Intel® Dialogic®
System Release 6.1 for Linux

Software Installation Guide

November 2005

05-2396-003

Publication Date: November 2005

Document Number: 05-2396-003

Intel Converged Communications, Inc.
1515 Route 10
Parsippany, NJ 07054

For **Technical Support**, visit the Intel Telecom Support Resources website at:
http://developer.intel.com/design/telecom/support

For **Products and Services Information**, visit the Intel Telecom and Compute Products website at:
http://www.intel.com/design/network/products/telecom

For **Sales Offices** and other contact information, visit the Buy Telecom Products page at:
http://www.intel.com/buy/networking/telecom.htm

Contents

Tables

Revision History

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

Document No.	Publication Date	Description of Revisions
05-2396-003	November 2005	Choosing the Appropriate Install Procedure : This section was rewritten to reflect changes to Service Update installation and the section title was changed to Understanding the Installation Procedures. Table 1 was also revised. Major Installation Steps: Clarified the Note to indicate that Hot Swap and Redundant host only work on CompactPCI systems with a Red Hat Advanced Server 3.0 OSD. Third Party Software: Replaced “Options.cpp” and ““Options.h” with “Command line processing software.” Clarified the Note to indicate that Hot Swap and Redundant host only work on CompactPCI systems with a Red Hat Advanced Server Version 3.0 OSD. List of Prerequisites: Added a Note stating that Linux kernel source is required. Added the specific version of the Red Hat OSD on which Hot Swap and Redundant Host are supported. Changed “${INTEL_DIALOGIC_DIR}/qscript directory” to “${INTEL_DIALOGIC_QSCRIPT} directory.” NetSNMP prerequisite now states that you can use the NetSNMP included with the Red Hat Advanced Server Version 4.0 and SuSE OSDs. Removed mention of the TK RPM since it is no longer necessary to install Tcl/Tk. General Guidelines for Installing Linux: added these OSDs to list: Red Hat* Enterprise Linux Version 4.0 Update 1 (Advanced Server, Enterprise Server, and Workstation) and SuSE* Linux Enterprise Server 9. Specified 2.6 kernel for the two new OSDs added to the list. Added a note about no support for Redundant Host and Peripheral Hot Swap for 2.6 kernel. Added a note about the two versions of GCC included with the release. Guidelines for Installing the Hot Swap Kit and Redundant Host Software: Added a note stating that for this Service Update, the OSDs using the 2.6 kernel do not support Peripheral Hot Swap or Redundant Host. Preparing to Run the System Release with Variations on the Default Kernels: Replaced the first two paragraphs with a new paragraph. Revised the procedure. Preparing to Run the System Release with Other Linux OSDs: Revised the notes. In the Drivers section, changed $(uname -r) to ‘uname -r‘. Revised the procedure and notes following it. Preparing to Run the System Release with the Red Flag OSD: Deleted this section. Installing the NetSNMP Package: Added some OSD-specific instructions.

Document No.	Publication Date	Description of Revisions
05-2396-003	November 2005	Installing the Software for the First Time: An introductory paragraph was added. Screen output was updated: Upgrading from a Previous Release: The introduction and procedure were revised. Verifying the Installation: The IPML Gateway demo (ipmlgateway) was added to Table 6. Performing a Silent Install: Updated and restructured section to include a new subsection: Performing a Silent Update Install. Uninstalling the Software: Updated screen output.
05-2396-002	September 2005	Global: Revised description of update installs to account for service updates. Removed notes that said DMIP boards are not supported. Added information about Redundant Host wherever the Hot Swap Kit is mentioned. Choosing the Appropriate Install Procedure: Revised Table 1. Major Installation Steps: Added information about Redundant Host. Related Information: Added information about Redundant Host. Prerequisites for Software Installation: Added a list of the subsections. Preparing to Run the System Release with Other Linux OSDs: New section. Preparing to Run the System Release with the Red Flag OSD: New section. Determining Which Features to Install: Added Intel Dialogic DISI and DI boards as supported under the Intel NetStructure DMV/DMN/DMT option. Table 4: Added “and Intel Dialogic DISI and DI boards” to the package description for DLGCqspan.
05-2396-001	August 2005	Initial version of document.:

About This Publication

The following topics provide information about this guide:

Purpose

This guide explains how to install Intel® Dialogic® System Release 6.1 for Linux. It also explains how to upgrade from a previous release, uninstall, and redistribute the software.

Intended Audience

This information is intended for:

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

How to Use This Publication

The information in this document is organized as follows:

- Chapter 1, "Installation Overview" describes the major installation steps in the order in which they are performed, giving an overview of the process.This chapter also provides guidelines for choosing the appropriate installation procedure and lists the environment variables and third party software.
- Chapter 2, "Installing the Software" discusses the prerequisites for software installation and provides procedures for installing or upgrading the software. This chapter also covers silent installs and redistributing the system release runtime files.
- Chapter 3, "Uninstalling the Software" contains a procedure for uninstalling the software.
- Chapter 4, "Troubleshooting" discusses what to do if there is a problem with the installation.

Related Information

For additional information related to installation, configuration, administration, and diagnostics, refer to the following documents, which are provided as PDF files with the system release software and on the online bookshelf for the release, which can be found at *http://resource.intel.com/telecom/support/documentation/releases/*.

- For timely information that may affect installation and configuration, refer to the Release Guide and Release Update. Because it is updated after the software is released, the Release Update is not provided as a PDF file with the system release software. It is maintained on the web site mentioned above.
- For configuration procedures, refer to the appropriate product-specific Configuration Guide(s).
- For administration procedures, refer to the Administration Guide for this system release.
- For diagnostics information, refer to the Diagnostics Guide for this system release.
- For information about using the SNMP agent software, refer to the Administration Guide for the SNMP agent software.
- For information about installing the Hot Swap Kit (HSK) and Redundant Host software, refer to the user guide for this software (*Pigeon Point Systems Linux Hot Swap Kit User Guide*), which is a PDF file located in the *redistributable-runtime/PPS* directory. Note that the Redundant Host software is installed with the HSK software so you will not see a separate Redundant Host installation procedure listed in the HSK user guide. Before installing the HSK and Redundant Host software, refer to the additional installation guidelines in Section 2.1.3, "Guidelines for Installing the Hot Swap Kit and Redundant Host Software", on page 15.
- For a list of CompactPCI boards and platforms that support the HSK and Redundant Host software, refer to the Release Guide.
- For hardware installation instructions, see the Quick Install Card that comes with each board. Quick Install Cards also can be accessed from the Intel® Networking and Communications Telecom Support Resources web site (see next bullet item).
- The Intel Networking and Communications Telecom Support Resources web site at *http://developer.intel.com/design/telecom/support/* provides technical support and wide-ranging information in the form of technical notes, problem tracking reports, application notes, and other helpful documentation.
- The Intel® Telecom Products web site at *http://www.intel.com/design/network/products/telecom/index.htm* provides product information.

Installation Overview 1

This chapter provides information about the following:

1.1 Understanding the Installation Procedures

The installation of Intel® Dialogic® System Release 6.1 for Linux is a complete installation.

The System Release 6.1 for Linux Service Update installs without the need for previous 6.1 Linux feature releases to be installed on the system. That is, all previously delivered content up to and including the Service Update shall is automatically installed.

If a previous version of System Release 6.1 for Linux is detected (that is, a Feature Release, the generally available release, or a Service Update), the installed features will be automatically updated with content contained in the new Service Update. You are not required to uninstall any previous version of System Release 6.1 for Linux software.

Table 1 provides an overview of the installation scenarios. Prerequisites for installation and installation procedures are provided in Chapter 2, "Installing the Software".

Table 1. Installation Scenarios

If you have this on your system	Perform the following
No existing Intel Dialogic system release	Be sure to meet the prerequisites in Prerequisites for Software Installation and then use one of the following installation procedures: Installing the Software for the First Time or Performing a Silent Install
A previous release of System Release 6.1 for Linux	Be sure to meet the prerequisites in Prerequisites for Software Installation and then use one of the following installation procedures: Upgrading from a Previous Release or Performing a Silent Install
An Intel Dialogic System Release earlier than System Release 6.1 for Linux (such as a 6.0 or 5.1 release)	You must remove the older release (refer to Uninstalling the Software) and install a supported OSD (refer to General Guidelines for Installing Linux and List of Prerequisites). Then use one of the following installation procedures: Installing the Software for the First Time or Performing a Silent Install

1.2 Major Installation Steps

The installation procedure can be summarized as follows:

1. Read the Release Guide and Release Update before starting the installation. The Release Guide contains information about hardware and software requirements for this release, and boards supported by this release. The Release Update provides the latest information about any issues, restrictions, or limitations that may affect the installation.
2. Make sure that all relevant prerequisites for installing the software have been met. Refer to Section 2.1, "Prerequisites for Software Installation", on page 13.
3. Install the Intel Dialogic software using the installation script provided with the release. Instructions are in Section 2.3, "Installing the Software for the First Time", on page 23. You can install both the redistributable runtime and software development kit or just the redistributable runtime files or just the software development kit. Information about upgrading from a previous release is given in Section 2.4, "Upgrading from a Previous Release", on page 28. A procedure for silent installs is given in Section 2.6, "Performing a Silent Install", on page 33.

Note: Hot Swap Kit (HSK) and Redundant Host software is included with System Release 6.1 for Linux. If you are using a CompactPCI system and the Red Hat Advanced Server Version 3.0 OSD and you are going to use the HSK and Redundant Host software, it is **strongly recommended** that you install it **before** you install the system release. For more information, refer to Section 2.1.3, "Guidelines for Installing the Hot Swap Kit and Redundant Host Software", on page 15.

After you complete the installation, you can start the configuration process. Depending on the hardware you have installed, refer to the appropriate product-specific Configuration Guide(s). When configuration is complete, reboot to start the software for the first time. Rebooting the system initializes all the Intel Dialogic and Intel NetStructure products in the system.

1.3 Environment Variables

Intel plans to eliminate a set of environment variables used to locate certain directories in the Intel Dialogic system release hierarchy. These existing variables will be replaced with a new set of environment variables that reflects Intel Dialogic directory names and structure. Because this change will break backwards compatibility, these new variables will be phased in during this and the next system release.

This system release will support both the old and new environment variables to allow you time to migrate to the new standard. In the next full system release, the old variables will be eliminated. **It is strongly recommended that you begin using these new variables as soon as possible.** The names of these variables will remain consistent, but the *values* of the variables are subject to change without notice.

Following is a list of the existing and replacement variables:

Existing Environment Variables

```
# Dialogic Root
DLGCROOT=/usr/dialogic
export DLGCROOT

DLGCFWLPATH=$DLGCROOT/data
export DLGCFWLPATH

DLGCCFGPATH=$DLGCROOT/cfg
export DLGCCFGPATH

QSCRIPT_DIR=$DLGCROOT/qscript
export QSCRIPT_DIR

QROOT=$DLGCROOT
export QROOT

# Where resource files are stored
QDNLDDATA=$DLGCFWLPATH
export QDNLDDATA

# Where binary files are stored
QDNLDBIN=$DLGCROOT/bin
export QDNLDBIN
```

New Environment Variables

```
INTEL_DIALOGIC_BASE=/usr
export INTEL_DIALOGIC_BASE

INTEL_DIALOGIC_NAME=dialogic
export INTEL_DIALOGIC_NAME

# for future use
INTEL_DIALOGIC_RELEASE=
export INTEL_DIALOGIC_RELEASE

# replacement for ${DLGCROOT}
INTEL_DIALOGIC_DIR=${INTEL_DIALOGIC_BASE}/${INTEL_DIALOGIC_NAME}/${INTEL_DIALOGIC_RELEASE}
export INTEL_DIALOGIC_DIR


# location of header files for use in application compilation
# e.g.  cc -o myapp myapp.c -I${INTEL_DIALOGIC_INC}
INTEL_DIALOGIC_INC=${INTEL_DIALOGIC_DIR}/inc
export INTEL_DIALOGIC_INC

# location of shared libraries for use in application linking
# e.g. cc -o myapp myapp.c -L${INTEL_DIALOGIC_LIB} -lsrl
INTEL_DIALOGIC_LIB=${INTEL_DIALOGIC_DIR}/lib
export INTEL_DIALOGIC_LIB

# location of firmware and firmware configuration files
INTEL_DIALOGIC_FWL=${INTEL_DIALOGIC_DIR}/data
export INTEL_DIALOGIC_FWL

# location of non-firmware configuration files
INTEL_DIALOGIC_CFG=${INTEL_DIALOGIC_DIR}/cfg
export INTEL_DIALOGIC_CFG

# add the  directory containing our executables to the path
PATH=${INTEL_DIALOGIC_DIR}/bin:${PATH}
export PATH
```

```
# location of qscript tools
INTEL_DIALOGIC_QSCRIPT=${INTEL_DIALOGIC_DIR}/qscript
export INTEL_DIALOGIC_QSCRIPT

# The following are obsolete. Replacements are given below.

# QROOT -  ( instead use ${INTEL_DIALOGIC_DIR} )

# QDNLDDATA -  ( instead use ${INTEL_DIALOGIC_FWL} )

# QDNLDBIN -  ( instead use ${INTEL_DIALOGIC_DIR}/bin )
```

1.4 Third Party Software

The following third party software is automatically installed with System Release 6.1 for Linux:

- JTCThread++ JTC 2.0.1 – Iona Technologies (http://www.iona.com)
- Object Request Broker 4.1.3 – Iona Technologies (http://www.iona.com)
- Command Line Processing Software – Brad Appleton, Software Tools Developer (http://www.cmcrossroads.com/bradapp)

Hot Swap Kit (HSK) and Redundant Host software is included with System Release 6.1 for Linux. If you are using a CompactPCI system and the Red Hat Advanced Server Version 3.0 OSD and you are going to use the HSK and Redundant Host software, it is **strongly recommended** that you install it **before** you install the system release. For more information, refer to Section 2.1.3, "Guidelines for Installing the Hot Swap Kit and Redundant Host Software", on page 15.

A Java Runtime Environment is required for operation of the UDD diagnostics tool. For more information, refer to the *Diagnostics Guide*.

Installing the Software 2

This chapter gives detailed procedures for installing Intel® Dialogic® System Release 6.1 for Linux:

2.1 Prerequisites for Software Installation

This section contains a list of prerequisites and procedures for the prerequisites:

- List of Prerequisites
- General Guidelines for Installing Linux
- Guidelines for Installing the Hot Swap Kit and Redundant Host Software
- Upgrading Linux STREAMS (LiS)
- Preparing to Run the System Release with Variations on the Default Kernels
- Preparing to Run the System Release with Other Linux OSDs
- Ensuring the System has Valid IP Hostname Resolution
- Installing the NetSNMP Package
- Determining Which Features to Install

2.1.1 List of Prerequisites

Before installing the software, make sure that the following prerequisites are met:

- Install Intel Dialogic and Intel NetStructure hardware according to the *Quick Install Card* that comes with each board.

  Note: If a non-supported board (i.e., a board that is not supported in System Release 6.1 for Linux) is detected, you will be notified (after the board is downloaded) that the board is unsupported by the release. The release will not prevent you from installing a non-supported board.

- Install a supported version of Linux and if you are using Intel Dialogic Springware architecture boards, install the supported version of Linux STREAMS (LiS). See Section 2.1.2, "General Guidelines for Installing Linux", on page 14.

- Source for the Linux kernel must be installed on your system.
- If you had installed LiS Version 2.16.18 when using System Release 6.1 for Linux Feature Release 1 or 2, you must upgrade LiS to Version 2.18.1 before upgrading to this release of System Release 6.1 for Linux. See Section 2.1.4, "Upgrading Linux STREAMS (LiS)", on page 16.
- If you are using a CompactPCI system and the Red Hat Advanced Server Version 3.0 OSD and want to use peripheral hot swap or redundant host functionality, then you must install the Hot Swap Kit (HSK) and Redundant Host software. See Section 2.1.3, "Guidelines for Installing the Hot Swap Kit and Redundant Host Software", on page 15.
- If you are using Intel NetStructure boards and want to run the system release with a variation on the default kernel, refer to Section 2.1.5, "Preparing to Run the System Release with Variations on the Default Kernels", on page 16.
- If you want to use a Linux OSD other than the OSDs listed in Section 2.1.2, "General Guidelines for Installing Linux", on page 14, refer to Section 2.1.6, "Preparing to Run the System Release with Other Linux OSDs", on page 17.
- If you intend to use any of the graphical diagnostic utilities contained in the *${INTEL_DIALOGIC_QSCRIPT* directory (such as PSTN Diagnostics), you must install the XFree86 and XFree86-libs on your system. If your Linux OSD uses the X.org X Windows implementation instead of XFree86, install the X.org equivalent RPMs. These RPMs are contained on the distribution media of the Linux OSD. The Diagnostics Guide specifies which diagnostic utilities require these RPMs.
- Ensure that your system has working IP hostname resolution. Otherwise, you will have problems when downloading Intel Dialogic and Intel NetStructure boards. See Section 2.1.7, "Ensuring the System has Valid IP Hostname Resolution", on page 19.
- If you intend to use SNMP Agent Software for remote monitoring and administration of Intel Dialogic and Intel NetStructure boards over an IP network, Net-SNMP must be installed on the managed node(s). Source code for NetSNMP (plus the required patches) is included with System Release 6.1 for Linux. If you have Red Hat Advanced Server Version 3.0, **do not use the NetSNMP that is included with your Linux OS distribution.** However, if you have Red Hat Advanced Server 4.0 or SuSE Linux Enterprise Server 9, you can use the NetSNMP that is included with your Linux OS distribution. See Section 2.1.8, "Installing the NetSNMP Package", on page 20.
- For information about the packages in this system release, see Section 2.1.9, "Determining Which Features to Install", on page 21.
- If you are upgrading from a system release *earlier than* System Release 6.1 (such as System Release 6.0 or 5.1), you must uninstall the previous system release according to the procedure in Chapter 3, "Uninstalling the Software". If you are upgrading from a previous release of System Release 6.1 for Linux, you do not have to uninstall the previous release before upgrading.

2.1.2 General Guidelines for Installing Linux

System Release 6.1 for Linux supports the following Linux distributions (OSDs):

- Red Hat* Enterprise Linux Version 3.0 (Advanced Server, Enterprise Server, and Workstation)
- Mandriva* (formerly Mandrakesoft) Powerpack 9.2

- Red Hat* Enterprise Linux Version 4.0 Update 1 (Advanced Server, Enterprise Server, and Workstation)
- SuSE* Linux Enterprise Server 9

Notes: ***1.*** Red Hat* Enterprise Linux Version 4.0 and SuSE* Linux Enterprise Server 9 are based on the 2.6 kernel. Redundant Host and Peripheral Hot Swap will not be supported with the 2.6 kernel in the current Service Update but support will be added in a future Service Update.

2. All of the above OSDs do not use the same version of GCC, so the System Release 6.1 for Linux CD contains Intel Dialogic binaries built using two different versions of GCC: 3.2 and 3.4. During installation, the GCC version on the system will be automatically detected and only the appropriate RPMs (built using GCC 3.2 or 3.4) will be installed.

If you will be using Intel Dialogic boards with Springware architecture, you must install Linux STREAMS (LiS) Version 2.18.1, which is included on the distribution media with the System Release 6.1 for Linux software. For instructions, refer to http://www.gcom.com/home/linux/lis/install.html.

Note: If you had installed LiS Version 2.16.18 when using System Release 6.1 for Linux Feature Release 1 or 2, you must upgrade LiS to Version 2.18.1. See Section 2.1.4, "Upgrading Linux STREAMS (LiS)", on page 16.

To install Intel Dialogic software, you must be logged in to the Linux system as root.

For more information about hardware and software requirements for this release, and boards supported by this release, see the Release Guide. In addition, check the online Release Update for the latest information about any issues, restrictions, or limitations that may affect the installation: http://resource.intel.com/telecom/support/documentation/releases/.

2.1.3 Guidelines for Installing the Hot Swap Kit and Redundant Host Software

If you are using a CompactPCI system and the Red Hat OSD and want to use peripheral hot swap or redundant host functionality, then you must install the Hot Swap Kit (HSK) and Redundant Host software.

Note: Red Hat* Enterprise Linux Version 4.0 and SuSE* Linux Enterprise Server 9 are based on the 2.6 kernel. Redundant Host and Peripheral Hot Swap will not be supported with the 2.6 kernel in the current Service Update but support will be added in a future Service Update.

It is **strongly recommended** that you install the HSK and Redundant Host software **before** you install System Release 6.1 for Linux. However, it is possible to install the HSK and Redundant Host software after the system release as long as you run `config.sh` again in order for the driver to recompile with the new kernel that comes with HSK.

If you are upgrading from any previous release of the HSK and Redundant Host software, you must uninstall it before installing the current version. You must be running an unmodified Red Hat Linux kernel to install the new HSK and Redundant Host software.

The HSK and Redundant Host software is provided with the System Release software, in the *redistributable-runtime/PPS* directory. For information on installing the HSK and Redundant Host

software, refer to the user guide for this software (*Pigeon Point Systems Linux Hot Swap Kit User Guide*), which is a PDF file located in the *redistributable-runtime/PPS* directory.

Note: The Redundant Host software is installed with the HSK software so you will not see a separate Redundant Host installation procedure listed in the HSK user guide.

You must reboot after you install the HSK and Redundant Host software.

For a list of CompactPCI boards and platforms that support the HSK and Redundant Host software, refer to the *Release Guide*. HSK and Redundant Host are software is only supported on the Red Hat OSD.

2.1.4 Upgrading Linux STREAMS (LiS)

If you had installed LiS Version 2.16.18 when using System Release 6.1 for Linux Feature Release 1 or 2, you must upgrade LiS to Version 2.18.1 before upgrading to this release of System Release 6.1 for Linux. LiS is required if you are using Intel Dialogic boards with Springware architecture. LiS Version 2.18.1 is included on the System Release 6.1 for Linux distribution media.

To upgrade LiS, perform the following:

1. Reboot your computer. This is to prevent a problem that occurs intermittently when an application using Springware resources is improperly shut down, causing memory corruption in the LiS libraries and driver. This is not a limitation of the Intel Dialogic System Release.
2. Stop all applications.
3. Stop all services by running `/usr/dialogic/bin/dlstop`.
4. Unload the drivers by running `/usr/dialogic/bin/drvunload`.
5. Remove the current LiS installation. For instructions, go to http://www.gcom.com/home/linux/lis/removal.html.
6. Install Lis Version 2.18.1. For instructions, go to http://www.gcom.com/home/linux/lis/install.html.

2.1.5 Preparing to Run the System Release with Variations on the Default Kernels

This System Release supports OSDs with Linux kernel version 2.6 as well as kernel version 2.4.21 or greater. Driver source files have been shipped in this release. They are compiled on the system during the configuration stage.

The basic steps to perform the required compile are as follows:

1. Source for the Linux kernel must be installed on your system. This may not be done by default so it may be necessary to install the source RPMs from your Linux OS distribution media. **If you are using SuSE Linux Enterprise Server 9**, the following three sub-steps are required before you proceed to the next step:

   1a. In the */usr/src/linux* directory

   – run "`make cloneconfig`"

– run "`make modules_prepare`"

1b. Remove symbolic link `/lib/modules/`uname -r/build`

1c. Create a symbolic link `/lib/modules/`uname -r/build` and direct it to `/lib/modules/`uname -r/source`

2. All driver files and scripts for compilations (*ins_rmv_drvs.sh*) will already have been placed on your system at *${INTEL_DIALOGIC_DIR}/drivers/*.

3. When you run `config.sh` to configure the system, *ins_rmv_drvs.sh* will be invoked and compile drivers. The object will be created in the appropriate directory automatically.

This operation is designed to enable use of kernel variations on the 2.4 and 2.6 base. If driver build fails, *drv.log* will have the compilation log.

2.1.6 Preparing to Run the System Release with Other Linux OSDs

This section provides some guidelines for running System Release 6.1 for Linux with Linux OSDs other than those listed in Section 2.1.2, "General Guidelines for Installing Linux", on page 14. This section contains information about the following:

- Drivers
- Convenience Functions and dlstart and dlstop

Notes: ***1.*** After you follow the procedures in this section, the procedures for installing and configuring System Release 6.1 for Linux on a system with an OSD other than Mandriva (formerly Mandrakesoft) or Red Hat are the same as for installing and configuring System Release 6.1 for Linux on a system with Mandriva or Red Hat. You will still run *install.sh* to install the software followed by *config.sh* to build the drivers and configure the software.

2. Installation of System Release 6.1 for Linux is only possible if the system's kernel version is greater than or equal to 2.4.21.

Drivers

Note: The following procedure applies to Intel NetStructure® DM3 architecture boards. Intel® Dialogic® Springware architecture boards do not make use of the ctimod driver, but still use LiS from http://www.gcom.com (refer to the Supported Hardware section of the Release Guide, which is where Springware and DM3 architecture boards are identified).

To support new OSDs, you must do the following:

1. Compile the drivers (see Section 2.1.5, "Preparing to Run the System Release with Variations on the Default Kernels", on page 16).

   Note: If the *config.sh* script is executed successfully during installation, it will automatically compile and install drivers in the `/lib/modules/`uname -r`/misc` directory and no manual step will be required.

2. If drivers are not compiled using the *config.sh* script, you must compile the `ins_rmv_drvs.sh` script in the `/usr/dialogic/drivers/` directory with the parameter **install** (for example, `./ins_rmv_drvs.sh install`). The script will compile the drivers, place them in the system directory, and load them. If the build fails, view the *drv.log* for errors.

In addition, please note the following:

- If any kernel functions of the new OSD use a different number or format of calling arguments, you must change the failing source file.
- `depmod -ae` will result in the tasklet_hi_schedule unresolved symbol, which is not a problem. This is a function internally used by the kernel API and it cannot be redefined like other kernel APIs. On 2.6 kernels, "`no version for "ctimod_kmalloc" found: kernel tainted`" will be printed during driver loading, but will not be a problem.
- Applications running on Mandriva or on an OSD other than Red Hat will be required to have the pthread library linked (-lpthread) in with the application even though the application does not make use of the pthreads functionality. Not doing so could result in the following error:

  ```
  relocation error: /usr/dialogic/ooc/lib/libJTC.so.2.0.1: symbol
  pthread_cond_timedwait, version GLIBC_2.3.2 not defined in file
  libc.so.6 with link time reference
  ```

Convenience Functions and dlstart and dlstop

You must set the seven Intel convenience functions to the LSB implementation of functions as defined by the distribution of Linux being used. You can find the seven convenience functions that need to be set by looking in the function set_redhat_lsb_interface. You should create a new function, set_'newOSname'_lsb_interface, which defines the seven functions for the operating system:

- dl_start_daemon - used to convert the different implementation of LSB start_daemon
- dl_stop_daemon - used to convert the different implementation of LSB stop_daemon
- dl_pidofproc - used to convert the different implementation of LSB pidofproc
- dl_log_success - used to convert the different implementation of LSB log_success
- dl_log_failure - used to convert the different implementation of LSB log_failure
- dl_log_warning - used to convert the different implementation of LSB log_warning
- dl_status - used to convert the different implementation of LSB status

In order for dlstart and dlstop to support other Linux OSDs, you must modify the *intel_functions* file. It is located in the `/usr/dialogic/bin directory`.

You must change the function set_lsb_interface in the intel_functions file to recognize the new OSD. Currently, this function uses the environment variable MACHTYPE to get the OSD name. If a new OSD other than ones already defined (Red Hat, Mandriva, and SuSe) sets this variable, a new "if" statement should be added and a call to the new function, set_'newOSname'_lsb, should be made.

If the new OS does not set MACHTYPE, then you should force the set_lsb_interface function to call the function set_'newOSname'_lsb. Following is an example of what changes and additions must be made to the intel_function file in order to add support for the "MyOSD" OS:

```
set_lsb_interface()
{|
        OS_RELEASE_NAME=${MACHTYPE#*-}
        OS_RELEASE_TYPE=${OS_RELEASE_NAME%%-*}

        if [ "${OS_RELEASE_TYPE}" = "SuSE" ]
        then
                set_suse_lsb_interface
        elif [ "${OS_RELEASE_TYPE}" = "mandrake" ]
        then

                set_mandrake_lsb_interface
        elif [ "${OS_RELEASE_TYPE}" = "MyOSD" ]
        then

                set_MyOSD_lsb_interface
        elif [ "${OS_RELEASE_TYPE}" = "redhat" ]
        then
                set_redhat_lsb_interface
        else
                echo "Error Unrecognized Linux OS Release"
                exit 1
        fi

}

set_MyOSD_lsb_interface()
{
      dl_start_daemon="/etc/MyOSD-lsb/lsb_start_daemon"
      dl_stop_daemon="/etc/MyOSD-lsb/lsb_killproc"
      dl_pidofproc="/etc/MyOSD-lsb/lsb_pidofproc"
      dl_log_success_msg="/etc/MyOSD-lsb/lsb_log_message success"
      dl_log_failure_msg="/etc/MyOSD-lsb/lsb_log_message failure"
      dl_log_warning_msg="/etc/MyOSD-lsb/lsb_log_message warning"
      . /etc/rc.d/init.d/functions &> /dev/null
      dl_status="status"
}
```

If the new OS does not set MACHTYPE, then you should force the set_lsb_interface function to call the function set_'newOSname'_lsb.

2.1.7 Ensuring the System has Valid IP Hostname Resolution

The Intel Dialogic System Release software requires that your system have a resolvable IP hostname. Name resolution can be implemented using either the Domain Naming System (DNS), or by editing the */etc/hosts* file on your system. Both of these methods provide translation between hostnames and their corresponding IP addresses. Consult your network administrator to determine which method of name resolution is used on your network.

Note: If your system is using the Dynamic Host Configuration Protocol (DHCP) to obtain its IP address, name resolution must be configured as described above.

To utilize DNS for name resolution, the DNS server administrator must create IP address (A) and inverse lookup (PTR) DNS records for your system.

To utilize /etc/hosts for name resolution, edit */etc/hosts* to add an alias for your machine name to the local loopback line. The */etc/hosts* file contains a line for the local loopback interface, for example:

```
127.0.0.1 localhost
```

So if you have a machine named "mymachine," you would edit */etc/hosts* as follows:

```
127.0.0.1 localhost mymachine mymachine.mydomain.com
```

Note: If your */etc/hosts* file is not configured properly, you will have problems when downloading Intel Dialogic and Intel NetStructure boards. Consult your network administrator if you need help with editing the */etc/hosts* file.

2.1.8 Installing the NetSNMP Package

NetSNMP is a software package that comprises various tools relating to the Simple Network Management Protocol (SNMP). If you intend to use SNMP agent software for remote monitoring and administration of Intel Dialogic and Intel NetStructure boards over an IP network, NetSNMP is required on the managed node(s). The managed node is the system that is being remotely monitored and has the SNMP agent installed.

Depending on which Linux OSD you are using, there are some specific instructions for installing the NetSNMP package:

Red Hat Advanced Server Version 3.0 or Mandriva Powerpack 9.2

If you are using one of these Linux OSDs, **do not use the NetSNMP that is included with your Linux OS distribution.** You must build NetSNMP with what is provided with the system release. Source code for NetSNMP (plus the required patches) is included with System Release 6.1 for Linux software, in the */snmp* directory. Instructions for making the required updates to NetSNMP are provided in the SNMP Administration Guide supplied with System Release 6.1 for Linux.

Red Hat Advanced Server Version 4.0

If you are using this Linux OSD, you can use the NetSNMP that is included with your Linux OS distribution. Also, to allow the SNMP functionality to work, you will have to disable Security-enhanced Linux (SELinux) for the snmpd daemon.

SuSE Linux Enterprise Server 9

If you are using this Linux OSD, you can use the NetSNMP that is included with your Linux OS distribution.

After you install the Intel Dialogic System Release software, including the SNMP agent software package, you must configure NetSNMP to use the Intel Dialogic SNMP agent extension software. Instructions are given in "Configuring SNMP Agent Software" in each product-specific Configuration Guide provided with System Release 6.1 for Linux.

If you do not configure SNMP as described in the Configuration Guide, this and other similar error messages will appear when you download the boards:

```
MsdDownMessageStrategy: adapter block null, may not be configured. Adpaternumber=255

MsdDownMessageStrategy: adapter block null, may not be configured. Adpaternumber=255

MsdDownMessageStrategy: adapter block null, may not be configured. Adpaternumber=255

DispProcDown: adapter number too large
```

For more information about SNMP and how to use it, refer to the *SNMP Agent Software for Linux Operating Systems Administration Guide* provided with System Release 6.1 for Linux.

2.1.9 Determining Which Features to Install

When you install the Intel Dialogic system release, you will be asked to select the features to install. The selections are:

1. **Intel® Dialogic® Boards** - provides support for this group of boards

   Note: Intel Dialogic Boards have also been called Springware or JCT series boards.

2. **Intel NetStructure® DMV/DMN/DMT** - provides support for this group of boards and Intel® Dialogic® DISI and DI boards
3. **Intel NetStructure® DMIP** - provides support for this group of boards

   Note: Intel NetStructure DMIP boards have been known as IP Link boards.

4. **Intel NetStructure® DMF** - provides support for this group of boards
5. **Intel NetStructure® HDSI**- provides support for this group of boards

   Note: HDSI stands for High Density Station Interface.

6. **Intel NetStructure® DMN160/DMT160** - provides support for this group of boards
7. **Intel NetStructure® IPT** - provides support for this group of boards
8. **Global Call SS7 Support Software** - provides Global Call SS7

   Note: You must install the SS7 development package in order to use Global Call SS7 with SS7 boards. Refer to the documentation provided with the SS7 board or SIU for installation instructions and other information. The SS7 development package and associated documentation can be accessed via this URL: *http://resource.intel.com/telecom/support/ss7/cd/index.htm*.

9. **SNMP Component Manager**- provides remote (or local) monitoring and limited control of Intel Dialogic boards and Intel NetStructure boards over an IP network (requires the version of NetSNMP and patches supplied with the System Release 6.1 for Linux software).

   Note: If you are using Red Hat Advanced Server Version 3.0 or Mandriva Powerpack 9.2, **do not use the NetSNMP that is included with your Linux OS distribution.** For details, refer to Section 2.1.8, “Installing the NetSNMP Package”, on page 20.

   Note: After you install the Intel Dialogic System Release software, including the SNMP agent software package, you must configure NetSNMP to use the Intel Dialogic SNMP agent extension software. Instructions are given in “Configuring SNMP Agent Software” in each product-specific Configuration Guide. If you do not configure SNMP as described in the Configuration Guide, error messages will appear when you download the boards.

10. **Global Call Protocols** - provides network signaling protocols (CAS and R2MF), which are invoked by the Global Call API to facilitate call control.

    Note: In previous releases, the Global Call Protocols had to be installed separately from the system release software. If you already have the Global Call protocols installed, and select Global Call Protocols during installation of System Release 6.1 for Linux, the Global Call Protocols RPM will be updated.

    Note: If you select only Global Call Protocols from the menu during installation, **only the DLGCgcpr package is installed** and **no other dependency packages are installed**.

11. **Documentation -** selecting this option installs all the system release documentation on your system

The install script may actually install several packages to support the menu selection made, because most of the menu selections require some common support packages to be installed. For example, when you select **Intel NetStructure DMV/DMN/DMT**, the following packages are installed: DLGCcom, DLGCooc, DLGCdmdev, and DLGCqspan. You don't have to be concerned with these individual package names; the install script installs all required packages, in the proper sequence, automatically. Messages will be displayed to indicate all packages being installed and whether they were installed because of selection or dependency.

Demos will be installed if you choose any of the board support items when you install the software (for example, Intel Dialogic boards or Intel NetStructure DMV/DMN/DMT). For details, refer to Table 6. For a description of the demos, see the Release Guide. If you're interested in what the individual packages are, they're explained in Section 2.5, "Verifying the Installation", on page 30. For more information about the Intel Telecom products supported by the software, go to http://www.intel.com/design/network/products/telecom/index.htm#boards.

The following table maps the install menu items for System Release 5.1 Feature Pack 1 for Linux to the install menu items for System Release 6.1 for Linux.

Table 2. Install Menu Items from Previous Release Mapped to Current Release

System Release 5.1 Feature Pack 1 for Linux (previous release)	System Release 6.1 for Linux (this release)
SpringWare Software	Intel® Dialogic® Boards
SpringWare Antares Software	NA
DM3 MediaSpan Software	Intel NetStructure® DMV/DMN/DMT
DM3 IPLink Software	Intel NetStructure® DMIP
DM3 FAX Software	Intel NetStructure® DMF
DM3 High Density Station Interface Software	Intel NetStructure® HDSI
Global Call SS7 Support Software	Global Call SS7 Support Software
BoardWatch SNMP Software	SNMP Component Manager
Not available on install menu - Global Call Protocols had to be installed separately for this release	Global Call Protocols
Documentation	Documentation

2.2 Order of Procedures

The order of procedures for installing System Release 6.1 for Linux is as follows:

1. Make sure all relevant prerequisites described in Section 2.1, "Prerequisites for Software Installation", on page 13 are met.
2. If you are upgrading from a system release *earlier than* System Release 6.1 (such as System Release 6.0 or 5.1), you must uninstall the previous system release according to the procedure in Chapter 3, "Uninstalling the Software". If you are upgrading from a previous release of System Release 6.1 for Linux, you do not have to uninstall the previous release before upgrading.
3. Install the software according to the appropriate procedure:
   - Section 2.3, "Installing the Software for the First Time", on page 23.

- Section 2.4, "Upgrading from a Previous Release", on page 28.
- Section 2.6, "Performing a Silent Install", on page 33.

Note: The silent install is only supported for the software located in the *redistributable-runtime* directory.

4. Verify the installation according to the procedure in Section 2.5, "Verifying the Installation", on page 30 (optional).

Note: Hot Swap Kit (HSK) and Redundant Host software is included with System Release 6.1 for Linux. If you are going to use the HSK and Redundant Host software, it is **strongly recommended** that you install it **before** you install the system release. For more information, refer to Section 2.1.3, "Guidelines for Installing the Hot Swap Kit and Redundant Host Software", on page 15.

2.3 Installing the Software for the First Time

This section describes installation on a "clean" system (one without any existing system release software). For an overview of the installation procedures, refer to Section 1.1, "Understanding the Installation Procedures", on page 9.

You can install the runtime files and software development kit (SDK) together or install either individually. These sections provide more information:

- Installing the Redistributable Runtime Files and the Software Development Kit
- Installing the Redistributable Runtime Files Only
- Installing the Software Development Kit Only

These procedures are also used for upgrades, but some additional messages are displayed during the upgrade. These are explained in Section 2.4, "Upgrading from a Previous Release", on page 28.

Notes: ***1.*** If you are upgrading from a system release *earlier than* System Release 6.1 for Linux (such as System Release 6.0 or 5.1), you must uninstall the previous System Release according to the procedure in Chapter 3, "Uninstalling the Software" before proceeding with the installation. For more information, refer to Table 1.

2. Hot Swap Kit (HSK) and Redundant Host software is included with System Release 6.1 for Linux. If you are going to use the HSK and Redundant Host software, it is **strongly recommended** that you install it **before** you install the system release. For more information, refer to Section 2.1.3, "Guidelines for Installing the Hot Swap Kit and Redundant Host Software", on page 15.

2.3.1 Installing the Redistributable Runtime Files and the Software Development Kit

Before starting the installation, make sure that all of the prerequisites have been met. See Section 2.1, "Prerequisites for Software Installation", on page 13. To determine the dependencies and overall order of procedures, see Section 2.2, "Order of Procedures", on page 22.

You can install the software directly from the CD, or you can copy the files to any empty directory on your hard drive to install the packages. The installation process installs the packages in the

proper directories regardless of whether you use the CD or another directory. The following procedure assumes that you are installing software from the CD.

Perform the following steps to install the Intel Dialogic software. The software will be installed in */usr/dialogic*.

1. Log in to the Linux system as `root`.

2. Insert the CD containing the Intel Dialogic system release software in the CD-ROM drive. Then, if your system is not set up to automount the CD-ROM drive when a CD is inserted, enter the following command to mount the CD to */mnt/cdrom*:

   ```
   mount -o ro /dev/cdrom /mnt/cdrom
   ```

   For further information about mounting a directory in Linux, refer to the documentation that came with the distribution of the Linux operating system you are using.

3. Change directory to */mnt/cdrom*:

   ```
   cd /mnt/cdrom
   ```

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

   ```
   ./install.sh
   ```

   Messages like the following are displayed:

   ```
    Intel(R) Dialogic(R) System Release 6.1 Build 183 (a Service Update)
                          Redistributable Runtime
                              INSTALLATION

   When the menu appears, select items to support the Intel(R) Telecom products
   you are using.  Enter the item number(s) separated by a space.
   Enter A for all packages, Q to quit.

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

   Press ENTER to display the menu:
   ```

5. Press **Enter**.

   The menu of items you can install is displayed:

   ```
   Item   Description
   ----   ---------------------------------------------------------------------------
      1   Intel(R) Dialogic(R) Boards (101 MB)
      2   Intel NetStructure(R) DMV/DMN/DMT (264 MB)
      3   Intel NetStructure(R) DMIP (197)
      4   Intel NetStructure(R) DMF (113 MB)
      5   Intel NetStructure(R) HDSI (89 MB)
      6   Intel NetStructure(R) DMN160/DMT160 (264 MB)
      7   Intel NetStructure(R) IPT (282 MB)
      8   Global Call SS7 Support Software (44 MB)
      9   SNMP Component Manager (48 MB)
     10   Global Call Protocols (10 MB)
     11   Documentation (44 MB)

      A   Install All(549 MB)
      Q   Quit Installation

   Enter the item(s) you want, separated by a space, or enter [A,a,Q,q]:
   ```

6. Enter the number of the package you want to install, or a series of package numbers separated by spaces, or A for all packages.

Note: Do *not* select A (all packages) on a CompactPCI system. If you do, the Springware files will be installed and the system will try to start nonexistent Springware boards.

If a specified package has dependencies, all required packages are installed automatically.

A series of messages will appear:

- Checking for previously installed packages
- Checking for sufficient disk space
- After installation, the filesystem containing the Intel Dialogic software will be [percentage] full
- Installing or upgrading [quantity] packages to support your selection(s)
- Progress bars and success messages
- Press ENTER to continue

Note: When viewing installation progress indications, please be aware of the following: The installation is broken up into transactions, or groups of RPMs. For each call to RPM, a percentage complete is shown. If a transaction has 2 RPMs, then once the first RPM is installed, the transaction will be shown as 50% complete. This might make it seem like something is not getting installed, but this is not the case. If you install one RPM, the progress indicator will indicate 100% complete after it is installed. This is just the way the RPM tool indicates progress.

Note: The grouping/content and number of these "transactions" are not guaranteed to be consistent across future releases (is subject to change).

7. Press **Enter**.

   The menu of items you can install is displayed again.

8. If you want to install more items, enter the item number(s). Otherwise, enter **Q** to quit.

   When you quit, the following message is displayed:

```
Do you wish to run config.sh to configure your system based upon
the installed Intel Telecom product(s) [Yn] ?
```

9. If you want to configure your system after you install the software (the normal thing to do), enter **y**.

The last item to be installed will be the Software Development Kit. A success message will appear at the end of a successful installation.

Before starting the configuration procedure, if you would like to verify that the installation was successful, see Section 2.5, "Verifying the Installation", on page 30. Otherwise, refer to the appropriate product-specific Configuration Guide for information about starting the board configuration process.

2.3.2 Installing the Redistributable Runtime Files Only

Before starting the installation, make sure that all of the prerequisites have been met. See Section 2.1, "Prerequisites for Software Installation", on page 13. To determine the dependencies and overall order of procedures, see Section 2.2, "Order of Procedures", on page 22.

You can install the software directly from the CD, or you can copy the files to any empty directory on your hard drive to install the packages. The installation process installs the packages in the proper directories regardless of whether you use the CD or another directory. The following procedure assumes that you are installing software from the CD.

Perform the following steps to install the Intel Dialogic software. The software will be installed in */usr/dialogic*.

1. Log in to the Linux system as root.

2. Insert the CD containing the Intel Dialogic system release software in the CD-ROM drive. Then, if your system is not set up to automount the CD-ROM drive when a CD is inserted, enter the following command to mount the CD to */mnt/cdrom*:

   ```
   mount -o ro /dev/cdrom /mnt/cdrom
   ```

   For further information about mounting a directory in Linux, see the Linux documentation.

3. Change directory to */mnt/cdrom/redistributable-runtime*:

   ```
   cd /mnt/cdrom/redistributable-runtime
   ```

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

   ```
   ./install.sh
   ```

   Messages like the following are displayed:

   ```
    Intel(R) Dialogic(R) System Release 6.1 Build 183 (a Service Update)
                          Redistributable Runtime
                              INSTALLATION

   When the menu appears, select items to support the Intel(R) Telecom products
   you are using.  Enter the item number(s) separated by a space.
   Enter A for all packages, Q to quit.

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

   Press ENTER to display the menu:
   ```

5. Press **Enter**.

   The menu of items you can install is displayed:

   ```
   Item   Description
   ----   ---------------------------------------------------------------------------
      1   Intel(R) Dialogic(R) Boards (101 MB)
      2   Intel NetStructure(R) DMV/DMN/DMT (264 MB)
      3   Intel NetStructure(R) DMIP (197)
      4   Intel NetStructure(R) DMF (113 MB)
      5   Intel NetStructure(R) HDSI (89 MB)
      6   Intel NetStructure(R) DMN160/DMT160 (264 MB)
      7   Intel NetStructure(R) IPT (282 MB)
      8   Global Call SS7 Support Software (44 MB)
      9   SNMP Component Manager (48 MB)
      10  Global Call Protocols (10 MB)
      11  Documentation (44 MB)

      A   Install All(549 MB)
      Q   Quit Installation

   Enter the item(s) you want, separated by a space, or enter [A,a,Q,q]:
   ```

   If a specified package has dependencies, all required packages are installed automatically.

Note: Do *not* select A (all packages) on a CompactPCI system. If you do, the Springware files will be installed and the system will try to start nonexistent Springware boards.

A series of messages will appear:

- Checking for previously installed packages
- Checking for sufficient disk space
- After installation, the filesystem containing the Intel Dialogic software will be [percentage] full
- Installing or upgrading [quantity] packages to support your selection(s)
- Progress bars and success messages
- Press ENTER to continue

Note: When viewing installation progress indications, please be aware of the following: The installation is broken up into transactions, or groups of RPMs. For each call to RPM, a percentage complete is shown. If a transaction has 2 RPMs, then once the first RPM is installed, the transaction will be shown as 50% complete. This might make it seem like something is not getting installed, but this is not the case. If you install one RPM, the progress indicator will indicate 100% complete after it is installed. This is just the way the RPM tool indicates progress.

Note: The grouping/content and number of these "transactions" are not guaranteed to be consistent across future releases (is subject to change).

6. Press **Enter**.

   The menu of items is displayed again.

7. If you want to install more packages, enter the package number(s). Otherwise, enter Q to quit.

   When you quit, the following message is displayed:

```
Do you wish to run config.sh to configure your system based upon
the installed Intel Telecom product(s) [Yn] ?
```

8. If you want to configure your system after you install the software (the normal thing to do), enter **y**.

Before starting the configuration procedure, if you would like to verify that the installation was successful, see Section 2.5, "Verifying the Installation", on page 30. Otherwise, refer to the appropriate product-specific Configuration Guide for information about starting the board configuration process.

2.3.3 Installing the Software Development Kit Only

Before starting the installation, make sure that all of the prerequisites have been met. See Section 2.1, "Prerequisites for Software Installation", on page 13. To determine the dependencies and overall order of procedures, see Section 2.2, "Order of Procedures", on page 22.

You can install the software directly from the CD, or you can copy the files to any empty directory on your hard drive to install the packages. The installation process installs the packages in the proper directories regardless of whether you use the CD or another directory. The following procedure assumes that you are installing software from the CD.

Perform the following steps to install the Intel Dialogic software. The software will always be installed in */usr/dialogic*.

1. Log in to the Linux system as root.

2. Insert the CD containing the Intel Dialogic system release software in the CD-ROM drive. Then, if your system is not set up to automount the CD-ROM drive when a CD is inserted, enter the following command to mount the CD to */mnt/cdrom*:

   ```
   mount -o ro /dev/cdrom /mnt/cdrom
   ```

   For further information about mounting a directory in Linux, see the Red Hat Linux documentation.

3. Change directory to */mnt/cdrom/sdk*:

   ```
   cd /mnt/cdrom/sdk
   ```

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

   ```
   ./install.sh
   ```

   The following messages will appear, indicating the progress and completion of the installation:

```
Preparing...                ########################################### [100%]
   1:DLGCsdk                ########################################### [100%]
```

2.4 Upgrading from a Previous Release

This section describes installation on a "existing servers" (those with a previous version of System Release 6.1 for Linux already installed). For an overview of the installation procedures, refer to Section 1.1, "Understanding the Installation Procedures", on page 9.

If you are upgrading from a system release *earlier than* System Release 6.1 (such as System Release 6.0 or 5.1), you must uninstall the previous system release according to the procedure in Chapter 3, "Uninstalling the Software" before proceeding with the installation. If you are upgrading from a previous release of System Release 6.1 for Linux, you do not have to uninstall the previous release before upgrading.

Notes: ***1.*** If you had installed LiS Version 2.16.18 when using System Release 6.1 for Linux Feature Release 1 or 2, you must upgrade LiS to Version 2.18.1. (LiS is required if you are using Intel Dialogic boards with Springware architecture.) See Section 2.1.4, "Upgrading Linux STREAMS (LiS)", on page 16.

2. If you are upgrading from any previous release of the Hot Swap Kit (HSK) and Redundant Host software, you must uninstall it before installing the current version.

You can install the software directly from the CD, or you can copy the files to any empty directory on your hard drive to install the packages. The installation process installs the packages in the proper directories regardless of whether you use the CD or another directory. The following procedure assumes that you are installing software from the CD.

Perform the following steps to install the Intel Dialogic software. The software will be installed in */usr/dialogic*.

1. Log in to the Linux system as `root`.

2. Insert the CD containing the Intel Dialogic system release software in the CD-ROM drive. Then, if your system is not set up to automount the CD-ROM drive when a CD is inserted, enter the following command to mount the CD to */mnt/cdrom*:

   ```
   mount -o ro /dev/cdrom /mnt/cdrom
   ```

   For further information about mounting a directory in Linux, refer to the documentation that came with the distribution of the Linux operating system you are using.

3. Change directory to */mnt/cdrom*:

   ```
   cd /mnt/cdrom
   ```

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

   ```
   ./install.sh
   ```

   Messages like the following are displayed:

   ```
    Intel(R) Dialogic(R) System Release 6.1 Build 183 (a Service Update)
                          Redistributable Runtime
                                  UPDATE

   Intel(R) Dialogic(R) System Release 6.1 Build 164 (a Base Release)
   was detected on your system.

   Do you wish to update it to Build 183 (a Service Update)? [yN]
   ```

5. Enter **y** to proceed with the update.

   Since this is an upgrade, the install will check your system for previously installed packages and upgrade the packages it finds.

   This will be followed by progress and success messages.

   Note: When viewing installation progress indications, please be aware of the following: The installation is broken up into transactions, or groups of RPMs. For each call to RPM, a percentage complete is shown. If a transaction has 2 RPMs, then once the first RPM is installed, the transaction will be shown as 50% complete. This might make it seem like something is not getting installed, but this is not the case. If you install one RPM, the progress indicator will indicate 100% complete after it is installed. This is just the way the RPM tool indicates progress.

   Note: The grouping/content and number of these "transactions" are not guaranteed to be consistent across future releases (is subject to change).

6. During the upgrade install, you will see the following prompt:

   ```
   Do you wish to run config.sh to configure your system based upon
   the installed Intel Telecom product(s) [Yn] ?
   ```

   Respond with **y** to start the configuration process.

The last item to be installed will be the Software Development Kit. A success message will appear at the end of a successful installation.

Before starting the configuration procedure, if you would like to verify that the installation was successful, see Section 2.5, "Verifying the Installation", on page 30. Otherwise, refer to the appropriate product-specific Configuration Guide for information about the board configuration process.

2.5 Verifying the Installation

Enter the following commands to verify that the Intel Dialogic software installation was successful:

1. To check which packages were installed, enter:

   ```
   rpm -qa DLGC\*
   ```

   The names of the installed packages are listed.

   See Table 3 for the software packages that are installed for each menu selection, and see Table 4 for a description of each package.

2. To list the contents of the directory containing the Intel Dialogic software, enter:

   ```
   ls ${INTEL_DIALOGIC_DIR}
   ```

   See Table 5 for a description of the directories under `${INTEL_DIALOGIC_DIR}`.

Now, you can move on to the board configuration process by referring to the appropriate product-specific Configuration Guide.

Table 3. Software Packages Installed

Menu Selection	Packages Installed
Intel® Dialogic® Boards	DLGCcom, DLGCooc, DLGCpri, DLGCdev
Intel NetStructure® DMV/DMN/DMT	DLGCcom, DLGCooc, DLGCdmdev, DLGCha, DLGCqspan
Intel NetStructure® DMIP	DLGCcom, DLGCooc, DLGCdmdev, DLGCipdemos, DLGCha, DLGCiplnk
Intel NetStructure® DMF	DLGCcom, DLGCooc, DLGCdmdev, DLGCha, DLGCdmfax
Intel NetStructure® HDSI	DLGCcom, DLGCooc, DLGCdmdev, DLGCha, DLGChdsi
Intel NetStructure® DMN160/DMT160	DLGCcom, DLGCooc, DLGCdmdev, DLGCqspan, DLGCha
Intel NetStructure® IPT	DLGCcom, DLGCooc, DLGCdmdev, DLGCqspan, DLGCipdemos, DLGCha, DLGCpmac
SNMP Agent Software	DLGCcom, DLGCooc, DLGCsnmp
Global Call Protocols	DLGCgcpr
Global Call SS7 Support Software	DLGCcom, DLGCooc, DLGCgcss7
See Table 4 for a description of each package.	

Table 3. Software Packages Installed (Continued)

Menu Selection	Packages Installed
Documentation	DLGCdocs
Install All	DLGCcom, DLGCooc, DLGCdev, DLGCdmdev, DLGCqspan, DLGCiplnk, DLGCdmfax, DLGChdsi, DLGCpmac, DLGCpri, DLGCgcss7, DLGCsnmp, DLGCgcpr, DLGCha, DLGCdocs, DLGCipdemos
See Table 4 for a description of each package.	

Table 4. Software Package Descriptions

Package Name	Package Description
DLGCcom	Common Runtime Software for the Intel NetStructure® and Intel® Dialogic® boards
DLGCdev	Runtime Software for the Intel Dialogic boards
DLGCdmdev	Common Runtime Software for the Intel NetStructure® DMV/DMN/DMT/DMF/DMIP/HDSI/IPT and DNM160/DMT160 boards
DLGCdmfax	Software for the Intel NetStructure® DMF boards
DLGCdocs	Intel Documentation Package
DLGCgcpr	Intel® Dialogic® Global Call Protocols
DLGCgcss7	Global Call SS7 Support Software
DLGCha	High Availability Software for the Intel NetStructure boards **Note:** Does not include the Hot Swap Kit (HSK) or Redundant Host software, which is installed separately. For more information, refer to Section 2.1.3, "Guidelines for Installing the Hot Swap Kit and Redundant Host Software", on page 15.
DLGChdsi	Software for the Intel NetStructure® HDSI boards
DLGCipdemos	IP telephony demos package for the Intel NetStructure and Intel Dialogic boards demonstrate an IP media server using Global Call and IPML APIs.
DLGCiplnk	Software for the Intel NetStructure® DMIP boards
DLGCooc	Orbacus 4.1.3 CORBA, with JTC support, shared libs, no debug, not optimized. **Note:** This is a CORBA support package that is required and runs in the background.
DLGCpmac	Intel NetStructure® IPT software
DLGCpri	ISDN PRI Protocols for Intel Dialogic boards
DLGCqspan	Software for the Intel NetStructure® DMV/DMN/DMT boards and Intel® Dialogic® DISI and DI boards
DLGCsnmp	SNMP agents for Intel Dialogic and Intel NetStructure boards
DLGCsdk	Intel® Dialogic® Software Development Kit (SDK) **Note:** Not present when you install only the redistributable runtime files.

Table 5. File Locations under ${INTEL_DIALOGIC_DIR}

Directory	Contents
bin	All Intel Dialogic executables
cfg	Configuration related files that can be viewed and modified by users. (Some configuration files are also in the *data* directory.)

Table 5. File Locations under ${INTEL_DIALOGIC_DIR} (Continued)

Directory	Contents
data	Firmware load files. Also contains Intel NetStructure *.pcd*, *.fcd*, and *.config* files.
demos	Demonstration programs (in separate subdirectories according to the feature)
docs	Documentation
drivers	Drivers source code
inc	Header files (symbolically linked into */usr/include*) - exists only when SDK is installed
init.d	Startup scripts specific to Intel Dialogic technologies
lib	Library files (symbolically linked into */usr/lib*)
log	Log files that should be checked by users (symbolic link to /var/log/dialogic)
ooc	CORBA support package
qscript	QScript tools. These tools are described in the Diagnostics Guide for Linux.
sctools	Files for SCbus routing convenience functions

Table 6. Demos Installed with the Packages

Package	Demos Installed in Directories under ${INTEL_DIALOGIC_DIR}/demos
DLGCcom	ec_demos/CSPAuto ec_demos/CSPLive gc_demos/gc_basic_call_model
DLGCdev	cc_demos/sampletest dpd_demos/dpddemo dx_demos/ansr/cpansr dx_demos/ansr/pansr dx_demos/custserv/custserv dx_demos/d40demo/d40demo fx_demos/async_demos/faxasync fx_demos/sync_demos/faxdemo fx_demos/sync_demos/faxsr
DLGCdmdev	ec_demos/CSPdemoSTB
DLGCipdemos	ipt_demos/IPMediaServer/ipmediaserver ipt_demos/IPMediaServer/ipmlgateway
DLGCha	clockapidemo/cdaemon_demo dlgrhdemo/dlgrhdemo hscfgdemo/hsdemo pfmdemo/pfmdemo rgademo/rgademo

2.6 Performing a Silent Install

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

Note: The silent install is only supported for the software located in the *redistributable-runtime* directory.

This section contains the following procedures:

- Performing a Silent Install on a Clean System
- Performing a Silent Update Install

2.6.1 Performing a Silent Install on a Clean System

This section describes silent installation on a "clean" system (one without any existing system release software).

1. Before you begin a silent install, you must meet the prerequisites given in Section 2.1, "Prerequisites for Software Installation", on page 13. Then, follow steps 1 through 4 in Section 2.3.2, "Installing the Redistributable Runtime Files Only", on page 25. After you complete step 4, continue with the following steps:

2. To display a list of the package names that can be silently installed, enter the following command:

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

   Messages like the following are displayed:

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

   Initializing install, please wait ..............

   Valid package selections are:

   Package Name  Package Description
   ------------  -------------------
   DLGCdev       Intel(R) Dialogic(R) Boards (101 MB)
   DLGCqspan     Intel NetStructure(R) DMV/DMN/DMT (266 MB)
   DLGCiplnk     Intel NetStructure(R) DMIP (197 MB)
   DLGCdmfax     Intel NetStructure(R) DMF (116 MB)
   DLGChdsi      Intel NetStructure(R) HDSI (91 MB)
   DLGCdti16     Intel NetStructure(R) DMN160/DMT160 (266 MB)
   DLGCpmac      Intel NetStructure(R) IPT (279 MB)
   DLGCgcss7     Global Call SS7 Support Software (44 MB)
   DLGCsnmp      SNMP Component Manager (48 MB)
   DLGCgcpr      Global Call Protocols (9 MB)
   DLGCdocs      Documentation (33 MB)
   ALL           All available packages (534 MB)
   ```

3. Enter the silent install command with the packages you want to install. For example, if you want to install Intel NetStructure DMV/DMN/DMT and Intel NetStructure DMF software plus the documentation for the system release, use the following command:

   ```
   ./install.sh --silent DLGCqspan DLGCdocs DLGCdmfax
   ```

   See Table 4 for a list of all the packages.

   Note: Do *not* select A (all packages) on a CompactPCI system. If you do, the Springware files will be installed and the system will try to start nonexistent Springware boards.

4. To verify the installation, you can follow the procedure in Section 2.5, "Verifying the Installation", on page 30.

2.6.2 Performing a Silent Update Install

This section describes silent installation on a "existing servers" (those with a previous version of System Release 6.1 for Linux already installed).

1. To perform a silent update install, enter the following command:

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

   The install detects the packages you already have installed and upgrades them.

2. To verify the installation, you can follow the procedure in Section 2.5, "Verifying the Installation", on page 30.

2.7 Redistributing the System Release Runtime Files

You can redistribute the runtime files of this system release software to your customers as part of your products that incorporate the Intel hardware product for which Intel has written the system release software. Simply distribute the contents of the runtime directory (`/redistributable-runtime`) along with the installation script found there.

Installation instructions are provided in Section 2.3.2, "Installing the Redistributable Runtime Files Only", on page 25.

Notes: ***1.*** You cannot redistribute the development files of this system release software located in the following directory: `/sdk`. Please refer to the Intel Dialogic system release software license agreement for the specific rights granted to you by Intel with respect to the system release software

2. System Release 6.1 for Linux includes certain utilities that are covered by the GNU General Public License (refer to *http://www.gnu.org/copyleft/gpl.html*). One of the requirements of the General Public License is that the source code for these utilities must be provided on the media containing System Release 6.1 for Linux. This source code is in `/redistributable-runtime/GNU`. Those who redistribute System Release 6.1 for Linux are bound by the same terms of the General Public License regarding this source code.

Uninstalling the Software 3

This chapter describes how to uninstall Intel® Dialogic® system release software. The following procedures are provided:

Introduction

Before uninstalling, ensure that any user-created files stored in *${INTEL_DIALOGIC_DIR}* directories are preserved and that configuration data is noted so you will know which parameter values to use when configuring boards with the new Intel Dialogic system release. For more information about configuration, refer to the product-specific Configuration Guides.

Note: If you are upgrading from a system release *earlier than* System Release 6.1 (such as System Release 6.0 or 5.1), you must uninstall the previous system release (as described in this chapter) before proceeding with the installation. If you are upgrading from a previous release of System Release 6.1, you do not have to uninstall the previous release before upgrading. You can go to Chapter 2, "Installing the Software".

Performing an Interactive Uninstall

Perform the following steps to uninstall Intel Dialogic software:

1. Log in as root.
2. Stop all applications that are using Intel Dialogic system.
3. Run the following uninstall script:

   ```
   dlguninstall.sh
   ```

   The following messages appear:

```
                Intel(R) Dialogic(R) System Release for Linux
                                UNINSTALL

This script uninstalls the Intel Dialogic System Release for Linux and
removes the /usr/dialogic/ directory.

At the end of the uninstall, you can choose to automatically save any
log files or modified configuration files.

Do you want to proceed with the uninstall process [yNq] ?
```

4. In response to the question about proceeding with the uninstall, enter **y** if you want to proceed or **q** to quit the uninstall.

   If you proceed, you will see messages like the following:

```
The Intel Dialogic Software will now be uninstalled.

Stopping Intel Dialogic services          [OK]
Unloading Intel Dialogic drivers          [OK]

Removing Intel Dialogic RPMs

   Removing DLGCooc-6.2.0.0-102_gcc3.2    [OK]
   Removing DLGCcom-6.2.0.0-210_gcc3.2    [OK]
   Removing DLGCsdk-6.2.0.0-191           [OK]
   Removing DLGCdmdev-6.2.0.0-203_gcc3.2  [OK]
   Removing DLGCha-6.2.0.0-124_gcc3.2     [OK]
   Removing DLGCqspan-6.2.0.0-129         [OK]

The removal of the Intel Dialogic software is complete.

Do you wish to automatically save your log and modified configuration files [yNq] ?
```

5. If you want to save your log and modified configuration files, enter **y** in response to the above question.

   If you choose to save your log and modified configuration files, messages like the following will appear:

```
Backing up the configuration and log files and saving them in a tar file

Detected 1 modified configuration file
Detected 0 log file

Do you want to archive these files [yN] ?
```

6. If you want to archive the detected files, enter **y** at the above prompt.

   If you choose to archive files, messages like the following will appear:

```
The following file was created:

      /tmp/25Oct2004_1_ct_intel_backup.tar.gz
```

The uninstall process is now complete.

Performing a Silent Uninstall with No Data Backup

If you want to uninstall the system release software without saving your log and modified configuration files, follow this procedure:

1. Log in as root.
2. Stop all applications that are using Intel Dialogic system.
3. If you want to see which packages are currently installed, use this command:

   ```
   rpm -qa DLGC\*
   ```

   A list like this one will appear:

```
DLGCqspan-6.2.0.0-12
DLGCooc-4.1.3-4
DLGCpri-6.2.0.0-26
DLGCdev-6.2.0.0-36
DLGCsdk-6.2.0.0-40
DLGCdmdev-6.2.0.0-46
DLGCcom-6.2.0.0-48
```

4. To uninstall the software, use this command:

   ```
   ./dlguninstall.sh --silent
   ```

5. To confirm that you've uninstalled the software, you can use this command:

   ```
   rpm -qa DLGC\*
   ```

   If the uninstall was successful, nothing should be listed.

Performing a Silent Uninstall with Data Backup

If you want to uninstall the system release software and also save your log and modified configuration files, follow this procedure:

1. Log in as root.
2. Stop all applications that are using Intel Dialogic system.
3. If you want to see which packages are currently installed, use this command:

   ```
   rpm -qa DLGC\*
   ```

   A list like this one will appear:

```
DLGCqspan-6.2.0.0-12
DLGCooc-4.1.3-4
DLGCpri-6.2.0.0-26
DLGCdev-6.2.0.0-36
DLGCsdk-6.2.0.0-40
DLGCdmdev-6.2.0.0-46
DLGCcom-6.2.0.0-48
```

4. To uninstall the software but also back up your log and modified configuration files, use this command:

   ```
   dlguninstall.sh --silent --backup
   ```

5. To confirm that you've uninstalled the software, you can use this command:

   ```
   rpm -qa DLGC\*
   ```

   If the uninstall and backup was successful, nothing should be listed.

6. To confirm that you've backed up your log and modified configuration files, use this command:

   ```
   ls -l /tmp/*ct_intel_backup*
   ```

   The result should look something like this example:

```
-rw-r--r--    root  root  505 Oct 26 13:28 /tmp/26Oct2005_1_ct_intel_backup.tar.gz
```

Location of Backup Files

The tar file containing the files that were backed up is located in `/tmp`. Untar the file into the root directory. This will put the log and configuration files back into their original location.

Troubleshooting 4

This chapter provides the following troubleshooting information:

- General Guidelines
- Checking Configuration Files
- Checking Which Packages Are Installed
- Checking Hardware

4.1 General Guidelines

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/*. You can also check the online Release Update for the latest information about any issues, restrictions, or limitations that may affect the installation.

In addition, refer to Section 2.1, "Prerequisites for Software Installation", on page 13 and make sure that all of the necessary procedures were performed. For example, if your */etc/hosts* file is not configured properly, you will have problems when downloading Intel® Dialogic® and Intel NetStructure® boards.

4.2 Checking Configuration Files

Refer to the parameter information in the product-specific Configuration Guides, and check all configuration files.

If you need to change parameter settings, you can edit configuration files manually or rerun the configuration tool. Refer to the configuration procedures in the product-specific Configuration Guides.

For the new configuration to take effect, enter the `dlstop` and `dlstart` commands. See "Reconfiguring the System" in any product-specific Configuration Guide.

4.3 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 Table 3, "Software Packages Installed", on page 30 and Table 4, "Software Package Descriptions", on page 31. To check which packages were installed, enter:

```
rpm -qa DLGC\*
```

If you need to install any additional packages, rerun the `install.sh` script from the directory containing the system release distribution files and select the additional package(s) you need.

4.4 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. Refer to the Quick Install Card supplied with your board.

For hardware testing information, see the Diagnostics Guide for the system release.

Index

J

L

M

N

O

P

Q

R

S

T

U

V

X