AVAYA

Avaya Solution & Interoperability Test Lab

Application Notes for InfoPlus Session Manager Book with Avaya Aura® Session Manager - Issue 1.0

Abstract

These Application Notes describe how InfoPlus Session Manager Book collects Network Routing Policy (NRP) configuration data from Avaya Aura® Session Manager to generate a detailed report. This report provides both a high-level overview of the SIP network and its components, as well as an understandable explanation of how individual calls are routed. The InfoPlus Session Manager Book is an excellent tool for the day-to-day management and administration of enterprise SIP network routing. InfoPlus Session Manager Book collects configuration data from Avaya Aura® System Manager.

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 how InfoPlus Session Manager Book collects Network Routing Policy (NRP) configuration data from Avaya Aura® Session Manager to generate a detailed report. This report provides both a high-level overview of the SIP network and its components, as well as an understandable explanation of how individual calls are routed. The InfoPlus Session Manager Book is an excellent tool for the day-to-day management and administration of enterprise SIP network routing. The InfoPlus Session Manager Book is designed so that even the Non-Technical Manager can understand and identify how SIP sessions are routed through their network. This is a hosted solution with the InfoPlus Session Manager Book server located on InfoPlus premises and the Session Manager Book report generated by InfoPlus Services personnel and delivered to the customer.

The InfoPlus Session Manager Book provides the following three chapters:

- **Chapter 1: SIP Network Information** – There is one section for each of the following NRP programming areas.

  - **Domains** – A reference of the programmed domains.
  - **Locations** – A breakdown of the bandwidth management programming and key Location parameters.
  - **SIP Entities** – A graphical depiction of the Avaya SIP Core Network, in addition to a comprehensive listing of SIP entities, their connections, and key parameters.
  - **Adaptations** – This section reveals the SIP header modifications applied by each Adaptation, processes and evaluates all digit conversion rules, and lists dependent SIP Entities.
  - **Time Ranges** – A graphical depiction of each Time Range programmed.
  - **Routing Policies** – For each Routing Policy, a Time of Day routing cost-based heat map, in addition to a summary of how many Dial Patterns and Regular Expressions are assigned.

- **Chapter 2: SIP Network Routing** – The statistical analysis provided in this chapter enables a high level understanding of how Session Manager will route a given call. The analysis is performed for all Dial Patterns and Regular Expressions and computes their routing destination for each minute of the week. This is then summarized to provide a percentage of the week that any given call will route to any given SIP Entity. This enables verification of routing performance from the simplest to the most complex 'Time of Day'/'Least Cost Routing' implementations.

- **Chapter 3: Action Items** – This chapter identifies Session Manager NRP data that can either cause Session Manager to behave in an unpredictable manner, is inconsistent with other Session Manager programming, or appears to be superfluous with regard to how Session Manager functions.

InfoPlus Session Manager Book collects the configuration data from Avaya Aura® System Manager. There are two methods used by InfoPlus Session Manager Book to capture the NRP data from Avaya Aura® System Manager: *Customer Export* and *Remote Access*.

Using the *Customer Export* method, the customer manually exports the NRP data from Avaya Aura® System Manager and then sends it to InfoPlus. Using the *Remote Access* method, InfoPlus Session Manager Book remotely accesses Avaya Aura® System Manager via VPN, SAL, or another TCP/IP communication method. InfoPlus Session Manager Book then automatically logs into Avaya Aura® System Manager and exports the data exactly as a customer would have done it. For this compliance test, both access methods were exercised. For remote access, InfoPlus Session Manager Book accessed Avaya Aura® System Manager via the Internet.

When the NRP data is exported from Avaya Aura® System Manager, the data is stored in the `NRPExportData.zip` export file. This compressed file contains nine XML files, each pertaining to a NRP data component. The nine XML files are:

- *<user>*Domains.xml (required)
- *<user>*Locations.xml (required)
- *<user>*Adaptations.xml (optional)
- *<user>*SipEntities.xml (required)
- *<user>*EntityLinks.xml (required)
- *<user>*TimeRanges.xml (required)
- *<user>*RoutingPolicies.xml (required)
- *<user>*DialPatterns.xml (optional)
- *<user>*RegularExpressions.xml (optional)

The InfoPlus Session Manager Book report uses data from each of the nine NRP files exported. Session Manager Book expands the compressed files, validates the files using XSD schema definitions, and then parses the XML to perform data processing and analysis. The data download and processing are performed by two applications: **InfoPlusDownloader** and **InfoPlusProducer** applications.

Note: Since this is a hosted solution provided by InfoPlus for customers with an Avaya SIP network using Avaya Aura® System Manager and Avaya Aura® Session Manager, all of the activities described in these Application Notes are performed by InfoPlus Services personnel with the exception of the customer providing the `NRPExportData.zip` export file to InfoPlus, if that is the chosen data collection method. The steps in these Application Notes are provided for information purposes.

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2. General Test Approach and Test Results

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.

The interoperability compliance test included feature testing. The feature testing focused on collecting NRP data from System Manager, validating and processing the data, and generating the Session Manager Book. Two methods were used to collect the data for Session Manager Book: *Customer Export* and *Remote Access*. Since this is a hosted solution provided by InfoPlus, the Session Manager Book server was located on InfoPlus' premises.

2.1. Interoperability Compliance Testing

Interoperability compliance testing covered the following features and functionality:

- Collecting NRP data from System Manager using the *Customer Export* method and importing the data into Session Manager Book.
- Collecting NRP data from System Manager using the *Remote Access* method. To test the remote access method, Session Manager Book accessed System Manager via the Internet. The **InfoPlusDownloader** application was used to collect the data remotely.
- Session Manager Book expanding the compressed files and removing the "user name" prepended to the XML file names by System Manager.
- Session Manager Book performing data integrity check of the `NRPExportData.zip` export file. Any required XML files that were missing were flagged and processing would be halted.
- Report generation and analysis.
- Checking the accuracy of the Session Manager Book report.

2.2. Test Results

All test cases passed. Session Manager Book collected the NRP data from System Manager, validated and processed the data, and generated the Session Manager Book report.

2.3. Support

For technical support on the InfoPlus Session Manager Book, contact InfoPlus Customer Support via phone, email, or website.

- **Phone:** (201) 746-7200
- **Email:** support@infoplusonline.com
- **Web:** http://www.infoplusonline.com/index.php/contactus

3. Reference Configuration

Figure 1 illustrates a sample configuration with an Avaya SIP-based network that includes the following Avaya products:

- Avaya Aura® Communication Manager running on an Avaya S8800 Server with a G650 Media Gateway. Communication Manager was configured as an Evolution Server.
- Avaya Aura® Session Manager connected to Communication Manager via a SIP trunk and acting as a Registrar/Proxy for SIP telephones.
- Avaya Aura® System Manager used to configure Session Manager. InfoPlus Session Manager Book downloads NRP data from System Manager.
- InfoPlus Session Manager Book server and a desktop PC running the InfoPlusDownloader and InfoPlusProducer applications, which are part of the InfoPlus Session Manager Book solution.
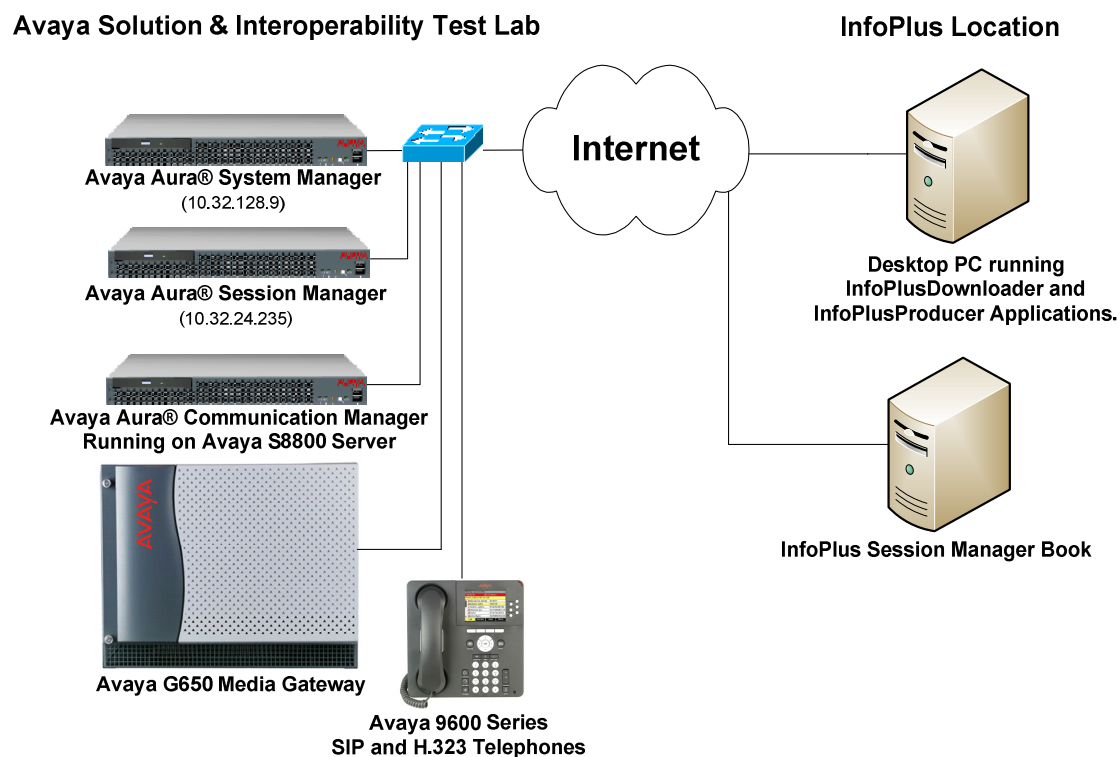
Figure 1: Avaya SIP Network with InfoPlus Session Manager Book – A Hosted Solution

4. Equipment and Software Validated
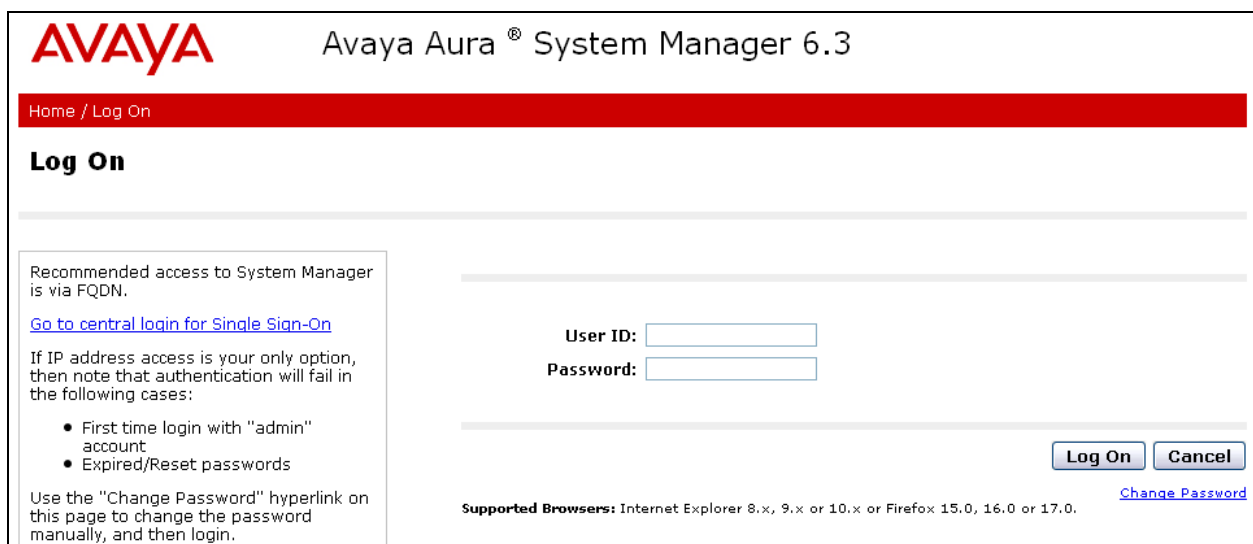
The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on an Avaya S8800 Server with and G650 Media Gateway	6.3 SP 1 (R016x.03.0.124.0 w/Patch 20850)
Avaya Aura® Session Manager	6.3 SP 3 (6.3.3.0.633004)
Avaya Aura® System Manager	6.3.3 (Build No. – 6.3.0.8.5682-6.3.8.1814, Software Update Revision No: 6.3.3.5.1719)
InfoPlus Session Manager Book	12803

5. Exporting NRP Data from Avaya Aura® System Manager

This section provides the procedure for exporting NRP data from System Manager. The procedure remains the same whether using the *Customer Export* or *Remote Access* methods. The only difference between the two access methods is that with the *Customer Export* method, the customer performs these steps manually, whereas with the *Remote Access* method, InfoPlus Session Manager Book performs these steps automatically using its **InfoPlusDownloader** application.

Access the System Manager Web interface by using the URL "https://ip-address" in an Internet browser window, where "ip-address" is the IP address of the System Manager server. Log in using the appropriate credentials.

From the subsequent screen shown below, navigate to **Elements → Routing**.

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Next, navigate to **Routing → Domains**.

In the **Domains** webpage, click on the **More Actions** button and then select **Export all data** as shown below. Save the `NRPExportData.zip` file to the desired directory, if manually performing these steps. When InfoPlus Services performs these steps using their **Downloader** application, the file will be saved automatically to the appropriate directory assigned to this host. Once the data has been exported, send the `NRPExportdata.zip` file to InfoPlus as directed by their services personnel.

6. InfoPlus Session Manager Book

InfoPlus Session Manager Book utilizes the **InfoPlusDownloader** and **InfoPlusProducer** applications to download the NRP data, and to process it and generate the report, respectively. The **InfoPlusDownloader** application uses an internal customer management database that contains customer information, including the System Manager IP address, login credentials, and customer email addresses. The **InfoPlusDownloader** application runs in the background and initiates a download per its configured schedule. The **InfoPlusDownloader** window is displayed below.
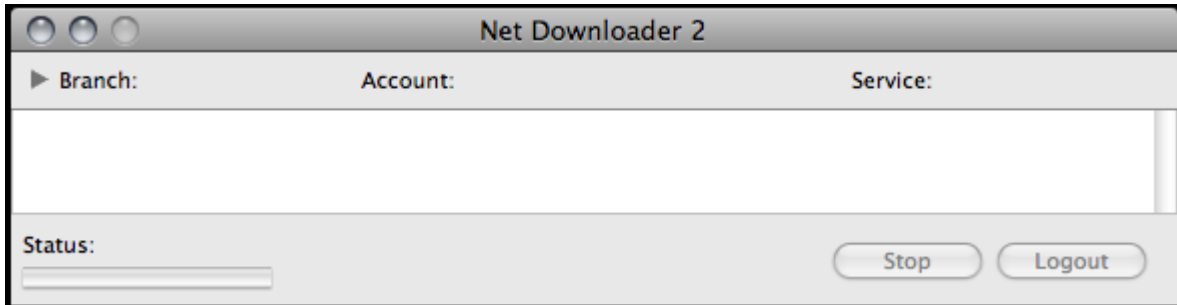
When the **InfoPlusDownloader** application initiates the NRP data download from System Manager, it connects to System Manager and logs in with the appropriate credentials as shown below. It proceeds to export the data as described in **Section 5**.
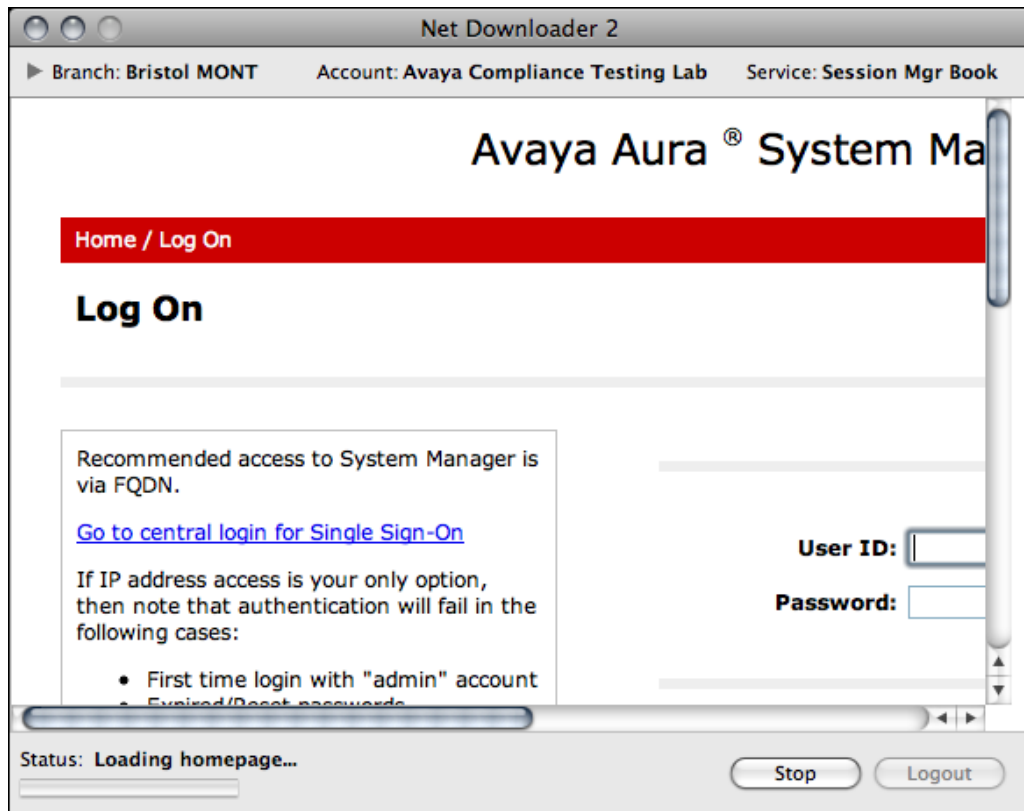
After the `NRPExportData.zip` file has been downloaded, it is automatically saved to the appropriate directory from where the **InfoPlusProducer** application will access it. **InfoPlusProducer** will then expand the file, parse it, and generate the report. The **InfoPlusProducer** window appears as shown below when it is processing the NRP data.
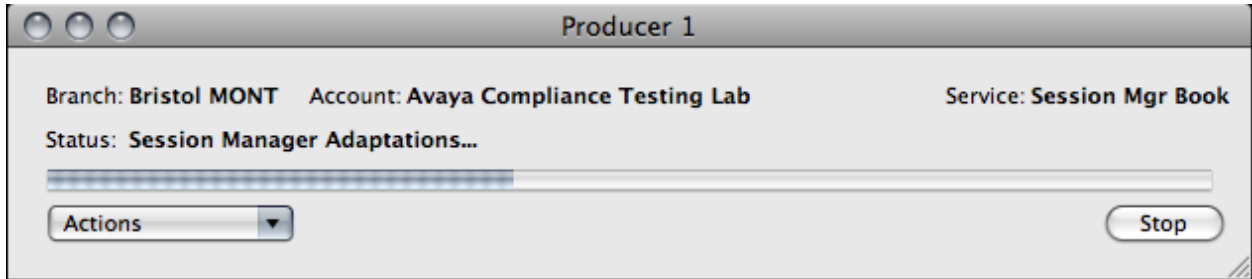

As InfoPlusProducer is processing data, it will display appropriate alerts as necessary. InfoPlus Services personnel then have the option to proceed or halt the process. Below is an example where an alert is displayed because an optional file is missing. In this case, there are no Regular Expressions configured so the process is allowed to continue.

The following example, provides an alert because one of the Adaptations is misconfigured (i.e., the Adaptation is using an unknown parameter). Again, the process is allowed to continue.
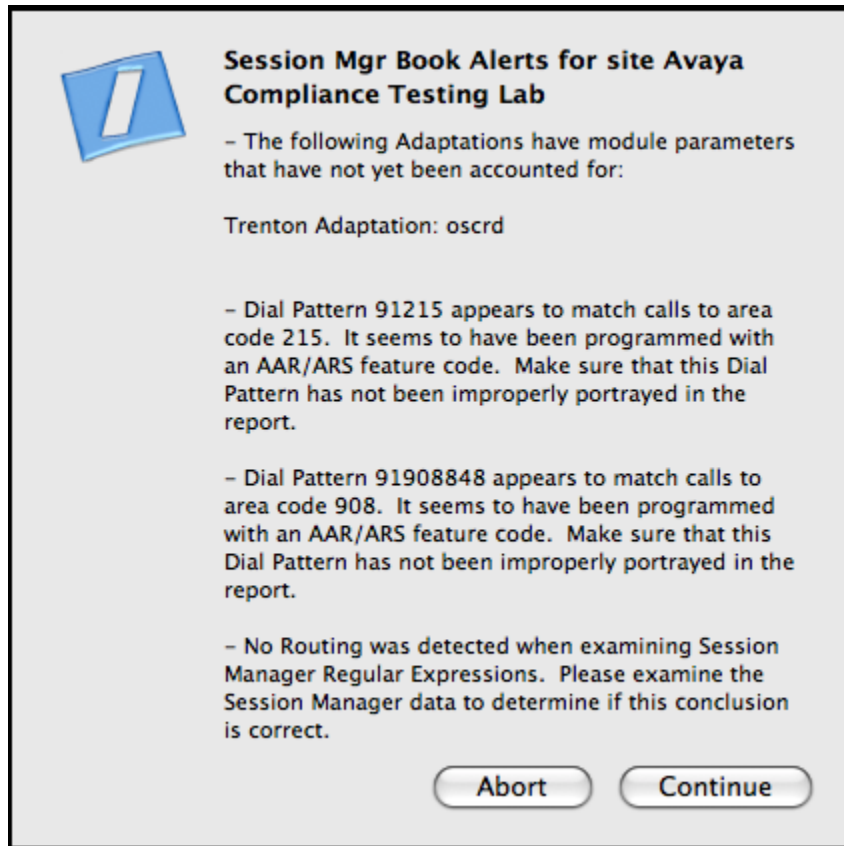
When the data has been processed, **InfoPlusProducer** starts to generate the Session Manager Book, which is a PDF file.
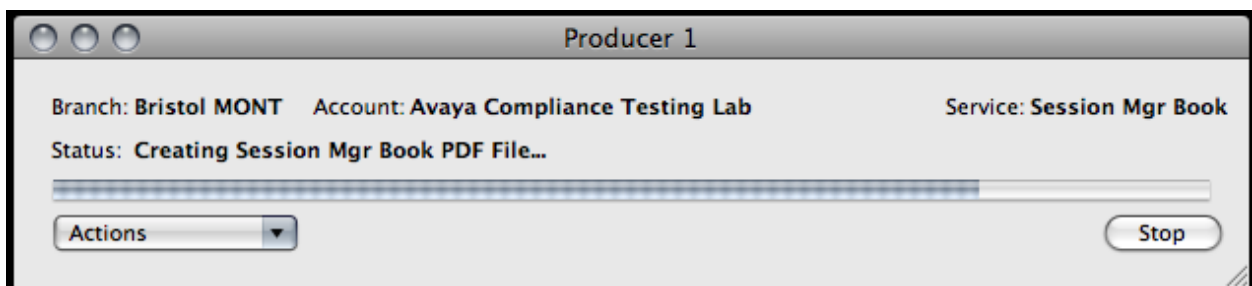
When the Session Manager Book has been created, the **InfoPlusProducer** appears as shown below. It then proceeds to send an email to the customer contact with a link to the report. This completes the process. To view a Session Manager Book sample, refer to [3].
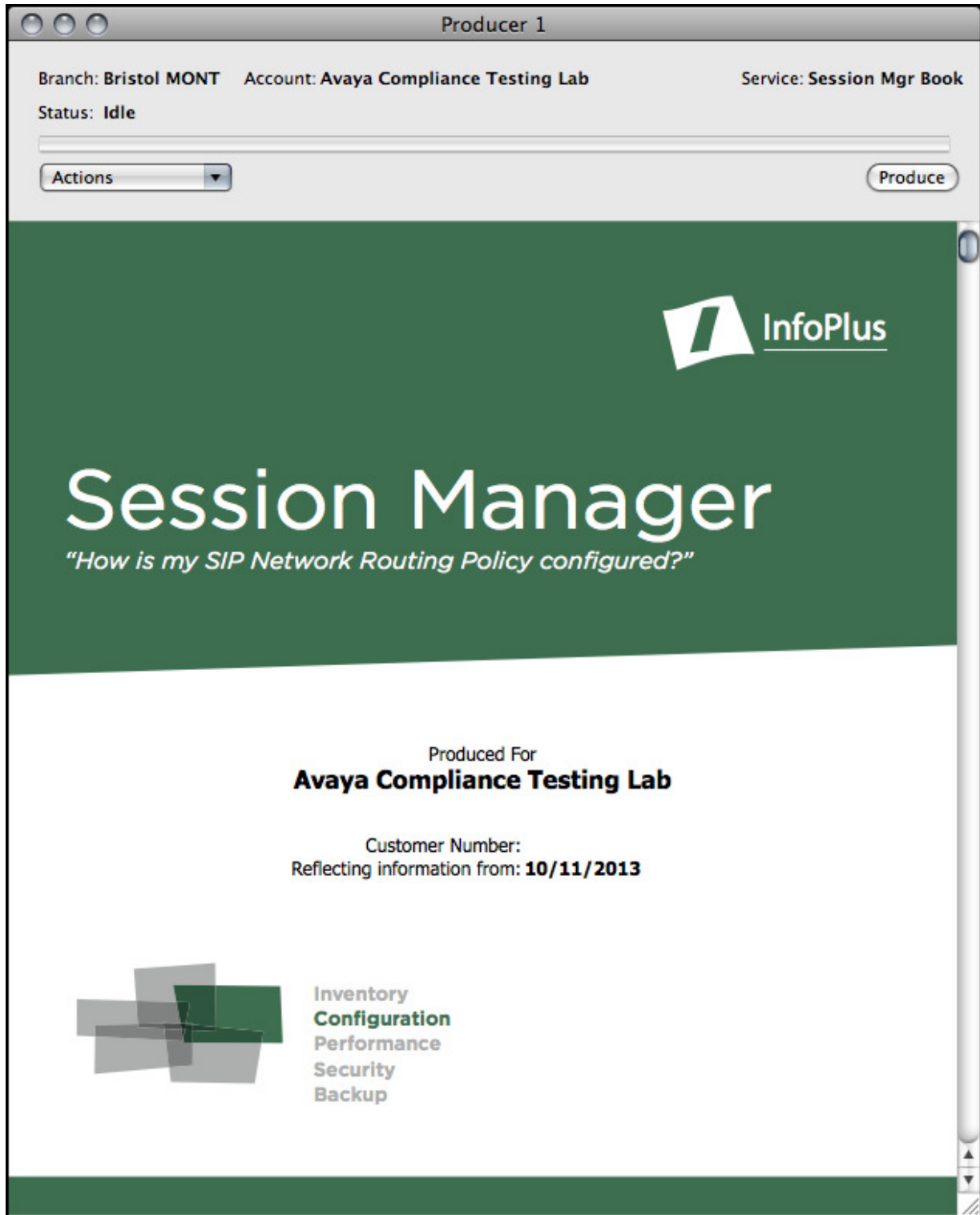
7. Verification Steps

This section provides the steps that can be performed to verify that InfoPlus Session Manager Book can remotely access Avaya Aura® System Manager to collect NRP data.

1. InfoPlus Services personnel may use the InfoPlusDownloader application to connect to the customer's System Manager using the information in their customer management database. If appropriate, the download can also be performed manually by the customer using the procedure described **Section 5**.

2. When the NRP data has been downloaded, it should be expanded and checked for the appropriate files.

3. Once the data has been validated, InfoPlus can proceed to process the data and generate the Session Manager Book.

8. Conclusion

These Application Notes describe how InfoPlus Session Manager Book collects Network Routing Policy (NRP) configuration data from Avaya Aura® Session Manager to generate a detailed report. InfoPlus Session Manager Book successfully downloaded the Network Routing Policy data from Avaya Aura® System Manager and generated the Session Manager Book report. All test cases passed.

9. References

This section references the Avaya documentation relevant to these Application Notes. The following Avaya product documentation is available at http://support.avaya.com.

[1] *Administering Avaya Aura® Communication Manager*, Release 6.3, Issue 9, October 2013, Document Number 03-300509.
[2] *Administering Avaya Aura® Session Manager*, Release 6.3, Issue 3, October 2013.
[3] *InfoPlus Session Manager Book* Demo available at
http://www.infoplusonline.com/images/demos/session%20manager%20book%20demo.pdf

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