Intel® Dialogic® System Software for PCI Products on Windows
Administration Guide
November 2003
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Revision History

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About This Publication

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Purpose

This publication provides information about performing administrative tasks on an active Windows*-based system that uses the Intel® Dialogic® System Release Software. The information applies to a system that has been successfully installed and configured, and has been in operation.

Intended Audience

This publication is written for the following audience:

- System Integrators
- Independent Software Vendors (ISVs)
- Original Equipment Manufacturers (OEMs)
- Telephony Equipment Manufacturers (TEMs)
- Network Equipment Providers
- Distributors

How to Use This Publication

Refer to this publication after you have installed and configured the Intel Dialogic System Software and associated hardware. This publication assumes that you are familiar with the Windows operating system.

The information in this guide is organized as follows:

- Chapter 1, “Administration Overview” provides an overview of the administrative tasks and tools associated with a system using the Intel Dialogic System Software.
- Chapter 2, “Stopping and Starting the System” provides information about stopping and starting the Intel Dialogic system and applying configuration changes to Intel telecom boards.
- Chapter 3, “Installing and Uninstalling Boards” provides procedures for adding, removing, or replacing boards in a system.
• Chapter 4, “Alarms Reference” provides reference information about the Alarms tool.
• Chapter 5, “Audio Control Reference” describes the Audio Control tool.
• Chapter 6, “CAS Signal Editor Reference” provides information about the CAS Signal Editor tool.
• Chapter 7, “Event Viewer Reference” describes the Event Viewer administrative tool.
• Chapter 8, “Line Admin Reference” provides reference information about the Line Admin tool.
• Chapter 9, “List Boards Reference” describes the List Boards administrative tool.
• Chapter 10, “STD Config Reference” contains information about the STD Config tool.
• Chapter 11, “TBList Reference” provides reference information about the TBList tool.
• Chapter 12, “Troubleshooting” provides general information about troubleshooting a system that uses the Intel Dialogic System Software.

Related Information

Refer to the following documents for more information about the System Release 6.0 software:

• For timely information that may affect installation and configuration, see the Release Guide and the Release Update. Be sure to check the Release Update for the system release you are using for any updates or corrections to this publication.
• For information about installing the system software, refer to the Intel Dialogic System Release 6.0 PCI for Windows on Intel Architecture Software Installation Guide.
• For information about configuring Intel telecom boards, refer to the Intel DM3 Architecture PCI Products on Windows Configuration Guide and the Intel Springware Architecture Products on Windows Configuration Guide.
• For diagnostics information, refer to the Dialogic Universal Hardware Diagnostics Guide and the Intel Dialogic System Software for DM3 Architecture Products Diagnostic Guide.
• For information about using the SNMP Agent Software, refer to the SNMP Agent Software for Windows Operating Systems Administration Guide.
• For development software documentation relating to administrative tasks see the Standard Runtime Library API for Linux and Windows Operating Systems Library Reference and the Event Service API for Windows Operating Systems Library Reference.
• For hardware installation instructions, see the Quick Install Card that comes with each board.
• http://www.intel.com/network/csp for product information
• http://developer.intel.com/design/telecom/support for technical support
This chapter provides an overview of the tasks that can be performed and the tools that can be used on a system using the Intel® Dialogic® System Software. The following sections are included:

- **Common Administration Tasks**
- **Administration Tools**
- **QScript Tools**

### 1.1 Common Administration Tasks

The common administration tasks that may be performed on a system using the Intel Dialogic System Software include:

- Stopping and Starting the System
- Adding, Removing, and Replacing Boards

#### 1.1.1 Stopping and Starting the System

To reconfigure the Intel Dialogic System Software, the system must first be stopped and then restarted again, after the configuration has been completed, so that the new configuration will take effect. Choosing **Stop System** from the Intel Dialogic Configuration Manager (DCM) **Service** menu stops all Intel computer telephony system resources in the system. Choosing **Start System** from the DCM **System** menu may or may not start all Intel computer telephony system resources in the system, depending on the startup mode option that the user selects. For more information about the system/device startup modes, see Chapter 2, “Stopping and Starting the System”.

**Notes:**
1. Stopping and starting the Intel Dialogic System Software stops and starts all of the active boards installed in the system.
2. When the system is rebooted, the Intel Dialogic System Software can be configured to start automatically.

#### 1.1.2 Adding, Removing, and Replacing Boards

To add, remove, or replace a board in the system, the application must be notified to stop all activity, the Intel Dialogic System must be stopped, and the system must be shut down. When restarting the system, there are three startup mode options to select from.
1.2 Administration Tools

A number of tools allow you to perform administration tasks on a system using Intel telecom boards.

Alarms
   Monitors the alarms on a T1 or E1 line.

Audio Control
   Controls the Player and Recorder resources.

CAS Signal Editor
   Allows you to dynamically view and modify CAS signal identification parameters (transitions, pulses, trains, or sequences) so you can test them before changing the .config file.

Event Viewer
   Displays error and administration messages using the Windows* Event Viewer.

LineAdmin
   Places T1 and E1 lines in service so you can run a number of the other utilities. Also monitors T1 and E1 alarms.

Listboards
   Displays information about the Intel® NetStructure™ boards that are installed in the system.

STD Config
   Compares component parameters.

TBList
   Provides information about the system’s TDM bus settings for the boards specified.

1.2.1 QScript Tools

The QScript tools are a subset of the administration tools that talk to the various components of a DM3 board (player, recorder, etc.). QScript is an object-oriented scripting tool developed for the Intel telecom products based on the DM3™ architecture. QScript is intended for use while developing demonstration or test programs and is implemented using the Tcl/Tk generic scripting language. All QScript utilities can be run from the Windows operating system.

Note: Do not directly run any <toolname>.qs files located in C:\program files\dialogic\qscript. Script files have been created which call the QScript interpreter to run the <toolname>.qs file. To use a QScript tool, specify the tool name, along with any options, at the command line as shown in the various administration tool reference sections in this document.

QScript tools use board and line numbers as follows: board numbers are 0-based and line numbers are 1-based. That is, the first board is typically board 0 and the first line is line 1.

The following administration tools use QScript:

- Audio Control
- CAS Signal Editor
- Line Admin
- STD Config
This chapter covers the following topics about starting and stopping the Intel® Dialogic® System:

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- Stopping the System .................................................................................. 17
- Starting the System ................................................................................... 17
- Applying Configuration Changes ............................................................... 18

After you install and configure Intel® telecom boards, you must start the Intel Dialogic System. The Intel Dialogic System downloads firmware with configuration parameter settings to the boards and initiates their device drivers. Following this, you can use some of the tools provided by Intel to verify that your system is operating properly, before starting work on your applications.

### 2.1 Initiating the Intel Dialogic System

To start the Intel Dialogic System for the first time, choose Start System from the System menu or click the Start all enabled devices icon in the configuration manager (DCM) main window (Figure 1).

You also have the option of choosing Start devices preference from the Settings menu (Figure 2). This allows you to select from two modes:

- Start all device(s) or Start none
  - causes the Intel Dialogic System to run only if all devices have downloaded the firmware. If at least one device fails to download, the Intel Dialogic System will not start.

- Start selective (Good devices only)
  - causes the Intel Dialogic System to run even if one or more devices fail to download the firmware. The DCM will bypass the problematic device(s) and the Intel Dialogic System will start.

It may take several minutes for the Intel Dialogic System to start. DCM displays a progress bar in the upper right corner of the screen during the wait time. When the Intel Dialogic System starts, the System status indicator at the bottom of the DCM main window indicates Running.

The progress bar is normally displayed until the Intel Dialogic System is started. However, when connected to a remote node, for example, the time to download boards and start the Intel Dialogic System could be extended because of network latency. If the progress bar is no longer displayed but the System status indicator does not indicate the Running state yet, this does not necessarily indicate a problem. Click the Refresh icon on the DCM main window periodically to update the System status indicator. Eventually, it should indicate Running. If not, check the Windows Event Viewer to see if an error occurred.
You cannot start the Intel Dialogic System while all the boards are disabled. Also, you should not start the Intel Dialogic System from the Windows Control Panel.

**Note:** When scanning the PCI bus, Windows 2000 uses an *inf* file to correlate a discovered device with a driver binary file that would be loaded for the scanned device. In this case, you need to direct the system to the *inf* file. The *inf* file makes the system aware of the name and manufacturer of the board. The *inf* file also keeps track of the device in the device manager.

If you don’t point the system to the *inf* file, a **Found New Hardware Wizard** will appear every time you reboot the computer. Refer to the procedure in Section 3.1, “Installing a Board in the System”, on page 21.
2.1.1 System/Device Autostart Modes

There are cases where the Intel Dialogic System must be started automatically (without human assistance) and there are other cases when the Intel Dialogic System, as well as the boards, need to be started manually. Users with administrative privileges can set the System/Device autostart option to Detect Only, Start Server Only, or Start System using the DCM Settings menu (Figure 3) or programmatically using the NCM API library (described in the Native Configuration Manager API for Windows Library Reference and Native Configuration Manager API for Windows Programming Guide).

2.1.1.1 Detect Only Mode

Selecting the Detect Only mode causes Windows to detect the boards that are installed in the system when the system reboots, but neither the Intel Dialogic System nor the boards are started automatically. If you select Detect Only as the System/Device autostart option, you will need to manually start both the Intel Dialogic System and the boards using the DCM GUI or the NCM API.
2.1.1.2 Start Server Only Mode

Selecting the Start Server Only mode from the System/Device autostart submenu causes the Intel Dialogic System to start automatically when the server is started. The boards will be automatically detected, but not started. In this mode you will need to start the boards manually using the DCM GUI or the NCM API.

2.1.1.3 Start System Mode

If the System/Device autostart option is set to Start System, the Intel Dialogic System restarts automatically when the system reboots and all boards are automatically detected and started.

Note: Do not use the Windows Services applet to set the Intel Dialogic System startup mode to Start System. You must use the DCM GUI or the NCM API to do this because they internally set the startup mode of the Intel Dialogic drivers to Start System. If you use the Windows Services applet, you will not set up the driver dependencies properly.
If you set the System/Device autostart option to Start System, and you want to reconfigure boards through DCM after rebooting the computer, you should use DCM to stop the Intel Dialogic System and then perform the normal operations through DCM. (It is possible to use Windows Services applet to stop the Intel Dialogic System, but this is not recommended.)

2.1.2 Setting Startup Mode to Manual Before Making Hardware Changes

Do not make changes to hardware in the system while the Intel Dialogic System is set to Start System. This is because in the Start System Mode, the Intel Dialogic System does not run the detection routine. If you intend to change hardware, set the System/Device autostart option to Detect Only first. Then, after you've completed the changes and the detection routine has run, you can reset the System/Device autostart option to Start System.

2.2 Stopping the System

Before you stop the Intel Dialogic System, the application must be stopped and the application must ensure that all channels have been closed.

The Intel Dialogic System is stopped using the DCM. From the DCM main window, choose Stop System from the System menu or click the Stop all enabled devices icon. See Figure 1 for a display of the DCM main window.

2.3 Starting the System

Startup should only be performed when the system is stopped.

You only have to reboot the system for the initial startup. To start the Intel Dialogic System at any time after the initial startup, from the DCM main window, choose Start System from the System menu or click the Start all enabled devices icon. See Figure 1 for a display of the DCM main window.

For information about startup messages, see the Intel Dialogic System Release 6.0 PCI for Windows on Intel Architecture Software Installation Guide.

2.3.1 Starting the Devices After a Reboot

The Intel Dialogic devices may be configured to start automatically or manually after the system is rebooted. The default configuration is for the devices to be manually started. The DCM Settings menu item System/Device Autostart is set by default to Detect Only (Don’t Start). If the system is rebooted with this configuration selected, you will then need to manually restart the devices by choosing Start System from the DCM System menu.
To change the Intel Dialogic System to automatically start the devices after a reboot, perform the following:

1. Stop the application and ensure that all channels have been closed.

2. Choose Stop System from the System menu in the DCM main window or click the Stop all enabled devices icon.

3. From the DCM main window, choose the Detect and Start option from the Settings menu System/Device Autostart item.

4. Reboot the system.

5. Restart the application.

2.4 Applying Configuration Changes

Configuration changes can be made at both the system level and board level. The following topics are included in this section:

- System Level Changes
- Board Level Changes

2.4.1 System Level Changes

Whenever a system-level configuration change is made, the system must first be stopped before the change is made and then restarted after the change has been made, but you do not have to reboot the system.

1. Before you stop the system, the application must be stopped and the application must ensure that all channels have been closed.

2. Stop the system from the DCM main window by choosing Stop System from the System menu or by clicking the Stop all enabled devices icon. See Figure 1 for a display of the DCM main window.

3. Modify configuration parameters as necessary.

4. Start the system from the DCM main window by choosing Start System from the System menu or by clicking the Start all enabled devices icon. See Figure 1 for a display of the DCM main window.

5. Restart the application.

For information about startup messages, refer to the Intel Dialogic System Release 6.0 PCI for Windows on Intel Architecture Software Installation Guide.
2.4.2 Board Level Changes

To modify one or more parameters on a single board without stopping the system, use the following procedure:

1. Inform the application to stop all activity on the board and close all open device handles.
   
   The Standard Runtime Library (SRL) functions can be used to determine the devices on the board with the specified AUID, and the devices can be closed using `dx_close()`, `dt_close()` etc. For information about these functions, see the Standard Runtime Library API for Linux and Windows Operating Systems Library Reference.

2. When the application has stopped using devices associated with the board, use the DCM to stop the board. From the DCM main window, highlight the board that you wish to stop and then choose Stop Device from the Device menu to inform the driver to release the operating system resources assigned to the board. See Figure 4 for a display of the Device menu.
   
   The board and all virtual devices associated with the board must not be used until the board is restarted.

3. Start the board using the DCM. From the DCM main window, with the board still highlighted, choose Start Device from the Device menu to download the revised configuration and initialize the board.
   
   The board and all virtual devices on the board can be used once the download and initialization have completed.

   **Note:** When the board is started, the DLGC_EVT_BLADE_STARTED event is generated by the event notification framework. For an application to receive this event, the application must be registered with the ADMIN_CHANNEL. For additional information about events, refer to the Event Service API for Windows Operating Systems Library Reference.

4. Inform the application to start using the board.
The standard runtime library (SRL) functions can be used to determine the devices that are in service again on the board with the specified AUID, and the devices can be opened using `dx_open()`, `dt_open()`, etc. For information about these functions, see the Standard Runtime Library API for Linux and Windows Operating Systems Library Reference.
This chapter provides information and procedures associated with installing and uninstalling boards in the system. The following topics are included:

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- Uninstalling a Board From the System ....................................... 22
- Replacing a Board in the System .............................................. 23

3.1 Installing a Board in the System

The following procedure describes how to add a new PCI board to a system.

1. Inform the application to stop all activity and close all open device handles.

   The Standard Runtime Library (SRL) functions can be used to determine the devices to be closed using \texttt{dx\_close()}, \texttt{dt\_close()}, etc. For information about these functions, see the Standard Runtime Library API for Linux and Windows Operating Systems Library Reference.

2. When the application has stopped all activity, use the configuration manager (DCM) to stop the Intel® Dialogic® System. From the DCM main window, choose Stop system from the System submenu.

3. From the Windows* Start menu, shut down the system.

4. Insert the new board in an empty slot following the instructions in the Quick Install Card provided with the board.

5. Re-apply power to the system.

6. Depending on the DCM System/Device autostart option selected, the new board will be detected by the system and either be started using the default values, or remain in the stopped state, allowing you to manually configure and start the board. See Figure 3, “System/Device Autostart”, on page 16 for a display of the System/Device autostart menu.

   - If the Detect Only option has been selected from the System/Device autostart submenu, the Intel Dialogic System and the boards will have to be manually started using the DCM GUI (or NCM API). The new board will be detected by the system and displayed in the DCM main window, but will not be started automatically. You will have to manually start the new board using the DCM GUI (or NCM API).

   - If the Start Server Only option has been selected, the Intel Dialogic System will start automatically when the system is restarted and the new board will be detected automatically. You will, however, need to start the new board manually using the DCM GUI.
• If the **Start System** option has been selected, the Intel Dialogic System will be automatically started and the new board will be detected by the system, displayed in the DCM main window, and automatically started using the system default configuration for that board type.

7. For Intel telecom boards that use the DM3™ architecture, ensure that the new board’s Power On Self Test (POST) has completed. This will be indicated by the LEDs on the board becoming extinguished.

   *Note:* The POST does not apply to Intel Dialogic Springware boards.

8. Starting the board depends on the option selected from the **System/Device autostart** menu:

   8a. If the System/Device autostart option is set to **Detect Only**, first start the Intel Dialogic System and then start the new board using the DCM GUI (or NCM API). From the DCM main window, click the **Start all enabled devices** button or highlight the new board and then choose **Start Device** from the **Device** menu to download and initialize the board.

   8b. If the System/Device autostart option is set to **Start Server Only**, the Intel Dialogic System will start automatically, but you will need to start the new board using the DCM GUI (or NCM API). From the DCM main window, click the **Start all enabled devices** button or highlight the new board and then choose **Start Device** from the **Device** menu to download and initialize the board.

   8c. If the System/Device autostart option is set to **Start System**, the Intel Dialogic System and all boards, including the new board, will be started automatically.

   The board and all virtual devices on the board can be used once the download and initialization have completed.

   *Note:* When the board is started, the DLGC_EVT_BLADE_STARTED event is generated by the event notification framework. For an application to receive this event, the application must be registered with the ADMIN_CHANNEL. For additional information about events, refer to the **Event Service API for Windows Operating Systems Library Reference**.

9. Inform the application to resume activity and open all closed device handles.

   The standard runtime library (SRL) functions can be used to determine the devices that are in service again on the board with the specified AUID, and the devices can be opened using `dx_open()`, `dt_open()`, etc. For information about these functions, see the **Standard Runtime Library API for Linux and Windows Operating Systems Library Reference**.

### 3.2 Uninstalling a Board From the System

The following procedure describes the basic steps for removing a PCI board from a system.

1. Inform the application to stop all activity on the board and close all open device handles.

   The Standard Runtime Library (SRL) functions can be used to determine the devices on the board with the specified AUID, and the devices can be closed using `dx_close()`, `dt_close()`, etc. For information about these functions, see the **Standard Runtime Library API for Linux and Windows Operating Systems Library Reference**.
2. When the application has stopped using devices associated with the board, use the Intel Dialogic Configuration Manager (DCM) to stop the Intel Dialogic System. From the DCM main window, select **Stop system** from the **System** submenu.

3. From the Windows Start menu, shut down the system.

4. Physically remove the board according to the instructions in the Quick Install Card that came with the board.

5. Re-apply power to the system.

6. Restarting the boards depends on the option selected from the **System/Device autostart** menu:
   - If the System/Device autostart option is set to **Detect Only**, first start the Intel Dialogic System and then start the boards using the DCM GUI (or NCM API). From the DCM main window, click the **Start all enabled devices** button to restart the boards.
   - If the System/Device autostart option is set to **Start Server Only**, the Intel Dialogic System will start automatically, but you will need to start the boards using the DCM GUI (or NCM API). From the DCM main window, click the **Start all enabled devices** button to restart the boards.
   - If the System/Device autostart option is set to **Start System**, the Intel Dialogic System and all remaining boards will be started automatically.

7. Inform the application to start using the boards.
   The standard runtime library (SRL) functions can be used to determine the devices that are in service again on the boards with the specified AUIDs, and the devices can be opened using `dx_open()`, `dt_open()`, etc. For information about these functions, see the *Standard Runtime Library API for Linux and Windows Operating Systems Library Reference*.

### 3.3 Replacing a Board in the System

The following procedure describes the basic steps for removing a PCI board and replacing it with a PCI board of the same type in a system.

1. Inform the application to stop all activity on the board and close all open device handles.
   The Standard Runtime Library (SRL) functions can be used to determine the devices on the board with the specified AUID, and the devices can be closed using `dx_close()`, `dt_close()`, etc. For information about these functions, see the *Standard Runtime Library API for Linux and Windows Operating Systems Library Reference*.

**Note:** If the board being replaced was previously functioning as the Primary Clock Master or Reference Master, and the system has now automatically switched to a backup Clock Master and/or Reference Master because this board failed, replacing this board will not cause the system to automatically revert back to using the replacement board as the Primary Clock Master and/or Reference Master.

All virtual devices associated with the board must not be used until the replacement board is started.
2. When the application has stopped using devices associated with the board, use the Intel Dialogic Configuration Manager (DCM) to stop the Intel Dialogic System. From the DCM main window, select Stop system from the System submenu.

3. From the Windows Start menu, shut down the system.

4. Physically remove the board according to the instructions in the Quick Install Card that came with the board.

5. Insert the replacement baseboard in the vacated slot following the instructions provided with the Quick Install Card.

6. Re-apply power to the system.

7. Depending on the DCM System/Device autostart option selected, the replacement board will be detected when the system is rebooted and either be started using the default values, or remain in the stopped state, allowing you to manually configure and start the board. See Figure 4 for a display of the Device menu.

   - If the Detect Only option has been selected from the System/Device autostart submenu, the Intel Dialogic System and the boards will have to be manually started using the DCM GUI (or NCM API). The replacement board will be detected by the system and displayed in the DCM main window, but will not be started automatically. You will have to manually start the new board using the DCM GUI (or NCM API).

   - If the Start Server Only option has been selected, the Intel Dialogic System will start automatically when the system is restarted and the replacement board will be detected automatically. You will, however, need to start the replacement board manually using the DCM GUI (or NCM API).

   - If the Start System option has been selected, the Intel Dialogic System will be automatically started and the replacement board will be detected by the system, displayed in the DCM main window, and automatically started using the existing system configuration for that board.

8. For Intel telecom boards that use the DM3 architecture, ensure that the replacement board’s Power On Self Test (POST) has completed. This will be indicated by the LEDs on the board becoming extinguished.

   Note: The POST does not apply to Intel Dialogic Springware boards.

9. Starting the replacement board depends on the option selected from the System/Device autostart menu:

   - If the System/Device autostart option is set to Detect Only, first start the Intel Dialogic System and then start the replacement board using the DCM GUI (or NCM API). From the DCM main window, click the Start all enabled devices button or highlight the replacement board and then choose Start Device from the Device menu to download and initialize the board.

   - If the System/Device autostart option is set to Start Server Only, start the new board using the DCM GUI. From the DCM main window, click the Start all enabled devices button or highlight the replacement board and then choose Start Device from the Device menu to download and initialize the board.
• If the System/Device autostart option is set to **Start System**, the Intel Dialogic System and all boards, including the replacement board, will be started automatically.

The board and all virtual devices on the board can be used once the download and initialization have completed.

**Note:** When the board is started, the DLGC_EVT_BLADE_STARTED event is generated by the event notification framework. For an application to receive this event, the application must be registered with the ADMIN_CHANNEL. For additional information about events, refer to the *Event Service API for Windows Operating Systems Library Reference*.

10. Inform the application to resume activity and open all closed device handles.

The standard runtime library (SRL) functions can be used to determine the devices that are in service again on the board with the specified AUID, and the devices can be opened using `dx_open()`, `dt_open()`, etc. For information about these functions, see the *Standard Runtime Library API for Linux and Windows Operating Systems Library Reference*. 
This chapter provides reference information about the Alarms tool. The following topics are included:

- Description .................................................. 27
- Guidelines ..................................................... 27
- Options ......................................................... 27

4.1 Description

The Alarms tool is used for sending and monitoring the alarm states on a T1 or E1 line. Figure 5 shows a typical Alarms display.

Figure 5. Alarms Display

4.2 Guidelines

If you are already using the LineAdmin tool to put lines into service, you may not need to use the Alarms tool because the LineAdmin tool displays much of the same information. See Chapter 8, “Line Admin Reference” for information about the LineAdmin tool.

4.3 Options

The Alarms tool uses the following command line options:

- -board <n>
  
  Board number (required). Use the Listboards utility to obtain the board number.

- -line <n>
  
  Line number (required)

The following example monitors the alarm states on line 1 of board 0:

  alarms -board 0 -line 1
This chapter provides reference information about the Audio Control tool. Topics include:

- **Description** .................................................. 29
- **Guidelines** .................................................. 29
- **Options** ..................................................... 29

### 5.1 Description

The Audio Control tool demonstrates the use of the Player and Recorder components. This utility provides control of the Player and Recorder resources, including speed and volume control. It also supports remote audio monitoring.

Figure 6 shows a typical DM3 Audio Control display:

**Figure 6. DM3 Audio Control Display**

![DM3 Audio Control Display](image)

### 5.2 Guidelines

The following guidelines should be considered when using the Audio Control tool:

- The Audio Control tool only applies to Intel telecom boards that use the DM3 architecture.
- When using dynamic routing configurations, the Audio Control tool is inoperative.

### 5.3 Options

The Audio Control tool uses the following command line options:

- `-board <n>`
  
  Board number (required). Use the Listboards tools to obtain the board number.
-line <n>
   Line number (optional, default is 1)

-chan <n>
   Channel number (optional, default is 1)

The following example runs the Audio Control tool on board 0, line 1, channel 1:
   audio -board 0 -line 1 -channel 1
This chapter provides reference information about the CAS Signal Editor tool and includes the following topics:

- Description .................................................................................................................. 31
- Guidelines ...................................................................................................................... 32
- Options ........................................................................................................................... 32

6.1 Description

The CAS Signal Editor tool allows you to dynamically view and modify CAS signal identification parameters (transitions, pulses, trains, or sequences) so you can test them before changing the .config file.

Signal identification parameters are defined by the .config and .fcd files for DM3 boards and downloaded to the board. To modify the parameters without the CAS Signal Editor tool, you must modify the signal definitions contained in the .config file, generate a new .fcd file, and then re-download the file to the board. (This process is described in the Intel DM3 Architecture PCI Products for Windows Configuration Guide.) Using the CAS Signal Editor tool, you can retrieve the current signal identification parameters and reconfigure them at runtime without downloading to the board.

The CAS Signal Editor tool also allows you to define a new signal (fill in the fields and click Define) and delete a signal (use Get to populate the display with the signal you want to delete and click Delete).

A typical Signal Editor display is shown in Figure 7.

Figure 7. CAS Signal Editor Display
6.2 Guidelines

Once you start the utility, a window will open in which you can choose the signal that you want to edit. See Figure 7 for an example of the CAS Signal Editor tool. For signal IDs, refer to the *Intel DM3 Architecture PCI Products for Windows Configuration Guide*. You can edit a signal and check the results as follows:

1. In the SignId field of the display, enter the ID of the signal you want to edit.

2. Select the appropriate category (Trans, Pulse, Train, or Sequence).

3. Click Get. The display will show the signal information you requested.

4. Edit the signal information as desired.

5. Click Redefine to apply the update.

6. If you wish, use the Phone tool and the TSP Monitor tool to check the changes you made to the signal. For information about these tools, see the *Intel Dialogic System Software for DM3 Architecture Products on Windows Diagnostic Guide*.

The CAS Signal Editor tool only applies to Intel telecom boards that use the DM3 architecture.

6.3 Options

The CAS Signal Editor tool uses the following command line options:

- `-board <n>`
  - Board number (required). Use the Listboards tool to obtain the board number.

- `-signal <n>`
  - Signal ID (optional)

The following example runs the CAS Signal Editor tool on board 0:

```
signaleditor -board 0
```
This chapter provides information about the Event Viewer tool.

The Event Viewer tool displays the Windows Event Viewer which allows you to view error and administrative messages generated by the system. The Event Viewer tool is accessed through the configuration manager (DCM). From the DCM main window, choose Log File from the View menu to display the Windows Event Viewer. Highlight System Log to display the Intel® Dialogic® System error and event messages.

See Figure 8 for a display of the DCM View menu.
This chapter provides information about the Line Admin tool.

- **Description** ......................................................... 35
- **Guidelines** .......................................................... 36
- **Options** ............................................................... 36

### 8.1 Description

The Line Admin tool puts lines into service so you can run many of the other diagnostic utilities. The Line Admin tool like the Alarms tool, is used for sending and monitoring the alarm states on a T1 or E1 line but the Line Admin tool is recommended as a more useful tool.

A flexible logging feature is available that includes the ability to log the status of the trunks and alarm conditions on a DM3 board.

Figure 9 shows the Line Admin display. This example shows four trunks. The alarm setting is on the left and the alarm indicators are on the right.

**Figure 9. Line Admin Display**
8.2 Guidelines

The Line Admin tool only applies to Intel telecom boards that use the DM3 architecture.

8.3 Options

The Line Admin tool uses the following command line options:

- **-board <n>**
  
  Board number (required). Use the List Boards tool to obtain the board number.

- **-line <n>**
  
  Line number (optional, default is 1)

- **-lines {n n+ ...}**
  
  Line numbers. This parameter is used when more than 1 line is monitored (optional, default is {1 2 3 4})

- **-advanced <n>**
  
  The presence or absence of the following alarms on the line: AIS, CRC, and D-Channel

The following example runs the Line Admin tool on board 1, lines 1, 2, 3, and 4:

```bash
lineadmin -board 1 -lines {1 2 3 4}
```
This chapter provides reference information about the List Boards tool and includes the following sections:

- **Description** ................................................................. 37
- **Guidelines** ................................................................. 37
- **Options** ......................................................................... 39

### 9.1 Description

The List Boards tool displays information for boards present in the system and recognized by the device driver. This tool displays information regarding the current status of the baseboard along with a list of attached digital network interface and processing daughter boards (if any).

Figure 10 and Figure 11 show the results of running the List Boards tool.

### 9.2 Guidelines

The following guidelines should be considered when using the List Boards tool:

- The List Boards tool only provides a logical board number. This *logical* board number should be used when running any of the administrative utilities that require a board number.
- Board numbers are dynamically assigned. The List Boards tool displays the logical board number along with the board’s serial number. Use the serial number to physically identify the board.
  
  *Note:* Listboards will fail if you specify a board number that does not exist on the system.
- To use the List Boards tool, you must first start the boards using the configuration manager (DCM) and then invoke the List Boards tool from the Command Prompt window.
Figure 10. Listboards Display (Level 1)

```
\textbf{Command Prompt:}
\begin{verbatim}
Microsoft Windows 2000 (Version 5.00.2195) 
(C) Copyright 1985-2000 Microsoft Corp.
C:\>listboards -h0

Listboards - Version 2.00 Beta 4 Build: 07

NTLI Library version: 1.16
DMApp Library version: 1.28 Beta 1 Build: 1
Driver version: 01.16

Logical Board Number is : 0
Physical Board Number is: 0

--- Board: 0 ---
Generic info
Number of SP daughterboards: 1
Number of Comm boards: 0
Number of Network IF daughterboards: 0
Serial Number: FT000587

BaseBoard info
BoardType: <0x9> Compact PCI Baseboard
HardwareVersion: 0x04
Init memory size: 17 <0x11>
CP local memory size: 21 <0x15>
Flash memory size: 18 <0x12>
Global memory size: 16 <0x10>

Daughterboards
SP Daughterboard => 1
BoardType: Motorola Onyx SP Daughterboard
HWVersion: 0x3
Number of proc: 6
```

Figure 11. ListBoards Display (Level 2)

```
\textbf{Command Prompt:}
\begin{verbatim}
C:\>listboards -l2 -c
\end{verbatim}
```

Note: The ModelNum, ConfigID, DriverState, and AdminState fields in the Level 2 display do not apply to Springware boards.
9.3 Options

The List Board tool uses the following command line options:

- **Note:** Options that are listed as intrusive send messages to the boards and may affect performance testing.

- **-b <PCI bus number>**
  Displays information for boards having specified PCI bus number (optional) (intrusive)

- **-d <level>**
  Application debug level (optional)

- **-e**
  Provides extra information - model number, config ID, driver state, and admin state (DM3 boards only) (optional).

  **Note:** This option must be used in conjunction with the -l option (For example, -l2 -e).

- **-i <board number>**
  Retrieve hardware information (optional) (intrusive)

- **-h**
  Help (optional)

- **-l <level>**
  Listboards release level to run (1 or 2) (optional)

- **-v**
  Version (optional)

  **Note:** The ModelNum, ConfigID, DriverState, and AdminState fields do not apply to Springware boards.

The following example command lists all the board attributes for boards associated with PCI bus 0. If any daughter boards are present, their attributes are also listed:

```
listboards -b0
```
This chapter provides the following reference information about the STD Config tool:

- Description ................................................................. 41
- Guidelines .................................................................... 42
- Options ........................................................................ 42

10.1 Description

The STD Config tool provides a flexible way to configure DM3 component parameters. You put the parameters to be set and retrieved for a particular component into a file. You can create and modify these files. When used in conjunction with the STD Config tool these component parameters (for example, lineadmin, CCS, player) can be easily configured.

Figure 12 shows the STD Config display.

Figure 12. STD Config Display
10.2 Guidelines

The STD Config tool only applies to Intel telecom boards that use the DM3 architecture.

10.3 Options

The STD Config tool uses the following command line options:

- **-board \(<n>\)**
  Board number (required). Use the *Listboards* utility to obtain the board number.

- **-file \(<name.ext>\)**
  The file name of the containing the relevant parameters of the component to be configured (such as tsc.prm, ccscmp.prm).

- **-inst \(<n>\)**
  Specifies the particular instance (of the component) whose parameters the user wants to modify.

- **-comptype \(<n>\)**
  Standard Dialogic component types (1 - 255).

- **-class \(<name>\)**
  One of the standard Dialogic components (such as TSC, LCON, CHP). This should match the relevant -file parameter.

The following example runs the STD Config tool on board 0:

```
stdconfig -board 0
```
This chapter provides reference information about the tblist tool and includes the following topics:

- **Description** ................................................................. 43
- **Guidelines** ..................................................................... 44
- **Options** ......................................................................... 44

### 11.1 Description

The tblist tool provides a display of the TDM bus settings for specified boards that have been started. See Figure 13 for an example of the tblist display.

**Figure 13. tblist Display**

<table>
<thead>
<tr>
<th>Clk</th>
<th>Bus</th>
<th>On</th>
<th>CTBus</th>
<th>Clk</th>
<th>Clk</th>
<th>NetRf</th>
<th>NetRf</th>
<th>Stand-</th>
<th>Num</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUID</td>
<td>Role</td>
<td>Type</td>
<td>Bus?</td>
<td>Line</td>
<td>Src</td>
<td>SrcSpd</td>
<td>SrcSpd</td>
<td>alone?</td>
<td>Timeslots</td>
</tr>
<tr>
<td>50001</td>
<td>Pri</td>
<td>H.100</td>
<td>Yes</td>
<td>A</td>
<td>NetRf1</td>
<td>8MHz</td>
<td>NetInt1</td>
<td>8KHz</td>
<td>No</td>
</tr>
<tr>
<td>50003</td>
<td>Sec</td>
<td>H.100</td>
<td>Yes</td>
<td>A</td>
<td>NetRf1</td>
<td>8MHz</td>
<td>N/A</td>
<td>8KHz</td>
<td>No</td>
</tr>
<tr>
<td>50002</td>
<td>Slv</td>
<td>H.100</td>
<td>Yes</td>
<td>A</td>
<td>N/A</td>
<td>8MHz</td>
<td>N/A</td>
<td>No</td>
<td>---</td>
</tr>
</tbody>
</table>

In the tblist display, the following information is available:

- **AUID** = Addressable Unit Identifier of the board
- **Clk Role** = Identifies whether this board is a primary clock master (Pri), secondary clock master (Sec), or clock slave (Slv).
- **Bus Type** = Type of TDM bus that the board interfaces with. Bus Types are H.100 or H.110.
- **On Bus?** = Identifies whether or not board is connected (Yes) to the TDM bus or not (No).
- **CTBus Line** = Identifies which CT Bus Line the primary or secondary clock master is using to provide system clocking - Line A or Line B.
- **Clk Src** = Identifies the clock source that the primary or secondary clock master is using to drive the primary (A) or secondary (B) line. Clock sources include IntOsc, NetRef1, or NetRef2.
- **Clk SrcSpd** = Identifies the clock source speed. Value of speed can be 2MHz, 4MHz, or 8MHz.
- **NetRf Src** = If this board contains the interface to the network line that drives NETREF_1 or NETREF_2, the network interface (NetInt1, NetInt2, NetInt3, or NetInt4) is displayed.
- NetRf SrSpd = If this board contains the interface to the network line that drives NETREF_1 or NETREF_2, the network interface source speed is displayed. Value can be 8 KHz, 1.536MHz, 1.544MHz, or 2.048MHz.
- Stand alone? = Board does not support the TDM bus configuration or the board does not have TDM bus capability.
- Num TimeSlots = Lists the number of time slots supported by this board.

11.2 Guidelines

The tblist tool only displays TDM bus information for boards that have been started. If a board has been stopped or is disabled, the information for that board will not be displayed.

11.3 Options

The tblist tool uses the following command line options:

- `<a<n>`
  Displays TDM bus information for board with this Addressable Unit Identifier (AUID) number.

- `<p<n>`
  Displays TDM bus information for board with this physical slot number.

- `<b<n> -s<n>`
  Displays TDM bus information for board with this PCI bus number (-b) and PCI slot number (-s).

- `<h>`
  Displays Help information, including a definition of each abbreviation.

- `<v>`
  Displays tblist version information.

  *Note:* If no option is defined (default), TDM bus information will be displayed for all boards in the system.

The following example displays the TDM bus information for the board with an AUID of 50001:

```
tblist -a50001
```
12.1 General Troubleshooting Information

After a condition has been diagnosed, troubleshooting can be performed to correct the faulty condition. Troubleshooting tasks that apply to an initial startup include checking the configuration files, checking which packages have been installed, and checking that all boards have been securely installed in their slots.

Solutions to many problems can be found in the technical notes on the Intel® Telecom Support Resources Web site at http://developer.intel.com/design/telecom/support. In addition, check the online Release Update for the latest information about any issues, restrictions, or limitations that may affect the installation.

Problems on initial startup are typically caused by errors in your configuration. Hardware related problems are also a possibility. The following sections provide some general information for troubleshooting these problems.

In addition, refer to the Intel Dialogic System Release 6.0 PCI for Windows on Intel Architecture Software Installation Guide and check that all of the necessary procedures were performed.

12.2 Checking Configuration

Check that your system has been configured correctly. Use the configuration manager (DCM) to verify the configuration.

For a new configuration to take effect if system-level changes are made, the system must first be stopped and then restarted after the changes have been made. For configuration changes to a single board to take effect, the board must first be stopped and then restarted after the changes have been made. See Chapter 2, “Stopping and Starting the System”.
12.3 Event Viewer

Check the Windows Event Viewer for error and event messages. The Event Viewer can be accessed through DCM. See Chapter 7, “Event Viewer Reference” for information about the Event Viewer.

12.4 Checking Which Packages Are Installed

Ensure that you installed all of the packages that you need. For a list and description of all system release software packages, see “Checking Which Packages to Install” in the Intel Dialogic System Release 6.0 PCI for Windows on Intel Architecture Software Installation Guide.

12.5 Checking Hardware

Ensure that each board is securely installed in its slot. Check that the correct cables are used and that they are connected properly.

For hardware testing information, see the Dialogic Universal Hardware Diagnostics Guide or the DM3 Diagnostic Utilities Reference Guide.

12.6 Board Download Failures

If the download to a DM3 architecture board fails because of a Control Processor (CP) fault, the failure will not be reported to a log file. You can, however, determine the cause of the download failure by using the dlgsnapshot tool. This tool uses the Intel Dialogic System Software fault monitoring components to generate a core dump file when a CP, Signal Processor (SP), or Shared RAM fault is detected on a DM3 architecture board.

For more information about using the dlgsnapshot tool, refer to the Intel Dialogic System Software for Windows Operating Systems Diagnostic Guide.
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