



Avaya Solution & Interoperability Test Lab

Application Notes for iEnterprises Mobile Edge with Avaya one-X™ Mobile – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for iEnterprises Mobile Edge to interoperate with Avaya one-X™ Mobile. iEnterprises Mobile Edge is a Customer Relationship Management (CRM) application for the RIM BlackBerry mobile handheld devices. iEnterprises Mobile Edge provides access to data such as accounts, contacts, and opportunities from the host CRM application, for retrieval and storage on the user's RIM BlackBerry device.

In the compliance testing, iEnterprises Mobile Edge used the Avaya one-X™ Mobile Client API For BlackBerry interface, to place business calls via the Avaya one-X™ Mobile UC client application that was co-resident with the iEnterprises Mobile Edge For 1X Mobile client application on the same RIM BlackBerry 8800 device.

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

1. Introduction

These Application Notes describe the configuration steps required for iEnterprises Mobile Edge to interoperate with Avaya one-XTM Mobile. iEnterprises Mobile Edge is a CRM application for the RIM BlackBerry mobile handheld devices.

iEnterprises Mobile Edge provides access to data such as accounts, contacts, and opportunities from the host CRM application, for retrieval and storage on the user's RIM BlackBerry device. While viewing contacts information on the RIM BlackBerry device, the iEnterprise Mobile Edge For 1X Mobile client application provides the user the option to place a call to the contact via the Avaya one-XTM Mobile UC client application that is co-resident on the same RIM BlackBerry device. Upon invoking the option, the iEnterprise Mobile Edge For 1X Mobile client application uses the Avaya one-XTM Mobile Client API For BlackBerry interface to pass the contact's telephone number to the Avaya one-X Mobile UC client application. From then on, the Avaya one-X Mobile UC client application takes over, comes to the foreground on the user's RIM BlackBerry device, and starts the dialing process. Calls via the Avaya one-X Mobile UC client application are placed from Avaya AuraTM Communication Manager with the user's business telephone number presented as the calling party number.

The compliance testing was conducted with the RIM BlackBerry 8800 device.

1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on the iEnterprises Mobile Edge For 1X Mobile client application that was running on the RIM BlackBerry 8800 device:

- Initiating business calls to dial from the Avaya one-X Mobile UC client application.
- Proper passing of different formats of contact telephone numbers to the Avaya one-X Mobile UC client application including local, long distance, long distance in E.164, international with prefix 011, and international in E.164 formats.

The serviceability testing focused on verifying the ability of iEnterprises Mobile Edge to recover from adverse conditions, such as rebooting the RIM BlackBerry 8800 device.

1.2. Support

Technical support on iEnterprises Mobile Edge can be obtained through the following:

- **Phone:** (800) 741-5597
- **Email:** support@ienterprises.com

2. Reference Configuration

As shown in **Figure 1**, iEnterprises Mobile Edge consists of the Mobile Edge server, the BlackBerry Enterprise server, the Mobile Edge For 1X Mobile client, and a separate CRM host. In the compliance testing, an internal iEnterprises iExtensions server was used to provide the CRM host functionality. The Avaya one-X Mobile configuration consists of Avaya Aura Communication Manager for call management, Avaya Modular Messaging for voicemail, Microsoft Active Directory for corporate directory, and the Avaya Aura Application Enablement Services server.

The RIM BlackBerry 8800 device shown below has both the iEnterprise Mobile Edge For 1X Mobile and the Avaya one-X Mobile UC client applications installed and configured.

The detailed administration of connectivity between the Avaya one-X Mobile server with other Avaya servers, and between the iEnterprises Mobile Edge server with other iEnterprises servers are assumed to be in place and will not be described in these Application Notes.

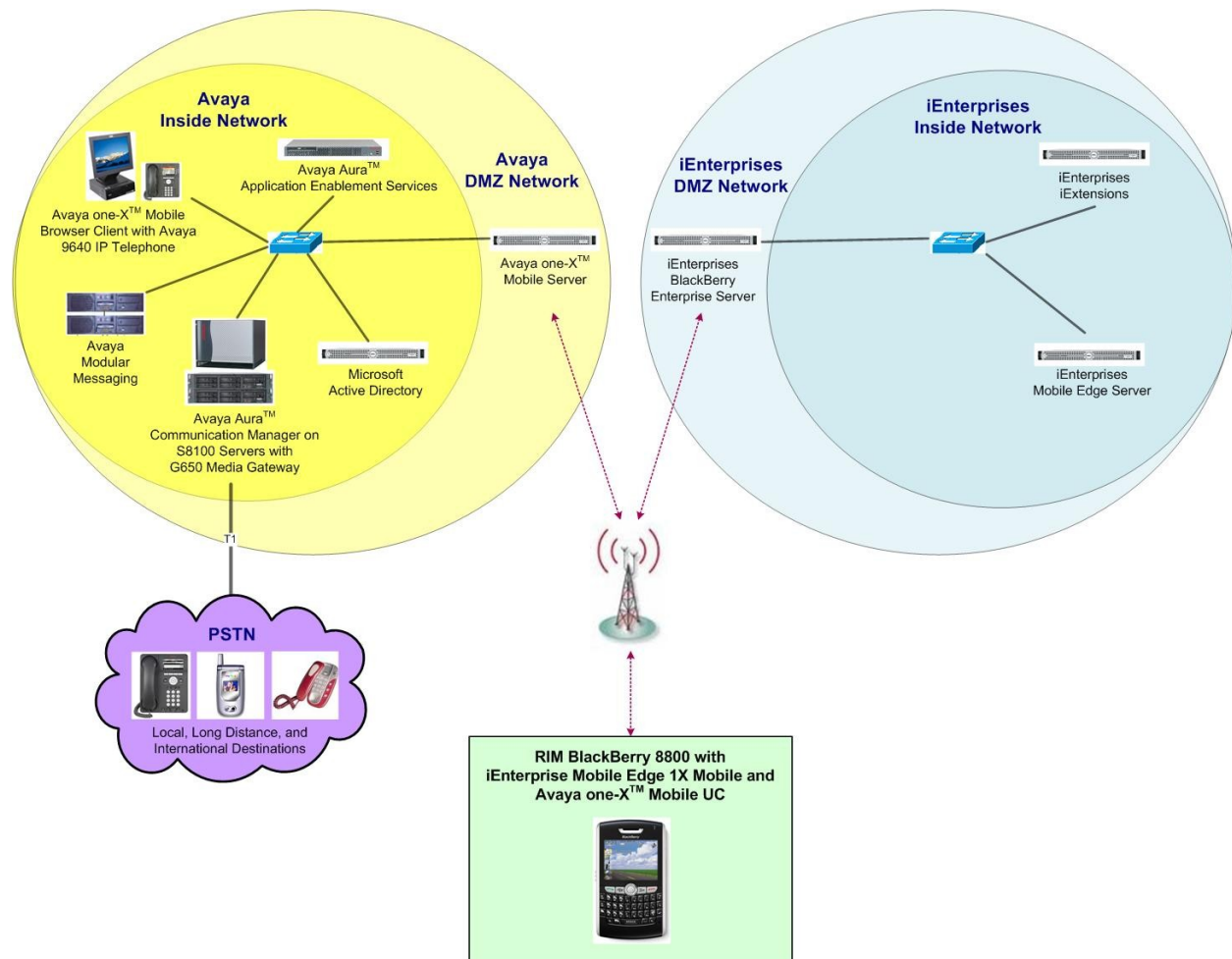


Figure 1: iEnterprises Mobile Edge with Avaya one-X Mobile

3. Equipment and Software Validated

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

Equipment	Software
Avaya Aura Communication Manager	R015x.02.0.947.3
Avaya G650 Media Gateway <ul style="list-style-type: none">TN799DP C-LAN Circuit PackTN2302AP IP Media Processor	HW01 FW032 HW20 FW120
Avaya Modular Messaging <ul style="list-style-type: none">Messaging Storage ServerMessaging Application Server	4.0 4.0
Avaya Aura Application Enablement Services	4.2
Avaya one-X Mobile	1.1.1
Avaya 9640 Series IP Telephones (H.323)	2.0
RIM BlackBerry 8800 <ul style="list-style-type: none">iEnterprises Mobile Edge For 1X MobileAvaya one-X Mobile UC	4.1.11 1.1.36
iEnterprises Mobile Edge Server	4.0
iEnterprises BlackBerry Enterprise Server	5.0
iEnterprises iExtensions	7.0

4. Configure Avaya Aura™ Communication Manager

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

- Verify Communication Manager License
- Administer station
- Administer off-pbx station mapping

4.1. Verify Communication Manager License

Log in to the System Access Terminal (SAT) to verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the “display system-parameters customer-options” command to verify that there is sufficient capacity for EC500 stations by comparing the **Maximum Off-PBX Telephones – EC500** field value with the corresponding value in the **USED** column. The difference between the two values needs to be greater than or equal to the desired number of iEnterprise Mobile Edge users with RIM BlackBerry devices.

```
display system-parameters customer-options                               Page 1 of 11
                                OPTIONAL FEATURES

G3 Version: V15                               Software Package: Standard
Location: 1                                   RFA System ID (SID): 1
Platform: 6                                   RFA Module ID (MID): 1

                                USED
                                Platform Maximum Ports: 44000 309
                                Maximum Stations: 36000 111
                                Maximum XMOBILE Stations: 0 0
Maximum Off-PBX Telephones - EC500: 1000 19
Maximum Off-PBX Telephones - OPS: 36000 15
Maximum Off-PBX Telephones - PBFMC: 0 0
Maximum Off-PBX Telephones - PVFMC: 0 0
Maximum Off-PBX Telephones - SCCAN: 0 0
```

4.2. Administer Station

Add a station for each iEnterprise Mobile Edge user using the “add station n” command, where “n” is the station extension number. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Type:** The applicable station type, in this case “9640”.
- **Name:** A descriptive name.
- **Security Code:** A desired value.
- **Coverage Path 1:** The applicable coverage path, in this case “1”.

Repeat this section to administer the desired number of stations. For the compliance testing, only one station was administered.

```
add station 20021                                     Page 1 of 5

                                STATION

Extension: 20021                                Lock Messages? n          BCC: 0
  Type: 9640                                Security Code: XXXXX      TN: 1
  Port: IP                                Coverage Path 1: 1      COR: 1
  Name: iEnterprises BlackBerry8800 Coverage Path 2:      COS: 1
                                          Hunt-to Station:

STATION OPTIONS

                                Time of Day Lock Table:
      Loss Group: 19          Personalized Ringing Pattern: 1
                                Message Lamp Ext: 20021
      Speakerphone: 2-way          Mute Button Enabled? y
      Display Language: english    Button Modules: 0
Survivable GK Node Name:
      Survivable COR: internal      Media Complex Ext:
Survivable Trunk Dest? y          IP SoftPhone? n

                                Customizable Labels? Y
```

Navigate to **Page 4**, and add an Extend Call feature button as shown below.

```
add station 20021                                     Page 4 of 5

                                STATION

SITE DATA
  Room:                                Headset? n
  Jack:                                Speaker? n
  Cable:                               Mounting: d
  Floor:                               Cord Length: 0
  Building:                            Set Color:

ABBREVIATED DIALING
  List1:                                List2:                                List3:

BUTTON ASSIGNMENTS
  1: call-appr                        5: extnd-call
  2: call-appr                        6:
  3: call-appr                        7:
  4:                                  8:
```

4.3. Administer Off-PBX Station Mapping

For each station in **Section 4.2**, use the “change off-pbx-telephone station-mapping n” command, where “n” is the station extension. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Application:** “EC500”
- **Trunk Selection:** “ars”
- **Config Set:** An existing configuration set to be used for the off-pbx call treatment.

change off-pbx-telephone station-mapping 20021							Page	1 of	3
STATIONS WITH OFF-PBX TELEPHONE INTEGRATION									
Station	Application	Dial	CC	Phone Number	Trunk	Config	Dual		
Extension		Prefix			Selection	Set	Mode		
20021	EC500	-			ars	1			
		-							

Navigate to **Page 2**, and set the **Mapping Mode** to “both” as shown below.

change off-pbx-telephone station-mapping 20021							Page	2 of	3
STATIONS WITH OFF-PBX TELEPHONE INTEGRATION									
Station	Appl	Call	Mapping	Calls	Bridged	Location			
Extension	Name	Limit	Mode	Allowed	Calls				
20021	EC500	2	both	all	both				

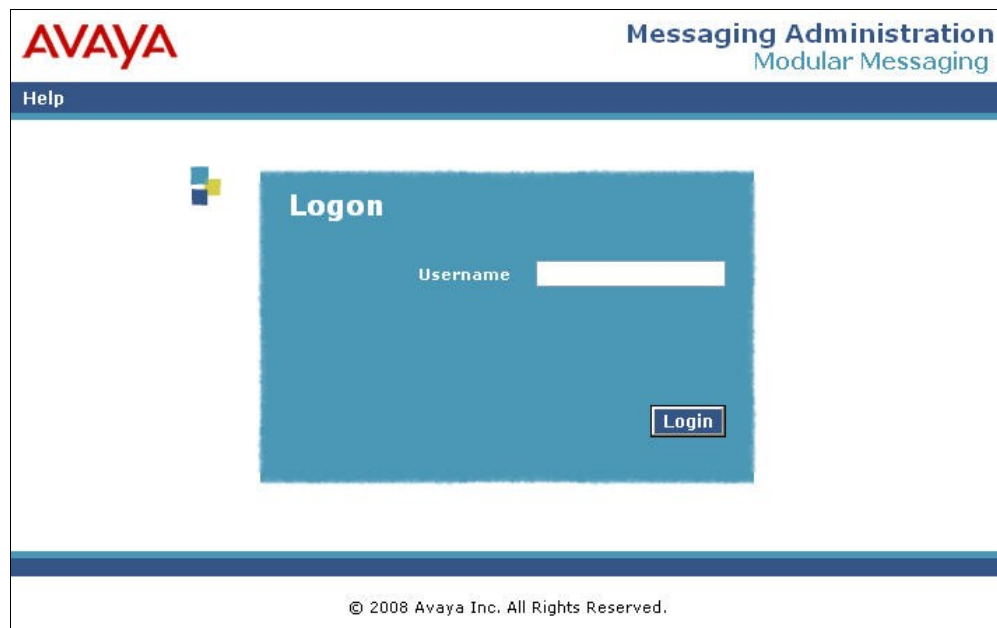
5. Configure Avaya Modular Messaging

This section provides the procedures for configuring Avaya Modular Messaging. The procedures include the following areas:

- Launch Messaging Administration
- Administer subscribers

5.1. Launch Messaging Administration

Access the Messaging Administration web-based interface by using the URL “http://ip-address” in an Internet browser window, where “ip-address” is the IP address of the Messaging Storage Server (MSS) component. The **Logon** screen is displayed. Log on using a valid user name and password. The **Password** field will appear after a value is entered into the **Username** field.



The **Messaging Administration** screen is displayed next, as shown below.



5.2. Administer Subscribers

Select **Messaging Administration > Subscriber Management** from the left pane, to display the **Manage Subscribers** screen. In the **Local Subscriber Mailbox Number** field, enter the station extension from **Section 4.2**, and click **Add or Edit**.



AVAYA Modular Messaging
Messaging Administration

Help Log Off

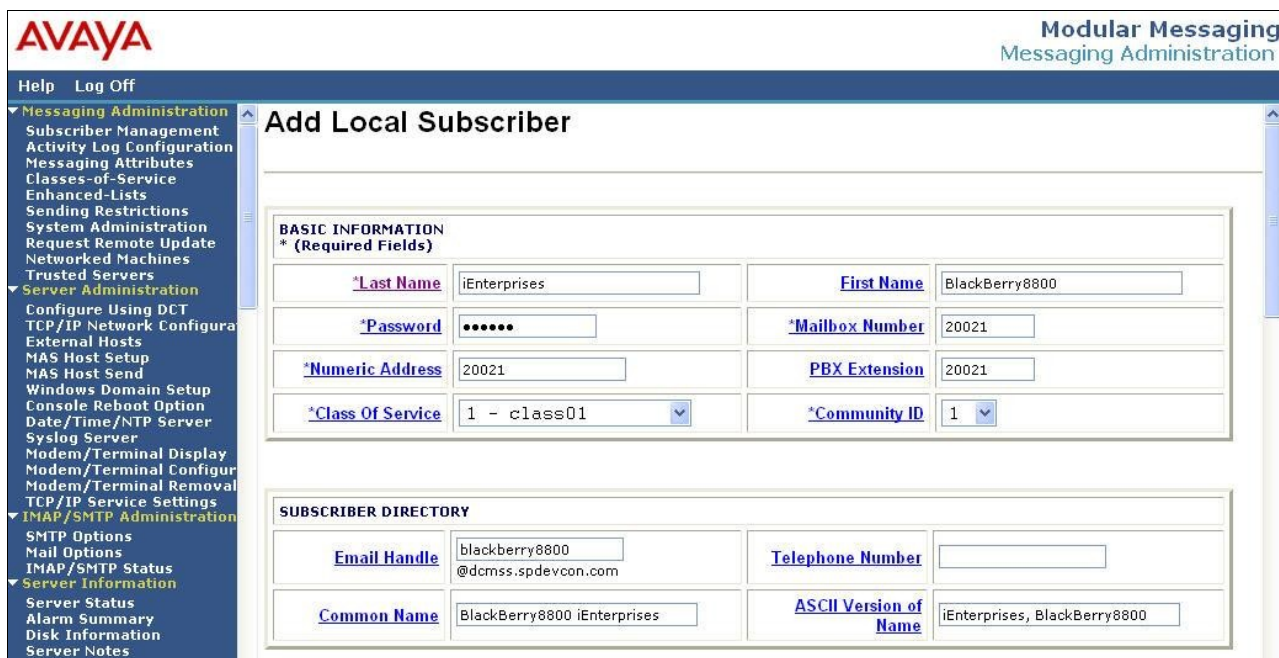
▼ Messaging Administration
Subscriber Management
Activity Log Configuration
Messaging Attributes
Classes-of-Service
Enhanced-Lists
Sending Restrictions
System Administration
Request Remote Update

Manage Subscribers

• Local Subscriber Mailbox Number

The **Add Local Subscriber** screen is displayed next. Enter the following values for the specified fields, and retain the default values for the remaining fields. Repeat this section for all station users in **Section 4.2**.

- **Last Name:** The last name of the subscriber.
- **First Name:** The first name of the subscriber.
- **Password:** A desired password.
- **Numeric Address:** A unique address in the voice mail network.
- **PBX Extension:** The station extension of the subscriber from **Section 4.2**.
- **Class Of Service:** Select an applicable class of service.
- **Email Handle:** A desired email handle.
- **Common Name:** A desired name to display in address book listings.
- **ASCII Version of Name:** The ASCII translation of the subscriber name.



AVAYA Modular Messaging
Messaging Administration

Help Log Off

▼ Messaging Administration
Subscriber Management
Activity Log Configuration
Messaging Attributes
Classes-of-Service
Enhanced-Lists
Sending Restrictions
System Administration
Request Remote Update
Networked Machines
Trusted Servers

Add Local Subscriber

BASIC INFORMATION
* (Required Fields)

*Last Name	<input type="text" value="iEnterprises"/>	First Name	<input type="text" value="BlackBerry8800"/>
*Password	<input type="password" value="....."/>	*Mailbox Number	<input type="text" value="20021"/>
*Numeric Address	<input type="text" value="20021"/>	PBX Extension	<input type="text" value="20021"/>
*Class Of Service	<input type="text" value="1 - class01"/>	*Community ID	<input type="text" value="1"/>

SUBSCRIBER DIRECTORY

Email Handle	<input type="text" value="blackberry8800@dcms.spdevcon.com"/>	Telephone Number	<input type="text"/>
Common Name	<input type="text" value="BlackBerry8800 iEnterprises"/>	ASCII Version of Name	<input type="text" value="iEnterprises, BlackBerry8800"/>

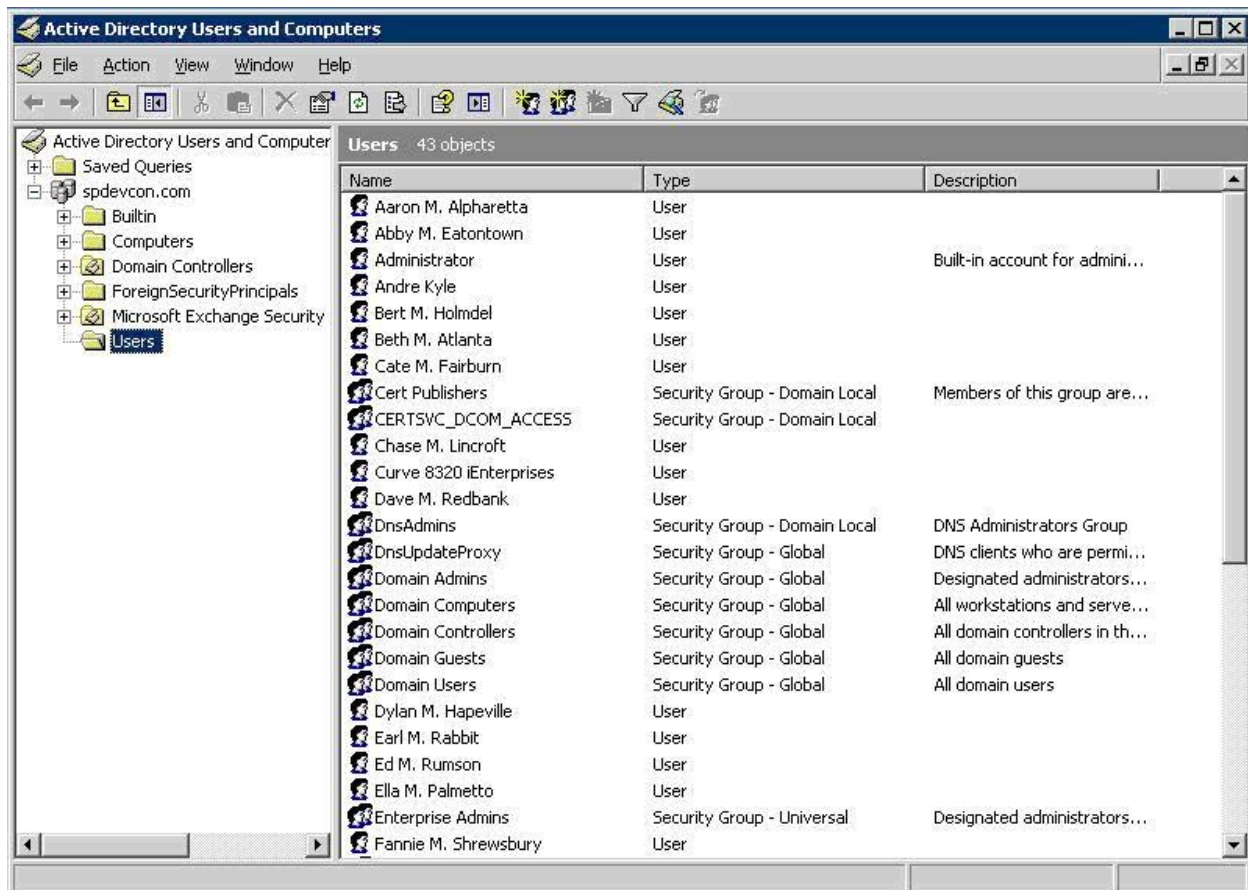
6. Configure Microsoft Active Directory

This section provides the procedures for configuring Microsoft Active Directory. The procedures include the following areas:

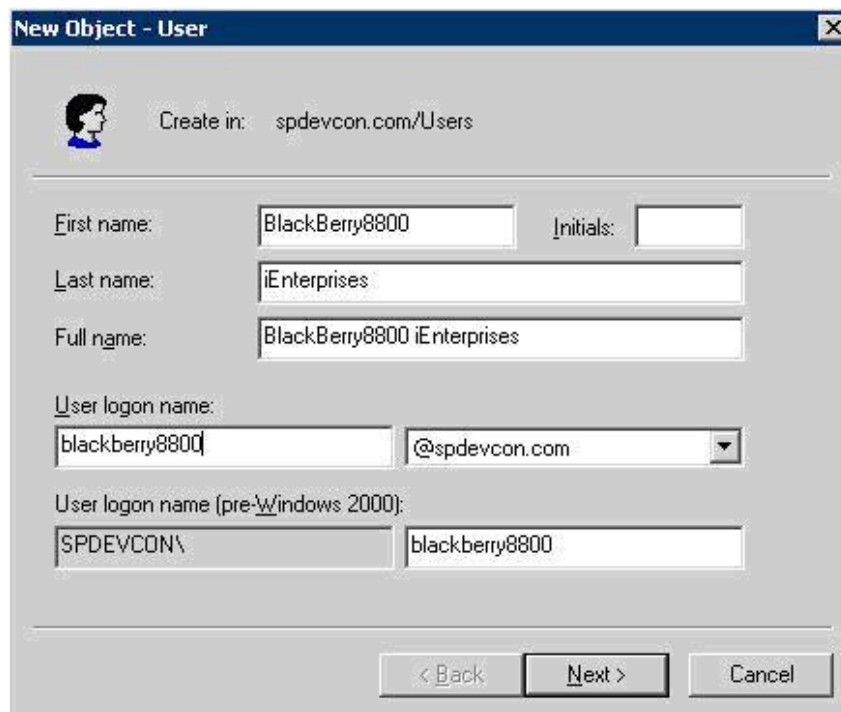
- Administer user account
- Administer telephone number

6.1. Administer User Account

From the Microsoft Active Directory server, launch **Programs > Administrator Tools > Active Directory Users and Computers**. The **Active Directory Users and Computers** screen is displayed. In the left pane, locate the proper domain name for the network configuration, in this case “spdevcon.com”, and right-click on **Users** below it. From the right-click drop-down menu (not shown below), select **New > Users**.




The **New Object – User** screen is displayed. Enter appropriate values for **First name**, **Last name**, and **User logon name**. Retain the default values in the remaining fields, and click **Next**.



The 'New Object - User' dialog box is shown. It has a title bar with a close button. Below the title bar is a user icon and the text 'Create in: spdevcon.com/Users'. The form contains several input fields: 'First name' with 'BlackBerry8800', 'Initials' (empty), 'Last name' with 'iEnterprises', 'Full name' with 'BlackBerry8800 iEnterprises', 'User logon name' with 'blackberry8800' and a dropdown menu showing '@spdevcon.com', and 'User logon name (pre-Windows 2000)' with 'SPDEVCON\' and 'blackberry8800'. At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

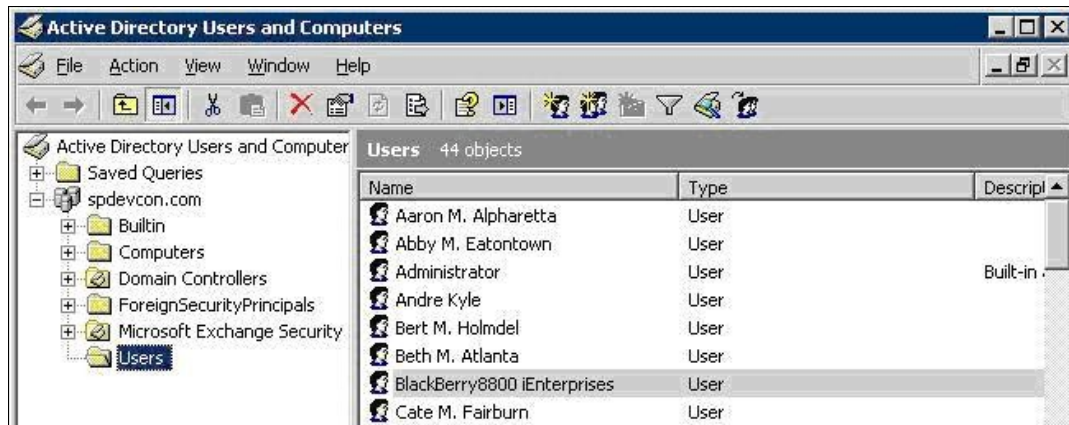
In the screen below, enter desired values for **Password** and **Confirm password**, and check the desired handling for password. Click **Next**, followed by **Finish** in the subsequent screen to add the user account.



The 'New Object - User' dialog box is shown. It has a title bar with a close button. Below the title bar is a user icon and the text 'Create in: spdevcon.com/Users'. The form contains two password input fields: 'Password' and 'Confirm password', both filled with dots. Below these are four checkboxes: 'User must change password at next logon' (unchecked), 'User cannot change password' (unchecked), 'Password never expires' (checked), and 'Account is disabled' (unchecked). At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

6.2. Administer Telephone Number

The **Active Directory Users and Computers** screen is displayed again, and updated with the newly created user shown in the right pane. Double click on the new user, in this case “BlackBerry8800 iEnterprises”.



The **BlackBerry8800 iEnterprises Properties** screen is displayed next. In the **Telephone number** field, enter the E.164 format of the user’s DID number as shown below, and click **OK**.

The screenshot shows the 'BlackBerry8800 iEnterprises Properties' dialog box. The 'General' tab is selected. The user's name is 'BlackBerry8800 iEnterprises'. The 'Telephone number' field contains '+17328522001'. The 'E-mail' and 'Web page' fields are empty. The 'OK', 'Cancel', and 'Apply' buttons are at the bottom.

Member Of	Dial-in	Environment	Sessions
Remote control	Terminal Services Profile	COM+	

General | Address | Account | Profile | Telephones | Organization

BlackBerry8800 iEnterprises

First name: BlackBerry8800 Initials:

Last name: iEnterprises

Display name: BlackBerry8800 iEnterprises

Description:

Office:

Telephone number: +17328522001

E-mail:

Web page:

7. Configure Avaya one-X™ Mobile Server

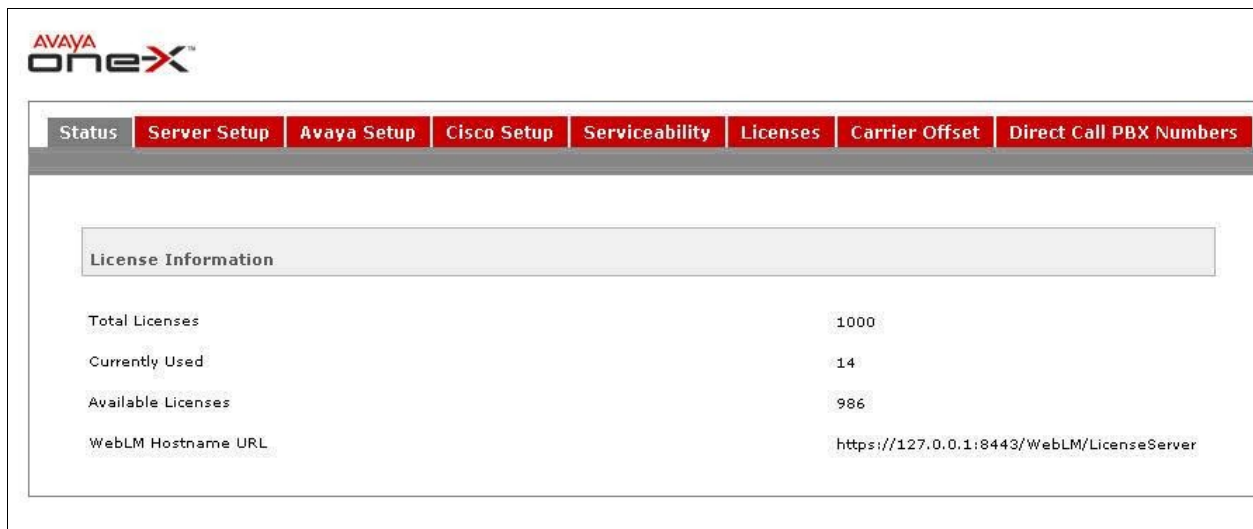
This section provides the procedures for configuring the Avaya one-X Mobile server. The procedures include the following areas:

- Verify one-X Mobile license
- Administer users

7.1. Verify one-X Mobile License

Access the Avaya one-X Mobile web-based administration interface by using the URL “http://ip-address/Admin” in an Internet browser window, where “ip-address” is the IP address of the Avaya one-X Mobile server. Log in with the appropriate credentials.

The License Information is displayed, as shown below. Verify that there is sufficient license to cover the number of new users.

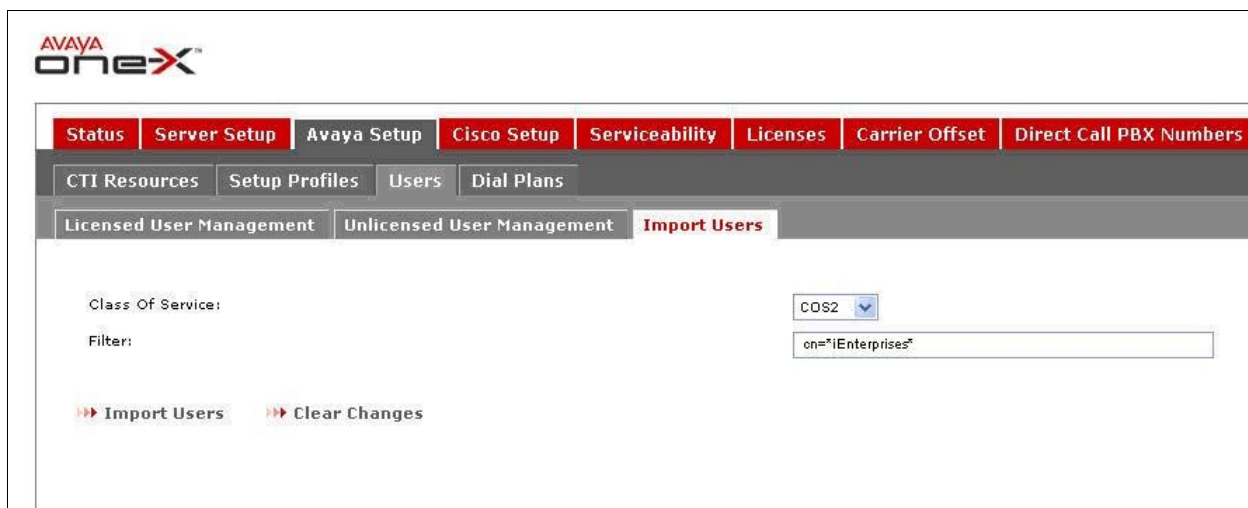


The screenshot displays the Avaya one-X Mobile web-based administration interface. At the top, the Avaya one-X logo is visible. Below the logo is a navigation bar with several tabs: Status, Server Setup, Avaya Setup, Cisco Setup, Serviceability, Licenses, Carrier Offset, and Direct Call PBX Numbers. The 'Licenses' tab is currently selected. The main content area is titled 'License Information' and contains a table with the following data:

Total Licenses	1000
Currently Used	14
Available Licenses	986
WebLM Hostname URL	https://127.0.0.1:8443/WebLM/LicenseServer

7.2. Administer Users

Select **Avaya Setup > Users > Import Users** as shown below. In the screen that is displayed, select an appropriate **Class Of Service**, and enter an appropriate **Filter** to enable importing of Active Directory users created in **Section 6.1**. Click **Import Users**.



AVAYA oneX

Status | Server Setup | Avaya Setup | Cisco Setup | Serviceability | Licenses | Carrier Offset | Direct Call PBX Numbers

CTI Resources | Setup Profiles | Users | Dial Plans

Licensed User Management | Unlicensed User Management | **Import Users**

Class Of Service: COS2

Filter: on=iEnterprises*

Import Users Clear Changes

Select the **Unlicensed User Management** tab to display the screen below. Check the desired user entries and click **License Selected Users**.



AVAYA oneX

Status | Server Setup | Avaya Setup | Cisco Setup | Serviceability | Licenses | Carrier Offset | Direct Call PBX Numbers

CTI Resources | Setup Profiles | Users | Dial Plans

Licensed User Management | **Unlicensed User Management** | Import Users

License Selected Users Delete Selected Users Search

Change Class of Service Sort by: Extension

<input type="checkbox"/>	Last	First	Extension	COS	Department	
<input checked="" type="checkbox"/>	iEnterprises	BlackBerry8800	20021	COS2	-	Details

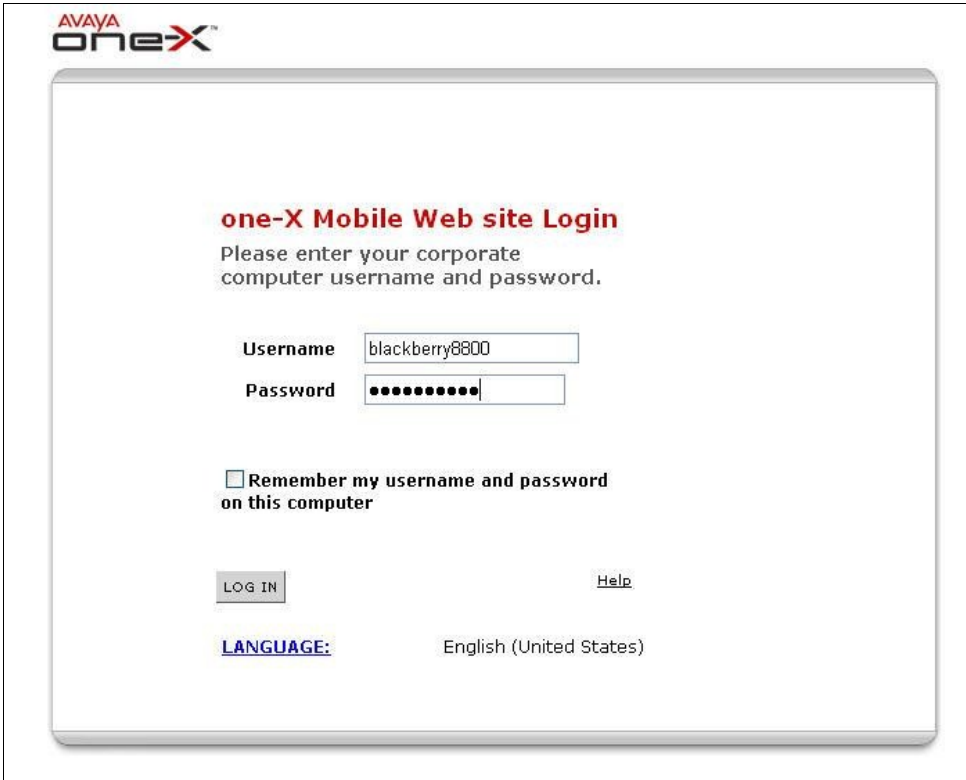
8. Configure Avaya one-X™ Mobile Client

This section provides the procedures for configuring the Avaya one-X Mobile client. The procedures include the following areas:

- Launch client web interface
- Administer mobile setup

8.1. Launch Client Web Interface

Access the Avaya one-X Mobile client web-based interface by using the URL “http://ip-address” in an Internet browser window, where “ip-address” is the IP address of the Avaya one-X Mobile server. The **one-X Mobile Web site Login** screen is displayed as shown below. Enter the Active Directory user credentials from **Section 6.1**, and click **LOG IN**.



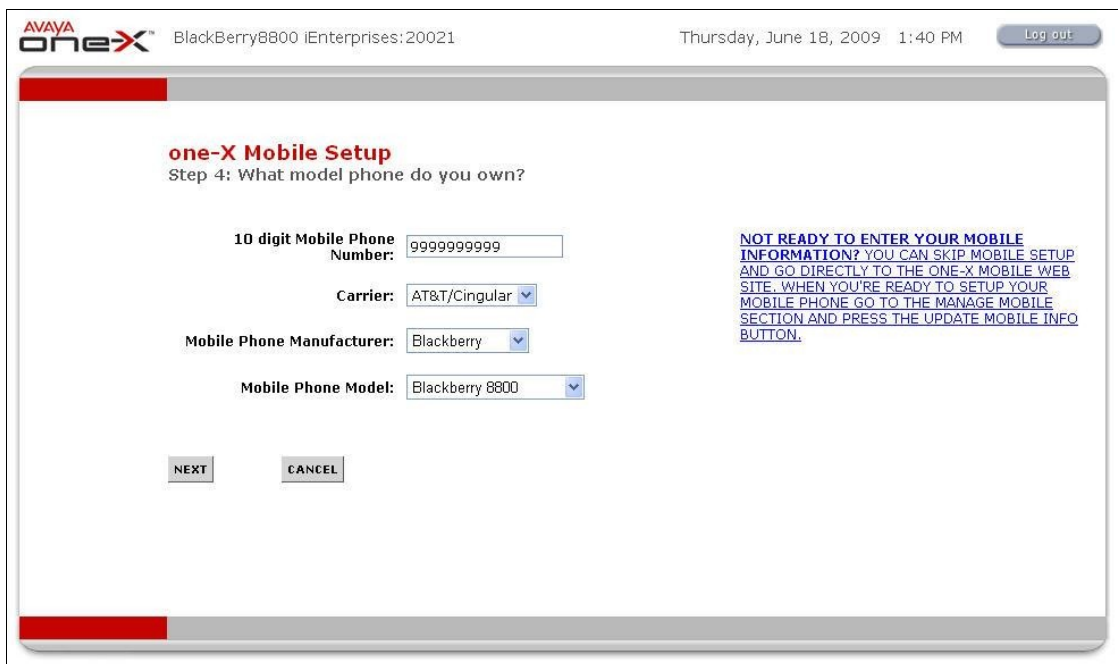
The screenshot shows the Avaya one-X Mobile Web site Login interface. At the top left is the Avaya one-X logo. The main heading is "one-X Mobile Web site Login" in red. Below it, a message says "Please enter your corporate computer username and password." There are two input fields: "Username" with the text "blackberry8800" and "Password" with masked characters "••••••••". Below the password field is a checkbox labeled "Remember my username and password on this computer". At the bottom left is a "LOG IN" button, and at the bottom right is a "Help" link. At the very bottom, there is a "LANGUAGE:" label and the text "English (United States)".

Upon initial log in to the system, the **Incorrect PIN** screen will be displayed. Enter the user's password for Avaya Modular Messaging from **Section 5.2** in the **PIN** field, and click **OK**.



8.2. Administer Mobile Setup

Accept the end user agreement in the next page, to display the **one-X Mobile Setup** screen. Enter the mobile phone number for the user's RIM BlackBerry 8800 device in the **10 digit Mobile Phone Number** field, and select the appropriate values for the remaining fields. Click **Next**. Continue in the subsequent screens to complete the setup.



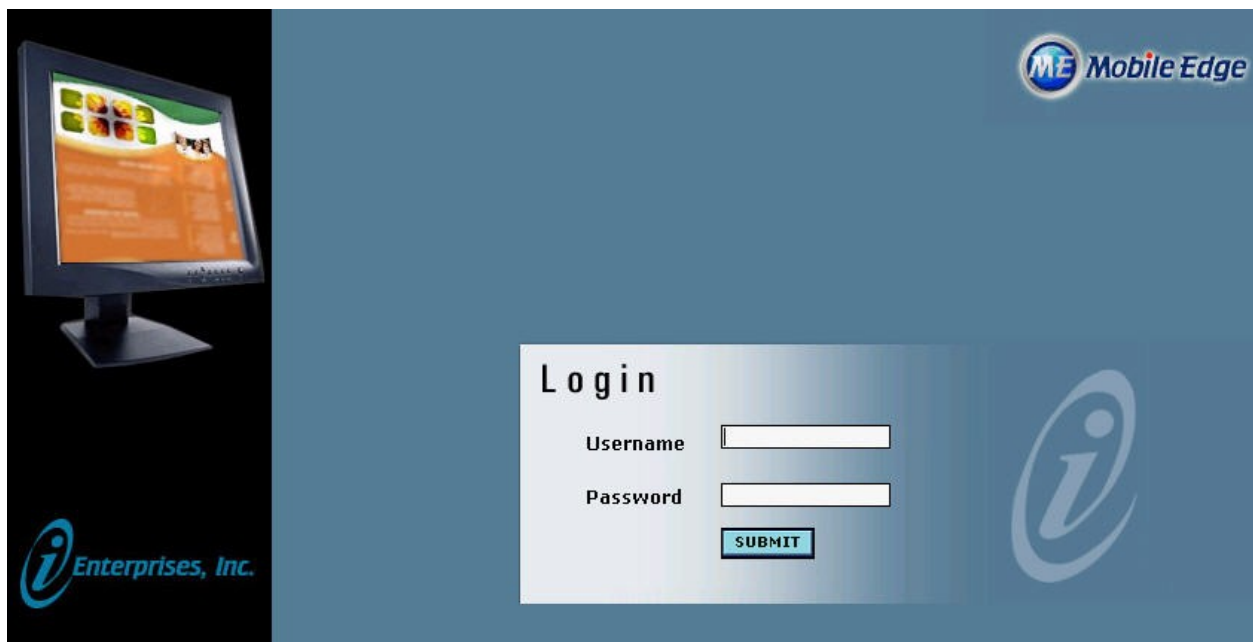
9. Configure iEnterprises Mobile Edge

This section provides the procedures for configuring the iEnterprises Mobile Edge server. The procedures include the following areas:

- Launch administration web interface
- Administer users

9.1. Launch Administration Web Interface

Access the iEnterprises Mobile Edge administration web-based interface using the URL from the installer in an Internet browser window. The **Login** screen is displayed as shown below. Enter the appropriate credentials, and click **SUBMIT**.



The **New User Registration – Basic Information** screen is displayed next. Enter the following values for the specified fields, and retain the default values for the remaining fields. Click **Submit**.

- **Last Name:** The last name of the user.
- **First Name:** The first name of the user.
- **E-Mail:** The email address of the user.
- **Pin:** The unique PIN number associated with the BlackBerry device.
- **Device Type:** Select the applicable device type.

Repeat this section for all station users in **Section 4.2**.

Build Version: 052809-1

Welcome admin Logout

New User Registration - Basic Information

First Name	iEnterprises
Last Name	BlackBerry8800
E-Mail	blackberry8800@ier
Pin	88888888
Device Type	Blackberry 8800
BES ServerAddress	crmotg.ienterprises.
BES ServerPort	8080
*Field Value:	
Language	English

Submit Reset

10. General Test Approach and Test Results

The feature test cases were performed manually. Calls were initiated from the iEnterprise Mobile Edge 1X Mobile client application to contacts with different format telephone numbers, and having the calls placed via the Avaya one-X Mobile UC client application. Testing also included delivering the callback call from Avaya one-X Mobile to the user's mobile phone, desk phone, and land-line phone. The verification included connected two-way talk paths, and proper display of the calling party's business contact information when appropriate.

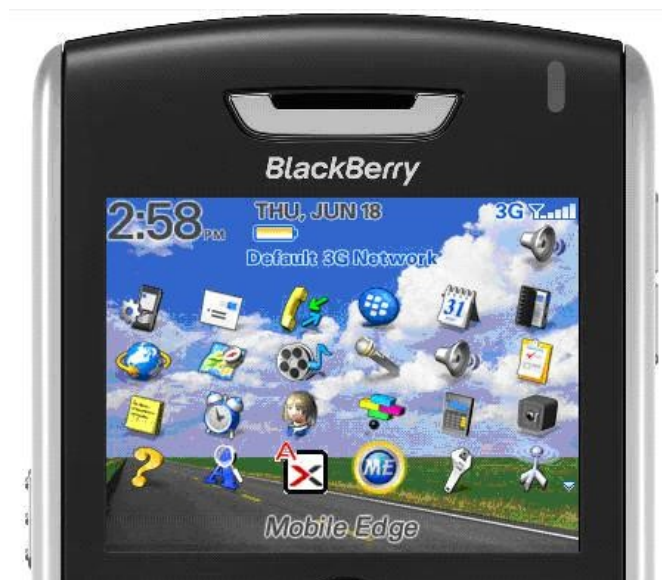
The serviceability test case was performed manually by rebooting the RIM BlackBerry 8800 device.

All test cases were executed and passed.

11. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya one-X Mobile and iEnterprises Mobile Edge.

From the RIM BlackBerry 8800 device, navigate to select the iEnterprises Mobile Edge application as shown below.



The screen below is displayed. Select the **Contacts** tab in the top of the screen to display a list of contacts. Navigate to the desired contact, and click the **Menu** key circled below.



The screen is updated with a list of options. Navigate to the **Call with Avaya one-X Mobile** option and click the **Trackball** circled below. Verify that Avaya one-X Mobile UC is launched and prompts the user for the callback destination. Select the mobile device as the callback destination, and verify that a call is placed to the BlackBerry. Answer the callback call on the BlackBerry, and verify that the contact is dialed and connected to the BlackBerry user.



12. Conclusion

These Application Notes describe the configuration steps required for iEnterprises Mobile Edge to successfully interoperate with Avaya one-X Mobile. All feature and serviceability test cases were completed.

13. Additional References

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

1. *Administering Avaya AuraTM Communication Manager*, Document 03-300509, Issue 5.0, Release 5.2, May 2009, available at <http://support.avaya.com>.
2. *Modular Messaging for the Avaya Message Store Server (MSS) Configuration Installation and Upgrade*, Release 4.0, April 2008, available at <http://support.avaya.com>.
3. *Avaya one-XTM Mobile Integration, Administration, and Maintenance Guide*, Document 18-602153, Issue 2, December 2008, available at <http://support.avaya.com>.
4. *Mobile Edge Administration Guide*, available on Mobile Edge installation CD.
5. *Mobile Edge User Overview*, December 2007, available on Mobile Edge installation CD.

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