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Avaya Solution & Interoperability Test Lab

Application Notes for FCS WinSuite with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring FCS WinSuite to interoperate with Avaya Communication Manager. FCS WinSuite is a Windows-based Hospitality system that provides a real-time multitasking interface between Avaya Communication Manager and a hotel's Property Management System.

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.

1. Introduction

These Application Notes describe the procedures for configuring FCS WinSuite to interoperate with Avaya Communication Manager. FCS WinSuite is a Windows-based Hospitality system that provides a real-time multitasking interface between Avaya Communication Manager and a hotel's 3rd party Property Management System (PMS). In addition to functioning as a call charge and billing system that manages the costs of telephony and service usage, FCS WinSuite supports standard Hospitality feature requests to/from a PMS (guest room check-in/check-out/moves, Do Not Disturb (DND), Automatic Wake-Up (AWU), Message Waiting Lamp (MWL) control, Housekeeping/Room Status changes). The call charge and billing functionality is facilitated by a Call Detail Recording (CDR) interface to Avaya Communication Manager, while the Hospitality features are enabled by a PMS data link to Avaya Communication Manager.

When notified of a guest room check-in, FCS WinSuite removes outbound call restrictions on the guest room extension and changes that extension's Hospitality Status to "occupied." Conversely, when notified of a guest room check-out, FCS WinSuite restricts outbound calls on the guest room extension and sets its Hospitality Status to "non-guest room."

The configuration used in performing compliance testing of FCS WinSuite is shown in **Figure 1**. It shows a network consisting primarily of a pair of Avaya S8720 Servers running Avaya Communication Manager in a High Reliability configuration with two Avaya G650 Media Gateways, an FCS WinSuite server, and Avaya 4626[1] and 9640 IP Telephones (representing guest telephones). In addition, FCS VoiceMail, a Windows-based voice messaging system designed specifically for hotels, was used to exercise specific capabilities in FCS WinSuite. The CDR and PMS data links from FCS WinSuite are carried over the IP network and terminated in Avaya Communication Manager as IP services. Analog and digital ports on the corresponding Intel Dialogic cards in the FCS VoiceMail server connect to ports on one of the Avaya G650 Media Gateways.

These Application Notes assume that FCS VoiceMail has been properly installed and configured by FCS services personnel, and that its integration with Avaya Communication Manager has been completed. For details on this integration, please refer to [3].

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[1] This telephone was designed and developed specifically for Hospitality environments.
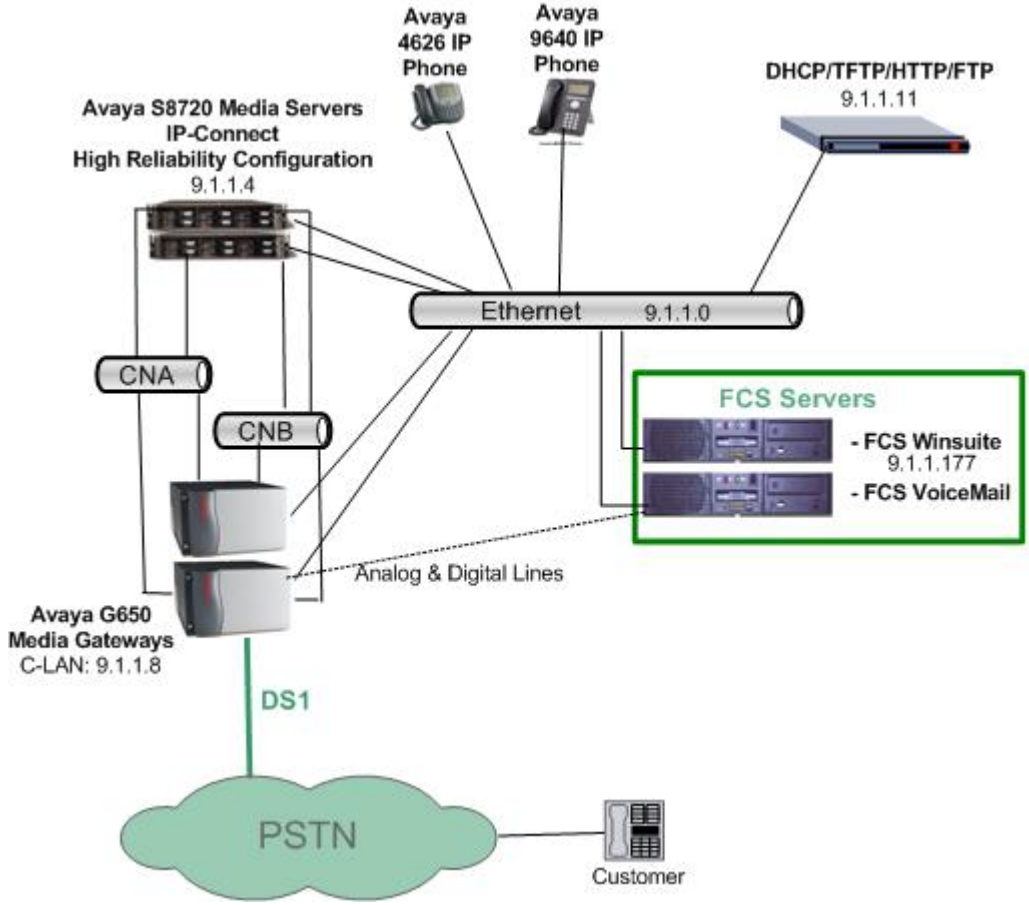
Figure 1: Sample Test Configuration

2. Equipment and Software Validated

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

Equipment	Hardware/Firmware/Software Version
Avaya S8720 Server	Avaya Communication Manager 4.0.1 (R014x.00.1.731.2)
Avaya G650 Media Gateway • TN799DP C-LAN • TN2312AP IPSI • TN2302AP MedPro • TN2224CP 2-Wire Digital • TN464HP DS1 • TN746B Analog Line	26.31.0 HW01 FW156 HW15 FW039 HW02 FW142 HW08 FW015 HW02 FW019 000019
Avaya 4626 IP Telephone	2.4

Equipment	Hardware/Firmware/Software Version
Avaya 9640 IP Telephone	S1.5
FCS WinSuite Server	3.0.8 (with Windows 2003 Server SP 2)
FCS VoiceMail Server	4.0.0 (with Windows 2003 Server SP 2)

3. Configure Avaya Communication Manager

This section details the steps required to configure Avaya Communication Manager to interoperate with FCS WinSuite. These Application Notes assume the Avaya Media Gateways (including circuit packs) have already been administered. Please refer to [1] for additional details.

The commands listed in this section were issued at the Avaya System Access Terminal (SAT) screen. For all steps where data are modified, submit the completed administration form for the changes to take effect.

Step	Description

1.	*Set Hospitality parameters:*
	
	Enter **change system-parameters hospitality**. On **Page 1**, set the following values:
	
	   - Message Waiting Configuration: **act-pms**. - Controlled Restrictions Configuration: **act-pms**. - Housekeeper Information Configuration: **act-pms**. - Client Room Coverage Path Configuration: **act-pms**. - Default Coverage Path for Client Rooms: Set to the number of a coverage path that provides the appropriate coverage treatment for an unoccupied guest room, e.g. coverage to the hotel operator (in this example, coverage path **100** is used). - PMS Endpoint: **PMS**.
	<pre>change system-parameters hospitality Page 1 of 3
	                         HOSPITALITY
	
	                Message Waiting Configuration: act-pms
	            Controlled Restrictions Configuration: act-pms
	            Housekeeper Information Configuration: act-pms
	                 Number of Housekeeper ID Digits: 0
	                             PMS Log Endpoint:
	                        Journal/Schedule Endpoint:
	            Client Room Coverage Path Configuration: act-pms
	             Default Coverage Path for Client Rooms: 100
	        Forward PMS Messages to Intuity Lodging? n
	
	                        PMS LINK PARAMETERS
	                               PMS Endpoint: PMS
	                          PMS Protocol Mode: transparent ASCII mode? y
	            Seconds before PMS Link Idle Timeout: 10
	Milliseconds before PMS Link Acknowledgement Timeout: 200
	              PMS Link Maximum Retransmissions: 3
	        PMS Link Maximum Retransmission Requests: 3
	                 Take Down Link for Lost Messages? y</pre>

Step	Description

2.	*Set room status values:*
	
	Advance to **Page 3** and enter the following values for the fields indicated:
	
	• Definition for Rooms in State 1: **Occupied/dirty**.
	• Definition for Rooms in State 2: **Occupied/Maid In Room**.
	• Definition for Rooms in State 3: **Occupied/clean**.
	• Definition for Rooms in State 4: **Vacant/clean**.
	
	<pre>change system-parameters hospitality Page 3 of 3
	        ROOM STATES HOSPITALITY
	
	          Definition for Rooms in State 1: Occupied/dirty
	          Definition for Rooms in State 2: Occupied/Maid In Room
	          Definition for Rooms in State 3: Occupied/clean
	          Definition for Rooms in State 4: Vacant/clean
	          Definition for Rooms in State 5:
	          Definition for Rooms in State 6:
	
	       HOSPITALITY FEATURES
	                                 Suite Check-in? n
	           Cancel Do-Not-Disturb for Wakeup Calls? Y</pre>

Step	Description

3.	*Administer feature access codes (FACs) for entering Housekeeping Status:*
	
	Enter **change feature-access-codes** and advance to **Page 7**. Enter unique FACs for each of the first four **Housekeeping Status (Client Room) Access Codes** listed, each of which will correspond to the room status values administered in **Step 2** (in this example, ***81, *82, *83** and ***84** were used, respectively).
	
	<pre>change feature-access-codes Page 7 of 7
	                             FEATURE ACCESS CODE (FAC)
	                               Hospitality Features
	
	              Automatic Wakeup Call Access Code:
	    Housekeeping Status (Client Room) Access Code: *81
	    Housekeeping Status (Client Room) Access Code: *82
	    Housekeeping Status (Client Room) Access Code: *83
	    Housekeeping Status (Client Room) Access Code: *84
	    Housekeeping Status (Client Room) Access Code:
	    Housekeeping Status (Client Room) Access Code:
	        Housekeeping Status (Station) Access Code:
	        Housekeeping Status (Station) Access Code:
	        Housekeeping Status (Station) Access Code:
	        Housekeeping Status (Station) Access Code:
	           Verify Wakeup Announcement Access Code:
	                   Voice Do Not Disturb Access Code:</pre>

Step	Description

4.	*Define the FCS WinSuite server as an IP Node Name:*
	
	 Enter **change node-names ip**, and add an entry for the FCS WinSuite server, using an appropriately descriptive value for the **Name** (in this case, **FCSWinsuite**) and the corresponding **IP Address** (in this example, **9.1.1.177**).
	
	 <pre>change node-names ip Page 1 of 2
	                             IP NODE NAMES
	      Name IP Address
	CLAN-01A02 9.1.1.8
	CLAN-01B02 9.1.1.9
	GVT-S8300-LSP 9.1.4.2
	MedPro-01A03 9.1.1.5
	MedPro-01B03 9.1.1.6
	S8500-ESS 9.0.1.4
	SES1 9.1.1.34
	default 0.0.0.0
	procr 9.1.1.3
	FCSWinsuite 9.1.1.177
	
	(9 of 9 administered node-names were displayed)
	Use 'list node-names' command to see all the administered node-names
	Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name</pre>

Step	Description
5.	*Define IP services in support of the PMS and CDR data links:* Enter **change ip-services** and add entries with a Service Type of **PMS** and **CDR1** (or, if a CDR1 service is already defined, **CDR2**), respectively. In each case, enter the following values in the remaining fields: • Local Node: The IP Node Name of a C-LAN board (in this example, **CLAN-01A02** is used for each IP service definition). • Remote Node: The IP Node Name of the FCS WinSuite server, as defined in **Step 4**. • Remote Port: A valid unused port (in this example, the recommended value of **5103** is used for **PMS**, while **5050** is used for **CDR1**). <pre>change ip-services Page 1 of 3

                              IP SERVICES
  Service   Enabled   Local   Local   Remote   Remote
   Type   Node   Port   Node   Port
  PMS   CLAN-01A02 0   FCSWinsuite 5103
  CDR1   CLAN-01A02 0   FCSWinsuite 5050</pre> |

Step	Description

6.	*Administer CDR output format:*
	
	Enter **change system-parameters cdr** and choose one of the standard output formats for the **Primary Output Format** field (in this example, **expanded** was entered). This selection will determine the expected call detail record format that will be administered in FCS WinSuite in **Section 4, Step 6**. For more information on CDR output formats in Avaya Communication Manager, please refer to [2].
	
	<pre>change system-parameters cdr Page 1 of 1
	                         CDR SYSTEM PARAMETERS
	
	 Node Number (Local PBX ID): 1 CDR Date Format: month/day
	      Primary Output Format: expanded Primary Output Endpoint: CDR1
	     Secondary Output Format:
	             Use ISDN Layouts? n Enable CDR Storage on Disk? n
	          Use Enhanced Formats? n Condition Code 'T' For Redirected Calls? n
	        Use Legacy CDR Formats? y Remove # From Called Number? n
	Modified Circuit ID Display? n Intra-switch CDR? n
	                Record Outgoing Calls Only? n Outg Trk Call Splitting? y
	  Suppress CDR for Ineffective Call Attempts? y Outg Attd Call Record? y
	      Disconnect Information in Place of FRL? n Interworking Feat-flag? n
	 Force Entry of Acct Code for Calls Marked on Toll Analysis Form? n
	                                    Calls to Hunt Group - Record: member-ext
	Record Called Vector Directory Number Instead of Group or Member? n
	Record Agent ID on Incoming? n Record Agent ID on Outgoing? y
	        Inc Trk Call Splitting? n
	  Record Non-Call-Assoc TSC? n Call Record Handling Option: warning
	      Record Call-Assoc TSC? n Digits to Record for Outgoing Calls: dialed
	      Privacy - Digits to Hide: 0 CDR Account Code Length: 15</pre>
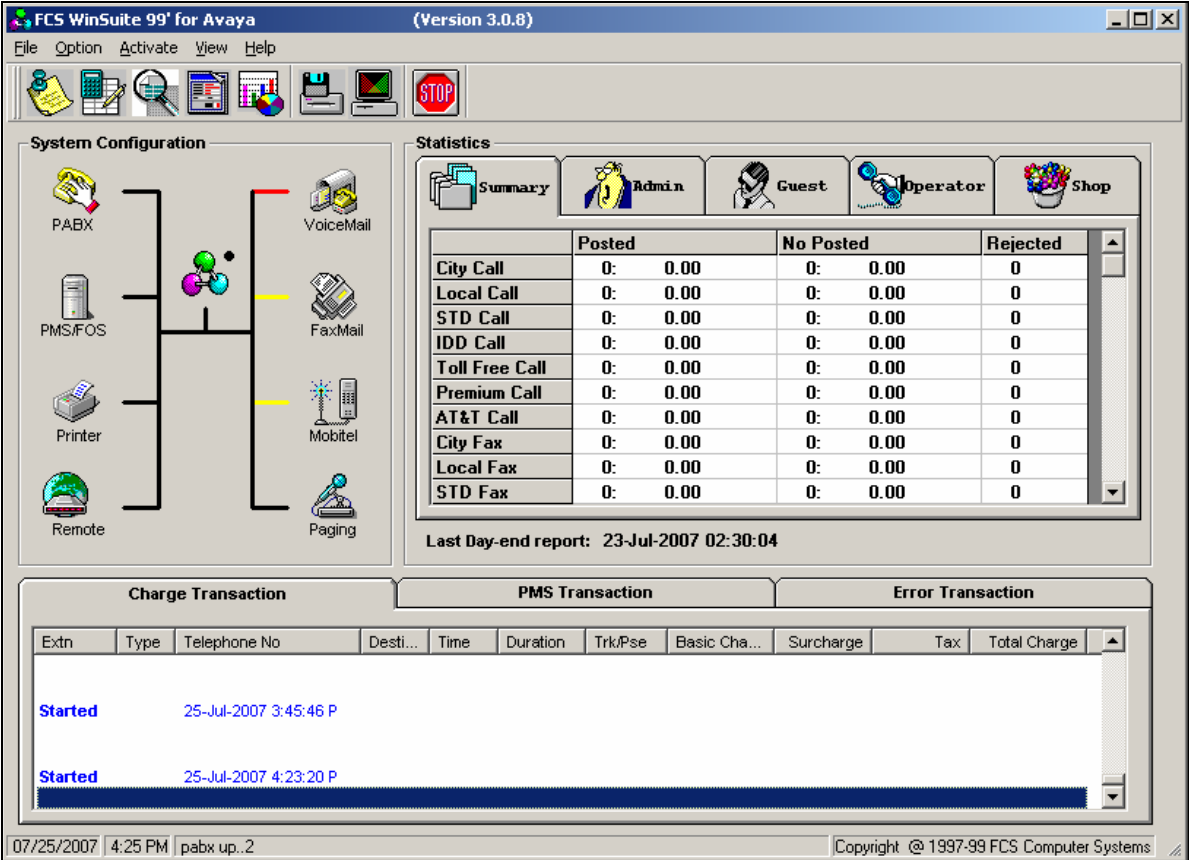
Step	Description

7.	*Add Client Room properties to a Class of Service:*
	
	Enter **change cos**, and for the Class of Service to be assigned to guest telephones, set the **Client Room** field to **y** (as shown below for Class of Service **5**).
	
	<pre>change cos Page 1 of 2
	                    CLASS OF SERVICE
	
	                        0 1 2 3 4 **5** 6 7 8 9 10 11 12 13 14 15
	  Auto Callback n y y n y n y n y n y n y n y n
	  Call Fwd-All Calls n y n y y n n y y n n y y n n y
	  Data Privacy n y n n n y y y y n n n n y y y
	  Priority Calling n y n n n n n n n y y y y y y y
	  Console Permissions n y n n n n n n n n n n n n n n
	  Off-hook Alert n n n n n n n n n n n n n n n n
	  Client Room n n n n n **y** y n n n n n n n n n
	  Restrict Call Fwd-Off Net y y y y y y y y y y y y y y y y
	  Call Forwarding Busy/DA n y n n n n n n n n n n n n n n
	  Personal Station Access (PSA) n n n n n n n n n n n n n n n n
	  Extended Forwarding All n n n n n n n n n n n n n n n n
	  Extended Forwarding B/DA n n n n n n n n n n n n n n n n
	  Trk-to-Trk Transfer Override n n n n n n n n n n n n n n n n
	  QSIG Call Offer Originations n n n n n n n n n n n n n n n n
	  Contact Closure Activation n n n n n n n n n n n n n n n n</pre>

Step	Description

8.	*Set guest room Calling Party Restrictions in a Class of Restriction (COR):*
	
	Enter **change cor *n***, where ***n*** is the number of the Class of Restriction to be assigned to guest telephones (in this example, COR **5** is used). In the **Calling Party Restriction** field, enter **all-toll**.
	
	<pre>change cor 5 Page 1 of 22
	                          CLASS OF RESTRICTION
	
	                 COR Number: 5
	            COR Description:
	
	                       FRL: 0 APLT? y
	    Can Be Service Observed? n Calling Party Restriction: all-toll
	  Can Be A Service Observer? n Called Party Restriction: none
	   Partitioned Group Number: 1 Forced Entry of Account Codes? n
	            Priority Queuing? n Direct Agent Calling? n
	       Restriction Override: none Facility Access Trunk Test? n
	        Restricted Call List? n Can Change Coverage? n
	     Unrestricted Call List:
	             Access to MCT? y Fully Restricted Service? n
	  Group II Category For MFC: 7 Hear VDN of Origin Annc.? n
	           Send ANI for MFE? n Add/Remove Agent Skills? n
	              MF ANI Prefix: Automatic Charge Display? n
	  Hear System Music on Hold? y PASTE (Display PBX Data on Phone)? n
	                        Can Be Picked Up By Directed Call Pickup? n
	                               Can Use Directed Call Pickup? n
	                               Group Controlled Restriction: inactive</pre>
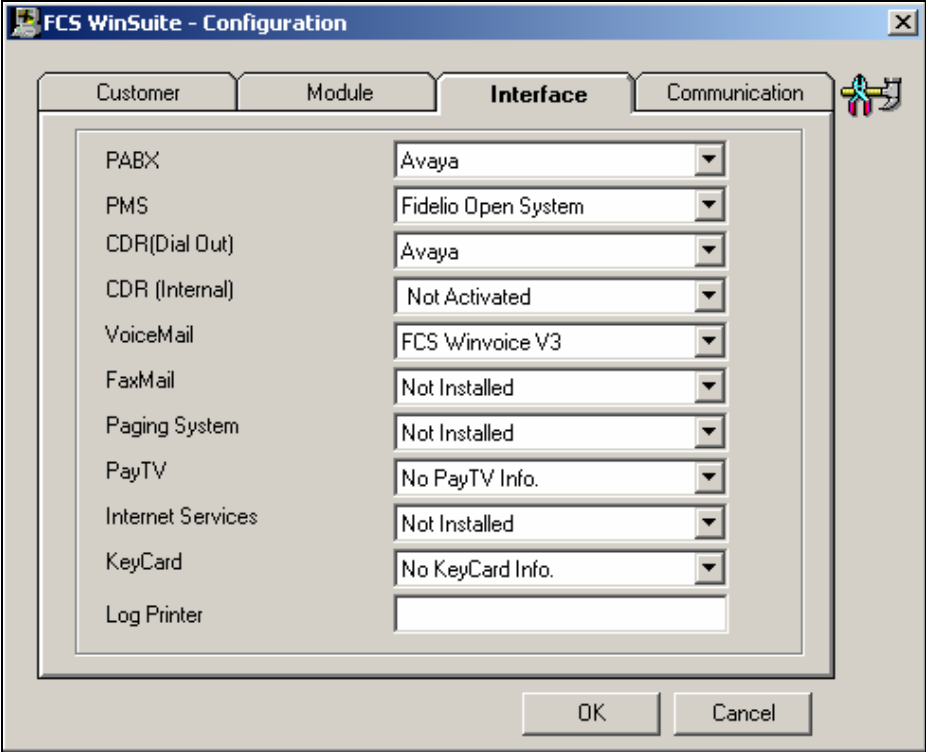
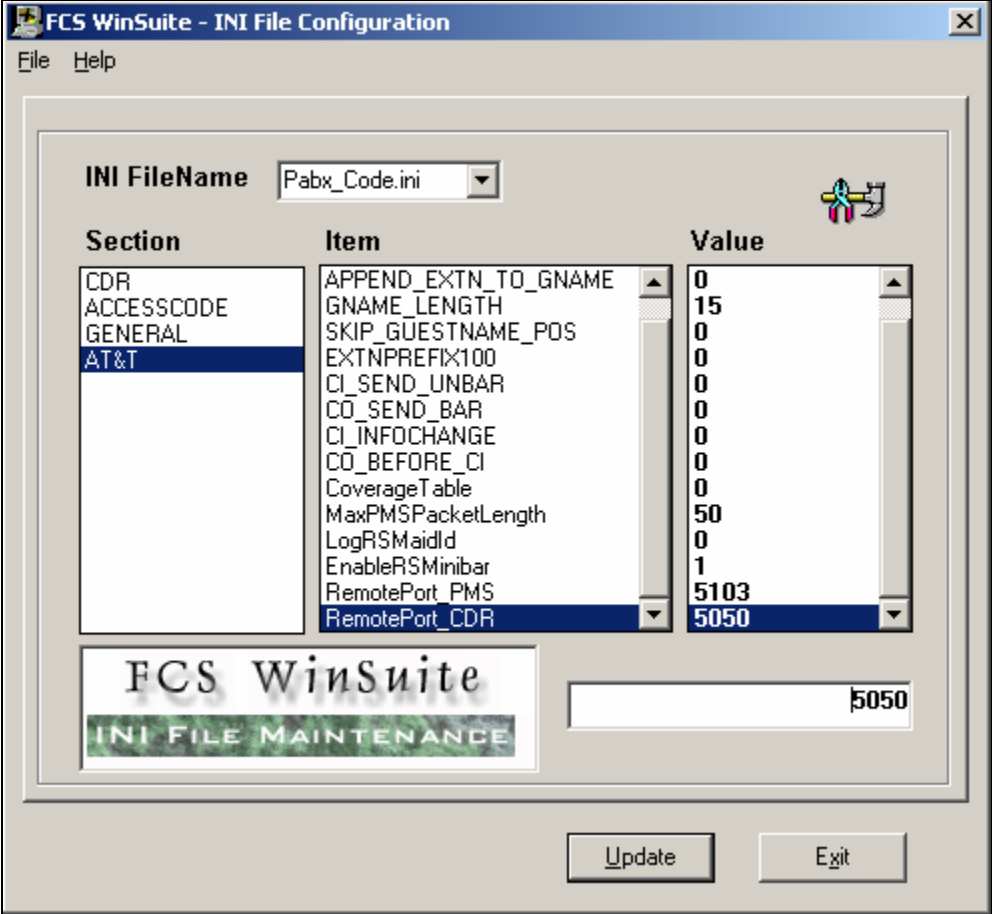| Step	Description

9.	*Assign Class of Service and Class of Restriction values to guest telephones:*
	
	For each guest telephone extension *x*, enter **change station *x*** and enter in the **COR** and **COS** fields the values corresponding to the Class of Service and Class of Restriction administered in **Steps 8 and 9**, respectively.
	
	<pre>change station 44000 Page 1 of 5
	                                STATION
	
	Extension: 44000 Lock Messages? n BCC: 0
	     Type: 4625 Security Code: 123456 TN: 1
	     Port: S00062 Coverage Path 1: 1 COR: 5
	     Name: FCS 4626 1 Coverage Path 2: COS: 5
	                                   Hunt-to Station:
	STATION OPTIONS
	                                       Time of Day Lock Table:
	               Loss Group: 19 Personalized Ringing Pattern: 1
	                                         Message Lamp Ext: 44000
	          Speakerphone: 2-way Mute Button Enabled? y
	      Display Language: english Expansion Module? n
	  Survivable GK Node Name:
	         Survivable COR: internal Media Complex Ext:
	   Survivable Trunk Dest? y IP SoftPhone? n
	
	                                   Customizable Labels? y</pre>

4. Configure FCS WinSuite

This section details the steps required to configure FCS WinSuite to interoperate with Avaya Communication Manager. These Application Notes assume that the FCS WinSuite application has already been properly installed by FCS services personnel.
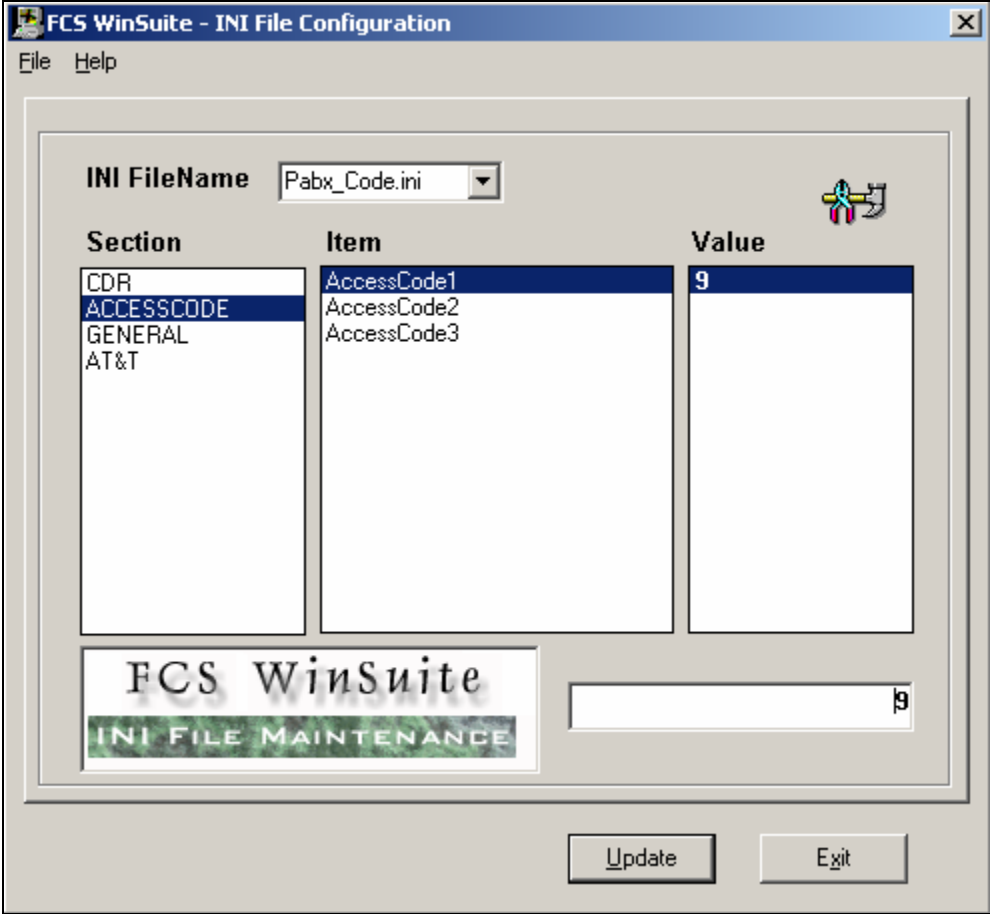
Step	Description
1.	Open the FCS WinSuite administration client. The **FCS WinSuite 99 for Avaya** screen is presented, as shown below.

Step	Description
2.	Select **Activate -> WinSuite Configuration.** In the subsequent **Password** window, enter the appropriate password to open the **FCS WinSuite Configuration** main screen, shown below.

Step	Description
3.	Click the **System** icon, then in the subsequent **System** window, select **Configuration**. The **FCS WinSuite – Configuration** screen is presented, as shown below. Under the **Interface** tab, select "Avaya" from the drop-down menus for the **PABX** and **CDR (Dial Out)** fields, then click **OK**.

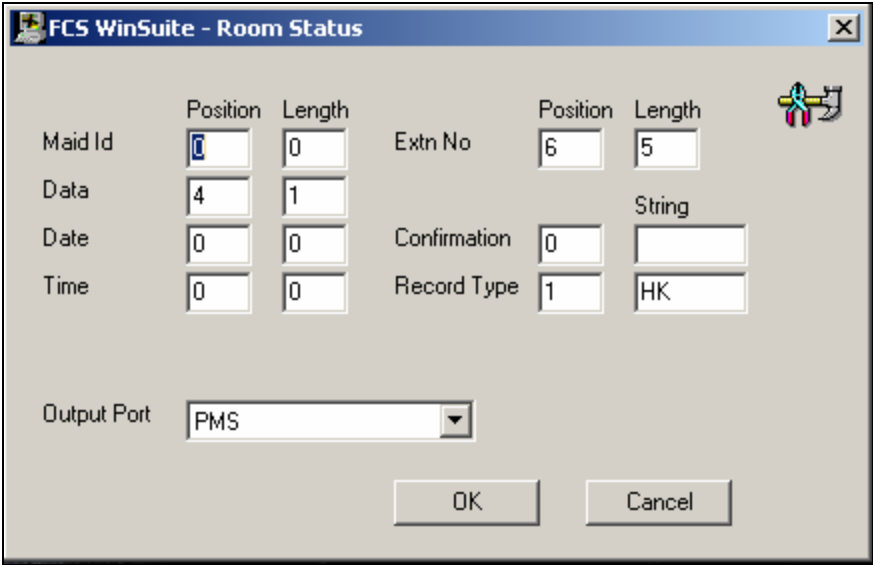| Step	Description
4.	*Configure the PMS and CDR data links to Avaya Communication Manager:* From the **System** window (as described in **Step 3**), select **INI Config**. In the **FCS WinSuite – INI File Configuration** window that is presented (see below), select **Pabx_Code.ini** from the **INI FileName** drop-down field, then select **AT&T** in the **Section** column. Select, in turn, the **RemotePort_PMS** and **RemotePort_CDR** entries in the **Item** column and, in each case, enter the **Remote Port** value used for the corresponding service as administered in **Section 3, Step 5**. After entering each value, click **Update**.

Step	Description
5.	*Identify the ARS access code used by Avaya Communication Manager in CDR records:* Select **ACCESSCODE** from the **Section** column and **AccessCode1** from the **Item** column. Enter the ARS access code in the lower-right text field (in this case, **9**) and click **Update**.

DAH; Reviewed:
SPOC 8/25/2007

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Step	Description
6.	*Define the format of the incoming CDR records:* Return to the **FCS WinSuite Configuration** main screen (as shown in **Step 2**) and click on the **Data Format** icon. In the subsequent **Data Format** window, select the **C.D.R.** icon. The **FCS WinSuite – Call Detail Record** screen is presented, as shown below. Click **New** to define a new record format. (At this point, the **New** button is replaced by a **Save** button.) Enter an appropriate string in the **PABX Description** field (in this case, **Avaya**) as well as **Start position** and **Length** values for each of the corresponding fields in the CDR records produced by Avaya Communication Manager, consistent with the output format administered in **Section 3, Step 6**. Click **Save** to create the record format.

Step	Description
7.	*Define the format of Housekeeping/Room Status data received from Avaya Communication Manager via the PMS data link:* From the **Data Format** window (as described in **Step 6**), select the **Room Status** icon. In the subsequent window, populate the various fields as shown below and click **OK**.

5. Interoperability Compliance Testing

Interoperability compliance testing focused on FCS WinSuite's ability to work with Avaya Communication Manager. FCS WinSuite features and capabilities that were verified included the following: receipt and processing of Call Detail Records, check-in/check-out/room change for guest extensions, receipt of Housekeeping/Room Status changes initiated at guest telephones and forwarding to a simulated Property Management System, MWL activation for incoming voicemail, and DND activation/deactivation.

5.1. General Test Approach

Feature functionality testing was performed manually. Inbound calls were made to the Avaya 4626 and 9640 IP Telephones (i.e. the guest telephones) over T1/PRI trunks, as well as from other local extensions (analog, digital, and IP Telephone). A simulated PMS application was used to launch changes to telephone message waiting lamps and phone privileges during room check in / check out / move requests, receive room status updates, and activate/deactivate DND.

5.2. Test Results

All executed test cases were completed successfully. One observation of note was that the FCS WinSuite application needed to be restarted on occasion if the PMS data link went down. This,

however, was not the general case, and the restart of FCS WinSuite is a sufficiently fast process such that service interruption is minimal.

6. Verification Steps

This section describes steps that may be used to verify the configuration.

Step	Description

1.	To verify that the PMS data link between Avaya Communication Manager and FCS WinSuite is operational, enter **status pms-link** at the SAT and look for a status of **up** in the **Physical Link State** and **Protocol State** fields.
	
	<pre>status pms-link
	                        PMS LINK STATUS
	
	        Physical Link State: up
	             Protocol State: up
	
	          Maintenance Busy? no
	        Data Base Swapping? No</pre>

2.	To verify that the CDR data link between Avaya Communication Manager and FCS WinSuite is operational, enter **status cdr-link** at the SAT and look for a status of **up** in the **Link State** field of the CDR link to FCS WinSuite (in this example, the **Primary** link).
	
	<pre>status cdr-link
	                          CDR LINK STATUS
	                    Primary Secondary
	
	       Link State: up CDR not administered
	
	      Date & Time: 2007/7 /26 17:41:32 0 /0 /0 0 :0 :0
	  Forward Seq. No: 0 0
	 Backward Seq. No: 0 0
	CDR Buffer % Full: 0.00 0.00
	      Reason Code: OK</pre>

Step	Description
3.	To verify the ability to check in guest extension *x*, initiate such a request from the associated Property Management System. At the Avaya Communication Manager SAT, enter **status station *x*** and verify that **Room Status** is **occupied** and **User Cntrl Restr** is **none**.

```
status station 44000                                      Page   1 of   6
                            GENERAL STATUS
      Administered Type: 4625               Service State: in-service/on-hook
        Connected Type: 4626            TCP Signal Status: connected
             Extension: 44000
                  Port: S00062         Parameter Download: complete
           Call Parked? no                   SAC Activated? no
      Ring Cut Off Act? no
  Active Coverage Option: 1

            EC500 Status: N/A       Off-PBX Service State: N/A
    Message Waiting:
    Connected Ports:


   Limit Incoming Calls? no

 User Cntrl Restr: none                        HOSPITALITY STATUS
Group Cntrl Restr: none                    Awaken at:
                                            User DND: not activated
                                           Group DND: not activated
                                         Room Status: occupied

```

7. Support

Tor technical support on FCS WinSuite, contact FCS Computer Systems at
http://www.fcscs.com/support.htm.

8. Conclusion

These Application Notes describe the procedures for configuring FCS WinSuite to interoperate with Avaya Communication Manager. All interoperability compliance test cases executed against such a configuration were completed successfully.

9. Additional References

1. "Administration for Network Connectivity for Avaya Communication Manager," Document ID 555-233-504.
2. "Administrator Guide for Avaya Communication Manager," Document ID 03-300509.
3. "Application Notes for FCS VoiceMail with Avaya Communication Manager."

Additional product documentation may be found at the following sites:

- Avaya: http://support.avaya.com
- FCS: http://www.fcscs.com