Avaya Solution & Interoperability Test Lab

Application Notes for Bristol Capital Security Audit Service with Avaya Aura™ Communication Manager – Issue 1.0

Abstract

These Application Notes describe the steps required for the Bristol Capital Security Audit service to successfully interoperate with Avaya Aura™ Communication Manager. The Bristol Capital Security Audit is a PBX management service that uses the Avaya System Administrator Terminal interface to obtain security related data and provide report on the security aspects of Avaya Aura™ Communication 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 the steps required for the Bristol Capital Security Audit service to successfully interoperate with Avaya Aura™ Communication Manager. The Bristol Capital Security Audit is a PBX management service that uses the Avaya System Administrator Terminal (SAT) interface to obtain security related data and provide report on the security aspects of Avaya Aura™ Communication Manager.

1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the proper collection and reporting of security data by the Bristol Capital Security Audit service. The collected security data included configuration, coverage paths, capacity, system parameters, trunk groups, attendants, hunt groups, locations, ARS analysis, AAR analysis, report scheduler, class of services, abbreviated dialing lists, route patterns, authorization codes, feature access codes, remote access, time of day, coverage remote groups, listed directory numbers, vectors, alternate FRL, trunk group measurements, route pattern measurements, tenants, asg history, VDNs, data modules, ARS digit conversions, AAR digit conversions, class of restrictions, profiles, dial plan parameters, audio groups, software versions, stations, partition groups, partition tables, toll, call forwarding, off PBX station mapping, and UNIX users/groups/authorizations.

The serviceability testing focused on verifying the ability of the Bristol Capital Security Audit service to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable and restarting the SAT session with Avaya Aura™ Communication Manager.

1.2. Support

Technical support on the Bristol Capital Security Audit service can be obtained through the following:

- **Phone:** (201) 476-0600
- **Email:** support@infoplusonline.com

2. Reference Configuration

As shown in **Figure 1**, the Bristol Capital Security Audit service consists of a server that connects remotely to the Avaya Aura™ Communication Manager SAT interface, and uses a subset of the SAT commands to collect security related data. The collected security data are passed on to the Bristol Capital Central Database for analysis and reporting.

The remote connectivity between the Bristol Capital Security Audit service and Avaya Aura™ Communication Manager can be accomplished using either modem dialup to the Avaya Server Availability Management Processor (SAMP) interface, VPN tunneling, or direct access from the public network. In the compliance testing, the direct access method from the public network was used.

In the direct access method via the public network, a spare and existing C-LAN circuit pack from Avaya Aura™ Communication Manager was connected to the public network, with the corporate firewall configured to allow traffic from the public IP address of the Bristol Capital Security Audit server. The public IP address of the C-LAN circuit pack and the SAT login credentials were passed on to Bristol Capital.

Note that the corporate firewall configuration is outside the scope of these Application Notes, and will not be described.

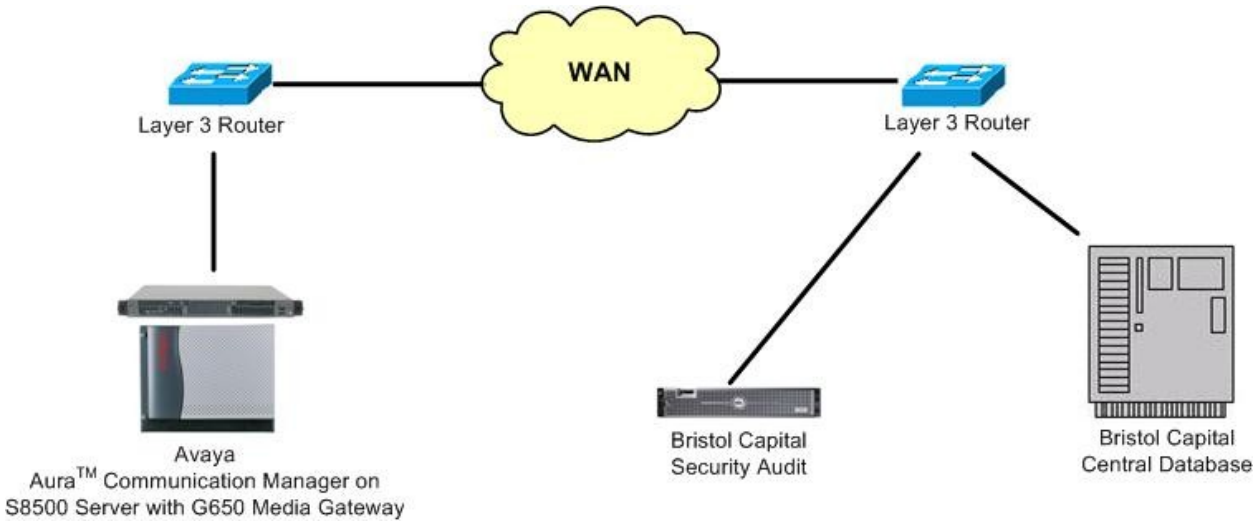


Figure 1: Bristol Capital Security Audit with Avaya Aura™ Communication Manager

3. Equipment and Software Validated

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

Equipment	Software
Avaya Aura™ Communication Manager on Avaya S8500 Server	R015x.02.0.947.3
Avaya G650 Media Gateway • TN799DP C-LAN Circuit Pack	 HW01 FW032
Bristol Capital Security Audit	Build 8026

4. Configure Avaya Aura™ Communication Manager

This section provides the procedures for configuring Avaya Aura™ Communication Manager. The procedures include the following areas:

- Obtain node names
- Administer node names
- Administer IP services

4.1. Obtain Node Names

Log in to the SAT with proper credentials. Use the "display ip-interface x" command, where "x" is the location of an existing C-LAN circuit pack that will be used to connect to the public network. Note the values in the **Node Name** and **Gateway Node Name** fields.

```
display ip-interface 1a05                                    Page   1 of   3
                                IP INTERFACES


                 Type: C-LAN
                 Slot: 01A05        Target socket load and Warning level: 400
          Code/Suffix: TN799  D           Receive Buffer TCP Window Size: 8320
     Enable Interface? y                          Allow H.323 Endpoints? y
                 VLAN: n                           Allow H.248 Gateways? y
       Network Region: 2                            Gatekeeper Priority: 5



                               IPV4 PARAMETERS
            Node Name: Clan-2
          Subnet Mask: /24
    Gateway Node Name: Gateway002

        Ethernet Link: 2
        Network uses 1's for Broadcast Addresses? Y
```

4.2. Administer Node Names

Use the "change node-names ip" command to modify the IP address of the C-LAN circuit pack from **Section 4.1**, and the IP address of the associated gateway. In this case, the C-LAN node name is "Clan-2", and the associated gateway node name is "Gateway002". Enter the appropriate public IP addresses for these two entries to match the network configuration. The public IP addresses for the entries are masked in the screen below for privacy.

```
change node-names ip                                          Page   1 of   2
                                  IP NODE NAMES
    Name                  IP Address
AES-Test                10.32.32.20
Annc-1                  10.32.32.14
CDR-2nd                 192.168.1.12
CDR-Metropolis          192.2.5.25
Clan-1                  10.32.32.12
Clan-2                  xxx.xxx.xxx.xxx
G150-Lan2               192.10.20.1
G350-S8300              10.32.38.10
Gateway001              10.32.32.1
Gateway002              yyy.yyy.yyy.yyy
IPO500                  10.32.33.10
Prowler-1               10.32.32.13
Prowler-2               12.184.9.168
S8300-G250              10.10.1.5
```

4.3. Administer IP Services

Use the "change ip-services" command to add an entry to allow SAT access via the public facing C-LAN circuit pack. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Service Type:** "SAT"
- **Enabled:** "y"
- **Local Node:** Node name of the public facing C-LAN circuit pack from **Section 4.2**.
- **Local Port:** "5023"
- **Remote Node:** "any"
- **Remote Port:** "0"

```
change ip-services                                            Page   1 of   4

                                  IP SERVICES
 Service     Enabled     Local       Local       Remote      Remote
  Type                   Node        Port        Node        Port
CDR1                  Clan-1          0       TestSite        9002
CDR2                  Clan-1          0       CDR-2nd         9004
AESVCS         y      Clan-1          8765
SAT            y      Clan-2          5023    any             0
```

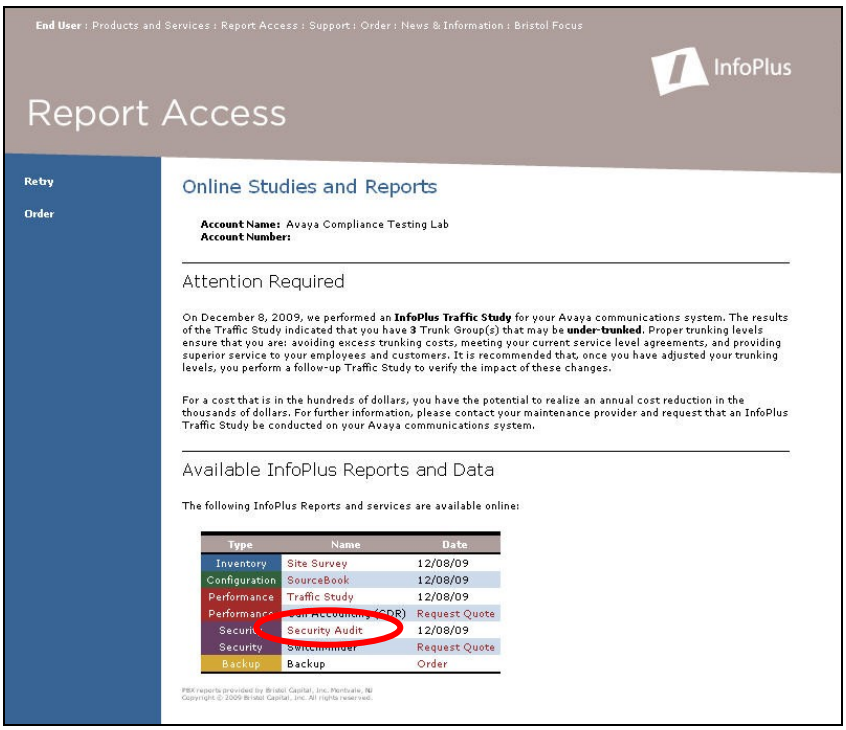
5. Navigate Bristol Capital Security Audit Report

This section provides the procedures for navigating the Bristol Capital Security Audit report. The procedures include the following areas:

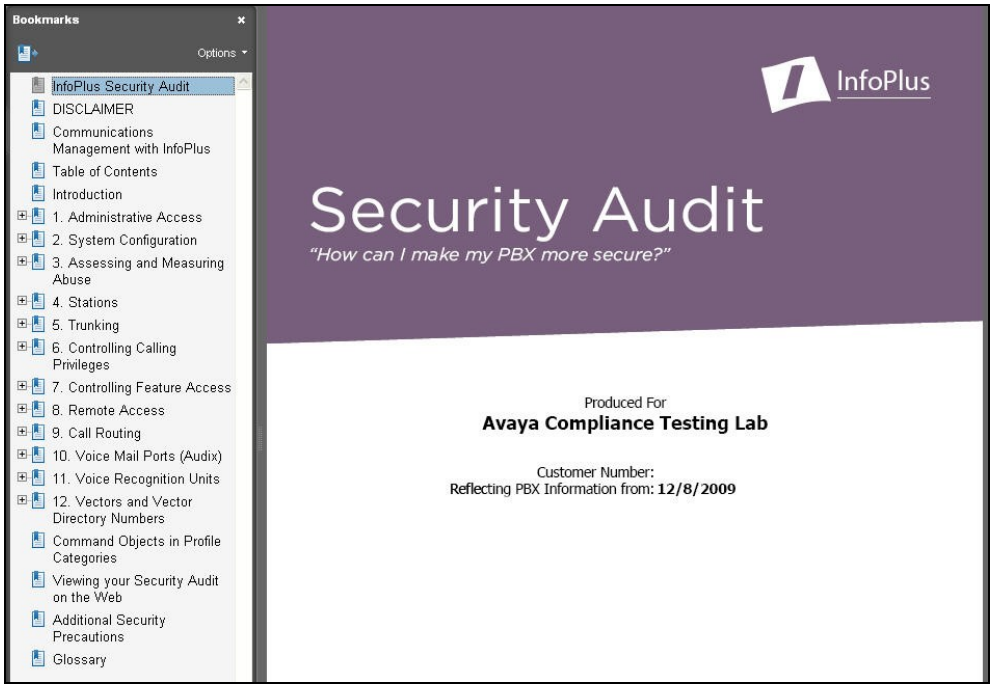
- Access report
- Review administrative access
- Review system configuration
- Review assessing and measuring abuse
- Review stations
- Review trunking
- Review controlling calling privileges
- Review controlling feature access
- Review remote access
- Review call routing
- Review voice mail ports
- Review voice recognition units
- Review vectors and vector directory numbers

5.1. Access Report

At the conclusion of the inventory data collection and analysis, the Bristol Capital Security Audit service will send an automatic email notification to the customer, including a URL to access the online report. From an Internet browser window, enter the URL from the email notification to display the **Report Access** screen below. Select **Security Audit**.

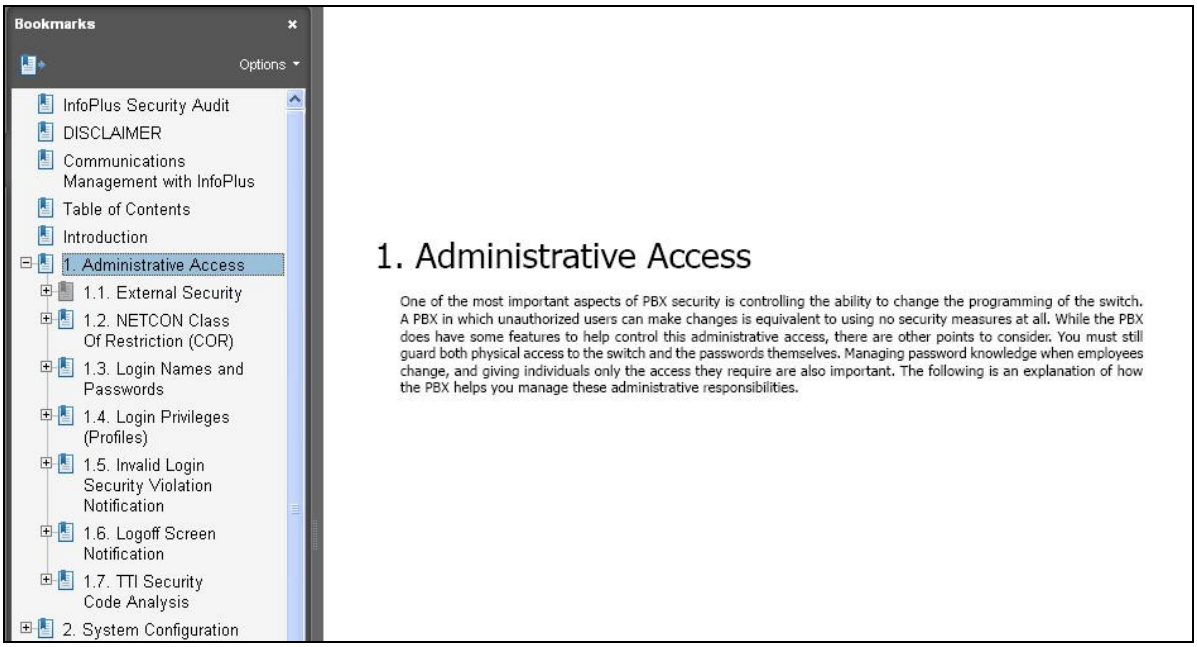


The **Security Audit** report is displayed.



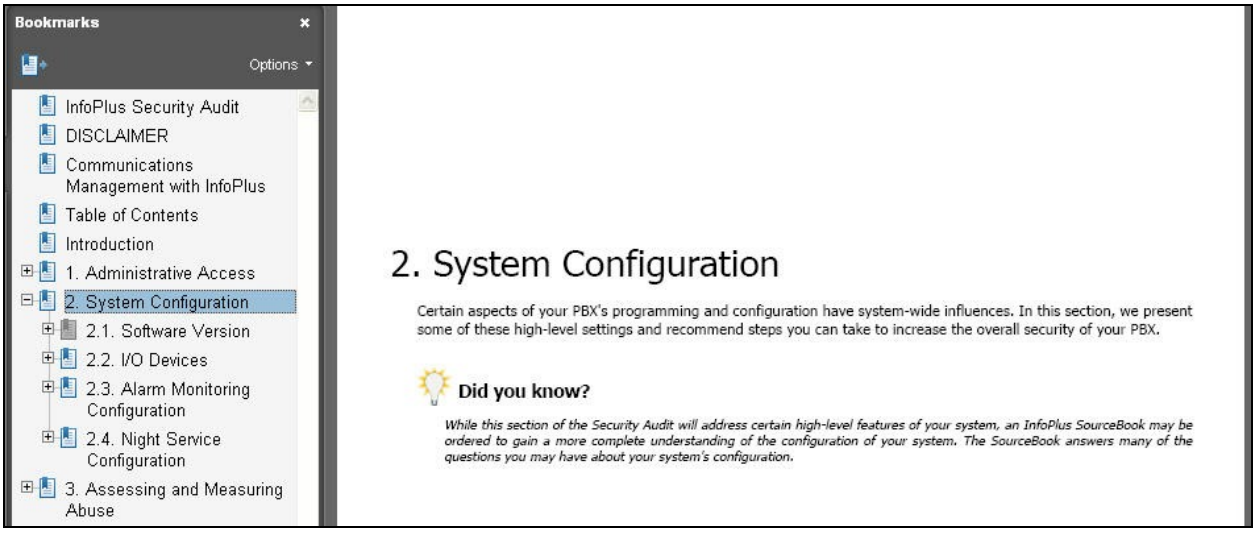
5.2. Review Administrative Access

Select **Administrative Access** from the left pane, to display the **Administrative Access** section. This section provides information on the administrative access aspects of the system, including external security, NETCON class of restriction, login names and passwords, login profiles, invalid login security violation notification, logoff screen notification, and Terminal Translation Initialization (TTI) code analysis.



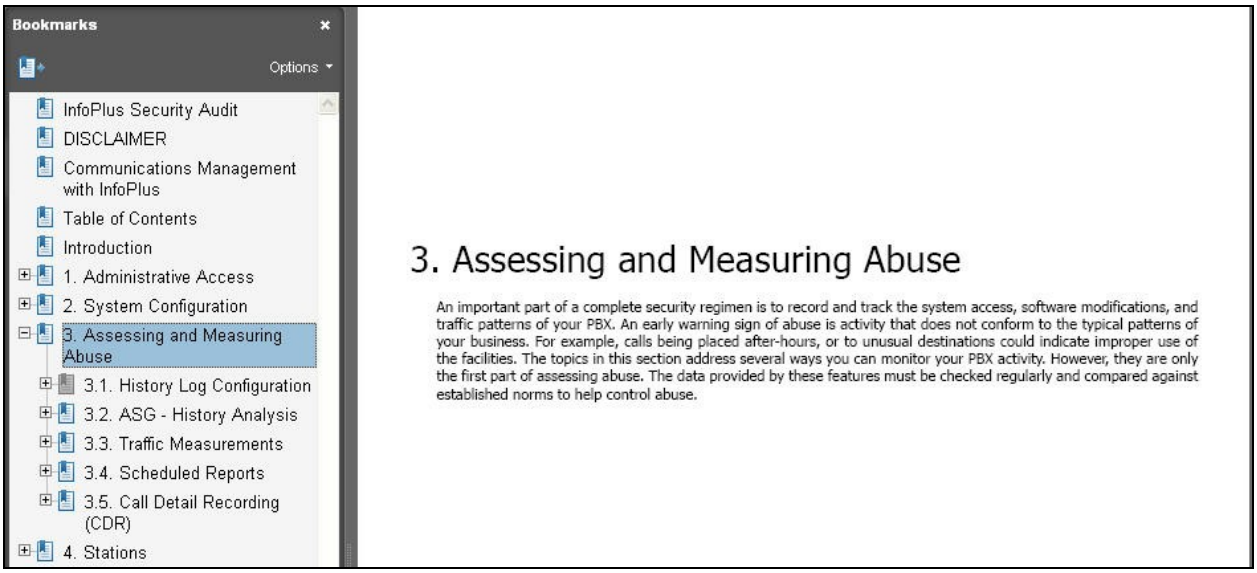
5.3. Review System Configuration

Select **System Configuration** from the left pane, to display the **System Configuration** section. This section provides the system high level settings, including software version, input and output devices, alarm monitoring configuration, and night service configuration.



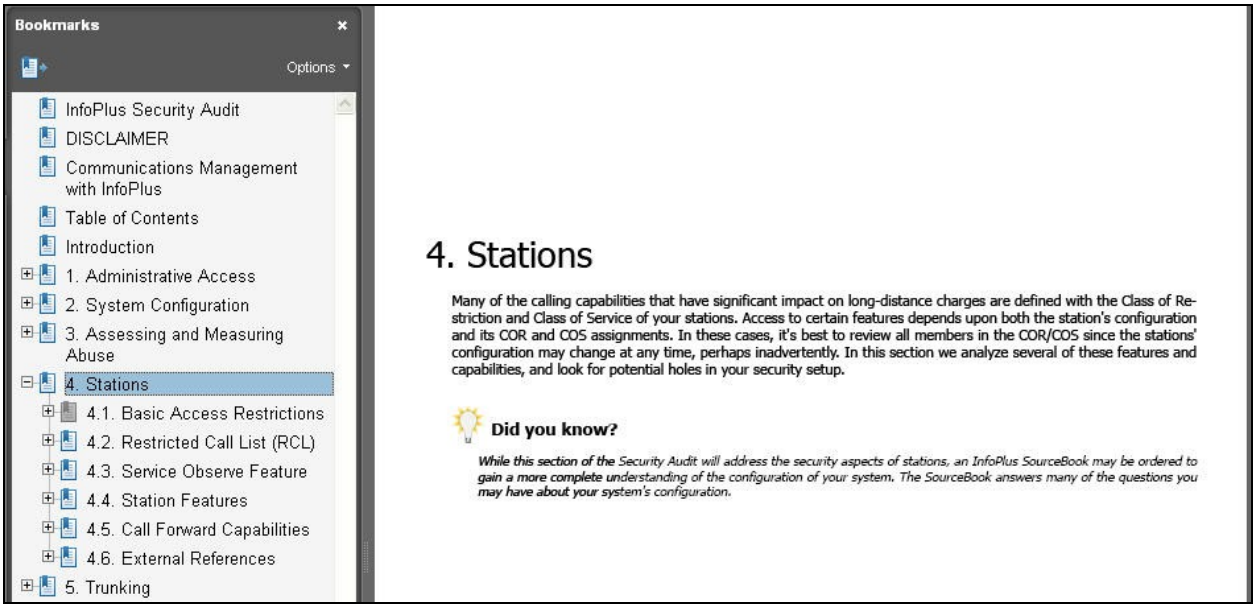
5.4. Review Assessing and Measuring Abuse

Select **Assessing and Measuring Abuse** from the left pane, to display the **Assessing and Measuring Abuse** section. This section provides details on the system access and usage, including history log configuration, ASG history analysis, traffic measurements, scheduled reports, and call detailed recording.



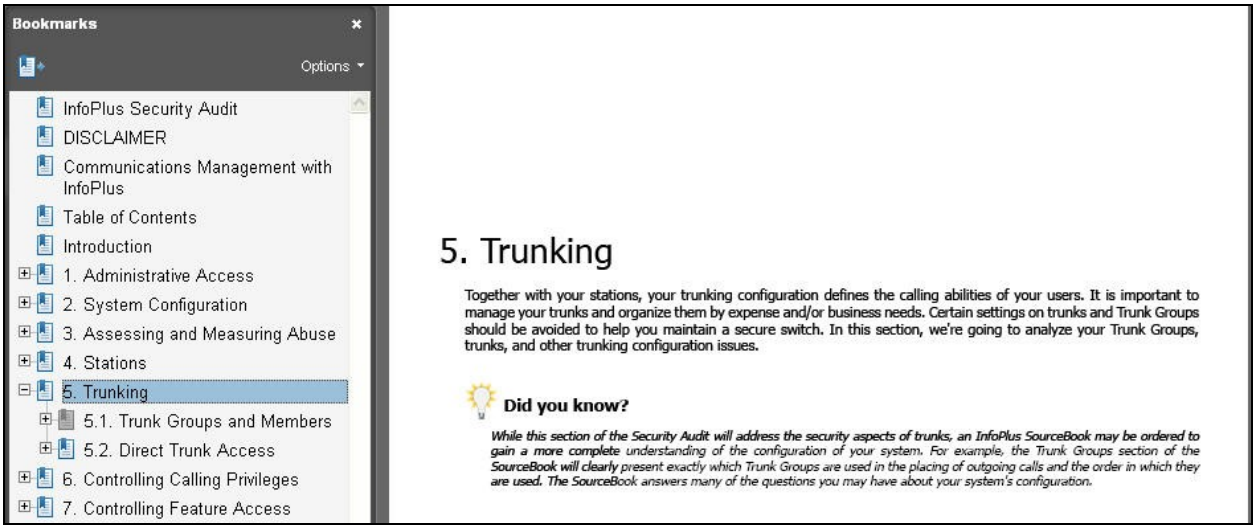
5.5. Review Stations

Select **Stations** from the left pane, to display the **Stations** section. This section provides detailed station information that can have significant impact on long distance charges, including access restrictions, restricted call list, service observe feature, station features, call forward capabilities, and external redirections.



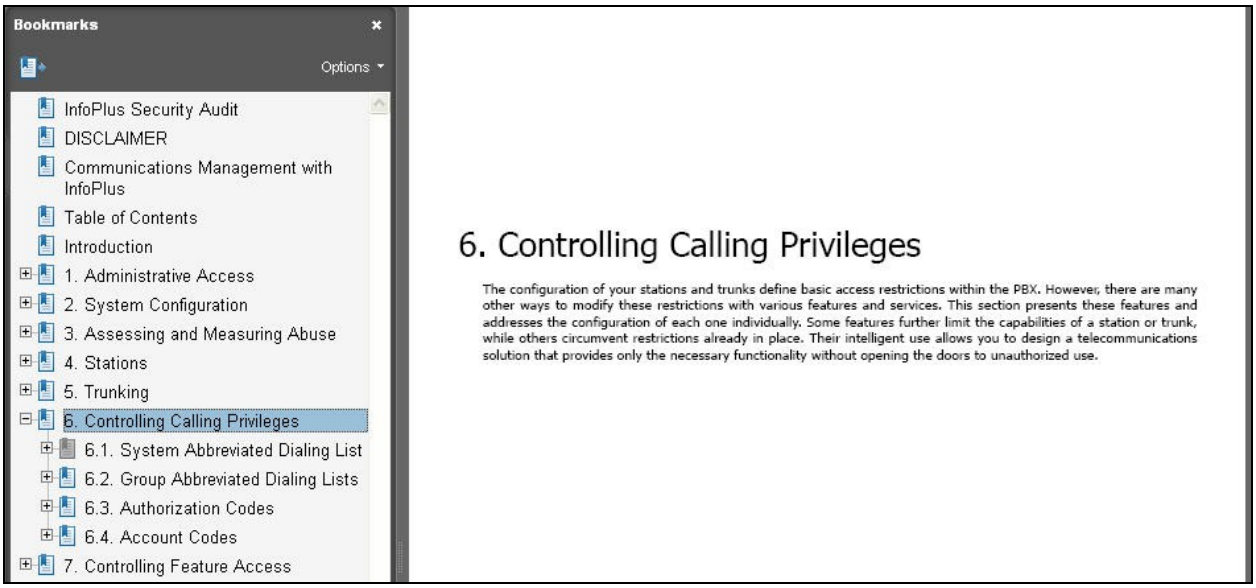
5.6. Review Trunking

Select **Trunking** from the left pane, to display the **Trunking** section. This section provides detailed trunking analysis, including trunk groups and members, and direct trunk access.



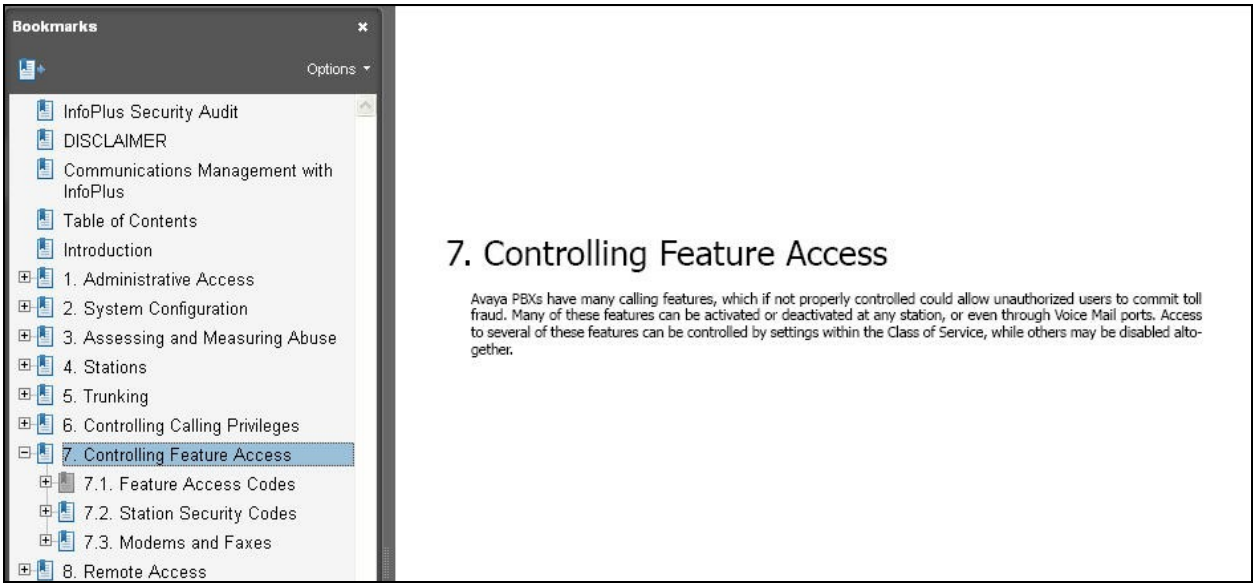
5.7. Review Controlling Calling Privileges

Select **Controlling Calling Privileges** from the left pane, to display the **Controlling Calling Privileges** section. This section provides detailed information relating to calling privileges, including abbreviated dialing system list, abbreviated dialing group lists, authorization codes, and account codes.



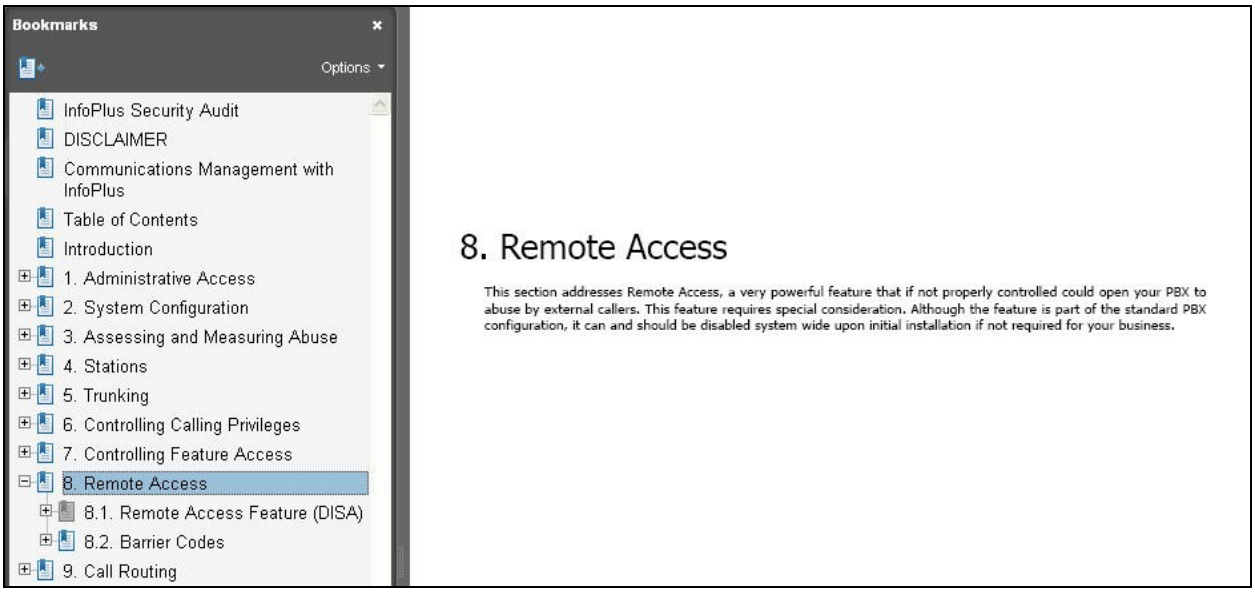
5.8. Review Controlling Feature Access

Select **Controlling Feature Access** from the left pane, to display the **Controlling Feature Access** section. This section provides detailed feature settings, including feature access codes, station security codes, modems and faxes.



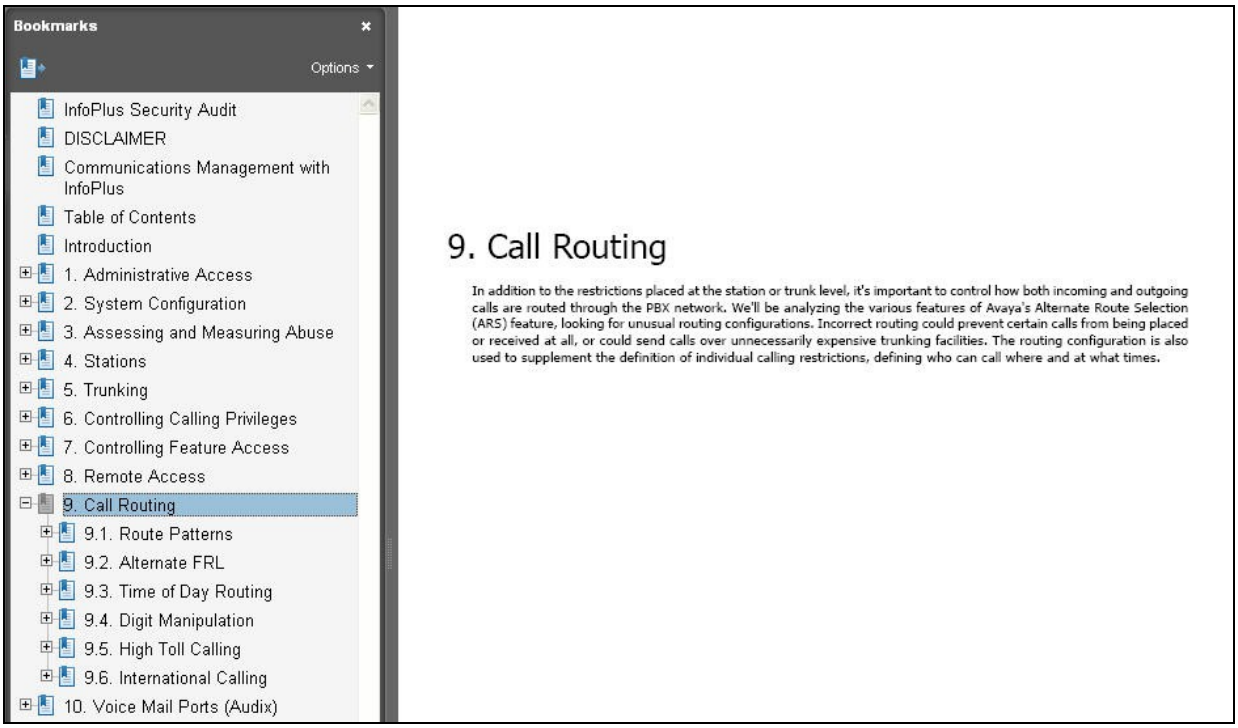
5.9. Review Remote Access

Select **Remote Access** from the left pane, to display the **Remote Access** section. This section provides detailed remote access settings, including the remote access feature, and barrier codes.



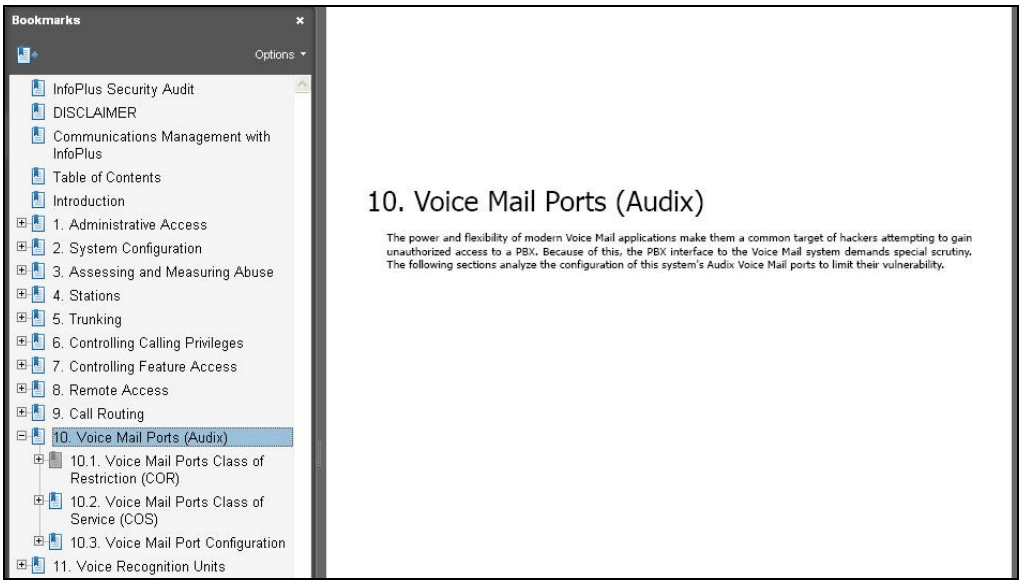
5.10. Review Call Routing

Select **Call Routing** from the left pane, to display the **Call Routing** section. This section provides detailed call routing configurations, including route patterns, alternate FRL, time of day routing, digit manipulation, high toll calling, and international calling.



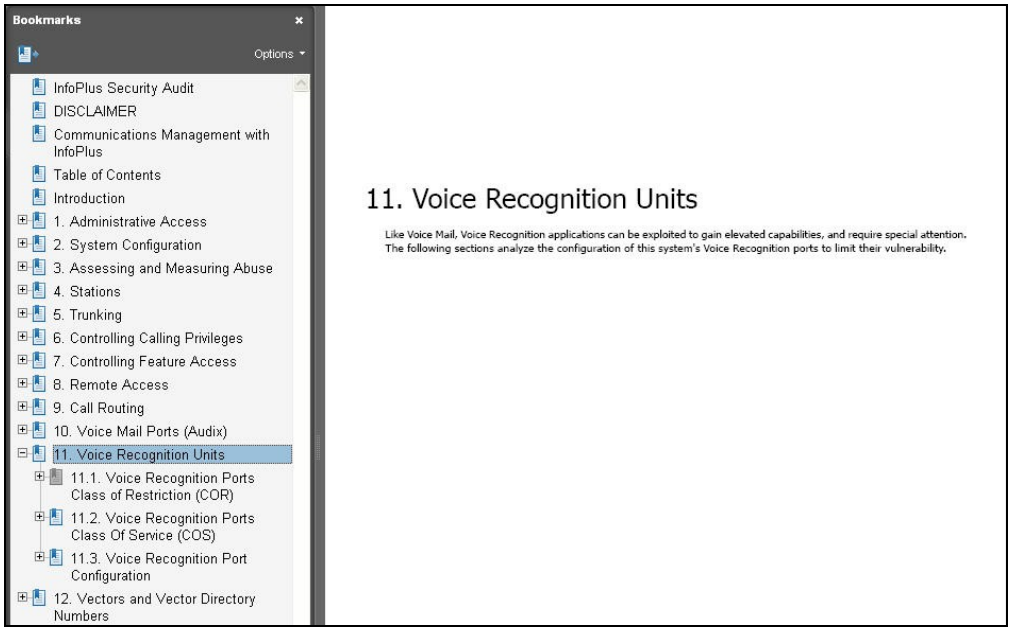
5.11. Review Voice Mail Ports

Select **Voice Mail Ports (AUDIX)** from the left pane, to display the **Voice Mail Ports (AUDIX)** section. This section provides detailed voice mail access configuration, including class of restriction and class of service settings for the voice mail ports.



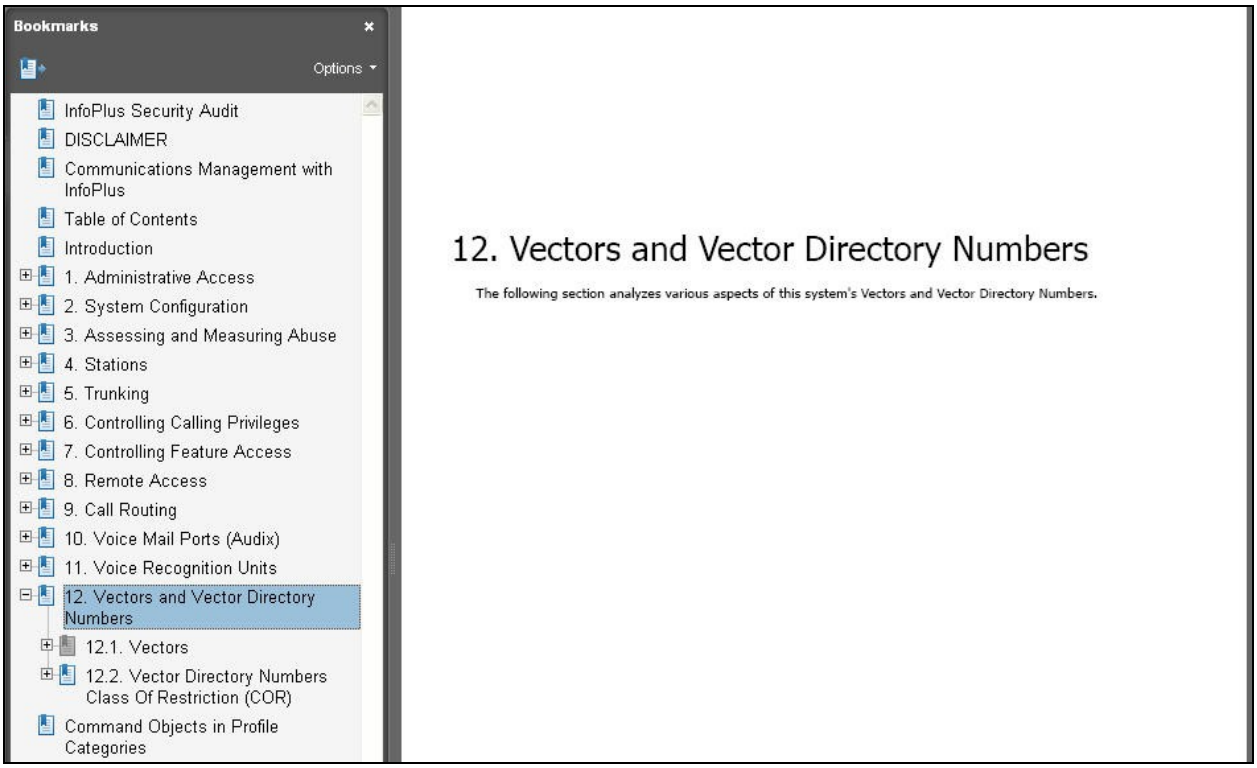
5.12. Review Voice Recognition Units

Select **Voice Recognition Units** from the left pane, to display the **Voice Recognition Units** section. This section provides detailed voice recognition units configuration, including class of restriction and class of service settings for the voice recognition ports.



5.13. Review Vectors and Vector Directory Numbers

Select **Vectors and Vector Directory Numbers** from the left pane, to display the **Vectors and Vector Directory Numbers** section. This section provides detailed analysis on various aspects of vectors and vector directory numbers, including security related aspects of vectors programming, and class of restrictions setting for vector directory numbers.



6. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Security related data were manually configured on Avaya Aura™ Communication Manager, and automatically collected by the Bristol Capital Security Audit service.

The report produced by the Bristol Capital Security Audit service was reviewed manually and compared with the data on Avaya Aura™ Communication Manager for accurate representation.

All test cases were executed. The following were the observations from the compliance testing:

- The Service Observe Feature section did not include Service Observing No Talk Access Code and Allow Two Observers in Same Call.
- The Critical Feature Access Codes section did not include Abbreviated Dial Prgm Group List Access Code.
- The Time of Day Routing section showed eight empty time of day routing plans when none existed in the system.
- The Digit Manipulation section will interpret route patterns with "0" deleted digits and no inserted digits as a route pattern that manipulated data. Furthermore, special characters in the route pattern inserted digits string were not reflected in the displayed entries.

7. Conclusion

These Application Notes describe the configuration steps required for the Bristol Capital Security Audit service to successfully interoperate with Avaya Aura™ Communication Manager. All test cases were completed successfully with four observations noted in **Section 6**.

8. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administrator Guide for Avaya Aura™ Communication Manager*, Document 03-300509, Issue 5.0, Release 5.2, May 2009, available at http://support.avaya.com.
2. *Avaya Security Audit Demo*, available at http://www.infoplusonline.com.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.