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Introduction

The Win323 Call Generator is a high performance H.323 signaling and media load generator that is fully compliant with the ITU H.323 specification. Win323 is capable of generating many simultaneous calls using Commercial Off-the-Shelf (COTS) hardware. This allows you to determine the investment you are willing to make to achieve the performance level you desire. Using a standard single processor desktop computer, Win323s performance rivals that of much more expensive solutions that require highly specialized hardware to achieve similar results.

Win323 goes one step above the others by providing real-time call flow analysis of H.323 signaling, tracking errors over extended periods of testing, and allowing you to control the level of verbosity of logged events. These capabilities are invaluable in determining endpoint compliance, detecting network failures and latency and generally troubleshooting H.323 network paths.

Win323 allows you to construct test scenarios which model the real world environment by giving you the flexibility to control all aspects of your calls. Win323s intuitive user interface allows you to generate test scripts (call files) containing thousands of calls in less than one minute. Call files and individual call attributes can easily be modified or fine tuned using a simple, familiar spreadsheet type interface. Win323 call files can also be exported to your favorite spreadsheet program, which could allow advanced users to generate their own templates to further refine or model testing scenarios.

Win323 is the ideal tool for generating H.323 and media traffic loads without requiring special hardware investments. Win323 can be an invaluable tool to aid in the testing and debugging of new or recently deployed H.323 networks. Best of all, Win323 users can begin generating real world scenarios within minutes of installing the software!

The Win323 software is copy protected and is licensed for use on a single machine. Please make sure that you install Win323 on the machine you intend to use it on. Installation of Win323 on multiple machines is not possible without authorization from Touchstone.

The following pages will demonstrate how to install, setup, and get started with Win323. Please read the following pages carefully. They are the keys to your success.

<u>Note</u>: Win323 is designed for the advanced 32 bit and 64 bit Windows operating systems. The following operating systems are supported:

Windows 2000 Professional, Windows 2000 Server, Windows XP Professional, Windows 2003 Server, Windows 2008 Server, Vista, Window 7.Win323's capabilities automatically scale with the hardware on which it is installed.

Minimum recommended configuration:

- 2.4 MHz Pentium 4 Processor
- 512MB Ram
- 60 GB hard drive
- 1280x1024

Win323 is optimized for 1280 x 1024 displays.

The Win323 software is copy protected and is licensed for use on a single machine. Please make sure that you install Win323 on the machine with which you intend to use it. Installation of Win323 on multiple machines is not possible without authorization from Touchstone.

The following pages will demonstrate how to install, setup, and get started with Win323.

Installation Types

Win323 on CD-ROM

If you received Win323 on CD-ROM, please follow the following procedure:

- Insert the Win323 CD in your CD-ROM drive.
- The installation program should start automatically. If it does not, use Windows Explorer to browse the CD and double-click the Setup.exe file.
- Continue to the next section.

Win323 via E-Mail

If you received Win323 via E-Mail, please follow the following procedure:

- Double-click on the e-mail attachment.
- Select "Save to Disk" option and select a temporary folder to store the self-extracting file.
- Use Windows Explorer to browse to the folder you saved the selfextracting file in.
- Double-click the self-extracting file. Select a folder to extract the files to.
- Use Windows Explorer to browse to the folder you extracted the files in and double-click the Setup.exe file.
- Continue to the next section in this document.

Win323 via the Internet

If you downloaded Win323 via the internet, please use the following procedure:

- Win323's setup.exe is compressed using WinZip. Download Win323.zip and extract the setup.exe to a temporary location on the destination computer.
- Double-click on the Setup.exe file.
- Continue to the next section in this document.

Installing Win323 for Limited Users

Prior to Installation of any Touchstone Software

For any Touchstone Technologies software installation the user <u>MUST BE</u> logged on as the Administrator and / or have Administrator rights.

If Touchstone Technologies Software is going to be installed on a computer that has multiple users including users with limited rights the minimum setting required to run the software is a "Power User". The basic "User" setting does not have enough rights to run the programs no matter how it is installed.

For limited user account installations please follow the following procedure precisely.

Procedure

To install Touchstone Technologies Test Tools with limited user accounts follow the below procedure:

- 1. Log on as Administrator.
- 2. Run the setup.exe file of choice.
- 3. During the Installation wizard a screen will be display whose subject heading is "Customer Information". Please make sure the "Anyone" radial button is selected before clicking the Next button.
- 4. At the Destination Folder screen make sure to enter a different path by using the Change button.
- 5. Change the Installation directory to the units shared directory, (i.e. C:\Documents and Settings\All Users\Win323)
- 6. Continue following the instructions until the installation is finished.

Changing a User's Rights

If a user's account is set to a "Limited" or basic "User" rights, Touchstone Technologies software will not run. The minimum rights setting must be "Power User". To change a user's rights, follow the procedure below.

- 1. Log on as administrator.
- 2. On the desktop right click on My Computer, select "Manage".
- 3. Select "Local User & Groups"; then select "Users" to view list.
- 4. Right click on the user of choice, and then select properties.
- 5. Select "Member of Tab", and then click on "Add".
- 6. Click on the "Advanced" button, and then click on "Find Now" button.
- 7. Select "Power User" from list.
- 8. Click "OK", "OK", and "OK" to close windows.

Important Note

All Touchstone applications that need to be run by users who do not have administrative rights have to be installed in My Computer\Shared Documents folder.

This folder can be located either thru My Computer or thru explore at "C:\Documents & Settings\All Users\Win323".

Win323 Installation

The following screens will appear during the installation process. Please follow the directions carefully using the Next button to navigate forward and the Back button to return to a previous page.

Install Screen 1 - Preparing Setup Wizard

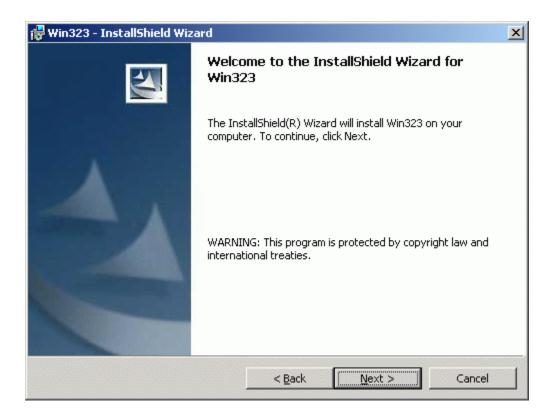
Wait for the wizard to complete or press the Cancel to quit the installation.

InstallShield Wizard	
	Preparing to Install Win323 Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
	Checking Operating System Version
	Cancel

Install Screen 2 - Beginning the Installation



Install Screen 3 - Beginning the Installation



Install Screen 4 - End-User License Agreement

Carefully read the End-User License Agreement. If you accept the terms, select the I Accept option, if you do not, select the 'I do not accept option.'

😽 Win323 - InstallShield Wizard			2
License Agreement Please read the following license agreer	ment carefully.		
END-USER LICENSE AGREEMENT F	OR Win323		<u> </u>
IMPORTANT - READ CAREFULLY: This legal agreement between you (eithe Touchstone Technologies, Inc. ("TOU identified above, which includes com media, printed materials, and "online PRODUCT"). The SOFTWARE PRODUC supplements to the original SOFTWA Technologies. Any software provide associated with a separate end-used the terms of that license agreement	er an individual JCHSTONE") fo aputer softward e″or electronic T also includes RE PRODUCT p d along with th r license agree	or a single entity r the software pr and may include documentation any updates any rovided to you by SOFTWARE PR(ment is licensed	y) and oduct e associated ("SOFTWARE d y Touchstone DDUCT that is to you under
• I accept the terms in the license agreen	nent		
$ \mathbb{C}$ I $\underline{d} o$ not accept the terms in the license	agreement		
InstallShield			
	< <u>B</u> ack	<u>N</u> ext >	Cancel

Install Screen 5 - Readme Information

🙀 Win323 - InstallShield Wizard	. 🗆 🗙
Readme Information Please read the following readme information carefully.	
Thank you for your interest in Touchstone Technologies, Inc. Win323 . The Win323 Call Generator is designed to create demanding "Real-world" load conditions. The tool can be used for gatekeeper signaling as well as call signaling. The Win323 Call Generator capable of generating up to 1000 simultaneous signaling only calls or 400 calls with media, they can be set up and pulled down continually, simulating heavy loading on the network - crucial for testing large scale gateways between a packet network and switched circuit network.	
Networks can be pre-qualified through stress and load testing using packetized audio and video output streams. Monitor protocol signaling and packet throughput for QOS during heavy traffit to determine the maximum number of endpoints your network will support. Touchstone's Win323 Call Generator can be used to supply real-time H.323 Voice and Video over IP bit streams for endpoint analysis of products under development. The Win323 Call Generator can generate many call streams to load the network, servers, gateways, routers and gatekeepers with siznaling and pavload data. for evaluation of equipment under heavy stress conditions.	1
< <u>B</u> ack <u>Next</u> <u>C</u> anc	el

Install Screen 6 - Customer Information

Please fill in your customer information and select the appropriate security option.

🙀 Win323 - InstallShield Wizard			×
Customer Information			
Please enter your information.			
User Name:			
Touchstone Customer			
Organization:			
Touchstone Technologies Inc.			
Install this application for:			
Anyone who uses this a	computer (all users	;)	
C Only for me (Brian)			
InstallShield			
	< <u>B</u> ack	<u>N</u> ext >	Cancel

Install Screen 7 - Destination Folder

Please select the folder in which you would like to install Win323 and its components.

🙀 Win323 -	InstallShield Wizard			×
Destinatio Click Nex	on Folder It to install to this folder, or clic	k Change to insta	all to a different folder	
	Install Win323 to: C:\Win323\			<u>C</u> hange
InstallShield –		< <u>B</u> ack	Next >	Cancel

Install Screen 8 - Ready to Install

Press the Install button to continue the installation or Cancel to quit.

🖶 Win323 - InstallShield Wizard	X
Ready to Install the Program	
The wizard is ready to begin installation.	
If you want to review or change any of your installation settings, click Back. Cl exit the wizard.	ick Cancel to
Current Settings:	
Setup Type:	
Destination Folder:	
C:\Win323Gen\	
User Information:	
Name: Touchstone Customer	
Company: Touchstone Technologies Inc.	
InstallShield	
< <u>B</u> ack [Install]	Cancel

For Windows 7 or Windows Server 2008, the screen below will appear. Please select "All Users" and press Install.

🙀 Win323 - InstallShie	ld Wizard	X
Ready to Install the The wizard is ready to	to be water and	4
If you want to review exit the wizard.	or change any of your installation settings, c	lick Back. Click Cancel to
Install this application	for: Anyone who uses this computer (all users)	
	Only for <u>m</u> e (Joe)	
InstallShield	< <u>B</u> ack Ins	tal Cancel

Install Screen 9 - Installing Win323

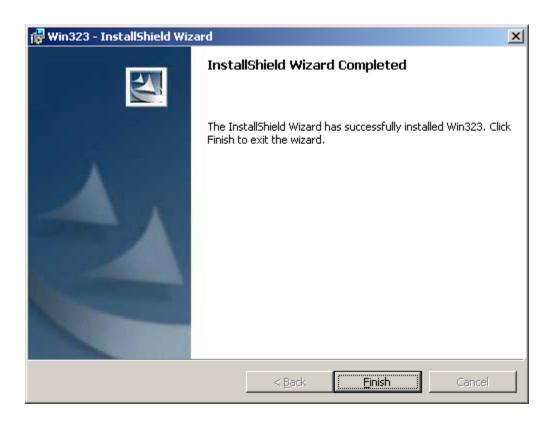
This screen will appear during the installation to inform you of the progress.

Typically this screen will only appear for a very brief period of time.

🙀 Win323 -	- InstallShield Wizard	
Installing The prog	y Win323 gram features you selected are being installed.	N
17	Please wait while the InstallShield Wizard installs Win323. This may take several minutes.	
	Status:	
InstallShield –	< <u>B</u> ack <u>N</u> ext > Cance	

Install Screen 10 - Installation Complete

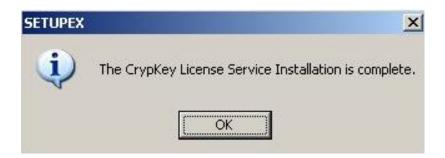
This screen will appear at the completion of the installation process. Any errors that may have occurred will be reported at this time. Should you encounter any errors, please contact Touchstone for technical assistance at +267.222.8687 or support@touchstone-inc.com.



Press the Finish button to complete the installation.

CrypKey Installation

After you press Finish button, CrypKey will automatically get installed on your machine. Once it gets installed the screen below will popup. Hit OK to Proceed.



In future, if you want to transfer the license to another machine, please see Appendix A, which gives you the step by step procedure for the license transfer.

Once you hit OK, you should be given an option to start the installation of WinPcap Driver. If you receive the below error, please click OK and go to Win323 application directory, locate "WinPcap_4_1_1.exe" setup and start the installation manually.

🙀 Win323	3 Installer Information	×
	Error 1722. There is a problem with this Windows Installer package. A program run as part of the setup did not finish as expected. Contact your support personnel or package vendor.	
	<u>OK</u>	

WinPcap Installation

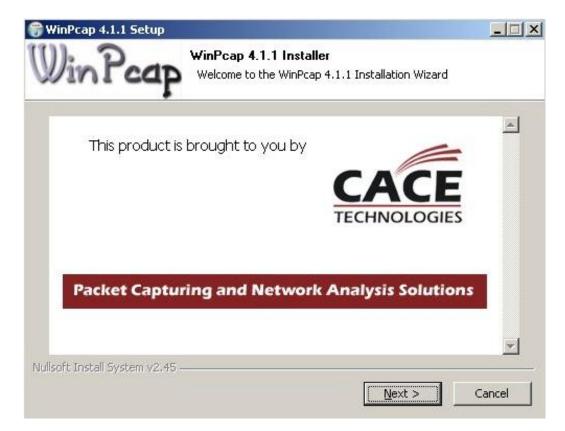
Before the installation is complete, it is necessary to install the WinPcap driver. If you have installed other products that use this driver (such as Ethereal), you will probably need to restart the computer after installation. The following screens will appear during the WinPcap installation process. Please follow the directions carefully using the "Next" button to navigate forward and the "Back" button to return to a previous page.

If you get below pop up, please press OK to force install the WinPcap Driver.



WinPCap Install Screen 1 - WinPcap Installer

Press the "Next" button to continue or the "Cancel" to quit the installation.



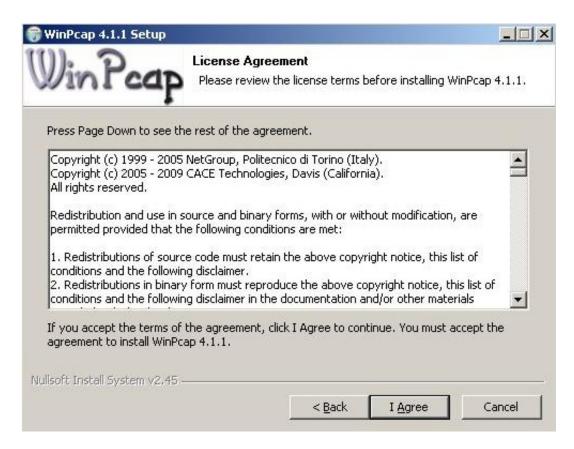
WinPCap Install Screen 2 - Welcome to the installation Wizard

Press the "Next" button to continue or the "Cancel" to quit the installation.



WinPcap Install Screen 3 - End-User License Agreement

Carefully read the License Agreement. If you accept the terms, press the "I Agree" button, if you do not, press the "Cancel" button.



WinPcap Install Screen 4 - Installation Progress

This screen will appear during the installation process. Press Install.

🗑 WinPcap 4.1.1 Setup				
WinPcap	Installation o Please review 4.1.1	ptions the following optio	ns before installin	ıg WinPcap
Automatically start (the WinPcap drive	r at boot time		
System Information				
Operating system dete True operating system npptools.dll present or netnm.inf present on t nmnt.sys present on t	i (kernel.dll): Wind in the system: tru the system: tru	lows XP - x86 ue		
Nullsoft Install System v2.45				
		< <u>B</u> ack	Install	Cancel

WinPcap Install Screen 5 - Installation Complete

The following screen will appear at the completion of the WinPcap installation.



Press the Finish button to complete the installation.

Choosing a Network Card

It has been found through extensive testing that different network adapters have a wide range of performance values.

The recommended NIC card is the <u>Intel Pro/1000 GT Desktop Adapter</u>. The manufacturer product code for this network card is PWLA8391GT.

Custom Driver Settings

Open the Computer Management Console and select the Intel Pro 1000 GT network adapter.



Right click on the Intel Pro/1000 GT adapter and select properties from the shortcut menu. With the properties displayed select the Advanced tab.

The following changes will increase the performance of this network adapter.

Set the Interrupt Moderation Rate to OFF.

Intel(R) PRO/1000 GT Desktop Adapter Properties	? ×
General Advanced Driver Details Resources Power Management	nt]
The following properties are available for this network adapter. Click the property you want to change on the left, and then select its value on the right. <u>P</u> roperty: <u>V</u> alue:	
Adaptive Inter-Frame Spacing Enable PME Flow Control Gigabit Master Slave Mode Interrupt Moderation Rate Jumbo Frames Link Speed & Duplex Locally Administered Address Log Link State Event Offload Receive IP Checksum Offload Receive IP Checksum Offload Transmit IP Checksum Offload Transmit IP Checksum QoS Packet Tagging	
OK Cano	el

Make sure all four of the offload properties are set to ON.

Intel(R) PRO/1000 GT Desktop Adapter Properties	? ×
General Advanced Driver Details Resources Power Manag The following properties are available for this network adapter. Click the property you want to change on the left, and then select its valu on the right.	
Property: ⊻alue: Link Speed & Duplex Image: Constraint of the second secon	Y
ОК	Cancel

Running Win323 for the First Time

Win323 software is copy protected and is licensed for use on a single machine. The first time you run Win323, you will be provided with a site code. You must contact Touchstone in order to obtain the authorization code to enable the software.

Once the software is authorized, it may not be installed on any other machines without a new authorization code from Touchstone. If you have installed the software on a machine in error, do not authorize that installation. Re-install it on the appropriate machine prior to contacting Touchstone for the authorization code.

Obtaining the Win323 Authorization Code

When you first run Win323 the following authorization dialog will appear:

Authorizing Win323 Profe	ssional		×
	Site Code: Authorization Code:	7F63 35AE E723 BC57 5484 80B6 0BA1 Authorize Win323 Professional	
		site code above and visit the key request pag provided in the e-mail you received when you purchased the product or contact sales@touchstone-inc.com for more information on obtaining your code. Please note that we must validate your transaction prior to issuing your permanent code. Advanced >>	e

In the field labeled Site Code a series of numbers and letters will appear. To authorize the application, contact Touchstone with the <u>exact</u> value of the site code field. Touchstone will provide the code to enter in the Authorization Code field. You must enter this <u>exactly</u> as it is provided to you in order to enable the software. It is strongly suggested that you copy the site code into an email that you send to Touchstone, and paste the authorization code from the email you receive from Touchstone. Once you have enabled the software, you are just moments away from being able to construct your first test scenarios!

Overview

Win323's main user-interface is divided into three main components:

The Edit View

This spreadsheet - like view allows quick, intuitive editing of fields, columns or blocks of data.

🗅 🚔 🔚	X 時間 🕰 🕰	- 😂 💡 📢	Mode: Initial	e Calls	- 3 🚳	9 X 🔳				
Call	Status	Local IP Address	Local E.164	Local H.323 ID	Q.931 Calling Par	Remote IP Address	Remote E.164	Remote H.323 ID	Q.931 Called Part	Call Delay
- Call 1	😭 Ready	192.168.1.111	7275551000	Maudie.Sta	2194600442	192.168.1.113	1751374817	Sergio.Boffo@	8663434454	00:00:05
Call 2	🖀 Ready	192.168.1.111	7275551001	Precious.Na	4263537267	192.168.1.113	1428921477	Laverna.Have	4186968657	00:00:05
- Call 3	😭 Ready	192.168.1.111	7275551002	Jessia.Vye@	6659741129	192.168.1.113	2543940021	Alba.Masters	2943065739	00:00:05
Call 4	😭 Ready	192.168.1.111	7275551003	Cara.Fulsta	5076014198	192.168.1.113	1532451119	Bernardine.Wi	7696776869	00:00:05
Call 5	😭 Ready	192.168.1.111	7275551004	Creola.Isely	4933855529	192.168.1.113	1586185349	Olive.Reinckey	4332138556	00:00:05
Call 6	😭 Ready	192.168.1.111	7275551005	Hildegarde	4464567536	192.168.1.113	1268796939	Samantha.Nau	6425866604	00:00:05
Call 7	🖀 Ready	192.168.1.111	7275551006	Pasquale.Zui	7368946046	192.168.1.113	1925144129	Claretha.Reau	6572027188	00:00:05
Call 8	😭 Ready	192.168.1.111	7275551007	Chi.Rebman	4495291735	192.168.1.113	1106526642	Lynda.Cowlar	3877591039	00:00:05
Call 9	😭 Ready	192.168.1.111	7275551008	Derik.Ganey	4516755658	192.168.1.113	1062475121	Eldora.Bourdel	5849849764	00:00:05
Call 10	🖀 Ready	192.168.1.111	7275551009	Peg.Postal@	3226427605	192.168.1.113	1382351684	Mariam.Cuffel	7013632929	00:00:05
	😭 Ready	192.168.1.111	7275551010	Elise.Stucki	4594077283	192.168.1.113	5153522562	Bok.Ziegelbein	2063604046	00:00:05
Call 12	😭 Ready	192.168.1.111	7275551011	Angelena.Sa	7409272418	192.168.1.113	1802630152	Moshe.Thornb	4615266328	00:00:05
- Call 13	😭 Ready	192.168.1.111	7275551012	Yazmin.Kerli	4832891923	192.168.1.113	4042066789	Wilfredo.Klavo	4445255671	00:00:05
Call 14	😭 Ready	192.168.1.111	7275551013	Nohemi.Bald	4085536103	192.168.1.113	1766065913	Herlinda.Tothe	5209076761	00:00:05
Call 15	😭 Ready	192.168.1.111	7275551014	Alayna.Criso	7628838244	192.168.1.113	1029780676	Stone.Longsta	4594102541	00:00:05
Call 16	😭 Ready	192.168.1.111	7275551015	Ismael.Wels	2227127397	192.168.1.113	5803702072	Valentina.Dan	7364574342	00:00:05
Call 17	😭 Ready	192.168.1.111	7275551016	Preston.War	2018664952	192.168.1.113	1229206571	Melinda.Lanzal	4852644158	00:00:05
Call 18	🖀 Ready	192.168.1.111	7275551017	Shavonne.S	5167167571	192.168.1.113	1120299726	Josh.Jehle@D	6843151733	00:00:05
Call 19	😭 Ready	192.168.1.111	7275551018	Benny.Merkl	3316620898	192.168.1.113	1155028598	Luther.Siebrec	4562062685	00:00:05
Call 20	😭 Ready	192.168.1.111	7275551019	Suzanna.Da	5142536621	192.168.1.113	4268650454	Peter.Cuomo	6673302728	00:00:05
Call 21	😭 Ready	192.168.1.111	7275551020	Everett.Stall	2509770981	192.168.1.113	9029419272	Thora.Younker	7436401418	00:00:05
Call 22	😭 Ready	192.168.1.111	7275551021	Eli.Hiron@C	3232429347	192.168.1.113	5065331948	Glinda.Blom@I	6533416066	00:00:05
- Call 23	😭 Ready	192.168.1.111	7275551022	Jimmy.Murr	5346116016	192.168.1.113	1884095336	Rosenda.Cagl	6214040914	00:00:05
Call 24	🖀 Ready	192.168.1.111	7275551023	Taylor.Wojd	5347184211	192.168.1.113	2402220854	Moira.Ruffcor	2259118306	00:00:05
Call 25	😭 Ready	192.168.1.111	7275551024	Latanya.De	3402394039	192.168.1.113	1112981854	Vincenza.Knau	4986482850	00:00:05
Call 26	🖀 Ready	192.168.1.111	7275551025	Lisette.Espie	7315925706	192.168.1.113	1843739397	Miguelina.Frilo	3283652441	00:00:05
Call 27	😭 Ready	192.168.1.111	7275551026	Annika.Parvi	3677420337	192.168.1.113	1304140890	Mayola.Weilka	6828548479	00:00:05
Call 28	😭 Ready	192.168.1.111	7275551027	Marcella.Hel	7339163453	192.168.1.113	2457573127	Margarete.Lan	5425424643	00:00:05
Call 29	😭 Ready	192.168.1.111	7275551028	Raymond.H	2567126482	192.168.1.113	9809303012	Brandy.Hemm	3934487751	00:00:05
Call 30	🖀 Ready	192.168.1.111	7275551029	Marissa.Paig	6595515420	192.168.1.113	1180130232	Lashon.Prego	3763586371	00:00:05
Call 31	😭 Ready	192.168.1.111	7275551030	Eusebia.Gav	4557065624	192.168.1.113	1107670277	Cydney.Bejcz	4806161269	00:00:05
Call 32	🖀 Ready	192.168.1.111	7275551031	Miracle.Lync	7324578836	192.168.1.113	1900850344	Perry.Alcorn@	7872219540	00:00:05
Call 33	😭 Ready	192.168.1.111	7275551032	Euna.Witten	5026319956	192.168.1.113	1570837701	Edwina.Steret	4504090520	00:00:05
Call 34	🖀 Ready	192.168.1.111	7275551033	Alvin.Winkle	5052302900	192.168.1.113	7447183879	Shelly.Mcasey	3306435825	00:00:05
Call 35	😭 Ready	192.168.1.111	7275551034	Sharika.Kabr	7488575405	192.168.1.113	1135978285	Juli.Kwiatkows	2919258944	00:00:05
Call 36	😭 Ready	192.168.1.111	7275551035	Xavier.Fickle	3277062218	192.168.1.113	1931980645	Kyle.Corthout	2167837150	00:00:05
Call 37	😭 Ready	192.168.1.111	7275551036	Laurence.M	2964215121	192.168.1.113	1255628151	Kay.Zvacek@	2633527323	00:00:05
- Call 38	😭 Ready	192.168.1.111	7275551037	Anamaria.Sc	4217299767	192.168.1.113	8819840321	Bunny.Langtre	7296973379	00:00:05
Call 39	😭 Ready	192.168.1.111	7275551038	Kiley.Vaihing	2149568563	192.168.1.113	1694623481	Alvaro.Maisen	4627507711	00:00:05
Call 40	😭 Ready	192.168.1.111	7275551039	Ashely.Wec	2716248146	192.168.1.113	1415907921	Mari.Lepard@	7079547301	00:00:05
Call 41	😭 Ready	192.168.1.111	7275551040	Mi.Eichstaed	6502466612	192.168.1.113	3328453035	Phillis.Pastana	3934267967	00:00:05
Call 42	🖀 Ready	192.168.1.111	7275551041	Julian.Pue@	3266251651	192.168.1.113	1877736761	Junior.Horung	4979913746	00:00:05
Call 43	😭 Ready	192.168.1.111	7275551042	Riley.Wisem	5415767319	192.168.1.113	5096155316	Reina.Nemece	4538447475	00:00:05
Call 44	🖀 Ready	192.168.1.111	7275551043	Jordon.Zwa	7288341285	192.168.1.113	1390236345	Katy.Odum@	5655146985	00:00:05
Call 45	🚔 Ready	192.168.1.111	7275551044	Erika.Zarets	2954139798	192.168.1.113	1433131204	Fanny.Grise@	4289439331	00:00:05
Call 46	😭 Ready	192.168.1.111	7275551045	Dagmar.Visn	5022834313	192.168.1.113	4987083221	Santiago.Duin	5307753214	00:00:05
Call 47	😭 Ready	192.168.1.111	7275551046	Linn.Cashwe	5297302922	192.168.1.113	1032415642	Betsy.Naish@	4864255168	00:00:05
Call 48	🖀 Ready	192.168.1.111	7275551047	Raina.Lazes	5645743891	192.168.1.113	9816193432	Gene.Barrinea	7217189444	00:00:05
Call 49	😭 Ready	192.168.1.111	7275551048	Juana.Com	5637610243	192.168.1.113	5496333781	Maria.Bel@Alg	3873975964	00:00:05
Call 50	🖀 Ready	192.168.1.111	7275551049	Melisa.Brem	5638077724	192.168.1.113	1402013627	Marie.Cywa@	6394150126	00:00:05
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The Main View

This multi-column view is the main control panel for defining the contents of a session (i.e. selecting the calls to be run) and launching additional or stopping calls within that session.

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Win323			14	·							
nachterer Technol	lugios										
Select:	51 to	240		Available Ca	alls: 190	Select	1 to	50 <<		Selected Call	s:
ndex	Call		Local E.164	Remote IP Address	130	Index	Call	Local IP Address	LevelE 104	Remote IP Address	Remote E
00051	Call 51	192.168.1.111	7275551050	192.168.1.113	759596	100001	Call 1	192.168.1.111		192.168.1.113	17513748
00051	Call 52	192.168.1.111	7275551050	192.168.1.113	184280654	a 00001 a 00002	Call 2	192.168.1.111	7275551000	192.168.1.113	14289214
00052	Call 53	192.168.1.111		192.168.1.113	6831925	a 00002 a 00003	Call 2	192.168.1.111		192.168.1.113	25439400
00053					148936535	a 00003 a 00004					
00054	Call 54 Call 55	192.168.1.111	7275551053 7275551054	192.168.1.113	14893653	a 00004 a 00005	Call 4 Call 5	192.168.1.111		192.168.1.113	15324511
		192.168.1.111		192.168.1.113				192.168.1.111		192.168.1.113	15861853
00056	Call 56	192.168.1.111	7275551055	192.168.1.113	9137195	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 	Call 6	192.168.1.111		192.168.1.113	12687969
00057	Call 57	192.168.1.111	7275551056	192.168.1.113	5478667	1 00007	Call 7	192.168.1.111		192.168.1.113	192514413
00058	Call 58	192.168.1.111		192.168.1.113	465528	80000	Call 8	192.168.1.111		192.168.1.113	11065266
00059	Call 59	192.168.1.111	7275551058	192.168.1.113	143042265	(2) 00009	Call 9	192.168.1.111		192.168.1.113	10624751
\$ 00060	Call 60	192.168.1.111	7275551059	192.168.1.113	10542951	(2) 00010	Call 10	192.168.1.111		192.168.1.113	13823516
00061	Call 61	192.168.1.111	7275551060	192.168.1.113	4167004	a 00011	Call 11	192.168.1.111		192.168.1.113	51535225
00062	Call 62	192.168.1.111	7275551061	192.168.1.113	63724442	(*) 00012	Call 12	192.168.1.111		192.168.1.113	18026301
00063	Call 63	192.168.1.111		192.168.1.113	9767362(a 00013	Call 13	192.168.1.111		192.168.1.113	40420667
00064	Call 64	192.168.1.111		192.168.1.113	983134	(2) 00014	Call 14	192.168.1.111		192.168.1.113	17660659
00065	Call 65	192.168.1.111	7275551064	192.168.1.113	1406067	a 00015 (a 100015)	Call 15	192.168.1.111		192.168.1.113	10297806
3 00066	Call 66	192.168.1.111		192.168.1.113	18396931((2) 00016	Call 16	192.168.1.111		192.168.1.113	58037020
00067	Call 67	192.168.1.111	7275551066	192.168.1.113	10399498	(2) 00017	Call 17	192.168.1.111	7275551016	192.168.1.113	12292065
\$ 00068	Call 68	192.168.1.111	7275551067	192.168.1.113	225616	(2) 00018	Call 18	192.168.1.111	7275551017	192.168.1.113	11202997
\$ 00069	Call 69	192.168.1.111	7275551068	192.168.1.113	1308829*	a 00019 🖾	Call 19	192.168.1.111	7275551018	192.168.1.113	11550285
\$ 00070	Call 70	192.168.1.111	7275551069	192.168.1.113	17348154	(2) 00020	Call 20	192.168.1.111	7275551019	192.168.1.113	42686504
00071	Call 71	192.168.1.111	7275551070	192.168.1.113	54378532	(2) 00021	Call 21	192.168.1.111	7275551020	192.168.1.113	90294192
00072	Call 72	192.168.1.111	7275551071	192.168.1.113	10335709	1 00022	Call 22	192.168.1.111	7275551021	192.168.1.113	50653319
00073	Call 73	192.168.1.111	7275551072	192.168.1.113	1688164	(2) 00023	Call 23	192.168.1.111	7275551022	192.168.1.113	18840953
00074	Call 74	192.168.1.111	7275551073	192.168.1.113	9871678;	(2) 00024	Call 24	192.168.1.111	7275551023	192.168.1.113	24022208
00075	Call 75	192.168.1.111	7275551074	192.168.1.113	166763174	(2) 00025	Call 25	192.168.1.111	7275551024	192.168.1.113	11129818
00076	Call 76	192.168.1.111	7275551075	192.168.1.113	17161809	1 00026	Call 26	192.168.1.111		192.168.1.113	18437393
00077	Call 77	192.168.1.111	7275551076	192,168,1,113	191996495	1 00027	Call 27	192.168.1.111		192,168,1,113	13041408
00078	Call 78	192.168.1.111		192.168.1.113	26798	1 00028	Call 28	192.168.1.111		192.168.1.113	24575731
00079	Call 79	192,168,1,111	7275551078	192,168,1,113	1478374	a 00029	Call 29	192.168.1.111		192.168.1.113	98093030
000080	Call 80	192.168.1.111	7275551079	192.168.1.113	1515480:	a 00020 (a) 00030	Call 30	192.168.1.111		192.168.1.113	11801302
00081	Call 81	192.168.1.111	7275551080	192.168.1.113	1384377	a 00030 00031	Call 31	192.168.1.111		192.168.1.113	11076702
00082	Call 82	192.168.1.111	7275551080	192.168.1.113	2752377	a 00031	Call 32	192.168.1.111		192.168.1.113	19008503
00082	Call 83	192.168.1.111		192.168.1.113	199092	a 00032 a 00033	Call 33	192.168.1.111		192.168.1.113	15708377
00083	Call 84	192.168.1.111	7275551082	192.168.1.113	18339	a 00033 a 00034	Call 33 Call 34	192.168.1.111		192.168.1.113	74471838
00085	Call 85	192.168.1.111		192.168.1.113	6809274	(C) 00035	Call 35	192.168.1.111		192.168.1.113	11359782
00086	Call 86	192.168.1.111	7275551085	192.168.1.113	1089836(a 00036	Call 36	192.168.1.111		192.168.1.113	19319806
00087	Call 87	192.168.1.111	7275551086	192.168.1.113	3861706	<pre>(2) 00037</pre>	Call 37	192.168.1.111		192.168.1.113	12556281
\$ 00088	Call 88	192.168.1.111		192.168.1.113	175212315	(2) 00038	Call 38	192.168.1.111		192.168.1.113	88198403
00089	Call 89	192.168.1.111	7275551088	192.168.1.113	19018984	(2) 00039	Call 39	192.168.1.111		192.168.1.113	16946234
🗳 00090	Call 90	192.168.1.111	7275551089	192.168.1.113	121459(a 00040 a 1	Call 40	192.168.1.111		192.168.1.113	14159079
00091	Call 91	192.168.1.111	7275551090	192.168.1.113	10404935	a 00041 (Contemporation)	Call 41	192.168.1.111		192.168.1.113	33284530
00092	Call 92	192.168.1.111	7275551091	192.168.1.113	17259782	(2) 00042	Call 42	192.168.1.111	7275551041		18777367
\$ 00093	Call 93	192.168.1.111	7275551092	192.168.1.113	1103681	(2) 00043	Call 43	192.168.1.111	7275551042	192.168.1.113	50961553
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The Detail View

This view presents the session detail information. Active calls, call flows and media stream QoS details are provided within its tabular style interface.

Start 15 14 14	Pass F	ail BAS			0	Deta			Second rage antaneous
14	15	ali nao	H.225	H.245	Audio	Video		Packet Count	
	10	Skipped	Passed	Passed	TX/RX	TX/RX			Second
14	14	Skipped	Passed	Passed	TX/BX	TX/BX		RAS 0 0.00	0.00
	14	Skipped	Passed	Passed	TX/BX	TX/BX		H.225 823 753 5.30	4.85
13	13	Skipped	Passed	Passed	TX/BX	TX/BX		H.245 3,179 4,224 20.48 RTP Audio 227,607 227,684 1,466,25 1	27.21
13	13	Skipped	Passed	Passed	TX/BX	TX/BX		RTP Video 68.864 115.358 443.62	743.14
12	12	Skipped	Passed	Passed	TX/BX	TX/BX		Lost Audio 0 0.00	140.14
								Lost Video 0 0.00	
0.57	0.000							RTCP Audio 878 925 5.66	5.96
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								value Q.931 ::= Call Signalling :	
	0.556	Skipped	Passed	Passed				(
		Skipped	Passed	Passed	TX/RX	TX/RX			
7	7	Skipped	Passed	Passed	TX/BX	TX/BX			
7	7	Skipped	Passed	Passed	TX/BX	TX/BX			
6	6	Skipped	Passed	Passed	TX/BX	TX/BX	-		
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IO <> H.225 IO > H.225 I3 <	Setup Connect Terminal Capa Master Slave I Terminal Capa	ability Set Determination ability Set	Informati	on 9E665D68P	533194620	72A		Message Type - Setup Length 01 Octet Value 05 0.931 Information Elements : 05 Bearer Capability Length 4 Octets	
IO < H.225 10 > H.225 13 <	Setup Connect Terminal Capa Master Slave I Terminal Capa Master Slave I	ability Set Determination ability Set Determination	Informati	on 9E665D68P	533194620	72A		Message Type - Setup Length 01 Octet Value 05 0.931 Information Elements : Bearer Capability Length 4 Octets Value 881882A5 Decode : Octet 3	
IO <> H.225 IO > H.225 I3 <	Setup Connect Terminal Capa Master Slave I Terminal Capa Master Slave I Terminal Capa	ability Set Determination ability Set Determination	Informati	on 9E665D68P	533194620	72A		Message Type - Setup Length 01 Octet Value 05 0,931 Information Elements : Bearer Capability Length 4 Octets Value 881882A5 Decode : Octet 3 Extension	
ID <> H.225 IO > H.245 I3 <	Setup Connect Terminal Capa Master Slave I Terminal Capa Master Slave I Terminal Capa Master Slave I	ability Set Determination ability Set Determination ability Set Ack Determination Ack ability Set Ack	Informati 66196869 68196869 Slave	on 9E665D68P	533194620	72A		Message Type - Setup Length 01 Octet Value 05 0.931 Information Elements : Bearer Capability Length 4 Octets Value 881882AS Decode : Octet 3 Extension Extension Bit is Set	
ID H.225 IO > H.225 IO > H.245	Setup Connect Terminal Capa Master Slave (Terminal Capa Master Slave (Master Slave (Terminal Capa Master Slave (ability Set Determination ability Set Determination ability Set Ack Determination Ack ability Set Ack Determination Ack	Informati 68196869 68196869 Slave Master	on 9E665D68P	533194620	72A		Message Type - Setup Length 01 Octet Value 05 () 931 Information Elements : Bearer Capability Length 4 Octets Value 881882AS Decode : Octet 3 Extension Extension Bit is Set Coding Standard	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Setup Connect Terminal Capa Master Slave I Terminal Capa Master Slave I Terminal Capa Master Slave I Terminal Capa Master Slave I Open Logical (ability Set Determination ability Set Determination ability Set Ack Determination Ack ability Set Ack Determination Ack Channel	Informati 68196869 68196869 Slave Master Audio	on 9E665D68P	533194620	72A		Message Type - Setup Length 01 Octet Value 05 0.931 Information Elements : Bearer Capability Length 4 Octets Value 881882A5 Decode : Octet 3 Extension Extension Bit is Set Coding Standard ITU-T	
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J		11 11 11 11 10 10 9 9 8 8 8 8 7 7 7 7 7 7 6 6	11 11 Skipped 11 11 Skipped 10 10 Skipped 9 9 Skipped 9 9 Skipped 8 8 Skipped 8 8 Skipped 7 7 Skipped 6 6 Skipped	11 11 Skipped Passed 10 10 Skipped Passed 10 10 Skipped Passed 9 9 Skipped Passed 9 9 Skipped Passed 8 8 Skipped Passed 7 7 Skipped Passed 7 7 Skipped Passed 6 6 Skipped Passed	12 12 Skipped Passed Passed 11 11 Skipped Passed Passed 11 11 Skipped Passed Passed 10 10 Skipped Passed Passed 10 10 Skipped Passed Passed 9 9 Skipped Passed Passed 9 9 Skipped Passed Passed 8 8 Skipped Passed Passed 7 7 Skipped Passed Passed 7 7 Skipped Passed Passed	12 12 Skipped Passed Passed TX/RX 11 11 Skipped Passed Passed TX/RX 11 11 Skipped Passed Passed TX/RX 10 10 Skipped Passed Passed TX/RX 10 10 Skipped Passed Passed TX/RX 9 9 Skipped Passed Passed TX/RX 9 9 Skipped Passed Passed TX/RX 8 8 Skipped Passed Passed TX/RX 8 8 Skipped Passed Passed TX/RX 8 8 Skipped Passed TX/RX 7 7 Skipped Passed Passed TX/RX 7 7 Skipped Passed Passed TX/RX	12 12 Skipped Passed Passed TX/RX TX/RX 11 11 Skipped Passed Passed TX/RX TX/RX 11 11 Skipped Passed Passed TX/RX TX/RX 10 10 Skipped Passed Passed TX/RX TX/RX 10 10 Skipped Passed Passed TX/RX TX/RX 9 9 Skipped Passed Passed TX/RX TX/RX 9 9 Skipped Passed Passed TX/RX TX/RX 8 8 Skipped Passed Passed TX/RX TX/RX 8 8 Skipped Passed Passed TX/RX TX/RX 7 7 Skipped Passed Passed TX/RX TX/RX	12 12 Skipped Passed Passed TX/RX TX/RX 11 11 Skipped Passed Passed TX/RX TX/RX 11 11 Skipped Passed Passed TX/RX TX/RX 10 10 Skipped Passed Passed TX/RX TX/RX 10 10 Skipped Passed Passed TX/RX TX/RX 9 9 Skipped Passed Passed TX/RX TX/RX 9 9 Skipped Passed Passed TX/RX TX/RX 8 8 Skipped Passed Passed TX/RX TX/RX 8 8 Skipped Passed Passed TX/RX TX/RX 7 7 Skipped Passed Passed TX/RX TX/RX	12 12 Skipped Passed TX/RX TX

Files Used By Win323

Call Files

Typically, call files are generated and edited via the Edit View. Win323 call files are ASCII text files with field value separated by tab characters. This format allows users desiring so to use commercial spreadsheets, word processors or scripting tools such as PERL to generate call files that match their specific scenario requirements. Call files represent the individually controllable attributes of calls within a session.

Parameter Files

Parameter files contain the session and system settings that are common for all the calls in a session. The attributes of the parameter file in conjunction with the call file determine the characteristics of a session.

Session Settings File

This file contains the user-defined preferences as well as application state information.

Setting up Win323

Win323's factory defaults are set to allow you to get up-and-running quickly in point-to-point mode. You should review these settings by accessing the Options | Settings menu option and reviewing each of the tabs. The online help provides specific information on the each of the fields. We highly recommend that you run calls between two Win323s to ensure that the network connections are functioning and that the settings are configured properly.

When you enter Win323 for the first time or when you select New Call File, Win323 provides the call generation screens to allow you to define the call file properties. This is the quickest and easiest way to enter calls in just a few minutes. You may of course, cancel out of this screen and enter the information freeform if desired.

User Interface

Modes of operation

The first step in preparing to run Win323 is to determine which mode you would like to operate in.

Win323 offers the following modes of operation:

Initiate Calls

This mode initiates (places) calls during the session. The selected calls are placed in a start queue, which can have a garden hose effect on call start-up. This queue can run wide-open, without putting any limit on the number of calls, which can start simultaneously, or it can let a prescribed number start in any given second. Calls may also have their own individual start delays to form a more random pattern, simulating real-world conditions.

In initiate mode, each call will run once, indefinitely, or a specific number of times until stopped by the user for the duration you have entered. You may stop or terminate the calls at any time.

Answer Calls

This mode registers calls with a gatekeeper first, and then responds to inbound calls during the session. The selected calls are started immediately and look for inbound Setups messages on the IP address and port that they registered with the gatekeeper.

In answer mode, each call will run once, indefinitely or a specific number of times until stopped by the user for the duration you have entered.

You may stop or terminate the calls at any time.

Unattended Answer Calls

This mode responds to unscripted inbound calls arriving on the well-known H.225 port for any IP address on the PC. No scripted calls may be selected during this time.

You may stop the active calls at any time. To terminate the Unattended Answer Mode press the 'Terminate All Calls' button.

Gatekeeper Calls

This mode registers and unregisters with a gatekeeper during the session. The selected calls are placed in a start queue, which can have a garden hose effect on call start-up. This queue can run wide-open, without putting any limit on the number of calls, which can start simultaneously, or it can let a prescribed number start in any given second.

Calls may also have their own individual start delays to form a more random pattern, simulating real-world conditions.

In gatekeeper mode, each call will run once, indefinitely or a specific number of times until stopped by the user for the duration you have entered.

You may stop or terminate the calls at any time.

Gatekeeper Emulation

In this mode, Win323 serves as a simple gatekeeper and listens on the wellknown port for the currently selected IP address. It responds to all mandatory RAS messages and can keep track of thousands of registered endpoints.

The Edit View

This is the view designed to facilitate editing individual call parameters and manipulating call files. This view has a spreadsheet style interface.

D 🗳 🖬 🛛		. 😂 🤋 🐶	Mode: Initiat	e Calls	- 3 -	9 X 🛄				
Call	Status	Local IP Address	Local E.164	Local H.323 ID	Q.931 Calling Par	Remote IP Address	Remote E.164	Remote H.323 ID	Q.931 Called Part	Call Delay
- Call 1	😭 Ready	192.168.1.111	7275551000	Maudie.Sta	2194600442	192.168.1.113	1751374817	Sergio.Boffo@	8663434454	00:00:05
- Call 2	🞏 Ready	192.168.1.111	7275551001	Precious.Na	4263537267	192.168.1.113	1428921477	Laverna.Have	4186968657	00:00:05
Call 3	🖀 Ready	192.168.1.111	7275551002	Jessia.Vye@	6659741129	192.168.1.113	2543940021	Alba.Masters	2943065739	00:00:05
- Call 4	🖀 Ready	192.168.1.111	7275551003	Cara.Fulsta	5076014198	192.168.1.113	1532451119	Bernardine.Wi	7696776869	00:00:05
Call 5	😭 Ready	192.168.1.111	7275551004	Creola.Isely	4933855529	192.168.1.113	1586185349	Olive.Reinckey	4332138556	00:00:05
Call 6	😭 Ready	192.168.1.111	7275551005	Hildegarde	4464567536	192.168.1.113	1268796939	Samantha.Nau	6425866604	00:00:05
Call 7	😭 Ready	192.168.1.111	7275551006	Pasquale.Zui	7368946046	192.168.1.113	1925144129	Claretha.Reau	6572027188	00:00:05
Call 8	🖀 Ready	192.168.1.111	7275551007	Chi.Rebman	4495291735	192.168.1.113	1106526642	Lynda.Cowlar	3877591039	00:00:05
Call 9	😭 Ready	192.168.1.111	7275551008	Derik.Ganey	4516755658	192.168.1.113	1062475121	Eldora.Bourdel	5849849764	00:00:05
Call 10	🖀 Ready	192.168.1.111	7275551009	Peg.Postal@	3226427605	192.168.1.113	1382351684	Mariam.Cuffel	7013632929	00:00:05
Call 11	🖀 Ready	192.168.1.111	7275551010	Elise.Stucki	4594077283	192.168.1.113	5153522562	Bok.Ziegelbein	2063604046	00:00:05
Call 12	Teady Ready	192.168.1.111	7275551011	Angelena.Sa	7409272418	192.168.1.113	1802630152	Moshe.Thornb	4615266328	00:00:05
Call 13	TReady	192.168.1.111	7275551012	Yazmin.Kerli	4832891923	192.168.1.113	4042066789	Wilfredo.Klavo	4445255671	00:00:05
Call 14	🖀 Ready	192.168.1.111	7275551013	Nohemi.Bald	4085536103	192.168.1.113	1766065913	Herlinda.Tothe	5209076761	00:00:05
Call 15	Ready	192.168.1.111	7275551014	Alayna.Criso	7628838244	192.168.1.113	1029780676	Stone.Longsta	4594102541	00:00:05
Call 16	Ready	192.168.1.111	7275551015	Ismael.Wels	2227127397	192.168.1.113	5803702072	Valentina.Dan	7364574342	00:00:05
Call 17	🖀 Ready	192,168,1,111	7275551016	Preston.War	2018664952	192.168.1.113	1229206571	Melinda.Lanzal	4852644158	00:00:05
Call 18	Ready	192.168.1.111	7275551017	Shavonne.S	5167167571	192.168.1.113	1120299726	Josh.Jehle@D	6843151733	00:00:05
Call 19	Ready	192.168.1.111	7275551018	Benny.Merkl	3316620898	192.168.1.113	1155028598	Luther.Siebrec	4562062685	00:00:05
Call 20	Ready	192.168.1.111	7275551019	Suzanna.Da	5142536621	192.168.1.113	4268650454	Peter.Cuomo	6673302728	00:00:05
-Call 21	😭 Ready	192.168.1.111	7275551020	Everett.Stall	2509770981	192.168.1.113	9029419272	Thora.Younker	7436401418	00:00:05
Call 22	🖀 Ready	192.168.1.111	7275551021	Eli.Hiron@C	3232429347	192.168.1.113	5065331948	Glinda.Blom@I	6533416066	00:00:05
Call 23	🖀 Ready	192.168.1.111	7275551022	Jimmy.Murr	5346116016	192.168.1.113	1884095336	Rosenda.Cagl	6214040914	00:00:05
Call 24	Ready	192.168.1.111	7275551023	Taylor.Wojd	5347184211	192.168.1.113	2402220854	Moira.Ruffcor	2259118306	00:00:05
Call 25	Ready	192.168.1.111	7275551024	Latanya.De	3402394039	192.168.1.113	1112981854	Vincenza.Knau	4986482850	00:00:05
Call 26	🖀 Ready	192.168.1.111	7275551025	Lisette.Espie	7315925706	192.168.1.113	1843739397	Miguelina.Frilo	3283652441	00:00:05
Call 27	Ready	192.168.1.111	7275551026	Annika.Parvi	3677420337	192.168.1.113	1304140890	Mayola.Weilka	6828548479	00:00:05
Call 28	Ready Ready	192.168.1.111	7275551027	Marcella.Hel	7339163453	192.168.1.113	2457573127	Margarete.Lan	5425424643	00:00:05
Call 29	TReady Ready	192.168.1.111	7275551028	Raymond.H	2567126482	192.168.1.113	9809303012	Brandy.Hemm	3934487751	00:00:05
Call 30	Ready Ready	192.168.1.111	7275551029	Marissa.Paig	6595515420	192.168.1.113	1180130232	Lashon.Prego	3763586371	00:00:05
	Ready Ready	192.168.1.111	7275551030	Eusebia.Gav	4557065624	192.168.1.113	1107670277	Cydney.Bejcz	4806161269	00:00:05
Call 32	Ready Ready	192.168.1.111	7275551031	Miracle.Lync	7324578836	192.168.1.113	1900850344	Perry.Alcorn@	7872219540	00:00:05
	Ready Ready	192.168.1.111	7275551032	Euna.Witten	5026319956	192.168.1.113	1570837701	Edwina.Steret	4504090520	00:00:05
Call 34	Ready Ready	192.168.1.111	7275551033	Alvin.Winkle	5052302900	192.168.1.113	7447183879	Shelly.Mcasey	3306435825	00:00:05
Call 35	Ready Ready	192.168.1.111	7275551034	Sharika.Kabr	7488575405	192.168.1.113	1135978285	Juli.Kwiatkows	2919258944	00:00:05
Call 36	Ready Ready	192.168.1.111	7275551035	Xavier.Fickle	3277062218	192.168.1.113	1931980645	Kyle.Corthout	2167837150	00:00:05
	Ready Ready	192.168.1.111	7275551036	Laurence.M	2964215121	192.168.1.113	1255628151	Kay.Zvacek@	2633527323	00:00:05
Call 37	Ready Ready	192.168.1.111	7275551037	Anamaria.Sc	4217299767	192.168.1.113	8819840321	Bunny.Langtre	7296973379	00:00:05
	Ready	192.168.1.111	7275551037	Kiley.Vaihing	2149568563	192.168.1.113	1694623481	Alvaro.Maisen	4627507711	00:00:05
Call 39	Ready Ready	192.168.1.111	7275551030	Ashely.Wec	2716248146	192.168.1.113	1415907921	Mari.Lepard@	7079547301	00:00:05
	Ready	192.168.1.111	7275551039	Mi.Eichstaed	6502466612	192.168.1.113	3328453035	Phillis.Pastana	3934267967	00:00:05
	Ready Ready	192.168.1.111	7275551040	Julian.Pue@	3266251651	192.168.1.113	1877736761	Junior.Horung	4979913746	00:00:05
Call 43	Ready Ready	192.168.1.111	7275551041	Riley.Wisem	5415767319	192.168.1.113	5096155316	Reina.Nemece	4538447475	00:00:05
	Ready Ready	192.168.1.111	7275551042	Jordon.Zwa	7288341285	192.168.1.113	1390236345	Katy.Odum@	5655146985	00:00:05
Call 44 Call 45	Ready	192.168.1.111	7275551043	Erika.Zarets	2954139798	192.168.1.113	1433131204	Fanny.Grise@	4289439331	00:00:05
	Ready Ready	192.168.1.111	7275551044	Dagmar.Visn	5022834313	192.168.1.113	4987083221		5307753214	00:00:05
	Ready							Santiago.Duin		
Call 47 Call 48	Ready	192.168.1.111	7275551046	Linn.Cashwe	5297302922	192.168.1.113	1032415642	Betsy.Naish@	4864255168	00:00:05
Call 48 Call 49	Ready	192.168.1.111	7275551047	Raina.Lazes	5645743891	192.168.1.113	9816193432	Gene.Barrinea	7217189444	00:00:05
		192.168.1.111	7275551048	Juana.Com	5637610243	192.168.1.113	5496333781	Maria.Bel@Alg	3873975964	00:00:05
Call 50	🖀 Ready	192.168.1.111	7275551049	Melisa.Brem	5638077724	192.168.1.113	1402013627	Marie.Cywa@	6394150126	00:00:05

To enter 'edit mode', position your cursor over a data cell (any cell except 'Status'), hold down the 'Alt' key and press the left mouse button. You may now edit the value within that field. To move between fields, you may use the following keys:

Tab: This moves one column to the right (wrapping to the next line at the end).

<u>Shift + Tab</u>: This moves one column to the left (wrapping to the previous line at the beginning).

<u>Down Arrow</u>: This moves one row down (wrapping to the first line at the end).

<u>Up Arrow</u>: This moves one row up (wrapping to the last line at the top).

Any of the previous actions validate (and if successful, update) the data in the current cell prior to navigation.

To exit the edit mode and update the data, press the enter key. Changes in the data will be validated upon exiting.

To exit edit mode and discard the data, press the escape (Esc) key.

To edit an entire column of data, press the column-heading button. To edit selected values within a column, select the desired rows and press the column-heading button.

To insert a new row, highlight a row that you want the new row inserted BEFORE and press the insert (Ins) key.

To delete a row or rows, highlight the item(s) to be deleted and press the delete (Del) key.

All editing actions are supported by full multi-level undo and redo functions.

The following menu of options is available by right-clicking the mouse anywhere within the spreadsheet:

Cut Copy Paste Delete	Shift + Del Ctrl + Ins Shift + Ins Del
Insert New Call Before Insert New Call After	
Import Calls Export Calls	
Generate Call File Generate Partner File.	
Ping Remote Endpoint.	

<u>Note</u>: If Calls are started from the Edit View, only those calls will be started, not the calls from the Main View.

The Main View

This is the view designed to facilitate starting and stopping call sessions. This view has two main columns, available calls on the left and selected calls on the right. When you first load Win323, all calls in the call file will be in the left column (available calls).

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🗅 🚅 🖬	1 X 🖻 🛱	122 8 8	Node:	Initiate Calls	- ₩		X				
Win323	logies										
Select	51 to	240		Available Ca	alls: 190	Select:	1 to	50 <<		Selected Ca	lls: E
Index	Call	Local IP Address	Local E.164	Remote IP Address	_	Index	Call	Local IP Address	Local E.164	Remote IP Address	Remote E
😭 00051	Call 51	192.168.1.111	7275551050	192.168.1.113	759596	(2) 00001	Call 1	192.168.1.111	7275551000	192.168.1.113	17513748
* 00052	Call 52	192.168.1.111	7275551051	192.168.1.113	18428065	(2) 00002	Call 2	192.168.1.111	7275551001	192.168.1.113	142892147
🚔 00053	Call 53	192.168.1.111	7275551052	192.168.1.113	683192	(a) 00003	Call 3	192.168.1.111	7275551002	192.168.1.113	254394002
100054	Call 54	192.168.1.111	7275551053	192.168.1.113	14893653	a 00004 (a 1	Call 4	192.168.1.111	7275551003	192.168.1.113	153245111
🖀 00055	Call 55	192.168.1.111	7275551054	192.168.1.113	15700098	1 00005	Call 5	192.168.1.111	7275551004	192.168.1.113	158618534
100056	Call 56	192.168.1.111	7275551055	192.168.1.113	913719	(2) 00006	Call 6	192.168.1.111	7275551005	192.168.1.113	126879693
1 00057	Call 57	192.168.1.111	7275551056	192.168.1.113	5478667	(2) 00007	Call 7	192.168.1.111	7275551006	192.168.1.113	192514412
🚔 00058	Call 58	192.168.1.111	7275551057	192.168.1.113	465528*	1 100008	Call 8	192.168.1.111	7275551007	192.168.1.113	110652664
😭 00059	Call 59	192.168.1.111	7275551058	192.168.1.113	14304226!	1 00009	Call 9	192.168.1.111	7275551008	192.168.1.113	106247512
(1) 00060	Call 60	192.168.1.111	7275551059	192.168.1.113	10542951	(a) 00010	Call 10	192.168.1.111	7275551009	192.168.1.113	13823516{
😫 00061	Call 61	192.168.1.111	7275551060	192.168.1.113	4167004	(2) 00011	Call 11	192.168.1.111	7275551010	192.168.1.113	515352256
🖀 00062	Call 62	192.168.1.111	7275551061	192.168.1.113	63724442	(2) 00012	Call 12	192.168.1.111	7275551011	192.168.1.113	180263015
🚔 00063	Call 63	192.168.1.111	7275551062	192.168.1.113	9767362((2) 00013	Call 13	192.168.1.111	7275551012		404206678
🚔 00064	Call 64	192.168.1.111	7275551063	192.168.1.113	983134:	(2) 00014	Call 14	192.168.1.111	7275551013	192.168.1.113	176606591
🚔 00065	Call 65	192.168.1.111	7275551064	192.168.1.113	1406067	(2) 00015	Call 15	192.168.1.111	7275551014	192.168.1.113	102978067
🚔 00066	Call 66	192.168.1.111	7275551065	192.168.1.113	18396931((2) 00016	Call 16	192.168.1.111	7275551015	192.168.1.113	580370201
😭 00067	Call 67	192.168.1.111	7275551066	192.168.1.113	10399498	(2) 00017	Call 17	192.168.1.111	7275551016	192.168.1.113	122920657
😭 00068	Call 68	192.168.1.111	7275551067	192.168.1.113	225616	(2) 00018	Call 18	192.168.1.111	7275551017	192.168.1.113	112029972
😭 00069	Call 69	192.168.1.111	7275551068	192.168.1.113	1308829	(2) 00019	Call 19	192.168.1.111	7275551018	192.168.1.113	115502859
200070	Call 70	192.168.1.111	7275551069	192.168.1.113	17348154	(2) 00020	Call 20	192.168.1.111	7275551019	192.168.1.113	426865045
🖀 00071	Call 71	192.168.1.111	7275551070	192.168.1.113	54378532	(2) 00021	Call 21	192.168.1.111	7275551020	192.168.1.113	902941927
1 00072	Call 72	192.168.1.111	7275551071	192.168.1.113	103357098	(2) 00022	Call 22	192.168.1.111	7275551021	192.168.1.113	506533194
🖀 00073	Call 73	192.168.1.111	7275551072	192.168.1.113	1688164	(2) 00023	Call 23	192.168.1.111	7275551022	192.168.1.113	188409533
* 00074	Call 74	192.168.1.111	7275551073	192.168.1.113	98716782	(2) 00024	Call 24	192.168.1.111	7275551023	192.168.1.113	24022208
🚔 00075	Call 75	192.168.1.111	7275551074	192.168.1.113	166763174	(2) 00025	Call 25	192.168.1.111	7275551024	192.168.1.113	111298185
* 00076	Call 76	192.168.1.111	7275551075	192.168.1.113	171618098	(*) 00026	Call 26	192.168.1.111	7275551025	192.168.1.113	184373939
🚔 00077	Call 77	192.168.1.111	7275551076	192.168.1.113	19199649	(2) 00027	Call 27	192.168.1.111	7275551026	192.168.1.113	130414089
* 00078	Call 78	192.168.1.111	7275551077	192.168.1.113	26798	(*) 00028	Call 28	192.168.1.111	7275551027	192.168.1.113	245757312
2 00079	Call 79	192.168.1.111	7275551078	192.168.1.113	1478374	(2) 00029	Call 29	192.168.1.111	7275551028	192.168.1.113	980930301
00080	Call 80	192.168.1.111	7275551079	192.168.1.113	1515480:	(*) 00030	Call 30	192.168.1.111	7275551029	192.168.1.113	118013023
🚔 00081	Call 81	192.168.1.111	7275551080	192.168.1.113	13843778	(2) 00031	Call 31	192.168.1.111	7275551030	192.168.1.113	110767027
00082	Call 82	192.168.1.111	7275551081	192.168.1.113	2752377	(2) 00032	Call 32	192.168.1.111	7275551031	192.168.1.113	190085034
🚔 00083	Call 83	192.168.1.111	7275551082	192.168.1.113	199092	(2) 00033	Call 33	192.168.1.111	7275551032	192.168.1.113	157083770
🚔 00084	Call 84	192.168.1.111	7275551083	192.168.1.113	18339	(2) 00034	Call 34	192.168.1.111	7275551033	192.168.1.113	74471838
200085	Call 85	192.168.1.111	7275551084	192.168.1.113	6809274	(*) 00035	Call 35	192.168.1.111	7275551034	192.168.1.113	113597828
38000 😭	Call 86	192.168.1.111	7275551085	192.168.1.113	1089836((*) 00036	Call 36	192.168.1.111	7275551035	192.168.1.113	193198064
2 00087	Call 87	192.168.1.111	7275551086	192.168.1.113	3861706	(2 00037	Call 37	192.168.1.111	7275551036	192.168.1.113	125562815
88000 🖀	Call 88	192.168.1.111	7275551087	192.168.1.113	175212315	(2) 00038	Call 38	192.168.1.111	7275551037		881984032
8 00089	Call 89	192.168.1.111	7275551088	192.168.1.113	19018984	(* 00039	Call 39	192.168.1.111	7275551038	192.168.1.113	169462348
2 00090	Call 90	192.168.1.111	7275551089	192.168.1.113	1214590	1 00040	Call 40	192.168.1.111	7275551039	192.168.1.113	141590792
2 00091	Call 91	192.168.1.111	7275551090	192.168.1.113	10404935	(S) 00041	Call 41	192.168.1.111	7275551040		33284530
00092	Call 92	192.168.1.111	7275551091	192.168.1.113	17259782	1 00042	Call 42	192.168.1.111	7275551041	192.168.1.113	187773676
COUSE	Call 93	192.168.1.111	7275551092	192.168.1.113	1103681	C 00042	Call 43	192.168.1.111	7275551042		50961553
1 00000	can co	196.199.1.111	. 210001002	10011001110	T105001(4		106.100.1.111	. 210001042	Test for the form	JUJ01333
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To move all calls to the selected column, you may simply press the Add All>> button. To move them back again, simply press the <<Remove All button.

There are a number of ways to move individual or groups of calls; each user will develop their own personal preference.

Both columns offer extended selection (i.e. you may select a disjointed group of calls by holding down the control (Ctrl) key and pressing the left mouse button).

<u>Drag and Drop</u>: Select one or more calls from either list and 'drag and drop' them onto the target list.

Double click the selected calls: This moves the entire group to the opposing list.

<u>Select a sequence of calls</u>: Enter the call range you would like to move in the 'Select: [x] to [y]' fields and press the [>>] or [<<] buttons.

Both columns offer extended selection (i.e. you may select a disjoint group of calls by holding down the control (Ctrl) key and pressing the left mouse button). When you have the appropriate calls for your session in the selected list and have set the application mode, you are ready to begin your session. Simply press the green traffic light to start the calls.

Available Calls Shortcut Menu

Select desired calls then right click on the selected calls to display the shortcut menu.

e Edit (/iew Help	Mode:	Initiate Calls	-
Win323			te II mode.		
Select:	1 to	240 <u>≥></u> Local IP Address	Level 7 104	Available Ca Remote IP Address	alls: 24
Index	Call 1	192.168.1.111	Local E.164	192,168,1,113	17513748
00002	Call 2	192.168.1.111	7275551000	192 168 1 113	1428921
00003	Call 3	192,168,1,111	7275551002	192,168,1,113	25439400
00004	Call 4	192,168,1,111	7275551003	192.168.1.113	1532451
00005	Call 5	192.168.1.111	7075551004	1021001112	158618534
✓ 00006	Call 6	192.168.1.111	Start Selecte		1268796
		192.168.1.111	Ping Remote	e Endpoint	192514412
✓ 00007	Call 7	132.100.1.111			

<u>Start Selected Calls</u>: The available calls column offers the additional way of starting calls. Just select the calls you want to start and right click the mouse within the selection. Then click Start Selected Calls.

<u>Ping Remote Endpoint</u>: Allows you to run a ping utility to test line-of-sight availability of a device or address on the network.

Selected Calls Shortcut Menu

The Selected Calls column offers the additional way of stopping calls. With calls running select desired calls then right click on the selected calls to display the shortcut menu.

<u>.</u>	@ Q	×				
235	Select:		5 <<	Level F 104	Selected Ca	
268796	Index 00001	Call Call	Local IP Address 192.168.1.111	Local E.164 7275551000	Remote IP Address 192.168.1.113	Remote E.16 1751374817
2514412	00002	Call 2	192.168.1.111	7275551001	192.168.1.113	1428921477
0652664 062475 ⁻ 8235168 1535228 0263018 4042068 7660658	000 000 000 000 000	Stop Selected Calls Terminate Selected Ca Trace Selected Calls Ping Remote Endpoint	8.1.111	7275551002 7275551003 7275551004	192.168.1.113 192.168.1.113 192.168.1.113	2543940021 1532451119 1586185349

<u>Stop Selected Calls</u>: Just select the calls you want to stop and right click the mouse within the selection. Then click Stop Selected Calls.

<u>Terminate Selected Calls</u>: Select the calls you want to terminate and right click the mouse within the selection. Then click Terminate Selected Calls.

<u>Trace Selected Calls</u>: This option allows the user to create a protocol trace file of the call. Each protocol message in the call will be printed to a file on the disk. A complete ASN.1 decode is done for RAS, H.225, and H.245. The first five RTP packets in each media stream are decoded as well as the first five RTCP packets.

<u>Ping Remote Endpoint</u>: Allows you to run a ping utility to test line-of-sight availability of a device or address on the network.

The Detail View

This is the view designed to facilitate monitoring individual calls and overall session status. The values on this screen are updated once every second.

chistone Technologies	Complete	* [425	Channels Availab				50 of 50 (1			Lowest Rate:		/	Per Hour Per Second
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00:02:35	Unsucces	:sful:	0	Errors Detected:			0	Detai	ls		Current Rate:	9,856.31 F		Àverage Instantaneou:
1	9	itart	Pass	Fail RAS	H.225	H.245	Audio		-	Packet Count-				
Call 1		15	15	Skipped	Passed	Passed	TX/RX	TX/BX		Protocol	In	Out	In/Second	Out/Second
Call 2		14	14	Skipped	Passed	Passed	TX/BX	TX/BX		RAS H.225	0 823	0 753	0.00 5.30	0.00
Call 3		14	14	Skipped	Passed	Passed	TX/RX	TX/BX		H.245	3,179	4,224	20.48	27.21
Call 4		13	13	Skipped	Passed	Passed	TX/BX	TX/BX		RTP Audio	227,607	227,684	1,466.25	1,466.75
Call 5		13	13	Skipped	Passed	Passed	TX/BX	TX/BX		RTP Video	68,864	115,358	443.62	743.14
Call 6		12	12	Skipped	Passed	Passed	TX/RX	TX/BX	100	Lost Audio	0		0.00	
Call 7		12	12	Skipped	Passed	Passed	TX/BX	TX/BX	-	Lost Video	0	005	0.00	5.00
Call 8		11	11	Skipped	Passed	Passed	TX/BX	TX/BX		RTCP Audio RTCP Video	878 876	925 925	5.66 5.64	5.96 5.96
Call 9		11	11	Skipped	Passed	Passed	TX/BX	TX/BX		Total	302.227	349.869	1,946.96	2,253.87
Call 10		10	10	Skipped	Passed	Passed	TX/BX	TX/BX		. otar	006,661	343,003	1,540.30	2,200.0r
Call 11		10	10	Skipped	Passed	Passed	TX/BX	TX/BX	L					
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Call 13		9	9	Skipped	Passed	Passed	TX/BX	TX/BX		-				
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There are four main sections of this screen.

<u>Section One</u>: The upper left section contains information on the Call name, Started calls, Passed calls, Failed calls, and the status of each protocol layer is displayed for each active call. When a particular call in this section is clicked, information about that call is displayed in section three.

<u>Section Two</u>: The upper right section provides the overall total number of packets by protocol that have been sent and received.

<u>Section Three</u>: The lower left section contains seven tabs that contain detailed information of the call selected in section one.

These tabs are:

<u>Call Flow</u>: Shows each signaling packet associated with the call. When the user selects a packet from the call flow list, the decode of that packet is displayed in section four.

<u>Note</u>: The display is limited to 25 instances of each type of packet. For example, only the first 25 Round Trip Delay packets will be displayed.

Audio Jitter: Shows a real time graph of the audio jitter of the call.

<u>Video Jitter</u>: Shows a real time graph of the video jitter of the call.

Audio Interval: Shows a real-time graph of the audio latency of the call.

<u>Video Interval</u>: Shows a real-time graph of the video latency of the call.

Audio Details: Shows a summary of the audio RTP stream of the call.

Video Details: Shows a summary of the video RTP stream of the call.

<u>RTCP Details</u>: Shows a summary of the audio and video RTCP streams of the call.

<u>Section Four</u>: The lower right section provides a detailed display of the packet that has been highlighted in the call flow list.

Creating Call Files

When running in initiate call, answer call or gatekeeper call mode, it is necessary to create a call file and select one or more calls to run. The simplest way of creating a call file is to use the Generate Call File option. Call files may be created by hand if so desired. This would be accomplished via the edit view.

Win323 provides an easy, fill-in-the-blank method of generating large test files quickly. When this option is selected from the file menu or the edit view, the following dialog will appear:

General	×
Filename: C:\Win323\H32300001.clf	
Number Of Calls 100	
Call Duration	
C Manual	
⑦ Timed Fixed	
Frequency	
Auto Restart C Single Repeating Specified	
- Start Delay	
Random From: 00:00:30 To: 00:00:60	
Call Delay	
Random From: 00:00:30 To: 00:00:60	
Unique ID's	
Conference ID Random	
Call ID Random	
Call Reference 0 Random	
< <u>B</u> ack. <u>N</u> ext > Cancel Hel	p

There are four (4) screens in this dialog, which create all the major fields within the call file. These pages include:

- General Page
- Local Page
- Remote Page
- Gatekeeper Page

All fields on these pages must be completed. Default values are provided in the fields for which they are appropriate.

General Page

This screen contains the general information pertaining to the test script.

General	×
Filename: C:\Win323\H32300001.clf	
Number Of Calls 100	
Call Duration	
O Manual	
Timed Fixed ■ Duration: 00:00:30	
Frequency	
I Auto Restart ○ Single ● Repeating ○ Specified	
Start Delay	
Random From: 00:00:30 To: 00:00:60	
Call Delay	
Random From: 00:00:30 To: 00:00:60	
Unique ID's	
Conference ID Random	
Call ID Random 💌	
Call Reference 0 Random 💌	
< <u>₿</u> ack <u>N</u> ext > Cancel Help	

This screen contains the information pertaining to the general properties of the test script. The fields included on the general page are:

<u>Filename</u>: Fill in the name of the file or use the Browse button located on the right side of the field to select an existing file to overwrite.

Number of Calls: Enter the number of calls you would like this script to contain.

<u>Call Duration</u>: This field may be one of two settings, either manual or timed. If you select timed, you may generate the values as fixed, incremental or random. The appropriate fields will appear as the selection changes. All visible fields must be filled out.

Frequency: This determines how many times the calls will be run.

<u>Auto Restart</u>: If checked, the calls will automatically restart when they have completed. <u>Single</u>: Calls will run once. <u>Repeating</u>: Calls will continue to run until the user stops the call. Specified: Calls will run N number of times, then terminate.

<u>Start Delay</u>: This is the delay, on a per-call basis, that will occur prior to starting a call for the first time in a session. The choices are None, Fixed, Incremental, and Random.

<u>Call Delay</u>: This is the delay, on a per-call basis, that will occur prior to starting a call each successive time in a session. The choices are None, Fixed, Incremental, and Random.

<u>Unique IDs</u>: There are three identification fields that the user may specify values for; the Conference ID, the Call ID and the Call Reference Value. These three IDs are used in various protocol messages of the call. The user may specify fixed, incremental or random values for these IDs.

Local Page

This screen contains the information pertaining to the local properties of the test script.

Local						×
IP Address	120.249.49.10		•	Fixed	-	
E.164 Alias			10001	Incremental	•	
H.323 ID			20001	Incremental	•	
Q.931 Calling Party Number		;	30001	Incremental	•	
Q.931 Calling Party Type And	Numbering Plan		127	Fixed	•	
	< <u>B</u> ack	(<u>N</u> ext >		Cancel	Help	

The fields included on the local page are:

<u>IP Address</u>: Enter the local IP address to be used for the calls. This may be either fixed or incremental.

<u>E.164 Alias</u>: Fill in the value of the local E.164 alias. Choose incremental to generate incremental value (e.g. 1234, 1235, etc.), fixed to set all IDs to the same value (not a good idea, but possible) or random to generate a random ID for each call or choose none.

<u>H.323 ID</u>: Fill in the value of the local H.323 ID alias. Choose incremental to generate incremental value (e.g. Harry1, Harry2, etc.), fixed to set all IDs to the same value (not a good idea, but possible) or random to generate a random ID for each call or choose none.

<u>Q.931 Calling Party Number</u>: Enter the Calling Party Number for the call. This may be fixed, incremental, random or none.

<u>Q.931 Calling Party Type And Numbering Plan</u>: Enter the Calling Party Type and Calling Party Numbering Plan as specified in Q.931 section 4.5.10, octet 3. This entry is optional and will override the value that is specified in the parameter file.

Seven bits are used to encode this information. Bit 8 is zero. Enter the decimal number of the bit combination wanted.

Bits	
765	
000	Unknown
0 0 1	International Number
010	National Number
011	Network Specific Number
100	Subscriber Number
110	Abbreviated Number
111	Reserved for Extension

The Type of Number is set in bits 7 to 5 as follows:

The Numbering Plan Identification is encoded in bits 4 to 1 as follows:

Bits	
4 3 2 1	
0000	Unknown
0001	ISDN/telephony numbering plan
0011	Data numbering plan
0100	National Number
1000	National standard numbering plan
1001	Private numbering plan
1111	Reserved for extension

Examples:

Decimal Value	Hex Value	Bit Value	Type of Number	Numbering Plan
0	0	000 0000	Unknown	Unknown
20	14	001 0100	International	Telex
105	69	110 1001	Abbreviated	Private

Remote Page

This screen contains the information pertaining to the remote properties of the test script.

Remote				×
IP Address	120 . 249 .	49 . 20	Fixed	▼ Ping
E.164 Alias		50001	Incremental	•
H.323 ID		60001	Incremental	•
Q.931 Called Party Number		70001	Incremental	•
Q.931 Callied Party Type And	d Numbering Plan	127	Fixed	•
This Call File Will Be Use	d As An Answer Call File O	nly		
	< <u>B</u> ack	xt>	Cancel	Help

The fields included are:

<u>IP Address</u>: Enter the remote IP address to be used for the calls. This may be either fixed or incremental.

<u>Ping</u>: Allows you to run a ping utility to test line-of-sight availability of a device or address on the network.

<u>E.164 Alias</u>: Fill in the value of the remote E.164 alias. Choose incremental to generate incremental value (e.g. 1000, 1001, etc.), fixed to set all IDs to the same value (not a good idea, but possible) or random to generate a random ID for each call.

<u>H.323 ID</u>: Fill in the value of the remote H.323 ID alias. Choose incremental to generate incremental value (e.g. Harry1, Harry2, etc.), fixed to set all IDs to the same value (not a good idea, but possible) or random to generate a random ID for each call.

<u>Q.931 Called Party Number:</u> Enter the Called Party Number for the call. This may be fixed, incremental or random.

<u>Q.931 Called Party Type And Numbering Plan:</u> Enter the Called Party Type and Calling Party Numbering Plan as specified in Q.931 section 4.5.8, octet 3. This entry is optional and will override the value that is specified in the parameter file.

Seven bits are used to encode this information. Bit 8 is not entered. Enter the decimal number of the bit combination wanted.

Bits	Description
765	
0 0 0	Unknown
001	International number
0 1 0	National number
0 1 1	Network specific number
100	Subscriber number
1 1 0	Abbreviated number
1 1 1	Reserved for extension

The Type of Number is set in bits 7 to 5 as follows:

The Numbering Plan Identification is encoded in bits 4 to 1 as follows:

Bits	Description
4 3 2 1	
0 0 0 0	Unknown
0 0 0 1	ISDN/telephony numbering plan
0011	Data numbering plan
0 1 0 0	Telex numbering plan
1000	National standard numbering plan
1001	Private numbering plan
1 1 1 1	Reserved for extension

Examples

Decimal	Hex	Bit	Type of	Numbering
Value	Value	Value	Number	Plan
1	1	000 0001	Unknown	ISDN
40	28	010 1000	National	National
67	43	100 0011	Subscriber	Data

<u>This Call File Will Be Used As an Answer Call File Only</u>: If this option is checked, the above information does not have to be entered. If it is not selected, at least one of the above fields must be filled out.

Gatekeeper Page

This screen contains the information pertaining to the Gatekeeper properties of the test script.

Gatekeeper		×
🔽 Use Gatekeeper		
Gatekeeper IP Address	120 . 249 . 0 . 200	
Gatekeeper ID	Gatekeeper 1	
Call Model	Direct 💌	
Bandwidth	2000	
RAS Persistent		
🗖 Send GRQ		
	< <u>B</u> ack Finish	Cancel Help

The fields included are:

<u>Use Gatekeeper</u>: If selected, the calls will use a gatekeeper.

Gatekeeper IP Address: The IP address if that gatekeeper.

Gatekeeper ID: The gatekeepers ID string.

Call Model: Can be either Direct or Gatekeeper Routed.

Bandwidth: The bidirectional bandwidth requested for each call.

<u>RAS Persistent</u>: If this option is selected, each call will do a Registration Request with the gatekeeper once, and then begin making calls. Successive calls will begin with an Admission Request and end with a Disengage Request. When the call finally completes (due to an error, operator stop, or gatekeeper command), the call will do an Unregistration Request. If this option is not selected (RAS Non-Persistent), each call will start with a Registration Request and end with an Unregistration Request every time.

Send GRQ: If selected, each call will start with a Gatekeeper Request.

Generating Partner Files

Win323 provides an automated method of generating a mirror-image of the test script for use by another Win323 endpoint. This file is usually referred to as a partner file.

When this option is selected from the file menu or the edit view the following occurs:

You will be presented with the Save As dialog box.

Win323 will automatically swap the following fields:

Local and remote addresses. Local and remote E.164 and H.323 IDs.

You will then be given the opportunity to load the partner file for use or viewing.

Settings

Win323 provides parameter file editing through the Options | Settings menu choice. The following section describes these screens and settings in detail.

Use this command to view or change parameters in the current parameter file and session settings file.

General

Video Fast Connect H.225 H.245 - Part 1 H.245 - Part 2 Media QOS Logging General Initiate Calls Answer Calls Gatekeeper Calls RAS Gatekeeper Enulation Fast Connect And Tunneling Audio Fast Connect Non-Standard Information 0 T.35 Extension: 0 Manufacturer Code: 0 Auto Statt Auto Statt Auto Statt Auto Statt Call Switch To Detail View On Statt In Auto Switch To Detail View On Statt Call Type Call Stat Delay Call Stat Delay Call Stat Delay Call Stat All Coles (Call Rates) Call Stat All Coles (Call Rates) Call Stat All Coles (Call Rates) Call Stat Delay Call Stat All Coles (Call Rates) Call Stat All Coles (Call Rates) Call Stat Delay Call State All Coles (Call Consecutive Error(s) Call State All Coles (Call Consecutive Error(s)) Call State A	n323 Settings - C:\Win323\ParameterFiles\Win32	3.prm	
Non-Standard Information Auto Switch T.35 County Code: 0 Vendor Information Win323 Product ID: Win323 Version ID: Win323 Version ID: Version 1.70 Call Stat Delays Call Errors © Freed 100 (ms) Minimum 100 (ms) Minimum 000 (ms) Interval 60 (sec) Shape © Wave © Sewtooth Ceete A Protocol Trace Files © No Trace Files © No Trace File For Each Call Pot Number 1720 Note - Default is 1720 User Defined H.225 Call Signaling Pot Number Pot Number 1719 Note - Default is 1719 Verity Connectivity Weirole Address User Defined RAS Call Signaling Pot Number Por Number Endpoints And Gatekcepers Por Number			
Vendor information Product ID: Version ID: Version ID: Inter Call Delays (Call Rates) Call Stat Delay Not race	Non-Standard Information		- Auto Switch
Inter Call Delays [Call Rates] Call Errors Call Stat Delay ① 00 (ms)	Product ID:		Call Type Call Type Point To Point
• Wave • Wave • Create A Protocol Trace Files • User Defined H.225 Call Signaling Pot Number • From • (ms) • Create A Protocol Trace File For Each Call • User Defined H.225 Call Signaling Pot Number • From • (ms) • Network Edge Device IP Address • User Defined HAS Call Signaling Pot Number • Random To 10000 (ms) • Network Edge Device IP Address • User Defined HAS Call Signaling Pot Number • Miscellaneous • Wiscellaneous • Wiscellaneous • Wiscellaneous • Wiscellaneous • Fing Remote Endpoints And Gatekeepers • Show Expanded Call Trace • Ping Remote Endpoints And Gatekeepers	Call Start Delay Fixed 100 (ms) Minimum 100 (ms)	Continue On Error Stop After 1 Consecutive Error(s) Delay After An Error (sec)	EndpointType Terminal (For Signaling Purposes Only) Call Shutdown Options C H.323 Recomendation
Call Stop Delau 100 (ms) Miscellaneous Ping Remote Endpoints And Gatekeepers Before Starting Calls	Shape Wave C Sawtooth From 0 (ms) C Random To 1000 (ms)	C Create A Protocol Trace File For Each Error Call C Create A Protocol Trace File For Each Call Network Edge Device IP Address	Port Number 1720 Note - Default is 1720 User Defined RAS Call Signaling Port Number Port Number 1719 Port Number 1719 Note - Default is 1719
	Call Stop Delay 100 (ms)	Show Expanded Call Trace	 Ping Remote Endpoints And Gatekeepers
			Cancel Apply Help

Non-Standard Information

<u>T.35 Country Code</u>: The Country Code as specified in T.35. Any number can be entered.

<u>T.35 Extension</u>: The Extension as specified in T.35. Any number can be entered.

<u>Manufacturer Code</u>: A number that indicates a certain manufacturer. Any number can be entered.

Vendor Information

<u>Product ID</u>: A character string that indicated the name of the product. Any string can be entered.

<u>Version ID</u>: A character string that indicated the version of the product. Any string can be entered.

Inter Call Delays (Call Rates)

<u>Start Delay</u>: This delay is used to regulate the amount of time between the starting and restarting of two or more different calls. The Start Delay is the way to adjust the call start rate. When two or more calls are starting for the first time or have completed and are restarting, Win323 uses the Start Delay to start each call. This delay is measured in milliseconds. For example, if three calls want to start or restart and the Start Delay is 500 milliseconds, call 1 will be started immediately, call 2 will be started 500 ms after call 1, and call 3 will be started 500 ms after call 2. There are three ways to specify the restart delay:

<u>Fixed</u>: When Fixed is selected, the start delay between calls remains constant.

<u>Variable</u>: When Variable is selected, the start delay is gradually adjusted as the calls are running. The user must enter the minimum and maximum delays that Win323 should use and the time Interval that it will take to go from the minimum to the maximum delay. For example, if the user enters a minimum delay of 100 ms and a maximum delay of 200 ms and a time interval of 60 seconds, Win323 will initially set the start delay to 100 ms and gradually increase it to 200 ms. The time it takes to go from 100 ms to 200 ms will be 60 seconds. When the maximum delay value has been reached, if the user has selected Wave Shape, the start delay will be gradually decreased until the minimum delay value is again reached. If the user has selected Sawtooth Shape, the start delay will immediately be set to the minimum value.

<u>Random</u>: When Random is selected, the start delay is a randomly generated number. The user must enter the From and To limits that Win323 should use to generate the number and the time Interval that that delay will be used. For example, if the user enters a From delay of 100 ms and a To delay of 200 ms and a time interval of 60 seconds, Win323 will initially set the restart delay to 150 ms (From + To / 2) for 60 seconds. Next the program will generate a random number between 100 ms and 200 ms and use that delay for another 60 seconds. Win323 will continue to generate random numbers and uses them for 60 seconds. For

<u>Example</u>: If the user enters a minimum delay of 100 ms and a maximum delay of 1000 ms and a time interval of 30 seconds, Win323 will initially set the start delay to 550 ms for 30 seconds. Then it will generate a new random number and set the delay for another 30 seconds.

<u>Stop Delay</u>: This delay is used to regulate the amount of time between the stopping of two or more different calls. The Stop Delay is the way to adjust the call stop rate. When Win323 is ready to stop two or more calls (because the user pressed the Stop Button), it uses the Stop Delay between the actual stopping of each call. This delay is measured in milliseconds. For example, if the user stops three calls and the Stop Delay is 500 milliseconds, call 1 will be stopped immediately, call 2 will be stopped 500 ms after call 1 stops, and call 3 will be stopped 500 ms after call 2 stops. The Stop Delay only applies when the user stops calls using the Stop Button.

<u>Call Errors</u>: These options allow the user to select what happens when a call detects an error. There are three options allowed.

<u>Continue on Error</u>: Terminates the call and immediately restart the call (if the call is repeating).

<u>Stop on Error</u>: Terminates the call and does not restart it (even if the call is repeating).

<u>Delay after Error</u>: Delays N seconds before restarting the call (if the call is repeating).

<u>Trace Files</u>: This option allows the user to create a protocol trace file of the call. Each protocol message in the call will be printed to a file on the disk. A complete ASN.1 decode is done for RAS, H.225, and H.245. The first five RTP packets in each media stream are decoded as well as the first five RTCP packets.

<u>No Trace Files</u>: This option turns off all tracing. <u>Create A Protocol Trace File For Each Error Call</u>: When this option is selected, a trace file will be created for calls that have errors. <u>Create A Protocol Trace File For Each Call</u>: When this option is selected, a trace file will be created for calls all errors.

The name of the trace file that will be created is formatted as follows:

Protocol_Trace_Call_N_HHMMSSXXX.trc

Where N = Call Number, and HHMMSSXXX = Hour, Minute, Second, and Millisecond the trace file was created. See the Protocol Trace example.

<u>Network Edge Device IP Address</u>: If calls are being made through a non H.323 aware network edge device (gateway, router, etc), Win323 can substitute the outside IP address of the edge device for the inside IP address of the edge device within the ASN.1 encoded messages Setup, Call Proceeding, Alerting, Connect, and Open Logical Channel.

Miscellaneous

<u>Show Expanded Call Trace</u>: If this option is selected, additional trace messages will be displayed on the Call Flow tab on the Details View. <u>Enable Stacked Parameter Settings</u>: If this option is selected, the Parameter File configuration tabs (Options | Settings menu) will be displayed as a stacked display. If not, the configuration tabs will be displayed horizontally with scroll buttons.

<u>Auto Switch</u>: There are two options that the user may use to switch views automatically.

<u>Auto Switch To Detail View On Start</u>: With this option set, when the start button is pressed, Win323 switches to the Detail view. <u>Auto Switch To Main View On Stop</u>: With this option set, Win323 switches back to the Main view when all calls have terminated.

<u>Call Type</u>: This drop down list box allows the user to select the Call Type parameter that is used in the H.225 and RAS protocol layers. This parameter is used for signaling purposes only, not to control any behavior of the program.

The choices are:

Point To Point One To N N To One N To N

<u>Endpoint Type</u>: This drop down list box allows the user to select the Call Endpoint parameter that is used in the H.225 and RAS protocol layers. This parameter is used for signaling purposes only, not to control any behavior of the program. The choices are:

Gatekeeper Gateway MCU Terminal <u>Call Shutdown Options</u>: This option allows the user to specify how to terminate each call. Several vendors have chosen to speed up this process by closing H.245 and H.225 at once. Win323 now allows the user to select which termination method to use. H.323 Recommendation uses the recommended termination method, while Netmeeting uses the faster termination method.

<u>H.323 Recommendation</u>: Specifies the protocol sequence that a call should use when it terminates. The call should sequentially close the H.245 channel, then the H.225 channel, and then the RAS channel (if there is a gatekeeper involved). Microsoft Netmeeting: Uses the faster termination method.

<u>User Defined H.225 Call Signaling Port Number</u>: This option allows the user to select the port that will be used for H.225 call signaling. Normally, this number should be set to 1720, which is the well-known H.225 port. This will be used as the remote port number for all Initiate calls on the tool. In addition, this is the port that Unattended Answer calls will listen on to accept Unattended Answer calls.

<u>User Defined RAS Call Signaling Port Number</u>: This option allows the user to select the port that will be used for RAS call signaling. Normally, this number should be set to 1719, which is the well-known RAS port. This will be used as the remote port number for all Initiate and Answer calls on the tool. In addition, this is the port that Gatekeeper Emulation Mode will listen on to accept RAS request messages.

Verify Connectivity:

<u>Ping Remote Endpoints and Gatekeepers before Starting Calls</u>: Selecting this option causes Win323 to verify that there is a valid network connection to each endpoint and gatekeeper entered in the call file. When the user presses the Start button a ping is sent to each unique IP address in the call file and Win323 waits for a reply.

Initiate Calls

Video Fast Connect H.25 H.245 - Pet1 H.245 - Pet2 Media QOS Logging General Initiale Call Answer Calls Gatekeeper Calls RAS Gatekeeper Emulation Fast Connect And Turneting Audio Fast Connect RAS Options Image Call Fixed © Seconds Image Calls Fixed Fixed Image Calls Fixed Image Calls Fixed Fixed Image Calls Fixed Fixed Fixed </th <th>/in323 Settings - C:\Win323\ParameterFiles\Win323.prm</th> <th></th> <th>×</th>	/in323 Settings - C:\Win323\ParameterFiles\Win323.prm		×
RAS Options General C Fixed 0 Seconds Random From 0 To User Repairing Calls II The Remote Endpoint Stops The Call First H225 Options H225 Options H225 Options User Repairing Calls II The Remote Endpoint Stops The Call First If Jgnore H.245 Address In Call Proceeding Message If Jgnore H.245 Address In Call Proceeding Message If Jgnore H.245 Address In Call Proceeding Message If Jgnore H.245 Address In Call Researce Send Non Standard Terminal Data In Setup Message User Input Indication Send UII Message (Alphanumeric) Note - Also Requires H.245 UII Message If Send As A Thraceter String' Before MSD / TCS Note: Waits For A Response From Other Endpoint Response Wait Timeout Value (sec): 0 (A Value OIZ ero Indicaters No Wait) Send As DTMF After OLC ACK (Audo OLC ACK ^ Video OLC ACK) Interval Between UII Messages (ms) 100	Video Fast Connect H.225 H.245 - Part 1 H.245 - Part 2 Mei	dia QOS	Logging
Delay Between Receiving RCF And Sending ARQ Fixed 0 Seconds Fixed 0 Seconds Endpoint Stops The Call First H.225 Options H.225 Setup Message Timeout (sec): 120 Ignore H.245 Address In Call Proceeding Message Ignore H.245 Address In Progress Message Ignore H.245 Address In Alerting Message Ignore H.245 Address In Progress Message Ignore H.245 Address In Alerting Message Ignore H.245 Address In Progress Message Send Non Standard Terminal Data In Setup Message Ignore H.245 Address In Facility Message H.245 Options Win323 · Version 1.7.0 H.245 Options Ignore Message Gend As A Tharacter String' Before MSD / TCS Note : Waks For A Response From Other Endpoint Response Wait Timeout Value (sec): 0 (A Value OTZero Indicates No Wait) Send As DTMF After OLC ACK (Gaudio OLC ACK / Video OLC ACK) Interval Between UII Message (ms); Interval Between UII Messages (ms); 100 Send Continuously	General Initiate Calls Answer Calls (Gatekeeper) Unattended Answer Calls Gatekeeper Calls RAS Gatekeeper Emu	ulation Fast Connect And Tunneling	Audio Fast Connect
Interval Between UII Messages (ms): 100 Send Continuously	RAS Options General Delay Between Receiving RCF And Sending ARQ Stop Repeating Calls If The Remote Endpoint Stops The Call First Random From 0 To 0 Seconds H.225 Options Ignore H.245 Address In Call Proceeding Message Ignore H.245 Address In Progress Message Ignore H.245 Address In Call Proceeding Message Ignore H.245 Address In Progress Message Ignore H.245 Address In Call Proceeding Message Ignore H.245 Address In Facility Message Ignore H.245 Address In Call Proceeding Message Ignore H.245 Address In Facility Message Ignore H.245 Address In Call Proceeding Message Ignore H.245 Address In Facility Message Ignore H.245 Address In Old To Seconds Win323 - Version 1.7.0 H.245 Options User Input Indication Ignore H.245 Mill Message (Alphanumeric) Note - Also Requires H.245 UII Message' Data In Call File C Send As A "Character String' Before MSD / TCS Note : Wats For A Response From Other Endpoint	Ilation Fast Connect And Tunneling	Audio Fast Connect
OK Cancel Apply Help	Interval Between UII Messages (ms): 100 Send Continuously		

RAS Options: Used to set RAS options for Initiate calls only.

<u>Delay Between Receiving RCF And Sending ARQ</u>: This option allows the initiating endpoint to create a delay after it receives the RCF message but before it sends the ARQ message. There are two types of delay:

<u>Fixed N Seconds</u>: Each call will wait N seconds before sending ARQ.

<u>Random From N to M Seconds</u>: Each call will wait a random number of seconds (between N and M) before sending ARQ.

General: Used to set General options for Initiate calls only.

<u>Stop Repeating Calls If The Remote Endpoint Stops The Call First</u>: If this option is selected, the call initiator will stop repeating a call if the remote endpoint terminates the call.

H.225 Options: Used to set H.225 options for Initiate calls only.

<u>H.225 Setup Message Timeout</u>: This option specifies the time Win323 will wait for the Connect message, after sending the Setup message. If this timer expires before the Connect message is received, and an error is reported.

Ignore H.245 address in Call Proceeding Message: Tells Win323 not to open an H.245 channel if it detects an H.245 address in the Call Proceeding message.

Ignore H.245 address in Alerting Message: Tells Win323 not to open an H.245 channel if it detects an H.245 address in the Alerting message. Ignore H.245 address in Progress Message: Tells Win323 not to open an H.245 channel if it detects an H.245 address in the Progress message. Ignore H.245 address in Facility Message: Tells Win323 not to open an H.245 channel if it detects an H.245 address in the Facility message. Send Non Standard Terminal Data In Setup Message: If this option is selected the Non Standard Terminal Data field of the Setup message is filled in with the T.35 Country Code, the T.35 Extension, and Manufacturer Code (from the General page) and the data from the Terminal Data field.

H.245 Options: Used to set H.245 options for Initiate calls only.

User Input Indication

<u>Send UII Message</u>: This option is used in conjunction with the UII Message Data column in the call file. This option tells Win323 how to send the UII Message, the data in the call file tells Win323 what to send in the UII message.

<u>Send As A Character String Before MSD / TCS</u>: If this option is selected, the call file data is sent all at once as the first H.245 message. Win323 then waits for the first H.245 Message from the remote endpoint. The data in the UII Message Data column may be any alphanumeric data.

<u>Wait Timeout Value</u>: The length of time Win323 will wait for a response from the remote endpoint before continuing the call.

<u>Send As DTMF After OLC ACK</u>: If this option is selected, the call file data is sent a digit at a time in each UII message. The data in the UII Message Data column may be any alphanumeric data. The format of the UII data in the call file is as follows: Audio OLC ACK: The DTMF digits will be sent after the receipt of the Audio OLC ACK. <u>Video OLC ACK</u>: The DTMF digits will be sent after the receipt of the Video OLC ACK. <u>Interval Between UII Messages</u>: This is the delay in milliseconds between each DTMF digit that is sent. <u>Send Continuously</u>: If checked, when all of the UII Data digits have been sent, Win323 will start the sequence over again. If not checked, the data digits will be sent only once.

<u>Note</u>: The data entered into the call file for DTMF simulation must be in the following format:

<u>P#;D;P#;D</u>: Where P means pause, # means the number of milliseconds to pause, and D means the data to send.

<u>Example 1</u>: The string P1000;12345; means pause for 1000 milliseconds, and then send 1 2 3 4 5 in five UII messages. <u>Example 2</u>: The string P5000;joe;P4000;6632;P1000;42; means pause for 5000 milliseconds, then send j o e in three UII messages, pause 4000 milliseconds, then send 6 6 3 2 in four UII messages, pause 1000 milliseconds, and then send 4 2 in two UII messages.

<u>Example 3</u>: The string P0;888; means pause for 0 milliseconds, and then send 8 8 8 in three UII messages.

For Calls That Use A Gatekeeper.....:

When making a call with Win323 that involves a gatekeeper, it is very important to keep in mind that the Answering endpoint must be ready to receive the call when the Originating endpoint places the call.

Normally, a call start delay of a few seconds on the originating side is all that it takes to ensure that the answering side is ready. The amount of time that the originating side needs to delay depends on several factors such as the speed of the gatekeeper, the call load, the amount of media being sent and received, etc.

Since RAS messages are sent via UDP, it is possible that they may get lost. This is ordinarily not a problem, since the gatekeeper or endpoint simply retransmits the message after a fixed period of time. However, if re-transmissions occur while the answering side is closing down or starting up, it is very possible that it will not be ready in time to answer the initiators call. Also, if you have entered large RAS timeout values for request messages the answer side will probably not be ready if it re-transmits these messages. If the Answer side is not able to accept a new call it will report the following warning:

Call XXX: An Initiate Call Is Attempting To Connect To An Existing Answer Call Before The Call Is Terminated. Sending Release Complete

The originating side report one the following errors:

Call XXX: Could Not Issue Setup Message - Remote Socket Is Closed. Call XXX: A RAS admission reject was received-Reason Called Party Not Registered.

Call XXX: Setup Timeout Waiting For the Connect Message.

Call XXX: Received Release Complete - In Conference, No Address In Alternative Address.

If you are getting these messages you must increase the initiate call start delay in your call file and/or decrease the timeout values for the RAS request messages. These values must be found experimentally.

Answer Calls (Gatekeeper)

Win323 Settings - C:\Win323\ParameterFiles\V	Vin323.prm				x
Video Fast Connect H.2 General Initiate Calls Answer Calls (Gate		H.245 - Part 2 Gatekeeper Calls RAS	Media Gatekeeper Emulation	QOS Fast Connect And Tunneling	Logging Audio Fast Connect
H.225 Options					
Wait For Connection (seconds) 0 (Zero	Indicates Wait Indefinably)				
Send H. 225 Alerting Message	☐ Send H.245 Address In Alerting ✓ Send Call ID In Alerting				
Send H.225 Call Proceeding Message	☐ Send H.245 In Call Proceeding ✓ Send Call ID In Call Proceeding				
Delay Before Sending Connect					
C Fixed 0 Seconds					
C Random From 0 To	0 Seconds				
				K Cancel	Apply Help
			L		Lieven Holp

H.225 Options: Used to set H.225 options for Answer calls only.

<u>Wait For Connection</u>: After an Answer call registers with the gatekeeper, this option will specify how long it will wait for a call to be received.

Send H.225 Alerting Message: If selected, an Alerting message is sent.

<u>Send H.245 Address In Alerting</u>: If selected (and Send H.225 Alerting Message is selected), the H.245 channel address is sent in the Alerting message. <u>Send Call ID In Alerting</u>: The Call ID will be sent in the Alerting message. <u>Send H.225 Call Proceeding Message</u>: If selected, a Call Proceeding message is sent.

<u>Send H.245 In Call Proceeding</u>: If selected (and Send H.225 Call Proceeding Message is selected), the H.245 channel address is sent in the Call Proceeding message.

<u>Send Call ID In Call Proceeding</u>: The Call ID will be sent in the Call Proceeding message.

<u>Delay Before Sending Connect</u>: This option causes the answering endpoint to create a delay before it sends the Connect message. There are two types of delay:

Fixed N Seconds: Each call will wait N seconds before sending Connect.

<u>Random From N To M Seconds</u>: Each call will wait a random number of seconds (between N and M) before sending Connect.

Unattended Answer Calls

Vin323 Settings - C:\Win323\ParameterFiles\Win323.prm		×
Video Fast Connect H.225 H.245 - Part 1	H.245 - Part 2 Media QOS	Logging
General Initiate Calls Answer Calls (Gatekeeper) Unattended Answer Call	s Gatekeeper Calls RAS Gatekeeper Emulation Fast Connect And Tunnelin	ng Audio Fast Connect
	OK Cancel	Apply Help

<u>Display</u>

<u>Display Calls On Detail View</u>: If checked new calls will be displayed in the unattended answer mode. If unchecked no calls will be displayed in unattended answer mode, this lowers the load on the installed computer's hardware.

<u>Call Duration</u>: This option allows the user to select how long an Unattended Answer call will run. There are three ways to specify the duration:

<u>Manual</u>: If this option is selected, the call will run until the Initiate endpoint terminates the call.

<u>Fixed N Seconds</u>: If this option is selected, each Unattended Answer call will run for N seconds, or until the Initiate endpoint terminates the call. <u>Random from N To M Seconds</u>: If this option is selected, each Unattended Answer call will run for a random number (between N and M) of seconds, or until the Initiate endpoint terminates the call. Local E.164 And H.323 ID Alias Selection: These options allow the user to select what aliases (if any) Unattended Answer calls will use as their local aliases.

<u>Send No Alias Information</u>: If this option is selected, no E.166 or H.323 ID alias will be sent.

<u>Send Random Alias Information</u>: If this option is selected Win323 will generate a random E.164 and H.323 ID alias for each Unattended Answer call.

<u>Return Calling Endpoints Destination Alias's as Called Endpoints Source</u> <u>Alias</u>: If this option is selected, Win323 will use the destination aliases (if present) sent to it from the originating endpoint.

<u>Call Forward Mode</u>: This option allows the user to put Win323 in Call Forward mode. In this mode, when a new call is accepted, an H.225 Facility message is sent to the originating endpoint. The Facility message will indicate Facility Call Deflection and will specify the IP address and port should call next. The user must also select when to send the Facility and what forwarded port to use.

<u>Send Call Forward Using the H.225 Facility Message</u>: This checkbox enables / disables all other Call Forward options.

Send The Facility Message When The Call Starts: If this option is selected, the Facility message will be returned in response to the Setup message sent from the originating endpoint. Send The Facility Message NNNN Seconds After Call Has Started: If this option is selected, the Facility message will be returned NNNN seconds after the Connect message is sent.

H.225 Options: Used to set H.225 options for Unattended Answer calls only.

Send H.225 Alerting Message: If selected, an Alerting Message is sent.

Send H.245 in Alerting: If selected (and Send H.225 Alerting Message is selected), the H.245 channel address is sent in the Alerting Message.

<u>Send Call ID In Alerting</u>: The Call ID will be sent in the Alerting message.

<u>Send H.225 Call Proceeding Message</u>: If selected, a Call Proceeding Message is sent.

<u>Send H.245 Address In Call Proceeding</u>: If selected (and Send H.225 Call Proceeding Message is selected), the H.245 channel address is sent in the Call Proceeding message. <u>Send Call ID In Call Proceeding</u>: The Call ID will be sent in the Call Proceeding message.

<u>Delay Before Sending Connect</u>: This option causes the answering endpoint to create a delay before it sends the Connect message. There are two types of delay:

<u>Fixed N Seconds</u>: Each call will wait N seconds before sending Connect.

<u>Random from N to M Seconds</u>: Each call will wait a random number of seconds (between N and M) before sending Connect.

Gatekeeper Calls

Video Fast Connect	H.225	H.245 - Part 1	Í Н.245	- Part 2	Media	QOS	Logging
eneral Initiate Calls	Answer Calls (Gatekeeper)	Unattended Answer Calls	Gatekeeper Calls	RAS	Gatekeeper Emulation	Fast Connect And Tunneling	Audio Fast Connec
aatekeeper Only Calls							
Send RRQ Only							
Send RRQ And ARQ (Requires Another Endpoint Alread	ly Registered)					
						K Cancel /	Apply Help

Gatekeeper Only Calls: Used to set RAS options for Gatekeeper calls only.

<u>Send RRQ Only</u>: If selected, Win323 issues a Registration Request message, and an Unregistration Request message.

<u>Send RRQ And ARQ</u>: If selected, Win323 issues a Registration Request message, an Admission Request message, a Disengage Request and an Unregistration Request message.

<u>Note</u>: This option requires that a remote endpoint already be registered for each call you start.

RAS

Vin323 Settings - C:\Win323\ParameterFiles\Win323.prm			×
Video Fast Connect H.225 General Initiate Calls Answer Calls (Gatekeeper) Unat	H.245 - Part 1 H.2 ended Answer Calls Gatekeeper Calls	 fedia QOS mulation Fast Connect And Tunn	Logging eling Audio Fast Connect
RAS Version: 4 -	Timeout Value (seconds) 50		
Include Optional Source Alias Information	Retry Count 2		
RRQ Message RRQ Message Include Optional Vendor Information in Terminal Type Field Include Optional Vendor Information in Endpoint ID Field Time To Live (seconds) 300	Timeout Value (seconds) 30 Retry Count 2		
ARQ Message Timeout Value (seconds) 50 Retry Count 2	DRQ Message Timeout Value (seconds) 30 Retry Count 2		
LRRQ Message Interval (seconds) 270 Or Use Time To I Time To Live (seconds) 300	ive Value Returned In RCF (if present) Timeout Value (seconds) 30		
IRR Message Interval (seconds) 0 0r 🗂 Use IRR Frequ	ency Value Returned In ACF (if present)		
URQ Message Include Optional Source Alias Information Include Optional Vendor Information in Endpoint ID Field	Timeout Value (seconds) 30 Retry Count 1		
H.460.9 Enable H.460.9 Negotiation Send H.460.9 Feature Supported In RRQ (Optional)	Always Send H.460.9		
		Cancel	Apply Help

RAS Version: Used to set the vintage of the RAS layer.

GRQ Message

Include Optional Source Information: If selected, the E.164 and / or H.323 ID Alias will be sent in the GRQ.

<u>Timeout Value</u>: The time to wait for a response from the gatekeeper before retrying the message.

<u>Retry Count</u>: The number of times to retry the message before indicating an error.

RRQ Message

Include Optional Vendor Information In The Terminal Type Field: If selected, the vendor information will be added to the terminal type field of the message.

<u>Include Optional Vendor Information In The Endpoint Field</u>: If selected, the vendor information will be added to the endpoint field of the message. <u>Time To Live</u>: The value for the time to live field.

<u>Timeout Value</u>: The time to wait for a response from the gatekeeper before retrying the message.

<u>Retry Count</u>: The number of times to retry the message before indicating an error.

ARQ Message

<u>Timeout Value</u>: The time to wait for a response from the gatekeeper before retrying the message.

<u>Retry Count</u>: The number of times to retry the message before indicating an error.

DRQ Message

<u>Timeout Value</u>: The time to wait for a response from the gatekeeper before retrying the message.

<u>Retry Count</u>: The number of times to retry the message before indicating an error.

LRRQ Message

<u>Interval</u>: The time interval between LRRQ messages. OR <u>Use Time To Live Value Returned in RCF (if present)</u>: If selected and there is a 'Time To Live' value returned in the last RCF, that values will be used instead of the 'Interval' value above. <u>Time To Live</u>: The value for the time to live field. Timeout Value: The time to wait for a response from the gatekeeper

before retrying the message.

IRR Message

Interval: The time interval between IRR messages.

<u>Use IRR Frequency Value Returned in ACF (if present)</u>: If selected and there is an 'IRR Frequency' value returned in the ACF, that values will be used instead of the 'Interval' value above.

URQ Message

Include Optional Source Information: If selected, the E.164 and / or H.323 ID Alias will be sent in the URQ.

<u>Include Optional Vendor Information in Endpoint ID Field</u>: If selected, the vendor information will be added to the endpoint ID field of the message. <u>Timeout Value</u>: The time to wait for a response from the gatekeeper before retrying the message.

<u>Retry Count</u>: The number of times to retry the message before indicating an error.

<u>H.460.9</u>

Enable H.460.9 Negotiation: If this box is selected, H.460.9 will be negotiated with the gatekeeper.

<u>Send H.460.9 Feature Supported in RRQ (Optional)</u>: If selected, the endpoint will indicate that it supports H.460.9 in the RRQ message. <u>Always Send H.460.9</u>: H.460.9 QoS information will always be sent whether or not the gatekeeper wants it.

Gatekeeper Emulation

23 Settings - C:\Win323\ParameterFiles\Win323.prm	1				
Video Fast Connect H.225	H.245 - Part 1	H.245 - Part 2	Media	QOS	Logging
ieneral Initiate Calls Answer Calls (Gatekeeper) Gatekeeper Emulation	Unattended Answer Calls	Gatekeeper Calls RAS	Gatekeeper Emulation	Fast Connect And Tunneling	Audio Fast Connect
RAS Version: 4 Gatekeeper ID Time To Live 300 Seconds	/in323 Version 1.7.0				
IRR Interval 300 Seconds		Gatekeeper Delays	efore Sending GCF		
Bandwidth Grant Requested Bandwidth Allow Only 2000 (100's of bits) Request In Progress Delays Send RIP In Responce To GRQ - Indicate A Delay O Send RIP In Responce To ARQ - Indicate A Delay O Send RIP In Responce To DRQ - Indicate A Delay O Send RIP In Responce To DRQ - Indicate A Delay O Send RIP In Responce To DRQ - Indicate A Delay O Send RIP In Responce To DRQ - Indicate A Delay O Send RIP In Responce To URQ - Indicate A Delay O	f 0 Millisecon f 0 Millisecon f 0 Millisecon	belay conds B conds conds B conds conds B conds conds B conds conds	efore Sending RCF efore Sending RCF efore Sending DCF efore Sending UCF Milliseconds Milliseconds Milliseconds Milliseconds Milliseconds Milliseconds		
Note - Request In Progress Delays Override Gatekeeper Del					
			[DK Cancel	Apply Help

Gatekeeper Emulation

RAS Version: Used to set the vintage of the RAS layer.

<u>Gatekeeper ID</u>: Used to set the Gatekeeper ID field in the GCF and RCF message.

<u>Time To Live</u>: Used to set the TTL field in the RCF message.

IRR Interval: Used to set the IRR interval in the RCF message.

Bandwidth: Used to set the Bandwidth in the RCF message.

<u>Grant Requested</u>: If selected, Win323 will grant whatever bandwidth the endpoint requests. <u>Allow Only</u>: Specifies a fixed bandwidth allowed for each endpoint. <u>H.460.9</u>: This option specifies what the gatekeeper will send to each endpoint as far as H.460.9 is concerned. The options are:

Needed Desired Supported None

<u>Delays</u>: Win323 can introduce artificial delays before sending confirm messages to a requesting endpoint. The delay for each type of message can be selected and configured individually.

<u>Delay N Seconds before Sending GCF</u>: Actual delay value to wait before sending GCF.

<u>Delay N Seconds before Sending RCF</u>: Actual delay value to wait before sending RCF.

<u>Delay N Seconds before Sending ACF</u>: Actual delay value to wait before sending ACF.

<u>Delay N Seconds before Sending DCF</u>: Actual delay value to wait before sending DCF.

<u>Delay N Seconds before Sending UCF</u>: Actual delay value to wait before sending UCF.

<u>Request In Progress Delays</u>: Win323 can send RIP messages to a requesting endpoint. The RIP message is used when a response cannot be generated by the gatekeeper within a typical retry timeout period. The RIP message specifies the period (in the Delay field) after which a response should have been generated.

<u>Send RIP In Response To GRQ</u>: The user can indicate if RIP will be sent in response to a GRQ, the time value in the RIP, and the actual time the gatekeeper will delay before it sends the GCF.

<u>Send RIP In Response To RRQ</u>: The user can indicate if RIP will be sent in response to a RRQ, the time value in the RIP, and the actual time the gatekeeper will delay before it sends the RCF.

<u>Send RIP In Response To ARQ</u>: The user can indicate if RIP will be sent in response to an ARQ, the time value in the RIP, and the actual time the gatekeeper will delay before it sends the ACF. <u>Send RIP In Response To DRQ</u>: The user can indicate if RIP will be sent in response to a DRQ, the time value in the RIP, and the actual time the gatekeeper will delay before it sends the DCF.

<u>Send RIP In Response To URQ</u>: The user can indicate if RIP will be sent in response to a URQ, the time value in the RIP, and the actual time the gatekeeper will delay before it sends the UCF.

<u>Note</u>: Request In Progress Delays override gatekeeper delays. Only one delay will be applied to each message.

Fast Connect and Tunneling

If Called Endpoint Accepts Tunneling Procedure Fails Or Is Refused. If Called Endpoint Accepts Tunneling Procedure Fails Or Is Refused. Begin Tunneling After Call Proceeding Is Received Note - If Called Endpoint Begin Tunneling After Call Proceeding Is Received Sends An H245 Address, © Don't Tunnel Unless Called Endpoint Tunnelis Tunneling Is Stopped Answer Calls (Gatekeeper) Return Fast Connect In Call Proceeding © Accept Fast Connect I Return Fast Connect In Call Proceeding © Accept Fast Connect In Call Proceeding Return Fast Connect In Connect In Call Proceeding If Fast Connect Is Successful If Fast Connect Is Successful If Fast Connect Is Successful C Tunnel Remaining H.245 Messages	
Return Fast Connect In Call Proceeding Accept Fast Connect In Call Proceeding Accept Fast Connect In Call Proceeding Accept Fast Connect In Connect In Alerting Return Fast Connect In Connect If Fast Connect Is Successful	
Accept Fast Connect Return Fast Connect In Alerting Fast Connect In Connect In Connect If Fast Connect Is Successful	
C Tunnel Bemaining H 245 Messages	
Do Not Send Any Additional H.245 If Tunneling Successful O Not Send Any Additional H.245 If Tunneling Successful	
C Refuse Fast Connect C Begin Tunneling After Call Proceeding Is Sent C Befuse Fast Connect C Begin Tunneling After Call Proceeding Is Sent Begin Tunneling After Alerting Is Sent C Begin Tunneling After Connect Is Sent C Begin Tunneling After Con	ent
If Fast Connect Is Refused Or Is Unsuccessful If Fast Connect Is Refused Or Is Unsuccessful	
Tunnel All H.245 Messages O Tunnel All H.245 Messages	
C Open H.245 Channel	

<u>Note</u>: If Tunneling and Fast Connect are selected, Fast Connect takes precedence over the normal H.245 and media parameter section unless the Fast Connect procedure fails or is refused.

Enable Tunneling Of H.245 Messages Through H.225: If selected, Win323 will attempt to establish calls using tunneling procedures.

Initiate Calls: These options are for initiate calls only.

<u>Send Fast Connect</u>: If selected, fast connect will be sent in the H.225 Setup message.

<u>Media Wait For Connect</u>: If selected, the Media Wait For Connect flag will be sent in the Setup Message.

If the called endpoint accepts tunneling:

<u>Begin Tunneling After Call Proceeding Is Received</u>: Begins tunneling after the Call Proceeding message is received

Begin Tunneling After Alerting Is Received: Begins tunneling after the Alerting message is received. Begin Tunneling After Connect Is Received: Begins tunneling after the Connect message is received. Don't Tunnel Unless Called Endpoint Tunnels: If selected, the initiating endpoint waits to see if the answering endpoint wants to proceed with tunneling or if fast connect was sufficient.

Answer Calls (Gatekeeper): These options are for answer calls only.

<u>Accept Fast Connect</u>: If selected, Answer calls will attempt to negotiate the fast connect procedure.

Return Fast Connect In Call Proceeding: If selected and fast connect has been successfully negotiated, the fast connect elements will be returned in the Call Proceeding message. <u>Return Fast Connect In Alerting</u>: If selected and fast connect has been successfully negotiated, the fast connect elements will be returned in the Alerting message. <u>Return Fast Connect In Connect</u>: If selected and fast connect has been successfully negotiated, the fast connect elements will be returned in the Connect and fast connect has been successfully negotiated, the fast connect elements will be returned in the Connect message.

If Fast Connect Is Successful

<u>Tunnel Remaining H.245 Messages</u>: If selected, the remaining H.245 messages will be tunneled. <u>Do Not Send Any Additional H.245</u>: If selected, no more H.245 messages will be sent.

<u>Refuse Fast Connect</u>: If selected, Fast Connect negotiation will not be attempted.

If Fast Connect Is Refused or Unsuccessful

<u>Tunnel All H.245 Messages</u>: If selected, all H.245 messages will be tunneled. <u>Open H.245 Channel</u>: If selected, An H.245 channel will be opened.

If Tunneling is Successful

<u>Begin Tunneling After Call Proceeding Is Sent</u>: If selected, begins tunneling after the Call Proceeding message is sent.

Begin Tunneling After Alerting Is Sent: Begins tunneling after the Alerting message is sent. Begin Tunneling After Connect Is Sent: Begins tunneling after the Connect message is sent.

<u>Unattended Answer Calls</u>: These options are for unattended answer calls only.

<u>Accept Fast Connect</u>: If selected, Unattended Answer calls will attempt to negotiate the fast connect procedure.

Return Fast Connect In Call Proceeding: If selected and fast connect has been successfully negotiated, the fast connect elements will be returned in the Call Proceeding message. <u>Return Fast Connect In Alerting</u>: If selected and fast connect has been successfully negotiated, the fast connect elements will be returned in the Alerting message. <u>Return Fast Connect In Connect</u>: If selected and fast connect has been successfully negotiated, the fast connect elements will be returned in the Connect and fast connect has been successfully negotiated, the fast connect elements will be returned in the Connect message.

If Fast Connect Is Successful

<u>Tunnel Remaining H.245 Messages</u>: If selected, the remaining H.245 messages will be tunneled. <u>Do Not Send Any Additional H.245</u>: If selected, no more H.245 messages will be sent.

<u>Refuse Fast Connect</u>: If selected, Fast Connect negotiation will not be attempted.

If Fast Connect Is Refused or Unsuccessful

<u>Tunnel All H.245 Messages</u>: If selected, all H.245 messages will be tunneled. <u>Open H.245 Channel</u>: If selected, An H.245 channel will be opened.

If Tunneling is Successful

Begin Tunneling After Call Proceeding Is Sent: If selected, begins tunneling after the Call Proceeding message is sent. Begin Tunneling After Alerting Is Sent: Begins tunneling after the Alerting message is sent. Begin Tunneling After Connect Is Sent: Begins tunneling after the Connect message is sent.

Audio Fast Connect

Win323 Settings - C:\Win323\Parameterf	Files\Win323.prm			×
Video Fast Connect	H.225 H.245 - Part		Media QOS	
General Initiate Calls Answer Call	s (Gatekeeper) Unattended Answer Ca	lls Gatekeeper Calls RAS	Gatekeeper Emulation Fast Connect Ar	nd Tunneling Audio Fast Connect
Proposed Forward Audio Channels (Audio	0ut)	Audio Out Files		
Codec	Frames Per Packet Codec	Codec	File Name	
G.711 ALAW 64K G.711 ALAW 64K G.711 ULAW 64K G.722 MODE 3 G.722 MODE 3 G.723 5.8K G.723 6.8K G.728 ANNEX A G.729 ANNEX A G.729 ANNEX A AMB - NetMeeting Remove All	020 G.711 ALAW 64K	G 711 ALAW 54K G 711 ULAW 54K G 711 ULAW 54K G 722 MODE 1 G 722 MODE 1 G 722 MODE 3 G 723 5.3K G 723 5.3K G 723 6.3K G 723 G.3K G 723 ANNEX A AMR - NetWeeting	ín323∖MediaFiles∖A64KALAW.711	
Frames Per Packet: 20	1 Items	Browse		
Proposed Reverse Audio Channels (Audio Codec G.711 ALAW 64K, G.711 ALAW 54K, G.711 ULAW 54K, G.712 ULAW 54K, G.722 MODE 1 G.722 MODE 2 G.722 MODE 2 G.723 S.3K, G.723 S.3K, G.728 G.729 G.729 ANNEX A AMR - NetMeeting Frames Per Packet: 20	1 in) Frames Per Packet Codec 020 G.711 ALAW 64K • • •		Takes Precedence Over The Normal lection Unless The Fast Connect	
			Car	ncel Apply Help

Fast Connect elements consist of a sequence of Open Logical Channel structures describing media channels which the calling endpoint proposes to send and receive, including all of the parameters necessary to immediately open and begin transferring media on the channels.

The calling endpoint initiates the Fast Connect procedure by sending a Setup message containing the Faststart element to the called endpoint.

When the called endpoint desires to proceed with the Fast Connect procedure, it sends a H.225.0 call signaling message (Call Proceeding, Progress, Alerting, or Connect) containing a Faststart element selecting from amongst the Open Logical Channel proposals offered by the calling endpoint. The calling endpoint shall process each of these messages until it determines that Fast Connect is accepted or refused.

The called endpoint may refuse to use the Fast Connect procedure, either because it does not implement it or because it intends to invoke features that require use of the procedures defined in ITU-T Rec. H.245.

To setup the Audio Fast Connect parameters in Win323, you must do three things.

- Create a prioritized list of one or more proposed forward audio channels.
- Create a prioritized list of one or more proposed reverse audio channels.
- Create a list of audio test pattern files.

<u>Proposed Forward Audio Channels (Audio Out)</u>: To create a prioritized list of proposed forward audio channels:

- Select an audio codec from the Codec list.
- Set the number of audio frames you want to send in each RTP packet in the Frames per Packet box.
- Click the Add button.
- Continue the above three steps until your list is complete. (Only one entry is required.)
- The position of an entry in the list is its priority, i.e. the entry at the top of the list has the highest priority, and the entry at the bottom of the list has the lowest priority.
- To remove an item in the list, select it and click the Remove button.
- To remove all items from the list, click the Remove All button.
- To change the priority (position) of an item in the list, select it and click the + button (to increase its priority) or the button (to decrease its priority).

<u>Proposed Reverse Audio Channels (Audio In)</u>: To create a prioritized list of proposed reverse audio channels:

- Select an audio codec from the Codec list.
- Set the number of audio frames you want to receive in each RTP packet in the Frames per Packet box.
- Click the Add button.
- Continue the above three steps until your list is complete. (Only one entry is required.)
- The position of an entry in the list is its priority, i.e. the entry at the top of the list has the highest priority, and the entry at the bottom of the list has the lowest priority.
- To remove an item in the list, select it and click the Remove button.
- To remove all items from the list, click the Remove All button.
- To change the priority (position) of an item in the list, select it and click the + button (to increase its priority) or the button (to decrease its priority).

<u>Audio Out Files</u>: You must assign a test pattern file for each audio codec type you have entered in the Proposed Forward Audio Channels list. Select the codec type and click the Browse button to select the file.

Video Fast Connect

General Initiality Calls Answer Calls Gatekeeper Calls PAS Gatekeeper Endation Fast Correct Ando Fast Correct Proposed Forward Video Charrels (Video Dal) User State Correct Media QUS Logging Proposed Forward Video Charrels (Video Dal) Media QUS Logging Code Bit also Media QUS Logging Maximum Bit also Media QUS Logging Maximum Solo F Add -> Bit also Media Remove Maximum Code File Name Media Code Hass Opf Maximum Code File Name Media Solo F Hass Opf Maximum Code Remove All Media Solo F Hass Opf Hass Opf Maximum Code Media Media Media Media Media Media Maximum Gatekeeper End Maximum Media Media Media Media Media Maximum Media Media Media Media Media Media Maximum	in323 Settings - C:\Win323\ParameterFiles\Win323.prm	x
Code Bitale MPI Code H 250 CDF Add -> \$900 1/23 97 H.263 QDF H 250 CDF H.263 CDF H.263 QDF H 250 CDF H.263 CDF H.263 CDF H 263 CDF<		
(100 bits/sec) Items Video Frame Rate 15 Proposed Reverse Video Channels (Video In) Maximum Codec Bitate MPI L251 QCIF Add -> 8000 1/23.97 H + 263 QCIF H + Bitate + Maximum 8000 1/23.97 H 263 QCIF H + 263 QCIF + + Bitate * Maximum 8000 1/23.97 + Estate Procedence Dver The Normal Media Parameter Selection Unless The Fast Connect Procedure Fais. Procedure Fais. Procedure Fais.	Maximum Maximum Codec Birate MPI Codec H.261 QCIF Add → Birate MPI Codec H.263 QCIF Add → B000 1/29.97 H.263 QCIF H.263 QCIF Add → B000 1/29.97 H.263 QCIF H.263 QCIF H.263 QCIF H.263 QCIF H.263 QCIF H.263 SICJF Composition Composition Composition Maximum Composition Composition Composition Composition	Codec File Name H_261 QCF H_263 SQCF H_263 SQCF C:Win323\MediaFiles\VQCF1.263 H_263 GCF C:Win323\MediaFiles\VQCF1.263 H_263 IGCF Description
Codec Maximum Bitrate MPI L251 QCF Add -> H 263 SQCF B000 H 263 SQCF B1000 H 263 SQCF B1000 Media Parameter Selection Unless The Fast Connect Procedure Fails. Procedure Fails.	(100 bits/sec) 1/23 97 ▲ 3/28 97 ▲ 3/28 97 ↓ 5/23 97 ↓ Remove All ↓ 1 Items	Video Frame Rate 15
	Maximum Maximum L261 QCIF Add → H 261 QCIF Add → H 261 QCIF Add → H 261 QCIF Add → H 263 QCIF H 263 QCIF H 273 97 N MPI 2/23 97 MPI 2/23 97 MPI Penove All	Media Parameter Selection Unless The Fast Connect
		OK Cancel Apply Help

Fast Connect elements consist of a sequence of Open Logical Channel structures describing media channels which the calling endpoint proposes to send and receive, including all of the parameters necessary to immediately open and begin transferring media on the channels.

The calling endpoint initiates the Fast Connect procedure by sending a Setup message containing the Faststart element to the called endpoint.

When the called endpoint desires to proceed with the Fast Connect procedure, it sends a H.225.0 call signaling message (Call Proceeding, Progress, Alerting, or Connect) containing a Faststart element selecting from amongst the Open Logical Channel proposals offered by the calling endpoint. The calling endpoint shall process each of these messages until it determines that Fast Connect is accepted or refused.

The called endpoint may refuse to use the Fast Connect procedure, either because it does not implement it or because it intends to invoke features that require use of the procedures defined in H.245.

To setup the Video Fast Connect parameters in Win323, you must do three things.

- Create a prioritized list of one or more proposed forward video channels.
- Create a prioritized list of one or more proposed reverse video channels.
- Create a list of video test pattern files.

<u>Proposed Forward Video Channels (Video Out)</u>: To create a prioritized list of proposed forward video channels:

- Select a video codec from the Codec list.
- Set the maximum bit rate in the Maximum Bitrate box.
- Select the minimum picture interval from the MPI box.
- Click the Add button.
- Continue the above four steps until your list is complete. (Only one entry is required.)
- The position of an entry in the list is its priority, i.e. the entry at the top of the list has the highest priority, and the entry at the bottom of the list has the lowest priority.
- To remove an item in the list, select it and click the Remove button.
- To remove all items from the list, click the Remove All button.
- To change the priority (position) of an item in the list, select it and click the + button (to increase its priority) or the button (to decrease its priority).

<u>Proposed Reverse Video Channels (Video In)</u>: To create a prioritized list of proposed reverse video channels:

- Select a video codec from the Codec list.
- Set the maximum bit rate in the Maximum Bitrate box.
- Select the minimum picture interval from the MPI box.
- Click the Add button.
- Continue the above three steps until your list is complete. (Only one entry is required.)
- The position of an entry in the list is its priority, i.e. the entry at the top of the list has the highest priority, and the entry at the bottom of the list has the lowest priority.
- To remove an item in the list, select it and click the Remove button.
- To remove all items from the list, click the Remove All button.
- To change the priority (position) of an item in the list, select it and click the + button (to increase its priority) or the button (to decrease its priority).

<u>Video Out Files</u>: You must assign a test pattern file for each video codec type you have entered in the Proposed Forward Video Channels list. Select the codec type and click the Browse button to select the file.

H.225

Win323 Settings - C:\Win323\ParameterFiles\Win323.prm	<u>x</u>
General Initiate Calls Answer Calls (Gatekeeper) Unattended Answer Calls Gatekeeper) Video Fast Connect H.225 H.245 - Part 1	tekeeper Calls RAS Gatekeeper Emulation Fast Connect And Tunneling Audio Fast Connect H.245 · Part 2 Media QOS Logging
H.225 Version: 4 Q.931 Bearer Capabilities Capability Unrestricted Digital Mode Circuit Mode Rate Multirate User Info Layer H.221 and H.242 Rate Multiplier 2 Send Bearer Capabilities In C	
O. 931 Optional Called Party Number Type : National Number Numbering Plan National Standard Numbering Plan Call File Entries Will Override These Fields Redirecting Number Send Redirecting Number IE In Setup. Note - Also Requires H-225 Redirecting Number' Data In Call File Type 0f Number Numbering Plan ID Presentation Indicator Screening Indicator Reason For Redirection	Calling Party Number Type : National Standard Numbering Plan Numbering Plan National Standard Numbering Plan Presentation Indicator Presentation Allowed Screening Indicator User Provided, Not Screened Display
	OK Cancel Apply Help

H.225 Version: Used to set the vintage of the H.225 layer.

<u>Q.931 Bearer Capabilities</u>: Using the drop down boxes, the user can build the Q.931 Bearer Capabilities Information Element.

<u>Capacity</u>: Information Transfer Capacity. <u>Mode</u>: Transfer Mode. <u>Rate</u>: Information Transfer Rate <u>User Info Layer</u>: User Information Layer 1 Protocol. Rate Multiplier: Rate Multiplier.

<u>Status Inquiry Message</u>: This option allows the user to send Status Inquiry messages and specify how frequently between them. There are two ways to specify how often this message is sent:

<u>Fixed Interval</u>: Status Inquiry messages will be sent every N seconds. <u>Random Interval</u>: Status Inquiry messages will be sent between N and M seconds. <u>Send Bearer Capabilities In Connect Message</u>: If selected, the Bearer Capabilities from this screen will be sent in the Connect message.

<u>Q.931 Optional</u>: These drop down boxes are used to add additional optional Q.931 information elements.

Called Party

Party Number Type Party Numbering Plan

Calling Party

Party Number Type Calling Party Numbering Plan Calling Party Presentation Indicator Calling Party Screening Indicator

<u>Redirecting Number</u>: Using the drop down boxes, the user can build the Q.931 Redirecting Number Information element.

Send Redirecting Number IE In Setup: If this box is selected, the Re-Directing Number Information Element will be sent in the Setup. <u>Type Of Number</u>: Select Type of Number. <u>Presentation Indicator</u>: Select Presentation Indicator. <u>Screening Indicator</u>: Select Screening Indicator. <u>Reason for Redirection</u>: Select Reason for Re-Direction.

<u>Note</u>: The call file must contain the actual redirecting number in the H.225 Redirecting Number column to actually send the data).

Display: A text message to be used in the Q.931 Display field.

H.245 - Part 1

1.245 Version: 7 ▼ Non-Standard Capabilities
G.722 Mode 3 48k 1 AMR 7.95k 4 H.263 16CIF NONE Image: Comparison of the stress of the

H.245 Version: Used to set the vintage of the H.245 layer.

<u>Non-Standard Capabilities</u>: Use to pass non-standard capabilities to the remote endpoint.

<u>Text Data</u>: This capability can be entered as text. <u>Hex Data</u>: This capability can be entered as an even number of hexadecimal digits.

<u>Audio Capabilities</u>: Used to select which audio capabilities are included in the Terminal Capability Set (TCS) message sent to the remote endpoint.

<u>Video Capabilities</u>: Used to select which video capabilities are included in the Terminal Capability Set (TCS) message sent to the remote endpoint.

<u>User Input Capabilities</u>: Used to select which User Input capabilities are included in the Terminal Capability Set (TCS) message sent to the remote endpoint.

<u>Note</u>: These parameters are used for signaling purposes only, they do not imply additional functionality in Win323 other than sending H.245 UII messages with DTMF characters.

H.245 - Part 2

Win323 Settings - C:\Win323\ParameterFiles\Win323.prm		×
	d Answer Calls Gatekeeper Calls RAS Gatekeeper Emulation Fast Connect A H.245 - Part 1 H.245 - Part 2 Media QO	
Master Slave Terminal Type Terminal Round Trip Delay Seconds Fixed Interval 0 Seconds H.245 Signaling Entity Timers (seconds) T101 - Capability Exchange 60 T101 - Capability Exchange 60 60 T103 - Logical Channel 60 1106 - Master Slave 60 T106 - Master Slave 60 1108 - Close Channel 60 End Session Timeout Timer (seconds): 60 60 Skip End Session (Send And Receive) Skip End Session (Send And Receive) 60	Audio Open Logical Channel Set Silence Suppression True Send Close Logical Channel Set Silence Suppression True Send Close Logical Channel Send Miscellaneous Command C Equalize Delay / Zero Delay Multipoint Mode Command / Cancel Multipoint Mode Command Video Freze Picture Video Fast Update Picture Video Fast Update Picture Fixed Interval © Seconds Random Interval From © To © Seconds	
	Ca	ncel <u>Apply</u> Help

<u>Master Slave Terminal Type</u>: Used to set the terminal type in the Master Slave Determination (MSD) message.

Round Trip Delay

<u>Send Round Trip Delay</u>: If selected, Round Trip Delay (RTD) messages will be sent. There are two ways to specify how often this message is sent.

<u>Fixed Interval</u>: RTD messages will be sent every N seconds. <u>Random Interval</u>: RTD messages will be sent between N and M seconds.

<u>H.245 Signaling Entity Timers</u>: Used to set the timeout values for the messages that are sent at the H.245 layer.

End Session Timeout Timer: Used to set the timeout value of the End Session message.

<u>Skip End Session (Send And Receive)</u>: If this box is selected, Win323 will not send or wait for End Session Commands. The H.225 Release Complete message will terminate the call.

Audio Open Logical Channel

<u>Set Silence Suppression True</u>: If selected the Silence Suppression True field in the Audio Open Logical Channel message will be set to TRUE.

Close Logical Channel

<u>Send Close Logical Channel</u>: If selected, the endpoint that terminates the call will first issue a Close Logical channel for each open media channel.

Miscellaneous Command

<u>Send Miscellaneous Command</u>: If this box is selected, H.245 Miscellaneous commands will be sent to the remote endpoint.

> Equalize Delay / Zero Delay: Alternately send the Equalize Delay Command and the Zero Delay Command. <u>Multipoint Mode Command / Cancel Multipoint Mode</u> <u>Command</u>: Alternately send the Multipoint Mode Command and the Cancel Multipoint Mode Command. <u>Video Freeze Picture</u>: Send the Video Freeze Picture Command. <u>Video Fast Update Picture</u>: Send the Video Fast Update Picture Command.

<u>Fixed Interval</u>: Send these commands at a fixed interval. <u>Random Interval From</u>: Send these commands at random intervals.

Media

Win323 Settings - C:\Win323\ParameterFiles\Win3	23.prm	×
General Initiate Calls Answer Calls (Gatekeep Video Fast Connect H.225	er) Unattended Answer Calls Gatekeepe H.245 - Part 1	er Calls RAS Gatekeeper Emulation Fast Connect And Tunneling Audio Fast Connect H.245 · Part 2 Media QOS Logging
Audio Out Format: G.711 ALAW 64K Session ID 1 Channel Number 4 Frames Per Packet 20 Audio File: diaFiles\TalkingAlaw.711 TOS / DSCP Flag Default (0) G.723.1 Silence Suppression G. Alternate Sending Audio And Silence AMR Specific Dynamic Payload Type 100 Send Dynamic Payload Type 100. Send RFC Number In OLC Extract RTP Media Streams From WinPcap Trace Files	Video Dut Format VIDEO DFF Session ID 2 Channel Number 8 Frame Rate 15 Maximum Bit Rate (100 bits/sec) 7680 Video File: TOS / DSCP Flag Default (0) H.261 MPI 1/29 97 H.263 MPI 1/29 97 H.263 MPI 1/29 97 H.264 Profile Baseline H.264 Profile Baseline H.264 Level 1.2 H.264 Level 1.2 H.263 Unrestricted Motion Vectors H.263 Arithmetic Coding H.263 Arithmetic Coding H.263 Arithmetic Coding H.263 Arithmetic Coding H.263 Temporal Spatial Tradeoff H.263 Temporal Spatial Tradeoff Temporal Spatial Tradeoff H.263 Temporal Spatial Tradeoff H.263 Temporal Spatial Tradeoff H.263 Temporal Spatial Tradeoff H.263 Temporal Spatial Tradeoff Temporal Spatial Tradeoff Temporal Spatial Tradeoff Temporal Spatial Tradeoff Temporal Spatial Temporal Spatial Temporal Spatial Temporal	Transmit Dn All Channels Ensure That Open Logical Channel Receive On 10 Channels Fraguests Comply With The Remote Media Ports Media Quality Highest 25000 Ending Port Number 40000 C Lowest H.264 Specific Dynamic Payload Type 104 Select Value Custom Max MBPS 225 RTCP Send Simulated RTCP ×R Reports Audio TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Rice TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Video TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Default (0) Video TOS / DSCP Flag Video TOS / DSCP Flag Video TOS / DSCP Flag
		Cancel Apply Help

Audio Out: Used to select which audio parameters to send.

<u>Format</u>: This drop down box allows the user to choose the algorithm. <u>Session ID</u>: Use to enter the session ID. Audio is normally 1. <u>Channel Number</u>: Used to enter the Logical Channel number. Frames per Packet: Used to indicate how many frames of audio data will

be sent in each RTP packet.

<u>Audio File</u>: Used to enter the file name of the test pattern to send. The button to the right of the field provides browse capabilities.

<u>TOS / DCSP Flag</u>: Used to enter the TOS / DSCP flag byte in the IP header of each audio RTP packet. Choose from the drop down list of entries. If "Other" is selected, another entry box is displayed to allow the user to enter something other than the standard choices. (See table below.)

<u>G.723.1 Silence Suppression</u>: Used to set the Silence Suppression bit in the Open Logical Channel message.

<u>Alternate Sending Audio And Silence</u>: If this box is selected, the audio will alternate between the audio pattern and silence.

<u>AMR Specific</u>: Used to select parameters used when sending AMR media streams.

<u>Dynamic Payload Type</u>: Used to indicate what the RTP payload type will be when sending AMR. <u>Send Dynamic Payload Type In OLC</u>: If selected, the payload type entered above will be included in the OLC message. <u>Send RFC Number in OLC</u>: If selected, the optional RFC field that contains the RFC number will be included in the OLC.

Audio In: Used to open an audio socket for input.

<u>Note</u>: This may be hidden. This option is hidden when the audio out format is <u>NOT</u> set to AUDIO OFF.

<u>Open A Connection For Input</u>: When the audio out format is set to any value other than None, a socket is opened for sending and receiving audio. If the audio out format is set to None, the user can choose whether or not to open a receive only socket. Selecting this option will allow Win323 to receive media if the remote endpoint wants to open an audio channel. Not selecting this option this will save system resources and speed up call startup and shutdown, but will result in Win323 sending an Open Logical Channel Reject message if the remote endpoint wants to open a audio channel.

Video Out: Used to select which video parameters to send.

<u>Format</u>: This drop down box allows the user to choose the algorithm. <u>Session ID</u>: Use to enter the session ID. Video is normally 2. <u>Channel Number</u>: Used to enter the logical channel number. Erame Rate: Used to indicate how many frames of video will be sent po

<u>Frame Rate</u>: Used to indicate how many frames of video will be sent per second.

Maximum Bit Rate: Used to set the Maximum Bit Rate field of the Open Logical Channel message, in units of 100 bits/second.

<u>Video File</u>: Used to enter the file name of the test pattern to send. The button to the right of the field provides browse capabilities.

<u>TOS / DCSP Flag</u>: Used to enter the TOS / DSCP flag byte in the IP header of each video RTP packet. Choose from the drop down list of entries. If "Other" is selected, another entry box is displayed to allow the user to enter something other than the standard choices. (See table below.)

<u>H.261 MPI</u>: The Minimum Picture Interval signaled in the Open Logical Channel.

<u>H.263 MPI</u>: The Minimum Picture Interval signaled in the Open Logical Channel.

H.264 Profile: The profile of the H.264 stream. Select from list.

H.264 Level: The level of the H.264 stream. Select from list.

H.261 Still Image: Used to set the Still Image Transmission bit in the Open Logical Channel message.

<u>H.263 Unrestricted Motion Vectors</u>: Used to set the Unrestricted Vector bit in the Open Logical Channel message.

H.263 Arithmetic Coding: Used to set the Arithmetic Coding bit in the Open Logical Channel message.

<u>H.263 Advanced Prediction</u>: Used to set the Advanced Prediction bit in the Open Logical Channel message.

<u>H.263 PB Frames</u>: Used to set the PB Frames bit in the Open Logical Channel message.

<u>H.263 Temporal Spatial Tradeoff</u>: Used to set the Temporal Spatial Tradeoff Capability bit in the Open Logical Channel message.

<u>H.263 Error Compensation</u>: Used to set the Error Compensation bit in the Open Logical Channel message.

Send Fast Picture Update If Jitter Exceeds N ms: If the jitter value of the video received from the remote endpoint exceeds N milliseconds, an H.245 Miscellaneous Command message specifying Fast Picture Update will be sent.

<u>Restart Video Pattern If Fast Picture Update Is Received</u>: If this option is set and an H.245 Miscellaneous Command message specifying Fast Picture Update, the video test pattern will be restarted at the beginning.

Video In: Used to open a video socket for input.

<u>Note</u>: This may be hidden. This option is hidden when the video out format is <u>NOT</u> set to VIDEO OFF.

<u>Open A Connection For Input</u>: When the video out format is set to any value other than None, a socket is opened for sending and receiving video. If the video out format is set to None, the user can choose whether or not to open a receive only socket. Selecting this option will allow Win323 to receive media if the remote endpoint wants to open a video channel. Not selecting this option this will save system resources and speed up call startup and shutdown, but will result in Win323 sending an Open Logical Channel Reject message if the remote endpoint wants to open a video channel.

<u>Transmit On / Receive N Channels</u>: These fields determine the number of calls that transmit/receive data. If a specific number is entered, then that many calls, in sequence starting with the first call you selected to run, transmit and/or receive data accordingly. If "all" is entered, then all of the calls you have selected to run will transmit and/or receive data accordingly.

Ensure That Open Logical Channel Requests Comply With The Remote Endpoint's Terminal Capabilities: If selected, the values that the user has entered for the H.245 Open Logical Channel Message will not violate the remote endpoint's Terminal Capabilities. For example, if the remote endpoint does not advertise G.728 in his TCS and the user selects G.728 audio out, no audio channel will be opened. For example, if the remote endpoint advertises it can receive H.263 at a max bitrate of 1280 (128 kbs) and the user has entered a max bitrate of 7680 (768 kbs) the OLC will specify a max bitrate of 1280 (128 kbs). If this option is not selected, the values entered by the user will be the ones sent in the OLC.

<u>Media Ports</u>: Used to set the upper and lower bounds for the RTP and RTCP ports that are used for audio and video connections in this instance of Win323. Only ports 25000 to 65534 are valid.

<u>Starting Port Number</u>: This is the first port that Win323 will use for media. <u>Ending Port Number</u>: This is the last port that Win323 will use for media.

<u>Note</u>: If you run multiple instances of Win323 on a PC, make sure that the port range does not overlap. For example, with the first instance of Win323 select a range of 25000 to 30000 ports and a range of 30002 to 40000 ports for the second instance.

<u>Note</u>: Please make sure that you have included enough ports for all the calls in your call file. If you are sending audio, include at least two times the number of calls, if you are sending audio and video, include at least four times the number of calls.

<u>Media Quality</u>: These three selections (Higher, Average, Lower) allow the user to control how much of the PCs resources will be focused on sending RTP. If there only a few calls running, the Quality can be set to Higher, if there are many calls running, the Quality should be set to Lower. Attempting to send high quality while running many calls will cause call signaling to suffer. The number of calls vs. the quality is directly proportional to the horsepower of the PC you are using.

<u>H.264 Specific</u>: Used to select parameters used when sending H.264 media streams. See H.241 for details.

<u>Dynamic Payload Type</u>: Used to indicate what the RTP payload type will be when sending H.264.

<u>Custom Max MBPS</u>: This parameter permits a decoder to signal that it is capable of decoding video at a higher rate than required by the signaled Level. Encoders may use this knowledge to, for example, send pictures of a given size at a higher frame rate. It is the maximum macroblock processing rate, in units of 500 macroblocks per second. This parameter is optional.

<u>Custom Max FS</u>: This parameter permits a decoder to signal that it is capable of decoding larger picture sizes than required by the signaled Level. Encoders may use this knowledge to, for example, send larger pictures at a proportionally lower frame rate. It is the maximum frame size, in units of 256 luma macroblocks. This parameter is optional. <u>Custom Max DPB</u>: This parameter permits a decoder to signal that it has more than the minimum amount of decoded picture buffer memory required by the signaled Level. Encoders may use this knowledge to construct coded video streams with improved compression. It is the maximum decoded picture buffer size, in units of 32768 bytes. This parameter is optional.

<u>RTCP</u>

<u>Send Simulated RTCP XR Reports</u>: If this box is selected, simulated RTCP XR reports will be sent in RTCP packets.

<u>Audio TOS / DCSP Flag</u>: Used to enter the TOS / DSCP flag byte in the IP header of each audio RTCP packet. Choose from the drop down list of entries. If "Other" is selected, another entry box is displayed to allow the user to enter something other than the standard choices. (See table on page 140.)

<u>Video TOS / DCSP Flag</u>: Used to enter the TOS / DSCP flag byte in the IP header of each video RTCP packet. Choose from the drop down list of entries. If "Other" is selected, another entry box is displayed to allow the user to enter something other than the standard choices. (See table on page 140.)

Extract Media Streams From Ethereal Traces

Step One

This option allows a user to extract RTP media streams suitable for use in Touchstone Technologies call generators from Ethereal Capture files. Pressing this button brings up the following dialog:

SRC	Source IP Address	Destination IP Address	Payload Type	Media Type	
ease Select 4	an Ethereal Capture Input File				
ease Select 4	un Ethereal Capture Input File				

Step Two

Next, you will be prompted to select an Ethereal Capture file for input. After the file is read in and scanned, a list of the media streams contained in the capture file will be displayed.

est Pattern Outp	out File				
SSRC	Source IP Address	Destination IP Address	Payload Type	Media Type	
00294823	120.249.2.150:40000	120.249.0.160:40000	8	G.711 Alaw	
4AE13D6C	120.249.2.150:40004	120.249.0.160:40004	8	G.711 Alaw	
69525F90	120.249.2.150:40008	120.249.0.160:40008	8	G.711 Alaw	
332A0024	120.249.0.160:40008	120.249.2.150:40008	8	G.711 Alaw	
5AF141BB	120.249.2.150:40012	120.249.0.160:40012	8	G.711 Alaw	
0BB32EA6	120.249.2.150:40016	120.249.0.160:40016	8	G.711 Alaw	
7E87390C	120.249.2.150:40020	120.249.0.160:40020	8	G.711 Alaw	
22291769	120.249.0.160:40020	120.249.2.150:40020	8	G.711 Alaw	
0124305E	120.249.2.150:40024	120.249.0.160:40024	8	G.711 Alaw	
	120.249.2.150:40028	120.249.0.160:40028	8	G.711 Alaw	
4D064DB7					
4D064D87 39B32D12	120.249.2.150:40032	120.249.0.160:40032	8	G.711 Alaw	•
39B32D12				G.711 Alaw	

Step Three

You now must specify the name of the test pattern output file.

est Pattern Outp	out File C:\Win323\Captur	eFiles\extracted RTP stream.	.pat		
SSRC	Source IP Address	Destination IP Address	Payload Type	Media Type	
00294823	120.249.2.150:40000	120.249.0.160:40000	8	G.711 Alaw	
4AE13D6C	120.249.2.150:40004	120.249.0.160:40004	8	G.711 Alaw	
69525F90	120.249.2.150:40008	120.249.0.160:40008	8	G.711 Alaw	
332A0024	120.249.0.160:40008	120.249.2.150:40008	8	G.711 Alaw	
5AF141BB	120.249.2.150:40012	120.249.0.160:40012	8	G.711 Alaw	
0BB32EA6	120.249.2.150:40016	120.249.0.160:40016	8	G.711 Alaw	
7E87390C	120.249.2.150:40020	120.249.0.160:40020	8	G.711 Alaw	
22291769	120.249.0.160:40020	120.249.2.150:40020	8	G.711 Alaw	
0124305E	120.249.2.150:40024	120.249.0.160:40024	8	G.711 Alaw	
4D064DB7	120.249.2.150:40028	120.249.0.160:40028	8	G.711 Alaw	
39B32D12	120.249.2.150:40032	120.249.0.160:40032	8	G.711 Alaw	
Now Select The	RTP Stream You Want To E⊧	tract.			

Step Four

Then you must select which stream from the list you want to extract.

SSRC Source IP A 00294823 120.249.2.15 4AE13D6C 120.249.2.15 59525F90 120.249.2.15 332A0024 120.249.2.15 5AF141BB 120.249.2.15 0BB32EA6 120.249.2.15 7E87390C 120.249.2.15 22291769 120.249.2.15 0124305E 120.249.2.15 120.249.2.15 120.249.2.15	50:40000 50:40004 50:40008 50:40008 50:40008 50:40012 50:40016	Destination IP Address 120.249.0.160:40000 120.249.0.160:40004 120.249.0.160:40008 120.249.0.150:40008 120.249.0.160:40012 120.249.0.160:40016	Payload Type 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Media Type G.711 Alaw G.711 Alaw G.711 Alaw G.711 Alaw G.711 Alaw G.711 Alaw	
4AE 13D6C 120.249.215 69525F90 120.249.215 332A0024 120.249.215 5AF141BB 120.249.215 0BB32EA6 120.249.215 22291769 120.249.215 0124305E 120.249.215	50:40004 50:40008 50:40008 50:40012 50:40016	120.249.0.160:40004 120.249.0.160:40008 120.249.2.150:40008 120.249.0.160:40012 120.249.0.160:40016	8 8 8 8 8	G.711 Alaw G.711 Alaw G.711 Alaw	
63525F90 120.249.2.19 332A0024 120.249.0.16 5AF141B8 120.249.2.15 0BB32EA6 120.249.2.15 7E87390C 120.249.2.15 22291769 120.249.2.15 0124305E 120.249.2.15	50:40008 50:40008 50:40012 50:40016	120.249.0.160.40008 120.249.2.150.40008 120.249.0.160.40012 120.249.0.160.40016	8	G.711 Alaw G.711 Alaw	
332A0024 120.249.0.16 5AF141BB 120.249.2.15 0BB32EA6 120.249.2.15 7E87390C 120.249.2.15 22291769 120.249.2.15 0124305E 120.249.2.15	60:40008 50:40012 50:40016	120.249.2.150:40008 120.249.0.160:40012 120.249.0.160:40016	8	G.711 Alaw	
5AF141BB 120.249.2.15 0BB32EA6 120.249.2.15 7E87390C 120.249.2.15 22291769 120.249.0.16 0124305E 120.249.2.15	50:40012 50:40016	120.249.0.160:40012 120.249.0.160:40016	8		
0BB32EA6 120.249.2.15 7E87390C 120.249.2.15 22291769 120.249.0.16 0124305E 120.249.2.15	50:40016	120.249.0.160:40016		C 711 Alam	
7E87390C 120.249.2.15 22291769 120.249.0.16 0124305E 120.249.2.15				G.711 Alaw	
22291769 120.249.0.16 0124305E 120.249.2.15	50:40020		8	G.711 Alaw	
0124305E 120.249.2.15		120.249.0.160:40020	8	G.711 Alaw	
		120.249.2.150:40020	8	G.711 Alaw	
4D064DB7 120.249.2.15		120.249.0.160:40024	8	G.711 Alaw	
		120.249.0.160:40028	8	G.711 Alaw	
39B32D12 120.249.2.15	50:40032	120.249.0.160:40032	8	G.711 Alaw	
low Click The 'Extract To Test Pa	attern' Button.				

Step Five

Finally, you must select the format the stream (raw or packetized) and click the 'Extract to Test Pattern' button to create the test file.

cene l	Course ID Address	Destination ID Address	Deula ad Tura -	Madia Tura	
SSRC	Source IP Address	Destination IP Address	Payload Type	Media Type	^
00294823	120.249.2.150:40000	120.249.0.160:40000	8	G.711 Alaw	
4AE13D6C	120.249.2.150:40004	120.249.0.160:40004	8	G.711 Alaw	
69525F90	120.249.2.150:40008	120.249.0.160:40008	8	G.711 Alaw	
332A0024	120.249.0.160:40008	120.249.2.150:40008	8	G.711 Alaw	
5AF141BB	120.249.2.150:40012	120.249.0.160:40012	8	G.711 Alaw	
OBB32EA6	120.249.2.150:40016	120.249.0.160:40016	8	G.711 Alaw	
7E87390C	120.249.2.150:40020	120.249.0.160:40020	8	G.711 Alaw	
22291769	120.249.0.160:40020	120.249.2.150:40020	8	G.711 Alaw	
0124305E	120.249.2.150:40024	120.249.0.160:40024	8	G.711 Alaw	
4D064DB7	120.249.2.150:40028	120.249.0.160:40028	8	G.711 Alaw	
39B32D12	120.249.2.150:40032	120.249.0.160:40032	8	G.711 Alaw	
Complete, 3006 l	RTP Packets Were Extracted	From File C:\\Win323\Captur	sFiles\20-1min calls-	4Х.рсар.	

When all streams have been extracted, click the 'Done' button.

Test Pattern File Names

The audio test pattern files that are installed with Win323 are as follows:

A12K.amr	AMR, 12 kbs, only compatible with MS Netmeeting
A16K.728	G.728, 16 kbs
A53K.723	G.723, 5.3 kbs, speech
A63K.723	G.723, 6.3 kbs, speech
A64KALAW.711	G.711 Alaw, 64 kbs, tone
A64KULAW.711	G.711 ulaw, 64 kbs, tone
A64KMOD1.722	G.722 mod 1, 64 kbs
A8K.729	G.729, 8 kbs
AMR1220a.AMR	AMR, 12.20 kbs
AMR1220b.AMR	AMR, 12.20 kbs
TalkingAlaw.711	G.711 Alaw, 64 kbs, speech

The video test pattern files that are installed with Win323 are as follows:

VSQCIF1.261 VQCIF1.261	H.261, Sub QCIF H.261, QCIF
VQCIF2.261	H.261, QCIF
VQCIF3.261	H.261, QCIF
VQCIF1.263	H.263, QCIF
VQCIF2.263	H.263, QCIF
VQCIF3.263	H.263, QCIF
VQCIF4.263	H.263, QCIF
VCIF1.261	H.261, CIF
VCIF2.261	H.261, CIF
VCIF3.261	H.261, CIF
VCIF1.263	H.263, CIF
VBPL13.264	H.264, Baseline Profile, Level 1.3

Additional video test pattern files that when combined with 64 kbs of audio will produce approximately a 384 kbs call:

C3846415.263	H.263 CIF, 15 frames/second
C3846430.263	H.263 CIF, 30 frames/second
Q3846415.263	H.263 QCIF, 15 frames/second
Q3846430.263	H.263 QCIF, 30 frames/second

Additional video test pattern files that when combined with 16 kbs of audio will produce approximately a 512 kbs call:

C5121615.263	H.263 CIF, 15 frames/second
C5121630.263	H.263 CIF, 30 frames/second
Q5121615.263	H.263 QCIF, 15 frames/second
Q5121630.263	H.263 QCIF, 30 frames/second

Additional video test pattern files that when combined with 64 kbs of audio will produce approximately a 768 kbs call:

C7686415.263	H.263 CIF, 15 frames/second
C7686430.263	H.263 CIF, 30 frames/second
Q7686415.263	H.263 QCIF, 15 frames/second
Q7686430.263	H.263 QCIF, 30 frames/second

QOS

Win323 Settings - C:\Win323\ParameterFiles\Win32	3.prm				×
General Initiate Calls Answer Calls (Gatekeepe	r) Unattended Answer Calls	Gatekeeper Calls RAS	Gatekeeper Emulation F	ast Connect And Tunneling	Audio Fast Connect
Video Fast Connect H.225	H.245 - Part 1	H.245 - Part 2	Media	QOS	Logging
ODS Jitter Alerts (% of Perfect Interval) Enable Jitter Thresholds Audio Warning Threshold 0 Audio Error Threshold 0 Video Warning Threshold 0 Video Error Threshold 0 Write Errors And Warnings To Log Note : A Value Of Zero Disables Th	QOS Interval Alerts (% of Perfect In Enable Interval Thresholds Audio Warning Threshold Audio Error Threshold Video Warning Threshold Video Error Threshold Write Errors And Warnings To	nterval)			
			C OK	Cancel 🛛	pply Help

<u>QOS Jitter Alerts</u>: This option allows the user to be visually alerted whenever the audio or video jitter exceeds the value specified by the user. There is a warning threshold and an error threshold. If the jitter measurement for a particular stream exceeds the warning threshold, its bar graph turns yellow, the call status icon changes, and a warning message may be written to the log. If the jitter measurement for a particular stream exceeds the call status icon changes, and a warning message may be written to the log. If the jitter measurement for a particular stream exceeds the error threshold, its bar graph turns red, the call status icon changes, and an error message may be written to the log.

Jitter is an estimate of the statistical variance of the RTP data packet inter-arrival time, measured in milliseconds. The inter-arrival jitter is defined to be the mean deviation of the difference in packet spacing at the receiver compared to the sender for a pair of packets.

The threshold numbers are entered as a percentage of the ideal interval. For example if the interval for a audio stream should be 60 ms and the user enters a Warning threshold of 5 (%) and an Error threshold of 10 (%), a Warning alarm will be generated when the jitter goes above 3 ms and an Error alarm will be generated when the jitter goes above 6 ms. The call icon will change when an

alarm is generated and a log message will be written if the user selects that option.

Enable Jitter Thresholds: If selected thresholds are enabled.

<u>Audio Warning Threshold</u>: The jitter measurement that will trigger a warning. <u>Audio Error Threshold</u>: The jitter measurement that will trigger an error. <u>Video Warning Threshold</u>: The jitter measurement that will trigger a warning. <u>Video Error Threshold</u>: The jitter measurement that will trigger an error. <u>Write Errors and Warning to Log</u>: If selected, jitter errors and warnings will be written to the log file.

<u>QOS Interval Alerts (% Of Perfect Interval)</u>: This option allows the user to be alerted whenever the audio or video latency exceeds the value specified by the user. There is a warning threshold and an error threshold. If the latency measurement for a particular stream exceeds the warning threshold, its bar graph turns yellow, the call status icon changes, and a warning message may be written to the log. If the latency measurement for a particular streak the call status icon changes, and a warning message may be written to the log. If the latency measurement for a particular stream exceeds the call status icon changes, and an error threshold, its bar graph turns red, the call status icon changes, and an error message may be written to the log.

The numbers are entered as a percentage of the ideal latency. For example if the latency for a video stream should be 66 ms and the user enters a warning threshold of 5 (%) and an error threshold of 10 (%), a warning alarm will be generated when the latency goes above 69 ms or below 62 ms and an error alarm will be generated when the latency goes above 72 ms or below 59 ms. The call icon will change when an alarm is generated and a log message will be written if the user selects that option.

Latency is the inter-packet delay of a media stream. For audio, it is the time interval from one packet to the next. The audio algorithm and the number of frames per packet will define what the latency should be. For video, latency is the time interval from one frame to the next. All video streams have the same latency.

Enable Interval Thresholds: If selected thresholds are enabled.

<u>Audio Warning Threshold</u>: The interval measurement that will trigger a warning.

<u>Audio Error Threshold</u>: The interval measurement that will trigger an error.

<u>Video Warning Threshold</u>: The interval measurement that will trigger a warning.

<u>Video Error Threshold</u>: The interval measurement that will trigger an error.

<u>Write Errors and Warning to Log</u>: If selected, Interval Errors and Warnings will be written to the Log file.

Write Errors and Warning to Log: If selected, Interval Errors and Warnings will be written to the Log file.

Logging

Use this command to view or change the global logging settings. The following dialog will appear:

n323 Settings - C:\Win323\ParameterFiles\Win323.prm	<u>></u>
n323 Settings - Ci\Win323\ParameterFiles\Win323.pm General Initiate Calls Answer Calls (Gatekeeper) Unattended Answer Video Fast Connect Log File H.225 H.245 - File Name C:\Win323\LogFiles\Win323.log Log Levet Warnings (Normal) Image: Size Limit 100 Size Limit 100 megabytes of disk space Write Checkpoint Record Every 00.00.00 Vite Checkpoint Record Every 00.00.00 (Zero To Disable) Image: Size Limit Imageabytes of disk space File Name C:\Win323\LogFiles\Win323.err Imageabytes of disk space Write Checkpoint Record Every 00.00.00 (Zero To Disable) Imageabytes of disk space Write Checkpoint Record Every 00.00.00 (Zero To Disable) Imageabytes file Vite Checkpoint Record Every 00.00.00 (Zero To Disable) Imageabytes file Vite Statistics File C:\Win323\LogFiles\Win323.xls Imageabytes file File Name C:\Win323\LogFiles\Win323.xls Imageabytes file Vite Statistics Record Every 00.00.00 (Zero To Disable) Imageabytes file Write Statistic	- r Calls Gatekeeper Calls RAS Gatekeeper Emulation Fast Connect And Tunneling Audio Fast Connect
	Cancel Apply Hep

Log File

<u>File Name</u>: This field represents the name and location of the current Log file. If there is no path specified, the log file resides in the originally installed Win323 directory (the same directory as the Win323.exe file). The button to the right of the field provides browse capabilities.

<u>Log Level</u>: This field represents the level at which logging will occur during the operation of the application. The following levels are available:

<u>All</u>: This option logs everything. It will generate a very large amount of information and should not be used when running at high call rates or over extended periods of time due to negative performance impact and disk space requirements. <u>Trace</u>: This option generates messages for the following levels: Trace, Debug, Information, Warnings and Errors. Use this option for debugging Win323 when looking for a known application error. It generates a very large amount of information and should not be used when running at high call rates or over extended periods of time due to negative performance impact and disk space requirements.

<u>Debug</u>: This option generates messages for the following levels: Debug, Information, Warnings and Errors. Use this option for debugging Win323 when looking for possible application error. It generates a large amount of information and should not be used when running at high call rates or over extended periods of time due to negative performance impact and disk space requirements. <u>Information</u>: This option generates messages for the following levels: Information, Warnings and Errors. Use this option for debugging problems that may be due to error conditions on the remote connection. It generates information on connections, request and responses for each call. This mode may be run at high call rates or over extended periods of time. Warnings: This option generates messages for the following levels:

Warnings. This option generates messages for the following levels. Warnings and Errors. Use this option for normal testing. <u>Errors</u>: This option generates error messages only. Use this option to minimize the size of the log file.

<u>Size Limit</u>: The option allows the user to specify the maximum size the log file may grow to. This number is in megabytes.

<u>Write Checkpoint Record Every HH:MM:SS</u>: This is the time interval between writing checkpoint records to the log file. A value of 00:00:00 will disable writing checkpoint records.

<u>Reset File Each Session</u>: This option clears the log file upon re-starting Win323 if the previous instance had exited normally. In the event of an abnormal termination, the previous instances log file contents will be preserved.

<u>Wrap When Full</u>: If this option is selected, when the log file reaches the 'Size Limit' from above, logging continues at the beginning of the file, overwriting the oldest data. If this option is not selected, logging stops when the 'Size Limit" is reached.

Error File

<u>File Name</u>: This field represents the name and location of the current Error file. If there is no path specified, the Error file resides in the Win323 install directory (the same directory as the Win323.exe file). The button to the right of the field provides browse capabilities.

<u>Size Limit</u>: The option allows the user to specify the maximum size the log file may grow to. This number is in megabytes.

<u>Write Checkpoint Record Every HH:MM:SS</u>: This is the time interval between writing checkpoint records to the error log. A value of 00:00:00 will disable writing checkpoint records.

<u>Reset File Each Session</u>: This option clears the error file upon re-starting Win323 if the previous instance had exited normally. In the event of an abnormal termination, the previous instances error file contents will be preserved.

<u>Wrap When Full</u>: If this option is selected, when the error file reaches the 'Size Limit' from above, logging continues at the beginning of the file, overwriting the oldest data. If this option is not selected, logging stops when the 'Size Limit" is reached.

Statistics File

<u>File Name</u>: This field represents the name and location of the current Statistics File. If there is no path specified, the Statistics file resides in the Win323 install directory (the same directory as the Win323.exe file). The button to the right of the field provides browse capabilities.

<u>Create A Tab Delimited File Of Runtime Statistics</u>: If this option is selected, run time statistics are logged to the disk. Pre-selected program metrics are written to a disk file (default: Win323.xls) periodically. These metrics will demonstrate how the system under test is performing. Each metric is the average value of a particular measurement. For example, one metric is the average value of all ARQ to ACF response times. At the conclusion of the run, this file may be loaded into a spreadsheet program and graphs can be generated. At the present time, the particular metrics that are captured are preset. In a future release, if there is further interest in these types of measurements, the user will be able to select which metrics are saved.

<u>Write Statistics Record Every HH:MM:SS</u>: This is the time interval between writing statistic records to the statistics file. A value of 00:00:00 will disable writing statistic records.

<u>Reset File Each Session</u>: This option clears the statistics file upon restarting Win323. Otherwise the previous file contents will be preserved.

<u>Note</u>: Both the checkbox and time interval must be set to generate the statistics file.

Summary File

<u>File Name</u>: This field represents the name and location of the current Summary File. If there is no path specified, the Summary file resides in the Win323 install directory (the same directory as the Win323.exe file). The button to the right of the field provides browse capabilities.

<u>Create A Tab Delimited Call Summary File</u>: If this option is selected, call statistics are logged to the disk. Pre-selected program metrics will be written to a disk file (default: Win323.Sum) when each call terminates. These metrics will demonstrate how the system under test is performing. Each metric is the exact value for the particular measurement. For example, one metric is the between ARQ and ACF for the call. At the conclusion of the run, this file may be loaded into a spreadsheet program and graphs can be generated. At the present time, the parameters that are captured are fixed. In a future release, if there is further interest in these types of measurements, the user will be able to select what is saved.

<u>Reset File Each Session</u>: This option clears the summary file upon restarting Win323. Otherwise the previous file contents will be preserved.

CDR File

<u>File Name</u>: This field represents the name and location of the current CDR File. If there is no path specified, the CDR file resides in the Win323 install directory (the same directory as the Win323.exe file). The button to the right of the field provides browse capabilities.

<u>Create A Tab Delimited Call CDR File</u>: If this option is selected, call definition records are logged to the disk. Information about each call is written to a disk file (default: Win323.Cdr) when each call terminates. Call start and stop times are recorded as well as the call duration. Source and destination parameters are also listed.

<u>Reset File Each Session</u>: This option clears the CDR file upon re-starting Win323. Otherwise, new summary information will be appended to the file.

Capture Received Media Files

<u>Capture Audio Streams to Disk</u>: If this option is selected the data from the received audio stream for each active call is captured from the RTP payload and saved to a separate file on the disk. If the calls repeat, the new data is appended to the file. The user may set a size limit to these files. This limit works the same way as Log file and Error file limit. The name of the trace file is formatted as follows:

Audio_Capture_Call_N_HHMMSSXXX.Ext

Where N = Call Number, HHMMSSXXX = Hour, Minute, Second, and Millisecond the trace file was created, and Ext = the file extension equal to the payload type of the media (*.729, *.723l, *.711, etc).

<u>Raw Format (Default)</u>: If this option is selected, only the payload bytes of the RTP stream will be written to the file. The RTP headers will be stripped off.

<u>Packetized Format</u>: If this option is selected, each RTP packet will be written to the file in its entirety (header and payload).

<u>Capture Video Streams to Disk</u>: If this option is selected the data from the received video stream for each active call is captured from the RTP payload and saved to a separate file on the disk. If the calls repeat, the new data is appended to the file. The user may set a size limit to these files. This limit works the same way as Log file and Error file limit. The name of the trace file is formatted as follows:

Video_Capture_Call_N_HHMMSSXXX.Ext

Where N = Call Number, HHMMSSXXX = Hour, Minute, Second, and Millisecond the trace file was created, and Ext = the file extension equal to the payload type of the media (*.261cif, *.263qcif, etc).

<u>Raw Format (Default)</u>: If this option is selected, only the payload bytes of the RTP stream will be written to the file. The RTP headers will be stripped off.

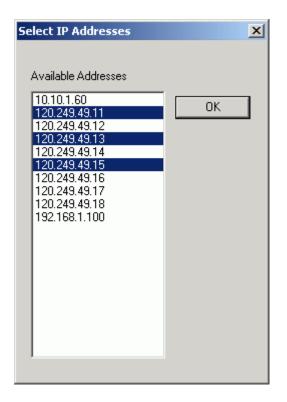
<u>Packetized Format</u>: If this option is selected, each RTP packet will be written to the file in its entirety (header and payload).

<u>Size Limit</u>: The option allows the user to specify the maximum size the media file may grow to. This number is in megabytes.

<u>Always Use Default Folders</u>: If this option is selected, Win323 will use the default folder for that file type as the initial folder in a file open or save dialog. If this option is not selected, Win323 will use the last accessed folder as the initial folder in the file open or save dialog. For example, if this option is checked, when the file open dialog is clicked for a call file, the initial folder in the dialog will be '\Win323\CallFiles\', or for a parameter file, the initial folder in the dialog will be '\Win323\ParameterFiles\'

Set Local IP Addresses

Use this command to select the IP addresses that will be used by Win323 in this session. This dialog displays the list of IP addresses that are configured on this computer that may be used to place or receive calls. The user selects the ones he wants to use from this set and clicks OK. No calls may be placed using the unselected IP addresses and no calls will be accepted from the unselected addresses. If no addresses have previously been entered, this dialog is displayed when the application is started. This option can found under Options tab.



Tools

The Tools menu offers the following commands:

ile Edit C	options Tools V	iew Help			
D 🚅 🕻	】 从 Ping		pde:	Initiate Calls	- 3
Win323	Play A	udio File	• F	, 	
Touchologie Technol	Extrac	t Media From WinPcap	File		
Select:	6 to	240 >>		Available Ca	ills: 235
Index	Call	Local IP Address	Local E.164	Remote IP Address	_
✓ 00006	Call 6	192.168.1.111	7275551005	192.168.1.113	1268796
✓ 00007	Call 7	192.168.1.111	7275551006	192.168.1.113	192514412
✓ 00008	Call 8	192.168.1.111	7275551007	192.168.1.113	110652664
✓ 00009	Call 9	192.168.1.111	7275551008	192.168.1.113	1062475
✓ 00010	Call 10	192.168.1.111	7275551009	192.168.1.113	138235168
✓ 00011	Call 11	192.168.1.111	7275551010	192.168.1.113	5153522
✓ 00012	Call 12	192,168,1,111	7275551011	192,168,1,113	180263015

<u>Ping</u>: Allows you to run a ping utility to test line-of-sight availability of a device or address on the network.

<u>Play Audio File</u>: Allows you to play a previously captured G.711 Alaw or Ulaw file using Windows Media Player.

<u>Extract Media from WinPcap File</u>: This utility allows you to "RIP" media streams from a WinPCAP (Ethereal/WireShark) capture file for later replay by the generator.

How To Schedule Win323 Sessions

The Microsoft Task Scheduler can be used to start and stop Win323 sessions automatically. To use this easy way of running single or recurring Win323 sessions, first familiarize yourself with the Task Scheduler. A Win323 task is set up just like any other application task would be, beginning with clicking the Add Scheduled Task icon. Proceed by entering the time(s) and date(s) you want to schedule the session(s). Finally, the newly scheduled task will look something like this:

Win323		? ×
Task Schedu	ule Settings Security	
6.w	/INNT\Tasks\Win323.job	
<u>R</u> un:	C:\Win323\Win323.exe	
		Browse
S <u>t</u> art in:	C:\Win323	
<u>C</u> omments:		
R <u>u</u> n as:	Admin	Set password
☑ <u>E</u> nabled (s	cheduled task runs at specified time)	
	ОК С	ancel <u>A</u> pply

Now you must add a parameter to the 'C:\Win323\Win323.exe' command line. The parameter you must add to the command line is the name of a session settings file. A session settings file name has an extension of 'ssn.' It contains the parameters that are related to the operation of the application. This includes all of the names of the files that are used by Win323. A session settings file contains all of the required parameters and files that Win323 requires.

<u>Note</u>: there is a parameter in the session settings file called Session Time Limit. If this value is other than zero (00:00:00), the Win323 session will last for that duration (zero means infinite).

The new command line would look like this:

Win323		?	×
Task Schedul	e Settings Security		
swi	NNT\Tasks\Win323.job		
<u>B</u> un:	C:\Win323\Win323.exe win32	3.ssn	
		<u>B</u> rowse	
S <u>t</u> art in:	C:\Win323		
<u>C</u> omments:			
R <u>u</u> n as:	Admin	<u>S</u> et password	
<mark>▼ E</mark> nabled (sc	heduled task runs at specified tin	ne)	
	ОК	Cancel <u>A</u> pply	

When this scheduled Win323 runs, the program settings and files named in Win323.ssn will be used for this session.

<u>Note</u>: Ordinary DOS batch files can be used to run Win323 the same way as the Microsoft Scheduler.

For example, the batch file Win323.bat:

cd c:\win323 win323gen slowtest.ssn win323gen fasttest.ssn

Will run Win323 twice, the first time using the settings from slowtest.ssn and the second time using the settings from fastest.ssn.

Examples

Parameter File

The following is a portion of a parameter file:

[Parameters] Version=Win323 Version 2.0 T.35 Country Code=0 T.35 Extension=0 Manufacturer Code=0 Product ID=Win323 Version ID=Version 2.0 Call Start Separation=100 Call Stop Separation=100 Fixed Restart Delay=TRUE Call Restart Separation=100 Variable Restart Delay=FALSE Minimum Restart Delay=100 Maximum Restart Delay=1000 Delay Period=60 Smooth Delay=TRUE Sawtooth Delay=FALSE Random Restart Delay=FALSE Random From Delay=0 Random To Delay=1000 Random Delay Period=5 Continue On Error=TRUE Stop On Error=FALSE Delay After Error=FALSE Delay After Error Value=0 Consecutive Error Count=1 Call Shutdown Style=1 Mirror RTP Streams=FALSE Call Type=1 Endpoint Type=4 H.225 Remote Call Signaling Port Number=1720 RAS Gatekeeper Registration And Status Port=1719 Ping Remote Endpoints And Gatekeepers=FALSE Auto Switch To Detail View=FALSE Auto Switch To Main View=FALSE Show Expanded Call Trace=FALSE Use Public IP Address=FALSE Public IP Address= RAS Want Delay Between RCF And ARQ=FALSE RAS Fixed Delay Between RCF And ARQ=FALSE

RAS Random Delay Between RCF And ARQ=FALSE RAS Delay Between RCF And ARQ=0 RAS From Delay Between RCF And ARQ=0 RAS To Delay Between RCF And ARQ=0 H.225 Setup Timeout Value=120 H.225 Ignore H.245 Address In Call Proceeding=TRUE H.225 Ignore H.245 Address In Alerting=TRUE H.225 Ignore H.245 Address In Progress=TRUE H.225 Ignore H.245 Address In Facility=TRUE H.225 Send Terminal Data In Setup Message=FALSE H.225 Terminal Data In Setup Message=Win323 - Version 2.0 H.245 Send User Input Indication=FALSE H.245 Send User Input Indication As DTMF=FALSE H.245 Send User Input DTMF After Audio OLC ACK=FALSE H.245 Send User Input DTMF After Video OLC ACK=FALSE H.245 Send User Input Indication As Destination Alias=FALSE H.245 User Input Indication Continuous=FALSE H.245 User Input Indication Interval=100 H.245 Send User Input Indication As Destination Alias Timeout=0

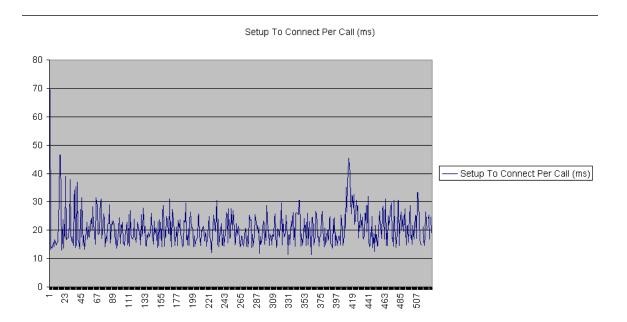
Session Settings File

The following is an example of session settings file:

[SessionData] Version=Win323 Version 2.0 CallFile=C:\Win323\CallFiles\BKK 00001.clf ParamFile=C:\Win323\ParameterFiles\Win323.prm LogFile=C:\Win323\LogFiles\Win323.log ErrFile=C:\Win323\LogFiles\Win323.err StatisticsFile=C:\Win323\LogFiles\Win323.xls SummaryFile=C:\Win323\LogFiles\Win323.sum CDRFile=C:\Win323\LogFiles\Win323.cdr Application Window Pos= Local IP Address Count=1 Local IP Address 1=192.168.1.111 Session Time Limit=00:00:00 Session Checkpoint Time=00:00:00 Session Error Checkpoint Time=00:00:00 Session Statistics Interval=00:00:00 TerminalMode=0 LogLevel=4 Log File Size Limit=102400000 Error File Size Limit=10240000 Trace Files Size Limit=10240000 Last View Type=3 Reset LogFile=TRUE Reset ErrFile=TRUE Reset Statistics File=TRUE Reset Summary File=TRUE Reset CDR File=TRUE Wrap LogFile=FALSE Wrap ErrFile=FALSE Save Run Time Statistics=FALSE Save Run Time Call Summary=FALSE Save Run Time CDR=FALSE Exited Cleanly=FALSE Enable Stacked Tabs=TRUE First Demonstration=FALSE

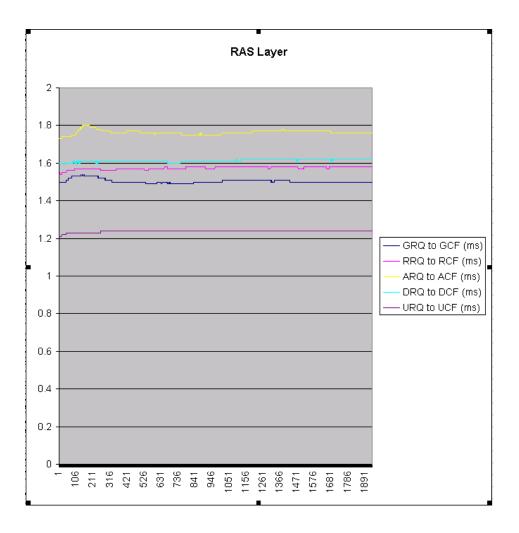
Summary File Display

This is a graph (taken from a summary file loaded into Microsoft Excel) of the actual time it took from sending the Setup message to receiving the Connect message for approximately 530 calls.



Statistics File Display

This is a graph (taken from a statistics file loaded into Microsoft Excel) of the actual time it took for GRQ to GCF, RRQ to RCF, ARQ to ACF, DRQ to DCF, and URQ to UCF messages for approximately 1900 minutes.



Trace File Example

This is an example of a Setup message taken from a typical trace file.

```
Date
                           = 03/29/05
Time
                           = 13:08:13.824996
Protocol Layer
                           = H.225
Source IP Address
Source Port
                         = 120.249.50.1 \\ = 5640
Source E.164 Alias = 8558
Source H.323 ID Alias = Joe1
Destination IP Address = 120.249.50.100
Destination Port
                           = 1720
Destination E.164 Alias = 12199
Destination H.323 ID Alias = Harry1
                           = 2900E6EAE9371CF11A14764C0D74F059
Conference ID
Call ID
                           = B4502692B4890C6EBCE5DF8215545BEC
Call Reference Value
                           = 9851
value Q.931 ::= Call Signalling :
{
  Protocol Discriminator
   Length
                                         01 Octet
                                         08
    Value
  Call Reference
                                         2 Octets
    Length
                                        9851
    Value
  Message Type - Setup
    Length
                                        01 Octet
    Value
                                         05
  Q.931 Information Elements :
    Bearer Capability
                                         4 Octets
     Length
      Value
                                         88D800A5
      Decode :
        Octet 3
          Extension
            Extension Bit is Set
          Coding Standard
            ITU-T
          Information Transfer Capability
            Unrestricted Digital Information
        Octet 4
          Extension
           Extension Bit is Set
          Transfer Mode
            Packet Mode
          Information Transfer Rate
           Multirate (64 k Bits/Sec Base Rate)
        Octet 4.1
          Extension
            Extension Bit is Not Set
          Rate Multiplier = 0
```

```
Octet 5
         Extension
           Extension Bit is Set
          Layer 1 Identification
           Layer 1 Protocol Indication
          Information Layer 1 Protocol
           H.221 and H.242
   Calling Party Number Idenitfier
     Length
                                        11 Octets
     Value
                                        A83532303837...
     Decode :
       Octet 3
         Extension
           Extension Bit is Set
          Type Of Number
           National Number
          Numbering Plan
            National Standard Numbering
   Called Party Number Idenitfier
     Length
                                        11 Octets
     Value
                                        A83535353936...
     Decode :
       Octet 3
          Extension
           Extension Bit is Set
          Type Of Number
           National Number
          Numbering Plan
            National Standard Numbering
   User To User
     Length
                                        165 Octets
                                        A505...
     Value
     Decode :
       Protocol Discriminator
                                        01
         Length
                                        05
         Value
       H.225 ASN.1
          Decode :
value H323-UserInformation ::=
 h323-uu-pdu
  {
   h323-message-body setup :
   {
     protocolIdentifier { 0 0 8 2250 0 4 },
     sourceAddress
      {
       dialedDigits : "8558",
       h323-ID : "Joe1"
      },
     sourceInfo
      {
       vendor
        {
          vendor
```

}

{

```
{
        t35CountryCode 0,
        t35Extension 0,
       manufacturerCode 44252
      },
      productId "Win323",
      versionId "Version 1.4.0"
    },
    terminal
    {
      nonStandardData
      {
        nonStandardIdentifier h221NonStandard :
        {
          t35CountryCode 0,
          t35Extension 0,
         manufacturerCode 44252
        },
        data '57696E33323347656E202D205665727369 ...'H
      }
    },
   mc FALSE,
   undefinedNode FALSE
  },
 destinationAddress
  {
   dialedDigits : "12199",
   h323-ID : "Harry1"
  },
  destCallSignalAddress ipAddress :
  {
   ip 120.249.50.100,
   port 1720
  },
 activeMC FALSE,
 conferenceID '2900E6EAE9371CF11A14764C0D74F059'H,
 conferenceGoal create : NULL,
 callType pointToPoint : NULL,
 sourceCallSignalAddress ipAddress :
  {
   ip 120.249.50.1,
   port 5640
  },
  callIdentifier
  {
   guid 'B4502692B4890C6EBCE5DF8215545BEC'H
 },
 mediaWaitForConnect FALSE,
 canOverlapSend FALSE
}
```

Length = 205

}

0802267B	05040488	D800A56C	0BA83532	30383737	32353532
700BA835	35353936	39303732	337E00A5	0500B806	0008914A
00040201	80B88B40	03004A00	6F006500	3122C000	00ACDC08
57696E33	32334765	6E0C5665	7273696F	6E20312E	332E3350
0000ACDC	1957696E	33323347	656E202D	20566572	73696F6E
20312E33	2E330002	0200454C	C4050048	00610072	00720079
00310078	F9326406	B8002900	E6EAE937	1CF11A14	764C0D74
F05900CD	0C000007	0078F932	01160811	00B45026	92B4890C
6EBCE5DF	8215545B	EC010001	00		

Checkpoint Record

A checkpoint record is written to the log file once a minute. This record provides a summary of the current Win323 session. This is an example of a checkpoint record.

CHECKPOINT Run Time = O Days O Hours 10 Minutes 38 Seconds Calls Run = 9023 Calls Passed = 8823 Calls Failed = 0 Errors = 0 Low Call Rate = 47,985.68 Current Call Rate = 49,780.44 High Call Rate = 50,082.40 Minimum Call Startup Time = 118.75 ms Minimum Call Shutdown Time = Average Call Startup Time = 3455.89 ms Average Call Shutdown Time = Maximum Call Startup Time = 4780.05 ms Maximum Call Shutdown Time = 0.44 ms 7317.75 ms 8770.14 ms

 GRQ's Sent =
 0
 GCF's Received =
 0
 GRJ's Received =
 0
 GRQ Timeouts =

 RQ's Sent =
 0
 RCF's Received =
 0
 RRJ's Received =
 0
 RRQ Timeouts =

 ARQ's Sent =
 0
 ACF's Received =
 0
 RRJ's Received =
 0
 ARQ Timeouts =

 DRQ's Sent =
 0
 ACF's Received =
 0
 ARJ's Received =
 0
 ARQ Timeouts =

 DRQ's Sent =
 0
 DCF's Received =
 0
 DRJ's Received =
 0
 DRQ Timeouts =

 DRQ's Sent =
 0
 DCF's Received =
 0
 DRJ's Received =
 0
 DRQ Timeouts =

 DRQ's Sent =
 0
 UCF's Received =
 0
 URQ Timeouts =
 0

 Setup's Sent =
 0
 UCF's Received =
 0
 URQ Timeouts =
 0

 Call Proceeding's Sent =
 0
 Call Proceeding's Received =
 9014
 Alerting's Received =
 9012

 Connects's Sent =
 0
 Connect's Received =
 9012
 9012

 Connects's Sent =
 0
 Release Complete's Received =
 364

 Setup Timeouts's =
 0
 Release Complete 0 ο 0 0 Π MSD's Sent MSD ACK's Sent = 0 TCS's Sent = 8974 TCS's ... TCS ACK's Sent = 8972 TCS ACK's Received = Audio OLC's Sent = 8962 Audio OLC's Received = Audio OLC's Sent = 8972 Audio OLC ACK's Received = Video OLC's Sent = 8972 Video OLC ACK's Received = Video OLC ACK's Sent = 8972 Video OLC ACK's Received = OLC Timeouts = 0 Audio CLC's Sent = 8900 Audio CLC's Received = Video CLC ACK's Sent = 0 Audio CLC's Received = Video CLC ACK's Sent = 0 Video CLC's Received = Video CLC ACK's Sent = 0 Uideo CLC ACK's Received = Video CLC ACK's Sent = 0 Video CLC ACK's Received = Video CLC ACK's Sent = 0 Uideo CLC ACK's Received = Video CLC ACK's Sent = 0 Video CLC ACK's Received = Video CLC ACK's Sent = 0 Video CLC ACK's Received = 0 Uideo CLC ACK's Received = 0 Uil's Received = 0 Audio CLC ACK's Receiv 8989 8989 8992 8974 8972 8962 8972 8962 n 8899 8899 0 п 8877

Appendix A

Transferring a License

The method of transferring a license is the same for all Touchstone Technologies products. For demonstration purposes Win323 will be used to explain the license transfer procedure.

At the time of installation there are two options for licensing Win323. The first is to have a new key issued from Touchstone Technologies, and the second is to transfer a license from an existing Win323 application to the newly installed version of Win323. Touchstone's software licenses are fully transferable from PC to PC within a customer's physical location. To transfer a license to a different location, please contact Touchstone Technologies at (267) 222-8687.

A floppy diskette or USB memory device is required to transfer a license.

There are three basic steps in transferring a license:

- Initialize transfer media on the PC with newly installed Win323.
- Export license from the PC with the originally installed Win323.
- Import license to the PC with newly installed Win323.

Note: Touchstone Technologies licenses will have to be re-issued if:

- The original installation directory of Win323 is:
 - Copied or moved to a new directory on the original PC.
 - Copied or moved to a different PC.
 - \circ Renamed
- One of the hidden files (deltapts.ckn or deltapts.inf) is deleted or modified.
- The license service (crypserv.exe) is stopped or uninstalled.

After a new installation is finished and the application is run for the first time an Authorizing Win323 screen will appear, click on the Advanced button, an expanded dialog will be displayed:

Authorizing Win323		X
	Site Code: Authorization Code:	6F88 53AB 492F BE38 8444 7032 09A2
		Authorize Win323
		To authorize this application, please copy the site code above and visit the key request page provided in the e-mail you received when you purchased the product or contact sales@touchstone-inc.com for more information on obtaining your code. Please note that we must validate your transaction prior to issuing your permanent code.

Press the Import License button to begin the license transfer procedure.

Step One - Import License, Media Initialization

The first step of the Import License transfer requires initialization of a diskette or USB device that will be used as the License Transfer Media.

Import License - Step 1		×
	This process will initialize a floppy disk or USB device as a "License Transfer Media". The media must be "FAT" (file allocation table) formatted. Please insert the formatted "License Transfer Media" into an appropriate device and select its location below. After completing this process, please press the "Next" button. If you have previously completed this step, check here and press the "Next" button. "License Transfer Media" device location:	
	< Black Next > Cancel	

To initialize the transfer media, select the drive to be used as the transfer device, insert the transfer media and press the Next button.

<u>Note</u>: If you have completed this step from a previous execution of Win323 and already have the initialized transfer media, click the checkbox and then click the Next button.

When step one is complete the transfer media is initialized.

The Import License step two dialog will then appear:

Import License - Step 2		×
	License Transfer Media successfully initialized. Please remove the License Transfer Media from its current location. Note - For USB devices, please use the correct 'Unplug' procedure for this type of device. After removing the media, please take it to the installation you wish to export the license from and follow the procedures detailed there. After completing the license export process from the existing installation, please press the 'Next' button to continue with the import process.	
	< Back Next > Cancel	

The next step is to eject or unplug the transfer media and take it to the PC that has the license you want to remove.

<u>Note</u>: For USB devices please follow the correct unplug procedure for your device.

Step Two - Export License

On the PC that you have selected to remove the Win323 license, click on the Help menu and then select Licensing Information.

The following dialog will appear:

About Your Win3	23 License	X
Type: Restrictions: Term:	Professional Version Unrestricted Never expires.	Win323 Touchstone Technologies
Information:	, 	Upgrade License
	,	Close
		<u>A</u> dvanced >>

Please press the Advanced button.

About Your Win3	23 License		×
Type: Restrictions: Term: Information:	Professional Version Unrestricted Never expires.	Win323 Touchstone Technologies Upgrade License Close Hide <<	
to another inst press the "Exp WARNING: TH	t the license from this installation allation. To export the license, ort License'' button. his operation will disable this on completion of the transfer.	Export License	

A warning dialog will be displayed next. This box has a warning to read the procedure carefully and that the version of Win323 running will be disabled after the procedure is completed.

If you are certain you want to transfer this license, press Yes, if not, press No.

The existing Win323 application will not be uninstalled nor will any Win323 files be removed from the Win323 directory, the software will just be disabled. Later if you wish, you can re-enable the application with a new license from Touchstone or with a Win323 license transferred from another PC.

Step one of the export procedure displays the following dialog:

Export License - Step 1		×
	To begin the license export process, please install the new application on the PC you wish to transfer the license to. After installing the new application, you must run it to initialize a "License Transfer Media" device. Please press the "Advanced" button on the "Authorization" dialog and then press the "Import License" button. Follow the directions detailed in steps 1 and 2 of the import process. After you have initialized the "License Transfer Media", please press the "Next" button.	
	< Back. Next > Cancel Help	_

Click the Next button.

Step two of the license export procedure displays the following dialog:

Export License - Step 2		×
	Insert the "License Transfer Media" into an appropriate device. Chose the device location below and press the "Next" button. "License Transfer Media" device location:	
	< Back Next > Cancel He	lp

Insert the transfer media that was initialized from Step One - Media Initialization, select the drive to be used as the transfer device and press the Next button.

When the license has been successfully exported, the following dialog will appear:

Export License - Step 3		×
	License successfully exported. Please remove the License Transfer Media from its current location. Note - For USB devices, please use the correct 'Unplug' procedure for this type of device. After removing the media, please take it to the installation you wish to import the license to and follow the procedures detailed there. Please press the "Finish" button to complete the transfer.	
	< Back Finish Cancel Help	_

When the Finish button is pressed, the application will terminate. This completes the license export.

Remove and take the License Transfer Media to the newly installed Win323.

<u>Note</u>: For USB devices please follow the correct unplug procedure for your device.

Step Three - Install exported license

The PC with the newly installed version of Win323 should still have the following screen displayed, Import License - Step 2:

Import License - Step 2		×
	License Transfer Media successfully initialized. Please remove the License Transfer Media from its current location. Note - For USB devices, please use the correct 'Unplug' procedure for this type of device. After removing the media, please take it to the installation you wish to export the license from and follow the procedures detailed there. After completing the license export process from the existing installation, please press the 'Next' button to continue with the import process.	
	< Back Next > Cancel	

After the export procedure is complete, and you have the license on the transfer media, insert or plug in the media and then press the Next button.

Select the proper License Transfer Media:

Import License - Step 3		×
	Please insert the License Transfer Media containing the license you wish to import. Select the device location below and press the "Next" button to continue with the import process. "License Transfer Media" device location:	
	< <u>B</u> ack <u>N</u> ext > Cancel	

Press the Next button when done.

When the license has been successfully imported, the following dialog will appear:

Import License - Step 4		×
	License successfully imported. Please remove the License Transfer Media from its current location. Note - For USB devices, please use the correct 'Unplug' procedure for this type of device. Please press the ''Finish'' button to complete the transfer.	
	< <u>B</u> ack Finish Cancel	

The newly installed Win323 is now fully enabled and ready to run when you press the Finish button.

License Transfer Instruction Chart

Action	New Installation	Existing Installation
1.Install New Software	Select the machine on which you would like to install the new instance of the product and follow the installation instructions. Once installed, run the application and the licensing dialog will appear.	
	When the new installation asks for the Authorization code, press the 'Advanced' button then, press the 'Import License' button. This will bring up a dialog that asks you to initialize a 'License Transfer Media Device'. This device may be a diskette or USB device. Enter the letter of the drive where the transfer media is located and press the 'Next' button. Once you have pressed the 'Next' button, you may remove the License Transfer Device. You must then take that diskette or USB device to the PC that has the license you want to	

Action	New Installation	Existing Installation
3. Export License		Run the application on the PC that has the license you want to export, go to the Help menu and press Licensing Information.
		Press the 'Advanced' button to reveal the advanced options. Once visible, press the 'Export License' button.
		Follow the step-by-step directions to export the license onto the License Transfer Media Device.
		Remove the License Transfer Media Device. The existing installation is now deactivated.
		Return to the new installation.
4. Import License	Insert your License Transfer Device into the appropriate device. Follow the instructions to import the license. The new installation is now activated.	

<u>FAQ</u>

The following are Frequently Asked Questions about Win323:

Q: Must I set up my call file with E.164 or H.323 ID aliases for point-to-point calls?

A: No. Alias names are only required when using a gatekeeper. Point-to-point calls require only IP address; aliases are optional.

Q: How can I send DTMF digits?

A: The H.245 UII message is used to send simulated DTMF digits after an Audio or Video logical channel is opened. The alphanumeric characters are sent one at a time. The sequence may be sent once or they can be looped continuously for the duration of the call. The user specifies the time delay before starting the UII message sequence and the time interval between UII messages. The actual alphanumeric character sequences that are sent are specified in the call file. Therefore each call can have a different sequence.

Q: What call measurements can be taken with Win323?

A: There are two ways you can take specific call measurements. The first way is to generate a 'Statistics' file. This file contains the *average* values of 25 measurements taken by Win323. These measurements include the time from GRQ to GCF, RRQ to RCF, Setup to Connect, and TCS to TCS ACK among others. These measurements represent the *average* values take over all the calls that have run so far in this session and are written to the file periodically. The second way to take specific call measurements is to generate a "Summary' file. This file contains the same measurements as stated above but is written to the file on a call-by-call basis.

Q: What about call delays?

A: It is important to understand the various delays used by Win323 when generating calls. There are four delays that apply to the starting, restarting, and stopping of calls. Two of these are on the Options: Settings: General menu. They are: Start Delay and Stop Delay. The third and fourth delays are in the call file and are called the Call Start Delay and the Call Delay.

The two easiest of these to understand are the Call Start Delay and the Call Delay. The first time a call is started, the first thing it does is look at the Call Start Delay parameter. This parameter tells the call how long (in seconds) it must wait to start its protocol exchange. The call is active and ready to run, but will wait 'Call Start Delay' seconds before it will actually start sending H.323 messages. On subsequent iterations of this call it will wait 'Call Delay' seconds before it starts sending H.323 messages. Each call in the Call File can have a different Call Start Delay and Call Delay. At the call level, the only two delays are the Call Start Delay and the Call Delay. For example, if a call has a 5 second call start delay and a 10 second call delay, the first time the call is started, it will wait 5

seconds before sending the initial protocol exchange. Thereafter, the when the call is restarted, it will wait 10 seconds before sending the initial protocol exchange. When setting up Initiate / Answer calls (i.e. calls that use a gatekeeper), it is advisable to set the Call Start Delay and the Call Delay on the Answer side to a lower value than the Initiate side, to give the Answer side time to get ready for the next call.

The other two delays apply at the Win323 level, (which controls all of the calls). They are used to control burst rate of protocol exchanges. The Start Delay is used to regulate the amount of time between the starting or the restarting of different calls. When Win323 has two or more calls to start (because the user pressed the Start Button) or because the call has completed and wants to restart, it uses the Start Delay between each call. This delay is measured in milliseconds. For example, if Win323 has three calls to start and the Start Delay is 100 milliseconds, call 1 will be started immediately, call 2 will start 100 ms after call 1, and call 3 will start 100 ms after call 2. The Stop Delay is used to regulate the amount of time between the stopping of different calls. When Win323 has two or more calls to stop (because the user pressed the Stop Button), it uses the Stop Delay between each call. This delay is measured in milliseconds. For example, if Win323 has three calls to stop and the Stop Delay is 500 milliseconds, call 1 will be stopped immediately, call 2 will stop 500 ms after call 1, and call 3 will stop 500 ms after call 2. The Stop Delay only applies when the user stops calls using the Stop Button.

Q: How can I simulate many different endpoints registering with a gatekeeper? **A:** Most gatekeepers today recognize distinct endpoints by their IP address <u>and</u> port number. Win323 uses a different port number for each registration that it makes with a gatekeeper. Therefore, if you run a call file with 500 calls, the gatekeeper will see 500 distinct registrations.

Error Codes

When an error occurs during a call, an error message is written to the log file.

The following table is a list of the error messages and their error number generated by Win323.

Number	Message			
	Call Layer			
10001	Timeout During Protocol Exchange. Call Did Not Connect			
10002				
10003	Could Not Create All Of The Sockets Required For This Call			
	RAS Layer			
20001	RAS Received An Incorrect Gatekeeper Confirm Message H.225 Object Identifier			
20002	A RAS Gatekeeper Reject Was Received - Reason =			
20003	RAS Received An Incorrect Registration Confirm Message H.225 Object Identifier			
20004	A RAS Registration Reject Was Received - Reason =			
20005	A RAS Unregistration Reject Was Received - Reason =			
	RAS Received An Invalid Port Number Of Zero For The Destination Call Signal			
20006	Address In The Admission Confirm.			
20007	A RAS Admission Reject Was Received - Reason =			
20008	A RAS Disengage Reject Was Received - Reason =			
20009	Could Not ASN.1 Decode An Incoming RAS Message :			
20010	A RAS Gatekeeper Request Timeout Occurred			
20011	A RAS Registration Request Timeout Occurred			
20012	A RAS Admission Request Timeout Occurred			
20013	A RAS Disengage Request Timeout Occurred			
20014	A RAS Unregistration Request Timeout Occurred			
20015	RAS - Local Socket Unexpectedly Closed			
20016	RAS - Remote Socket Unexpectedly Closed			
20017	Could Not ASN.1 Encode The RAS Gatekeeper Request Command :			
20018	Could Not ASN.1 Encode The RAS Registration Request Command :			
	Unable To Create The RAS Admission Request Command - No Registration Confirm			
20019	Endpoint Information Was Received			
20020	Could Not ASN.1 Encode The RAS Admission Request Command :			
	Unable To Create The RAS Unregistration Request Command - No Registration			
20021	Confirm Endpoint Information Was Received			
20022	Could Not ASN.1 Encode The RAS Unregistration Request Command :			
20023	Could Not ASN.1 Encode The RAS Unregistration Confirm Command :			
	Unable To Create The RAS Disengage Request Command - No Registration Confirm			
20024	Endpoint Information Was Received			
20025	Could Not ASN.1 Encode The RAS Disengage Request Command :			
20026	Could Not ASN.1 Encode The RAS Disengage Confirm Command :			
	Unable To Create The RAS Information Request Response Command - No			
20027	Registration Confirm Endpoint Information Was Received			
20028	Could Not ASN.1 Encode The RAS Information Request Response Command :			
	Unable To Create The RAS Lightweight Registration Request Command - No			
20029	Registration Confirm Endpoint Information Was Received			
20030	Could Not ASN.1 Encode The RAS Lightweight Registration Request Command :			
20031	Could Not Issue Gatekeeper Request Message			

Number	Message				
20032	Could Not Issue Registration Request Message				
20033	Could Not Issue Admission Request Message				
20034	Could Not Issue Unregistration Request Message				
20035	Could Not Issue Unregistration Confirm Message				
20036	Could Not Issue Disengage Request Message				
20037	Could Not Issue Disengage Confirm Message				
20038	Could Not Issue Information Request Response Message				
20039	Could Not Issue Lightweight Registration Request Message				
20040	RAS Socket Create Failed - IP Address XXX Port XX - Error Code = XXXX				
	RAS - TCP/IP Error : XX (Function) - Local IP Address XXX : Port XX - Remote IP				
20041	Address XXX : Port XX - Error Text				
20042	Could Not ASN.1 Encode The H460 Qos Monitoring Report For The IRR Command :				
	Could Not ASN.1 Encode The H460 Qos Monitoring Report For The DRQ/DCF				
20043	Command :				
	H.225 Layer				
	A Q.931 Protocol Error Occurred - User Info Protocol Indicator Is Incorrect - Ignoring				
30001	Message				
	The Length Of The Q.931 User To User Information Element Is Incorrect - Ignoring				
30002	Message				
30003	Received Incorrect Setup Message H.225 Object Identifier				
30004	Received Incorrect Release Complete Message H.225 Object Identifier				
30005	Received Incorrect Call Proceeding Message H.225 Object Identifier				
30006	Received Incorrect Connect Message H.225 Object Identifier				
30007	Received Incorrect Alerting Message H.225 Object Identifier				
30008	Call ID Returned In H.225 Release Complete Is Incorrect				
	A Q.931 Protocol Error Occurred - Received Call Reference Value Incorrect. Ignoring				
30009	Message.				
	A Q.931 Protocol Error Occurred - Call Reference Length Incorrect - Ignoring				
30010	Message				
	A Q.931 Protocol Error Occurred - Protocol Discriminator Incorrect - Ignoring				
30011	Message				
30012	Call ID Returned In H.225 Call Proceeding Message Is Incorrect				
30013	Call ID Returned In H.225 Connect Message Is Incorrect				
30014	Conference ID Returned In H.225 Connect Message Is Incorrect				
30015	Call ID Returned In H.225 Alerting Message Is Incorrect				
30016	Received H.225 Release Complete Message - No Reason, No Cause				
30017	Received Incorrect Facility Message H.225 Object Identifier				
30018	Call ID Returned In H.225 Facility Message Is Incorrect				
30019	Conference ID Returned In H.225 Facility Message Is Incorrect				
30020	Call ID Returned In H.225 Progress Message Is Incorrect				
30021	Could Not ASN.1 Decode An Incoming H.225 Message :				
30022	H.225 Release Complete Message Could Not Be Sent And Was Not Received				
30023	H.225 Was Unable To Establish A Remote Endpoint Connection Address From ACF				
	No H.245 Address / Faststart Elements Were Returned In Response To The Setup				
30024	Message				
30025	The H.245 Address Was Not Returned In Response To The Setup Message				
30026	H.225 - Local Socket Was Closed Before Setup Message Could Be Sent				
	H.225 - Local Socket Was Closed After Setup Message Was Sent But Before				
20027	Connect Was Received				
30027					
30027	H.225 - Local Socket Was Closed After Connect Was Received				

Number	Message				
	H.225 - Remote Socket Was Closed After Setup Message Was Sent But Before				
30030	Connect Was Received				
30031	H.225 - Remote Socket Was Closed After Connect Was Received				
30032	H.225 - Remote Socket Was Closed After Connect Was Received				
30033	Could Not ASN.1 Encode The H.225 Setup Message :				
30034	Could Not ASN.1 Encode The Release Complete Message :				
30035	H.225 Local Socket Closed - Terminating Persistent Mode				
30036	H.225 - Local Socket Was Closed Before Setup Message Was Received				
30037					
30038	H.225 - Local Socket Was Closed After Connect Was Sent				
30039	H.225 - Remote Socket Was Closed Before Setup Message Was Received				
30040	H.225 - Remote Socket Was Closed Before Connect Could Be Sent				
30041	H.225 - Remote Socket Was Closed After Connect Was Sent				
30042	Could Not ASN.1 Encode The H.225 Call Proceeding Message :				
30043	Could Not ASN.1 Encode The H.225 Alerting Message :				
30044	Could Not ASN.1 Encode The H.225 Connect Message :				
30045	Could Not ASN.1 Encode The H.225 Facility Message :				
30046	Could Not Issue Call Proceeding Message				
30047	Could Not Issue Alerting Message				
30048	Could Not Issue Connect Message				
30049	Could Not Issue Status Message				
30050	Could Not Issue Status Inquiry Message				
30051	Could Not Issue Facility Message				
30052	Could Not Issue Release Complete Message				
30053	Could Not Issue Setup Message				
	H.225 - TCP/IP Error : XX (Function) - Local IP Address XXX : Port XX - Remote IP				
30054	Address XXX : Port XX - Error Text				
30055	H.225 Socket Create Failed - IP Address XXX Port XX - Error Code = XXXX				
20050	H.225 Socket Connect Failed - Local IP Address XXX Port XX - Remote IP Address				
30056	XXX Port XX - Error Code = XX				
20057	H.225 Socket Listen Failed - Local IP Address XXX Port XX - Remote IP Address				
30057	XXX Port XX - Error Code = XX				
	H.245 Layer				
40001					
40002	Received An Incorrect Terminal Capability Set Message H.245 Object Identifier				
40003	Received An Invalid H.245 Request Message				
40004	Received An Invalid H.245 Response Message				
40005	Received An Invalid H.245 Command Message				
40006	Received An H.245 Function Not Supported Message				
40007	Received An Invalid H.245 Indication Message				
40008	Received An Invalid H.245 Message				
40009	Could Not ASN.1 Decode A H.245 Message :				
40010	H.245 Terminal Capability Set Timeout				
40011	H.245 Master Slave Determination Timeout				
40012	H.245 Close Logical Audio Channel Timeout				
40013	H.245 Close Logical Video Channel Timeout				
	The Call Was Terminated Before The H.245 Completed Successfully - Sent An End				
40014	Session Message, But Did Not Receive And End Session From The Other Endpoint				
40015	H.245 Could Not ASN.1 Encode The Master Slave Determination Message :				
40016	H.245 Could Not ASN.1 Encode The Open Logical Channel Message:				

Number	Message			
40018	H.245 Could Not ASN.1 Encode The Open Logical Channel REJ Message:			
40019				
40020				
40021	H.245 Could Not ASN.1 Encode The User Input Indication Message:			
40022	H.245 Could Not ASN.1 Encode The Miscellaneous Message:			
40023	Could Not Issue Terminal Capability Set Message			
40024	Could Not Issue Terminal Capability Set Acknowledge Message			
40025	Could Not Issue Master Slave Determination Message			
40026	Could Not Issue Master Slave Determination Acknowledge Message			
40027	Could Not Issue Open Logical Channel Message For Audio			
40028	Could Not Issue Open Logical Channel Message For Video			
40029	Could Not Issue Open Logical Channel Acknowledge Message For Audio			
40030	Could Not Issue Open Logical Channel Acknowledge Message For Video			
40031	Could Not Issue Open Logical Channel Reject Message			
40032	Could Not Issue Close Logical Channel Message For Audio			
40033	Could Not Issue Close Logical Channel Message For Video			
40034	Could Not Issue Close Logical Channel Acknowledge Message For Audio			
40035	Could Not Issue Close Logical Channel Acknowledge Message For Video			
40036	Could Not Issue User Input Indication Message (As Destination Alias)			
40037	Could Not Issue User Input Indication Message (As DTMF)			
40038	Could Not Issue Round Trip Delay Message			
40039	Could Not Issue Round Trip Delay Response Message			
40040	Could Not Issue End Session Message			
40041	Could Not Issue Miscellaneous Command Message			
40042	Received A Master Slave Determination Reject Message			
40043	Received A Terminal Capability Set Reject Message			
	H245 - TCP/IP Error : XX (Function) - Local IP Address XXX : Port XX - Remote IP			
40044	Address XXX : Port XX - Error Text			
40045				
	H.245 Socket Connect Failed - Local IP Address XXX Port XX - Remote IP Address			
40046	XXX Port XX - Error Code = XX			
	H.245 Socket Listen Failed - Local IP Address XXX Port XX - Remote IP Address			
40047	XXX Port XX - Error Code = XX			
	RTP Layer			
50001	RTP Audio Socket Create Failed - IP Address XXX Port XX - Error Code = XXXX			
50001	RTP Video Socket Create Failed - IP Address XXX Port XX - Error Code = XXXX			
00002				
	RTCP Layer			
60001	RTCP Audio Socket Create Failed - IP Address XXX Port XX - Error Code = XXXX			
60002	RTCP Video Socket Create Failed - IP Address XXX Port XX - Error Code = XXXX			
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Winsock Error Codes

The following table is a list of common Winsock error codes and their description.

Windows Sockets	Code	Error Description
WSAEINTR	10004	Interrupted system call.
WSAEBADF	10009	Bad file number.
WSEACCES	10013	Permission denied.
WSAEFAULT	10014	Bad address.
WSAEINVAL	10022	Invalid argument.
WSAEMFILE	10024	Too many open files.
WSAEWOULDBLOCK	10035	Operation would block.
WSAEINPROGRESS	10036	Operation now in progress. This error is returned if any Windows Sockets API function is called while a blocking function is in progress.
WSAEALREADY	10037	Operation already in progress.
WSAENOTSOCK	10038	Socket operation on nonsocket.
WSAEDESTADDRREQ	10039	Destination address required.
WSAEMSGSIZE	10040	Message too long.
WSAEPROTOTYPE	10041	Protocol wrong type for socket.
WSAENOPROTOOPT	10042	Protocol not available.
WSAEPROTONOSUPPORT	10043	Protocol not supported.
WSAESOCKTNOSUPPORT	10044	Socket type not supported.
WSAEOPNOTSUPP	10045	Operation not supported on socket.
WSAEPFNOSUPPORT	10046	Protocol family not supported.
WSAEAFNOSUPPORT	10047	Address family not supported by protocol family.
WSAEADDRINUSE	10048	Address already in use.
WSAEADDRNOTAVAIL	10049	Cannot assign requested address.
WSAENETDOWN	10050	Network is down. This error may be reported at any time if the Windows Sockets implementation detects an underlying failure.
WSAENETUNREACH	10051	Network is unreachable.
WSAENETRESET	10052	Network dropped connection on reset.
WSAECONNABORTED	10053	Software caused connection abort.
WSAECONNRESET	10054	Connection reset by peer.
WSAENOBUFS	10055	No buffer space available.
WSAEISCONN	10056	Socket is already connected.
WSAENOTCONN	10057	Socket is not connected.
WSAESHUTDOWN	10058	Cannot send after socket shutdown.
WSAETOOMANYREFS	10059	Too many references: cannot splice.
WSAETIMEDOUT	10060	Connection timed out.
WSAECONNREFUSED	10061	Connection refused.
WSAELOOP	10062	Too many levels of symbolic links.
WSAENAMETOOLONG	10063	File name too long.
WSAEHOSTDOWN	10064	Host is down.
WSAEHOSTUNREACH	10065	No route to host.
WSASYSNOTREADY	10091	Returned by WSAStartup(), indicating that the network subsystem is unusable.
WSAVERNOTSUPPORTED	10092	Returned by WSAStartup(), indicating that the Windows Sockets DLL cannot support this application.

WSANOTINITIALISED

WSAEDISCON

- 10093 Winsock not initialized. This message is returned by any function except WSAStartup(), indicating that a successful WSAStartup() has not yet been performed.
- 10101 Disconnect.

Differentiated Services Code Point (DSCP)

Win323 can optionally set the TOS / DSCP flag in the IP header for audio and video RTP and RTCP media streams. The default value is zero for this field. Any or all the fields can be set independently.

The following are standard values for this field:

DSCP Value	Binary Value	Decimal Value	IP Header Byte Value Decimal	IP Header Byte Value Hex
Default	000000	0	0	0
CS1 (DSCP8)	001000	8	32	20
AF11 (DSCP10)	001010	10	40	28
AF12 (DSCP12)	001100	12	48	30
AF13 (DSCP14)	001110	14	56	38
CS2 (DSCP16)	010000	16	64	40
AF21 (DSCP18)	010010	18	72	48
AF22 (DSCP20)	010100	20	80	50
AF23 (DSCP22)	010110	22	88	58
CS3 (DSCP24)	011000	24	96	60
AF31 (DSCP26)	011010	26	104	68
AF32 (DSCP28)	011100	28	112	70
AF33 (DSCP30)	011110	30	120	78
CS4 (DSCP32)	100000	32	128	80
AF41 (DSCP34)	100010	34	136	88
AF42 (DSCP36)	100100	36	144	90
AF43 (DSCP38)	100110	38	152	98
CS5 (DSCP40)	101000	40	160	A0
EF (DSCP46)	101110	46	184	B8
CS6 (DSCP48)	110000	48	192	C0
CS7 (DSCP56)	111000	56	224	E0

CS = Class Selector

AF = Assured Forwarding

EF = Expedited Forwarding

Example Call and Parameter Files

To aid with the configuration of Win323 for different types of H.323 equipment, the application comes with pre-configured call and parameter files. The name of the file indicates the configuration that it will emulate.

For example, the parameter file 'Phone.prm' will configure Win323 to act like a basic voice phone. The parameter file 'TunnelPhone.prm' will act like a speech phone that supports H.225 tunneling. There are also parameter file for sending low and high bandwidth video.

These files are stored in a separate 'Examples' folder and should be copied into the parameter or call file folder before being modified. Version 2.0

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