Dialogic
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Dialogic® Multimedia Kit Software Release 1.0 for PCIe

Software Installation Guide

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Contents

Revision History

This revision history summarizes the changes made in each published version of this document.

Document No.	Publication Date	Description of Revisions
05-2629-001	August 2008	Initial version of this document.

About This Publication

This preface provides the following information about this document:

Purpose

This publication describes how to install Dialogic® Multimedia Kit Software Release 1.0 for PCIe. Information about running a demo to confirm proper installation, troubleshooting the installation, and uninstalling the software is also included.

Intended Audience

This publication is intended for:

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

How to Use This Publication

Following are some guidelines for using this publication:

- To get an overall understanding of the install process, refer to Chapter 1, “Installation Overview”.
- For pre-installation requirements, refer to Chapter 2, “Pre-Installation Requirements”.
- The complete installation procedure, including prerequisites, system configuration procedures, and instructions for running the verification demo, is provided in Chapter 3, “Installing the Software”.
- Refer to Chapter 4, “License Administration” for information about performing the various tasks related to obtaining, activating, and otherwise working with Dialogic® license files.
- For post-installation requirements, refer to Chapter 7, “Post-Installation Requirements”.
- If you need to uninstall the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, refer to Chapter 6, “Uninstalling the Software”.

- If you have problems while installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, refer to Chapter 7, "Troubleshooting".
- To navigate through all the information, use the Contents and internal links.

Related Information

The following documents and web sites provide more information:

- *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide* - This document provides information about the release such as product features, system requirements, and user documentation. Locate this document at *http://www.dialogic.com/manuals.*
- *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Update* - This document addresses release issues such as known problems and documentation updates. Locate this document at *http://dialogic.com/manuals.*
- For technical support, go to *http://www.dialogic.com/support*.
- For information about Dialogic® products, go to *http://www.dialogic.com.*

Installation Overview 1

This chapter provides the following information about installing Dialogic® Multimedia Kit Software Release 1.0 for PCIe.

1.1 Terminology

The following terms are used in this document:

Dialogic® MMK
: Dialogic® Multimedia Kit for PCIe (consists of MMK Software Release 1.0 for PCIe and Multimedia Accelerator Board for PCIe)

Dialogic® MMA Board
: Dialogic® Multimedia Accelerator Board for PCIe

ethX
: Rack Mount server's network interface (typically eth0)

ethY
: Dialogic® MMA media interface, Ethernet interface visible from host operating system to DSPs on Dialogic® MMA board

SELinux
: Security-enhanced Linux (SELinux) is a reference implementation of the Flask security architecture for flexible mandatory access control. It was created to demonstrate the value of flexible mandatory access controls and how such controls could be added to an operating system.

1.2 Major Installation Steps

Following are the major installation steps:

1. Before installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, make sure that the system meets the hardware and software System Requirements as described the Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide.
2. Complete the pre-installation requirements described in Chapter 2, "Pre-Installation Requirements". In addition to both hardware and software requirements, this chapter includes operating system installation and network setup.
3. To install the software, you must have local administrative privileges. Contact your network administrator to set up administrative privileges as required.

4. Uninstall any existing Dialogic® System Release. Refer to Chapter 6, "Uninstalling the Software" for details.
5. Obtain a Dialogic® software license. You must do this before you install the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software. A verification license supplied with the software will allow you to run the verification demo to confirm that you have installed the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software properly. However, its features are limited and you may want to obtain another license. Refer to Chapter 4, "License Administration" for more information about obtaining licenses.
6. Install the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software and start the verification license. Refer to Section 3.3, "Installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe", on page 16.
7. Complete the post-installation described in Chapter 7, "Post-Installation Requirements".
8. Run the verification demo to verify proper installation of the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software. Refer to Section 7.4, "Running the Verification Demo", on page 30.
9. Activate a Dialogic® software license. Refer to Chapter 4, "License Administration".

1.3 Dialogic® Software Licenses

Before you install the Dialogic® Multimedia Kit Software Release 1.0 for PCIe, you must obtain a license file containing Dialogic® software license data. A Dialogic® software license is a file containing authorizations for a combination of call control and media processing resources. You can obtain a license file from your authorized Dialogic distributor. The default verification license file is stored in the /usr/dialogic/data directory.

Dialogic® Multimedia Kit Software Release 1.0 for PCIe supports board-based licensing. The license must be locked to the Dialogic® MMA board, based on the board's serial number. Locking the license to a board allows you to transfer the license to another host by moving the board to that host. If the system contains one or more Dialogic® DNI board, the license still must be locked to the Dialogic® MMA board only.

Once you have installed the Dialogic® Multimedia Kit Software Release 1.0 for PCIe and downloaded a license on your machine, you must activate the license. Dialogic® software licenses are configured and managed using the Command Line Interface (CLI) or SNMP. Both CLI and SNMP provide remote management capability. Refer to Chapter 4, "License Administration" for detailed information about obtaining and using license files.

You can try out the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software with a verification, evaluation, or trial license before you purchase a permanent, production license from Dialogic. Refer to the License Types table in Chapter 4, "License Administration" for types of licenses available for use with the software.

Pre-Installation Requirements 2

This chapter provides requirements that need to be met prior to installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software. This information is contained in the following sections:

2.1 Hardware Requirements

The following are basic hardware requirements to install and run the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software:

- Rack Mount Server or equivalent PC
- Dialogic® Multimedia Accelerator Board for PCIe (also known as Dialogic® MMA board). Refer to the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide* for supported models.
- Optional Dialogic® Host Media Processing Interface Board (also known as Dialogic® DNI boards). Refer to the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide* for supported models.

2.2 Operating System Requirements

The Dialogic® Multimedia Kit Software Release 1.0 for PCIe software requires that one of the following operating systems be installed:

- Red Hat Enterprise Linux 4.0
- SUSE Linux Enterprise Server 9

Note: Specific versions of operating systems are required. Refer to the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide* for up-to-date details about operating system support.

2.3 Supported Compilers

The following compiler is required:

GNU Compiler Collection (GCC) Versions 3.2.3 and 3.4.3

Note: Development tools such as GCC must be installed on your system, even in a runtime installation. The Dialogic® MMK Software 1.0 for PCIe uses the GCC to compile certain Dialogic® drivers.

2.4 Software Requirements

The following software is required:

- Dialogic® MMK Software Release 1.0 for PCIe software
- Dialogic® MMK License

Note: You must have a license prior to installing the software. The board serial number is needed to obtain your license SKU.The serial number is found on the Dialogic® MMA board or the shipping box. The format is NZxxxxxx. Refer to Chapter 4, "License Administration".

2.5 Network Requirements

One public IP address is required for the default configuration. By default, the Media interface and DSPs are configured to a preset network configuration. When using the default configuration, the Media interface is not visible on the network and no network cables should be plugged into the RJ45 interfaces (labeled ETH1 and ETH2 on the rear bracket) of the MMA board. In this configuration all network bound data will go through ethX.

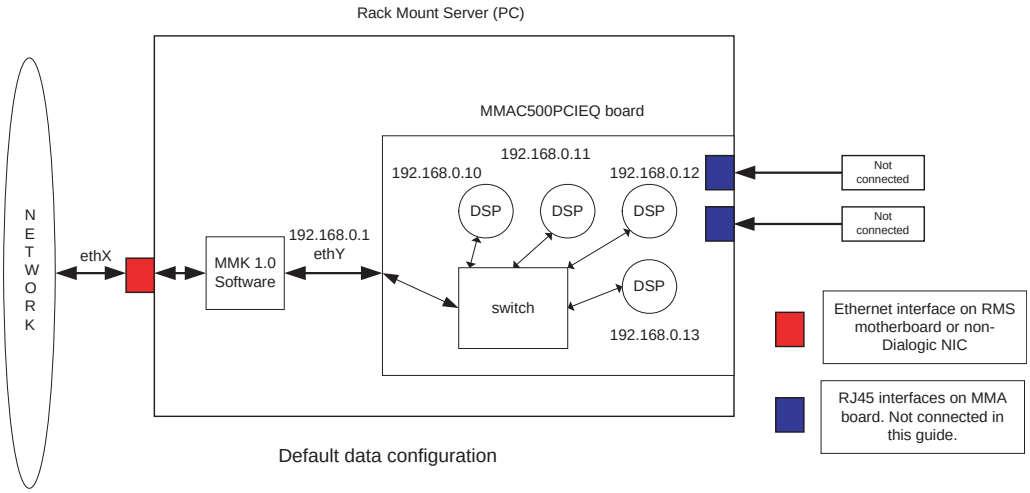

Figure 1. Default Data Configuration

Note: User needs to make sure ethX and ethY are not on the same subnet. ethY should be configured to 192.168.0.x as shown in the diagram for default configuration to work.

2.6 Installing the Operating System

Before installing the operating system, make sure there are no Dialogic® boards in the chassis.

1. Power on the system.

2. Disable SELinux (refer to Section 1.1, "Terminology", on page 7 for a description of SELinux).

3. **For Red Hat Enterprise Linux 4.0**, select the "default software packages" option to obtain the packages needed to run the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software.

   For SUSE Linux Enterprise Server 9, select the "default system" option in the "software selection" window. Then open the "detailed selection" to add a few packages needed to run Dialogic® Multimedia Kit Software Release 1.0 for PCIe software.

   Note: The development package must be selected to get the compilers.

   3a. Use the search filter and search for "gcc", then select "gcc" and "gcc-c++" from the results window.

   3b. Use the search filter and search for "kernel," and then select "kernel-source" from the results window.

4. Configure the host interface eth0 (this will be asked during install and is ethX).

5. Disable firewall.

Installation of the operating system is now complete. Proceed to the Installing the Dialogic® Hardware section.

2.7 Installing the Dialogic® Hardware

Be sure to shut down the system before attempting to install the Dialogic® hardware. Proceed as follows:

1. Install the Dialogic® MMA board into the PCIe slot of the chassis according to the instructions found in the appropriate board installation guide.

2. If a Dialogic® Host Media Processing Interface (DNI) board will be used, first determine if the chassis requires that the power jumper on the board be set. Refer to the appropriate board installation guide.

3. Install the Dialogic® Host Media Processing Interface (DNI) board into the PCIe slot of the chassis according to the instructions found in the appropriate board installation guide.

4. Proceed to the Configuring the Network section.

2.8 Configuring the Network

Configure the network according to the following instructions:

1. Power on the system.

2. Log in as: root or a root-level access equivalent.

3. **For Red Hat Enterprise Linux 4.0**, Kudzu is automatically run on system startup and will detect the newly installed Ethernet interfaces.

   For SUSE Linux Enterprise Server 9, Yast must be run to detect and configure the Ethernet interfaces.

4. Two interfaces will be detected. The first interface is referred to as ethY in this document. The second interface must be disabled by selecting “ignore” option.

5. Configure IP addresses for ethY. ethY must be configured with 192.168.0.1 (default configuration in Figure 1)

   Note: It is recommended that ethX and ethY be on separate subnets.

6. Check in the /etc/hosts file that the IP address of the host interface name and the ethX IP address match.

   For example:

   ```
   127.0.0.1                 localhost.localdomain   localhost
   <ethX IP addr>            testbox.testdomain.com testbox
   ```

7. Check that the /etc/sysconfig/network file has the correct gatewaydev device and host name.

   For example:

   ```
   HOSTNAME=testbox
   GATEWAYDEV=ethX
   ```

8. Restart the network services using the command:

   ```
   /etc/init.d/network restart
   ```

9. Verify the IP addresses using `ifconfig` command.

When all pre-installation requirements are completed, proceed to Chapter 4, "License Administration".

2.9 Additional Requirement

The following topic may be required if the system has less than 4 GB memory:

- Reconfiguring Kernel 2.6.5 on SUSE Linux Enterprise Server 9

2.9.1 Reconfiguring Kernel 2.6.5 on SUSE Linux Enterprise Server 9

Follow these instructions to reconfigure kernel 2.6.5 of SUSE Linux Enterprise Server 9:

- At a minimum, configure the kernel .config file for an Intel Pentium 4 processor (which also includes the Mobile Intel Pentium 4 Processor-M and the Intel Xeon processor) as follows:
  - Disable CONFIG_M586 and enable CONFIG_MPENTIUM4.
  - Enable CONFIG_PREEMPT.
  - Disable CONFIG_HPET_RTC_IRQ.
- After changing the configuration, recompile the kernel using the following commands:
  - make
  - make modules_install
  - make install
- Although the .config file can be manually configured, it is recommended that you use the make menuconfig command or the configuration script provided at: http://www.dialogic.com/support/helpweb/hmp/hmplinux/hmp12/suse/default.htm.

Installing the Software 3

This chapter provides procedures for installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe. This information is contained in the following sections:

3.1 Assumptions and Prerequisites

The following are basic requirements to install and run the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software:

- The appropriate version of Linux must be installed and the system must meet all the hardware and software "System Requirements" as described in the Chapter 2, "Pre-Installation Requirements".

  Note: To install the software, you must have local administrative privileges. Contact your network administrator to set up administrative privileges as required.

- Complete the post-installation requirements found in Chapter 7, "Post-Installation Requirements" before starting Dialogic® Services.
- If you have any Dialogic® System Release or any Dialogic® Host Media Processing Software Release on your machine, you must uninstall it. Follow the uninstall procedure in Chapter 6, "Uninstalling the Software".

Dialogic® Multimedia Kit Software Release 1.0 for PCIe software has three install scripts:

- One in the redistributable-runtime directory, which installs runtime components. This script does not contain header files. Use this script to install precompiled Dialogic® applications.
- One in the sdk directory, which installs header files for application development. Run this script to install the software required to compile Dialogic® applications.
- One at the top level which installs both runtime components as well as header files. Run this script to install the software required to compile and run your applications on the same computer system.

Note: For purposes of this document, only the top level install is explained which shows both the redistributable-runtime install and the SDK install.

The name of the install script for each level is `install.sh`.

3.2 Order of Procedures

This section describes the order in which the installation procedures must be performed.

Before you use the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, you must obtain a license file containing license data **before** you install the software. For more information, refer to Chapter 4, "License Administration".

If you wish to automate the software installation or integrate it into another setup program, follow the procedures in Section 3.4, "Performing a Silent Install", on page 19.

The basic order of the installation process is as follows:

1. Complete the pre-installation requirements described in Chapter 2, "Pre-Installation Requirements".
2. Install the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software as described in Section 3.3, "Installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe", on page 16.
3. Complete the post-installation requirements described inChapter 7, "Post-Installation Requirements".
4. Manually start Dialogic® Services using the `dlstart` command.
   The system is in manual start mode by default. Therefore, the user must manually log into the CLI and start Dialogic® Media Services after running `dlstart`. Refer to Section 7.3.1, "dlstart in Manual Mode", on page 29 for more details.
5. Run the verification demo to verify proper installation of the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software (refer to Section 7.4, "Running the Verification Demo", on page 30).

3.3 Installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe

The Dialogic® Multimedia Kit Software Release 1.0 for PCIe software can be downloaded from the http://www.dialogic.com/support/helpweb/dxall/ website. When you select this link, you will be asked to either LOGIN or JOIN.

After downloading the software, use the following procedure to install Dialogic® Multimedia Kit Software Release 1.0 for PCIe software. If a silent installation is desired, refer to Section 3.4, "Performing a Silent Install", on page 19:

1. Log in to the Linux system as root.

2. Copy the *.tgz* file downloaded from the website to its own directory and use the `tar` command to uncompress it.

   ```
   tar -xvzf <filename>.tgz
   ```

3. Enter the following command to start the install script:

   ```
   ./install.sh
   ```

   Messages similar to the following are displayed:

   ```
   Installing Dialogic(r) Multimedia Kit Software Release 1.0 for PCIe
   Redistributable Runtime
   Please wait, installation is in progress...

   Initializing install, please wait .....

   ================================================================================
                 Dialogic(R) Multimedia Kit Software Release 1.0 for PCIe
                              Redistributable Runtime
                                   INSTALLATION
   ```

   You will now have the opportunity to install software packages.

   After the menu is displayed, enter the package number(s) of the desired packages, separated by a space. Enter A for all packages, Q to quit.

   Package dependencies will be automatically resolved during installation. For example, selecting a single package will automatically install all packages required for that selection.

4. Press ENTER to display the menu of packages.

```
Item    Package Description
----    ---------------------------------------------------------------------
  1     Dialogic(r) Multimedia Kit Software Release 1.0 for PCIe (314 MB)
  2     Dialogic(r) DNI Boards & MMK Software Release 1.0 for PCIe  (367 MB)
  A     Install All (367 MB)
  Q     Quit Installation
Enter the packages you want to install, separated by a space, or [A,a,Q,q]:
```

5. Enter the packages you want to install, separated by a space, or [A,a,Q,q].

   Select 1 for an IP-only configuration. This option installs the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software only (no PSTN, board support).

   Select 2 for an IP and PSTN configuration. This option installs the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software and supports Dialogic® DNI Boards.

   For this example, **1** is selected.

   ```
   Enter the packages you want to install, separated by a space, or [A,a,Q,q]:1

   Package installation order (including dependencies):
      lsb-dialogic-zvl-com
      lsb-dialogic-zvl-ooc
      lsb-dialogic-zvl-dmdev
      lsb-dialogic-zvl-hmp
      lsb-dialogic-zvl-lic
   Enter the packages you want to install, separated by a space, or [A,a,Q,q]:
   ```

   For this second example, **a** is selected.

   Note: Licensing is automatically installed when Item 1, Item 2, or Item A is selected.

   ```
   Enter the packages you want to install, separated by a space, or [A,a,Q,q]: a

   Package installation order (including dependencies):
      lsb-dialogic-zvl-com
      lsb-dialogic-zvl-ooc
      lsb-dialogic-zvl-dmdev
      lsb-dialogic-zvl-hmp
      lsb-dialogic-zvl-t1e1
      lsb-dialogic-zvl-lic
   ```

```
Checking for previously installed packages:
   None found.

Checking for sufficient disk space (need 193 MB): OK
After installation, the filesystem containing the Dialogic(r) Software will be 9% full.

Installing or upgrading 6 needed packages:

Preparing...                ########################################### [100%]
   1:lsb-dialogic-zvl-lic   ########################################### [ 17%]
   2:lsb-dialogic-zvl-com   ########################################### [ 33%]
   3:lsb-dialogic-zvl-ooc   ########################################### [ 50%]
   4:lsb-dialogic-zvl-dmdev ########################################### [ 67%]
   5:lsb-dialogic-zvl-hmp   ########################################### [ 83%]
   6:lsb-dialogic-zvl-t1e1  ########################################### [100%]
   Building the ctimod and mercd drivers...
Installation successful.
Press ENTER to continue:
```

6. Press **ENTER** to continue.

```
Item    Package Description
----    -------------------------------------------------------------------------
  1     Dialogic(r) Multimedia Kit Software Release 1.0 for PCIe (314 MB)
  2     Dialogic(r) DNI Boards & MMK Software Release 1.0 for PCIe  (367 MB)
  A     Install All (367 MB)
  Q     Quit Installation
Enter the packages you want to install, separated by a space, or [A,a,Q,q]:
```

7. If you have finished selecting packages, enter **q** to quit and complete the installation process. The following messages are displayed:

```
Installation of Dialogic(r) Multimedia Kit Software Release 1.0 for PCIe Redistributable
Runtime was successful.

Do you wish to install the Software Development Kit [y/n] ?
```

8. If applicable, enter **y** to install the Software Development Kit.

```
Installing Dialogic(r) Multimedia Kit Software Release 1.0 for PCIe Software Development
Kit

Preparing...                ########################################### [100%]
   1:lsb-dialogic-zvl-sdk   ########################################### [100%]
Installation of Dialogic(r)Multimedia Kit Software Release 1.0 for PCIe Software
Development Kit was successful.

Do you wish to configure the SNMP Agent Listening Port (default is 161) [y/n] ?
```

9. If applicable, configure the SNMP Agent Listening Port.

```
Do you wish to configure the CLI Agent Telnet Port (default is 23) [y/n] ?
```

10. If applicable, configure the CLI Agent Telnet Port. Selecting **n** at this prompt completes the installation process. Messages similar to the following are displayed:

```
Installation of Multimedia Kit Software Release 1.0 for PCIe Software Development Kit
successfully completed.

-------------------------------------------------------------------------------
--                                                                           --
-- NOTE:                                                                     --

-- (1) The default Verification License has been automatically installed. --
-- (2) The Dialogic(r) system services will automatically start           --
--     every time the system is rebooted. To start and stop system        --
--     services manually, use the dlstop and dlstart scripts found in     --
--     /usr/dialogic/bin.                                                 --
-- (3) For administration via SNMP, use any SNMP browser, library or tools--
-- (4) For administration via CLI, use the telnet command                 --
-- (5) For details, refer to documentation                                --
--                                                                        --
-- NEXT STEPS:                                                            --
-- You need to do the following before using the product:                 --
-- (1) The Dialogic(r) system services must be started. To start system   --
--     services manually, use the dlstart script found in                 --
--     /usr/dialogic/bin.                                                 --
```

```
-- (2) Before using the software, you must also ensure that the          --
--     environment variables are set by performing the following action:  --
--     - Logout and login                                                 --
-- (3) Configure an appropriate license (higher density) via SNMP or CLI  --
--                                                                        --
--------------------------------------------------------------------------------
```

After installing the Dialogic Multimedia Kit Software Release 1.0 for PCIe Software Development Kit software, it is recommended that you reboot the system. In addition, you must set the environment variables after installing the software. To set the environment variables, enter the following command:

```
source /etc/profile.d/ct_intel.sh
```

Alternatively, you can log out and then log in as root.

After installation, you must install the E1000 Ethernet Driver before starting Dialogic® Services. Install the driver according to the instructions in Chapter 7, "Post-Installation Requirements".

3.4 Performing a Silent Install

A silent installation is recommended when no user interaction is intended. It allows you to predefine the answers that you would normally supply to the setup program interactively.

Before you begin a silent install, you must meet the prerequisites given in Section 3.1, "Assumptions and Prerequisites", on page 15. The silent install can only be used with install.sh in the redistributable-runtime directory or with the install.sh in the sdk directory. The silent install for the sdk can be run by simply entering the following command from the sdk directory. (Note that no output is printed.)

```
./install.sh --install
```

The silent install for the redistributable-runtime can be run using the following procedure:

1. Follow steps 1 through 2 in Section 3.3, "Installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe", on page 16.

2. Display a list of the package names that can be silently installed by entering the following command from the redistributable-runtime directory:

   ```
   ./install.sh --silent
   ```

   The following messages are displayed:

   ```
   ./install.sh --silent <PKG1> <PKG2> ... <PKGn>

   Initializing install, please wait ......

   Valid package selections are:

   Package Name  Package Description
   ------------  -------------------
   lsb-dialogic-zvl-hmp   Dialogic(r) Multimedia Kit Software Release 1.0 for PCIe Software
   (314 MB)
   lsb-dialogic-zvl-t1e1   Dialogic(r) DNI Boards & Multimedia Kit Software Release 1.0 for
   PCIe Software  (367 MB)
   ALL           All available packages (367 MB)
   ```

3. Enter the silent install command with the packages you want to install. For example, if you want to install the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software and the Dialogic® DNI boards, use the following command:

   ```
   ./install.sh --silent lsb-dialogic-zvl-t1e1
   ```

   or

   ```
   ./install.sh --silent ALL
   ```

4. After installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, it is not necessary to reboot the system. However, you must set the environment variables after installing the software. To set the environment variables, enter:

   ```
   source /etc/profile.d/ct_intel.sh
   ```

   or, alternatively: log out and then log in.

Note: It is recommended that you run the verification demo to verify that you have set up the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software properly. Refer to Section 7.4, "Running the Verification Demo", on page 30, for details.

5. Activate a software license file as described in Section 4.2, "Configuring the System", on page 23.

Note: A verification license is installed with the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software. This license is intended to be used for verifying that the installation was successful. To fully utilize the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, you **must** obtain and activate a license. Refer to Chapter 4, "Activating a License" for details. Once the new license is activated, you must start Dialogic® Services in order to use it.

License Administration 4

A license file contains a combination of call control and media processing resources. The default verification license file is stored in the /usr/dialogic/data directory.

Once you have installed the Dialogic® Multimedia Kit Software Release 1.0 for PCIe, you must activate the license on the target system using either SNMP or CLI. Remote management capability is also available using SNMP or CLI. CLI can be accessed by using telnet. On the local machine, use `telnet localhost` or from a remote machine, use `telnet <server_ip>`. For more details about using SNMP or CLI, refer to the *Dialogic® System Configuration Guide*.

The following are the common administrative tasks performed for Licensing.

Obtaining a License
: You need to decide which type of license you want and get it. This chapter describes the various types of licenses and how to get each type.

Configuring the System and Activating a License
: Once you have obtained a license, you must activate it using either SNMP or CLI.

Starting Dialogic® Services
: After you install the Dialogic® Multimedia Kit Software Release 1.0 for PCIe, you start the Dialogic® Services as described in Section 7.3, "Starting Dialogic® Services", on page 28. After that, any time you reboot your system, Dialogic® services will be automatically started. However, if you need to manually stop and start the services, you can use the procedure in that section.

4.1 Obtaining a License

This section describes the types of licenses available for Dialogic® Multimedia Kit Software Release 1.0 for PCIe and how to get them.

Licenses can be obtained from your authorized Dialogic distributor. For board-based licenses, be prepared to enter the Serial Number of the board to which you want to lock the license. For OEM licenses, contact your vendor for details.

Before you obtain a license, you must understand the types of licenses available and decide which type of license you want to obtain. You can try out the Dialogic® Multimedia Kit Software Release 1.0 for PCIe with a verification, or trial license before you purchase a permanent, production license. Table 1 shows the types of licenses available for use with Dialogic HMP Software, where to get each type of license, and whether you need to supply a Board Serial Number.

Table 1. License Types

License Type	Features	Expires?	Where to get license?	Board Serial Number required?
Verification (free)	1 channel for RTP and Voice	no	included with Software[1]	no
Trial (free)	any supported license SKU	expires in 45 days	Dialogic authorized distributor[2]	yes - supply Dialogic® MMA Board Serial Number when ordering
Purchased	any supported license SKU	no	Dialogic authorized distributor[2]	yes - supply Dialogic® MMA Board Serial Number when ordering

1. A verification license is installed with the Dialogic® Multimedia Kit Software Release 1.0 for PCIe, activated and ready to use, but this license is only intended to be used for verifying that the Dialogic® Multimedia Kit Software Release 1.0 for PCIe installation was successful (see Running the Verification Demo).
2. For a list of authorized distributors, go to:*www.dialogic.com*.

The follow examples help to understand the naming scheme:

- Verification license - 1r1v0e0c0s0f1i_ver.lic
- Purchased license - MMKSL1000V10_NZ000107.lic

Note: The trial license name uses the same naming scheme as the purchased license.

4.1.1 Using the Verification License

A verification license is installed with the Dialogic® Multimedia Kit Software Release 1.0 for PCIe, activated and ready to use, but this license is only intended to be used for verifying that the software installation was successful. Verification consists of running a demo. This is described in Section 7.4, “Running the Verification Demo”, on page 30.

4.1.2 Obtaining a Trial or Purchased License

If you want to obtain one of these licenses, you must provide a Board Serial Number to your Dialogic authorized distributor when you request them.

Here is a description of each of these licenses:

Trial License

A trial license is free, and expires after a specified time period (see Table 1), and will allow you to try out the Dialogic® Multimedia Kit Software Release 1.0 for PCIe before you purchase a license. You will need to request this license from a Dialogic authorized distributor and supply a Board Serial Number.

Purchased License

You can request any supported license SKU and this license does not expire. You must request this license from a Dialogic authorized distributor and supply a Board Serial Number.

Now that you have obtained a license file, you must activate it. Refer to Section 4.2, “Configuring the System and Activating a License”, on page 23.

4.1.3 Upgrading a License

You can request that a license be upgraded to include additional resources for configuration features. Contact the Dialogic authorized distributor from whom you requested the original license.

4.2 Configuring the System and Activating a License

Configuring the system consists of activating a Dialogic® Multimedia Kit Software Release 1.0 for PCIe license, refer to the *Dialogic® System Configuration Guide.*

You can activate the verification license supplied with the software or another license you have obtained. Either SNMP or CLI can be used to activate a license. For more information about SNMP and CLI, and other system configuration details, see the *Dialogic® System Configuration Guide*.

To begin, you must be logged in to the CLI as administrator. The administrator user name is "admin" and the password is "admin". CLI can be accessed by using telnet on the local machine (`telnet localhost`) or from a remote machine (telnet <server_ip>).

1. At the prompt, enter

   ```
   # telnet localhost
   ```

   The following messages are displayed:

   ```
   Trying 127.0.0.1...
   Connected to localhost.localdomain (127.0.0.1).
   Escape character is '^]'.
   +------------------------------------------------------------+
   |                                                            |
   |  .:::::::::::::::::::::::::::::::::::::::::::::::::::::.  |
   |Dialogic(R) Multimedia Kit Software Release 1.0 for PCIe  |
   |  `:::::::::::::::::::::::::::::::::::::::::::::::::::::'  |
   |                                                            |
   |                                                            |
   | For HELP:                                                  |
   |   Use '?' at command prompt                                |
   |   Use '-h' within commands                                 |
   |                                                            |
   +------------------------------------------------------------+

   CLI>
   ```

2. Verify that the Dialogic® MMA board is found by entering

   ```
   CLI> show hardware mma
   ```

   The Dialogic® MMA board serial number is *NZxxxxxx.*

3. Configure the license directory for later activation by entering:

   `CLI> conf license directory` <*Directory path where license file(s) reside*>

   Example: `CLI> conf license directory /dialogic/licenses`

At this point, you may configure other settings such as the media address or automatic setup. For more information, see the *Dialogic® System Configuration Guide.*

The following steps provide the license activation procedures. Dialogic® Services must be stopped before activating a license.

1. At the CLI prompt, enter the following command to stop services:

```
CLI> conf system ipmedia stop

updated- This action can take a few minutes to complete. Please wait
CLI>
EVENT--SYSTEM Run State [Shutdown]

CLI>
EVENT--SYSTEM Run State [Inactive]

CLI>
EVENT--SYSTEM [not ready]

CLI>
IPMedia stop complete

CLI>
```

2. Enter the `conf license activate` command and specify the license file name. For example:

```
CLI> conf license activate MMKSL1000V10_NZ000107.lic

CLI>
```

   Configuring a license file from the CLI involves the license file validation. It may take a few seconds to complete. Upon successful completion, a message similar to the following is displayed:

```
CLI>License verification is in progress. Please wait

updated - will be effective on the next ipmedia start"
```

   In case of an invalid license, the following error message is displayed:

```
"License activation failed. Reverted to last selected license"
```

   To view the current selected license file name and license content details, enter the command:

```
CLI> show license
```

3. Enter the following command to start media services:

```
CLI> conf system ipmedia start

updated- This action can take a few minutes to complete. Please wait
CLI>
EVENT--SYSTEM Run State [Initializing]

CLI>
EVENT--SYSTEM Run State [Active]

CLI>
EVENT--SYSTEM [ready]

CLI>
IPMedia start complete

CLI>
```

4. Exit the CLI using the `logout` command or open another terminal and use your new license.

Uninstalling the Software 6

This chapter describes how to uninstall the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software.

Note: Before uninstalling the software, close all telephony applications that are currently running in the system and stop the Dialogic® Services.

1. To stop Dialogic® Services, enter following command at the prompt:

   ```
   dlstop
   ```

   You will see several screen messages scrolling. The services have successfully stopped when the prompt returns.

2. To uninstall the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, enter the following command at the prompt:

   ```
   dlguninstall.sh
   ```

   The message below is displayed:

   ```
   ================================================================================

                       Dialogic(r) Multimedia Kit Software Release 1.0 for PCIe

                                          UNINSTALL

   Before you uninstall the software, you may wish to save certain configuration files that
   you have modified based upon the configuration of your system.

   If you wish to save these configuration files, answer Y at the prompt below to quit the
   uninstall.  You may then manually back up any files located under /usr/dialogic.

   Once this has been done, re-run this script to uninstall the software.

   Quit the uninstall and back up your configuration files now [y/n] ?
   ```

Note: It is recommended that you create a backup directory to save your configuration data. From the root, create a backup directory by entering the command `mkdir /backup`. Go to the */usr/dialogic/data* directory (the default directory for license files) or whatever directory contains your license files. Using the copy command, **`cp`**, copy all instances of the active license file (with all extensions: *.lic*, *.pcd*, *.fcd*, *.config*) to the backup directory.

3. Enter **y**, to stop the uninstall process and to back up data, or enter **n** to continue. If you enter **n**, the following messages are displayed:

   ```
   The Dialogic(r) Software will now be uninstalled.

   Stopping Dialogic(r) software ...Successful
      lsb-dialogic-zvl-com...   successfully removed lsb-dialogic-zvl-com
      lsb-dialogic-zvl-dmdev... successfully removed lsb-dialogic-zvl-dmdev
      lsb-dialogic-zvl-hmp...   successfully removed lsb-dialogic-zvl-hmp
      lsb-dialogic-zvl-lic...   successfully removed lsb-dialogic-zvl-lic
      lsb-dialogic-zvl-ooc...   successfully removed lsb-dialogic-zvl-ooc
      lsb-dialogic-zvl-sdk...   successfully removed lsb-dialogic-zvl-sdk
      lsb-dialogic-zvl-t1e1...  successfully removed lsb-dialogic-zvl-t1e1

   To complete the removal of the Dialogic(r) software, the following action is required:

   - Logout and login

   NOTE: A reboot is not required to complete the uninstall process.
   ```

4. After uninstalling the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, it is not necessary to reboot the system. However, you must log out and log in to restore the environment settings. Log out, and then log in again to restore the environment setting.

Post-Installation Requirements 7

This chapter provides the requirements that need to be met after installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software. This information is contained in the following sections:

Refer to the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide* for more information.

7.1 E1000 Ethernet Driver Installation Procedure

This section provides the procedure for installing the E1000 Ethernet Driver. The E1000 Ethernet Driver installation is required **only once** after the operating system is installed.

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Proceed as follows to install the E1000 Ethernet Driver:

1. Backup the e1000.ko in /lib/modules/2.6.9-67.ELsmp/kernel/drivers/net/e1000.
2. Copy e1000-7.6.15.tar.gz from the /usr/dialogic/data directory into temp directory.
3. Run tar –xvzf e1000-7.6.15.tar.gz
4. cd e1000-7.6.15/src
5. make clean
6. make install

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Proceed as follows to install the E1000 Ethernet Driver:

1. Backup the e1000.ko in /lib/modules/`uname –r`/kernel/drivers/net/e1000
2. Copy e1000-7.6.15.tar.gz onto the system from /usr/dialogic/data directory
3. Run tar –xvzf e1000-7.6.15.tar.gz

4. cd e1000-7.6.15/src
5. make clean
6. make install
7. Copy /usr/dialogic/data/depmod-3.2-pre1 to /sbin and rename to depmod
8. Comment out `blacklist e1000` from /lib/modules/`uname –r`/modules.unsupported

7.2 Tuning System Performance

For information on tuning system performance, refer to the chapter on this topic in the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide*. That chapter provides recommendations for those who choose to enhance system performance. This chapter includes such topics as optimizing NIC driver settings, and disabling driver status messages.

7.3 Starting Dialogic® Services

After you install the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software, you must first run `dlstart` to start the Dialogic Multimedia Kit Software Release 1.0 for PCIe software configuration tools.

Notes: ***1.*** Before you use the Dialogic® Multimedia Kit Software Release 1.0 for PCIe you **must** obtain and activate a license. Refer to Chapter 4, "License Administration" for details.

2. Dialogic® Services will not automatically start any time you reboot your system unless you set the system to auto start mode. See Section 7.3.2, "Auto Start Mode", on page 29 for instructions.

After this initial start, you may again need to stop or start Dialogic® Services. If you need to do this, it is recommended that you use the `ipmedia start` and `ipmedia stop` commands, rather than the `dlstart` and `dlstart` commands. The dlstart/dlstop commands are operating system-level commands, and ipmedia start/stop are CLI commands.

The `dlstart` command starts all the Dialogic® Services, including OAM services, and also starts, initializes, and downloads Dialogic® Multimedia Kit Software Release 1.0 for PCIe software and any applicable boards. The `ipmedia start` command is a subset and only starts, initializes, downloads Dialogic Multimedia Kit Software Release 1.0 for PCIe software and any applicable Dialogic boards.

The `dlstop` command will stop the SNMP and CLI agents in addition to services. As a result, the user has no way to configure the Dialogic® software (to change licenses, etc.) because the ability to telnet into the CLI or run an SNMP MIB browser to configure through SNMP is not available.

The `ipmedia start` and `ipmedia stop` commands are preferable when starting and stopping Dialogic® Media Services. The advantage being that ipmedia start/stop is faster than dlstart/dlstop because it does not start and stop all services.

To start and stop Dialogic® Media Services, use the following commands at the CLI prompt:

```
CLI> conf system ipmedia start
CLI> conf system ipmedia stop
```

7.3.1 dlstart in Manual Mode

Proceed as follows to start Dialogic® Services using `dlstart` in manual mode. Log in as root and use the following command:

```
dlstart
```

The following messages are displayed:

```
STARTING DIALOGIC SERVICES...

Starting CORBA Event Server:        [  OK  ]
Starting CORBA Name Server:         [  OK  ]
Starting RTF Logging Server:        [  OK  ]
Starting Device Mapper :            [  OK  ]
Starting Timeslot Doler :           [  OK  ]
Starting Telephony System Monitor : [  OK  ]
Starting ssp_x86Linux_boot:         [  OK  ]
Starting Board Manager Service :    [  OK  ]
Starting SNMP Agent Service :       [  OK  ]
Starting CLI Agent Service :        [  OK  ]
Starting WEB Agent Service :        [  OK  ]

STARTING DIALOGIC MEDIA
.

Dialogic Media is ready to configure

STARTING DIALOGIC SERVICES COMPLETE.
```

Note: To start Dialogic® Media Services, access the CLI and run the following command at the CLI prompt:

```
CLI> conf system ipmedia start
```

7.3.2 Auto Start Mode

By default, dlstart is set to manual mode. To enable auto mode, proceed as follows:

1. At the CLI prompt, enter
   ```
   # telnet localhost
   ```
   The system responds:

```
Trying 127.0.0.1...
Connected to localhost.localdomain (127.0.0.1).
Escape character is '^]'.

+------------------------------------------------------------------------------+
|                                                                              |
|  .::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::. |
| :::    Dialogic(R) Host Media Processing Software Release 3.1 LIN    ::: |
|  `::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::' |
|                                                                              |
|                                                                              |
| For HELP:                                                                    |
|   Use '?' at command prompt                                                  |
|   Use '-h' within commands                                                   |
|                                                                              |
+------------------------------------------------------------------------------+
Login :
```

2. Login as admin.

3. Enter the command

   ```
   CLI>conf system ipmedia start-mode auto
   ```

   The system responds:

   ```
   updated
   CLI>
   EVENT-- SYSTEM Start Mode [Auto]
   ----------------------------------------------------------------------------------------------
   ```

4. Proceed to Running the Verification Demo to verify that the Dialogic® Multimedia Kit Software Release 1.0 for PCIe Software Development Kit software has been set up properly.

Note: A verification license is installed with the Dialogic® Multimedia Kit Software Release 1.0 for PCIe Software Development Kit software. This license is intended to be used for verifying that the installation was successful. To fully utilize the Dialogic® Multimedia Kit Software Release 1.0 for PCIe Software Development Kit software, you **must** obtain and activate a license. Refer to Chapter 4, "License Administration" for details.

7.4 Running the Verification Demo

It is recommended that you run the verification demo to verify that you have set up the Dialogic® Multimedia Kit Software Release 1.0 for PCIe Software Development Kit software properly. This demo simply receives an IP call to let you know that the installation and configuration were successful.

To run the verification demo, perform the following:

1. If you have not already done so, run `dlstart`.

2. Change to the directory containing the verification demo or set it as the working directory: */usr/dialogic/demos/Verification/VerificationDemo/Release*.

3. Run the demo using the `VerificationDemo` executable. When you run the demo, you will see output similar to the following:

```
                Welcome to the HMP Demonstration Program

        The purpose of this demo is to establish a basic level
        of functionality after installing and configuring the
        Dialogic(R) Host Media Processing Software.
        This application will perform some sanity checking and
        then wait for a Voice Over Internet Protocol (VOIP) call
        to be placed into the system using a SIP or H.323 VOIP
        phone configured to use the G.711 codec. After connecting
        a message prompt will be played out to the calling party.
        Press ENTER to continue.....

Checking that the HMP service is running.......
Getting the host IP address.....
        Opening Prompt File........
        Opening Voice Device.......
        Opening Global Call IP Device.......
        Starting the Global Call subsystem.....

        The system is initialized and ready for a call.
        Place a SIP or H.323 call to the IP address of this machine.
        on this system: |       |       |       \-- <ipmB1C1>
        The call will be answered automatically and a welcome
        message prompt will be played. Event and call
        processing messages will be displayed as the call
        is answered and the prompt plays. If the call is
        immediately disconnected, check the settings on your
```

```
phone and make sure that G.711 is the selected codec.
Press Q at any time to quit this demo .........

Normal ResetLine Event on iptB1T1
 Waiting for Incoming Call on iptB1T1
```

If you need to restart Dialogic® Services, refer to Section 7.3, "Starting Dialogic® Services", on page 28.

Troubleshooting 7

This chapter provides the following information about troubleshooting problems encountered when installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe:

7.1 Checking the Installation

After the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software has been installed as described in Chapter 3, "Installing the Software", you can enter the following commands to confirm what has been installed:

1. To check which packages were installed, enter:

   ```
   rpm -qa lsb-dialogic-zvl-\*
   ```

   The names of the installed packages are listed.

   See Table 2 for the software packages that are installed for each menu selection, and see Table 3 for a description of each package.

2. To list the contents of the */usr/dialogic* directory, enter:

   ```
   ls /usr/dialogic
   ```

   See Table 4 for a description of the directories under */usr/dialogic*.

Table 2. Software Packages Installed

Menu Selection	Packages Installed
Dialogic® Multimedia Kit Software Release 1.0 for PCIe Software	lsb-dialogic-zvl-com, lsb-dialogic-zvl-ooc, lsb-dialogic-zvl-dmdev, lsb-dialogic-zvl-hmp, lsb-dialogic-zvl-lic
Dialogic® MMA Boards & Dialogic® Multimedia Kit Software Release 1.0 for PCIe Software	llsb-dialogic-zvl-com, lsb-dialogic-zvl-ooc, lsb-dialogic-zvl-dmdev, lsb-dialogic-zvl-hmp, lsb-dialogic-zvl-t1e1, lsb-dialogic-zvl-lic
Install All	lsb-dialogic-zvl-com, lsb-dialogic-zvl-ooc, lsb-dialogic-zvl-dmdev, lsb-dialogic-zvl-hmp, lsb-dialogic-zvl-t1e1, lsb-dialogic-zvl-lic
See Table 3 for a description of each package.	

Table 3. Software Package Descriptions

Package Name	Package Description
lsb-dialogic-zvl-com	Core Host Software for Linux
lsb-dialogic-zvl-dmdev	Dialogic® DM3 Architecture Development Software
lsb-dialogic-zvl-hmp	Dialogic® Multimedia Kit Software Release 1.0 for PCIe Software
lsb-dialogic-zvl-ooc	Orbacus CORBA Support Package **Note:** This is a CORBA support package that is required and runs in the background.
lsb-dialogic-zvl-t1e1	Dialogic® HMP Interface (DNI) Boards
lsb-dialogic-zvl-lic	Licensing software
lsb-dialogic-zvl-sdk	Dialogic® Software Development Kit

Table 4. File Locations under /usr/dialogic

Directory	Contents
bin	All Dialogic® executables
cfg	Configuration related files that can be viewed and modified by users. (Some configuration files are also in the *data* directory.)
data	Contains *.pcd*, *.fcd*, and *.config* files. The data directory typically contains *.lic* files.
demos	Demonstration programs (in separate subdirectories according to the feature)
docs	Documentation
drivers	Drivers
inc	Header files (symbolically linked into */usr/include*) - exists only when SDK is installed
init.d	System startup scripts
lib	Library files (symbolically linked into */usr/lib*)
log	Log files that should be checked by users
ooc	CORBA support package
qscript	QScript tools. These tools are described in the *Diagnostic Guide*.
sctools	Files for SCbus routing convenience functions

7.2 Understanding the Install Error Messages

This section describes the error messages that can appear during installation. For convenience, the error messages have been grouped as follows:

- Installation Prerequisites (OS, Kernel, Disk Space)
- Packages and Package Managers
- Multimedia Kit Specific

Installation Prerequisites (OS, Kernel, Disk Space)

Following is a list of error messages and what must be done to correct the error condition. The error is in bold type and an explanation follows it:

This program requires you to be a Superuser.
Log in as root and re-run the install.

This software requires a kernel upgrade. The current kernel version is [VERSION]. Please upgrade the kernel to at least version [SUPPORTED_KERNEL].
Upgrade to the requested kernel and rerun the install.

The current kernel version [VERSION] is later than the version currently supported by this software [SUPPORTED_KERNEL].
Install the supported kernel and rerun the install.

Insufficient free disk space is available on the file system containing [DLGCROOT] to install the selected software. Need 1 MB, but only have [SPACE_AVAILABLE] MB.
You must free up at least 1 MB of disk space before installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software.

ERROR: check_diskspace_dlgcroot_filesystem(): number of bytes must be > 0
You must free up disk space before installing the Dialogic® Multimedia Kit Software Release 1.0 for PCIe software.

Unable to determine the specific distribution of Linux you are running.
Make sure you are running the distribution of Linux specified in the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide*.

Distributions from [OS DISTRIBUTOR] are not supported.
Make sure you are running the distribution of Linux specified in the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide*.

[OS DESCRIPTION] is not supported.
Make sure you are running the distribution of Linux specified in the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide*.

Unable to determine the OS version
Make sure you are running the distribution of Linux specified in the *Dialogic® Multimedia Kit Software Release 1.0 for PCIe Release Guide*.

Packages and Package Managers

The following list contains error messages, in bold type, and appropriate actions, if needed.

You have selected an invalid package.
Review the list of packages again (in the install menu) and make sure you select one or more of the packages shown in the menu.

[PKGNM] is obsolete and will be removed
This message lets you know that the install has found an obsolete package and is deleting it.

Invalid Response
When entering your selection(s) from the install menu, you entered something other than the valid numbers and letters shown on the menu.

ERROR: Invalid package name [PACKAGE NAME].

You specified an invalid package from the command line (silent install). Check the package names listed in Section 7.1, "Checking the Installation", on page 33.

Multimedia Kit Specific

The following list contains error messages, in bold type, and appropriate actions, if needed.

Invalid Command

This message is in response to `CLI> show hardware mma`. It means that media devices were not found.

Action

Check that the Dialogic® Multimedia Accelerator Board for PCIe (Dialogic® MMA) board is correctly installed using the following procedure:

1. At the command prompt enter `quit` OR `logout`.
2. Run lsmod to check if the csme driver is loaded. If csme is running, continue to step 3.
3. Run lspci to verify PCI bus detection.
4. Check that the Dialogic® MMA board is configured correctly. The configuration may not be correct if only a MAC address appears under the heading "Ethernet Interface Information".
5. Go to the operating system window and edit etc/sysconfig/network-scripts/ifcfg-ethY with correct information:

- Type the command `ifdown` to will bring the NIC interface down.
- Type the command `ifup` to enable the device so that recent changes take effect.

6. Log in to the CLI and type `show hardware mma`.

Fault

This message is in response to `CLI> conf system ipmedia start`. It means that the media services did not start.

Action

1. Verify that a valid license has been activated.
2. Verify the DSP IP addresses are on the same subnet as media interface.
3. Look for the specific error message(s) in the log file located in /var/log/messages.
4. If the error cannot be diagnosed, send the log file to your Dialogic support representative.

7.3 Determining the Dialogic® MMA Board Serial Number

This section shows an example of using the CLI to determine the serial number of the Dialogic® MMA board.

At the command prompt, enter:

```
CLI> show hardware
```

7.4 Disabling ACPI Features on SUSE Linux for Dialogic® HMP Interface Boards

On some systems, there may be hardware problems using the ACPI (Advanced Configuration and Power Interface) feature. For example, there may be a problem with the Dialogic® DNI board getting interrupts from the operating system. If a hardware problem exists, proceed with the following steps to disable the ACPI.

In order to determine whether pci=noacpi must be set, execute the following guidelines during installation after running ./install.sh.

1. Log in to the `CLI` and type `show hardware` to obtain the slot number for the Dialogic® DNI board (other than 21).

2. Run `dm3start -s<Slot> -b2`

   Where **<Slot>** is the slot number, in the above case **5**. If successful, the following messages are printed:

   ```
   Board 5 configuration complete.
   Board 5 started  successfully!
   ```

   Proceed to steps 3 and 4 only if dm3start does not return with “started successfully!”.

3. If dm3start returns an error and cat /proc/interrupts show no interrupts for mercdintr, try setting `pci=noacpi`

   If this does not resolve the issue, there may be other problems.

4. To disable ACPI features, specify the following command in /boot/grub/menu.lst on the kernel line:

   ```
   pci=noacpi
   ```

Refer to your operating system manual for more information on how to set kernel boot parameters. For more information on controlling ACPI and/or APIC (Advanced Programmable Interrupt Controller), see the openSUSE web site at: http://en.opensuse.org/SDB:Kernel_Parameters_for_ACPI/APIC.