Dialogic®

Installing Dialogic® Software Video Transcoder

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Table Of Contents

Revision History

Revision	Release date	Notes
GA	September 2010	
GA Update	January 2011	Added 32-bit reference
Last modified: January 2011		

Refer to www.dialogic.com for product updates and for information about support policies, warranty information, and service offerings.

1. Introduction

Video Transcoder 3.0 contains separate installation images for each supported client- side operating system. The following operating systems are supported:

- Red Hat Linux Enterprise Solutions 4 (32-bit)
- Windows 2003 (32-bit)

Video Transcoder 3.0 also contains the video transcoder platform server-side installation package for the Red Hat Linux Enterprise Solutions 4 operating system (both 32 and 64-bit mode) and the Dialogic License Manager package. For more information, refer to *Installing the video transcoder platform software* on page 12.

Refer to www.dialogic.com for product updates and for information about Dialogic support policies, warranty information, and service offerings. From the Dialogic web site, you can download the Video Transcoder software and documentation.

2. Installing the TRC Software Under Red Hat Linux

Complete the following steps to install the TRC software under Red Hat Linux:

Step	Action
1	Log on as root.
2	Uninstall prior versions of TRC client product software before beginning this installation: `rpm -e <filename>`
3	Navigate to the installation directory of your choice.
4	Download the Video Transcoder software from the Dialogic web site.

5	Unzip and untar the download file by entering the following commands:
	`gzip -d filename .tar.gz`
	`tar -xvf filename.tar`
	where ***filename*** is the name of the file that you downloaded.

6	Install the Dialogic SVT TRC software: `rpm -hiv <filename>`
7	Create the TRC API configuration file: • Edit the file: /opt/nms/trc/trcapi.cfg • Add a line providing the IP address of each video transcoder platform. For example, for controlling three video transcoder platforms: vtp 10.10.10.100 vtp 10.10.10.101 vtp 10.10.10.102 **Note:** The TRC API configuration file can be any file at any location.

Environment Variable Settings

To set up the system environment correctly, you must:

- Add the TRC API library location to the standard library path:
  Variable name: LD_LIBRARY_PATH
  Variable value (add to the end of the current value): :/opt/nms/lib
- Add the binary directory to the program search path:
  Variable Name: path
  Variable Value (add to end of current value): :/opt/nms/bin

Optionally, run *trccheck* to verify the TRC software installation and to check that an active video transcoder platform is listed in *trcapi.cfg*.

Note: *trccheck* defaults to the configuration file */opt/nms/trc/trcapi.cfg.* Use the -c option to specify a different file name.

When building applications, provide a path to the include directory. For most compilers use the following specification:

```
-I/opt/nms/include
```

3. Installing the TRC Software Under Windows

Complete the following steps to install the TRC software under Windows:

Step	Action
1	Log on as a member of the Administrators group.
2	Uninstall prior versions of TRC client product software before beginning this installation.
3	Download the Transcoder Resource Controller software from the Dialogic web site.
4	Double-click on the *.exe* file and unzip it.
5	Launch Windows Explorer and double-click on *install.bat* in the root directory of the unzipped image. The Welcome screen appears followed by the Dialogic license agreement.
6	Follow the prompts as they appear.
7	Run the Windows installation package to install the software: *trc.msi*
8	Create the TRC API configuration file: • Edit the file: c:\nms\trc\trcapi.cfg • Add a line providing the IP address of each video transcoder platform. For example, for controlling three video transcoder platforms: vtp 10.10.10.100 vtp 10.10.10.101 vtp 10.10.10.102 **Note:** The TRC API configuration file can be any file at any location.

Environment Variable Settings

To set up the system environment correctly, you must:

- Add the TRC API library location to the standard library path:
  Variable name: lib
  Variable value (add to the end of the current value): ;c:\nms\lib

- Add the binary directory to the program search path:
  Variable Name: path
  Variable Value (add to end of current value): ;c:\nms\bin

Optionally, run *trccheck* to verify the TRC software installation and to check that an active video transcoder platform is listed in *trcapi.cfg*.

Note: *trccheck* defaults to the configuration file *c:\nms\trc\trcapi.cfg*. Use the -c option to specify a different file name.

When building applications, provide a path to the include directory. For most compilers use the following specification:

```
-Ic:\nms\include
```

4. Installed Files

The following table describes the files that are installed with the TRC installation:

File name	Description
trcapi.h	Top-level TRC API include file defining the TRC control interface (includes other TRC include files).
trcdefs.h	TRC control definitions that are used by the TRC API and the VTP Server software.
trctypes.h	Basic TRC type definitions.
vserr.h	Error code definitions use by Vision Server internal components.
vsport.h	Well-known port definitions.
vstypes.h	Vision Server basic type definitions.
vslogmsg.h	Log message definition. This file defines log-related substructures used by the management interface.
transmanage.h	UDP record definitions for all messages that make up the management interface.
vtmng.h	VTMNG include file defining the management interface.
libtrcapi.so or *trcapi.dll* and *trcapi.lib*	UNIX TRC API library. Windows TRC API library.
libvtmngapi.so *or* *vtmngapi.dll and vtmngapi.lib*	UNIX VTMNG API library. Windows VTMNG API library.
vtmgr *or* *vtmgr.exe*	Application providing a text-based console interface that can be used to perform all video transcoder management.

File name	Description
trccheck or *trccheck.exe*	Self-test utility that verifies the ability to control a set of video transcoder platforms.
trcsample or *trcsample.exe*	Executable form of a sample application that performs each type of TRC API function call.
trcsample.c and *makefile*	Source code and *makefile* for the sample control application.
vtmgr.c and *makefile*	Source code and *makefile* for the sample management application.
trcapi.example.cfg	Example TRC API configuration file (also copied to *trcapi.cfg* if no default configuration file exists when the application is installed).
Buildinfo svtvtps.txt	TRC build information file

Configuration File Naming Conventions

Configuration is performed through the management interface. To protect configuration files from being accidentally deleted or overwritten, configuration file examples use the following naming conventions:

*<**name**>.example.cfg*

During the initial installation, these example files are automatically copied to file names that do not have *example* in the name. For each example configuration file, ***.example.cfg* ic copied to ***.cfg*. The example configuration files are only copied when the files that do not have example in the name are missing. Only the example files are removed on uninstall. This allows for a software upgrade that maintains the previous configuration.

5. Video Transcoder Platform Requirements

The video transcoder platform is the physical platform on which all transcoding takes place. Because video transcoding is a processor intensive service, consider the processing requirements when selecting a platform. This topic describes the recommended hardware and software for the video transcoder platform installation.

Hardware Requirements

You need to create a video transcoder platform by selecting your own hardware environment. Dialogic has tested the video transcoder platform with the following:

- Server with dual E5540 processors that is qualified as supporting 240 active full-duplex channels or 480 active simplex channels
- Dual Ethernet interfaces (recommended)

Software Requirements

The video transcoder platform has the following software requirements:

- Install Red Hat Linux Enterprise Solutions 4 operating system.
- Run only the VTP Server software on the video transcoder platform, since it is a very processor intensive service.
- Assign each video transcoder platform a fixed IP address. You can configure both Ethernet IP addresses to act as the same IP address, or you can define each Ethernet as part of a separate network. Defining each Ethernet as part of different networks provides separate control and media interfaces to the video transcoder platform.

Note: Use local terminal access to perform certain management functions, such as examining log files or modifying startup options. While it is not required for Dialogic VTP Server operations, you can enable remote terminal access and FTP access. However, use caution and select access methods that do not introduce security issues.

Minimal Required Services

Most of the packages provided with the Red Hat Linux Enterprise Solutions 4 installation are not required for video transcoder functionality. A minimal installation is required to reduce the processor load and avoid security issues.

When installing the operating system, select **Customize** and deselect all packages, except those listed in the following table:

Package name	Description
GNOME	Required by the License Manager. Provides the graphical user interface that the License Manager uses.
Compatibility arch support	Provides the standard libraries used to perform video transcoder processing.
Legacy software development	Provides the standard libraries used to perform video transcoder processing.

IP Configuration

Each video transcoder platform must be configured with IP addressing information. A video transcoder platform can operate using a single Ethernet interface. In this situation, the interface is used for both TRC control messages and all transmitted and received video media.

A video transcoder platform can also operate using separate Ethernet interfaces for control or management and for media connections. When using a separate media network, configure two Ethernet interfaces (usually eth0 and eth1) with each interface providing connectivity to a separate network. If a single interface is used, only a single Ethernet interface (usually eth0) must be configured.

Complete the following steps to set the Ethernet configuration for a video transcoder platform:

Step	Action
1	Log on to the video transcoder platform as root.
2	On the Linux Desktop, click on the Red Hat icon, and then select **System Settings > Network**.
3	Select the **Devices** tab.
4	Double-click on the device you want to configure.
5	Make sure **Activate device when computer starts** is checked.
6	Select the **Statically Set IP Address** button.
7	Fill in the IP address, subnet mask, and gateway address.
8	Press **OK**.
9	Repeat Steps 4-8 for each Ethernet interface you want to configure.
10	Reboot the video transcoder platform to use the new configuration.

By default, the Red Hat Linux operating system activates additional Ethernet devices, as if they are to be used for connections to a public network. The device is therefore configured with an active software firewall that inhibits the receiving of UDP traffic. You must alter the device configuration to accommodate this.

The following table describes how to alter the device configuration to allow sending and receiving video traffic through a specified UDP port range:

For this type of traffic...	Set the UDP port range to...	Used by the video transcoder platform to...
Inbound	4000.4199	Receive video bit streams (and optionally RTCP) from remote endpoints.
Outbound	5000..5199	Transmit video bit streams (and optionally RTCP) to remote endpoints.

The TRC software includes both a control interface and a management interface. The control interface connects to the video transcoder platform by establishing a TCP connection to port number 10000 with an optional connection to port 11522 (used to reset a video transcoder platform). The management interface issues requests to UDP port numbers 25200 and 25206.

There are various methods available for modifying the Linux software firewall configuration. If the media network connection is made through a separate hardware firewall, the Ethernet device could be marked as trusted, opening up the system to all types of UDP traffic. More

secure options are available, including limiting the allowed UDP receive range. Consult your operating system documentation for a detailed description of Ethernet device and software firewall configuration options.

Configuring the Network Time Protocol

Complete the following steps to configure the network time protocol for a video transcoder platform:

Step	Action
1	Select **Application > System Settings > Date & Time**.
2	Select the **Network Time Protocol** tab.
3	Click **Enable Network Time Protocol**. The Network Time Protocol window appears.
4	Enter the Network time protocol server address in the Server field and click **Add**.
5	Press **OK**.

6. Installing the Video Transcoder Platform Software

To convert a hardware platform to a video transcoder platform, install the Dialogic License Manager (*nmslm*) and the Dialogic VTP Server software products. The Dialogic License Manager provides a mechanism for licensing transcoder resources while the Dialogic VTP Server product provides all video transcoding capabilities.

The Dialogic License Manager and the Dialogic VTP Server products are provided as separate RPM files. Install the Dialogic License Manager RPM first, since it provides a library file that the Dialogic VTP Server software requires. This topic includes procedures for:

- Installing the Dialogic License Manager and the Dialogic VTP Server
- Installing the Dialogic License Manager or the Dialogic VTP Server

Caution:	**Red Hat Linux requirement** Video Transcoder 3.0 requires Red Hat Linux Enterprise Solutions 4. If you are running Red Hat Linux Enterprise Solutions 3, you must upgrade to Red Hat Linux Enterprise Solutions 4 before you install Video Transcoder 3.0.

Installing the Dialogic License Manager and the Dialogic VTP Server

Before installing the package (which will also perform an uninstall of any previous versions), it may be helpful to maintain trc_agent command-line options as well as deleting previous transcoder log files.

To maintain trc_agent command line options, record the trc_agent start line from the /opt/nms/video/startXC.sh script.

To remove all transcoder log files from a 2.x or 3.x release, use the following command:

```
rm -f /opt/nms/video/logs/*
```

Complete the following steps to install the Dialogic License Manager and the Dialogic VTP Server:

Step	Action
1	Log on as root and navigate to the location where you will download the software.
2	Enter the following commands to extract the Dialogic VTP Server package from the file that you downloaded:

Step	Action

	• *gzip –d . <**filename**>.tar.gz*
	• *tar –xvf <**filename**>.tar*
	At this point you should see two *rpm* files, an *install* file, and the *license.txt* file:
	`nmslm-2.22-1.i386.rpm`
	`nmsvtps-2.1-1.x86_64.rpm`

3	Run the *install* script to install the Dialogic License Manager and the Dialogic VTP Server software. This script automatically uninstalls previously installed versions of the License Manager and Dialogic VTP Server software. Previously installed video transcoder port licenses must be re-installed once the new Dialogic License Manager is installed.

4	Replace the existing configuration files, if necessary. Although previous versions of Dialogic VTP Server configuration files are maintained during the software upgrade, Dialogic recommends using the configuration files provided with the latest software release.
	To replace the existing configuration files with the latest version, copy the latest example configuration file over the existing file.
	Use the following commands to replace all configuration files:
	`cd /opt/nms/video`
	`cp vtp.example.cfg vtp.cfg`
	`cp trcr.example.cfg trcr.cfg`
	`cp vtmon.example.cfg vtmon.cfg`
	`cp encodeh263.example.cfg encodeh263.cfg`
	`cp encodempeg4.example.cfg encodempeg4.cfg`
	`cp usageLevel.example.cfg usageLevel.cfg`

5	Enter the following command to verify that the package is installed and to check the version:
	`rpm –qi nmslm`
	`rpm -qi svtvtps`
	The following summary line appears for the License Manager Version:
	`Version: 2.22`
	The following summary line appears for the Dialogic VTP Server Version:

Step	Action
	`Version: 3.0`
6	Enter the following command to activate the Dialogic License Manager: `/opt/nms/nmslm/javaservice/bin/nmslm start`
7	Determine the product ID for the video transcoder platform and use that value to order video transcoder port licenses. The transcoder must be licensed before it is started. For more information, refer to *Licensing video transcoder resources* on page 19.
8	Install all licenses. For more information, refer to *Licensing video transcoder resources* on page 19. **Note:** If licenses are not available at installation, install the evaluation license.
9	Optionally deactivate process monitoring which disables automatic process recovery. By default, the Dialogic VTP Server installation operates with process monitoring ON. You can run the Dialogic VTP Server with process monitoring OFF. To deactivate process monitoring, enter the following command: `/opt/nms/video/monitorXC.sh off`

Step	Action
10	Reboot the video transcoder platform to verify that the Dialogic VTP server is properly setup to automatically run all transcoder processes when it is rebooted. **Caution:** Only perform a reboot if the licenses are installed. If a video transcoder platform boots without an installed license, the transcoder control process (trc_agent) and the transcoder processes (trcps) will not execute. If process monitoring is ON, this is interpreted as a failure condition and *vtmon* will attempt to restart the trc_agent process. To stop this cycle, issue the following command: `/opt/nms/video/monitorXC.sh off` The License Manager package installs the Dialogic License Manager daemon (*nmslm*) that is started when the system is rebooted. The Dialogic VTP Server installation adds the starting of the video transcoder processor monitor (*vtmon*) to the boot process using the *inittab* service provided by Red Hat Linux. The *vtmon* process then starts all other transcoder processes including: • The transcoder control process (*trc_agent*). • All transcoder processes (trcp instances). • The overlay render process (*trcr*). • A process providing remote-reset capability (*xscontrol*). These processes start automatically when the video transcoder platform is rebooted. **Note:** If process monitoring is deactivated, *vtmon* does not execute and *inittab* does not monitor transcoder processes. In the monitor OFF mode, all transcoder processes are started by the *startXC.sh* script which executes due to the *nmsXC* script.

You can manually start the video transcoder after the VTP Server software is installed. Reboot the server after installation to verify that automatic recovery from any power loss, for example, is working properly.

To start the transcoder without rebooting, enter the following command:

```
/sbin/telinit q
```

This command manually starts the transcoder processes when operating in the default process monitor mode (monitor ON). It causes the *inittab* service to re-read the *inittab* configuration file (*/etc/inittab*). The *inittab* service starts *vtmon* which then starts all other transcoder processes.

To manually start the transcoder processes when operating with process monitoring OFF, enter the following command:

```
/etc/init.d/nmsXC start
```

The *nmsXC* script provides a standard interface to the VTP Server start script (*startXC.sh*) and the stop script (*stopXC.sh*).

All files, with the exception of the *nmsXC* script, are installed in the */opt/nms/video* directory. For more information, refer to the *Video Transcoder Developer's Manual*.

Installed Files

The following table provides a description of the files installed with the video transcoder platform software no from the License Manager Software:

File name	Description
encodeh263.example.cfg	An example H.263 encoding control file. The values defined in this configuration file are optimized for H.263 video encoding and must not be altered.
encodempeg.example.cfg	An example MPEG-4 encoding control file. The values defined in this configuration file are optimized for MPEG-4 video encoding and must not be altered.
Encodeh264.example.cfg	An example H.264 encoding control file. The values defined in this configuration file are optimized for H.264 video encoding and must not be altered.
fonts/	Provides a set of text files and a set of true type font files. Add customer-specific fonts to this folder.
images/NMSLogo/	Directory holding example graphic images provided for use by demonstration overlays.
lib/	Dialogic video transcoder platform and third-party library files.
nmsXC	Transcoder boot script provided as an alternative to the process monitor startup mechanism installed by default. Some installations may use independent process failure detection software. For these installations, the process monitor provided with the release can be replaced by the *nmsXC* script which will

<table>
<tr><th>File name</th><th>Description</th></tr>
<tr><td></td><td>start all transcoder processes but will not perform process recovery.

To remove the process monitor, edit the file /etc/inittab and comment out the line that specifies a respawn of vtmon:

<code>#vm:12345:respawn:/opt/nms/video/vtmon.</code>

Copy the nmsXC script into the startup script that is set to act as the alternative transcoder process startup mechanism:

<code>cp /opt/nms/video/nmsXC /etc/init.d/nmsXC</code>

Reboot the video transcoder platform for the system to startup using the nmsXC script. The nmsXC script is now used to start and stop the transcoder on initialization and shutdown.</td></tr>
<tr><td>startXC.sh</td><td>Script used to start all transcoder processes when the process monitor (vtmon) startup mechanism has been replaced with the nmsXC mechanism.</td></tr>
<tr><td>stopXC.sh</td><td>Script used to stop all transcoder processes when the process monitor (vtmon) startup mechanism has been replaced with the nmsXC mechanism.</td></tr>
<tr><td>monitorXC.sh</td><td>Script used to view the current process monitoring mode or to change the current mode. The following commands are provided:

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>monitorXC.sh on</td><td>Restart the transcoder processes with monitoring.</td></tr>
<tr><td>monitorXC.sh off</td><td>Stop all processes and change to startup script.</td></tr>
<tr><td>monitorXC.sh status</td><td>Report whether operating with monitor ON or OFF.</td></tr>
</table>
</td></tr>
<tr><td>trc_agent</td><td>Acts as a server to the TRC. The agent receives all channel control requests from the TRC and forwards these requests to the transcoder processes (trcp instances).</td></tr>
<tr><td>trcp</td><td>Performs video transcoding for one or two unidirectional channels. The agent creates a set of trcp process instances on startup.</td></tr>
<tr><td>trcr</td><td>Transcoder overlay rendering process.</td></tr>
</table>

File name	Description
trcr.example.cfg	An example transcoder overlay rendering process configuration file.
usageLevel.example.cfg	An example central processor usage (CPR) estimation configuration file.
vtmon	Video transcoder process monitor is responsible for monitoring all other transcoder processes and for automatically recovering from process failures.
vtmon.example.cfg	An example video transcoder process monitor configuration file.
vtp-eval.lic	Evaluation license file that can be used to provide temporary activation of video transcoder platform-based transcoder resources.
vtp.example.cfg	An example video transcoder platform-level configuration file.
xscontrol	Provides the capability of resetting (rebooting) the entire video transcoder platform under control of the TRC.

Note: All files of the form ***xxx****.example.cfg* are copied to ***xxx****.cfg* if ***xxx****.cfg* does not exist. Upon future uninstallation, only the example configuration files are uninstalled. This allows for a configuration to remain intact across future upgrades of the VTP Server software.

7. Licensing Video Transcoder Resources

The VTP software must be licensed and each platform must have a unique license file installed. Product activation cannot be transferred from one platform to another.

The VTP software is installed with an evaluation license that provides limited video transcoding resources for a 30-day trial period. This allows the VTP software to be available immediately for evaluation purposes and lets the user control up to four simplex channels (or two full-duplex channels). To activate the evaluation trial, follow the procedure described in *Deploying license files* on page 21. Use the evaluation license file, */opt/nms/video/vtp-eval.lic*, in this procedure.

Once the License Manager is installed and started, license management is operational and ready for license deployment.

To manually control the License Manager daemon (*nmslm*), navigate to the following directory:

/opt/nms/nmslm/javaservice/bin

Enter one of the following commands:

Command	Description
./nmslm start	Starts the *nmslm* daemon.
./nmslm stop	Stops the *nmslm* daemon.
./nmslm status	Indicates whether the *nmslm* daemon is running.

Complete the following steps to license the product:

Step	Action
1	Determine the product identification number, a value unique to the given hardware platform and network interface.
2	Obtain licenses from Dialogic. Include the product identification number as part of an order for a set of VTP licenses.

Determining the Product Identification Number

The License Manager tool provides a graphical user interface for determining the product identification number.

Complete the following steps to start the License Manager tool and determine the product ID:

Step	Action
1	Navigate to the *nmslm* installation directory: */opt/nms/nmslm/bin*
2	Enter the following command to display the product ID for the system: `./nmslm_tool –c` To run the Dialogic License Manager in interactive mode, run the nmslm_tool without the –c option. The top-level menu of the Dialogic License Manager appears.
3	If the License Manager was run in interactive mode, Select **Option > View Product ID** to view the system's product ID. A Product ID window appears indicating the product ID, for example: `Your Product ID is: 7e4e-0156-62b5-4b7f-d226-ecd3`

Obtaining Licenses

Note that licenses for a given VTP Server/network interface (unique product ID) are additive. Thus multiple licenses can be deployed on the same system. The following VTP software licenses can be ordered from Dialogic.

VHL300004 4 simplex ports

VHL300024 24 simplex ports

VHL300030 30 simplex ports

VHL300060 60 simplex ports

VHL300120 120 simplex ports

VHL300240 240 simplex ports

VHL303120 120 simplex ports, 45-day expiration

Dialogic provides two files for each license order with the following license information:

File name	Description
***nn**.lic*	A binary license file used to deploy the licenses with the nmslm tool.
***nn**.xml*	A text file providing information about the license content and conditions.

Deploying License Files

Complete the following steps to deploy the license files:

Step	Action
1	Make a backup copy of the license files that you received from Dialogic.
2	Copy the license files to the system on which the licenses will be deployed.
3	Navigate to the following directory: */opt/nms/nmslm/bin*
4	Enter the following command: `./nmslm_tool -c nn.lic` The license file deploys as soon as the command runs. To run the License Manager in interactive mode, run the nmslm_tool without the –c option. The top-level menu of the License Manager appears.
5	If the License Manager was run in interactive mode, select **File > Deploy License > Add** to deploy each license.
6	Navigate to the ***nn**.lic* license file, select the file, and click **Open**. The ***nn**.lic* file appears in the License Components window and is selected.
7	Click **Deploy** to deploy the license.

After you deploy a license, you can use the number of licensed resources for video transcoding. To purchase additional licenses and add them to the existing set of licenses, use the procedures described in this topic.

The License Manager integrates the licenses, making it unnecessary for the ***nn**.lic* file to continue to exist.

Archive all license files so that the licenses can be re-deployed if the License Manager is ever uninstalled and re-installed.

8. Optional Recommendations

Once both TRC and VTP packages are properly installed, the following are general recommendations for further installation validation as well as application development and usage of fonts for text overlays.

Application Threading Model

Any application developed to control video transcoder resources (managed through the TRC API) must implement a thread-safe mechanism for forwarding asynchronous event notifications received as an upcall from the TRC API's execution thread to the application's execution thread. The specific mechanism chosen is up to the application.

Both single threaded and multi-threaded applications are supported by the TRC API.

TRC API Error Tracing

The TRC API allows the calling application to control the level of error and debugging information that is logged. This logging can be independently controlled for both console logging (logging to stdout) and file logging (logging to the log file provided to the TRC API initialization function).

When operating in a production mode, it is recommended that all applications enable error tracing to the API log file (by setting TRCTR_ERR). This logging type will only make log entries for error conditions. It is also recommended that TRCTR_ALM (warning-level alarm conditions) be traced.

TRC API logging is the best method for identifying any problems encountered while using the TRC API.

Sample Application

A sample application (trcsample) is provided in source code form as a guideline for developing applications. The sample application includes at least 1 example usage for each of the functions provided by the TRC API. Examples are shown for each of the major transcoding channel types except for H.264 (with separate simplex, full-duplex, overlay and RTCP examples):

H.263 <===> MPEG-4

H.263 <===> H.263

MPEG-4 <===> MPEG-4

The trcsample application has been written with simplicity in mind and does not employ a complicated mechanism for controlling execution thread switches. For a complete application (maintaining more than a single channel), a more sophisticated method of execution control would be required. This can be accomplished through Dialogic® NaturalAccess queues, a pipe mechanism, mutex locking, or any other thread-safe method.

Installing Fonts for Text Overlays

To use fonts provided by Linux ES 4 update 4, install the following package:

font-xorg-truetype-6.8.2-1.EL.noarch.rpm

If you are using any other font package you will need to manually

update the following file:

/opt/nms/video/trcr.cfg