell' (/bin/bash), 'Home directory' (/var/home/blackchair), 'Lock this account' (checkbox), 'SAT Limit' (none), 'Date after which account is disabled-blank to ignore (YYYY-MM-DD)' (empty), 'Enter password' (password field), 'Re-enter password' (password field), and 'Force password change on next login' (radio buttons for No and Yes). At the bottom, there are 'Submit', 'Cancel', and 'Help' buttons.

6. Configure Avaya Aura® Application Enablement Services

Although the Spotlight server's connection to the Avaya solution is through the SMS SDK on the AES, there is no configuration required on the AES server. The username and password utilised by Spotlight is that which was created above in **Section 5**. There are no other configurations required on the Avaya solution.

7. Configure blackchair Spotlight

The installation and configuration of the Spotlight server from blackchair is performed by a blackchair engineer and is therefore outside the scope of these Application Notes. The information for support for blackchair can be found in **Section 2.3**.

8. Verification Steps

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

8.1. Verify connection to Avaya Aura® Application Enablement Services

AES contains a test web page that can be used to test the connection to Communication Manager using the SMS service.

Open a browser session to **https://<AEServerIP>/smsxml/smsxml_test.php**. The web page shown below should be opened. Enter the appropriate **CM Login ID** and **Password** and enter some **Request Parameters** as shown below where the “list station” command is entered. Click on **Submit Request** highlighted below.

The screenshot shows a web browser window with the URL https://10.10.40.43/smsxml/smsxml_test.php. The page title is "XML Based - Web Service Request Form". The Avaya logo is in the top left corner.

SMS Resources

- [Model Documentation](#)
- [Model Doc \(No-Frames\)](#)
- [SMS XML WSDL](#)
- [SMS XML Schema](#)

Connection Information

CM Login ID: login@<[IPv6]:port|hostname:port>
Password:
SMS Host:
SOAP Request Timeout (Seconds):

Session Recording

☐ Record SMS Request
☐ Record Result Data
[Get Record](#)
[Clear Record](#)

Request Parameters

ModelFields

Model	<input type="text" value="Station"/>
Field	<input type="text" value="..."/>
Value	<input type="text"/>
Position	<input type="text"/> Use For ArrayType Fields

[ADD Field](#)

Operation
Objectname
Qualifier

ModelFields - Generated XML
Note: You may also manually enter valid XML or modify the populated data, then click **Update XML**

[Update XML](#)

```
<?xml version="1.0"?>
<modelFields>
  <Station/>
</modelFields>
```

[Submit Request](#) [Release](#)

Last Request Response

Session ID: [Duplicate Session](#)

The **Response** at the bottom of the screen should return data as shown below.

ModelFields

Model

Station

Field

...

Value

Position

Use For ArrayType Fields

ADD Field

Operation

list

Objectname

Qualifier

ModelFields - Generated XML

Note: You may also manually enter valid XML or modify the populated data, then click **Update XML**

Update XML

```
<?xml version="1.0"?>
<modelFields>
  <Station/>
</modelFields>
```

Submit Request

Release

Last Request Response

Session ID

f12229f2a6574814c43cc7ed756650df

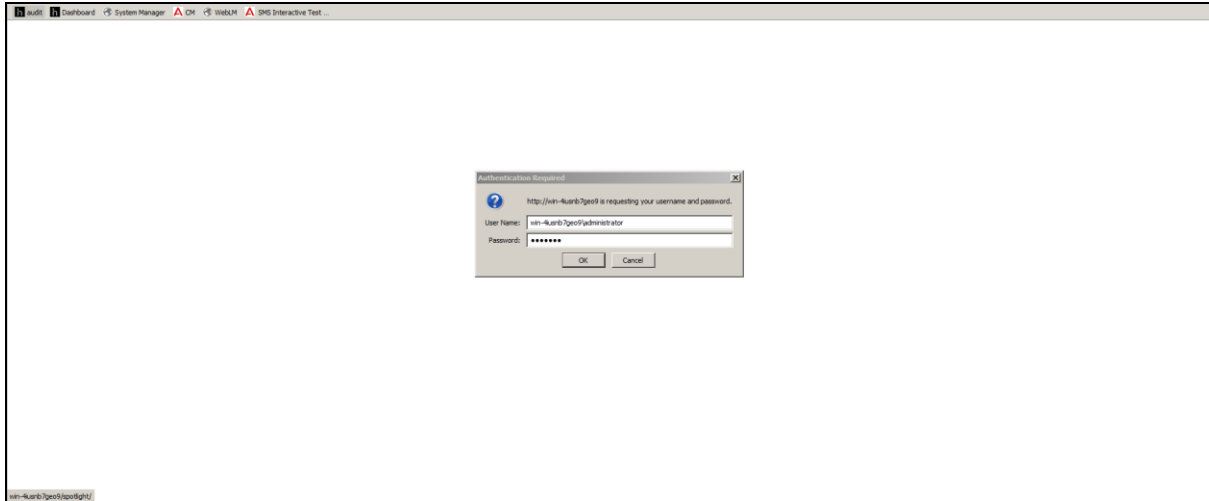
[Duplicate Session](#)

Response

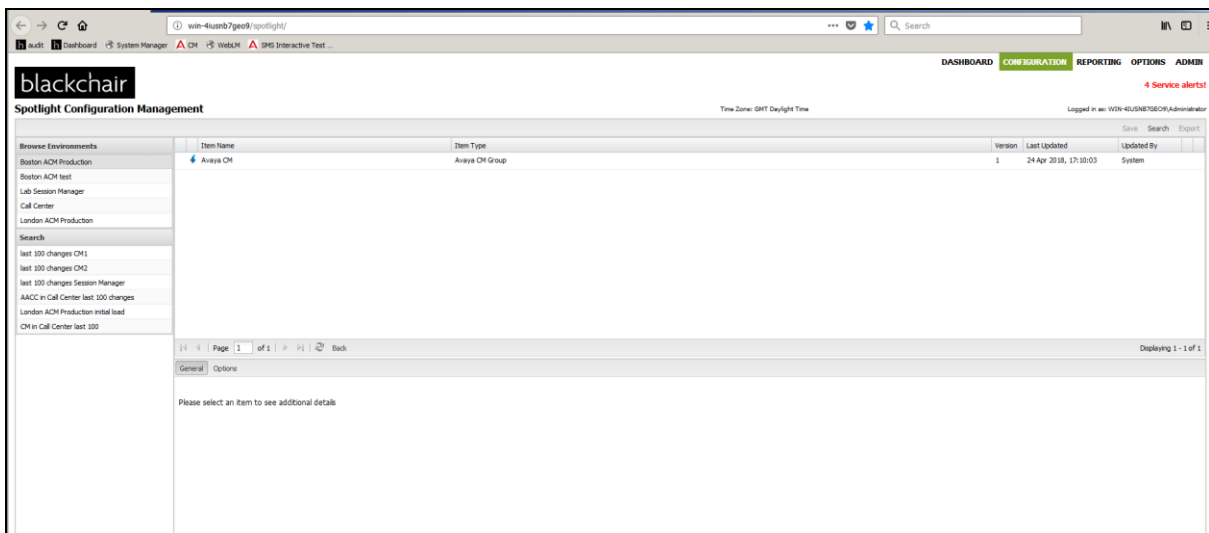
```
<Extension/1000/>
<Type>9608</Type>
<Port>S00000</Port>
<Name>4000, H323User</Name>
<Coverage_Path_1>1</Coverage_Path_1>
<Coverage_Path_2/>
<Hunt_to_Station/>
<COR>1</COR>
<COS>1</COS>
```

8.2. Verify changes shown on Spotlight

Open a web browser to the Spotlight server **http://<ServerAddress>/spotlight**. Enter the Windows credentials, then click on **OK** as shown below.



In the **Browse Environments** left window, click on the appropriate environment and then in the main window click on the appropriate **Item**.



The main page shows various items that can be chosen to display. **Agent Login Status** is clicked on below and this displays the status of the agents configured on the system as shown below.

The screenshot shows the 'Spotlight Configuration Management' interface. The 'Agent Login Status' item is selected in the left sidebar. The main table displays the configuration for 'Agent Login Status'.

Item Name	Item Type	Version	Last Updated	Updated By
Agent Login Status	Agent Login Status Group	1	24 Apr 2018, 17:10:04	System

Below the table, there is a section for 'General' and 'Filter' with a table of agent login details.

Date Retrieved	Login ID	Name	Extension	Skill Number 1	Skill Number 2	Skill Number 3	Skill Number 4	Skill Number 5	Skill Number 6	Skill Number 7	Skill Number 8	Updated By
Apr 25, 2018 10:20:15	4462	Dave EMC Agt2	4001									System
Apr 25, 2018 10:20:15	4461	Paul EMC Agt1	4000									System
Apr 25, 2018 10:08:05	4462	Dave EMC Agt2	4001									System
Apr 25, 2018 10:08:05	4461	Paul EMC Agt1	4000									System

Another item can be chosen such as **Announcement**, as is shown below. The information on that announcement chosen is displayed.

The screenshot shows the 'Spotlight Configuration Management' interface with the 'Announcement' item selected. The main table displays the configuration for 'Announcement'.

Item Name	Item Type	Version	Last Updated	Updated By
Extension 4700	Announcement	1	24 Apr 2018, 18:45:04	System

Below the table, there is a section for 'General' and 'Options' with a table of announcement details.

Property	Value
Name :	Extension 4700
Version :	1
Last Updated By :	System
Updated Date :	24 Apr 2018, 18:45:04
Extension :	4700
Announcement Type :	Integrated
Name :	PGTEXT1
Num Files :	
Board :	001V9
Announcement Number :	

9. Conclusion

These Application Notes describe the configuration steps required for Spotlight from blackchair to successfully interoperate with Avaya Aura® Communication Manager R7.1 using the SMS SDK on Avaya Aura® Application Enablement Services. 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*, Release 7.1.3 Issue 7 May 2018
- [2] *Avaya Aura® Communication Manager Feature Description and Implementation*, Release 7.1.3 Issue 6 May 2018
- [3] *Administering and Maintaining Avaya Aura® Application Enablement Services* Release 7.1.3 Issue 5 May 2018

Information on the Avaya Aura® Application Enablement Services SMS SDK can be found by navigating to this link <https://www.devconnectprogram.com/>

The AE Services System Management Service Fact Sheet can be found by searching for the following file **LB3873.pdf**

Product information on blackchair Spotlight can be found at <http://www.thebackchair.com>

Appendix

Existing Avaya CM Target List Versioned Data	AAR Analysis
	AD Enhanced
	Agent Login ID
	Announcement
	ARS Analysis
	Cab Map
	COR
	COS
	Coverage Path
	IP Interface
	Media Gateway
	Route Pattern
	Skill
	Station
	Trunk Group
	VDN
	Vector
New Avaya CM Target List Versioned Data	AARDigitConversion
	ARSDigitConversion
	AuthorizationCode
	VRT
	CTILink
	DialPlan
	DialPlanParameters
	Locations
	HolidayTable
	IPServices
	ListSurvivable (not licensed)
	OffPBXFeatureNameExtension
	OffPBXStationMapping
	PublicUnknownNumbering
	ReasonCodeNames
	RemoteAccess
	SystemFeatures

Volatile Data Target List	AE Services CTI Link
	AE Services Link
	Agent Login ID Status
	Capacity
	IP Codec Set
	IP Network Map
	IP Network Region
	IP Network Region Monitor
	IP Server Interface
	Logins (Registered IP Stations Group)
	Node Names

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