Avaya Solution & Interoperability Test Lab

Application Notes for the SDC *Intelli*DESK IPSERVICES Directory and OnCall Access via Avaya IP Telephone Web Browser and Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for the SDC *Intelli*DESK IPSERVICES Directory and OnCall access from the web browser interfaces of Avaya 4610 and 4620 IP Telephones connected to Avaya Communication Manager. Features and functionality were validated for Directory search as well as OnCall schedule IPSERVICES from the Avaya 4610 and 4620 IP Telephone web browsers. Information in these Application Notes has been obtained through interoperability 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 configuration steps required for SDC *Intelli*DESK IPSERVICES access via the web browser interfaces of Avaya 4610 and 4620 IP Telephones connected to Avaya Communication Manager.

*Intelli*DESK IPSERVICES provides access to the *Intelli*DESK Directory database, OnCall schedules, and Emergency Procedures and Emergency Notification Service (ENS). IPSERVICES leverages the enterprise directory database utilized by other SDC applications, such as *Intelli*DESK Console and *Intelli*SPEECH, creating additional access points for retrieval of directory information and OnCall schedules.

The scope of the compliance testing was limited to the *Intelli*DESK IPSERVICES Directory and OnCall browser application navigation via Avaya 4610 and 4620 IP Telephones.

1.1. Sample Configuration

The tested configuration is shown in **Figure 1**. An Avaya S8700 Media Server running Avaya Communication Manager was connected to an Avaya G650 Media Gateway. Avaya Communication Manager supported a mix of Avaya 4610 and 4620 IP telephones, and an Avaya 8410D Digital telephone. A TFTP server was utilized for the initialization of the Avaya IP telephones' web related parameters. The Avaya P333T-PWR Stackable Switch in this configuration was used to support connectivity of the Avaya S8700 Media Server with the Avaya G650 Media Gateway, Avaya IP telephones, the TFTP server, and an SDC *Intelli*DESK IPERVICES server. The IPSERVICES application was running on a Windows 2000 server supporting a web server, an SDC Page Server and an SDC *Intelli*DESK database. The Avaya P333R Stackable Switch in this configuration provided the routing between the two subnets shown in **Figure 1**.

Note that these configurations are also applicable to other Avaya Media Servers and Media Gateways.

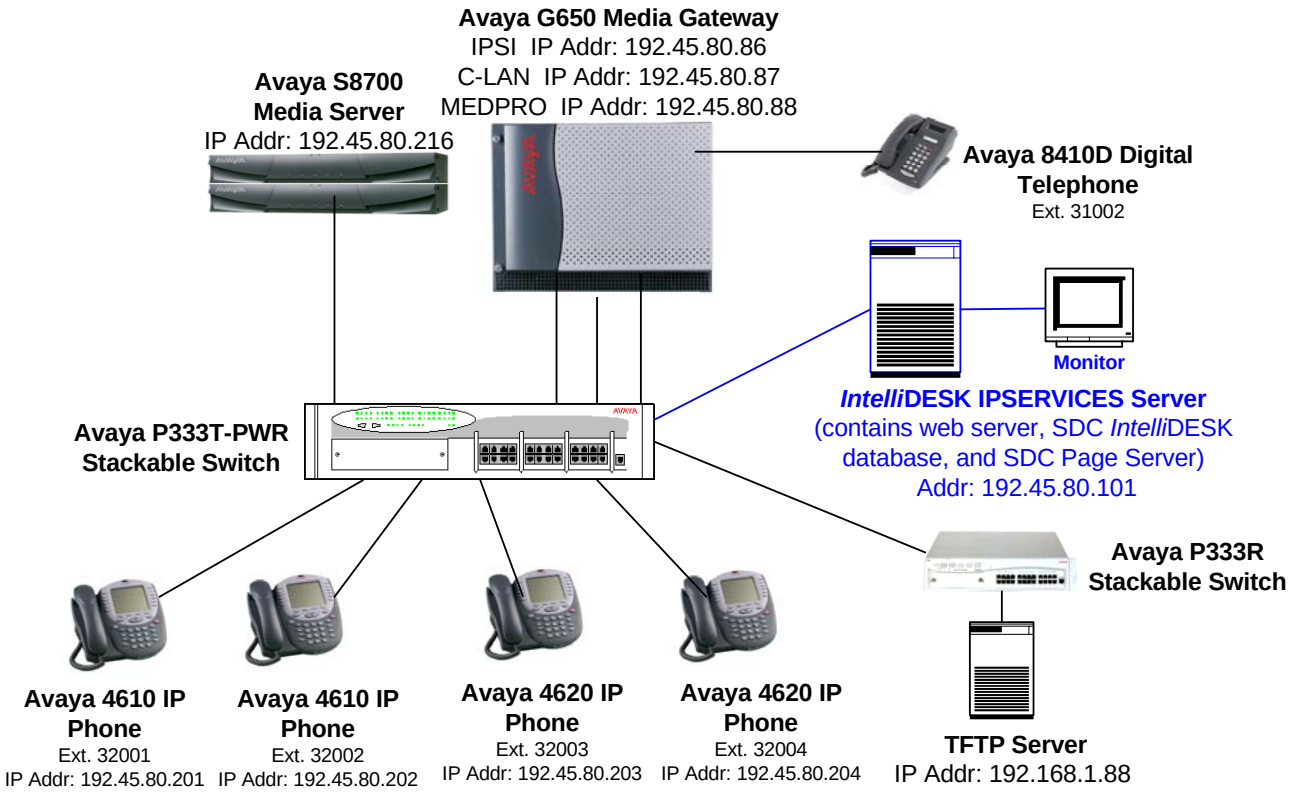


Figure 1: Network Configuration

2. Equipment and Software Validated

The following equipment and software/firmware were used for the sample configurations provided:

Equipment	Software/Firmware
Avaya S8700 Media Server	Avaya Communication Manager 2.2 (R012x.02.0.111.4)
Avaya G650 Media Gateway • TN799DP C-LAN • TN2312AP IPSI • TN2302AP MedPro	 HW11 FW12 HW01 FW12 HW20 FW95
Avaya 4610 IP Telephones	2.130
Avaya 4620 IP Telephones	2.130
Avaya 8410D Digital Telephones	-
Avaya P333T-PWR Power Over Ethernet Stackable Switch	4.0.17
SDC *Intelli*DESK IPSERVICES	1.0
SDC *Intelli*DESK Administration	5.4.135

3. Configure *Intelli*DESK IPSERVICES

*Intelli*DESK IPSERVICES leverages the enterprise directory database utilized by other SDC applications, such as *Intelli*DESK Console and *Intelli*SPEECH, creating an additional access point via the Avaya IP telephone web browser for retrieval of directory information and OnCall schedules. The focus of these Application Notes is on the capability to navigate through pages on the Avaya IP telephone web browser to access Directory and OnCall information from the pre-configured *Intelli*DESK directory database.

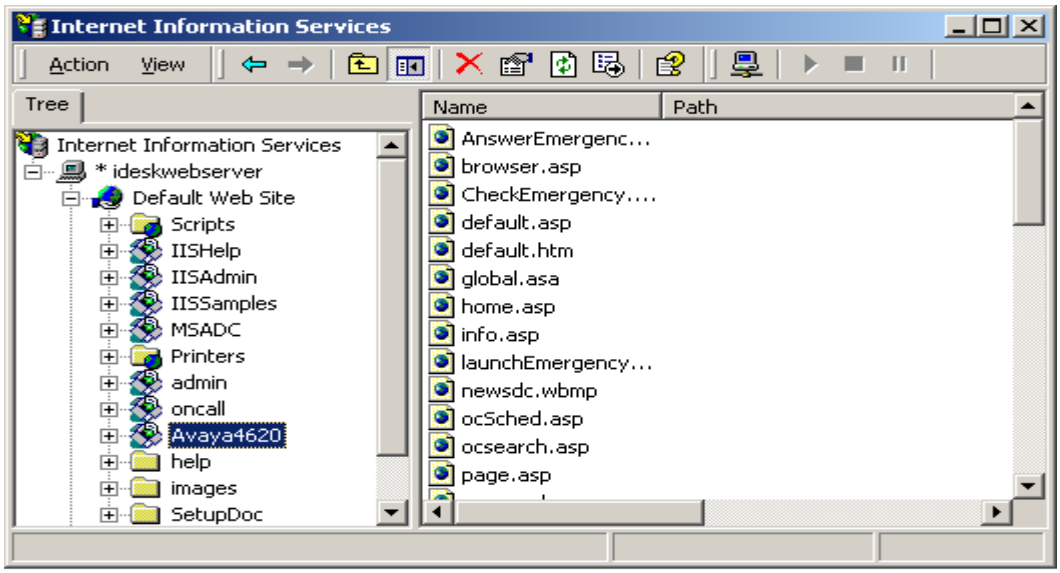
Administering Directory and OnCall information in the database is beyond the scope of these Application Notes. This section describes the web server settings required for the IPSERVICES and the database fields needed to populate web pages that are served by the IPSERVICES server.

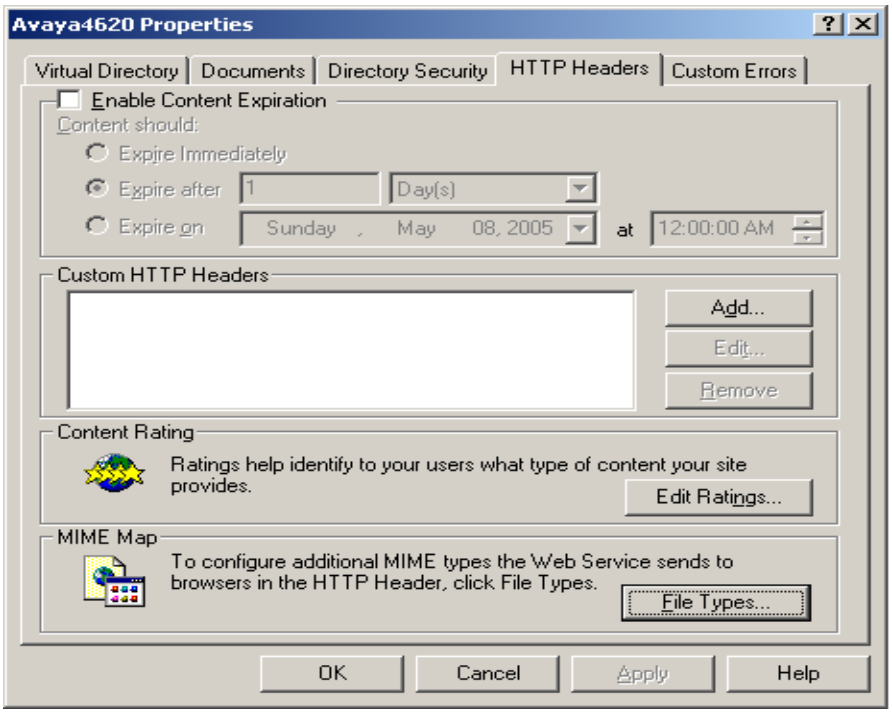
3.1. IPSERVICES Web Server

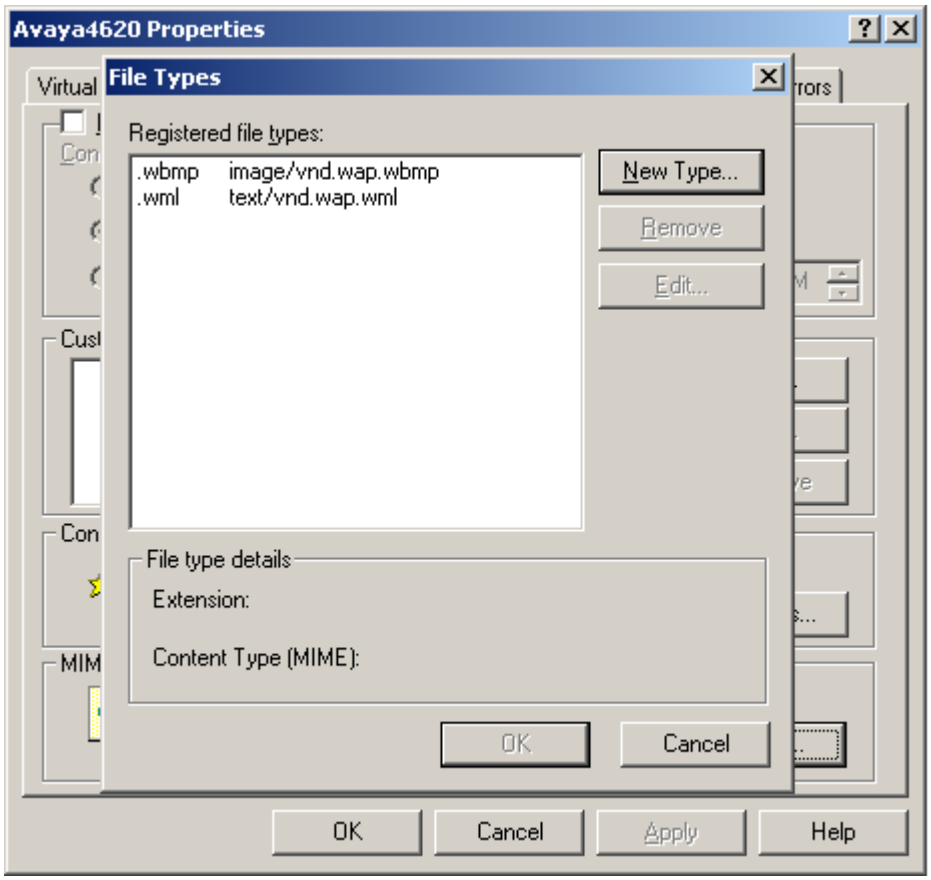
*Intelli*DESK IPSERVICES utilizes Microsoft Internet Information Server (IIS) on a Windows 2000 server to serve the web pages to the Avaya IP telephones. Configuring an IIS web server is a Microsoft standard procedure, and its detailed description is beyond the scope of this document. In addition to the normal web server configuration, the following web server setting is required for the interoperability of the Avaya IP telephone web browser and IPSERVICES.

The Avaya IP telephone web browser displays text information from Wireless Markup Language (WML) web pages, and the images, such as SDC logo, are rendered from Wireless BitMap (WBMP) pages. Configure IPSERVICES web server to handle WML and WBMP pages by setting Wireless Application Protocol (WAP) Multipurpose Internet Mail Extensions (MIME) types for Microsoft IIS server. For details on how to set up MIME settings, refer to the Avaya document "WML Server (MIME Types) Setup Guide – 4600 Series IP Telephone, 16-300507 Issue 2.5 April 2005". These is pre-configured by SDC for their customers. Use the following step-by-step guide to view the MIME settings in the IPSERVICES web server.

Step	Description
1.	Open the Internet Services Manager by clicking **Start > Control Panel > Administrative Tools > Internet Services Manager**. Navigate the directory tree to highlight the **Avaya4620** node.

Step	Description
2.	The **Internet Information Services** screen appears, as follows:  Right click on the **Avaya4620** node and click on the **Properties** option. Select the **HTTP Headers tab**.

Step	Description
3.	The **HTTP Headers** tab on the **Avaya4620 Properties** screen appears, as follows:  Click on the **File Types** button under the **MIME Map** section.

Step	Description
4.	The **File Types** screen appears. The **.wbmp** and **.wml** entries are displayed as the **Registered file types**. These file types are required to handle WBMP and WML web pages. 

3.2. Directory and OnCall Schedule Fields for Display

For the purpose of IPSERVICES, there is no special configuration required for Directory and OnCall schedule information. For details of configuring Directory and OnCall schedules, refer to *"SDC IntelliDESK Enterprise Edition Administration, version 5.4.135"*.

IPSERVICES serves WML pages with a subset of database fields from the *Intelli*DESK database. For the Directory application, this subset is pre-configured by SDC for their customers. For the OnCall, the subset of these fields is fixed.

The following is a snapshot of the field mapping to illustrate a subset of the fields that are displayed on Avaya IP telephones. In this case, the directory fields **Title**, **Status**, **Ext**, **AltExt**, **Addr**, **Pager1** and **Pager2** are displayed on the Avaya IP telephone web browser:

```
  [IPPHONE]

(ln and fn already displayed)
FieldCount=7

field1_caption="Title: "
field1_name=title
field1_dial=0
field2_caption="Status: "
field2_name=DIRLOCAL
field2_dial=0
field3_caption="Ext: "
field3_name=ext
field3_dial=1
field4_caption="AltExt: "
field4_name=altext
field4_dial=1
field5_caption="Addr: "
field5_name=FLD1
field6_caption="Pager1: "
field6_name=PAGER1
field7_caption="Pager2: "
field7_name=PAGER2

(What to display if a field returns blank)
BlankFieldCaption="Not Available"
```

4. Configure Avaya Communication Manager

There is no special configuration required in Avaya Communication Manager related to these Application Notes. For details of configuring Avaya 4610 and 4610 IP telephones, refer to "*Administrator's Guide for Avaya Communication Manager*, Jan 2005, Document Number 555-233-506*"*.

The following System Access Terminal (SAT) screen, obtained by **list registered-ip-stations** command, shows the list of the IP telephones registered with Avaya Communication Manager during the compliance testing.

```
list registered-ip-stations

                          REGISTERED IP STATIONS

Station  Set     Product    Prod  Station         Net Orig      Gatekeeper
Ext      Type    ID         Rel   IP Address      Rgn Port      IP Address
32001    4620    IP_Phone   2.130 192.45.80.201   1             192.45.80.87
32002    4620    IP_Phone   2.130 192.45.80.202   1             192.45.80.87
32003    4610    IP_Phone   2.130 192.45.80.203   1             192.45.80.87
32004    4610    IP_Phone   2.130 192.45.80.204   1             192.45.80.87
```

5. Configure Avaya IP Telephone Web Browser Settings.

In order to allow Avaya 4610 and 4620 IP telephones to access *Intelli*DESK IPSERVICES, modify the **46xxsettings.txt** file on the Avaya TFTP Server.

Step	Description
5.	Add or modify the following to set the default location for the Web button on the IP telephone: • **SET WMLHOME http://x.x.x.x/Avaya4620** (where x.x.x.x is the IP Address of the web server hosting the *Intelli*DESK IPSERVICES). For example, WMLHOME was set to http://192.45.80.101/Avaya4620 in the compliance-tested configuration.
6.	Add or modify the following settings for click-to-dial operation from an Avaya IP telephone: • **SET PHNCC 1**: Set the telephone Country Code. For example, set it to1. • **SET PHNDPLENGTH 5**: Set the telephone dial plan length. For example, set it to 5. With this setting, calls are dialed to the telephones with 5 digit extensions. If the length of the digits to be dialed is not 5, an outside line access code is prefixed before the dialed digits. See **SET PHNOL** setting below. • **SET PHNLD 1**: Set the telephone long distance access code. For example, set it to 1. • **SET PHNLDLENGTH 10**: Set to the length of national telephone number. For example, set it to 10. • **SET PHNOL 9**: Set outside line access code. For example, set it to 9. Note that this setting should be the same as the Automatic Route Selection (ARS) access code in Avaya Communication Manager.
7.	Save the file. Reset all Avaya IP telephones to load the new settings.

6. Interoperability Compliance Testing

The interoperability compliance testing focused on the *Intelli*DESK IPSERVICES Directory Search and OnCall browser application navigation via Avaya 4610 and 4620 IP telephones.

6.1. General Test Approach

The general approach was to access the web browser from Avaya 4610 and 4620 IP telephones and navigate through the IPSERVICES Directory and OnCall web applications. In addition to browsing for the Directory application, click-to-dial operation was performed to dial internal and external telephone numbers in Avaya Communication Manager. For OnCall application, click-to-paging was performed using the *Intelli*DESK page server. The main objectives were to verify that:

Directory

- Upon pressing the Web button on an Avaya 4610 or 4620 IP Telephone, the SDC main page is displayed on the Avaya IP telephone screen, showing the SDC logo and the menu with Directory and OnCall as the menu choices.
- Searching the directory by full or partial last name displayed the directory entries administered in the *Intelli*DESK database.
- The directory entries can be scrolled up and down. Selecting a specific entry displayed the subset of the directory entry fields, such as title, name and the telephone number or extension. See Section 3.2 for the subset of the directory entry fields.
- Selecting the displayed telephone number automatically dialed the telephone number and the call is successful. Both the internal and external calls were dialed successfully.
- An employee status for a given directory entry can be modified.
- Selecting the pager field pages the individual successfully using SDC Page Server via an analog modem connection to the Public Switch Telephone Network (PSTN).

OnCall

- Searching the OnCall schedule by full or partial department name displays the list of departments.
- Upon selecting a department from the returned list, the current day's OnCall Schedule is displayed, with the individual's name and the time he/she is on call.
- Scrolling forward and backward by a single day displays past and future schedules.
- Selecting the individual's name pages the individual successfully using the SDC Page Server via an analog modem connection to the Public Switch Telephone Network (PSTN).

Directory and OnCall

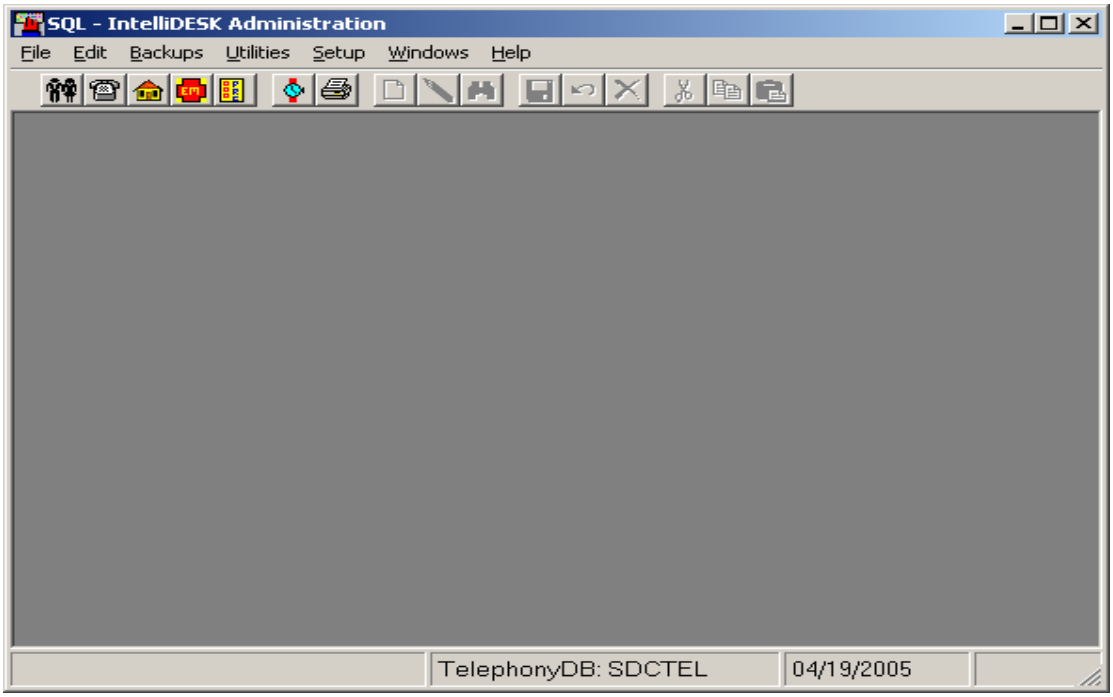
- While navigating through Directory entry and OnCall pages, incoming and outgoing calls modify the display on the top line with the calling number and name. The top line display is restored to the previous view when the call is finished.

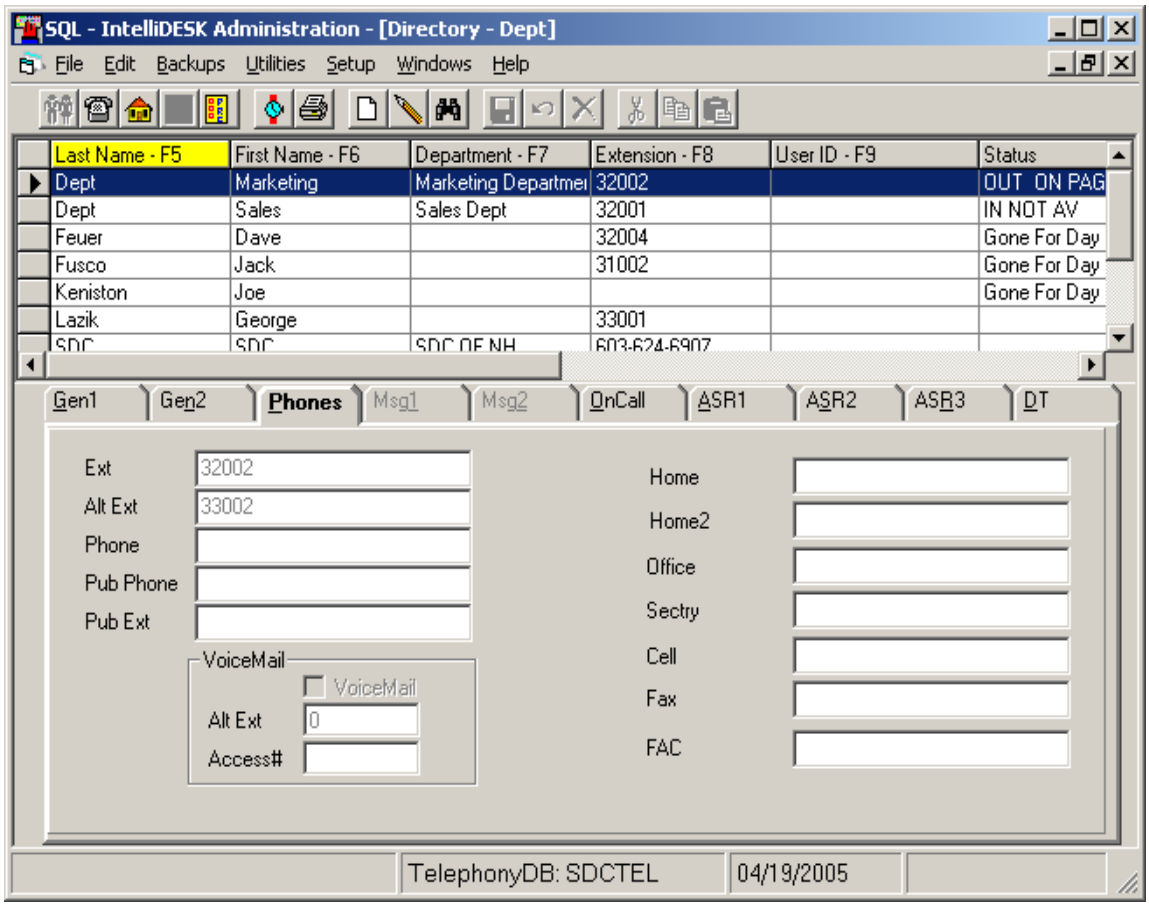
6.2. Test Results

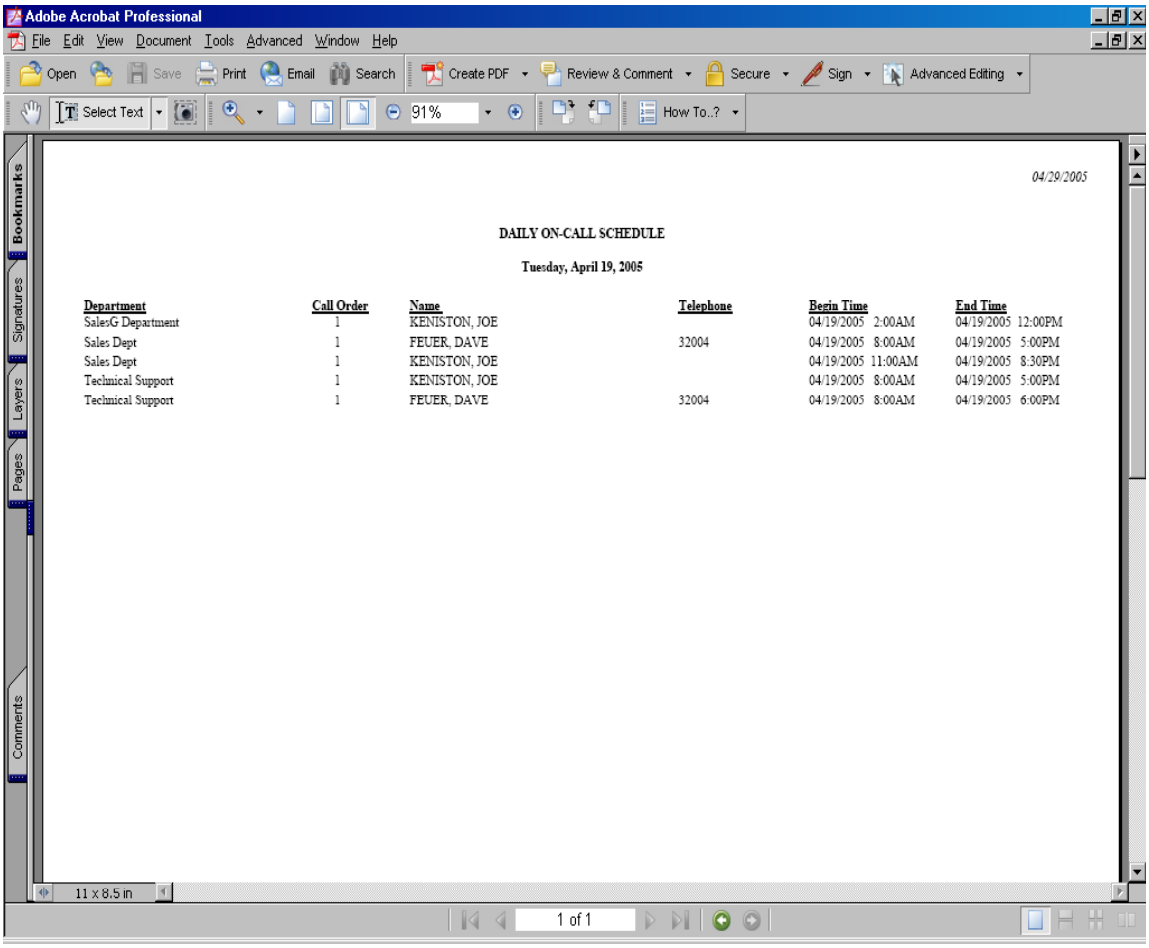
All test cases completed successfully. With the appropriate configuration, access of Directory and OnCall Schedule information via the Avaya 4610 and 4620 IP telephone web browsers was successful.

7. Verification Steps

To verify the configuration and connectivity, perform the tests for the objectives listed in Section 6.1. To verify that the returned information on Avaya IP telephone web browser is correct, view the Directory entries and OnCall Schedule information in the *Intelli*DESK database and compare. The following steps describe how to view the information in the database using *Intelli*DESK Administration.

Step	Description
1.	On a monitor connected to *Intelli*DESK IPSERVICES server, click on **Start > Programs > *Intelli*DESK Group > *Intelli*DESK Administration**. The following screen appears.  Enter the Operator User Name and Password. Click **OK** (or press **ENTER**).
2.	The ***Intelli*DESK Administration** screen appears as follows:  Click on click on **File > Open > Directory**.

Step	Description
3.	The **Directory** screen appears, with the directory entries, as follows:  Scroll up and down for the directory entries. Scroll left and right to view fields of each directory entries. Highlight an entry and click on the tabs in the middle, such as **Phones**, to see more details about a specific directory entry.

Step	Description
4.	For **OnCall** schedule, there are many reports available in *Intelli*DESK Administration. The following screen shows one of the reports that can be used to validate OnCall schedule info. 

8. Support

SDC Technical Support can be reached by calling 603-624-6907 or via email at support@sdc-nh.com.

9. Conclusion

These Application Notes describe the configuration steps required for SDC *Intelli*DESK IPSERVICES Directory and OnCall Schedule access via the web browser interfaces of Avaya 4610 and 4620 IP Telephones connected to Avaya Communication Manager. With the appropriate configuration, access of Directory and OnCall Schedule information via an Avaya IP telephone web browser was successful.

10. Additional References

The following documents are relevant to these Application Notes:

1) *Administrator's Guide for Avaya Communication Manager, Jan 2005, Document Number 555-233-506.*
2) *Application Programmer Interface (API) Guide – 4600 Series, Document Number 16-300256, April 2005*
3) *WML Server (MIME Types) Setup Guide – 4600 Series IP Telephone, 16-300507 Issue 2.5 April 2005*
4) *SDC IntelliDESK IPSERVICES, version 1.0*
5) *SDC IntelliDESK Enterprise Edition Administration, version 5.4.132*

Additional product documentation for Avaya products may be found at http://support.avaya.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 Developer*Connection* Program at devconnect@avaya.com.