

Avaya Solution & Interoperability Test Lab

Application Notes for Configuring CrystalVoice Click-To-Talk with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the steps for configuring CrystalVoice Click-To-Talk to communicate with Avaya Communication Manager. The CrystalVoice Click-To-Talk solution consists of the Click-To-Talk client, the CrystalVoice ISS/IVX Server and a Web Server. The CrystalVoice Click-To-Talk client component is accessed through a Web Browser. Emphasis of the testing was placed on verifying good voice quality from Click-To-Talk and its ability to operate with Avaya Communication Manager. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

With the ease of use and general availability of the Web browser and multimedia capable PC, CrystalVoice offers a unique solution to access telephone support and the telephone system in general. The CrystalVoice Click-To-Talk solution consists of two parts, a client PC with web browser and multimedia capability and a CrystalVoice ISS/IVX Server. The Click-To-Talk client is used to initiate calls to the CrystalVoice ISS/IVX Server. The server components of the CrystalVoice Click-To-Talk solution reside on the CrystalVoice ISS/IVX Server, which is located in the core network. The CrystalVoice Click-To-Talk client communicates with the CrystalVoice ISS/IVX Server, and the CrystalVoice ISS/IVX Server communicates with Avaya Communication Manager to setup a call. Click-To-Talk client is only capable of making out bound calls.

To access the system, a user clicks on an extension or icon (appearance depends on the Web Master's programming of Web pages). The first time a user clicks on a Click-To-Talk link on a web page, the Click-To-Talk client will be installed on the user's PC automatically. On subsequent Click-To-Talk calls, the web page will launch the Click-To-Talk client that is installed on the user's PC. Calls are established from the Click-To-Talk client through the CrystalVoice ISS/IVX Server to Avaya Communication Manager.

1.1. Configuration

Figure 1 illustrates the configuration used in these Application Notes. The CrystalVoice ISS/IVX Server has a dual Ethernet connection. One Ethernet port is connected into the private network, and the other Ethernet port is connected to the Internet. Two Click-To-Talk clients communicate with the ISS/IVX Server through a Linksys Router via a common Internet IP address. Click-To-Talk only supports outbound dialing, therefore, there are no inbound telephone numbers to be administered on the Click-To-Talk client. The telephone numbers that Click-To-Talk clients can dial are administered in web pages that reside on the Web Server.



Figure 1: Sample Network Configuration

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2. Equipment and Software Validated

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

Equipment	Software/Firmware
Avaya S8300 Media Server with a G650 Media	Communication Manager 3.0
Gateway	(R0.13x.00.0.340.3) with
	update 00.0.340.3-10458
Avaya IA770 INTUITY AUDIX [™]	3.0-1.7
Avaya 4610SW/4620SW IP Telephones	2.2.3
Avaya P333T-PWR Converged Stackable Switch	3.12.1
CrystalVoice Click-To-Talk client	4.2.0.4
CrystalVoice Integrated System Services (ISS)	4.2.0.4
CrystalVoice Internet Voice Transcoder for H.323 (IVX)	4.2.0.4
Microsoft Internet Web Browser	6.0

3. CrystalVoice Click-To-Talk

There are two parts to the CrystalVoice Click-To-Talk, the Click-To-Talk client and the CrystalVoice ISS/IVX Server. The CrystalVoice ISS/IVX Server transcodes voice traffic between Click-To-Talk client and Avaya Communication Manager. Although this sample configuration shows a dual Ethernet connected CrystalVoice ISS/IVX Server, it is possible to configure the CrystalVoice ISS/IVX Server with a single Ethernet Connection to support traffic to and from Avaya Communication Manager and the Internet.

Microsoft Internet Web Browser was used in the sample network to access the CrystalVoice ISS/IVX Server. Other Internet browsers are supported. For additional information, please refer to CrystalVoice documentation[6].

3.1. Configuring the ISS/IVX Server

The following steps describe the configuration for CrystalVoice ISS/IVX Server to communicate with Avaya Communication Manager. A Web Server was installed on the same machine where the CrystalVoice ISS/IVX is running. The sample configuration uses Microsoft IIS.

Step	Description									
1.	Log in to the CrystalVoice ISS/IVX Server via its private IP address using the Well browser. The CrystalVoice ISS/IVX installation process will automatically change Web Server port to 8080.									
	http://50.1.1.200:8080/systemsmanager/home.asp To log in to the system, enter the Username and Password and click Login .									
	CrystalVoice Systems Manager - Microsoft Internet Explorer									
	Eile Edit View Favorites Iools Help									
	😋 Back 🝷 🕤 🝷 📓 🏠 🔎 Search 👷 Favorites 🜒 Media 🕢 😥 💺 🚍									
	Address 🙆 http://50.1.1.200:8080/systemsmanager/Login.asp									
	Clear Voice CrystoVoice Over									
	the Internet Edit Login Logout Home									
	Network System Servers Services Call Routing Accounts Reports									
	The user name or password you entered was invalid. Please try again. If you continue to experience problems contact CrystalVoice technical support for assistance at support@crystalvoice.com Enter Username									
	Enter Password									
	Login © Trusted sites									

Step	Description										
2.	Click Servers on the main menu bar and select Add Server.										
	Note:										
	• For a single Ethernet connection scenario, the IP address must be enter										
	the Public IP Address field.										
	Click Save to complete.										
	A FrushalVaice Fustance Manager - Missosoft Takayoot Fundayov										
	← Back ← → → ② ⑦ ᢙ ②Search ③Favorites ③History 등 → ④ ③ 등										
	Address 🔄 http://50.1.1.200:8080/systemsmanager/ServerEdit.asp?id=1&txtProcessMode=get 💽 🔗 Go 🛛 Links » 👰 🔹										
	Clear Systems Manager										
	Voice <u>Systems Manager</u>										
	the the fillenging to the fill										
	Network System Services Call Bouting Accounts Reports										
	Network System Services Can Routing Accounts Reports										
	Comun Configuration										
	Server Configuration										
	Edit Server										
	If this server has only one IP address, then put that address in the										
	Server Information										
	Name DEVCON1										
	Public IP Address 141.150.155.69										
	Private IP Address										
	Save Delete Back										
	v.										
	http://50.1.1.200:8080/systemsmanager/home.asp										

Step	Description										
3.	Select Call Routing \rightarrow Routing from the main menu bar, and click on Add to bring up										
	he Routing Table Configuration form. This form sets the allowable numbers for										
	incoming calls. The sample Routing Table Name for the sample network is <i>ToAvaya</i> .										
	Ulick Save to complete.										
	alled Number This is the number that will be programmed into a Web Page for users to click on										
	In the sample configuration, the Web page can use any five digit number beginning with "1" to access the system.										
	Integration Digits										
	This maps the called number to an actual telephone extension that will be sent to										
	Avaya Communication Manager.										
	In this comple configuration, if a user clicks on a link that dials the number 10245, the										
	CrystalVoice ISS/IVX Server will change the number to 42345 and send it to Avava										
	Communication Manager.										
	CrystalVoice Systems Manager - Microsoft Internet Explorer										
	J Ene Euk view rayonices Tools Eelp ↓ Back • → · ② ⑦ ⑦ ③ ② Search Favorites ③ History ▷ • ④ ③										
	Address 🛃 http://50.1.1.200:8080/systemsmanager/RoutingEdit.asp?txtProcessMode=get&id=1 🔽 🔗 Go 🗍 Links 🍽 👰 🔹										
	Clear Systems Manager										
	Crysta Voice Over the										
	Internet Edit Login Logout Home										
	Network System Servers Services Call Routing Accounts Reports										
	Routing Table Configuration										
	Edit Routing Table										
	 To add a new route, enter the route information, then click the Save button. To edit the routing table, change the route information, then click the Save button. 										
	 To delete the entire routing table, lick the Delete button. To delete specific routes (if the routing table has some routes), check the corresponding Mark for Delete checkboxes, then click the Save button. 										
	Routing Table Name ToAvaya										
	Edit Route Information										
	Routing Priority Called Number Integration Digits Billing Mode Mark For Delete										
	1 I Ixxxx 4xxxx Billing Off I										
	Add a New Route										
	Routing Priority Called Number Integration Digits Billing Mode										
	1 V Billing Off V										
	Save Delete Back										
	P Thernet										

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	scription							
Select Servers \rightarrow IVX from the main menu. Click on Add to add a new IVX service. This will bring up the IVX Information form to create a H.323 trunk between the CrystalVoice ISS/IVX Server and Avaya Communication Manager. Configure the following fields:								
Note: Due to the size of the screen capture, it is necessary to split the captured screen across two pages. The actual Web browser screen is one continuous page.								
IVX Type: <i>IVX-H323</i> This indicates that it is a H.323 trunk. Route: <i>ToAvava</i>								
This indicates call routing for this	trunk.							
Maximum Channel Capacity: 4								
Communication Manager	members in the Trunk configuration in Avaya							
Routing Type : "Fixed Routing" with IP	Address 50.1.1.10							
This is the IP address of Avaya Co	ommunication Manager terminating this trunk.							
Audio Source Type: G.711 This needs to match the in codes.	set setting in Avera Communication Managar							
used for this trunk. If the G 729 c	odec is desired, the in-codec-set used for this							
trunk in Avaya Communication M	lanager must be set to G.729AB.							
Fast Start: Checked	C							
Click Sove to complete								
Click Save to complete								
Click Save to complete IVX Information Installed On:	DEVCON1							
Click Save to complete IVX Information Installed On: Start Up Type:	DEVCON1							
Click Save to complete IVX Information Installed On: Start Up Type: IVX Type:	DEVCON1							
Click Save to complete IVX Information Installed On: Start Up Type: IVX Type: Route:	DEVCON1							
Click Save to complete IVX Information Installed On: Start Up Type: IVX Type: Route: IP Port Number:	DEVCON1							
Click Save to complete IVX Information Installed On: Start Up Type: Start Up Type: IVX Type: Route: IP Port Number: Maximum Channel Capacity: Image: Capacity:	DEVCON1							
Click Save to complete IVX Information Installed On: Start Up Type: Start Up Type: IVX Type: IVX Type: IVX Type: Route: IP Port Number: Maximum Channel Capacity: Image: Capacity: Digit Duration: Image: Capacity:	DEVCON1							
Click Save to complete IVX Information Installed On: Installed On: Start Up Type: IVX Type: IVX Type: IVX Route: IIP Port Number: Maximum Channel Capacity: IIP Digit Duration: Reservation Required:	DEVCONI							
Click Save to complete IVX Information Installed On: Installed On: Start Up Type: IVX Type: IVX Type: IVX Route: IIP Port Number: Maximum Channel Capacity: III Digit Duration: IVX Reservation Required: IVX Network Type: IVX	DEVCONI							
Click Save to complete IVX Information Installed On: Installed On: Start Up Type: IVX Type: IVX Type: IVX Route: II IP Port Number: IVX Maximum Channel Capacity: IVX Digit Duration: IVX Reservation Required: IVX Network Type: IVX Output Gain: IVX	DEVCON1 Automatic Automatic IVX-H323 ToAvaya 4051 4051 120 III WAN 1.00							
Click Save to complete IVX Information Installed On: Installed On: Start Up Type: IVX Type: IVX Type: IVX Route: IIP Port Number: Maximum Channel Capacity: III Digit Duration: IVX Reservation Required: IVX Network Type: IVX Output Gain: IVX Service Address Distribution Heartbeat Interval: IVX	DEVCON1 Image: Constraint of the second							
Click Save to complete IVX Information Installed On: Start Up Type: Start Up Type: IVX Type: IVX Type: Route: IP Port Number: III Maximum Channel Capacity: IIII Digit Duration: Reservation Required: Network Type: Output Gain: Service Address Distribution Heartbeat Interval: Presence Manager Heartbeat Interval:	DEVCON1 Image: Constraint of the second							
Click Save to complete IVX Information Installed On: Start Up Type: IVX Type: Route: IP Port Number: Maximum Channel Capacity: Digit Duration: Reservation Required: Network Type: Output Gain: Service Address Distribution Heartbeat Interval: Presence Manager Heartbeat Interval: Logging and Directory Services Heartbeat Interval:	DEVCON1 Image: Constraint of the second							

			Description
		Routing (Outg	joing)
C Gatekeeper IP Address: Gatekeeper Zone: C Fixed Routing			
	IP Addr	ess:	50.1.1.10
Out Signal IP Port	: 1720		
Allow H323 Incom In Signal IP Port:	ing Calls:	反 1720	
RTP Port Range B	egin:	17000	
RTP Port Range E	nd:	17999	
		General	
Audio Source Type	в:		64K Mulaw (G.711) 💌
Maximum Jitter (m	is):		50
Maximum Bandwi	dth (100 bps):		100000
Fast Start:			R
Tunneling:			1.3
tanore Available P	andwidth:		r

Step				Descri	ption					
5.	To verify the Cry	stalVoice IS	SS/IVX	is operat	ional, click on	Networ	k from	the main		
	menu. This displays a list of all the services and their current status. Make sure the ISS									
	and IVX-H323 services are running.									
	🖉 http://50.1.1.200:8080/systemsmanager/NetworkFrameset.asp - Microsoft Internet Explorer									
	Eile Edit View Favorites Tools Help									
	🚱 Back 🝷 🕥 👻 😰 🏠 🔎 Search 👷 Favorites 🚳 Media 🕢 😥 💺 🚍									
	Address 🙆 http://50.1.1.2	200:8080/systemsmana	ager/NetworkFr	ameset.asp				🛨 🔁 Go 🛛 Links	»	
	X		Clear		Sys	tems Mai	nager			
	Crystal	hice	Over				-			
	Ci ystary		the	et	Edit Login	Logout	Home			
	Network System	Servers Services	Call Routi	ng Account	s Reports					
				•						
				1						
			Netw	ork statu	5					
		Last l	Jpdated 9/	21/2005 1	D:47:09 AM					
			🗹 Refresh	every 5 se	conds.					
			<u>Change</u>	Refresh Ra	<u>te</u>					
	Comun Namer	DEVCON1		Server	View Applicatio	n Event I og				
	ID Addroses	50.1.1.200			View System Ev	vent Log				
	Statuc:	Connected			Reload Configu	ration				
	Status.	Varcian	Ctatus	Ctartlla	Reload Security	<u>' Keys</u>				
		e version	Status	start υμ	Operation	15				
	Connection Test Directory Service Logging Service Presence Manag	ter e 4.2.0.4	Running	Auto	<u>Stop</u> Pause Rest	<u>art Monitor</u>	<u>Edit</u>			
	Address Distribu SIP Service Voice Proxy	ition								
	PMA	4.2.0.4	Running	Auto	<u>Stop</u> Pause Rest	art <u>Monitor</u>	Edit			
	IVX-SIP	4.2.0.4	Running	Auto	<u>Stop Pause Rest</u>	art <u>Monitor</u>	<u>Edit</u>			
	IVX-H323	4.2.0.4	Running	Auto	<u>Stop Pause Rest</u>	art <u>Monitor</u>	<u>Edit</u>			
	18						_]⊘ ⊺	rusted sites	11.	

3.2. Configuring the Web Server

The sample network uses the Microsoft IIS Web Server that comes with Windows 2000 Professional. When the CrystalVoice ISS is installed, it automatically changes the port number for accessing the IIS Web Server to port 8080. The CrystalVoice Click-To-Talk Web Components installation adds the following two configuration files onto the CrystalVoice Click-To-Talk Server.

File name:	File location
index.htm	C:\program files\crystalVoice\CTT\ClickToTalk
config.txt	C:\program files\crystalVoice\CTT\ClickToTalk

The index.htm file above and as shown in step 1 is an initial web page used by the IIS Web Server and needs to be configured to dial the desired extension. There are some basic settings that need to be configured in the config.txt file before a call can be placed. At a minimum, the Click-To-Talk token must be configured.

The installation of the Microsoft IIS Web Server is beyond the scope of these Application Notes; please refer to Microsoft documentation for installation and configuration information of the Microsoft IIS Web Server.

Step	Description	
1.	Below is a sample configuration of the index.htm file. Step 2 shows how the field in bold is displayed on the user's web browser. When the user clicks on the " Click Here " hyperlink, the Click-To-Talk client will launch and dial telephone number 10001. The CrystalVoice ISS/IVX will change the called number to 40001 and connect to Avava	
	Communication Manager to complete the call.	
	<hr/> <hr/> <body bgcolor="#FFFFFF"> <center> </center> </body>	
	<script language="JavaScript"> <!</th></tr><tr><th></th><th><pre>function displayPopup(url,name,width,height) {</pre></th></tr><tr><th></th><th><pre>var properties = 'menubar=no,toolbar=no,directories=no,scrollbars=no,status=no,' +</pre></th></tr><tr><th></th><th>leftvar = (window.screen.availWidth - width) / 2; rightvar = (window.screen.availHeight - height) / 2;</th></tr><tr><th></th><th><pre>properties += ',left=' + leftvar; properties += ',top=' + rightvar;</pre></th></tr><tr><th></th><th><pre>open(url,name,properties);</pre></th></tr><tr><th></th><th><pre> function dialHardPhone(number) f </pre></th></tr><tr><th></th><th>displayPopup('ClickToTalk.asp?dialednumber=' + number,'ClickToTalk',440,220);</th></tr><tr><th></th><th><pre>function dialSoftPhone(phoneId) {</pre></th></tr><tr><th></th><th><pre>displayPopup('ClickToTalk.asp?destphoneid=' + phoneId,'ClickToTalk',440,220); } //> </script> <hr/>	
	<center></center>	
	<table> <tr> <td width="200"> To Call Support: </td></tr></table>	 To Call Support:
 To Call Support: 		
	<td> Click Here </td>	 Click Here
	<hr/> 	

Step	Description										
2.	This is an example of what the user's Web browser will show from the script in step 1.										
	Image: Second										
	To Call Support: <u>Click Here</u>										
	Done My Computer										
3.	Once the user clicks on the " Click Here " hyperlink, the following Click-To-Talk client GUI will display on the user's desktop.										
	Options _ ×										
	Avaya hang up										
	ex Powered by Crystol voice										

4. Avaya Communication Manager

This section highlights the important commands for configuring Avaya Communication Manager to connect to the CrystalVoice ISS/IVX Server. Use the System Access Terminal (SAT) interface to perform these steps. Log in with the appropriate permissions.

4.1. Configuring a H.323 Trunk in Avaya Communication Manager

The CrystalVoice Click-To-Talk solution does not support call shuffling. Therefore, Call shuffling will be disabled in the signaling group for this trunk. To simplify implementation, the sample network setup uses a new ip-codec-set for the H.323 trunk between the Avaya Communication Manager and the CrystalVoice ISS/IVX Server.

Use the **change node-names ip** command to add a new node name for the CrystalVoice ISS/IVX Server.

change node-names i	р				Page	1 of	1
				IP NODE NAMES			
Name		IP Ad	ddre	55			
CCS	50	.1	.1	.50			
CrystalVoice	50	.1	.1	.200			
EMMC	50	.1	.1	.10			
default	0	.0	.0	.0			
procr	50	.1	.1	.10			

Use the **change ip-codec-set** command to configure a new codec set. This Audio Codec must match the configuration of the IVX Server described in section 3.1, Step 4. To support G.729 specify G.729AB as the Audio Codec and make the corresponding change in section 3.1 Step 4.

change ip-code	Page	1 of	2					
	IP Codec Set							
Codec Set:	2							
Audio	Silence	Frames	Packet					
Codec	Suppression	Per Pkt	Size(ms)					
1: G.711	n	2	20					
2:								
3:								

Use the change **ip-network-region** command to configure to use Codec Set 2 for the trunk between Avaya Communication Manager and CrystalVoice ISS/IVX Server.

chang	ge ip	-networ	k-region	1		Page 3	3 of	19
			Inter	Network Region	Connection Management	5		
src	dst	codec	direct			Dynamic CA	2	
rgn	rgn	set	WAN	WAN-BW-limits	Intervening-regions	Gateway	IG	AR
1	1	1						
1	2	2	У	:NoLimit			n	L
1	3							
1	4							

Use the **add signaling-group** command to define a new signaling group for the trunk between the CrystalVoice ISS/IVX Server and Avaya Communication Manager. Make sure that **Direct IP-IP Audio Connections** and **IP Audio Hairpining** are set to **n**. CrystalVoice Click-To-Talk does not support call shuffling.

add aignaling group 1							
add Signaling-group z	raye I OI D						
Group Numbers 2							
Group Number, 2 Group Type	e. n. 323						
Remote Office	e? n						
SB	3? n						
IP Video	o? n						
Remote Office	e? n Max number of NCA TSC: 0						
SB	3? n Max number of CA TSC: 0						
IP Video	o? n Trunk Group for NCA TSC:						
Trunk Group for Channel Selection	1: 2						
Supplementary Service Protocol	l: a						
T303 Timer(sec): 10						
Near-end Node Name: procr	Far-end Node Name: CrystalVoice						
Near-end Listen Port: 1720	Far-end Listen Port: 1720						
Near ena hibeen fore, 1720	Far-end Network Pegion: 2						
IPO Required? n	rai-end Network Region. 2						
DRO Demainedo n							
RRQ Required? n							
DIME over IP: out-of-band							
LRQ Required? n	Calls Share IP Signaling Connection? n						
	Bypass If IP Threshold Exceeded? n						
	H.235 Annex H Required? n						
DTMF over IP: out-of-band	Direct IP-IP Audio Connections? n						
	IP Audio Hairpinning? n						
	Interworking Message: PROGress						
	DCP/Analog Bearer Capability: 3.1kHz						

Use the **add trunk-group** command to create a new H.323 trunk between the CrystalVoice ISS/IVX Server and Avaya Communication Manager. Calls going into the CrystalVoice ISS/IVX Server from Click-To-Talk clients will be directed to Avaya Communication Manager through this trunk. Configure the same number of member(s) for this trunk as in the CrystalVoice ISS/IVX Server as shown in Section 3.1, step 4. This sample configuration has 4 members. Additional members can be added on both side of the H.323 trunk to support additional calls.

add trunk-group 2	Page 1 of 19						
TRUNK GROUP							
Group Number: 2 Grou	ap Type: isdn CDR Reports: y						
Group Name: IP Trunk to Crystal Voice	COR: 1 TN: 1 TAC: 102						
Direction: two-way Outgoing I	Display? n Carrier Medium: IP						
Dial Access? n Busy The	reshold: 255 Night Service:						
Queue Length: 0							
Service Type: tie Aut	th Code? n TestCall ITC: rest						
Far End Test Line No:							
TestCall BCC: 4							
TRUNK PARAMETERS							
Codeset to Send Display: 6 Codeset to Send National IEs: 6							
Max Message Size to Send: 260 Charge Advice: none							
Supplementary Service Protocol: a Digit Handling (in/out): enbloc/enbloc							
Trunk Hunt: cyclical							
	Digital Loss Group: 18						
Incoming Calling Number - Delete: Insert: Format:							
Bit Rate: 1200 Synchronization: async Duplex: full							
Disconnect Supervision - In? y Out? n							
Answer Supervision Timeout: 0							

```
add trunk-group 2
                                                          Page
                                                                3 of 19
                               TRUNK GROUP
                                  Administered Members (min/max):
                                                                     1/4
GROUP MEMBER ASSIGNMENTS
                                       Total Administered Members:
                                                                     4
                                Night
      Port Code Sfx Name
                                                  Sig Grp
 1: IP
                                                    2
 2: IP
                                                    2
 3: IP
                                                    2
 4: IP
                                                    2
 5:
  6:
```

4.2. General Test Approach

The general approach was to attempt to access different types of Avaya IP telephones and system features from the Click-To-Talk client. These include the Avaya 4610/4620 SIP telephones, Avaya H.323 IP telephone, Voice mail, and a Meet-me conference. Both G.711 and G.729 codecs were exercised during the test. Call shuffling was not supported in all tested scenarios.

4.3. Test Results

CrystalVoice successfully completed test cases for all supported features. With call shuffling disabled, CrystalVoice Click-To-Talk successfully accessed the Avaya 4610/4620 SIP telephone, Avaya H.323 IP telephone, Voice mail, and Meet-me conference. Both Voice mail and Meet-me conference were used to verify DTMF support. The CrystalVoice ISS/IVX Server does not support any L2 (802.1Q) or L3 (DiffServ) tagging for its traffic.

5. Verification Steps

The following steps may be used to verify the configuration:

- Log in to the CrystalVoice Systems Manager via the web browser and select Network from the main menu. The following three (3) services should be in a running state.
 i) ISS
 - ii) PMA
 - iii) IVX-H323
- Place calls using Web Browser

6. Support

For technical support on the CrystalVoice product line, contact CrystalVoice Communications at support@CrystalVoice.com or 1-805-889-4260

7. Conclusion

These Application Notes describe the administration steps required to support CrystalVoice Click-To-Talk with Avaya Communication Manager. With a Web browser, a microphone and speaker, users can communicate via CrystalVoice Click-To-Talk from anywhere. Applications include, but are not limited to, access to a support center, a Voice mail system and a teleconference.

8. Additional References

Product documentation for Avaya products may be found at <u>http://support.avaya.com</u>

Product documentation for CrystalVoice products may be found at http://www.crystalvoice.com

- [1] Administrator Guide for Avaya Communication Manager, Doc # 03-300509, Issue 1, June 2005
- [2] Avaya Communication Manager Advanced Administration Quick Reference, Doc # 03-300364, Issue 2, June 2005 Release 3.0
- [3] Expanded Meet-me Conference (EMMC) version 1.0 Installation and Troubleshooting Guide for the S8500, Doc # 04-300527, Issue 1, June 2005
- [4] Avaya IA 770 INTUITY AUDIX Messaging Application, Doc # 585-313-159, Issue 4, December 2003
- [5] CrystalVoice Click-To-Talk ISS/IVX Installation Notes, Doc #5900-1026
- [6] CrystalVoice Click-To-Talk Web Components Installation Notes, Doc #5900-1004
- [7] CrystalVoice Systems Manager Reference Guide, Doc #5900-1029

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