Intel® Dialogic® System Release 6.1 CompactPCI* for Windows

Release Guide

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Contents

About This Publication

The following topics provide information about this publication:

Applicability

This document provides information about Intel® Dialogic® System Release 6.1 CompactPCI* for Windows. This release considers Intel® Dialogic® System Release 6.0 CompactPCI* Feature Pack 1 for Windows as the base release. Features and products indicated as “new” in this document are compared with what was available in the base release.

Intended Audience

This document is intended for the following types of customers:

- Distributors
- System Integrators
- Toolkit Developers
- Independent Software Vendors (ISVs)
- Value Added Resellers (VARs)
- Original Equipment Manufacturers (OEMs)

How to Use This Publication

The information in this document is organized in the following manner:

- Chapter 1, “Release Overview” provides a high-level overview of this release.
- Chapter 2, “System Requirements” describes what you need to install and use this release.
- Chapter 3, “New Features by Product” describes the new features of this release.
- Chapter 4, “Installation and Configuration” describes the installation and configuration software features supported in this release.

- Chapter 5, “OA&M Software” describes the operation, administration, maintenance, and diagnostics supported in this release.
- Chapter 6, “Programming Libraries” describes the programming libraries that are available in this release.
- Chapter 7, “Demonstration Software” describes the demonstration software provided in this release.
- Chapter 8, “Supported Hardware” provides a list of all the hardware supported in this release.
- Chapter 9, “Documentation” provides a list of the documents that accompany this release (either on CD or downloadable from the Intel® website).

Related Information

Refer to the following for additional information:

- For Technical Support, visit the Telecom Support Resources website at the following link:
  http://developer.intel.com/design/telecom/support/index.htm
- For Products and Services Information, visit the Telecom Products website at the following link:
  http://www.intel.com/design/telecom/index.htm
- For Sales Offices and other contact information, visit the Buy Telecom Products website at the following link:
  http://www.intel.com/buy/networking/telecom.htm
- The *Intel Dialogic System Release 6.1 CompactPCI* for Windows Release Update* document contains information about known problems, resolved problems, and documentation updates associated with this release. The Release Update is available at the following link:
  http://www.intel.com/design/network/manuals/telecom/index.htm

Note: Refer to the Release Update for late-breaking changes or corrections to the release information. Information is updated in the Release Update, as needed, during the lifecycle of the system release.

Release Overview 1

This chapter provides a high-level overview of the products and features that are newly supported in Intel® Dialogic® System Release 6.1 CompactPCI* for Windows. Products and features that are newly supported are new since Intel® Dialogic® System Release 6.0 CompactPCI* Feature Pack 1 for Windows.

System Release 6.1 cPCI for Windows provides customers with the components they need to build cost-effective, high-density, highly available solutions that can be easily installed, configured and operated either locally or remotely. This release provides the capabilities to enable carrier-grade solutions that meet the stringent demands of the service provider market.The System Release 6.1 cPCI for Windows product has been distributed in three separate phases:

- Feature Release 1 (first release).
- Feature Release 2 (second release), which included all the features and board support from Feature Release 1, as well as additional features and support for select CompactPCI* products.
- System Release 6.1 cPCI for Windows (this release), which contains all the products and features from both Feature Release 1 and Feature Release 2, as well as some additional features and products.

Feature Release 1 and Feature Release 2 were made available with restrictions and special support. The following describes support and maintenance for Feature Release 1 and Feature Release 2:

Support
: Feature Release 1 and Feature Release 2 will be supported in the same manner as other “generally available” software, either directly by Intel under a Service Level Agreement or through an Intel Distributor. If a software issue is corrected in a later build of System Release 6.1 cPCI for Windows, it will be distributed to customers once testing and quality assurance on the build is completed.

Maintenance
: Defects encountered in one of the feature releases will be corrected in the next scheduled or interim version, which has undergone the same level of testing and quality assurance as the production release. The distribution of the maintenance releases will be determined by customer requirements. Distribution of the correction will be as a complete replacement of the System Release.

End of Support and Maintenance
: Support and maintenance for Feature Release 1 and Feature Release 2 will be discontinued nine (9) months following the release of System Release 6.1 cPCI for Windows. All customers using Feature Release 1 and Feature Release 2 must migrate to System Release 6.1 cPCI for Windows (general availability version). Contact your Intel customer representative for more information.

Release Highlights

System Release 6.1 cPCI for Windows supports the following new products and features:

Operating system support:

- Windows 2000 SP4 (Professional, Server, or Advanced Server), including simplified Chinese version;
- Windows 2000 SP 4 Rollup 1
- Windows Server 2003 (Standard and Enterprise Editions), including simplified Chinese version
- Windows Server 2003 SP1 (Standard and Enterprise Edition), including simplified Chinese version;
- Windows Server 2003 Rollup 2

Products and features

- New Intel Netstructure® DMV600BTEC, DMV1200BTEC and DMV4800BC products
- Support for the Intel NetStructure® DM/V2400A-cPCI, DM/V960A-4T1-cPCI, DM/V1200A-4E1-cPCI, DM/V480A-2T1-cPCI, DM/V600A-2E1-cPCI, DM/V480-4T1-cPCI, DM/V600-4E1-cPCI, DM/V960-4T1-cPCI and DM/V1200-4E1-cPCI products and features
- Support for the Intel NetStructure® DM/F300-cPCI products
- Support for the Intel NetStructure® HDSI products
  - HDSI/1200-cPCI
  - HDSI/480-cPCI
  - HDSI/720-cPCI
  - HDSI/960-cPCI
- Support for Intel NetStructure® IPT products and features
  - IPT10000C
  - IPT6720C
  - IPT4800C
  - IPT2400C
  - IPT1200C
- Support for the Intel NetStructure® DM/IP products with new features
  - DM/IP601-cPCI-100BT
  - DM/IP601-2E1cPCI-100BT
  - DM/IP481-2T1-cPCI-100BT
- Support for Intel NetStructure® DM/N960-4T1-cPCI and DM/N1200-4E1-cPCI products and new Intel NetStructure® DMN160TEC and DMT160TEC features
- Support for Intel NetStructure® SS7 products and SIUs
  - SS7CPM8
  - SS7HDCD16
  - SS7HDCQ16
  - SS7HDCS8

- Centralized OA&M logging with Runtime Trace Facility (RTF) diagnostic tool

System Requirements 2

This chapter describes the hardware and software system requirements for Intel® Dialogic® System Release 6.1 CompactPCI* for Windows:

2.1 Basic Hardware Requirements

The basic hardware requirements for System Release 6.1 cPCI for Windows include:

- CompactPCI* chassis
- 1 GHZ Intel® Pentium® III processor
- 1 GB of RAM
- 500 MB free space on hard disk
- CD-ROM drive
- VGA display
- Pointing device

Note: Customers using high-density solutions may require more robust systems.

Compatibility

The compatibility requirements for System Release 6.1 cPCI for Windows are as follows:

- System Release 6.1 cPCI for Windows operates on servers that utilize multiple IA32-based processors, which are Symmetric Multiprocessing (SMP) safe.

2.2 Basic Software Requirements

The basic software requirements for System Release 6.1 cPCI for Windows include:

- Windows 2000 SP4 Professional, Server and Advanced Server editions; Windows 2000 SP4 Professional (Simplified Chinese Version); Windows 2000 SP4 Advanced Server (Simplified Chinese Version); Windows 2000 SP 4 Rollup 1
- Windows Server 2003 Standard and Enterprise Editions; Windows Server 2003 Enterprise Edition (Simplified Chinese Version); Windows Server 2003 Rollup 2
- Windows Server 2003 SP1 Standard and Enterprise Editions (Simplified Chinese Version)

  Note: Support for the Simplified Chinese Version means that System Release 6.1 cPCI for Windows installs and functions on this operating system and that error messages are displayed (in English) when errors occur. However, the

Traditional Chinese Version is a superset of Simplified Chinese Version and supports extra characters. System Release 6.1 cPCI for Windows *does not* support the Traditional Chinese Version of the operating system.

- Compiler support for Developer Studio 6.0 and 7.0

Notes:1. Intel® Dialogic® drivers do not support Physical Address Extensions (PAE). Users using Windows 2003 with Service Pack 1 will have to disable PAE (which is enabled by default in Service Pack 1).

2. Intel® Dialogic® drivers do not support more than 4 GB of RAM.

3. Peripheral Hot Swap and Redundant Host features do not support more than 4 GB of RAM (e.g. on the Intel NetStructure® MPCBL5524A 1C/1D).

4. Terminal Services Application Server Mode and Active Directory Application Server Mode are not supported on any operating systems.

New Features by Product 3

This chapter describes the new features for various Intel NetStructure® and Intel® Dialogic® telephony products that are supported in Intel® Dialogic® System Release 6.1 CompactPCI* for Windows. These features are new since Intel® Dialogic® System Release 6.0 CompactPCI* Feature Pack 1 for Windows.

3.1 New Intel NetStructure DMV1200BTEC, DMV600BTEC and DMV4800BC and Products

System Release 6.1 cPCI for Windows provides support for the Intel NetStructure® DMV1200BTEC, DMV600BTEC, and DMV4800BC products.These combined media boards provide a universal port solution and robust media feature set in a single CompactPCI* slot.

The DMV600BTEC is a dual-span DM/V-B board with software selectable T1/E1 (per network interface). Two digital network interfaces with 60+ channels of media processing. New universal media load offers simultaneous voice, fax, and conferencing. Provides A-law/mu-law conversion and the ability to mix select protocols on the board. This board is CompactPCI* form factor.

The DMV1200BTEC is a quad span DM/V-B board with software selectable T1/E1(per network interface), which provides four digital network interfaces with 120+ channels of media processing. This board supports the new universal media load, which offers simultaneous voice, fax, and conferencing as well as A-law/mu-law conversion and the ability to mix select protocols on the board. This board is CompactPCI* form factor. The DMV4800BC is a media resource board supporting 240-704 channels of media processing with no network interface. This board includes a media load with 480 channels of basic voice and tone processing. New universal media loads offer simultaneous voice, fax, and conferencing. This board is CompactPCI* form factor.

Features

System Release 6.1 cPCI for Windows provides the following features on the DMV1200BTEC, DMV600BTEC, and DMV4800BC boards, unless indicated otherwise.

These features are new since System Release 6.0 cPCI Feature Pack 1 for Windows. Note that the DM/V-B boards support all the same features as the DM/V-A boards including:

Supports a variety of features at different channel densities depending on the media load selected. Refer to the *DM3 Configuration Guide* for more information about media loads and the board support.

- Supports media load ML10b, which provides 60 channels of basic voice and 180 channels of rich conferencing for BGM (background music) applications (on DMV1200BTEC only).
- Supports media load ML QSB-U2, which provides 120 channels of basic voice + 120 rich conferencing + 12 fax (on DMV1200BTEC only).
- Supports universal media loads (UL1, UL3 and UL4), which provide simultaneous voice + speech + fax + conferencing.
- Supports media load ML1B, which provides up to 480 channels of voice + Frequency Shift Keying (FSK) for SMS.
- Supports media load ML2C, which provides enhanced voice features, including up to 240 channels of transaction record, as well as enhanced echo cancellation and CSP streaming to CT bus.
- Supports media load ML9b, which provides rich conferencing (conferencing plus echo cancellation and Tone clamping).
- Supports media load ML9c, which provides conferencing only (no echo cancellation or Tone clamping).
- Supports media load ML 9D, which provides 352 channels of conferencing with Tone clamping and DTMF but no echo cancellation.
- Supports media load ML10C, which provides 120 channels of basic voice and 360 channels of basic conferencing (no echo cancellation or tone clamping), which is ideal for background music.

Software selectable T1/E1 (per network interface)
: Ability to mix T1 and E1 on a board. Refer to the *DM3 Configuration Guide* (on DMV1200BTEC and DMV600BTEC).

Support for mixed ISDN, CAS and Clear Channel on trunk by trunk basis
: Refer to the *DM3 Configuration Guide* for more information (on DMV1200BTEC and and DMV600BTEC).

ISDN network-side E1 and T1 protocol support
: Support for ISDN network-side protocols in accordance with ITU specifications (on DMV1200BTEC and DMV600BTEC). Refer to the *Global Call ISDN Technology Guide* for more information.

Trunk preconditioning
: The ability to send an alarm state to the network at all times from powerup to application startup. Refer to the *DM3 Configuration Guide* for more information.

Ability to combine protocols on the same board
: Protocols within a group can be mixed on the same board (on DMV1200BTEC and and DMV600BTEC); however, protocols from different groups cannot be mixed on the same board. Refer to the *DM3 Configuration Guide* for more information.

- Group 1: Mix any combination of 4ESS (T1), 5ESS (T1), NTT (T1) NI2 (T1), DMS (T1),QSIGT1 (T1), QSIGE1 (E1), NET5 (E1), T1CC (T1 Clear Channel), CAS (T1) E1CC (E1 Clear Channel), and R2MF(E1) protocols on the same board.
- Group 2: Mix any combination of DPNSS(E1) and DASS2 (E1) protocols on the same board.

A-Law/mu-Law conversion

This feature is only available on DM/V-B boards with network interfaces. Refer to the *DM3 Configuration Guide*.

Enhanced Echo Canceller (EEC) tap length of up to 64 ms (512 taps)

Tap lengths of 32 ms and 64 ms are now supported by the CSP library. Previously, the maximum tap length was 16 ms. Refer to the *CSP API Library Reference* and *CSP API Programming Guide* for more information.

Note: This feature is only supported on select media loads (ML2c and UL4 on the DMV4800BC; ML5BC, ML10 and UL1 on DMV1200BTEC; UL1 on DMV600BTEC). In addition, the tap length must be set up in the configuration file. Refer to the *DM3 Configuration Guide* for more information on how to configure the tap length.

Cached prompt management

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

API control of conference output volume on a per party basis

The new **dcb_SetPartyParms( )** and **dcb_GetPartyParms( )** functions provide the ability to adjust the output volume for individual conferrees (previously, the volume could only be adjusted on a board basis using DTMF digits). This feature is available on all media span products that support conferencing. See the *Audio Conferencing API Library Reference* for details.

Conference Bridging

All parties in two or more established conferences can speak to and listen to one another, enabling large conferences to be built. Refer to the *Audio Conferencing API Library Reference* and *Audio Conferencing API Programming Guide* for more information.

Improved accuracy for call progress analysis

Positive answering machine detection (PAMD) and positive voice detection (PVD) qualification templates have been updated to accomplish higher successful PAMD and PVD rates. For details, see the Documentation Updates section of the Release Update, under *Voice API Programming Guide*.

Enhancements to call progress analysis

Enhancements include the ability to modify call progress analysis tone definitions on DM3 boards. The **dx_createtone( )**, **dx_deletetone( )**, **dx_querytone( )** functions have been added to the Voice library. For more information, refer to the *Voice API Library Reference* and *Voice API Programming Guide*.

Silence compressed streaming

This feature allows for silence data to be removed from data being streamed to the host. Refer to the *CSP API Library Reference* and *CSP API Programming Guide* for more information.

Streaming to board

This feature enables streaming to a network interface in real time, which is essential in applications such as text-to-speech and IP gateways. Several new functions have been added to the Voice library. For more information, refer to the *Voice API Library Reference* and *Voice API Programming Guide*.

Streaming echo-cancelled data to the CT bus

The **ec_stream( )** and **ec_reciottdata( )** functions now support streaming of echo cancelled data to the TDM bus. The **ec_getxmitslot( )** function retrieves the number of the time slot that transmitted the echo-cancelled data. This feature is supported on select boards and media loads. Refer to the *CSP API Library Reference*, *CSP API Programming Guide* and *DM3 Configuration Guide* for more information.

Automatic gain control (AGC) configurable on a per-channel basis through new **dx_setparm( )** parameters

The new parameters for AGC have the prefix DXCH_AGC_. Previously AGC was configurable on a board basis. For more information, refer to the *Voice API Library Reference* and *Voice API Programming Guide.*

Playback pause and resume

This feature allows a playback to be paused and then resumed at the exact point it was stopped without loss of data. The **dx_pause( )** and **dx_resume( )** functions have been added to the Voice library. This feature is only available on DM3 boards. For more information, refer to the *Voice API Library Reference* and *Voice API Programming Guide.*

Support for speed control when using 6 kHz coders

Users can adjust speed via DTMF or programmatically using **dx_adjsv( )**. The following coders are now supported for speed control:

- 24 kbps OKI ADPCM (6 kHz 4-bit)
- 48 kbps G.711 A-law PCM (6 kHz 8-bit)
- 48 kbps G.711 mu-law PCM (6 kHz 8-bit)

Enhancements to **dx_reciottdata( )**

Two new modes have been added:

- Voice activity detector (VAD) with event notification (RM_VADNOTIFY).
- Initial silence compression (RM_ISCR)

3.2 New Features for Intel NetStructure DM/IP Products

Intel NetStructure® DM/IP products offer zero, one, or two T1 or E1 spans plus VoIP and media processing in a single-slot solution. The DM/IP products are designed for larger enterprise and carrier-grade IP media gateway solutions. These products support the H.323 and SIP IP telephony protocols as well as the Intel Global Call call control API.

Note: This release no longer supports the embedded H.323 stack and removes the associated libipm_nettsc.dll from the release.

Features

Intel NetStructure DM/IP boards support the following new IP protocol features in this release. These features are new since System Release 6.0 cPCI Feature Pack 1 for Windows. For information about many additional new IP protocol features that are supported on both DM/IP and IPT boards, refer to the New Global Call Features for IP Technology section of this Release Guide.

SIP re-INVITE

Three new API functions (documented in detail in the *Global Call IP Technology Guide*) provide the ability to send, receive, accept, and reject SIP re-INVITE requests when using DM/IP boards. The following specific capabilities are currently supported:

- refreshing SIP dialog properties
- changing the direction property of a media session (between half-duplex and full duplex, for example)
- changing the RTP address of a remote endpoint
- implementing hold/retrieve functionality by suspending and resuming RTP streaming

Note: To use SIP re-INVITE on DM/IP boards, the Early Media feature must be explicitly enabled on each board using a new parameter, PrmEarlyMedia, in the DM3 configuration file. See the DM3 Configuration Guide for details.

3.3 New Features for Intel NetStructure IPT Products

Intel NetStructure® IPT boards provide carrier-grade, open, standards-based platforms that offer a highly scalable and flexible solution for IP telephony gateways and media services. The boards provide IP services, enabling the optimal utilization of the next generation network (NGN) architecture.

Features

System Release 6.1 cPCI for Windows introduces the following new features on the IPT products. These features are new since System Release 6.0 cPCI Feature Pack 1 for Windows.

Support for GSM AMR-NB coder

IPT boards support the GSM AMR-NB (adaptive multi-rate narrow band) coder for applications that use the Global Call Library and the H.323 protocol, or the IP Media Library. Eight different AMR-NB allowable rates from 4.75 kbps and 12.2 kbps are supported.

Support for multiple IP addresses per board MAC address

IPT boards can be configured via the Intel Dialogic Configuration Manager to use up to four different IP addresses for each of its Ethernet media network ports. Applications can choose to use any IP address from the preconfigured trunk group on a call-by-call basis.

Media LAN disconnection alarm

Software alarm to notify IPML and Global Call (via GCAMS) applications if the board's media LAN connection is lost (due to cable disconnection, for example) and when it is restored.

3.4 New Features for Intel NetStructure DMN160TEC and DMT160TEC Products

The Intel NetStructure® DMN160TEC and DMT160TEC digital telephony interface boards provide a high-density network interface on a CompactPCI* form factor. Supporting up to 16 spans or 480 ports, they are software-selectable as T1, E1, or a combination, on the same board with the ability to run multiple ISDN protocols (and on the DMT160TEC, multiple ISDN or CAS protocols) simultaneously (in units of four). The DMT160TEC board includes support for all of the DMN160TEC features plus CAS protocols, DTMF detection/generation, call progress analysis and network tone signaling and control.

New Features

System Release 6.1 cPCI for Windows introduces the following new features on the DMN160TEC and DMT160TEC products:

ISDN network-side E1 and T1 protocol support

Support for ISDN network-side protocols in accordance with ITU specifications. Refer to the *Global Call ISDN Technology Guide* for more information.

Trunk preconditioning

The ability to send an alarm state to the network at all times from powerup to application startup. Refer to the *DM3 Configuration Guide* for more information.

Support for mixed ISDN, CAS and Clear Channel on trunk by trunk basis

The DCM Trunk Configuration property sheet now allows you to configure individual trunks on the same board with different protocols, including: ISDN, CAS (DMT160TEC only), or Clear Channel signaling. Refer to the *DM3 Configuration Guide* for more information.

Note: CAS and R2MF protocols are only supported on the DMT160TEC board. The DMN160TEC board does not support these protocols.

Dynamic protocol selection

Allows changes on a trunk-by-trunk basis within selected front-end configurations (T1 or E1). For example, if a trunk is configured for E1 at download, a user can change that trunk to a different *variant* of the same E1 call control signaling protocol during runtime, for example, ISDN QSIG to ISDN NET5. Changes from one E1 call control signaling protocol to another E1 call control signaling protocol, for example, ISDN to R2MF or vice-versa are not supported. Changes to/from Clear Channel or NFAS are also excluded. Refer to the *Global Call ISDN Technology Guide* and the *Global Call*

E1/T1 CAS/R2 Technology Guide. DMN160TEC boards do not support CAS/R2 protocols.

Note: The number of channels per trunk must remain the same as originally configured. This means you cannot dynamically change a span from T1 to E1 or vice-versa. This functionality is only provided at download.

D channel backup support for 5ESS and 4ESS

In addition to the NI-2 ISDN protocol, the CONFIG File parameter NFAS_Standby_IntID (Standby Instance Identifier) now supports D channel backup (DCBU) on the 4ESS and 5ESS protocols. Refer to the *DM3 Configuration Guide* for more information.

Support for 2B Channel Transfer (2BCT)

Allows the connection of two independent B Channel calls at an ISDN PRI user's interface to each other at the PBX or CO. The ISDN PRI user sends a Facility message to the PBX or CO requesting that the two B Channel calls be connected. If accepted, the user is released from the calls. See the *Global Call ISDN Technology Guide* for details.

Dynamic line coding and frame selection

Provides new parameter values for **gc_SetConfigData( )**, allowing dynamic configuration of the following trunk parameters at runtime:

- Line Type (E1 or T1)
- Frame Selection (D4 or ESF when using T1; E1 standard or E1 standard and CRC-4 when using E1)

Refer to the *Global Call ISDN Technology Guide* and the *Global Call E1/T1 CAS/R2 Technology Guide*.

PDK Trace support on the DMT160TEC board.

The PDK Trace tool allows those who use a DM3 PDK protocol to log specific information related to the operation of the protocol. Refer to the *Diagnostics Guide* for more information.

Improved Configuration Manager

Provides a trunk configuration utility for DMN160TEC and DMT160TEC boards. Refer to the *DM3 Configuration Guide* for more information.

3.5 New Features for Intel NetStructure High Density Station Interface (HDSI) Products

System Release 6.1 cPCI for Windows supports the Intel NetStructure® High Density Station Interface (HDSI) products. These products integrate large-scale switching and voice processing resources under a single hardware and software architecture. The HDSI solution provides high-density analog station connectivity in a single computer chassis slot. These boards are offered in CompactPCI* form factor.

New Features

System Release 6.1 cPCI for Windows provides the following new feature on HDSI products. This feature is new since System Release 6.0 cPCI Feature Pack 1 for Windows.

Station Interface Alarms
: This feature provides notification of problems with the communication link between a board and its associated Station Interface Box (SIB). The MSI API sends a station interface alarm to the application when a station interface goes offline, so that the application can stop sending calls to the station interfaces that are no longer in service. The MSI API can also notify the application when the problem is corrected; that is, when the station interface goes on-line. Example: If power to the SIB is lost or if any communication links between the board and the SIB are accidentally disconnected (e.g., cable is disconnected), the MSI API can notify the application by sending it an alarm event. See the *MSI API Library Reference* and the *MSI API Programming Guide* for details.

Asynchronous Routing with **ms_listenEx( )** and **ms_unlistenEx( )**
: In addition to the functionality provided by **ms_listen( )** and **ms_unlisten( )**, the new **ms_listenEx( )** and **ms_unlistenEx( )** routing functions provide asynchronous routing through the mode parameter. The MSEV_LISTEN and MSEV_UNLISTEN events are also added to indicate the successful completion of the asynchronous routing operations, and the MSEV_LISTEN_FAIL and MSEV_UNLISTEN_FAIL events to indicate failure of the asynchronous routing operations. See the *MSI API Library Reference* for details

3.6 New Intel NetStructure SS7 Products and SIUs

Intel NetStructure® SS7 boards provide on-board support for SS7 common channel signaling protocols with a number of digital line interfaces (E1/T1/J1) and a H.100 or H.110 PCM highway that supports connection to a wide range of voice, data, and fax boards. System Release 6.1 cPCI for Windows supports the following SS7 boards:

SS7HDCS8
: The SS7HDCS8 is a high-density, multi-port, SS7 signaling interface CompactPCI* board that supports up to 32 SS7 links and provides eight software-selectable T1/E1 interfaces.

SS7HDCD16
: The SS7HDCD16 is a high-density, multi-port, SS7 signaling interface CompactPCI* board that supports up to 64 SS7 links and provides 16 software-selectable T1/E1 interfaces.

SS7HDCQ16
: The SS7HDCQ16 is a high-density, multi-port, SS7 signaling interface CompactPCI* board that supports up to 128 SS7 links and provides 16 software-selectable T1/E1 interfaces.

SS7CPM8

The SS7CPM8 is a SS7 signaling interface board that supports up to four SS7 links and provides eight T1/E1 interfaces.

Signaling Interface Units (SIUs)

Intel NetStructure Signaling Interface Units (SIUs) are SS7 server solutions that provide a convenient and cost-effective way to add SS7 connectivity to an existing multi-chassis system or to enable an application with the necessary protocols for mobile wireless or intelligent networks. System Release 6.1 cPCI for Windows provides support for the following SIUs:

SS7G21 (in SIU Mode)

The SS7G21 is fitted with Intel NetStructure SPCI4 or SPCI2S boards with a system maximum of 12 SS7 links and provides a form, fit, and function replacement for the Intel NetStructure SIU520 signaling gateway on a higher performance platform. An SS7G21 may be purchased with either:

- 1, 2, or 3 SPCI2S boards (4 SS7 links, 2 T1/E1 interfaces, two V.11 serial ports per board)
- 1, 2, or 3 SPCI4 boards (4 SS7 links, 4 T1/E1 interfaces per board) Supplied in a 2U carrier-grade chassis, the SS7G21 provides SS7 connectivity for multichassis call control, wireless, or Intelligent Networking (IN) applications.

SS7G22 (in SIU Mode)

The SS7G22 is fitted with Intel NetStructure SS7HDP boards and offers significantly greater performance and link density than the SS7G21. An SS7G22 may be purchased with 1, 2, or 3 SS7HDP boards (64 SS7 links, 4 T1/E1 interfaces per board) with a system maximum of 128 SS7 links. Supplied in a 2U carrier-grade chassis, the SS7G21 provides SS7 connectivity for multichassis call control, wireless, or Intelligent Networking (IN) applications.

SIU520

The SIU520 is a carrier-grade programmable 2U server that provides signaling for multiple clients over a local area network (LAN). It supports up to 12 SS7 links and provides up to 12 T1/E1 digital network interfaces and up to six V.11 interfaces (offering V.35 interworking).

SIU231

The SIU231 is a modular design SIU enabling SS7 signaling boards to be added as needed. It supports up to 16,384 circuit identification codes (CICs), up to 32 SS7 links in eight linksets and handles 100 calls/second. It can connect to 32 host platforms (significantly more using a host-clustering arrangement) and is suitable for creating fault-resilient configurations.

SIU131

The SIU131 is an SIU that supports up to 4096 circuit identification codes (CICs), up to six SS7 links in six linksets and handles 100 calls/second. It can connect to 32 host platforms (significantly more using a host-clustering arrangement) and is suitable for creating fault-resilient configurations.

Features

System Release 6.1 cPCI for Windows provides the following features for SS7 boards and SIUs:

Global Call API support
: Supports the development of call control applications that use SS7 technology. See the *Global Call SS7 Technology Guide* for more information.

Note: System Release 6.1 cPCI for Windows works in conjunction with the SS7 Development Package, which is not part of the System Release software. The SS7 Development package is available from the following URL:
http://resource.intel.com/telecom/support/ss7/cd/genericinfo/index.htm

This package must be installed to provide support for the following SS7 layers and protocols:

- MTP2
- MTP3
- ISUP
- TUP (ITU and China GF001-9001 variants)
- SCCP
- TCAP
- IS41
- MAP
- INAP

Installation and Configuration 4

This chapter provides information about the installation and configuration of Intel® Dialogic® System Release 6.1 CompactPCI* for Windows. This information is provided in the following sections:.

4.1 Installation

Installation of System Release 6.1 cPCI for Windows is a complete installation (not an overlay to a previous release). Changes to the installation include the following:

An existing version of System Release 6.1 cPCI for Windows can be updated

If an existing release of System Release 6.1 cPCI for Windows is already installed on your system and you start to install a newer version, the previous version will be detected and all installed features will be automatically updated with content contained in the newer version. You will not have to uninstall any previous version of System Release 6.1 cPCI for Windows software. However, if a system release prior to System Release 6.1 cPCI Feature Release 1 for Windows is detected (such as System Release 6.0), the install will tell you to uninstall the old release before installing any version of System Release 6.1 cPCI for Windows.

A previous version of System Release 6.1 cPCI for Windows is not required before you can install an update

You can install any newer release of System Release 6.1 cPCI for Windows without having to install a previous release. In other words, all previously delivered content up to and including the most recent release will be automatically installed.

PDKManager Registry Key

When you upgrade to a newer release of System Release 6.1 cPCI for Windows, the PDKManager registry key will be preserved. Therefore, you do not need to manually run PDKManagerRegSetup. If you manually run PDKManagerRegSetup, it will fail since the registry key is already present.

A new Core Runtime option replaces all the individual board support options on the installation menu

The Core Runtime option installs the device drivers, firmware, parameters, and other files needed to execute an application that uses Intel telecom boards.

ISDN Protocol selection

On the installation menu, ISDN protocols can be selected individually or all ISDN protocols can be selected.

Global Call Protocols are now installed with the system release software

In previous releases, the Global Call Protocols had to be installed separately from the system release software. Now the Global Call Protocol Release is integrated with the system release installation. No additional steps are required to install Global Call.

Backup of configuration data from some previous releases is supported.

If you have a previous Intel Dialogic System Release installed on your computer (System Release 5.1, 6.0, or a previous release of 6.1), you can optionally preserve existing configuration data.

To do this, you must first install a preparation program, which is available in a Technical Note at this website:
http://resource.intel.com/telecom/support/tnotes/tnbyos/2000/tn113.htm

The backup feature (cfgbackup.exe) preserves the following files:

- some .cfg files and DCM Registry data - The **.cfg* files are DCM-related files (saved in *dialogic/savedConfig/*.cfg*) and they are different from the DM3 configuration files (**.config* files)
- DM3 configuration files (**.config* files)
- PDK *.CDP* files

No other configuration objects are preserved. Refer to the *Software Installation Guide* for more information.

Consumable Installation (Redistributable Edition)

System Release 6.1 cPCI for Windows offers a Redistributable Edition that can be incorporated or “consumed” into another install. This edition contains all the software that can be redistributed as part of an application developed using the system release. The Redistributable edition provides all the software and documentation necessary to deploy and run applications and also includes demos. The Redistributable Edition does not include any development tools. Development tools are provided in the Developer Edition.

Remote installation

System Release 6.1 cPCI for Windows can be installed remotely via a terminal services remote session.

Developer Edition

System Release 6.1 cPCI for Windows offers a Developer Edition. This edition is intended only for use during application development. The Developer Edition provides all the software and documentation necessary to develop applications that will run on the release.

Not for Sale Edition

System Release 6.1 cPCI for Windows offers a Not For Sale (NFS) Edition.This edition contains all the software required to develop and execute an application. The NFS edition is meant for evaluation purposes only. Thus, if you install this edition, the Intel Dialogic System Service will stop after 10 hours. The Intel Dialogic System Service can be restarted using the configuration manager (DCM), but it will stop again in 10 hours. The Intel Dialogic System Service does not stop after 10 hours in the Redistributable and Developer editions. To get this functionality, you must uninstall the NFS edition and install either the Redistributable or Developer edition of the software.

Detection of unsupported boards

If an unsupported board (i.e., a board that is not supported in System Release 6.1 cPCI for Windows) is detected by this release, you will be notified that the board is unsupported by the release via a log file (*rtf*.txt*) in the *log* directory and the Windows Event log. System Release 6.1 cPCI for Windows will not prevent you from installing an unsupported board.

For information about installing and uninstalling System Release 6.1 cPCI for Windows, refer to the *Software Installation Guide*. Online help is also available during installation.

4.2 Configuration

Configuration is performed after the system release software is installed, using the configuration manager (DCM). Products are distributed with preconfigured default settings.

The following new configuration capabilities are provided in System Release 6.1 cPCI for Windows. These capabilities are new since System Release 6.0 cPCI Feature Pack 1 for Windows:

Automatic FCD File Generation

The FCD files are not required in the system release software. When you download a PCD file and its corresponding CONFIG file to a board, the FCD file is automatically generated and also downloaded to the board. The FCD file is also copied into the data directory. Refer to the *DM3 Configuration Guide* for additional information.

Trunk Configurator

System Release 6.1 cPCI for Windows includes a Trunk Configuration property sheet in the Configuration Manager (DCM) that allows you to configure individual trunks on DMV600BTEC, DMV1200BTEC, DMN160TEC, and DMT160TEC products. Refer to the *DM3 Configuration Guide* for more information.

The Configuration Manager (DCM) supports migration of configuration data from previous releases of System Release 6.1 cPCI for Windows and some older releases

In addition to supporting migration of configuration data from previous releases of System Release 6.1 cPCI for Windows, DCM supports migration from the following older releases:

- System Release 6.0 cPCI Feature Pack 1 for Windows
- System Release 6.0 cPCI Service Pack 1 for Windows
- System Release 6.0 cPCI for Windows
- System Release 6.0 cPCI for Windows Service Update

Note: Not every .config file that is backed up will be migrated into the System Release 6.1 cPCI for Windows releases to avoid losing problem fixes and newly added features such as mixed ISDN/CAS and dynamic protocol selection.

PDK Configurator

System Release 6.1 cPCI for Windows includes a new PDK Configuration property sheet in the Configuration Manager (DCM) that allows you to assign country

dependent parameter (CDP) file variants to trunks on boards that are PDK capable, providing the trunks have been configured for either the CAS or R2MF protocol. This property sheet includes the following parameters:

- **PDKTrunk 0** = allows you to assign the same CDP file variants to all trunks on a board. This parameter only applies if all of the trunks on a board are configured for the CAS or R2MF protocols.
- **PDKTrunk 1 to PDKTrunk 16** = allows you to assign CDP file variants on a trunk-by-trunk basis. This parameter does not require that all trunks on a board be configured for the CAS or R2MF protocol, but it only applies to those trunks that are.

When multiple CDP file variants are assigned to a trunk, an application can dynamically change variants on that trunk.

OA&M Software 5

This chapter describes the OA&M (operation, administration and maintenance) software features that are supported in Intel® Dialogic® System Release 6.1 CompactPCI* for Windows.

5.1 Administration Software

This section describes the system administration software capabilities that are supported in System Release 6.1 cPCI for Windows. Administrative software allows the administrator to perform such tasks as starting and stopping the Intel® Dialogic® System, running demo programs, monitoring performance, and replacing a board in an active system with the same board type. System Release 6.1 cPCI for Windows supports the following administrative capabilities:

SNMP Agent Administration Software

SNMP stands for Simple Network Management Protocol, a standard IP network mechanism for exchanging management information between an SNMP agent and an SNMP manager.

No new SNMP features are introduced in System Release 6.1 cPCI for Windows. For information about the supported Management Information Bases (MIBs) and administrative tasks that can be performed with SNMP, refer to the *SNMP Agent Software Administration Guide*.

Peripheral Hot Swap (PHS)

System Release 6.1 cPCI for Windows supports Peripheral Hot Swap (PHS). PHS is supported on the following chassis/Single Board Computer (SBC):

Notes:1. PHS is supported on Windows 2000 SP4 and on SBCs with up to 4 GB RAM where the SBC supports it.

2. For more information about chassis/SBC, go to the following URL: *http://www.intel.com/design/network/products/cbp/cpci/index.htm*

- Intel NetStructure® ZT5085/ZT5524A-1A (Dual CPU)
- Intel NetStructure® ZT5085/ZT5524A-1B (Single CPU)
- Intel NetStructure® MPCHC5085/ZT5524A-1A (Dual CPU)
- Intel NetStructure® MPCHC5085/ZT5524A-1B (Single CPU)

- Intel NetStructure® MPCHC5085/MPCBL5524A1C (Dual CPU) with up to a maximum of **4** GB RAM
- Intel NetStructure® MPCHC5085/MPCBL5524A1D (Single CPU) with up to a maximum of **4** GB RAM
- Intel NetStructure® MPCHC5091/ZT5524A-1A
- Intel NetStructure® MPCHC5091/ZT5524A-1B
- Intel NetStructure® MPCHC5091/MPCBL5524A1C
- Intel NetStructure® MPCHC5091/MPCBL5524A1D
- Intel NetStructure® ZT5085/MPCBL5525 or MPCHC5085/MPCBL5525
- Intel NetStructure® MPCHC5091/MPCBL5525

  Note: For information about installing the Hot Swap Kit (HSK), refer to the *Pigeon Point Systems Hot Swap Kit User Guide*, which is a PDF file located in the HSK directory with the System Release 6.1 cPCI for Windows software. For information about using PHS software, refer to the *Software Installation Guide*, *Administration Guide*, and *High Availability Demo Guide*.
- Advantech MIC-3038A/8-4R with MIC-3358 SBC
- Advantech MIC-3041/MIC-3389
- Advantech MIC-3081/MIC-3369
- Westek P5100/Advantech MIC-3358

Redundant Host (RH)

System Release 6.1 cPCI for Windows supports Active/Standby Redundant Host (RH) and Peripheral Hot Swap (PHS) software on the following chassis/Single Board Computer (SBC):

Notes: ***1.*** RH is supported on Windows 2000 SP4 and on SBCs with up to 4 GB RAM where the SBC supports it.

2. To fully support the capabilities of the Hot Swap Kit (HSK) and RH on the Intel NetStructure® ZT5085 chassis, the xx5524 SBC requires the Intel NetStructure® ZT4901 mezzanine board installed with it.

3. For more information about chassis/SBC, go to the following URL: *http://www.intel.com/design/network/products/cbp/cpci/index.htm*

- Intel NetStructure® ZT5085/ZT5524A-1A (Dual CPU)
- Intel NetStructure® ZT5085/ZT5524A-1B (Single CPU)
- Intel NetStructure® MPCHC5085/ZT5524A-1A (Dual CPU)
- Intel NetStructure® MPCHC5085/ZT5524A-1B (Single CPU)
- Intel NetStructure® MPCHC5085/MPCBL5524A1C (Dual CPU) with up to a maximum of 4 GB RAM

- Intel NetStructure® MPCHC5085/MPCBL5524A1D (Single CPU) with up to a maximum of 4 GB RAM

  Note: For information about installing RH (HA SDK), refer to the *Pigeon Point Systems Hot Swap Kit User Guide*, which is a PDF file located in the HSK directory with the System Release 6.1 cPCI for Windows software. For information about using RH software, refer to the *Software Installation Guide*, *Administration Guide*, and *High Availability Demo Guide*.

New Tools

There are no new tools or new features of existing tools in System Release 6.1 cPCI for Windows since System Release 6.0 cPCI Feature Pack 1 for Windows.

New API Libraries

This section describes the new administration software API libraries available for System Release 6.1 cPCI for Windows. Board Management Library (BML)

The Board Management Library (BML) contains functions that provide runtime fault monitoring and management of configurable boards. The API provides the ability to monitor the host computer for a failure and take boards out of service to prevent the network from offering calls to a failed system. For example, if the host application or operating system fails, the API will take the network interface out of service. Refer to the *Board Management API Library Reference* for more information.

Note: This API was introduced in System Release 6.1 cPCI Feature Release 1 for Windows.

Support for the Board Management API is as follows:

- The Board Management API is supported on digital DM3 boards (the board must have a network interface for the API to be supported).
- The Board Management API is supported on these boards using the following protocols:
  - T1 North American ISDN (4ESS, 5ESS, DMS100, DMS250, NI2, NTT, QSIG)
  - E1 ISDN (NET5, QSIG)
  - E1/T1 CAS (PDK protocols)
  - E1 DPNSS and DASS2
- The Board Management API is not supported on the Intel NetStructure® IPT series boards.

5.2 Diagnostics Software

This section describes the new diagnostic capabilities and tools available for System Release 6.1 cPCI for Windows. For more information about the diagnostics software, refer to the *Diagnostics Guide*.

Runtime Trace Facility (RTF) Tool

System Release 6.1 cPCI for Windows introduces a new version of the Runtime Trace Facility tool. The RTF tool provides a mechanism for tracing the execution path of

runtime libraries that are supported by System Release 6.1 cPCI for Windows. Support for the RTF tool is as follows:

- `Rtftool` command is used to stop/start the RTF tool's tracing capabilities
- provides centralized logging for key OA&M components (OAMSYSLOG)and IP libraries
- run the RTF tool in preservation mode. Preservation mode allows you to save specified RTF trace information into a separate, preserved log file while the RTF engine continues to output active trace information into the default log file. The RTF engine will not overwrite, delete or append to the preserved log file after it has been saved.
- trace the Audio Conferencing API (DCB) library.

Runtime Trace Facility (RTF) Output

The presentation of the trace data has been made consistent. The trace format is identical for a given type of tracing, regardless of the library generating the trace.

Ability to trace inbound and outbound R2MF tones and CAS bit transitions/states

Inbound and outbound R2MF tones and CAS bit transitions/states can be traced using existing Global Call APIs and a Global Call event (GCEV_TRACEDATA). This allows developers to determine the root cause of protocol issues in a system that uses Intel NetStructure® DMT160TEC digital telephony interface boards. This capability provides a single interface through which every component on a DMT160TEC board can send trace data to the host in a generic format.

Note: Supported on DMT160TEC only.

Ability to trace multiple ISDN trunks and enable/disable tracing via APIs

The capture of ISDN D-channel trace information can now be dynamically started and stopped via Global Call APIs, and logs can be collected on two or more trunks at the same time. Previously, the only available tool for collecting ISDN trace information (isdntrace) could not be run on more than one trunk. This trace information allows developers to determine the root cause of protocol issues in a system that uses Intel NetStructure® DMT160TEC or DMN160TEC digital telephony interface boards (no other boards support this feature).

Hardware diagnostic improvements

The DM3post tool can now run POST on an entire chassis. The autodump feature of the dlgsnapshot tool is now disabled by default. However, you still have the option of enabling the autodump feature if you want to use it. In the default state, no board or DSP will be automatically reset as a result of a DSP failure. Previously, the entire board would be brought down if a single DSP failed.

PDK protocol tracing on DM3 now supports Intel NetStructure® DMT160TEC boards

The DM3 PDK Protocol Trace (PDK Trace) tool allows those who use a DM3 PDK protocol to log specific information related to the operation of the protocol. This tool can now be used with DMT160TEC boards.

Note: PDK Tracing will work on any of the following products with a PDK protocol loaded: Intel NetStructure® DM/V, DM/V-A, DM/V-B, DM/F, and DMT160TEC boards. PDK tracing is not supported for Intel NetStructure® DM/IP boards and Intel NetStructure® on DM3 architecture analog boards.

Intel® Telecom Subsystem Summary Tool (its_sysinfo)

System Release 6.1 cPCI for Windows introduces a new version of the Intel Telecom Subsystem Summary Tool (its_sysinfo). The its_sysinfo tool collects data from the system on which you execute it and provides you with information about the system environment: the operating system, computer architecture, Intel Dialogic System Release software, and operational logs. The new version of its_sysinfo supports a command line interface, provides more data-collecting features, and improves some existing data collecting features.

Programming Libraries 6

This chapter describes the features of the programming libraries that are supported in Intel® Dialogic® System Release 6.1 CompactPCI* for Windows.

Note: If you are upgrading to Intel® Dialogic® System Release 6.1 CompactPCI* for Windows from Intel® Dialogic® System Release 6.0 CompactPCI* Feature Pack 1 for Windows (or any earlier versions), you should recompile all of your applications to avoid any compatibility issues between releases.

6.1 Audio Conferencing (DCB) API Library

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

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

Note: Refer to the *Audio Conferencing API Library Reference* and *Audio Conferencing API Programming Guide* for more information.

New Features

System Release 6.1 cPCI for Windows provides the following new feature on the Audio Conferencing (DCB) API library. This feature is new since System Release 6.0 cPCI Feature Pack 1 for Windows.

API control of conference output volume on a per party basis

The new **dcb_SetPartyParms( )** and **dcb_GetPartyParms( )** functions provide the ability to adjust the output volume for individual conferees. (Previously, the volume could only be adjusted on a board basis using DTMF digits.) This feature is available on all media span products that support conferencing. See the *Audio Conferencing API Library Reference* for details.

6.2 Continuous Speech Processing (CSP) API Library

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

Note: Refer to the *CSP API Library Reference* and *CSP API Programming Guide* for more information.

New Features

The CSP API library provides the following new feature in System Release 6.1 cPCI for Windows. This feature is new since System Release 6.0 cPCI Feature Pack 1 for Windows.

Silence compressed streaming
: Allows for silence data to be removed from data being streamed to the host. A new parameter value in **dx_setparm( )**, ECCH_ SILENCECOMPRESS, enables this feature.

6.3 Fax API Library

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

Note: Refer to the *Fax Software Reference* for more information.

New Features

No new Fax API library features have been implemented since System Release 6.0 cPCI Feature Pack 1 for Windows.

6.4 Global Call API Library

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

Note: Refer to the *Global Call API Library Reference* and *Global Call API Programming Guide* for more information.

New Features

System Release 6.1 cPCI for Windows supports the following new Global Call features. These features are new since System Release 6.0 cPCI Feature Pack 1 for Windows.

Note: The Global Call Protocols Package is now integrated with the System Release 6.1 cPCI for Windows software installation. Previously, this was a separate, installable package.

New Global Call Features for E1/T1 Technology

The Global Call API library provides the following new features that apply to E1/T1 CAS technology:

Dynamic protocol selection

When using DMT160TEC and DMN160TEC boards, dynamic protocol selection allows changes on a trunk-by-trunk basis within selected front-end configurations (T1 or E1). For example, if a trunk is configured for E1 at download, a user can change that trunk to a different *variant* of the same E1 call control signaling protocol during runtime, for example, Argentina R2 to Brazil R2. Changes from one E1 call control signaling protocol to another E1 call control signaling protocol, for example, R2MF to ISDN or vice-versa are not supported. Changes to/from Clear Channel are also excluded. Refer to the *Global Call E1/T1 CAS/R2 Technology Guide*. This feature is supported on DMT160TEC and DMN160TEC boards only.

Note: The number of channels per trunk must remain the same as originally configured. This means you cannot dynamically change a span from T1 to E1 or vice-versa. This functionality is only provided at download.

Dynamic line coding and frame selection

Allows dynamic configuration (post download) of the following trunk parameters:

- Line Type (E1 or T1)
- Frame Selection (D4 or ESF when using T1; E1 standard or E1 standard and CRC-4 when using E1)

This feature is supported on Intel NetStructure® DMT160TEC and DMN160TEC boards only. For further information, see the *Global Call E1/T1 CAS/R2 Technology Guide*.

Support for new PDK protocols

The following new protocols are supported:

- Korea T1/R2
- Lebanon R2
- Poland R2
- Samsung Lineside E1
- Australia R2
- South Africa R2
- Bulgaria R2
- Croatia R2
- Kuwait R2
- Lithuania R2

- Uzbekistan R2

For further information about these protocols, see the *Global Call CDP Configuration Guide*.

Querying ABCD bits

The Direct Signaling protocol now provides the ability to retrieve the current state of the ABCD signaling bit values by using the **gc_Extension( )** function. For further information, see the *Global Call CDP Configuration Guide*.

Support for ANI category digit retrieval on DM3 boards

The **gc_GetCallInfo( )** function, which retrieves information associated with a call, can now be used to retrieve the category digit for DM3 boards. (Formerly, the **gc_GetCallInfo( )** CATEGORY_DIGIT parameter was supported for Springware boards only.) For information about using the **gc_GetCallInfo( )** function, see the *Global Call API Library Reference*.

The category digit is used to determine the origin or type of the calling party (for example, ordinary subscriber, pay phone) so that the application may choose to take a specific action based on the call's origin. The category digit is used mainly with E1 R2MF protocols, and the categories are determined by the protocol.

New Global Call Features for IP Technology

The Global Call API Library provides many new features that apply to the IP technology, either in general or specifically to either the SIP or the H.323 protocol. The following list includes features that are new since System Release 6.0 cPCI Feature Pack 1 for Windows.

The following new feature applies to the IP technology in general (that is, **both H.323 and SIP protocols**):

Support for Early Media when using Global Call

Media streaming is automatically established as early as possible in the call connection process to allow transfer of signaling tones or system announcements.

Note: When using DM/IP boards, the early media capability must be explicitly enabled by means of a new parameter (PrmEarlyMedia) in the DM3 configuration file. See the *DM3 Configuration Guide* for details.

Access to coder information in FastStart call offers

When a "FastStart" call offer that contains one or more coder proposals is received, the application can optionally access that coder information before accepting the offer. Previously, the coder information was only used internally by the library to begin the coder negotiation process.

RTF logging facilities

The logging capabilities available for the IP call control library and the SIP and H.323 protocol stacks now use the same RTF facilities as other system logging operations.

Host network disconnection alarm

GCAMS alarm to notify Global Call applications if the host LAN connection is lost (due to cable disconnection or network failure, for example) and when the connection is restored.

System Release 6.1 cPCI for Windows also supports the following new features that are specific to the **H.323 protocol only**:

Optional H.245 channel in H.323 fastStart connection mode

By indicating that the H.245 channel is not essential, an application can accelerate the call establishment process by allowing completion without waiting for the H.245 channel to be established.

H.323 Annex M Tunneled Signaling Messages

Applications can encapsulate DSS/QSIG/ISUP messages (optionally containing nonstandard data elements) in common H.225 call signaling messages. The length of the message content is not limited to 255 bytes.

Support for extended-length Global Call parameters is provided by several new **gc_util_..._ex( )** APIs that have been added to the Global Call library. These new APIs are documented in both the *Global Call API Library Reference* and the *Global Call IP Technology Guide*.

Expanded Nonstandard Data capabilities

When sending or receiving a Nonstandard Data element (in Setup, H.245 UII, Q.931 Facility, or RAS messages, for example) the data is no longer limited to 255 bytes.

Support for extended-length Global Call parameters is provided by several new **gc_util_..._ex( )** APIs that have been added to the Global Call library. These new APIs are documented in both the *Global Call API Library Reference* and the *Global Call IP Technology Guide*.

System Release 6.1 cPCI for Windows also supports the following new features that are specific to the **SIP protocol only**:

Call Transfer

Supplementary service for unattended and attended call transfers compliant with IETF RFC 3515.

Message header access

Applications can set/get any standard or proprietary header field in any supported SIP message type (as permitted by IETF standards) using a generic mechanism. Using this mechanism, the size of header field content is not limited to 255 bytes.

Support for extended-length Global Call parameters is provided by several new **gc_util_..._ex( )** APIs that have been added to the Global Call library. These new APIs are documented in both the *Global Call API Library Reference* and the *Global Call IP Technology Guide*.

MIME messages

Applications can send and retrieve SIP messages that include single-part or multi-part MIME bodies. MIME bodies are commonly used to encapsulate SIP Telephony (SIP-T) information.

SIP outbound proxy

Applications can configure the Global Call library to use a proxy for all outbound messages sent from each virtual board.

Support for TCP and UDP transport protocols

The Global Call IP call control library can be configured to accept incoming messages that use the TCP transport protocol rather than UDP. When TCP support is enabled, the library can be configured for which transport protocol to use as the default for SIP requests, and this default transport protocol can be overridden by the application on a message-by-message basis. The library can also be configured for how to handle transport failures for SIP requests that are sent using UDP.

Support for INFO method

Applications can send or receive INFO requests and responses to allow transport of application-level, session-related control information after the setup of a SIP session has begun.

Support for OPTIONS method

Applications can send or receive OPTIONS requests and responses to allow a SIP User Agent to query the capabilities of another UA or proxy either within or outside of a SIP dialog.

Support for SUBSCRIBE and NOTIFY methods

Applications can send or receive SUBSCRIBE and NOTIFY requests and responses to support event notification between nodes outside of a SIP dialog. Unsubscribed NOTIFY messages (commonly used for MWI) are supported as well as subscribed NOTIFY messages.

Expanded registration capabilities

The Global Call library now allows applications to query the SIP registrar for current bindings as well as adding, changing, and deleting the bindings. The maximum number of registrations can be configured when starting each virtual board to allow users to be registered with multiple registrars or registered using multiple transport addresses.

Support for digest authentication

The Global Call library supports the SIP digest authentication mechanism, which allows a remote endpoint to challenge and authenticate the identity of a User Agent which has sent it a request. A new **gc_SetAuthenticationInfo( )** API, which is documented in the *Global Call IP Technology Guide*, has been added to support this functionality.

Support for 3xx responses, including redirect server capabilities

Applications are notified of incoming 3xx (redirection) responses, and are capable of sending 3xx responses to support redirect server functionality.

Expanded support for provisional (18x) responses

Applications can specify which provisional response to send when accepting an incoming call request. Applications that receive a provisional response from the remote endpoint can distinguish among the different possible codes and can also retrieve the Status-Code and Reason-Phrase.

New Global Call Features for ISDN Technology

The Global Call API library provides the following new features that apply to ISDN technology:

Support for QSIG NCAS

The ability to make (outbound) and receive (inbound) Non-Call Associated Signaling (NCAS) calls is supported for the QSIG protocol (E1 or T1) on the Intel NetStructure® DMV1200BTEC, DM/V960A-4T1-cPCI and DM/V1200A-4E1-cPCI boards.

Note: The feature is only supported on media loads that use the QSIG T1 or E1 protocol; for example, ml2_qs2_qsige1.

See the *Global Call ISDN Technology Guide* for more information.

2B channel transfer

2B Channel Transfer (2BCT) is now supported. See the "Network Facility Request - Two B Channel Transfer" section in the *Global Call ISDN Technology Guide*.

D-channel backup

In addition to NI-2 ISDN protocol support for D-channel backup, 4ESS and 5ESS protocol support for D-channel backup has been added in this release. Refer to the *DM3 Configuration Guide* for more information.

Dynamic protocol selection

When using DMT160TEC and DMN160TEC boards, this feature enables changes on a trunk-by-trunk basis within selected front-end configurations (T1 or E1). For example, if a trunk is configured for E1 at download, a user can change that trunk to a different *variant* of the same E1 call control signaling protocol during runtime, for example, ISDN QSIG to ISDN NET5. Changes from one E1 call control signaling protocol to another E1 call control signaling protocol, for example, ISDN to R2MF or vice-versa are not supported. Changes to/from Clear Channel or NFAS are also excluded. This feature is supported on Intel NetStructure® DMT160TEC and DMN160TEC boards only. See the "Using Dynamic Trunk Configuration" section in the *Global Call ISDN Technology Guide* for more information.

Note: The number of channels per trunk must remain the same as originally configured. This means you cannot dynamically change a span from T1 to E1 or vice-versa. This functionality is only provided at download.

Dynamic line coding and frame selection

Allows dynamic configuration (post download) of the following trunk parameters:

- Line Type (E1 or T1)
- Frame Selection (D4 or ESF when using ISDN on T1; E1 standard or E1 standard and CRC-4 when using ISDN on E1)

See the "Using Dynamic Trunk Configuration" section in the *Global Call ISDN Technology Guide* for more information. This feature is supported on Intel NetStructure® DMT160TEC and DMN160TEC boards only.

Support for Continuity Check IE

Global Call supports the Continuity Check IE (0x53) that is part of Codeset 6 for the 4ESS protocol. See the "Retrieving Continuity Check IE" section in the *Global Call ISDN Technology Guide* for more information.

6.5 IP Media API Library

The IP Media library (IPML) is used to control media on IP devices. Voice over IP (VoIP) applications that use IP signaling stacks other than those supplied with Intel products may

use this library for application development. VoIP applications that use the Global Call library for call control will have limited need to use the IP Media Library directly.

Note: IP Media library functionality is documented in the *IP Media Library API Library Reference* and the *IP Media Library API Programming Guide*.

Features

System Release 6.1 cPCI for Windows provides the following new IP Media API Library features. These features are new since System Release 6.0 cPCI Feature Pack 1 for Windows.

Support for “Early Media” capabilities on DM/IP boards

An RTP stream can be started in unidirectional mode prior to completing the connection in order to pass network tones back to the calling party, then changed to full-duplex mode when the connection is complete. See the “Configuring for Half- or Full-Duplex Media Streams” chapter in the *IP Media Library API Programming Guide* and the **ipm_StartMedia( )** and **ipm_ModifyMedia( )** function descriptions in the *IP Media Library API Library Reference* for more information.

Partial Support for SIP REINVITE on DM/IP boards

To support SIP REINVITE functionality, the ability to change the media stream direction and remote IP address and port information is provided via the **ipm_ModifyMedia( )** function. See the *IP Media Library API Library Reference* for more information.

Media LAN disconnection alarm

A software alarm that notifies an IPML application when a board's media LAN connection on IPT boards is lost (due to cable disconnection, for example) and when it is restored. This feature is implemented as a board-level QoS alarm. In the IPM_QOS_ALARM_DATA structure, a new eQoSType value of QOSTYPE_NETWORKFAILURE and associated eAlarmState of ALARM_STATE_ON (indicating network connection loss) or ALARM_STATE_OFF (indicating network connection restoration) are provided for this feature. See the “Network Alarm Failure” section in the *IP Media Library API Programming Guide* and the IPM_QOS_ALARM_DATA structure description in the *IP Media Library API Library Reference* for details.

Support for GMS-AMR coder

IPT boards support the GSM AMR-NB (adaptive multi-rate narrow band) coder for applications that use the IP Media Library. Eight different AMR-NB allowable rates from 4.75 kbps and 12.2 kbps are supported. See the “Supported Coder Properties for Intel NetStructure IPT Series Boards” table in the *IP Media Library API Library Reference* for details.

6.6 Modular Station Interface API Library

The Modular Station Interface (MSI) API is used by the Intel NetStructure® High Density Station Interface (HDSI) boards, which provide high density analog station connectivity.

The HDSI board can support up to 120 stations with tone detection and generation, and FSK Caller ID transmission.

Note: Refer to the *MSI API Library Reference* and the *MSI API Programming Guide* for more information.

New Features

The following new MSI API library features have been implemented in System Release 6.1 cPCI for Windows. These features are new since System Release 6.0 cPCI Feature Pack 1 for Windows.

Station Interface Alarms

This feature provides notification of problems with the communication link between a board and its associated Station Interface Box (SIB). The MSI API sends a station interface alarm to the application when a station interface goes offline, so that the application can stop sending calls to the station interfaces that are no longer in service. The MSI API can also notify the application when the problem is corrected; that is, when the station interface goes on-line. Example: If power to the SIB is lost or if any communication links between the board and the SIB are accidentally disconnected (e.g., cable is disconnected), the MSI API can notify the application by sending it an alarm event. See the *MSI API Library Reference* and the *MSI API Programming Guide* for details.

Asynchronous Routing with **ms_listenEx( )** and **ms_unlistenEx( )**

In addition to the functionality provided by **ms_listen( )** and **ms_unlisten( )**, the new **ms_listenEx( )** and **ms_unlistenEx( )** routing functions provide asynchronous routing through the mode parameter. The MSEV_LISTEN and MSEV_UNLISTEN events are also added to indicate the successful completion of the asynchronous routing operations, and the MSEV_LISTEN_FAIL and MSEV_UNLISTEN_FAIL events to indicate failure of the asynchronous routing operations. See the *MSI API Library Reference* for details.

6.7 Standard Runtime Library

The Standard Runtime library (SRL) API provides a common interface for event handling and other functionality common to all Intel® Dialogic® and Intel NetStructure® devices. The 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. Through the Standard Runtime library, events are handled in a standard manner.

Note: Refer to the *SRL API Library Reference* and *SRL API Programming Guide* for more information.

New Features

No new SRL API features have been implemented since System Release 6.0 cPCI Feature Pack 1 for Windows.

6.8 Voice API Library

The Voice API library provides an interface for developing a wide range of 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.

Note: Refer to the *Voice API Library Reference* and *Voice API Programming Guide* for more information.

New Features

System Release 6.1 cPCI for Windows supports the following new Voice API features. These features are new since System Release 6.0 cPCI Feature Pack 1 for Windows.

DX_MAXSIL termination condition
: The DX_MAXSIL is the maximum length of silence before function will terminate. This termination condition is now supported by **dx_getdig( )** on DM3 boards.

Streaming to board
: This feature enables streaming to a network interface in real time, which is essential in applications such as text-to-speech and IP gateways. Several new functions have been added to the Voice library.

Enhancements to call progress analysis
: Enhancements include the ability to modify call progress analysis tone definitions on DM3 boards. The **dx_createtone( )**, **dx_deletetone( )**, **dx_querytone( )** functions have been added to the Voice library.

Automatic gain control (AGC) configurable on a per-channel basis through new **dx_setparm( )** parameters
: The new parameters for AGC have the prefix DXCH_AGC_. Previously AGC was configurable on a board basis.

Playback pause and resume
: This feature allows a playback to be paused and then resumed at the exact point it was stopped without loss of data. The **dx_pause( )** and **dx_resume( )** functions have been added to the Voice library.

Enhanced CT_DEVINFO structure
: This structure contains device and device configuration information.

Support for **ATDX_CRTNID( )**
: This function, which returns the last call progress analysis termination, is now supported on DM3 boards. This function was previously supported on Springware boards only.

dx_getfeaturelist( ) support for Frequency Shift Keying (FSK)
: This function returns information about Frequency Shift Keying (FSK) support on a device. The FEATURE_TABLE structure used by **dx_getfeaturelist( )** provides this information in the ft_misc field.

Enhancement to **dx_reciottdata( )**

Two new modes have been added.

- Voice activity detector (VAD) with event notification (RM_VADNOTIFY).
- Initial silence compression (RM_ISCR)

Enhancements to SIT Templates

Improvements include the following:

- Broader default SIT sequence definitions to allow greater coverage for SIT sequences detected in the field.
- New SIT sequence definitions in the SIT tone set for DM3 boards: TID_SIT_NO_CIRCUIT_INTERLATA (or TID_SIT_NC_INTERLATA), TID_SIT_REORDER_TONE_INTERLATA (or TID_SIT_RO_INTERLATA), and TID_SIT_INEFFECTIVE_OTHER (or TID_SIT_IO).
- New catch-all SIT sequence definition to cover SIT sequences that fall outside the range of the defined SIT sequences (TID_SIT_ANY).
- Support for the **ATDX_CRTNID( )** function to allow retrieval of the SIT IDs.

Note: In this release, the new SIT sequences are not supported by the **dx_querytone( )**, **dx_deletetone( )**, and **dx_createtone( )** functions.

Support for TF_SETINIT flag in DV_TPT structure

This termination flag, used by DX_MAXSIL termination condition only, is now supported on DM3 boards (on standard play/record functions). This flag was previously supported on Springware boards only.

Support for speed control using 6 KHz coders

Users can adjust speed via DTMF or programmatically using **dx_adjsv( )**. The following coders are now supported for speed control:

- 24 kbps OKI ADPCM (6 kHz 4-bit)
- 48 kbps G.711 A-law PCM (6 kHz 8-bit)
- 48 kbps G.711 mu-law PCM (6 kHz 8-bit)

Improved accuracy for call progress analysis

Qualification templates for positive answering machine detection (PAMD) and positive voice detection (PVD) have been updated to accomplish higher successful PAMD and PVD rates on DM3 boards. These new templates are incorporated in the firmware. For more information, see the [sigDet] section of the *DM3 Configuration Guide*.

Demonstration Software 7

This chapter describes the demonstration (demo) programs that are provided in Intel® Dialogic® System Release 6.1 CompactPCI* for Windows. Demo programs are provided to demonstrate the functionality and features of Intel® telephony products and serve as examples of application programming using Intel® Dialogic® API libraries. All demo programs are supplied as source code which users may modify to explore other capabilities of the products. This chapter is divided into three sections:

7.1 New Demonstration Programs

System Release 6.1 cPCI for Windows introduces support for one demonstration program. This demo program is new since System Release 6.0 cPCI Feature Pack 1 for Windows.

CSPdemoSTB
: A single-channel, interactive demo that illustrates the streaming to board (real time streaming) feature. CSPdemoSTB runs in interactive or diagnostic mode. This demo is supported on DM3 boards only. The CSPdemoSTB demo program is located in the \demos\speechprocessing directory under INTEL_DIALOGIC_DIR (the environment variable for the directory in which the system release software was installed).

Note: For more information about the CSPdemoSTB demo program, refer to the *CSP API Demo Guide*.

7.2 Updated Demonstration Programs

There are no demonstration programs that have been updated, modified, or enhanced since System Release 6.0 cPCI Feature Pack 1 for Windows.

7.3 Other Supported Demonstration Programs

System Release 6.1 cPCI for Windows continues to support the following demonstration programs. These demo programs have not changed since System Release 6.0 cPCI Feature Pack 1 for Windows.

CSP Demonstration Programs

Two Continuous Speech Processing (CSP) demonstration programs continue to be supported in System Release 6.1 cPCI for Windows. These demo programs are located in the \demos\speechprocessing directory under INTEL_DIALOGIC_DIR (the environment variable for the directory in which the system release software was installed). The CSPAuto and CSPLive demo programs cover the functionality of the cspdemo program which is no longer available.

The following describes the CSP demonstration programs:

CSPAuto
: A multi-channel CSP demo that runs without user interaction (automatic). It illustrates key features of the CSP API library, such as barge-in, voice activity detection, and echo-cancelled recording. This demo can be used to exercise the CSP API library functions under load conditions. This demo is supported on DM3 boards.

CSPLive
: A multi-channel, interactive CSP demo that illustrates key features of the CSP API library, such as barge-in, voice activity detection, and echo-cancelled recording. This demo provides a real-world experience through live interaction. This demo is supported on DM3 boards.

Note: For more information about the CSPAuto and CSPLive demo programs, refer to the *CSP API Demo Guide*.

Global Call Demonstration Program

The following Global Call demonstration program is supported in System Release 6.1 cPCI for Windows. This demo program is located in the \demos\gc_basic_call_model directory under INTEL_DIALOGIC_DIR (the environment variable for the directory in which the system release software was installed).

Global Call Basic Call Control Demo
: A demo that exercises some of the basic call control capabilities of the Global Call API.

Note: For more information about the Global Call Basic Call Control demo program, refer to the *Global Call API Demo Guide*.

High Availability (HA) Demonstration Programs

The following High Availability demonstration programs are supported in System Release 6.1 cPCI for Windows. These demo programs are located in the \demos\HA directory under INTEL_DIALOGIC_DIR (the environment variable for the directory in which the system release software was installed).

rgademo/pfmdemo
: The Revenue Generating Application (RGA)/Peripheral Fault Manager (PFM) program set illustrates how to develop a highly available, fault-tolerant call control application using the following libraries:
  - Global Call API Library

- Event Service API Library
- Standard Runtime API Library

Note: The rgademo and pfmdemo programs must be run simultaneously.

rhmanager5085
: This demo demonstrates how to integrate basic hot swap and redundant host (RH) High Availability architectures into systems and applications that are developed with Intel® Dialogic® software. The demo uses the RH APIs from Pigeon Point Systems* for the ZT5085 chassis as well as the NCM API.

Note: For more information about the rgademo/pfmdemo and rhmanager5085 demo programs, refer to the *High Availability Demo Guide*.

IP Demonstration Programs

Three IP demonstration programs are provided in this release. These demo programs are located in the \demos\ipdemos directory under INTEL_DIALOGIC_DIR (the environment variable for the directory in which the system release software was installed). Subfolders has been created for each demo.

GATEWAY (replaces gateway_r4)
: Using the Global Call API, this program demonstrates how to build a PSTN-IP gateway using the H.323 and SIP protocol stacks in the C++ programming language.This demo is available on the Intel NetStructure® IPT and DM/IP Series boards.

IPMediaServer (replaces iptmail_r4)
: This program demonstrates how to build a PSTN-IP gateway using the IPML API. The demo must use a proprietary IP protocol stack.

  Note: For more information on the IPMedia Server demo, refer to the *IP Media Server (Global Call) Demo Guide*.

Voice Demonstration Programs

The following voice demonstration programs are supported in System Release 6.1 cPCI for Windows. These demo programs are located in the \demos\voice directory under INTEL_DIALOGIC_DIR (the environment variable for the directory in which the system release software was installed).

ansrmt
: Synchronous Multi-threaded programming model demo that supports DM3 boards.

Voicedemo (formerly called sample)
: GUI-based, multi-channel, working demonstration of voice processing features that supports DM3 boards.

xaansr
: Extended Asynchronous programming model demo that supports DM3 boards.

Note: For more information about the voice demo programs, refer to the online help included along with the demos.

Supported Hardware 8

This chapter describes the boards supported in Intel® Dialogic® System Release 6.1 CompactPCI* for Windows. The boards are organized into the following categories:

Note: System Release 6.1 cPCI for Windows will not prevent you from installing a non-supported board. However, DCM will not show any unsupported boards. An error message about the unsupported board(s) will appear in a log file in dialogic/log with the following filename rtf*.txt (for example, *rtflog-10072005-14h47m25.639s.txt)*.

8.1 Media Processing - Combined Media Boards

The Media Processing Combined Media boards consist of the following subcategories:

- Voice with Conferencing + Speech + Fax (universal media load) Boards

Voice with Conferencing + Speech + Fax Boards

- DMV600BTEC
- DMV1200BTEC
- DMV4800BC

Voice with Speech

- DM/V960A-4T1-cPCI
- DM/V960A-4T1-cPCI
- DM/V1200A-4E1-cPCI

Voice with Speech and Conferencing Boards

- DM/V480A-2T1-cPCI
- DM/V600A-2E1-cPCI)
- DM/V2400A-cPCI

8.2 Media Processing - Single Media Boards

The Media Processing Single Media Boards consist of the following subcategories:

- Fax boards

Fax Boards

- DM/F300-cPCI

Voice Boards

- DM/V1200-4E1-cPCI
- DM/V960-4T1-cPCI
- DMV/600-4E1-cPCI
- DM/V480-4T1-cPCI

8.3 Signaling Products

Signaling Products consist of the following subcategories:

- Digital Telephony Interface Boards
- IP Boards
- SS7 Boards
- Signaling Servers (SS7 Signaling Interface Units [SIUs])

Note: Global Call SS7 can be installed as part of the System Release 6.1 cPCI for Windows software installation. However, you must install the SS7 Development Package to use the Global Call API with SS7 boards or SIUs. Refer to the documentation provided with your SS7 board or SIU for installation instructions and other information. The SS7 Development Package and associated documentation can be obtained via this URL: *http://resource.intel.com/telecom/support/ss7/cd/index.htm*

Digital Telephony Interface Boards

- DMT160TEC
- DMN160TEC
- DM/N960-4T1-cPCI
- DM/N1200-4E1-cPCI

IP Boards

- DM/IP481-2T1-cPCI-100BT
- DM/IP601-2E1-cPCI-100BT

- DM/IP601-cPCI-100BT
- IPT10000C
- IPT6720C
- IPT4800C
- IPT2400C
- IPT1200C

SS7 Boards

- SS7HDCS8
- SS7HDCD16
- SS7HDCQ16
- SS7CPM8

Signaling Servers (SS7 Signaling Interface Units [SIUs])

- SS7G22 (in SIU Mode)
- SS7G21 (in SIU Mode)
- SIU520
- SIU231
- SIU131

8.4 Switching Boards

The Switching Boards consist of the following subcategories:

- Station Interface Boards

Station Interface Boards

- HDSI/1200-cPCI
- HDSI/960-cPCI
- HSDI/720-cPCI
- HDSI/480-cPCI

Documentation 9

This chapter lists all of the documents that are included as part of Intel® Dialogic® System Release 6.1 CompactPCI* for Windows. The documentation is divided into the following categories:

9.1 System Release Documentation

The following system release documentation is provided to support this release:

- *Intel Dialogic System Release 6.1 CompactPCI for Windows Release Guide* (this document)
- *Intel Dialogic System Release 6.1 CompactPCI for Windows Release Update* (available on web only)

9.2 Installation and Configuration Documentation

The following installation and configuration documentation is provided to support this release:

- *Intel Dialogic System Release 6.1 CompactPCI for Windows Software Installation Guide*
- *Intel NetStructure DM3 Architecture for CompactPCI on Windows Configuration Guide*
- *Intel NetStructure IPT Series on Windows Configuration Guide*
- *Global Call Country Dependent Parameters (CDP) Configuration Guide*

9.3 OA&M Documentation

The following operation, administration and maintenance documentation is provided to support this release:

- *Intel Dialogic System Release for Windows Administration Guide*

- *SNMP Agent Software for Windows Administration Guide*
- *Intel Dialogic System Software Diagnostics Guide*
- *Board Management API Library Reference*
- *Event Service API for Windows Programming Guide*
- *Event Service API for Windows Library Reference*
- *Native Configuration Manager API for Windows Programming Guide*
- *Native Configuration Manager API for Windows Library Reference*

9.4 Programming Libraries Documentation

The following programming libraries documentation is provided to support this release:

Call Control

- *Global Call API for Windows Programming Guide*
- *Global Call API Library Reference*
- *Global Call E1/T1 CAS/R2 Technology Guide*
- *Global Call IP Technology Guide*
- *Global Call ISDN Technology Guide*
- *Global Call SS7 Technology Guide*
- *Digital Network Interface Software Reference*

Conferencing

- *Audio Conferencing API for Windows Programming Guide*
- *Audio Conferencing API Library Reference*

Continuous Speech Processing

- *Continuous Speech Processing API Programming Guide*
- *Continuous Speech Processing API Library Reference*

Fax

- *Fax Software Reference*

IP Media Library

- *IP Media Library API Programming Guide*
- *IP Media Library API Library Reference*

Modular Station Interface

- *Modular Station Interface API Programming Guide*
- *Modular Station Interface API Library Reference*

Standard Runtime Library

- *Standard Runtime Library API for Windows Programming Guide*
- *Standard Runtime Library API Library Reference*

Voice

- *Voice API Programming Guide*
- *Voice API Library Reference*

9.5 Demonstration Software Documentation

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

- *Continuous Speech Processing API Demo Guide*
- *Global Call API Demo Guide*
- *High Availability for Windows Demo Guide*
- *IP Gateway (Global Call) Demo Guide*
- *IP Media Server (Global Call) Demo Guide*
- *IP Media Gateway (IPML) Demo Guide*

9.6 Online Help

The following online help is provided to support this release:

- DCM Help
- Install Help
- Voice Ansrmt Demo Help
- VoiceDemo (formerly sample) Help
- Voice Xaansr Demo Help

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