Application Note for Emergency Broadcast System – PHP Sample Code - Issue 1.0

Abstract

These Application Notes describes the installation and operation of the Emergency Broadcast System sample application for Avaya 4600 and 9600 Series IP Telephones. The sample application is coded in PHP and demonstrates the different Push types supported by Avaya 4600 and 9600 Series IP Telephones. The Topline, Display and Audio Push are supported on Avaya 4600 and 9600 Series IP Telephones. The Transmit Push will work only on Avaya 9600 Series IP Telephones. The sample application also demonstrates the Subscription feature of Avaya 4600 and 9600 Series IP Telephones.

The sample application can be used to send messages to individual extensions or to a group of extensions. This application also allows multiple Push operations at the same time. The Emergency Broadcast system can be used to send Topline, Display or Audio messages to Avaya IP Telephones in case of an emergency.

1. Introduction

Avaya 4600 and 9600 Series IP Telephones have an embedded Push API that can be used to stream audio announcements, text messages, and full screen display messages to the phone. Audio Push is the ability to transmit RTP streams to the endpoint (for example, an audio message informing about a fire alarm in the office). Topline and Display Push are used to send text messages to the topline and full screen display, respectively.

Avaya 9600 Series IP Telephones also support an additional type of Push Message known as a Transmit Audio Push that allows the end user to send an audio stream from Avaya 9600 Series IP Telephones to a server based application.

The sample application described in these Application Notes exercises the different Push types to implement an Emergency Broadcast System which can be used to send messages to inform users about emergency situations. There is a main PHP web page that is used to control the sample application and several subordinate PHP scripts that are responsible for exercising one of the specific Push Types. The sample application also demonstrates the Subscription feature which is used to build a database of all Avaya IP Telephones in the network.

Figure 1 below shows the network configuration required to install and run the Emergency Broadcast sample application. Note that Avaya Communication Manager (depicted as an S8500 Server and a G650 Media Gateway in the figure) is included for completeness. The configuration of Avaya Communication Manager is beyond the scope of this document. It is assumed that the reader has an environment capable of registering Avaya 4600 or 9600 Series IP Telephones. Aside from being required to boot up Avaya IP Telephones, Avaya Communication Manager plays no part in the Push APIs exercised by the Emergency Broadcast sample application described in this document. Likewise, this document assumes that the reader has successfully installed a web server (Apache or Microsoft IIS). Configuration specific to allowing the sample application to run is covered in detail in the Configuration section below.

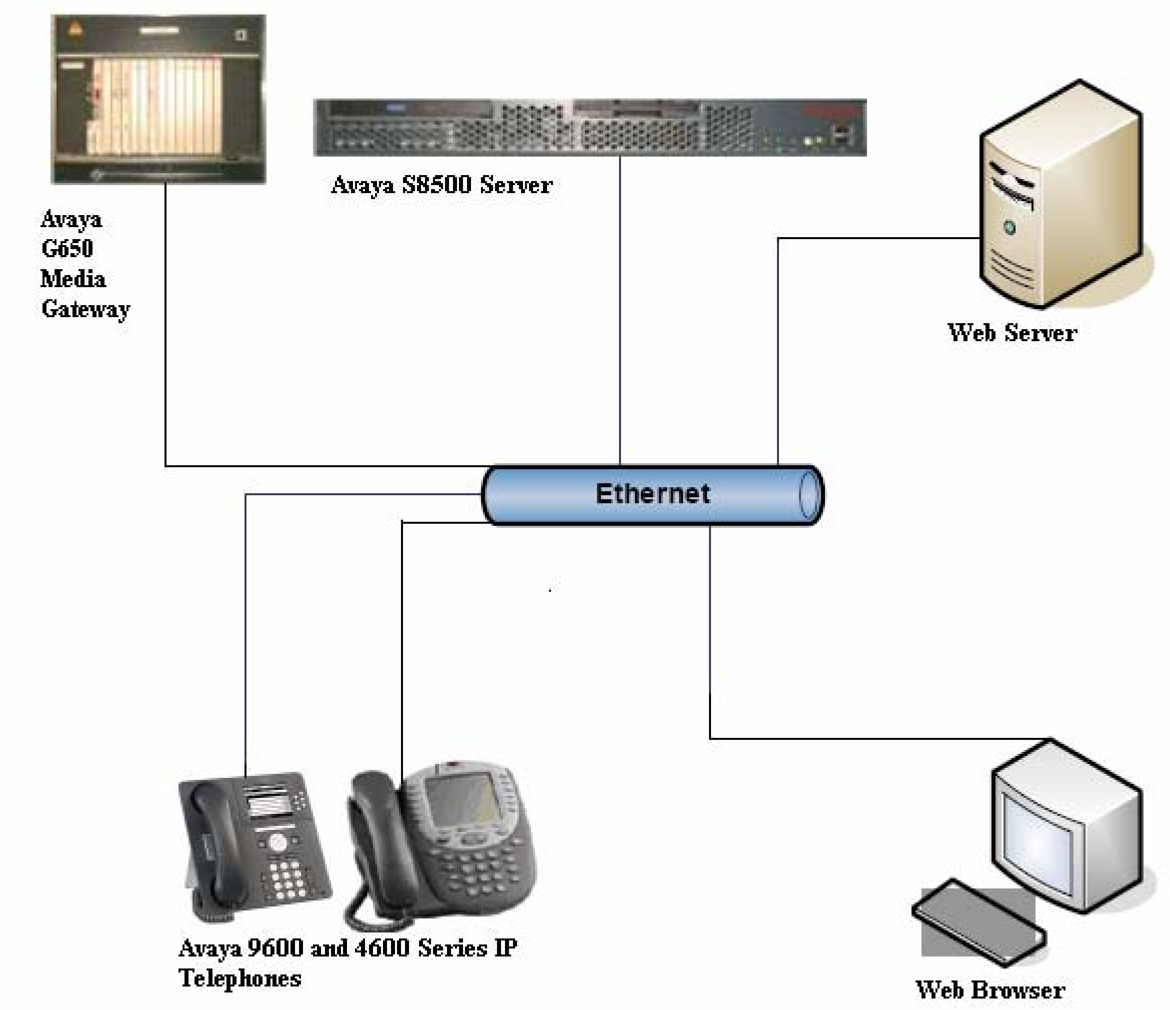


Figure 1: Network configuration for the application

2. Equipment and Software

The following equipment and software was used in the development and testing of the sample application:

Equipment	Software
Avaya 4625 IP Telephone	R2.8 (H.323)
Avaya 9630 IP Telephone	R1.5 (H.323)
Apache Web Server (with PHP Support)	Apache/2.2.4 (Win32) PHP/5.2.3-dev

3. Installation and content of Sample Application

The Emergency Broadcast System sample application can be downloaded from the Avaya DevConnect web site (http://www.avaya.com/devconnect) as a .zip file, `Emergency.zip`. To install the sample application, first unzip the downloaded file in the root folder of the web server. For example, if the Apache Web Server installation uses the default location, the document root would be:

```
C:\Program Files\Apache Software Foundation\Apache2.2\htdocs
```

After unzipping the sample application, there should be a folder named `Emergency`. Hence, the complete path of the location would be:

```
C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\Emergency
```

For the rest of this document this location will be used.

The content of the `Emergency` folder is the following directories and files:

- **audio** directory **–** contains the wave files that are streamed to the Avaya IP Telephone.
- **topline** directory **–** used to contain the `topline.xml` file that is used for the Topline Push operation. This file is generated dynamically during the operation of the sample application.
- **display** directory **–** used to contain the WML file that is used for the Display Push operation. The WML file contains the message that will be displayed on the full screen of the Avaya IP Telephone. This file is generated dynamically during the operation of the sample application.
- **subscribe.php –** contains the source code to process the Subscription request and store the information (IP address, extension, MAC address and SetID) provided by the Avaya 4600 or 9600 Series IP Telephone on boot-up. For more information on Subscribe Push refer [1], [2] and [3].
- **services.php –** contains the source code required to process the different Push Requests. The information provided in the user interface is used to build and send the Push Request message. For more information about the different Push Requests refer [1], [2] and [3].
- **audio.php –** captures the `rtpLPort` in the GET request from the IP telephone and sends the Audio Push Content XML back to the phone. The sample code then makes a mock call to a streaming audio application. Note that the user must supply the streaming audio software. This example does not cause any audio to be streamed to the phone. The Avaya IP Telephone will, however, turn on its speakerphone and be put in a state ready to accept an RTP audio stream. `rtpLPort` is the port on which the Avaya IP Telephone will be listening for the audio stream from the server. The sample application only

supports the Audio Push operation to a single Avaya IP Telephone at a time. For more information on Audio Push and rtpLPort refer [1], [2] and [3].

- **transmit.php –**sends the Transmit Audio Push Content XML back to the phone. The sample code then makes a mock call to a streaming audio application. Note that the user must supply the streaming audio application. This example does not receive audio streamed from the phone. The Avaya IP Telephone will, however, be put in a state ready to send an RTP audio stream. The sample application only supports the Transmit Push operation to a single Avaya IP Telephone at a time.
- **index.php -** the main page that allows the user to choose the extension(s) of the Avaya 4600 and 9600 Series IP Telephones to push to, the type of Push Message and its attributes. Submitting the form calls the appropriate PHP page to exercise the chosen Push type.
- **Demo_Configuration.inc –** contains the configuration variables for the sample application. The variables defined in this file need to be configured prior to executing the sample application. Currently, the Trusted Push Server (TSP) variable for the sample application is defined in this file.

4. Configuration of Sample application

Environment setup for Push Sample Application

To execute the Push based sample applications, the required environment needs to be set up for Avaya 4600 and 9600 Series IP Telephones. For more information, refer [4]. This tutorial provides information about setting up the environment for Avaya IP Telephone Push applications.

Also refer [3]; this tutorial provides information about configuring the `SUBSCRIBELIST` parameter in the 46xxsettings.txt file for the Subscribe Push feature of the Avaya IP Telephone. This feature is used to build the database of Avaya IP Telephones in this sample application. The `SUBSCRIBELIST` variable must contain the exact URL for the sample subscription application. So, if the web server's IP address is 10.10.10.11 then the `SUBSCRIBELIST` should be:

```
    SET SUBSCRIBELIST http://10.10.10.11/Emergency/subscribe.php
```

After setting the `SUBSCRIBELIST` parameter in the `46xxsettings.txt` file, reboot the Avaya 4600 and 9600 Series IP Telephones. When the phones register on reboot they will create the database named `Phone_db.txt` which contains the information about the Avaya IP Telephones in the network. The above mentioned tutorials are available at the DevConnect web site http://www.avaya.com/devconnect.

After deploying the sample application in the web server, update the `Demo_Configuration.inc` file with the value of the Trusted Push Server (TPS).

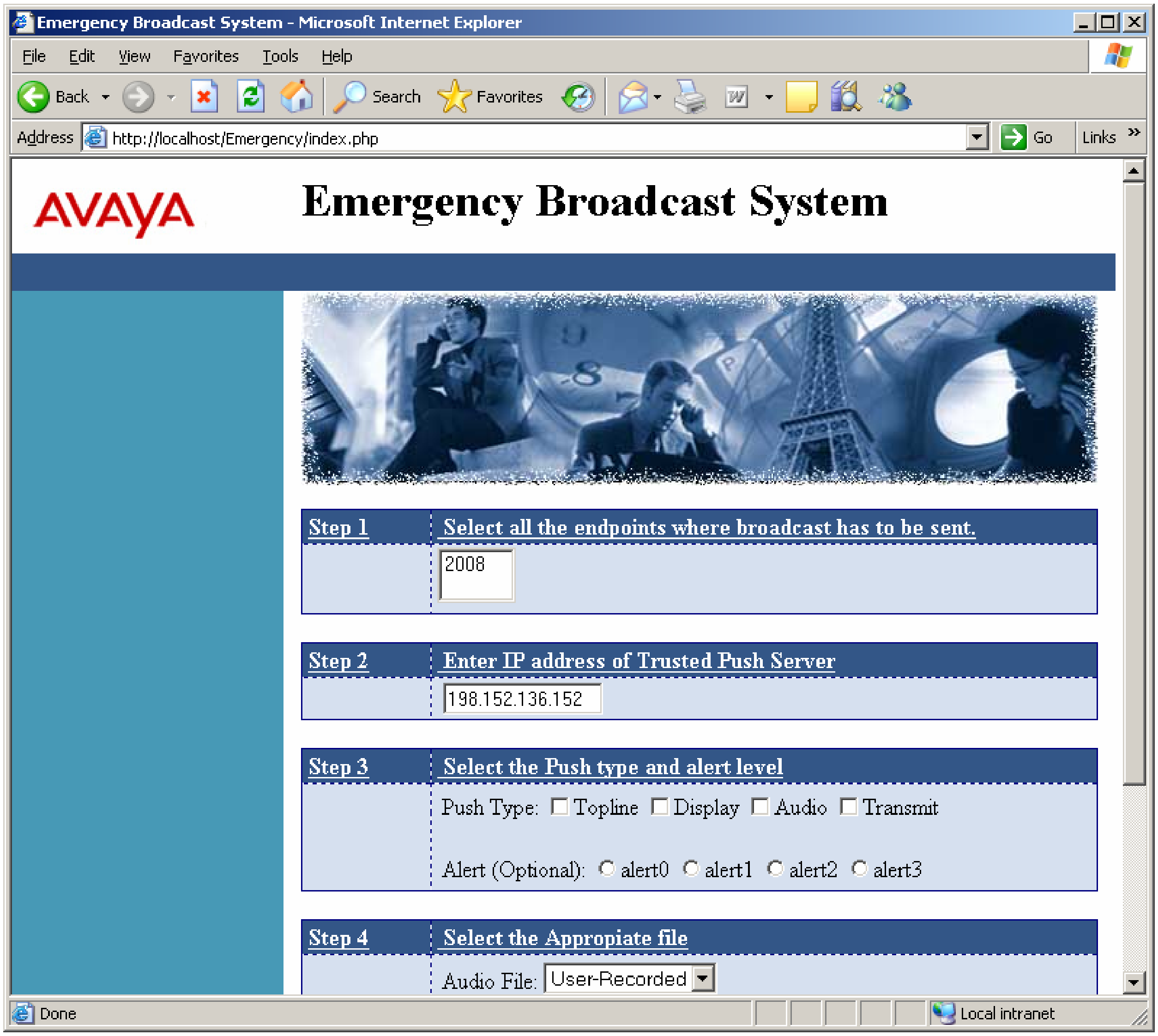
Note: In case of the Receive and Transmit Audio Push operations, the Avaya IP Telephone will respond to the audio request, by turning on the speaker, but no audio stream will be sent or received unless the user provides a third party RTP streaming software and integrates a call to it in the PHP sample application.

5. Running the sample application

To run the sample application, launch Internet Explorer and enter the following URL:

```
http://<TPS_IP_Address>/Emergency/index.php
```

where `<TPS_IP_Address>` is the IP address of the web server where the sample application is installed. This loads the main page of the application that is used to exercise all of the Push API types. **Figure 2** shows a screenshot of this page.



Emergency Broadcast System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://localhost/Emergency/index.php
Go Links
AVAYA
Done
Local intranet

Emergency Broadcast System

Step 1 Select all the endpoints where broadcast has to be sent.

2008

Step 2 Enter IP address of Trusted Push Server

198.152.136.152

Step 3 Select the Push type and alert level

Push Type: □ Topline □ Display □ Audio □ Transmit

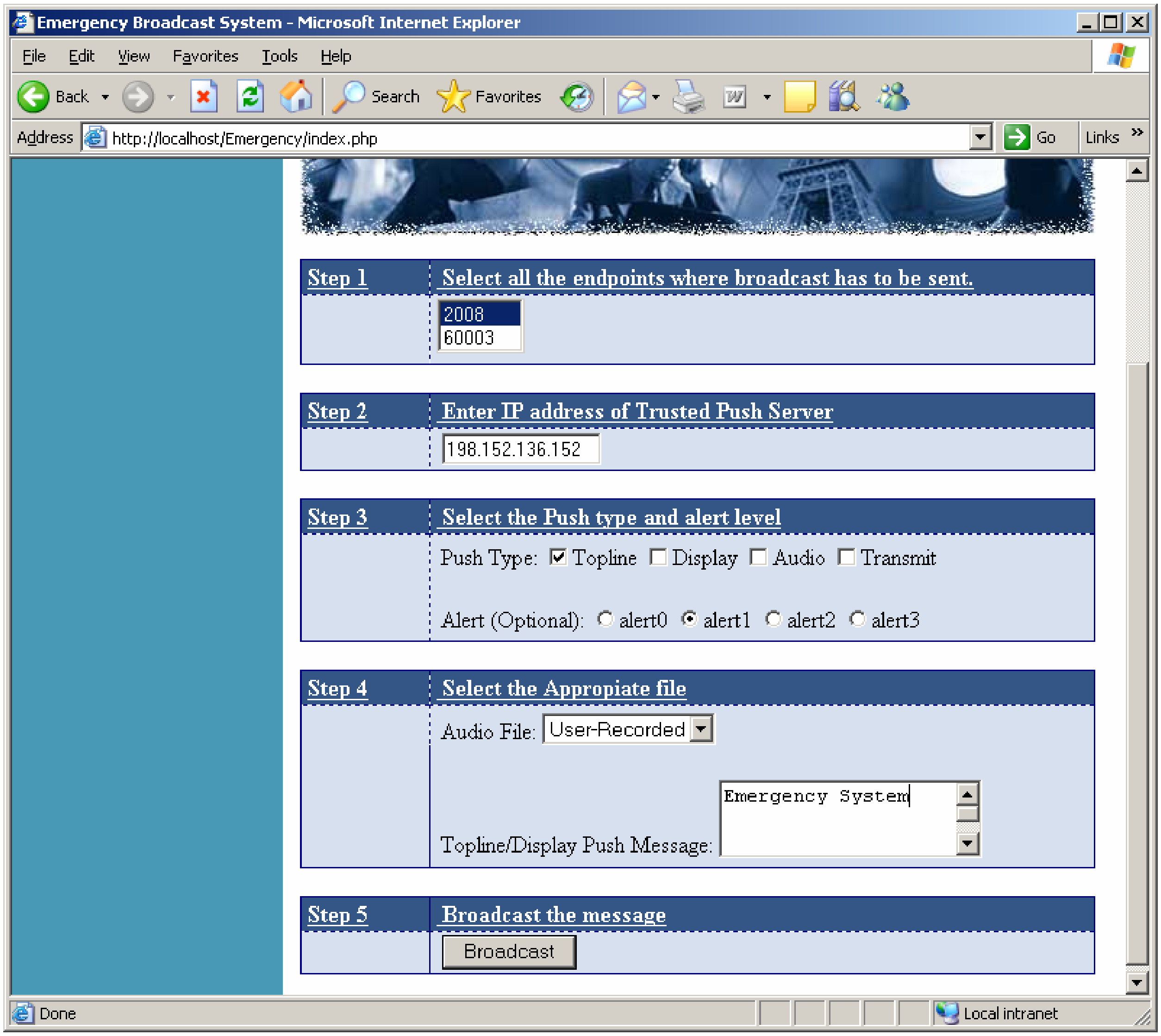
Alert (Optional): ○ alert0 ○ alert1 ○ alert2 ○ alert3

Step 4 Select the Appropiate file

Audio File: User-Recorded

Figure 2: Main page of Avaya Emergency Broadcast System

Follow the instructions below to fill out the page and run the demo as shown in **Figure 3**:


Emergency Broadcast System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://localhost/Emergency/index.php
Go Links
Done
Local intranet

Step 1 Select all the endpoints where broadcast has to be sent.

2008
60003

Step 2 Enter IP address of Trusted Push Server

198.152.136.152

Step 3 Select the Push type and alert level

Push Type: ☑ Topline □ Display □ Audio □ Transmit

Alert (Optional): ○ alert0 ● alert1 ○ alert2 ○ alert3

Step 4 Select the Appropiate file

Audio File: User-Recorded

Topline/Display Push Message: Emergency System

Step 5 Broadcast the message

Broadcast

Figure 3: Input fields for Sample Application

Step 1: Select the extension of the Avaya 4600 and 9600 Series IP Telephones from the list. The source of this list is the Phone_db.txt file produce by the Subscription service as described in Section 4.

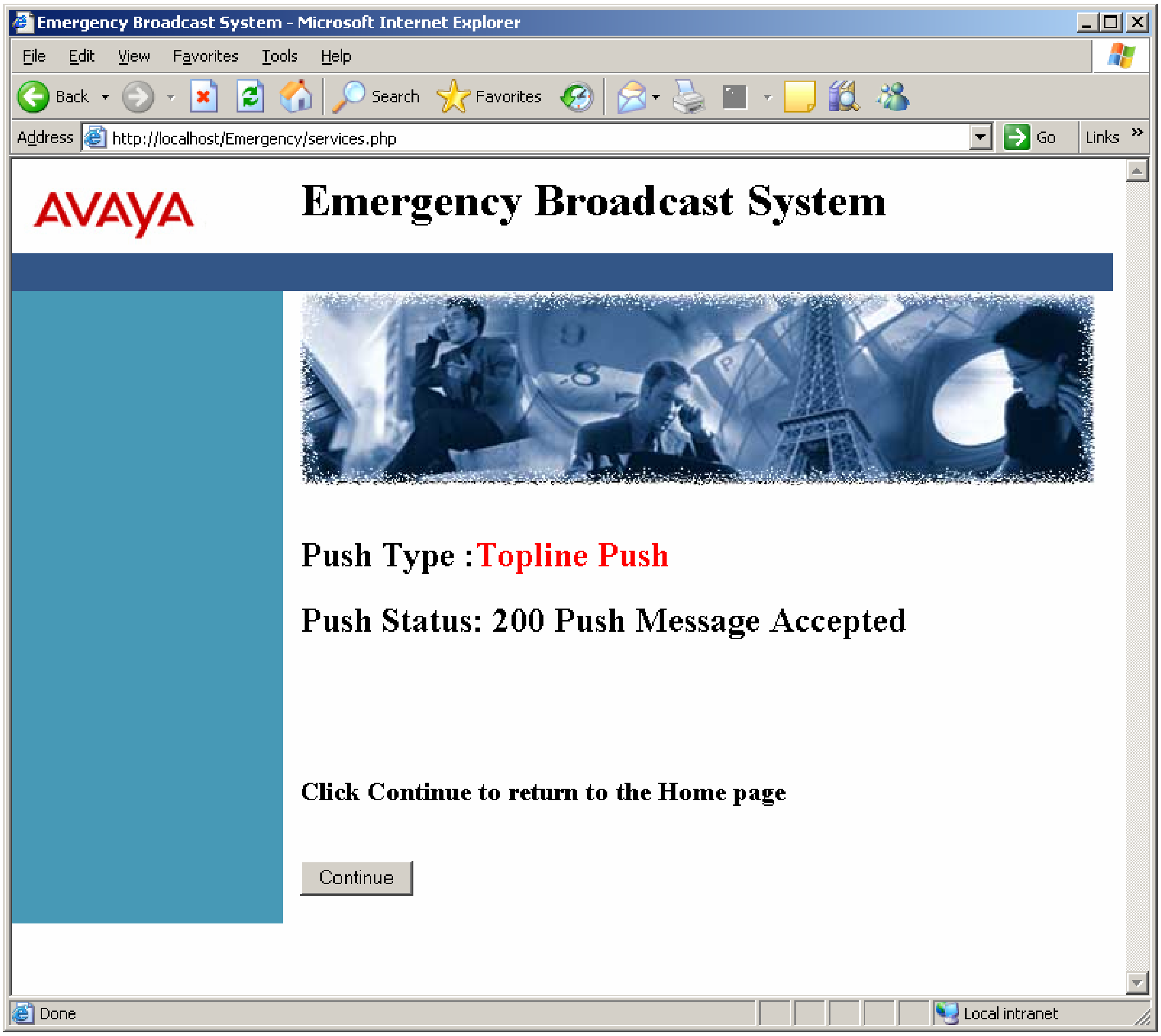
Step 2: IP Address (read from Demo_Configuration.inc file) of the web server (Trusted Push Server) where the Emergency Broadcast System sample application was installed.

Step 3: Select the Check box for the type of Push Message to send to the Avaya IP Telephone. Select the number of alert beeps for the Push Message. The alert beep is an optional parameter for the sample application.

Step 4: For the Topline or Display Push types, enter the desired message to send in the Text Area. For the Audio Push type, select the desired audio file to be streamed to Avaya IP Telephone.

Step 5: Click on the "Broadcast" button.

Clicking "Broadcast" causes the appropriate PHP page for the selected Push Type to be executed. Each PHP page and its functionality are described in section 3 of this document. In general, each sample produces a Push Content file and sends the `HTTP POST` request containing the Push Message to the Avaya IP Telephone. The HTTP Response from the phone is then displayed in the browser as shown in Figure 4. The phone then goes to the Trusted Push Server (the web server), retrieves the Push Content and performs the requested operation. In this case, the message "Emergency System" is displayed on the topline of the Avaya 4600 or 9600 Series IP Telephone. Clicking "Continue" reloads the home page (`index.php`) of the sample application.



Emergency Broadcast System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://localhost/Emergency/services.php
Go Links
AVAYA
Emergency Broadcast System

Push Type :Topline Push

Push Status: 200 Push Message Accepted

Click Continue to return to the Home page

Continue
Done
Local intranet

Figure 4: Response screen

6. References

[1] 4600 Series IP Telephones Application Programmer Interface (API) Guide, Issue 1, April 2005.

[2] Avaya one-X™ Deskphone Edition for 9600 Series IP Telephones Application Programmer Interface (API) Guide, Issue 2, January 2007.

[3] Tutorial for Developing Avaya 4600 and 9600 Series IP Telephone Push Applications.

[4] Tutorial for Avaya 4600 and 9600 Series IP Telephones Push and Browser Applications Setup.

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