Dialogic®

Dialogic® Host Media Processing Software Release 1.3WIN

Release Guide

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About This Publication

The following topics provide information about this publication.

Applicability

This Release Guide (05-2419-001)provides information about the features, system requirements, and release documentation for the Dialogic® Host Media Processing Software Release 1.3WIN.

Intended Audience

This document is intended for all users of Dialogic® Host Media Processing Software Release 1.3WIN, including the following:

- System Integrators
- Toolkit Developers
- Independent Software Vendors (ISVs)
- Original Equipment Manufacturers (OEMs)

How to Use This Publication

The information found in this document is organized into the following sections:

- Chapter 1, “Release Overview” - describes the highlights of this release.
- Chapter 2, “System Requirements” - describes the system software and hardware requirements for the Dialogic® Host Media Processing Software.
- Chapter 3, “Features” - describes the features supported in this release.
- Chapter 4, “Development Software” - describes the various development software libraries and demonstration programs that are available as part of this release.
- Chapter 5, “Documentation” - provides a list of the documents that accompany this release, either on the CD or downloadable from the Dialogic Support Web site.

Related Information

See the following for additional information:

- *http://www.dialogic.com/manuals/* (for Dialogic® product documentation)
- *http://www.dialogic.com/support/* (for Dialogic technical support)
- *http://www.dialogic.com/* (for Dialogic® product information)

Release Overview 1

Dialogic® Host Media Processing (HMP) Software Release 1.3WIN performs media processing tasks on general-purpose servers based on Dialogic architecture without the need for specialized hardware. The software provides media services that can be used to build flexible, scalable, and cost-effective next-generation IP media servers.

Dialogic® HMP Software is a Dialogic communications building block technology. When installed on a system, the software operates with customer applications similar to a Dialogic® board with Dialogic® DM3 architecture, but all media processing takes place on the host processor. To help customers migrate their existing applications to IP, the software also supports two direct APIs: R4 for media processing and Global Call (GC) for call control.

Dialogic® HMP Software uses a built-in network interface card (NIC) to provide IP connectivity. Dialogic® HMP Software supports the industry-standard H.323 and SIP protocols for call control; RTP/RTCP for media streaming over IP in G.711, G.723, and G.729 format; and the T.38 format for fax over IP.

Dialogic® HMP Software is implemented as a Windows® operating system kernel-mode driver that runs at real-time priority. The software is optimized to run on the Intel Pentium III, Pentium 4, and Xeon processors. Dialogic® HMP Software can be installed and upgraded like any other software. The Dialogic® HMP Software is licensed using an industry-standard model in which the MAC address is used to node-lock the software to a specific computer. To enable customers to choose combinations of media processing, Dialogic® HMP Software is offered in a variety of licensing models.

Release Features

Dialogic® HMP Software Release 1.3WIN supports the following new features:

- IP Call Control:
  - SIP Generic Headers
  - SIP Register and Unregister
  - SIP Digest Authentication
  - Support for headers greater than 255 bytes

  See the *Dialogic® Global Call IP Technology Guide* for more information.
- Media Processing:
  - Support for up to 240 G.711 channels and 120 G.723/G.729 channels

  See Chapter 2, “System Requirements” for additional information.
- Player/Recorder Formats:
  - G.726 (16 and 32 kbps)

- Improved user documentation - most documents include a new presentation format and a more customer-focused information architecture. See Chapter 5, “Documentation” for additional information.

Refer to Chapter 3, “Features” for a list of all of the features supported by the Dialogic® HMP Software.

System Requirements 2

The basic requirements to install and run this release are described in the following sections:

2.1 Basic Hardware Requirements

The minimum hardware requirements for this release are:

- Intel Pentium III Processor (See Table 1. for processor recommendations.)
- 512 MB of RAM for less than 120 channels, 1 GB of RAM for 120 or higher channels
- 600 MB of Disk Space (for full installation of HMP Release 1.3)
- 100 BaseT Network Interface Card (NIC)

Note: A 1000 BaseT NIC may improve CPU utilization.

Table 1. Processor Recommendations

Number of User Sessions (RTP and Voice Functionality)	Minimum Processor Type and Clock Speed	
	G.711 (20 msec Frame)	G.723.1, G.729A, or G.729AB (Number of Low Bit Rate Sessions = 50% of G.711 Sessions)
Up to 4	Intel Pentium III, 850 MHz	Intel Pentium III, 850 MHz
Up to 32	Intel Pentium III, 1.26 GHz	Intel Pentium 4, 1.7 GHz
Up to 64	Intel Pentium 4, 2.0 GHz	Dual Intel Xeon, 2.0 GHz
Up to 96	Single Intel Xeon, 2.4 GHz	Dual Intel Xeon, 2.8 GHz
Up to 120	Dual Intel Xeon, 2.4 GHz	Dual Intel Xeon, 3.06 GHz
Up to 240	Dual Intel Xeon, 3.2 GHz	Dual Intel Xeon, 3.6 GHz

2.2 Basic Software Requirements

Note: Dialogic® Host Media Processing (HMP) Software Release 1.3WIN has been tested only on systems with NTfile systems (NTFS). This release of the Dialogic® HMP Software has not been tested on systems with FAT 32 file systems.

The basic software requirements for this release are:

- Operating System - one of the following:
  - Windows® 2000 (Server or Professional Edition) with Service Pack 4
  - Windows® XP Professional with Service Pack 2
  - Windows Server 2003® (Standard or Enterprise Edition) with Service Pack 1
- Compilers: Microsoft® Visual Studio® 6.0 with Service Pack 5 or Microsoft® Visual Studio® .NET required for application development

Note: You may see a **Security Alert- Driver Installation** message during installation of the Dialogic® HMP Software. This is just a warning message, and the Dialogic® HMP Software will install properly after you click **Yes**. For more information, refer to the *Dialogic® Host Media Processing Release 1.3WIN Software Installation Guide*.

2.3 Additional Requirement Information

In addition to the basic hardware and software requirements, the following information is included in this section:

- Hyper-Threading Technology
- Memory Requirements
- IP Endpoints
- Configurations Tested
- Platforms Used in Testing the Dialogic® HMP Software

2.3.1 Hyper-Threading Technology

Hyper-Threading Technology (HT) is only supported on systems using the Intel Pentium 4 or Xeon processors and the Windows® 2000, 2003, or XP operating systems. For detailed information about using HT with the Windows® operating system, see the following Web sites:

- *http://www.intel.com/technology/hyperthread/*
- *http://www.intel.com/homepage/land/hyperthreading_more.htm*

Also, refer to the following Microsoft Web site:

- *http://www.microsoft.com/windows2000/server/evaluation/performance/reports/hyperthread.asp*

and the Microsoft design information titled "Windows Support for Hyper-Threading Technology."

2.3.2 Memory Requirements

For production purposes, a minimum of 512 MB of memory is required. For development and demo purposes using a single-channel configuration, 256 MB of memory may be sufficient.

For 120 and higher channels, a minimum of 1 GB of memory is required.

2.3.3 IP Endpoints

Dialogic® HMP Software interoperation has been validated with the endpoint devices listed in Table 2.

Table 2. IP Endpoints

Endpoint Devices	H.323	SIP
Microsoft® NetMeeting® (Version 3.0 or later)	√	√
Microsoft® Messenger	√	√
Polycom SoundPoint IP 500	√	
Intel Optimizers Internet Phone	√	
Dialogic® 1000 Media Gateway Series (formerly known as the Dialogic® PBX-IP Media Gateway)	√	√
Cisco AS5300 Universal Gateway IOS Version 12.3(1)	√	√
RadVision Gatekeeper 4.0.0.28	√	
Grandstream Budget Tone 1xx Series IP Phones		√
Cisco ATA-18x Series Gateways	√	√
Cisco 7960 Phone	√	√
Pingtel Xpressa PX-1		√

2.3.4 Configurations Tested

The reference configurations listed in Table 3 have been successfully tested with CPU utilization of 50% or less:

Table 3. Resource Configurations Tested

Configuration	RTP	Enhanced RTP	Voice	Conferencing (DCB)	Fax	Speech
IVR	240	0	240	0	0	0
IVR w/Speech	200	0	200	0	0	200
IVR/Conferencing	60	12	60	0	6	60
Unified Messaging	120	120	120	0	0	0
Unified Messaging	120	0	120	0	0	0
Fax	120	40	120	0	32	0
Fax	96	64	96	24	8	96
Conferencing	240	0	100	240	0	0
Conferencing	96	64	48	96	0	0
Gateway	23	11	23	0	4	23

2.3.5 Platforms Used in Testing the Dialogic® HMP Software

Table 4 provides information about the chassis/platform configurations used to test the HMP software.

Note: Dialogic® HMP Software Release 1.3WIN has been tested only on systems with NT file systems (NTFS). Dialogic® HMP Software Release 1.3WIN has not been tested on systems with FAT 32.

Table 4. Platform Configurations Used in Testing HMP Software

Vendor	Processor	Processor Speed	Symmetric Multi-Processing	Operating System
Transduction Ltd.	Celeron	700 MHz	No	Windows® 2000 Server, SP4
Transduction Ltd.	Pentium III	933 MHz	No	Windows® 2000 Professional, SP4
Intel	Dual Pentium III	1.26 GHz	Yes	Windows® XP Professional, SP2
Intel	Pentium 4	2.4 GHz	No	Windows Server® 2003 (Enterprise Edition), SP1
Intel	Pentium 4 with hyper-threading	2.8 GHz	Yes	Windows® 2000 Standard Server, SP4
Intel	Dual Pentium 4	2.2 GHz	Yes	Windows® 2000 Advanced Server, SP4
Dell Inc.	Dual Xeon	2.8 GHz	Yes	Windows Server® 2003 (Enterprise Edition), SP1

Table 4. Platform Configurations Used in Testing HMP Software (Continued)

Vendor	Processor	Processor Speed	Symmetric Multi-Processing	Operating System
Intel	Dual Xeon with hyper-threading	2.8 GHz	Yes	Windows® 2000 Advanced Server, SP4
IBM	Dual Xeon with hyper-threading	3.02 GHz	Yes	Windows® XP Professional, SP2
IBM	Dual Xeon with hyper-threading	3.02 GHz	Yes	Windows Server® 2003 (Standard Edition), SP1
IBM	Dual Xeon with hyper-threading	3.02 GHz	Yes	Windows Server® 2003 (Enterprise Edition),SP1
Intel	Dual Xeon with hyper-threading	3.2 GHz	Yes	Windows Server® 2003 (Enterprise Edition), SP1
Intel	Dual Xeon with hyper-threading	3.6 GHz	Yes	Windows® XP Professional, SP2
Intel	Dual Xeon with hyper-threading	3.6 GHz	Yes	Windows Server® 2003 (Enterprise Edition), SP1

2.4 Ordering the Product

The following table lists the media resources that are available through flexible licensing.

Table 5. Media Resources

Media Resource	Resource Code	Number of Resources Available	Resource Description
RTP G.711	r	0-240	Streaming digitized voice over RTP using G.711 coder
Voice	v	0-240	Basic voice ports that allow you to control volume, record with Automatic Gain Control (AGC), DTMF, and user-defined tone detection.
Enhanced RTP	e	0-120	Enhances the resource by supporting digitized voice over RTP using G.723.1, G.729A, and G.729AB coders.
Conferencing	c	0-240	Conferences parties using advanced features such as coach/pupil mode, tone clamping, and active talker notification.

Table 5. Media Resources (Continued)

Media Resource	Resource Code	Number of Resources Available	Resource Description
Speech Integration (Continuous Speech Processing)	s	0-240	Speech integration capabilities that allow you to integrate the Dialogic® HMP Software with speech engines for Automatic Speech Recognition (ASR) and Text-to-Speech (TTS) support using the Continuous Speech Processing (CSP) APIs.
T.38 Fax Termination	f	0-32	Provides support for T.38 fax origination and termination sessions.

The Dialogic® HMP Software provides a high level of flexibility in choosing media processing configurations. However, all possible combinations of the resources listed in Table 2 are not supported. Refer to the following rules and the automatic license fulfillment tool for determining valid configurations.

Resource Configuration Rules

Use the following rules to determine a valid resource configuration:

- The number of Voice resources must be less than or equal to the number of RTP G.711 resources.
- The number of T.38 Fax resources must be less than or equal to the number of RTP G.711 resources.
- The number of Enhanced RTP resources must be less than or equal to the number of RTP G.711 resources.

  Note: Enhanced RTP resources are used for G.723 and G.729 coders.
- The number of Conferencing resources must be less than or equal to the number of RTP G.711 resources.
- The number of Speech Integration (continuous speech processing) resources must be less than or equal to the number of Voice resources.
- Each T.38 Fax resource also requires an RTP G.711 resource. For example, if you want one T.38 Fax session and one IVR session simultaneously, you will need one Voice resource, one T.38 Fax resource, and two RTP G.711 resources.

For more information about the Dialogic® HMP Software product see the following Web site:

http://www.dialogic.com/products/ip_enabled/HMPWindows.htm

Features 3

This chapter lists and describes the features that are supported by the Dialogic® Host Media Processing (HMP) Software Release 1.3WIN. Features shown in **boldface** type are new for this release.

- Supported Codecs for IP (RTP) Encoding/Decoding:
  - G.711 (64 kbps format) mu-law and A-law (10, 20, and 30 ms frames)
  - G.723.1 (5.3 and 6.3 kbps format) 30 ms frames (1, 2, or 3 frames per packet)
  - G.729A and G.729AB (8 kbps format) 10 ms frames (2, 3, or 4 frames per packet)
- IP Call Control:
  - Support for H.323 and SIP protocols via Global Call
  - SIP call transfer
  - H.450.2 call transfer (H.323)
  - SIP outbound proxy
  - SIP over TCP
  - SIP request retry
  - MIME-encoded SIP message bodies
  - SIP INFO messages
  - SIP OPTION messages
  - SIP SUBSCRIBE and NOTIFY messages
  - Getting RTP addresses of a call
  - Getting SIP-specific origination and destination addresses for a call
  - Host LAN cable disconnect alarms
  - **SIP generic headers**
  - **SIP register and unregister**
  - **SIP digest authentication**
  - **Support for headers greater than 255 bytes**

    (See the *Dialogic® Global Call IP Technology Guide* for information.)
- Media Processing:
  - **Support for up to 240 G.711 channels and 120 G.723/G.729 channels**
- APIs:
  - IP Media to support third-party protocol stacks for call control over IP (See the *Dialogic® IP Media Library API Library Reference* and *Dialogic® IP Media Library API Programming Guide* for information.)
  - R4 Media Processing for Voice (See the *Dialogic® Voice API Library Reference* and *Dialogic® Voice API Programming Guide* for information.)
  - R4 Media Processing for Conferencing (See the *Dialogic® Audio Conferencing API Library Reference* and *Dialogic® Audio Conferencing API Programming Guide* for information.)
  - R4 Media Processing for Fax (See the *Dialogic® Fax Software Reference* for information.)

  - R4 Media Processing for Continuous Speech Processing (See the *Dialogic® Continuous Speech Processing API Library Reference* and *Dialogic® Continuous Speech Processing API Programming Guide* for information.)
  - Global Call for call control (See the *Dialogic® Global Call API Library Reference* and *Dialogic® Global Call API Programming Guide* for information.)
  - Standard Runtime Library for event handling (See the *Dialogic® Standard Runtime Library API Library Reference* and *Dialogic® Standard Runtime Library API Programming Guide* for information.)
  - Device Management API for coder reservation and T.38 connection (See the *Dialogic® Device Management API Library Reference* for more information.)
- IP Multicast (transmit) support
- Tone Management:
  - In-Band DTMF detection/generation
  - RFC 2833 DTMF detection/generation
  - H.245 User Input Indication (UII) (H.323) reception/transmission
  - User-defined Global Tone Detection (GTD) and Global Tone Generation (GTG)
- Player/Recorder Formats:
  - G.711 mu-law and A-law (48 kbps and 64 kbps)
  - OKI ADPCM (24 kbps and 32 kpbs)
  - Linear PCM (88 kbps)
  - **G.726 (16 kbps and 32 kbps)**
- Play/Record Capability:
  - Playing and recording files in all supported encoding formats with or without Wave headers
  - Automatic Gain Control
  - Volume Control
  - Indexed Play
  - Stream to Board (streams data to the network interface in real time)
- Call progress detection
- Audio conferencing:
  - Active Talker status
  - Digit Detection with tone clamping
  - Monitoring
  - Coach/Pupil monitoring
- Speech Integration (Continuous Speech Processing)
- Fax over IP (T.38 Fax origination/termination only)
- Flexible Configuration\Licensing (See the *Dialogic® Host Media Processing Software Administration Guide* for information about this feature.)
- Transaction Record - enables the recording of a two-party conversation by allowing two time slots from a single channel to be recorded. (See the *Dialogic® Voice API Library Reference* and *Dialogic® Voice API Programming Guide* for information about this feature.)

- Programmatic control of inbound RTP stream gain and outbound RTP stream volume (See the *Dialogic® IP Media Library API Programming Guide* for more information.)
- Support event notification for RTP and RTCP traffic stopping and starting (See the *Dialogic® IP Media Library API Library Reference* for information about this feature.)
- More flexible VoIP Quality of Service (QoS) support by modifying the default Registry setting of the Type Of Service (TOS) byte during installation to support TOS setting through IPML APIs at run time. (See the *Dialogic® IP Media Library API Library Reference* and *Dialogic® IP Media Library API Programming Guide* for information about this feature.)
- Manual, Semi-automatic, and Automatic startup modes for starting the System Service (See the *Dialogic® Host Media Processing Release 1.3WIN Software Installation Guide* for information about this feature.)
- Increased usability of Dialogic® HMP Software on Windows® platforms with Advanced Configuration and Power Interface (ACPI) by integrating automated Advanced Programmable Interrupt Controller (APIC) Timer compatibility check into the installation. (See the *Dialogic® Host Media Processing Release 1.1WIN Software Installation Guide* and the Compatibility Notes section of the Release Update for information about this feature.)
- Support for Microsoft® Visual Studio® .NET compiler
- Ability to configure UDP/RTP port range

Development Software 4

This chapter describes the various development libraries and demonstration programs that are available as part of Dialogic® Host Media Processing (HMP) Software Release 1.3WIN.

4.1 Dialogic® IP Media API Library

The Dialogic® IP Media Library API is used to control media on IP devices. Voice over IP applications that use IP signaling stacks other than those supplied with Dialogic® products may use this library for application development.

Dialogic® IP Media Library functionality is documented in the *Dialogic® IP Media Library API Library Reference* and the *Dialogic® IP Media Library API Programming Guide*.

Features

The Dialogic® IP Media Library provides the following features:

- Applications can configure the preferred DTMF mode: UII Alphanumeric, RFC 2833, or Inband. In addition, applications can generate and receive DTMF tones on the TDM bus.
- Media resource management and media resource operations functionality
- Quality of Service (QoS) threshold alarm configuration and status reporting
- Support of Standard Runtime Library (SRL) event management routines for error retrieval

4.2 Dialogic® Global Call API Library

The Dialogic® Global Call API library provides a uniform call control interface for developing applications for multiple network interface technologies. The Dialogic® Global Call API library supports a variety of protocols operating on Dialogic® DM3 architecture.

The Dialogic® Global Call API library:

- Is designed to support a both H.323 and SIP protocols
- Provides a consistent application interface for the various protocols and technologies

The generic functionality of Global Call is documented in the *Dialogic® Global Call API Library Reference* and the *Dialogic® Global Call API Programming Guide*. HMP-specific functionality is documented in the *Dialogic® Global Call IP Technology Guide*.

Features

The Dialogic® Global Call API library provides the following features for IP technologies:

- Global Call supports the development of applications that use the host-based H.323 and SIP RADVISION* stacks supplied with the Dialogic® HMP Software.
- Applications can open and use devices that support the H.323 protocol, the SIP protocol, or both protocols.
- Applications can use Global Call to register with a Gatekeeper (H.323) or Registrar (SIP).
- Applications can configure the preferred DTMF mode: UII Alphanumeric (H.323 only), RFC 2833, or Inband. In addition, applications can initiate the generation of DTMF, and receive notification of DTMF detection.
- Basic call control that includes the ability to make a call, detect a call, answer a call, release a call etc. The implementation of these capabilities is based on a generic call state model that maintains a consistent call control paradigm across all technologies supported by Global Call.
- Global Call supports the sending and receiving of fax information by the inclusion of the T.38 UDP coder in the capability exchange. Applications can be configured to receive notification of audio-to-fax and fax-to-audio transition as well as notification of T.38 status changes.
- Feature Transparency and Extension (FTE), that is, the ability to extend the capabilities of Global Call to handle features that are technology-specific so that those features are accessible via the Global Call interface.
- Global Call Alarm Management System (GCAMS) that provides the ability to manage alarms.
- Real Time Configuration Management (RTCM) that allows the modification of call control and protocol elements in real time, providing a single common user interface for configuration management.
- Easy access to error information using **gc_ErrorInfo( )** for function failures and **gc_ResultInfo( )** for event information.

- Selective call control library initialization using **gc_Start( )** that allows applications to control which call control libraries are started during initialization.
- Library information functions that enable an application to get information about the call control libraries being used.

4.3 Dialogic® Voice Library

The Dialogic® Voice API library provides a rich set of features for building a wide range of high-density call processing applications such as voice messaging, interactive voice response, telemarketing/call center, operator services, and more. Features include tone signaling, global tone detection and generation, call progress analysis, and a variety of voice encoding algorithms selectable on a channel-by-channel basis.

Refer to the *Dialogic® Voice API Library Reference* and the *Dialogic® Voice API Programming Guide* for more information.

Features

The Dialogic® Voice API library provides the following features:

- Call progress and call analysis including the ability to handle pre-connect (Call Progress) information that reports the status of the call connection, such as busy, no dial tone or no ringback, and post connect (Call Analysis) information that reports the destination party's media type (that is, voice, answering machine, fax, or modem).
- The range of valid values for DX_MAXSIL and DX_MAXNOSIL is 10 ms to 250 seconds (1 to 25000 in 10 ms units). There are no further restrictions within this range.
- Tone detection/generation:
- Dual Tone Multi Frequency (DTMF)
- Multi Frequency (MF)
- Global Tone Detection (GTD) user-defined tones
- Global Tone Generation (GTG) user-defined tones, including Cadenced Tone Generation
- Data formats for play and record:
- G.711 PCM at 6 kHz with 8-bit samples (48 kbps) and 8 kHz with 8-bit samples (64 kbps) using A-law or µ-law coding, VOX and WAVE file formats
- OKI* ADPCM at 6 kHz with 4-bit samples (24 kbps) and 8 kHz with 4-bit samples (32 kbps), VOX and WAVE file formats
- PCM at 11 kHz with 8-bit samples (88 kbps) using linear coding, VOX and WAVE file formats
- G.726 bit-exact voice coder at 8 kHz with 2- or 4-bit samples (16, 32 kbps), VOX and WAVE file formats
- Volume Control
- Call Progress Analysis through the **dx_dial( )** function

4.4 Dialogic® Standard Runtime API Library

The Dialogic® Standard Runtime Library (SRL) API provides a common interface for event handling and other functionality common to all Dialogic® devices. The Dialogic® Standard Runtime Library provides the framework for implementing the supported programming models and serves as the central dispatcher for events that occur on all devices. Events are handled in a standard manner through the Dialogic® Standard Runtime Library.

Refer to the *Dialogic® Standard Runtime Library API Programming Guide* and the *Dialogic® Standard Runtime Library API Library Reference* for more information.

Features

The Dialogic® Standard Runtime Library (SRL) API provides the following features:

- A set of functions called the device grouping API has been added to support a more efficient alternative to the **sr_waitevtEx( )** variant of the extended asynchronous model.
- Support for the following programming models:
- Asynchronous polled model
- Asynchronous with non-signal callback model
- Extended asynchronous model
- Device event management
- Device information retrieval using ATDV_ prefixed functions
- The ability to set and retrieve user-specific context using the **sr_setparm( )** and **sr_getparm( )** functions

4.5 Dialogic® Continuous Speech Processing (CSP) API Library

The Dialogic® Continuous Speech Processing (CSP) API Library supports development of host-based automatic speech recognition (ASR) applications. CSP provides many features such as high-performance echo cancellation, voice energy detection, barge-in, voice event signaling, pre-speech buffering, and full-duplex operation.

The Dialogic® CSP software includes library functions, device drivers, firmware, and demonstration programs.

Refer to the *Dialogic® Continuous Speech Processing API Programming Guide* and *Dialogic® Continuous Speech Processing API Library Reference* for more information.

Features

The following Continuous Speech Processing features are supported:

- The **ec_stream( )** and **ec_reciottdata( )** functions support the DX_MAXTIME termination condition which is set in the DV_TPT data structure.
- Full duplex operation
- Voice Activity Detector (VAD)
- Barge-in
- Voice event signaling
- Pre-speech buffering
- Modifying certain voice activity detector (VAD) parameters on the fly
- Barge-in and play event generation
- Ability to re-arm the VAD
- Ability to send an echo-reference signal (also called external reference signal) from another device across the TDM bus to the CSP voice channel
- Unified API

4.6 Dialogic® Fax API Library

The Dialogic® Fax API library supports development of a wide variety of fax applications such as fax mail, fax broadcast and fax-on-demand. The Fax software includes library functions, device drivers, firmware, and demonstration programs.

Refer to the *Dialogic® Fax Software Reference* for more information.

Features

The following fax features are supported in the Dialogic® HMP Software Release 2.0WIN:

- Uses T.38 Fax protocol to convert T.30 Fax session information and data to UDP packets
- Operates in T.38 Fax server mode (originates and terminates Fax sessions using T.38 protocol

4.7 Dialogic® Audio Conferencing (DCB) API Library

The Dialogic® Audio Conferencing (DCB) API library supports development of host-based conferencing applications. The Dialogic® Audio Conferencing API library provides many features that can be used to develop customized audio conferencing servers.

The Dialogic® Audio Conferencing software includes library functions, device drivers, and firmware.

Refer to the *Dialogic® Audio Conferencing API Programming Guide* and *Dialogic® Audio Conferencing API Library Reference* for additional information.

Features

Dialogic® HMP Software supports the following audio conferencing features:

- Conference bridging, where all parties in two or more established conferences can speak and listen to one another, enabling large conferences to be conducted
- Volume control for any conferee by issuing pre-programmed DTMF digits
- Conference monitoring, which allows one or more conferees to monitor a single conference without interrupting the conference.
- Coach/pupil feature allows two selected conferees to establish a private communication link with respect to the overall conference. The coach is a private member of the conference and is only heard by the pupil. However, the pupil cannot speak privately to the coach.
- DTMF digit detection for any conferee, allowing the application to determine when or if any party has generated a DTMF digit
- Tone clamping that allows each conferee to reduce the amount of DTMF tones heard during a conference
- DTMF tones may be heard by conferees if the application encourages the user to repeatedly press DTMF tones: for example, press 9 to raise the volume
- Automatic gain control (AGC) for all conferees, which equalizes the volume levels of different parties
- Active talker indication to determine which conferees in any given conference are currently talking. The active talker feature can be set to indicate which conferees are talking the loudest or for the longest amount of time.
- Monitoring feature, enabling many participants to monitor a single conference without interrupting the conference
- Echo cancellation for each active talker

4.8 Demonstration Programs

Demonstration programs are provided to demonstrate the functionality and features of Dialogic® products and serve as examples of application programming using Dialogic® API libraries. All demo programs are supplied as source code which users may modify to explore other capabilities of the products.

Demo Programs

The following demo programs are included in Dialogic® Host Media Processing (HMP) Software Release 1.3WIN:

Dialogic® IP Media Server (Global Call) Demo Program

The IP Media Server (Global Call) Demo uses the Global Call API to provide voice services via IP technology. See the *Dialogic® IP Media Server Demo Guide* for more information.

Dialogic® Continuous Speech Processing (CSP) Demo

The Dialogic® CSP demo is a single-threaded program that illustrates key CSP features such as barge-in, voice activity detection, and streaming. See the *Dialogic® Continuous Speech Processing API Demo Guide* for more information.

Dialogic® Audio Conferencing (DCB) Demo

The Dialogic® Audio Conferencing demo is a single process, single-threaded program that handles events using the polled mode. Conferencing features are accessed using the Dialogic® Audio Conferencing (DCB) API. The Dialogic® Global Call API is used for implementing call control and the Dialogic® Voice API is used for basic voice functionality. See the *Dialogic® Audio Conferencing API Demo Guide* for more information.

Dialogic® Global Call Basic Call Control Demo

A demonstration program that exercises some of the capabilities of Global Call. See the *Dialogic® Global Call API Demo Guide* for more information.

4.9 API Functions Not Supported

The following sections identify those API functions that are not supported by the Dialogic® HMP Software. The functions that are not supported are mostly those functions associated with a particular feature that is not supported in this release of the Dialogic® HMP Software.

The functions are grouped alphabetically by the API with which they are associated.

Continuous Speech Processing (CSP) API Functions

The following Dialogic® CSP API functions are either not applicable or not supported. See the *Dialogic® Continuous Speech Processing Library Reference* or the *Dialogic® Continuous Speech Processing Programming Guide* for additional information:

- ec_getxmitslot()
- ec_listen()
- ec_rearm()
- ec_unlisten()

Fax API Functions

The following Dialogic® Fax API functions are either not applicable or not supported. See the *Dialogic® Fax Software Reference* for additional information:

- fx_listen()
- fx_unlisten()
- fx_getxmitslot()

Audio Conferencing API Functions

The following Dialogic® Audio Conferencing API functions are either not applicable or not supported. See the *Dialogic® Audio Conferencing API Library Reference* or the *Dialogic® Audio Conferencing API Programming Guide* for additional information:

- dcb_GetAtiBitsEx()
- dcb_monconf()
- dcb_unmonconf()

Documentation 5

This chapter provides information about the documentation that supports the Dialogic® Host Media Processing (HMP) Software Release 1.3WIN. This information is organized into the following sections:

5.1 Support for Dialogic® HMP Software Release 1.3WIN Features

The following table lists the Dialogic® HMP Software Release 1.3WIN features and the user documentation containing the information about these features.

Table 6. User Documentation Feature Support

Dialogic® HMP Software 1.3WIN Feature	User Documentation
Dialogic® HMP Software Installation	• Dialogic® Host Media Processing Software Release 1.3WIN Installation Guide (05-2418-001)
Licensing	• Dialogic® Host Media Processing Software Release 1.3WIN Administration Guide (05-2420-001)
IP Call Control Using Global Call • RFC2833 • H.245 UII • Low Bit Rate Coder Reservation	• Dialogic® Global Call API Library Reference (05-2362-002) • Dialogic® Global Call API Programming Guide (05-2409-001) • Dialogic® Global Call IP Technology Guide (05-2239-005) • Dialogic® IP Media Server Demo Guide (05-2389-002)

Table 6. User Documentation Feature Support (Continued)

Dialogic® HMP Software 1.3WIN Feature	User Documentation
IP Call Transfer	• Dialogic® Global Call API Library Reference (05-2362-002) • Dialogic® Global Call IP Technology Guide (05-2239-005)
Media Streaming Compatibility with a Third-Party Stack for IP Call Control • RFC2833 • H.245 UII • Low Bit Rate Coder Reservation	• Dialogic® IP Media Library API Library Reference (05-2257-004) • Dialogic® IP Media Library API Programming Guide (05-2330-001) • Dialogic® Device Management API Library Reference (05-2222-002)
IP Multicast	• Dialogic® IP Media Library API Library Reference (05-2257-004) • Dialogic® IP Media Library API Programming Guide (05-2330-001)
Voice Features	• Dialogic® Voice API Library Reference (05-2333-002) • Dialogic® Voice API Programming Guide (05-2332-002)
Conferencing	• Dialogic® Audio Conferencing API Library Reference (05-1843-003) • Dialogic® Audio Conferencing API Programming Guide (05-1920-003) • Dialogic® Audio Conferencing Demo Guide (05-2290-003)
Speech Integration	• Dialogic® Continuous Speech Processing API Library Reference (05-1700-004) • Dialogic® Continuous Speech Processing API Programming Guide (05-1699-004) • Dialogic® Continuous Speech Processing API Demo Guide (05-2084-003)
T.38 Fax Using Global Call	• Dialogic® Global Call IP Technology Guide (05-2239-005) • Dialogic® Fax Software Reference (05-2341-001)

Table 6. User Documentation Feature Support (Continued)

Dialogic® HMP Software 1.3WIN Feature	User Documentation
T.38 Fax Using Third-Party Stack	• Dialogic® IP Media Library API Library Reference (05-2257-004) • Dialogic® IP Media Library API Programming Guide (05-2330-001) • Dialogic® Device Management API Library Reference (05-2222-002) • Dialogic® Fax Software Reference (05-2341-001)
Event Handling	• Dialogic® Standard Runtime Library API Library Reference (05-1882-003) • Dialogic® Standard Runtime Library API Programming Guide (05-1880-002)
Diagnostics	• Dialogic® Host Media Processing Diagnostics Guide (05-2356-003)

Note: Most of the user documents for this release differ from the previous HMP release in that they use a new presentation format and a more customer-focused information architecture. The Dialogic® Voice and Global Call API development documents are now HMP-specific and only include those functions that are supported by the HMP software. In the following sections, where applicable, a brief description of the new or changed document is provided.

The information previously provided by the *Dialogic® Compatibility Guide for the Dialogic R4 API on DM3 Products* is now incorporated in the individual API library references.

5.2 Release Documentation

The following system documentation is provided for this release:

- *Dialogic® Host Media Processing Software 1.3WIN Release Guide* (this document).

  This is a new document that includes information previously contained in the *Dialogic® Host Media Processing Software Release 1.1 Feature Pack 1 for Windows Release Notes*.

- *Dialogic® Host Media Processing Software 1.3 for Windows Release Update*

  This is a new document that includes information previously contained in the *Dialogic® Host Media Processing Software Release 1.1 Feature Pack 1 for Windows Release Notes*. The Release Update is not part of the online bookshelf, but is posted on the Support Web site. This document includes issues that may affect the performance of the Dialogic® HMP Software and lists both resolved and known issues. The Release Update also includes corrections and changes to the user documentation that could not be made to the documents prior to the release.

5.3 Installation Documentation

The following installation documentation is provided for this release:

- *Dialogic® Host Media Processing Release 1.3WIN Software Installation Guide*

  This is a new document that includes the installation-specific information that was contained in the previous *Dialogic® Host Media Processing Software Release 1.1 Feature Pack 1 for Windows Installation Guide*.

5.4 OA&M Documentation

The following OA&M Software documentation is provided for this release:

- *Dialogic® Host Media Processing Software Release 1.3 for Windows Administration Guide*

  This is a new document that contains licensing and other administrative information that was previously documented in the *Dialogic® Host Media Processing Software Release 1.1 Feature Pack 1 for Windows Installation Guide*.

- *Dialogic® SNMP Agent Software for Intel NetStructure Host Media Processing Software for Windows Administration Guide*

  This document has not been updated since the previous release.

- *Dialogic® Host Media Processing Diagnostics Guide*

  This is a new document that contains information that was previously included in the *Dialogic® DM3 Diagnostic Utilities Reference Guide*. The new Diagnostics Guide only includes diagnostic information that is specific to the Dialogic® HMP Software.

- *Dialogic® Native Configuration Manager API Library Reference*

  This is a new document that contains updated library reference information and supersedes the *Dialogic® Customization Tools for Installation and Configuration for Windows*.

- *Dialogic® Native Configuration Manager API for Windows Operating Systems Programming Guide*

  This is a new document that contains updated programming information and supersedes the *Dialogic® Customization Tools for Installation and Configuration for Windows*.

5.5 Programming Libraries Documentation

The following development software documentation is provided to support this release:

- *Dialogic® Audio Conferencing API Library Reference*

  This is a new document that contains updated library reference information and supersedes the *Dialogic® Audio Conferencing Software Reference for Windows*.

- *Dialogic® Audio Conferencing API Programming Guide*

  This is a new document that contains updated programming information and supersedes the *Dialogic® Audio Conferencing Software Reference for Windows*.
- *Dialogic® Continuous Speech Processing API Library Reference*

  This document has been updated since the previous release.
- *Dialogic® Continuous Speech Processing API Programming Guide*

  This document has been updated since the previous release.
- *Dialogic® Global Call API Library Reference*

  This is a new HMP-specific document that replaces the *Dialogic® Global Call API for Linux and Windows Operating Systems Library Reference*.
- *Dialogic® Global Call API Programming Guide*

  This is a new HMP-specific document that replaces the *Dialogic® Global Call API for Windows Operating Systems Programming Guide*.
- *Dialogic® Global Call IP Technology Guide*

  This is an updated version of the previous Technology Guide.
- *Dialogic® Device Management API Library Reference*

  This is an updated version of the previous Library Reference.
- *Dialogic® Fax Software Reference*

  This is a new document that replaces the *Fax Software Reference for Windows* and supports both the Linux and Windows operating systems.
- *Dialogic® IP Media Library API Library Reference*

  This is an updated version of the previous Library Reference.
- *Dialogic® IP Media Library API Programming Guide*

  This document has not been updated since the previous release.
- *Dialogic® Standard Runtime Library API Library Reference*

  This is a new document that contains updated library reference information and supersedes the *Dialogic® Voice Software Reference: Standard Runtime Library for Windows*.
- *Dialogic® Standard Runtime Library API Programming Guide*

  This is a new document that contains updated programming information and supersedes the *Dialogic® Voice Software Reference: Standard Runtime Library for Windows*.
- *Dialogic® Voice API Library Reference*

  This is a new HMP-specific document that contains updated library reference information and supersedes the *Dialogic® Voice Software Reference: Programmer's Guide for Windows*.
- *Dialogic® Voice API Programming Guide*

  This is a new HMP-specific document that contains updated programming information and supersedes the *Dialogic® Voice Software Reference: Feature's Guide for Windows*.

5.6 Demonstration Software Documentation

The following demo documentation is provided for this release:

- *Dialogic® Audio Conferencing API Demo Guide*
  This is an updated version of the previous Demo Guide.
- *Dialogic® Continuous Speech Processing API Demo Guide*
  This is an updated version of the previous Demo Guide.
- *Dialogic® Global Call API Demo Guide*
  This is a new document that supports the HMP Global Call Demo.
- *Dialogic® IP Media Server Demo Guide*
  This is a new document that supports the HMP IP Media Server Demo.

5.7 Online Help

The following online help is provided for this release:

- *Dialogic® Configuration Manager (DCM) Online Help*
- *Installation Online Help*
- *Licensing Online Help*