Avaya Solution & Interoperability Test Lab

Application Notes for InfoPlus SourceBook with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for InfoPlus SourceBook, by Bristol Capital Inc., to successfully interoperate with Avaya Communication Manager.

InfoPlus SourceBook is a remote solution that interrogates and collects software data from an Avaya Communication Manager system. InfoPlus SourceBook provides a comprehensive up-to-date view on how the Avaya Communication Manager PBX system is configured. The resulting InfoPlus SourceBook report is a detailed summary of the configuration contents of the PBX system and a meaningful reporting tool for communication management.

Serviceability and performance tests were conducted to assess the reliability of the solution.

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

SVS; Reviewed:
SPOC 8/17/2007

Solution & Interoperability Test Lab Application Notes
©2007 Avaya Inc. All Rights Reserved.

1 of 58
ACM-SourceBook

1 Introduction

InfoPlus SourceBook provides complete documentation on how Avaya Communication Manager is configured, including the button programming on various telephones. All information in InfoPlus SourceBook is an accurate up-to-date reflection of the programming of the PBX, and is presented in ways meaningful to users and administrators alike. As a detailed representation of the configuration programming of Avaya Communication Manager, the result is a meaningful reporting tool for communication management.

The InfoPlus SourceBook solution is processed by an InfoPlus Central Database system. The InfoPlus Central Database connects to the Avaya Communication Manager platform using a dialup modem connection. The InfoPlus Central Database is challenged during the login process, presents the Server Availability Management Processor (SAMP) interface with the correct login criteria, and gains access to the Avaya Communication Manager SAT command interface. The InfoPlus Central Database then executes a subset of SAT commands specifically targeted for gathering information about the configuration on the Avaya Communication Manager system (see Appendix A for the complete list of SAT commands).

The InfoPlus Central Database manipulates the captured data into a clear and concise format that is presented to Bristol Capital's customer. From the information obtained by the InfoPlus SourceBook solution, PBX configuration details are clearly organized and visualized. PBX business decisions can be made based on the results of the InfoPlus SourceBook solution.

See Appendix B for the InfoPlus SourceBook Report.

The illustration below describes the network configuration used to compliance test the InfoPlus SourceBook solution. The InfoPlus Central Database gains access to the Avaya Communication Manager platform via a modem interface, thus allowing the InfoPlus SourceBook command-line suite of functions to be executed.
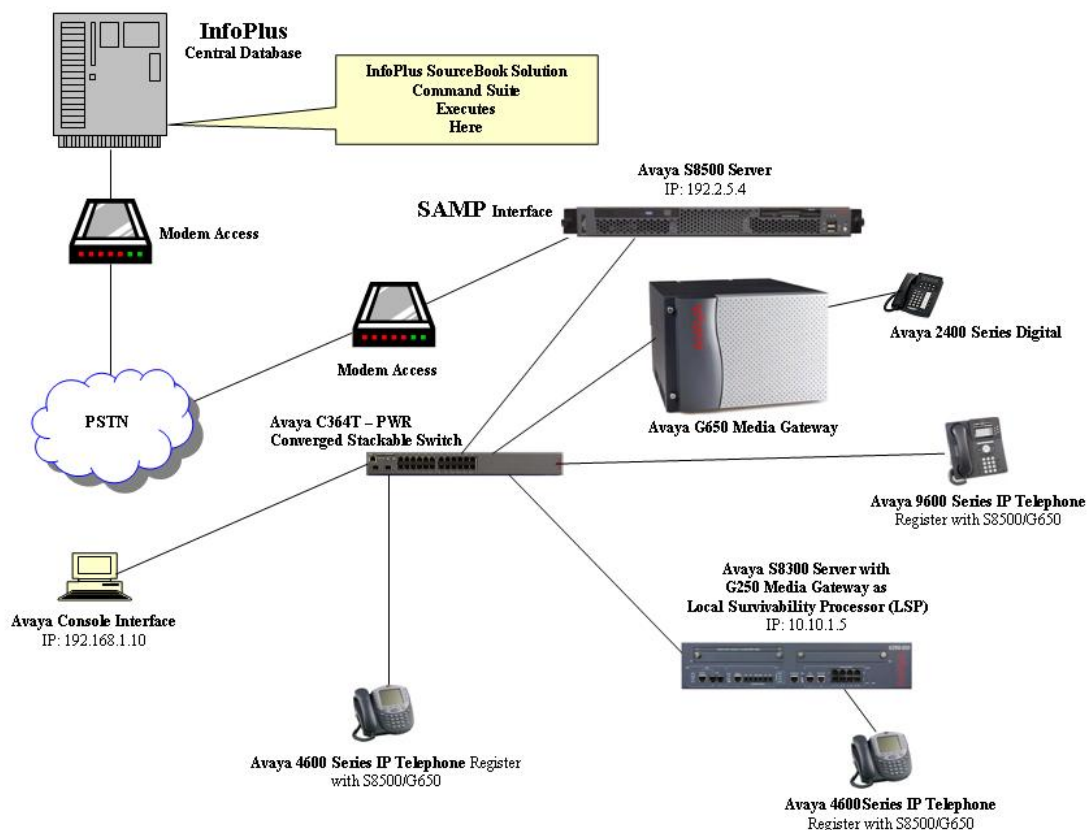
Figure 1 – InfoPlus Test Configuration

2 Equipment and Software Validated

The following table lists the equipment and software versions that were used for compliance testing.

Equipment	Software
Avaya S8500 Server with G650 Media Gateway	4.0.0 (R014x.00.0.730.5)
Avaya S8300 Server with G250 Media Gateway	4.0.0 (R014x.00.0.730.5)
Avaya 9600 Series IP Telephones	1.20 (H.323)
Avaya 4600 Series IP Telephones	4602: 1.8 (H.323)
	4620: 2.8 (H.323)
Avaya 2400 Digital Telephones	
Avaya C363T-PWR Converged Stackable Switch	4.5.14
MultiTech System, Multi*Modem*	
InfoPlus SourceBook Solution	Not Available [1]

Table 1 – Hardware and Software Components

---

[1] InfoPlus software version is for InfoPlus internal use only.

3 Avaya Communication Manager Configuration

Administration for proper modem connectivity must be performed.

3.1 Avaya Server Availability Management Processor

The Avaya Communication Manager platforms used for the compliance test were an Avaya S8500 Server with G650 Media Gateway and an Avaya S8300 with G250 Media Gateway as a Local Survivability Processor (LSP). The SAMP interface card installed on the S8500 in slot 1, allows for a modem interface connection. When the appropriate hardware and modem are installed, follow the steps below to ensure proper modem setup.

- Telnet to the S8500 system and log into the Linux interface. At the Linux system prompt, enter **sampdial –v**. A response indicating the SAMP interface is functioning should be displayed as below (SAMP OK):

        craft@S8500C> sampdiag -v
        The SAMP is using the Avaya IP address.
        SAMP HWaddress: 00:0F:29:01:4E:28
        SAMP IPaddress: 192.11.13.2 [2]
        HOST IPaddress: 192.11.13.1
        SSH port: 10022
        SSH OK
        HPI OK
        SAMP OK
        craft@S8500C>

- Setup login access for the modem interface by creating a user and assigning the user a password. At the system prompt, enter **rmbuseradd rasaccess** (rasaccess is used in this case)**.**

        craft@S8500C>
        craft@S8500C> rmbuseradd rasaccess
   craft@S8500C>

- Again, at the system prompt, enter **rmbpasswd rasaccess.** This will create the first password level challenge encountered by the InfoPlus Central Database processor. The password is not visible when entered.

        craft@S8500C>
        craft@S8500C> rmbpasswd rasaccess
        Enter new password:
   Re-enter new password:
        craft@S8500C>

---

[2] Default IP addresses are listed with the "sampdiag –v" command results.

- Administration of several modem related features must be configured using the Maintenance WEB interface. Launch the Maintenance WEB interface and click on **Configure Server** from the left navigation panel. Continue and under **Configure Individual IP Services**, select **Set Modem Interface** as below. An IP address is assigned for the modem PPP connectivity session. Click **Continue** and ensure the system updated successfully.
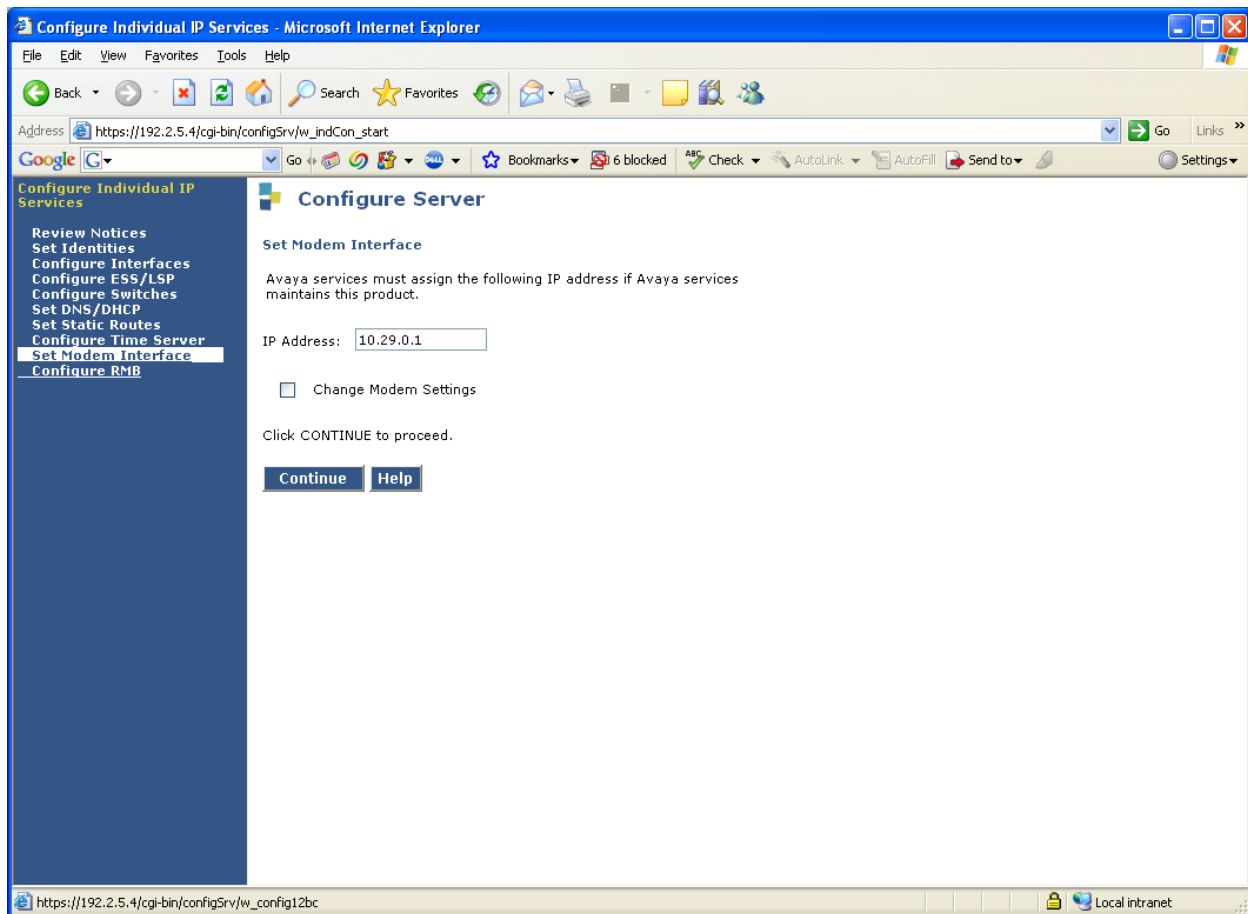
- On the left navigation panel, click on **Modem**. Ensure that **Enable modem for unlimited incoming calls** is enabled. Click **Submit** and ensure that the following message, as displayed below, is obtained:

  Modem access is administered for incoming calls.
  The modem is currently available for use.
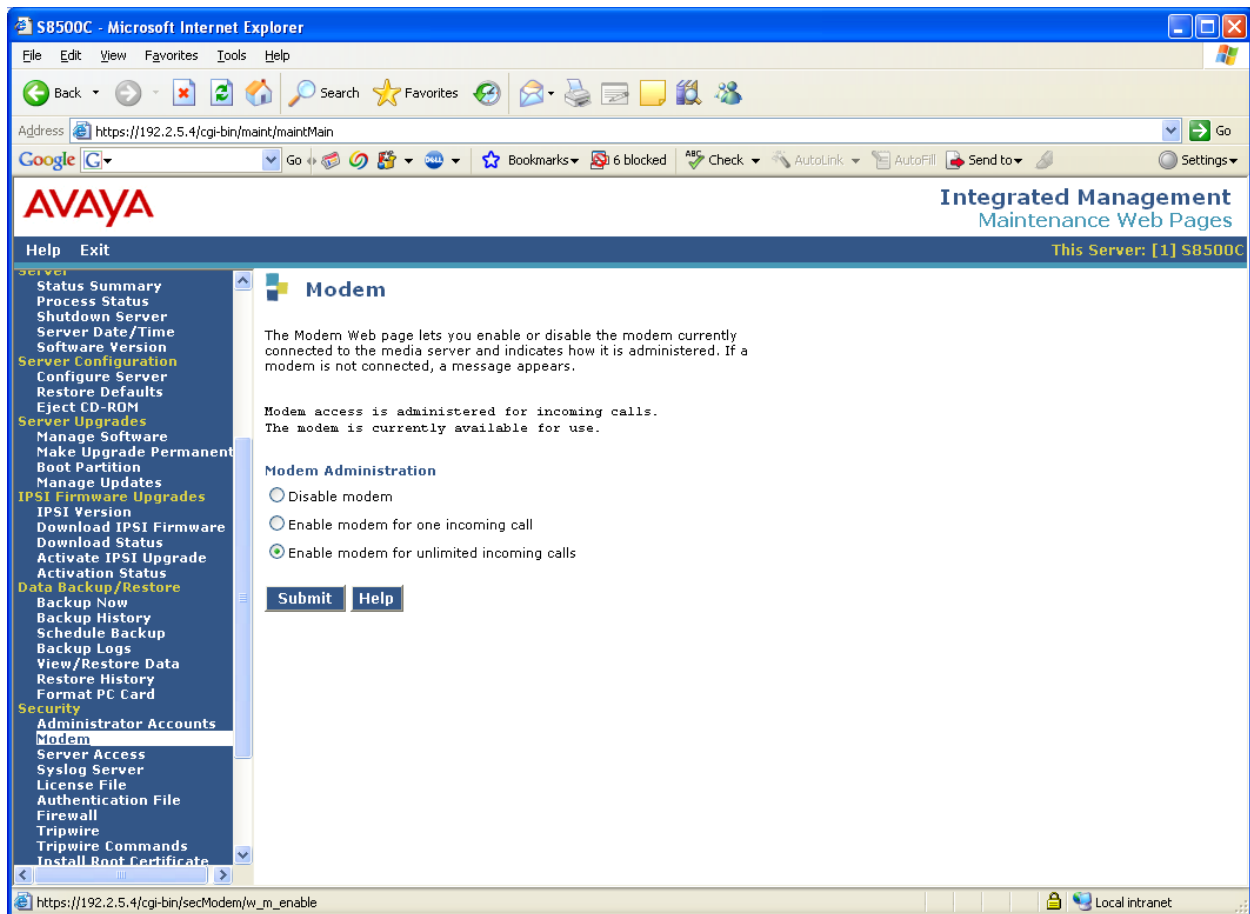
4 InfoPlus SourceBook Configuration

The InfoPlus SourceBook solution is not a software package that is configured or operates at the customer premise; therefore the customer does not require any setup knowledge of the InfoPlus SourceBook solution. All the system expertise is completely centralized to the InfoPlus Central Database location.

A pre-determined set of passwords and a network IP address must be known by the InfoPlus system administrator to allow modem access to occur. The Avaya system administrator needs to communicate the following information to InfoPlus:

- Telephone number for modem access
- Remote access modem login
- Remote access modem password
- Assign IP address for "telnet" session
- SAT login access
- SAT login password

5 Interoperability Compliance Testing

Interoperability compliance testing included InfoPlus Central Database connectivity, command-line implementation, and serviceability.

Connectivity between systems was pre-arranged by Avaya and Bristol Capital, whereby logins, passwords, and a modem IP address were setup in the InfoPlus Central Database processor. The InfoPlus Central Database processor dialed into the SAMP interface using the modem login and password, after which a PPP session was created. A telnet to the modem IP address allowed access to the Linux interface. After logging in using the **craft** login and password, the SAT interface was acquired. The InfoPlus Central Database processor runs a command-line suite of functions from this interface.

The serviceability tests introduced modem connectivity failure scenarios. The failures were performed by pulling out the modem telephone line while the InfoPlus Central Database processor was actually in session. Recovery was accomplished by plugging the telephone line back in and restarting the InfoPlus Central Database processor login session. The last command-line entered at the time of the failure was the point of pickup as the set of command-line functions continued.

5.1 Test Results

All command-line functions geared for the InfoPlus SourceBook service passed compliance testing. The output captured and formulated in a value-added concise format, passed compliance testing. Serviceability compliance tests passed.

6 Verification Steps

Compare the output produced by the InfoPlus SourceBook solution with the configuration of the Avaya Communication Manager system.

7 Support

Technical support for Bristol Capital's InfoPlus SourceBook can be obtained by contacting Bristol Capital Inc. at 201-476-0600 or by sending e-mail to support@infoplusonline.com.

8 Conclusion

This Application Note describes what is required to allow Bristol Capital's InfoPlus SourceBook solution to interoperate with Avaya Communication Manager. The result of the interoperability testing is presented in Appendix B.

9 References

This section references the Avaya and Bristol Capital documentation that are relevant to these Application Notes. The Avaya product documentation can be found at http://support.avaya.com, and information regarding InfoPlus SourceBook can be obtained at http://www.infoplusonline.com.

[1] Using the Avaya Server Availability Management Processor (SAMP) - Issue 4), February 2007

10 Appendix A

The categories of the SAT commands run by the InfoPlus Central Database are listed in the following table.

SAT Command Categories by InfoPlus Service
• Extensions
• Config All
• Stations
• Data Modules
• Attendants
• Announcements
• Trunk Groups
• Trunk Group Details
• Config DS1
• Status System All Cabinets
• Cabinets
• Capacities
• Config Software
• Offer
• Customer Options
• Aliases
• Media Gateways
• Media Gateway Details

A full set of actual SAT commands for the InfoPlus suite is listed in the following table.

Command Category	Command Syntax
Extension List:	list extension-type
Abbreviated Dialing Groups:	list abbrev group
Abbreviated Dialing Groups Details:	disp abbrev system disp abbrev group X Where X is each group listed by "list abbrev group"
Abbreviated Dialing Personal:	list abbrev personal

Command Category	Command Syntax
Abbreviated Dialing Personal Details:	disp abbrev personal X list Y Where X and Y are all the possible values from "list abbrev personal"
Announcements Detail:	disp announcements
Attendants Detail:	display attendant X Where X is 1 through 28 inclusive
COS Detail:	disp COS
COR Detail:	display COR X Where X can be 0 through 996 inclusive. (For Security Audits, retrieve every COR that exists. For all other services, intelligently determine those that are in use by analyzing Authorization Codes, Extensions, Remote Access and Trunks)
ARS Analysis:	list ars analysis
AAR Analysis:	list aar analysis
Config All:	list config all
Config DS1:	list config ds1
Config Software:	list config software
Coverage Answer:	list coverage answer
Coverage Answer Details:	disp coverage answer X Where X is each value from "list coverage answer"
Coverage Path:	list coverage path
Coverage Path Detail:	disp coverage path X Where X is each value from "list coverage path"
Remote Coverage Path Details:	disp cov rem OR (if switch needs an Identifier) disp cov rem X Where X is each value from 1-10 inclusive
Data Modules:	list data
Hunt Groups:	list hunt-group
Hunt Group Details:	disp hunt-group X Where X is each value from "list hunt-group"
Intercom Groups:	list intercom-group

Command Category	Command Syntax
Intercom Group Details:	disp intercom-group X Where X is each value from "list intercom-group"
Pickup Groups:	list pickup-group
Pickup Group Details:	disp pickup-group X Where X is each value from "list pickup-group"
Route Patterns:	list route-pattern
Route Pattern Detail:	display route-pattern X Where X is each value from "list route-pattern"
Trunk Groups:	list trunk-group
Trunk Group Details:	disp trunk-group X Where X is each value from "list trunk-group"
Paging:	disp paging loudspeaker
Capacities:	disp capacities
Offer:	display system-parameters offer
Partitioned Group:	list partitioned-group
Partition Route Table:	list partition-route-table
Toll:	list toll all
Bridged:	list bridge X Where X = each extension found in the Extension list
Stations:	list station
Logins:	list login
Login Details:	display login X Where X is each value from "list login"
Permissions:	display permission Where X is each value from "list login"
Features:	display system-parameters feature
Maintenance:	display system-parameters maintenance
Security:	display system-parameters security
Dial Plan:	display dialplan analysis
IP Services:	display ip-services
CDR:	display system-parameters cdr
Feature Access Codes:	display feature-access-codes

Command Category	Command Syntax
Aliases:	display alias station
Remote Access:	display remote-access
Time of Day Routing:	display time-of-day X Where X is every value from 1-8 inclusive
Report Schedule:	list report-scheduler
Authorization Codes:	list authorization-code
Agent LoginIDs:	list agent-loginID
Vectors:	list vector
Vector Details:	display vector X Where X is each value from "list vector"
Media Gateways:	list media-gateway
Media Gateway Details:	display media-gateway X Where X is each value from "list media-gateway"
Listed Directory:	disp listed-directory-number
Alternate FRL:	disp alternate-frl
Traffic Measurement:	disp meas-selection trunk-group disp meas-selection route-pattern
Tenants:	display tenant X (Only if Tenant Partitioning is enabled in Customer Options) Where X is each value from 1-100 inclusive
Off PBX Feature Name Extensions:	display off-pbx-telephone feature-name-extensions
Status System Cabinets:	status system all-cab
Cabinet Details:	status cabinet X Where X is each value from "list config-all"
Call Forwarding:	list call-forwarding
ASG History:	list asg-history
VDNs:	list vdn
VDN Details:	display vdn X Where X is each value from "list vdn"
Off PBX Station Mapping:	list off-pbx-telephone station-mapping
ARS Digit Conversion:	list ars digit-conversion

Command Category	Command Syntax
AAR Digit Conversion:	list aar digit-conversion
Traffic Measurements	list measurements attendant group list measurements attendant posit list measurements call-rate **OR (on newer switches)** list measurements call-rate total list measurements block pn last list measurements load-b total last list measurements tone-r summ last list measurements trunk-gr summ last list measurements occup summ list measurements ip dsp-resource summary last-hour (if available)

10.1 Appendix B

The result of compliance testing the InfoPlus SourceBook solution is attached in this appendix. Note: Blank pages in the report were intentionally omitted.

SourceBook

"How is my PBX configured?"

Produced For
Avaya Compliance Testing

Customer Number:
Reflecting PBX Information from: **6/26/2007**
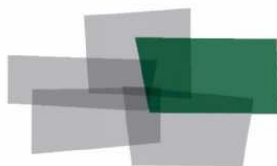
Inventory
Configuration
Performance
Security
Backup

DISCLAIMER

The information contained in this document is based upon data retrieved remotely from a PBX system. Some of the information presented may be derived, in whole or in part, from this data. Inconsistent and/or incorrect programming of the PBX may cause these derivations to be inaccurate. For the sake of consistency in these reports, there may be cases in which a best-effort attempt is made to derive particular information based upon related data in the PBX. As the reporting facilities of the PBX's hardware and software improve, the enhanced data will lead to more accurate InfoPlus reports. Technical errors encountered during the remote transfer of data from the PBX may cause spurious results in the report. Bristol Capital, Inc. does not guarantee the accuracy of the information presented, although reasonable attempts have been and will continue to be made to ensure InfoPlus reports are as accurate as possible.

This report and the information contained herein is to be used only for the purposes intended. Any disclosure of the information contained herein to parties other than the subscriber of this service, or the organization whose information is represented, is strictly prohibited.

InfoPlus® is a registered trademark of Bristol Capital, Inc. Montvale, NJ
Copyright © 1995-2007 Bristol Capital, Inc. All rights reserved.

Communications Management with InfoPlus

Regardless of the size or type of organization, there are a few basic concerns of every communications manager. InfoPlus services help address those various concerns through its integrated suite of reports and analyses.

Inventory
Configuration
Performance
Security
Backup

Configuration – This document, the InfoPlus SourceBook, details how a system's software is programmed to meet your organization's needs. The many details of system programming are laid out in understandable formats, including graphics of each set and even each button's feature or line assignment. Commonly needed but difficult to obtain information, such as call routing information, is clearly presented in easily understood reports, such as our Privilege Groups report. The SourceBook is an excellent tool for the day-to-day management and administration of a communications system, ensuring uniformity and adherence to current design policies.

A next logical step in gaining additional control over your telecommunications resources might be an InfoPlus Security Audit. While the SourceBook details the general programming of your system, the Security Audit is an extensive analysis of how that programming might be leaving the organization susceptible to internal or external abuse. More that just potential cost avoidance, the Security Audit makes specific recommendations to help limit your system to unintended use.

Other services in the InfoPlus suite include:

Inventory – InfoPlus Site Survey

- Inventory of the major PBX hardware and software components
- "End-of-Life" analysis pinpoints unsupported equipment
- Access to database for enterprise customers

Performance – InfoPlus Traffic Study

- Consultative Report, not a "data dump"
- Supported by graphical representation of the important data
- Analyzes Networks, Trunks, Consoles and even Processors
- Clear recommendations for improving service

Security – InfoPlus Security Audit

- Detailed, computerized review of the system's programming
- Analyses of 83 separate features with security implications
- Each analysis consists of a feature description, the security concerns and recommended changes in programming
- One hour of personal consultation is included

Backup – InfoPlus Backup Service

- Off-site backup of your PBX's configuration
- Available at any time for restoration through the internet

Please contact your telecommunications vendor for additional information about these services.

3

Table of Contents

5

1. Station Information

The Station Information section presents the configuration of the station side of the system, from graphics of each set to descriptions of each Hunt, Call Pickup and Intercom group.

7

1.1. Station Templates

Format

This section presents an image of each set in the PBX system. Graphics of all telephone instruments are in extension number order, and indicate the features of that station.

Use

Use this section to discuss changes with users and to prepare service or repair orders. The graphics provide a common reference point for all parties. For example, programming for button features and appearances may be verified before calling the vendor for repair of a trouble, or for requesting changes.
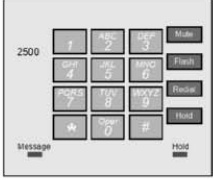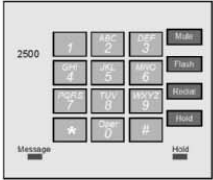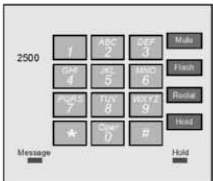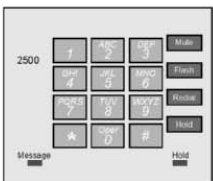
The amount of time it takes a technician to perform changes will be drastically reduced by consulting the telephone set graphic prior to placing a work order. Telling the technician to add extension 4321 to Call Pickup Group 7 is much more efficient (2 minutes) than telling the technician to add Alice Pedone to the same Call Pickup Group Sue Graham is in (30 minutes).

Station Templates

8

Ext: 62201   **G150 Set 1**

Set Type: **2500**	Port: **S00015**
Building:	Floor:
Room:	Cable: Jack:

CV1:	CV2:		**Groups**
COR: **1**	COS: **1**	Inter:	Pickup:
TN: **1**		Hunt:	Cov Ans:

Ext: 62202   **G150 Set 2**

Set Type: **2500**	Port: **S00014**
Building:	Floor:
Room:	Cable: Jack:

CV1:	CV2:		**Groups**
COR: **1**	COS: **1**	Inter:	Pickup:
TN: **1**		Hunt:	Cov Ans:

Ext: 62203   **G150 Set 3**

Set Type: **2500**	Port: **S00016**
Building:	Floor:
Room:	Cable: Jack:

CV1:	CV2:		**Groups**
COR: **1**	COS: **1**	Inter:	Pickup:
TN: **1**		Hunt:	Cov Ans:

Ext: 62204   **G150 Set 4**

Set Type: **2500**	Port: **S00013**
Building:	Floor:
Room:	Cable: Jack:

CV1:	CV2:		**Groups**
COR: **1**	COS: **1**	Inter:	Pickup:
TN: **1**		Hunt:	Cov Ans:

9

1.2. Classes of Service (COS)

This section contains the first example of a textual report. The majority of textual reports are similar in format, providing tables of entities (such as stations or trunks) that share a common attribute. A count of the entities listed is usually provided at the bottom of the table.

This section contains a listing of all stations that share the same Class of Service (COS).

Format

The section is organized by COS, and then by extension number of those stations sharing the given COS.

Use

This information should be used as a reference for the system administrator when adding new stations. For example, should you need to program a station with the same features as an existing station, you can find which COS the existing station uses and program the new station to use the same COS.

Class of Service: 0

This COS has the following features enabled:

Feature
Call Forwarding Enhanced
Restrict Call Fwd-Off Net

The following stations are assigned to COS 0:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 1

This COS has the following features enabled:

Feature
Auto Callback
Call Forwarding Enhanced
Call Fwd-All Calls
Data Privacy
Priority Calling
Restrict Call Fwd-Off Net

The following stations are assigned to COS 1:

Extension	Name	Port
60201	S8500-IP	S00000
60202	On-8500	S00017
62201	G150 Set 1	S00015
62202	G150 Set 2	S00014
62203	G150 Set 3	S00016

Extension	Name	Port
62204	G150 Set 4	S00013
64201	G250-IP96xx	S00002
64202	G250-IP46xx	S00001
64203	G250-Anal-1	001V305
64204	G250-Anal-2	001V306
Stations using this COS: 10		

Class of Service: 2

This COS has the following features enabled:

Feature
Auto Callback
Call Forwarding Enhanced
Restrict Call Fwd-Off Net

The following stations are assigned to COS 2:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 3

This COS has the following features enabled:

Feature
Call Forwarding Enhanced
Call Fwd-All Calls
Restrict Call Fwd-Off Net

The following stations are assigned to COS 3:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 4

This COS has the following features enabled:

Feature
Auto Callback
Call Forwarding Enhanced
Call Fwd-All Calls
Restrict Call Fwd-Off Net

12

The following stations are assigned to COS 4:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 5

This COS has the following features enabled:

Feature
Call Forwarding Enhanced
Data Privacy
Restrict Call Fwd-Off Net

The following stations are assigned to COS 5:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 6

This COS has the following features enabled:

Feature
Auto Callback
Call Forwarding Enhanced
Data Privacy
Restrict Call Fwd-Off Net

The following stations are assigned to COS 6:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 7

This COS has the following features enabled:

Feature
Call Forwarding Enhanced
Call Fwd-All Calls
Data Privacy
Restrict Call Fwd-Off Net

The following stations are assigned to COS 7:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

13

Class of Service: 11

This COS has the following features enabled:

Feature
Call Forwarding Enhanced
Call Fwd-All Calls
Priority Calling
Restrict Call Fwd-Off Net

The following stations are assigned to COS 11:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 12

This COS has the following features enabled:

Feature
Auto Callback
Call Forwarding Enhanced
Call Fwd-All Calls
Priority Calling
Restrict Call Fwd-Off Net

The following stations are assigned to COS 12:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 13

This COS has the following features enabled:

Feature
Call Forwarding Enhanced
Data Privacy
Priority Calling
Restrict Call Fwd-Off Net

The following stations are assigned to COS 13:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

15

Class of Service: 14

This COS has the following features enabled:

Feature
Auto Callback
Call Forwarding Enhanced
Data Privacy
Priority Calling
Restrict Call Fwd-Off Net

The following stations are assigned to COS 14:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

Class of Service: 15

This COS has the following features enabled:

Feature
Call Forwarding Enhanced
Call Fwd-All Calls
Data Privacy
Priority Calling
Restrict Call Fwd-Off Net

The following stations are assigned to COS 15:

Extension	Name	Port
There are no stations assigned to this COS		
Stations using this COS: 0		

16

1.3. Pickup Groups

This section contains listings of all stations that share the same Pickup Group.

Format

The section is organized by Pickup Group, and then by extension number within the Group. Member numbers are provided for technical reference purposes only.

We have purposefully omitted other information, such as assigned Port from this report to avoid confusion should these reports be distributed to your users.

Use

This information may be distributed to each member of each Group so they may have an accurate listing of members in their Pickup Group.

Pickup Groups that have only one station assigned are listed in the Action Items section as items which may be cleaned up.

You have no Pickup Groups defined.

17

1.4. Hunt Groups

This section contains a description of the Hunt Groups in your PBX.

Format

The section is organized numerically by Hunt Group.

Use

This information may be distributed to each member of each Hunt Group so they may have an accurate listing of members in their Group.

Hunt Groups that have only one station assigned are listed in the Action Items section as items which may require clean up.

You have no Hunt Groups defined.

18

1.5. Hunt Groups (ACD)

This section contains a description of the ACD Hunt Groups in your PBX.

Format

The section is organized by ACD Hunt Group.

Use

This information may be distributed to each member of each ACD Hunt Group so they may have an accurate listing of members in their Group.

ACD Hunt Groups that have no stations assigned are listed in the Action Items section as items which may require clean up.

You have no ACD Hunt Groups defined.

1.6. Coverage Paths

This section contains listings of all Coverage Paths, the conditions under which calls will be re-directed, and a table of all of stations which utilize each Coverage Path.

Format

This section is organized by Coverage Path.

Use

This information should be used as a reference for the system administrator when adding new stations. For example, should you need to program a station with the same coverage as an existing station, you can find which Coverage Path the existing station uses and program the new station to use the same Coverage Path.

Stations Without a Coverage Path

The following stations do not have a coverage path defined:

Extension	Name	Equipment Type
60201	S8500-IP	9650
60202	On-8500	9610
62201	G150 Set 1	2500
62202	G150 Set 2	2500
62203	G150 Set 3	2500
62204	G150 Set 4	2500
64201	G250-IP96xx	9630
64202	G250-IP46xx	4620
64203	G250-Anal-1	2500
64204	G250-Anal-2	2500

20

1.7. Coverage Answer-Groups

This section contains a listing of all stations in each Coverage Answer-Group as well as a high-level analysis of how each group is being used.

Format

This section is organized into three sections per Coverage Answer-Group. The first section displays a table of extensions that may be answered by this Answer-Group in extension number order. The second section is a listing of each Coverage Path and Coverage Path Point that references the Answer-Group. The final section is a table listing each Answer-Group member.

Use

This information may be distributed to each member of each Group so they may have an accurate listing of members in their Answer-Group as well as which extensions they are able to answer.

Coverage Answer-Groups that have only one station assigned are listed in the Action Items section as items which may be cleaned up.

You have no Coverage Answer Groups defined.

21

1.8. Abbreviated-Dialing Groups

This section contains a listing of all stations in each Abbreviated-Dialing Group as well as a list of the numbers that can be dialed by each Group.

Format

This section is organized by Abbreviated-Dialing Group. Within each Group section there is a list of all stations which are part of that group as well as a listing of the programmed dial-code entries.

Use

The list of Abbreviated-Dialing entries may be distributed to each member of the associated Abbreviated-Dialing Group for use as a reference.

Empty Abbreviated-Dialing Groups, and Groups which are not being used by any station, are listed in the Action Items section as items which may be cleaned up.

No Abbreviated-Dialing Group lists are defined in this system.

22

1.9. Abbreviated-Dialing System

This section contains a listing of all stations which use the Abbreviated-Dialing System list as well as a list of the numbers that can be dialed.

Format

This section contains only one section organized into two tables. The first table is a listing of stations which use the Abbreviated-Dialing System list. The second table is a listing of the programmed Abbreviated-Dialing System entries.

Use

The list of Abbreviated-Dialing entries may be distributed to each member of the associated Dialing group for use as a reference.

No Abbreviated-Dialing System list is defined in this system.

1.10. Intercom Groups

This section contains listings of all stations that share the same Intercom Group.

Format

The section is organized by Intercom Group, and then by extension number within the Group. Member numbers are provided for technical reference purposes only.

We have purposefully omitted other information, such as assigned Port from this report to avoid confusion should these reports be distributed to your users.

Use

This information may be distributed to each member of each Group so they may have an accurate listing of members in their Intercom Group.

Intercom Groups that have only one station assigned are listed in the Action Items section as items which may be cleaned up.

You have no Intercom Groups defined.

24

2. Directories

The Directories Section of the SourceBook will help you navigate your way around the three piece-parts of your communications system. The System is addressed in the Extension Directory Section, the People are listed in the Alphabetical Directory Section, and the facility in the Location Directory.

2.1. Extension Directory

This section presents a listing of all extensions appearing in the system.

Format

This section is organized in numerical order, by extension number. The extension type and any available port information is also noted.

Use

The Extension Directory can be distributed as a quick reference to your technician or console operator.

Extension Directory

Extension	Name	Extension Type	Equipment Type
60000	Clan-1	data-extension	ethernet
60201	S8500-IP	station-user	9650
60202	On-8500	station-user	9610
62000	Clan 2	data-extension	ethernet
62201	G150 Set 1	station-user	2500
62202	G150 Set 2	station-user	2500
62203	G150 Set 3	station-user	2500
62204	G150 Set 4	station-user	2500
64201	G250-IP96xx	station-user	9630
64202	G250-IP46xx	station-user	4620
64203	G250-Anal-1	station-user	2500
64204	G250-Anal-2	station-user	2500
Total Number of Extensions: 12			

26

2.2. Alphabetical Directory

This section presents a listing of all names assigned to extensions that appear in the system.

Format

This section is organized in alphabetical order, by extension name. The extension type and any available port information is also noted.

Use

The Alphabetical Directory can be distributed as a quick reference to your technician or console operator.

Alphabetical Directory

Name	Extension	Extension Type	Equipment Type
Clan 2	62000	data-extension	ethernet
Clan-1	60000	data-extension	ethernet
G150 Set 1	62201	station-user	2500
G150 Set 2	62202	station-user	2500
G150 Set 3	62203	station-user	2500
G150 Set 4	62204	station-user	2500
G250-Anal-1	64203	station-user	2500
G250-Anal-2	64204	station-user	2500
G250-IP46xx	64202	station-user	4620
G250-IP96xx	64201	station-user	9630
On-8500	60202	station-user	9610
S8500-IP	60201	station-user	9650
Extensions Listed: 12			

27

2.3. Location Directory

This section presents a listing of location information of stations as it appears in the system.

Format

This section is organized by location information in alphabetical order by Building, Floor, Room, Jack then Cable. The station extension and port information is also noted. Stations with unassigned location information will not be listed.

Use

The Location Directory can be used as an equipment management/inventory tool for the telecommunications department.

Stations Locations

Building	Floor	Room	Cable	Jack	Extension	Port
No Location information is entered for the stations						
Stations Listed: 0						

28

3. Trunking Information

Trunks are those facilities that tie your PBX to the outside world. The following Sections not only identify the Trunk Groups but also specify how they are being used.

💡 Did you know?

While this Section of the SourceBook will present information regarding the configuration of your trunking facilities, an InfoPlus Traffic Study would help determine the proper number and types of trunks to have based upon specific call volumes and patterns. InfoPlus Traffic Studies typically result in lower communications expense by optimizing and eliminating unnecessary resources.

29

3.1. Trunk Groups

Trunk Groups are sets of similar Trunks performing an identical purpose. For example, all DID Trunks for the main telephone number would be part of a single Trunk Group.

Format

A basic representation of each Trunk Group's programming is displayed at the beginning of each Trunk Group section.

This section is organized by Trunk Group number, with the left most column of each report reflecting the Member Number within the Trunk Group. Other applicable information is also displayed as available.

Use

The Trunk Group reports provide a listing of the numbers of Trunks associated with each Trunk Group, along with their associated Names (often used for the Circuit ID information). We would suggest that your technician provide you with the actual circuit numbers associated with each member in the Trunk Group, and its associated RJ21X jack and pin number. This will greatly aid in resolving future telephone company repair problems.

You may also use these reports to verify the 'Grading' of your system. Ideally, Trunks within a Trunk Group should be spread over all available Equipment so that failure of any one card would not affect an entire Trunk Group, but would minimally impact several Trunk Groups. There is no way to protect against this type of failure for circuits associated with a T-1.

Trunk Group: 7

Group Type: ISDN
Group Name: PRI- 2 outside
Direction: two-way
Trunk Access Code (TAC): 1007
CDR Reports: Yes

Group Members

Member Number	Port	Name
There are no members assigned to this Trunk Group		
Members in Group: 0	**Available Members: 255**	

Trunk Group: 8

Group Type: ISDN
Group Name: IPTrunk to G350
Direction: two-way
Trunk Access Code (TAC): 1008
CDR Reports: Yes

Group Members

Member Number	Port	Name	Night
1	T00001		
2	T00002		

30

Member Number	Port	Name	Night
3	T00003		
4	T00004		
5	T00005		
6	T00006		
Members in Group: 6		**Available Members: 249**	

Solution & Interoperability Test Lab Application Notes

3.2. Route Patterns

Route-Patterns define the Trunk Groups to be used when calling specific Area Codes, as well as the minimum Facility Restriction Level (FRL) required to have access to the Trunk Groups.

Format

This section is organized in numerically by Route-Pattern.

Use

This report may be used to verify the design of the Automatic Route Selection (ARS) system. First, the Area Codes assigned to each Route List are presented, along with a description of the geographic region covered by those Area Codes. We then list the Routes to be used in completing calls to the identified Area Codes. We then list the Trunk Groups to be used in completing calls to the identified Area Codes. For each Trunk Group, we list its Trunk Group Number (as identified in the Trunk Groups section), the type of trunk and the Classes of Restriction (COR) that have access to that Trunk Group.

Consistency in calling privileges may be checked by matching the Facility Restriction Level against other Route-Patterns.

As new Area Codes are added, they may be easily matched to existing Route-Patterns instead of creating a new Route-Pattern.

An overall communication objective would be to have the fewest number of Route Lists that meet the processing needs of the organization.

Route Pattern: 8

The following area codes can be dialed by this group:

These area codes cover the following geographic regions:

Trunk Group Selection and Accessibility

Pref	Trunk Group	FRL	Group Type	Group Name	Accessible by Classes of Restriction (COR)
1	8	0	isdn	IPTrunk to G350	(none)

32

3.3. Calling Privileges (COR)

This section summarizes the Calling Privileges of each station in your system. Calling Privileges are an analysis of each station's Class of Restriction (COR). This information is then matched against each Trunk Group and Facility Restriction Level (FRL) in each Route-Pattern to determine the station's calling capabilities. For each COR we show the area codes that stations are able to call. When using Time of Day Routing, we list area codes that can be called during at least one time period throughout the week, even if they may be denied at other times.

Format

This section is organized into groups of Calling Privileges as determined by a station's COR assignment. For each COR, we summarize the calling abilities and identify the geographic areas that may be called. We then identify in numerical order by extension, all stations having those abilities. Along with the extension number we provide the name, the equipment (port address) and the set type.

Use

Use this section to review overall Calling Privileges, and to assess the appropriateness of each station's assignment. You may also use the section as an aid when assigning a new station's call capabilities by first identifying the capabilities desired, and then using that COR for the new station.

Class of Restriction (COR) 1

Facility Restriction Level (FRL): 0
Restricted Call List: NO

Calling Capabilities

Calling Party Restriction: *outward* - These stations may place internal calls, but are restricted from calling outside the private network.

Restricted Call List: These stations are NOT limited by the RCL.

Unrestricted Call Lists: These stations are not using any UCLs.

Direct Access

This COR can access the following Trunk Groups directly by dialing their access code:

Trunk Group	Type	Name	TAC
No Trunk Groups can be directly accessed			

Calling Areas

No area codes can be dialed by this group.

Station List

Extension	Name	Port	Type
60201	S8500-IP	S00000	9650
60202	On-8500	S00017	9610
62201	G150 Set 1	S00015	2500
62202	G150 Set 2	S00014	2500

Extension	Name	Port	Type
62203	G150 Set 3	S00016	2500
62204	G150 Set 4	S00013	2500
64201	G250-IP96xx	S00002	9630
64202	G250-IP46xx	S00001	4620
64203	G250-Anal-1	001V305	2500
64204	G250-Anal-2	001V306	2500
Total members in this COR: 10			

34

3.4. Restricted Call List (RCL)

This section lists the entries in the Restricted Call List of your PBX.

Format

This section is a table, in numerical order, showing all of the leading dialed digits which are in the PBX's RCL.

Use

CORs which are using the RCL do not have the ability to dial numbers starting with the digits shown below. Review this list carefully to ensure that only necessary numbers are being blocked.

Restricted Call List

Dialed Digits	Min Length	Max Length
There are no entries in the Restricted Call List		
Total Entries: 0		

35

3.5. Unrestricted Call Lists (UCL)

This section lists the entries in the 10 Unrestricted Call Lists of your PBX.

Format

This section is organized numerically by Unrestricted Call List. For each list there is a table showing all of the leading dialed digits which are programmed in the given UCL.

Use

CORs which are using the UCL have the ability to dial numbers starting with the digits shown below. Review this list carefully to ensure that only necessary numbers are being allowed.

Unrestricted Call List: 1

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 2

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 3

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 4

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 5

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

36

Unrestricted Call List: 6

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 7

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 8

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 9

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

Unrestricted Call List: 10

Dialed Digits	Min Length	Max Length
There are no entries in this Unrestricted Call List		
Total Entries: 0		

4. System Information

The System Information Section of the SourceBook will help you identify how each line card in your system is configured, the types and counts of sets you have, and where in the PBX each port resides.

Did you know?

While this Section of the SourceBook will present basic information about your system, an InfoPlus Site Survey is specifically designed to inventory all manufacturer supplied hardware and software in your system. Order a Site Survey to verify your maintenance contract, plan upgrades, and to identify system capabilities and capacities.

4.1. Port Counts

For management purposes, it is often useful to have an inventory of all Port Types in your system. This information may be used for asset management and/or spares planning.

Format

This section presents listings of all ports of the same type. The lists are sorted in numerical order by extension number or TAC. The extension number/TAC number of each port, the name, the equipment (port address) and the port type are listed. The last line of each report indicates a total number of ports of that specific type.

Use

This information may be used to verify maintenance contracts and establish an inventory of system hardware.

Port or Set Type: 2500

Extension/TAC	Name	Port	Type
62201	G150 Set 1	S00015	2500
62202	G150 Set 2	S00014	2500
62203	G150 Set 3	S00016	2500
62204	G150 Set 4	S00013	2500
64203	G250-Anal-1	001V305	2500
64204	G250-Anal-2	001V306	2500
Total Ports: 6			

Port or Set Type: 4620

Extension/TAC	Name	Port	Type
64202	G250-IP46xx	S00001	4620
Total Ports: 1			

Port or Set Type: 9610

Extension/TAC	Name	Port	Type
60202	On-8500	S00017	9610
Total Ports: 1			

Port or Set Type: 9630

Extension/TAC	Name	Port	Type
64201	G250-IP96xx	S00002	9630
Total Ports: 1			

Port or Set Type: 9650

Extension/TAC	Name	Port	Type
60201	S8500-IP	S00000	9650

40

Extension/TAC	Name	Port	Type
Total Ports: 1			

Port or Set Type: ethernet

Extension/TAC	Name	Port	Type
60000	Clan-1	01A0317	ethernet
62000	Clan 2	01A0517	ethernet
Total Ports: 2			

Port or Set Type: IP MEDIA PROCESSOR

Extension/TAC	Name	Port	Type
		01A0201	IP MEDIA PROCESSOR
		01A0203	IP MEDIA PROCESSOR
		01A0205	IP MEDIA PROCESSOR
		01A0207	IP MEDIA PROCESSOR
		01A0401	IP MEDIA PROCESSOR
		01A0403	IP MEDIA PROCESSOR
		01A0405	IP MEDIA PROCESSOR
		01A0407	IP MEDIA PROCESSOR
Total Ports: 8			

Port or Set Type: IP SERVER INTFC

Extension/TAC	Name	Port	Type
		01A0101	IP SERVER INTFC
		01A0102	IP SERVER INTFC
		01A0103	IP SERVER INTFC
		01A0104	IP SERVER INTFC
		01A0105	IP SERVER INTFC
		01A0106	IP SERVER INTFC
		01A0107	IP SERVER INTFC
		01A0108	IP SERVER INTFC
Total Ports: 8			

41

4.2. Voice Mail

For systems equipped with Audix Voice Mail, this report lists those stations found to be associated with Audix along with those station's attributes.

Format

This section is organized in extension number order for those extensions that provide the link between the PBX and the Audix system.

Use

Careful review of these reports will help safeguard your system from potential toll abuse through the Audix system. Questions should be asked about increasing the Restriction Level of Voice Mail ports as well as denying External Call Forwarding capabilities.

Voice Mail Ports

Extension	Port Type	Name	COR	Port
There were no stations detected on Audix boards				
Total Audix Ports: 0				

42

4.3. Equipment Lists

The Avaya PBX system is organized into groups of equipment called Cabinets and Carriers. This section presents a listing of the ports associated with each Cabinet/Carrier.

Format

This section is organized in equipment order (Cabinet, Carrier, Slot, Position).

Use

Careful review of these reports will safeguard your system and improve its efficiency. They should be reviewed and cross-referenced to the Location Directory to determine if any one Cabinet is serving an entire floor or department, or if there are unusual concentrations of trunking facilities within any one Cabinet. If concentrations are found, you may want a technician to redistribute these resources to minimize the impact of potential equipment failure.

Should you experience temporary Cabinet or Carrier failure, you would consult this section to determine those facilities and/or individuals affected, and have your technician make temporary re-assignments if needed.
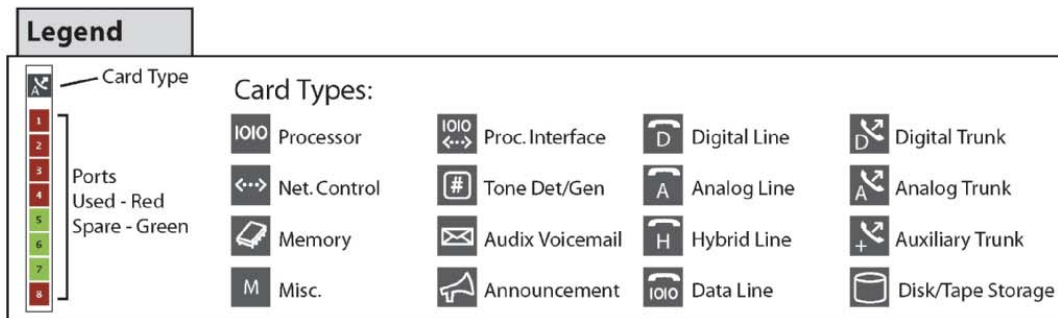
Media Gateway: 1

Port	Name	Extension	Type
5	G250-Anal-1	64203	2500
6	G250-Anal-2	64204	2500
Total Ports: 2			

Cabinet: 1 Carrier: A

Port	Name	Extension	Type
01A0101			IP SERVER INTFC
01A0102			IP SERVER INTFC
01A0103			IP SERVER INTFC
01A0104			IP SERVER INTFC
01A0105			IP SERVER INTFC
01A0106			IP SERVER INTFC
01A0107			IP SERVER INTFC
01A0108			IP SERVER INTFC
01A0201			IP MEDIA PROCESSOR
01A0203			IP MEDIA PROCESSOR
01A0205			IP MEDIA PROCESSOR
01A0207			IP MEDIA PROCESSOR
01A0317	Clan-1	60000	ethernet
01A0401			IP MEDIA PROCESSOR
01A0403			IP MEDIA PROCESSOR
01A0405			IP MEDIA PROCESSOR
01A0407			IP MEDIA PROCESSOR
01A0517	Clan 2	62000	ethernet
Total Ports: 18			

4.4. Equipment Layout

The following diagrams depict the hardware that makes up your PBX system as it appears in the switch. The Equipment Maps are most useful for hardware or software upgrades, business expansions, multi-site inventory control, and hardware repairs.

001   G250 Media Gateway

44

01A   G650 Media Gateway
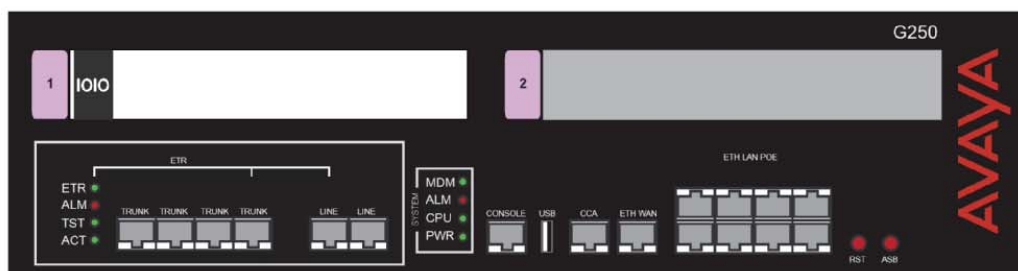
4.5. Action Items

The Action Items are potential anomalies we found in the programming of the system which require further investigation to improve service and/or eliminate inefficiencies.

Format

The Action Items are divided into two major categories: software programming items that are service affecting, and those which are clean-up issues.

Use

Addressing these issues will lead to better service, fewer user complaints, better utilization of system resources, and an easier system to manage.

Subscriptions to the SourceBook will help ensure continued good service.

Service Affecting Issues

The following may be service-affecting issues in the programming of the PBX:

Missing Area Codes

No North American area codes are missing from your PBX

Misassigned Night Extensions

The following Night extensions are assigned to individual trunks, but are not defined in the PBX:

Trunk Group	Member	Night Extension
All trunk Night extensions are defined in the PBX		

Coverage Answer Groups

No empty Coverage Answer Groups were found.

Coverage Paths

All Coverage Paths have at least one destination defined.

Clean Up Issues

The following are clean-up issues in the programming of the PBX:

Pickup Groups

No empty Pickup Groups were found.

Hunt Groups

No empty or one-member Hunt Groups were found.

46

Hunt Groups (ACD)

No empty or one-member ACD Hunt Groups were found.

Trunk Groups

The following Trunks Groups have no members: 7

These Trunk Groups should be removed if they are not being used.

The 'Name' field of trunk members is not currently being used. It is recommended to use this field to store a circuit ID or other identifying information for your trunks.

Intercom Groups

No empty or one-member Intercom Groups were found.

Coverage Answer Groups

No unused Coverage Answer Groups were found.

Abbreviated-Dialing Groups

No empty Abbreviated-Dialing Groups were found.

All of your Abbreviated-Dialing Groups are being used by at least one Station.

Agent Login IDs

The following Agent Login IDs are assigned to a Skill (ACD Hunt Group) that does not exist:

Login ID	Extension	Skill
All Skills assigned to Agent Login IDs are defined		

Unused Route Patterns

The following Route Patterns do not appear to be in use by your AAR/ARS system:

Route Pattern	Pref	FRL
No unused Route Patterns detected in your PBX.		

47

Glossary

Abbreviated Dialing
A feature providing station users access to system, group or personal lists allowing them to dial frequently called telephone numbers using a 1- to 3-digit code. System and Group lists may also be configured as 'privileged', thus overriding any restrictions placed on an extension.

Active (Coverage Paths)
A state where a user is on a phone and the instrument is capable of receiving another call on an additional call appearance button.

Audix
Avaya's voicemail platform for the Definity Call Servers.

Automatic Call Distribution (ACD)
A type of hunt group that presents incoming calls to multiple stations sequentially. These stations are called ACD Agents.

Automatic Route Selection (ARS)
A feature within the PBX which directs outbound calls to predefined Trunk Groups dependent upon the digits that were dialed.

Call Detail Recording (CDR)
A feature allowing the recording of information about selected calls, usually for cost allocation purposes.

Calling Party Restriction (CPR)
A setting with each Class of Restriction (COR) which allows or denies certain types of calls. For example, CORs with a CPR of 'none' have no restriction, while CORs with a CPR of 'outward' are not able to make any external calls.

Class of Restriction (COR)
Up to 96 (0 - 95) individual configurations of restrictions and permissions that control call origination and termination capabilities.

Class of Service (COS)
Assignments that determine certain calling options and features available to the telephone.

Control Circuit Packs
The circuit packs, or 'cards', not associated with stations or trunks, i.e. CPU, Memory, Software, and Storage Devices.

Coverage Answer Group
A group of up to 8 stations which act as an answer point for selected incoming calls. All phones in a Coverage Answer Group will ring simultaneously.

Coverage Path
A Coverage Path describes both the conditions under which incoming calls may be redirected and how they will be redirected.

Coverage Point
One of up to 6 answer points within a Coverage Path.

Direct Access
The ability for a station or trunk user to dial a Trunk Access Code (TAC) and receive dial-tone directly from a trunk, thus bypassing any restrictions of ARS.

DND/SAC
Do Not Disturb/Send All Calls - A feature allowing a user to temporarily deny their station the ability to receive incoming calls.

Extension
A dialable number assigned to a station, data module, hunt group, terminating extension group, vector, etc.

Facility Restriction Level (FRL)
An FRL is assigned to each Class of Restriction (COR) and are used to allow or deny access to specific Trunk Groups. An FRL of 0 is the most restrictive, 7 is the least restrictive and can commonly access more facilities.

49

Grading (Grade Of Service)
The balanced assignment of terminals (Stations, Trunks, etc.) across available Carriers in order to evenly distribute traffic and assignment of facilities among all Carriers within the system.

Hunt Group
Allows a call to a busy extension to be redirected to an idle extension within the group.

Intercom Group
A grouping of stations that have the ability to call each other by using a 1- or 2-digit code.

LWC Reception
A setting within station programming which tells the PBX where Leave Word Calling information will be stored.

Pickup Group
A group of stations that are able to answer calls to any of the stations within the same group.

Port
The physical location of terminal equipment using the addressing scheme of Cabinet, Carrier, Slot, Port.

Port Address
An alphanumeric value corresponding to a specific card and port within the PBX. Every trunk, station and voicemail port has a specific and unique Port Address.

Port Circuit Packs
The circuit packs, or 'cards', associated with stations and trunks, e.g. Digital Line Cards, Analog Trunk Cards, DS1 Interfaces, and Audix Voicemail.

Privileged
A setting within the programming of System and Group Abbreviated Dialing Lists which allows all programmed entries to be dialed, regardless of the originating station's COR.

Restrict Call Forward Off Net
A setting with in a Class of Service (COS) which when set to 'n' allows calls to be redirected off-premise (externally).

Restricted Call List (RCL)
A listing of dialed numbers that may not be accessed by CORs with the 'Restricted Call List?' set to 'y'.

Route Pattern
A list of Trunk Groups to be used when calling specific numbers (i.e. Area Codes).

Station Type
A field in the programming of each station designating a specific model of terminal equipment.

Toll Abuse
The action of making unauthorized calls through a PBX.

Toll List
A listing of dialed numbers to toll calling areas.

Trunk Access Code (TAC)
A dialable code assigned to each Trunk Group.

Trunk
A dedicated communications line between two PBXs or between the PBX and the Central Office.

Trunk Group
A collection of similar Trunks performing an identical function. For example, all DID Trunks for the main telephone number would be members of a single Trunk Group.

Unrestricted Call List (UCL)
One of ten individual listings of dialed numbers that may be accessed by otherwise restricted stations, even if the numbers are on the Toll List.

Vector
A set of treatments performed on incoming calls which can provide customized routing, announcements, and collection of data.

50

©2007 Avaya Inc. All Rights Reserved.
Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

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 Developer*Connection* Program at devconnect@avaya.com.