



Global Engineering

VOD Content Encoder 3.2

User Manual

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Revision History

Revision	Date	Description
A	2006-08-30	Initial version
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C	2012-12-13	Updated for release 3.0 Phase 2: added audio clusters; added warnings and troubleshooting regarding anti-virus programs
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Introduction

Audience

The audience for this manual includes station engineers or technicians working for content creators or third-party providers.

Note Media distributors are required to actively encode using the Nielsen encoding methodology per their service agreements with Nielsen.

Customer Support

Nielsen Support	Location
Nielsen Encoder Support	800-537-4872 option 2 Encoders@nielsen.com
Support Request (form)	http://nielsen-encoder-forum.com/public/documentation/
Nielsen Encoder Forum	www.nielsen-encoder-forum.com/public/
Nielsen Global Technology Center	Nielsen 501 Brooker Creek Blvd Oldsmar, FL 34677 www.nielsen.com

Conventions Used in this Document

The following items appear in this document:

Note This paragraph flags a key point, indicates a tip, or identifies an alternate way of performing a task.

Important This paragraph emphasizes one or more actions that must be followed to avoid a catastrophic failure.

Related Documents

CableLabs VOD Content Encoding Profiles Specification—specification for encoding AC-3 files

CableLabs VOD Metadata Specification Version 1.1—specification for providing metadata for AC-3 files

VOD Encoder Installation Quick Start—procedures for installing the encoder applications products

Understanding Encoding and Transferring Metadata

VOD Content Encoding

The VOD Content Encoder (the *Encoder*) watermarks audio content of a VOD (Video on Demand) asset. In a nutshell, the Encoder reads input from an audio file, generates an encoded file, and sends metadata to the Nielsen Collection Facility (CF):

Note *The Encoder* refers to the package that includes the SID/TIC Drive, VOD Content Encoder application, and SID/TIC Installer application.

Metering equipment that resides in Nielsen panelists' homes captures these audio codes (also called *watermarks*) from television viewing and sends them to the CF, where back-end systems use them to credit viewing.

The Encoder watermarks audio in these transport streams:

Table 1 – Supported Audio Transport Streams

MPEG-2 Stream in Format	With Extensions:
PCM	*.mpg,
AC3	*.m2t *.trp *.ts

The watermark consists of a unique SID (source identifier) and a number referred to as a TIC (time-in-content). The Encoder inserts either or both of two types of unique SID/TIC pairs:

- NAES II—Nielsen Audio Encoder System II, the second-generation method of inserting a SID (Nielsen source identifier) and time stamp into a TV signal
- NW—Nielsen Watermarks, a newer method of audio encoding that places an audio watermark in a lower-frequency portion of the active program than does NAES II technology. Its lower-frequency position enables NW to be more robust and much less likely to be “compressed out” of the program audio by TV distribution.

As individual VOD files are watermarked, the Encoder generates a metadata feed-point file and other files that are transmitted to the Nielsen Collection Facility (CF):

- Metadata feed-point file—contains information Nielsen uses to uniquely identify the VOD asset. The metadata file contains the SID, a range of TICs, asset ID, and information about the VOD content. The metadata file is copied, renamed <SID>_<TIC>_nmr.xml, and moved to a transfer folder before it is transferred to the CF.
- CableLabs ADI.xml file (optional)—may be attached for VOD content compliant with CableLabs standard (AC-3 audio). The ADI.xml file, which the provider supplies and is distributed to cable head-ends, must conform to *CableLabs® Asset Distribution Interface Specification Version 1.1*.

Components of the VOD Content Encoder

The VOD Content Encoder consists of the following the components:

- SID/TIC Drive Installer—an application that detects and installs a SID/TIC Drive on a system
- SID/TIC Drive (the *Drive*)—a USB flash drive that is pre-configured with client-specific information. Each system hosting a Server must have access to the Drive. The Drive can be inserted into a USB port on the same computer or into the port of a computer on the same network that uses TCP/IP communication. The Drive contains a serial number, a database of SID/TIC pairs, and a database of DSID/Distribution Source Name entries.

- SID—a numeric value assigned by Nielsen to individual content providers.
- TIC—a 32-bit counter that increments once per second of the encoded content. The TIC value represents the next available starting TIC for the SID in question. With each client request, the Server application caches (and later reserves) the value of the TIC at the start of the transaction, then updates the value of the TIC stored in the database by adding to it the number of TICs to reserve.

Ensuring TIC uniqueness for each SID is critical to proper crediting of viewing. The Server ensures that TICs are not duplicated. If an Encoder asks the Server to process a SID that does not already exist in its databases, the client's request fails, and the Server responds with an error string.

- SID/TIC Server (the *Server*)—an application that maintains mirror databases on the Server host computer and the Drive. Before responding to any Encoder request and, for almost any transaction, the Server first verifies all databases are present and identical. The Server runs as a service that automatically starts when the computer hosting it boots. A VOD Discovery Service “listens” on a port for “discovery” requests from the Encoder.

The Server allows only one connection at a time, completely processing each request before servicing the next. Since the processing of a request requires only a fraction of a second, the serialization of processing should not be a problem, even in the busiest encoding facility. If more than one Server is configured, each Server allocates a different range of SID/TICs.

- VOD Content Encoder software—an application that encodes, decodes, and can send metadata files directly to the CF or to another computer in your facility for forwarding to the CF. The application can be run from a graphical user interface, a command-line tool, (ContentCodeCmd), or a file trigger service.
- File Transfer Manager—optional software used to send metadata files to the CF from a system without the Encoder installed. At scheduled times, the File Transfer Manager Service transfers data to the CF. If the connection is disrupted, the manager or service automatically retries to send the data. For batch file encoding, you must install the File Transfer Manager.

ServicesMonitorTool—an application that monitors all services. If a metadata file transfer to the CF fails, the tool displays a notification message and restarts stopped services. ServicesMonitorTool is automatically installed with the VOD Content Encoder software, File Transfer Manager Software, and SID/TIC server. The user can configure which services are monitored and whether or not the notification message appears. For details, see “Configuring the ServicesMonitorTool” on page 47.

Transferring Metadata to the Nielsen Collection Facility

Overview of the File Transfer Options

To receive credited viewing, the feed-point metadata files that correspond with the encoded files must be sent to the CF. You can send these files directly or indirectly to the CF using one of several options. See also the workflows that begin on page 25.

- Directly transfer to data collection facility—the Nielsen File Transfer Manager Service uses SSH (Secure Shell software) to directly send files from the Encoder to the CF.
- Transfer files to a local sever—the Encoder uses the FTP function that is included in the VOD Encoder application or a third-party FTP application to transfer files to a transfer server and then the Nielsen File Transfer Service sends the files to the CF.

Important Install or enable only one FTP application on a computer.

In addition to these transfer flows, there are different configurations that you can use:

- Manually sending the metadata files
- Using the File Trigger Service to automatically send the metadata files
- Creating tar files and manually or automatically sending the tar files that contain the metadata files and corresponding ADI files

Important To use the tar file method, the files must conform to *CableLabs® Asset Distribution Interface Specification Version 1.1*.

The encoder sends the metadata in Table 2 in a file to the CF:

Table 2 – Feed-Point Metadata File Contents

Field	Description	Comment
ADIFilename	Name of the CableLabs file (if any) that is transferred to the CF with the Feed-Point Metadata file.	Optional Note ADI files are created by applications not under the control of Nielsen, therefore, we cannot guarantee that the ADI file is well formed.
ProviderId	ID of the content provider	May be derived from a Provider ID field in the CableLabs file
Provider	Name of the content provider	May be derived from a Provider field in the CableLabs file
AssetId	ID of the encoded content	May be derived from an Asset ID field in the CableLabs file
AssetName	Name of the encoded content	May be derived from an Asset Name field in the CableLabs file
EpisodeId	Unique identifier given to each episode of a given series	String characters, such as Episode #45 (may be derived from an Asset Name field in the CableLabs file)

Field	Description	Comment
OriginatorId	Unique Nielsen number to link back to the content provider.	
WatermarkTime	The actual system time that the watermarking process started, expressed as UTC (Coordinated Universal Time).	
SID	Value of the SID that was inserted into this asset	
StartingTIC	Value of first TIC presented to the watermarking algorithm for insertion into the asset.	First TIC (it may be significantly offset from the AllocatedStartTIC, depending upon the location in the stream of the first frame of audio)
EndingTIC	Value of the last TIC that the encoder presented to the watermarking algorithm for insertion into the asset	Last TIC (may be significantly less than the value of the AllocatedEndTIC, depending upon the location in the stream of the last frame of audio)
AllocatedStartTIC	Value of the first TIC reserved—and the first TIC presented to the watermarking algorithm for insertion into the asset.	
AllocatedEndTIC	Value of the last TIC reserved for this asset	
HDContent	True if and only if content is high definition.	Not currently used (undefined)
FileSizeBytes	Size of the encoded file in bytes	
FileSizeSeconds	Approximate duration (in seconds) of the encoded file	

Methods of Transferring Metadata

There are a few different methods for transferring metadata files to the CF.

- VOD Content Encoder application—if you are directly transferring files from the computer that does the encoding to the Nielsen CF, you configure the File Transfer Manager from within the VOD Content Encoder application itself.
- File Transfer Manager application (FTM)—if the File Transfer Manager application is on a different computer from the VOD Content Encoder application, you can use the FTM application to transfer the metadata files to the CF. See “Transferring Files Using the File Transfer Manager” on page 38.
- File Trigger Service—use this tool to do the following:
 - Manually start or stop file transfers from an internal server to the CF. See “Configuring the Trigger Service to Run Manually” on page 29.
 - Automatically encode tar files and transfer data to the CF. See “Configuring the File Trigger Service to Run Automatically” on page 29.

The next section gives more details on how the File Trigger Service works.

File Trigger Service

Overview

The File Trigger Service (*the Trigger Service*) performs content-based encoding according to parameters defined in a standard XML file (see Table 3 for the parameters and the Appendix for the format).

1. The Trigger Service opens C:/Program Files/Nielsen/etc/EncoderConfig.txt file. See Figure 9 – Encoder Configuration (System Setup) Window on page 24 for details on setting these parameters.
2. The Trigger Service extracts the following two settings entered into the FileTriggerManager window. See Figure 16 – File Trigger Manager Window on page 29.
 - XML File Path—the path to the EncoderParamFolder, which is the extracted path name and is sometimes referred to as *the encoder parameter folder*.
 - Scratch Folder setting, used in the optional tar-file processing
3. From the EncoderConfig.txt file, the Trigger Service extracts the SID/TIC Server IP address and all other configuration settings directly related to content-based encoding.
4. The Trigger Service repeatedly checks EncodeParamFolder, searching for all files that have the extension “xml.”
5. The Trigger Service makes a list of those xml files and processes the xml files, one at a time, as follows:
 - a. Opens the xml file
 - b. Reads the file
 - c. Validates all encoder parameter settings in the file

- d. (Optional) If it detects a TarFilePath, the system performs a tar-file encode. See “Using the File Trigger Service with Tar Files” on page on page 12.
- e. Closes the file. See Table 3 for a complete listing of settings that may be extracted from the xml file.
6. It encodes the specified video source file, using the settings extracted from the xml file as its encoding parameters. It uses the same encoding process (including interacting with the SID/TIC server, creating and naming metadata files, logging status and errors) that the VOD Content Encoder application uses.
7. When the source file has been encoded successfully, the Trigger Service deletes the corresponding xml file from the drive.
8. The Trigger Service sends the files to the Nielsen CF.
9. When all files in the xml list are fully encoded, the Trigger Service repeats steps 4 and 5.
10. The Trigger Service runs until it is manually stopped.

Standard XML File Parameters

Table 3 – Parameters Defined for Standard XML File-Encoding

XML Label	Parameter Data Type	Parameter Usage
InputFile	char *	Full path name of the source video file.
OutputFile	char *	Full path name of the encoded video file that the File-Trigger encoder creates.
AdiFile	char *	(Optional) full path name of the folder that holds CableLabs ADI Asset Distribution Interface. files
SID	int	The SID to be used in the upcoming encoding session.
AssetId	char *	The asset ID to be reported in the metadata file for the clip that is about to be encoded.
AssetName	char *	The asset name to be reported in the metadata file for the clip that is about to be encoded.
EpisodeId	char *	The optional episode ID to be written to the feed-point metadata file. If the episode ID is not found in the trigger file An XML file whose appearance in a specific folder triggers the start of a VOD-content encode. The path where these trigger files are located is identified by the "EncoderParamFolder" setting in the EncoderConfig.txt file in the VOD ROOT / etc folder. , it may be read from the ADI XML file.

Using the File Trigger Service with Tar Files

The Trigger Service can be configured to process a tar file that was created according to CableLabs standards. A CableLabs tar file contains, at a minimum:

- The MPEG file to be encoded
- An ADI XML file that describes the contents of the MPEG file.

Content providers use devices such as the Tandberg encoder to create the tar files. Once the tar files are assembled, they can be "pitched" to facilities ("catchers") that extract the archived files, and then make the MPEG content available for viewing.

The Trigger Service extracts the contents of the tar file (MPEG and ADI XML files), encodes the MPEG file, updates the ADI XML file, and archives the content into a new tar file. The content provider pitches the newly created tar file. See "Format of a Tar File Trigger File" on page 66.

Table 4 defines the parameters in the tar file.

Table 4 – Tar File Parameters

XML Label	Parameter Data Type	Parameter Usage
TarFilePath	char *	Full path name of the folder where the to-be-processed tar file is located
TarFileName	char *	Name of the tar file to be processed
NewTarFilePath	char *	Full path name of the folder where the newly created tar file is placed
NewTarFile Name	char*	Name of the newly created tar file Note This file name can be the same as the TarFileName as long as TarFilePath and NewTarFilePath are different.
SID	Int	SID to be used in the upcoming encoding session.
Episodeld	char *	The optional episode ID to be written to the feed-point metadata file. If the episode ID is not found in the trigger file it may be read from the ADI XML file.

Tar-File Constraints / Assumptions / Considerations

Note See also “Transferring Files Using the File Trigger Service” on page 38.

When the Trigger Service is processing tar files, the following constraints apply:

- It is assumed that the ADI file extracted from the tar file is named ADI.XML (the filename is not case-sensitive). If the Trigger Service does not locate the ADI file among the files in the tar file, the encoding process fails.
- Except for episode ID, all fields in Table 4 are required fields. It is assumed that tar file path names identify valid paths that have already been created. It is also assumed that the tar file folders are large enough to hold all of the tar files.
- The asset name and asset ID of the "movie" asset (in the ADI.xml file) are applied to the feed-point metadata file.

Note Although the asset name and asset ID of the "title" asset may be similar, it is the "movie" asset that is used.

- The MPEG file name is taken from the "Content" node of the ADI.xml file. The content node appears in the ADI file as <Content Value="MPEG file name"/>.
- The original ADI file must contain a checksum node.

Tar File Processing Overview

When it carries out tar-file processing, the VOD File Trigger Service works as follows:

1. It opens the trigger file.
2. If it detects the “EncoderParamFolder” setting in the ADI.XML file, it switches to tar-file encoding mode.
3. From the trigger file, the Trigger Service extracts:
 - The name of the tar file to use in encoding
 - The path name of the tar file to use in encoding
 - The name of the tar file to create after each successful encode.
 - The path name of the folder where the newly created tar file is to be placed.
 - The SID to use in watermarking
 - (Optional) the episode ID to be written to the feed-point metadata file. If not provided by the trigger file, the episode ID may be read from the ADI.XML file or it may be left blank.
4. From the C:\Program Files\Nielsen\etc\EncoderConfig.txt file, the Trigger Service extracts:
 - The SID/TIC server address
 - The discovery port (if the server address contains at least one part set to “255.”
 - The full path name of the folder that holds the trigger files.
 - The full path name of the scratch folder.
 - Other standard encoding parameters.
5. After reading the trigger file and the encoder configuration file, the service extracts into the scratch folder the contents of the tar file.

6. After changing directories to the scratch folder, the service opens and reads the ADI.XML file, extracting from it:
 - The name of the MPEG file to be encoded
 - The asset ID (of the “movie” asset)
 - The asset name (of the “movie” asset)
 - The episode ID (optional)
 7. The Trigger Service passes the settings extracted from the trigger file, the configuration file, and the ADI file to the encoder object. It content-encodes the MPEG file in compliance with the extracted settings. It creates the name of the encoded file by adding the string “_n2” to the base name of the original MPEG file. The newly encoded file is created in the scratch folder.
 8. The service deletes the original MPEG file.
 9. If the encoding process was successful, the service does the following:
 - Modifies the name of the MPEG file in the ADI.XML folder to reference the newly created file instead of the original MPEG file.
 - Calculates the MD-5 checksum of the newly encoded file, replacing the original checksum in the ADI_XML folder with the newly calculated checksum.
 - Creates a new tar file by archiving all files in the scratch folder into a new tar file. In naming and placing the new tar file, the service uses the “new” tar file name and “new” tar file path parsed earlier from the trigger file.
 - Deletes all files from the scratch folder.
 10. The status of the encoding process is logged in EncodedFileLog.txt file (in C:\Program Files\Nielsen\log). Each line starts with an *S* for *success* or an *F* for *failure*, followed by the name of the trigger file processed.
 11. If the entire process was successful, the service deletes the trigger file.
- Note** If the process fails for any reason, the Trigger Service appends the extension “.failed” to the trigger file name.
12. The Trigger Service repeats this entire process each time that it detects a tar-file trigger file.

Requirements

Environment

- One or more computers, depending on workflow (see pages 25 and 26)
 - Dedicate all computers used to perform VOD Content Encoding **solely** to encoding:

Important To permit the encoding software to run without interference, disable antivirus and firewall programs. If this is not possible, add the *.exe files to the “exclude” or “trust” list in your antivirus software. For details, see “Encoder Services Are Not Running or Repeatedly Fail” on page 49.
 - Do **not** install any USB drives other than the SID/TIC Drive on any computer used in performing encoding or encoding-related functions.
 - Do **not** install software that does not relate to encoding such as email, word processing, spreadsheets, etc.
- Platforms—one of the following Microsoft® Windows® operating systems:
 - Windows XP 32-bit operating system
 - Windows 7 operating system
 - Windows Server 2008, 32-bit
 - Windows Server 2008 64-bit
- Preferred screen resolution of 1024 x 768 pixels, although 800 x 600 is acceptable
- IP connectivity

VOD Content Encoding Package

The installation package for the VOD Content Encoder includes the following items:

- SID/TIC Installer application
- 1 or 2 SID/TIC Drives (USB) with label identifying software version, serial number, company name, and SID



Figure 1 – SID/TIC Drive

Note

In configurations where having a single point of failure is unacceptable, you can install two SID/TIC Servers in the network. For such setups, Nielsen provides a SID/TIC Drive for each active SID/TIC Server. Both Drives are programmed with the same SIDs; however, for each SID in the list, each Server manages a unique set of TICs.

- VOD Content Encoding application
- File Transfer Manager application

Digital Assets

Important

All digital assets processed by the VOD Content Encoder must be clean: they cannot contain any Nielsen watermarks.

Supported Formats

- MPEG-2 transport stream files with audio stream in AC3 format conforming to *CableLabs Content Encoding Specification MD-SP-VOD-CEPT-101-040107*.
- MPEG-2 transport stream files with audio stream in AES3/PCM format
- AC3 files—48 kHz
- AES3-LPCM files format
 - 16-bit, 48 kHz
 - 20-bit, 48 kHz
 - 24-bit, 48 kHz

Note

The VOD Content Encoder does not support encoding of MPEG files with both AC3 and PCM in the same file.

Audio Clusters

Beginning with version 3.1, the VOD Content Encoder has the capability to encode media files that contain more than 8 audio channels and files that contain audio for different distribution purposes, such as for different languages of the same video. Each cluster can support 2, 4, 6, or 8 audio channels. Up to 8 clusters can be defined. The total number of audio channels in all clusters assigned must match the total number of audio channels in the media file. Table 5 shows examples of valid and invalid entries for audio clusters.

Table 5 – Audio Cluster Assignment Examples

# of Audio Channels	<n1>	<n2>	<n3>	<n4>	<n5>	<n6>	<n7>	<n8>	Valid/Invalid
8	2	2	2	2	0	0	0	0	Valid (need only include cluster 1 to cluster 4)
8	8	0	0	0	0	0	0	0	Valid (need only include cluster 1)
16	8	8	0	0	0	0	0	0	Valid (need only include cluster 1 to cluster 2)
16	8	2	2	2	2	0	0	0	Valid (need only include cluster 1 to cluster 5)
8	2	2	2	2	2	0	0	0	Invalid (too many channels in clusters)
8	2	2	0	0	0	0	0	0	Invalid (not enough channels in clusters)
8	2	0	2	2	2	0	0	0	Invalid (cluster 2 skipped)

Installing the Software Applications

Important To permit the encoding software to run without interference, disable antivirus and firewall programs. If this is not possible, add the *.exe files to the “exclude” or “trust” list in your antivirus software. For details, see “Encoder Services Are Not Running or Repeatedly Fail” on page 49.

As you review the procedures in this section, keep in mind that there are two results we want from the process: encoded files to be provided for viewing and transfer of metadata files to the Nielsen CF to enable crediting of viewing.

Installing the VOD Content Encoder Application

1. Insert the SID/TIC Drive into a USB port on a computer.
2. Browse to the drive.
3. Double-click **autorun.exe** in the **VOD Encoder** folder. The Nielsen VOD Content Encoder installation window appears.

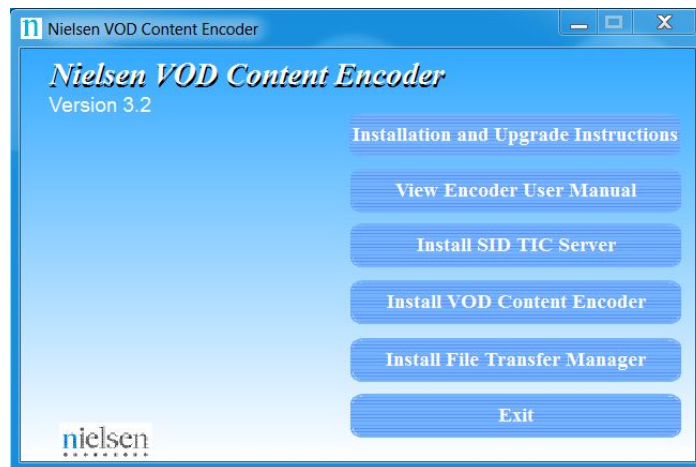


Figure 2 – Installation Window

4. On the **VOD Content Encoder** installation window, click **Install VOD Content Encoder**.
5. Click **Next**.
6. Enter your **User Name** and **Company Name**.
7. Click **Next**.
8. If prompted, install the **Microsoft Visual C++ 2010 x86 Redistributable Package**.
9. If a newer version of **Visual C++ 2010 Redistributable** is already installed, click **Close**.
10. If prompted, install **Microsoft .Net Framework 4**.
11. If Microsoft .NET framework 4 has not been detected on the machine, select **I accept license terms** and click **Install** to continue installation.

- a. If a newer version **Microsoft .NET framework** is detected on the machine, click **Close** to continue installation.
12. If **Microsoft .NET framework 4** has been detected on the machine, click **Cancel** (DO Not Repair/Remove) and continue installation
13. Click **Install**. A message appears regarding changes to your firewall software. See Figure 3.

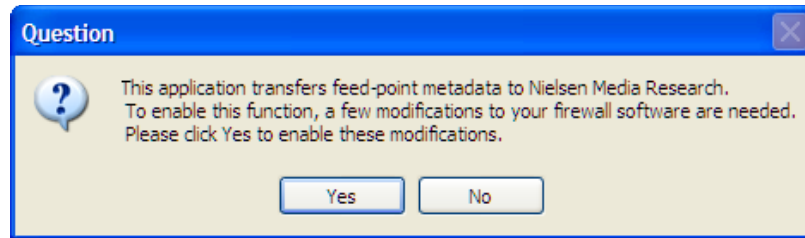


Figure 3 – Firewall Message

14. Assuming you have cleared this installation with your IT administrator, click **Yes**. A command line window appears and shows progress then closes and a message appears indicating the installation is complete.
15. On the **InstallShield Wizard**, click **Finish**.

Installing the SID/TIC Server

Important A computer that hosts a SID/TIC server can have only one USB drive installed at a time and it must be a SID/TIC Drive. A network, however, can have more than one SID/TIC Server running on it.

1. Insert the SID/TIC Drive into a USB port on the host computer.
2. Browse to the drive.
3. Double-click **autorun.exe** in the **VOD Encoder** folder. The Nielsen VOD Content Encoder installation window appears. See Figure 2 on page 18.
4. Click **Install SID/TIC Server**.
5. Click **Next**.
6. Enter your **User Name** and **Company Name**.
7. Click **Next**.
8. Click **Install**.
9. Click **OK**.
10. If prompted, do one of the following:
 - If the **Microsoft Visual C++ 2010 x86 Redistributable Package** has not been detected on the machine, follow the prompts to install it.
 - If a newer version of **Visual C++ 2010 Redistributable** is already installed, click **Close**.
11. If prompted, do one of the following:

- If **Microsoft .NET framework 4** has *not* been detected on the machine, select “I accept license terms” and click **Install**.
- If a newer version of **Microsoft .NET framework** is detected on the machine, click **Close** to continue the VOD Content Encoder installation.
- If Microsoft .NET framework 4 has been detected on the machine, click **Cancel (DO Not Repair/Remove)** and continue the VOD Content Encoder installation.

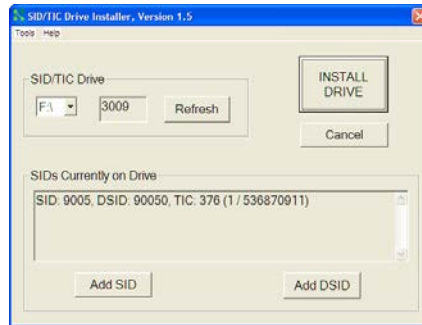


Figure 4 – SID/TIC Drive Installer Window

12. On the **SID/TIC Drive Installer** window, click **Install Drive**. A message appears that the install is successful.
13. Assuming you have cleared this installation with your IT administrator, click **Yes**. A command line window appears and shows progress then closes, followed by an indication that the installation is complete.
14. On the **InstallShield Wizard**, click **Finish**.
15. Click **Exit**.

Installing the File Transfer Manager

Because the File Transfer Manger is incorporated into the VOD Content Encoder application, the installation software stops you from installing the FTM software on the same computer as the encoder application.

Important If a computer already has a third party FTP program installed, do not install the File Transfer Manager application on it. If, however, you want to do batch processing, you must disable the FTP program and install the File Transfer Manager.

1. Insert the SID/TIC Drive into a USB port on the host computer.
2. Browse to the drive.
3. Double-click **autorun.exe** in the **VOD Encoder** folder. The Nielsen VOD Content Encoder installation window appears. See Figure 2.
4. Click **Install File Transfer Manager**.
5. Click **Next**.
6. Enter your **User Name** and **Company Name**.
7. Click **Next**.

8. Click **Install**
9. If prompted, do one of the following:
 - If the **Microsoft Visual C++ 2010 x86 Redistributable Package** has not been detected on the machine, follow the prompts to install it.
 - If a newer version of **Visual C++ 2010 Redistributable** is already installed, click **Close**.
10. If prompted, do one of the following:
 - If **Microsoft .NET framework 4** has *not* been detected on the machine, select “I accept license terms” and click **Install**.
 - If a newer version of **Microsoft .NET framework** is detected on the machine, click **Close** to continue the VOD Content Encoder installation.
 - If Microsoft .NET framework 4 has been detected on the machine, click **Cancel (DO NOT Repair/Remove)** and continue the VOD Content Encoder installation.

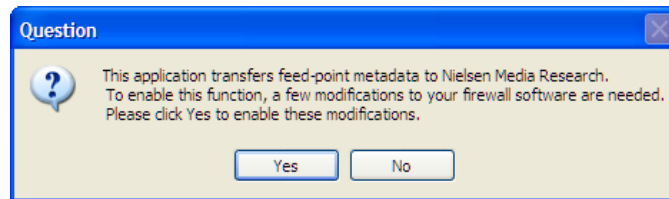


Figure 5 – Firewall Message

11. . When the install completes, a message appears regarding the firewall. Assuming you have cleared this installation with your IT administrator, click **Yes**. A command line window appears and shows progress then closes, followed by an indication that the installation is complete.
12. On the **InstallShield Wizard**, click **Finish**.

Configuring the Software Applications

This section covers the following tasks:

- VOD Content Encoder application
- (Optional) File Transfer Manager application
- (Optional) File Trigger Service

Configuring the VOD Content Encoder Application

Note For instructions on configuring and using the ContentCodeCmd tool instead of the GUI (graphical user interface), see “Encoding Using the Command Line” on page 35.

1. Restart your antivirus software.
2. Add the following to the list of “exclude” or “trusted” files in your antivirus software:
 - SIDTicService.exe
 - STSDiscovery.exe
 - VODFileTrigger.exe
 - VODFTMService.exe
3. From the list of programs in **Windows**, select **VOD Content Encoder**. One of the following occurs:

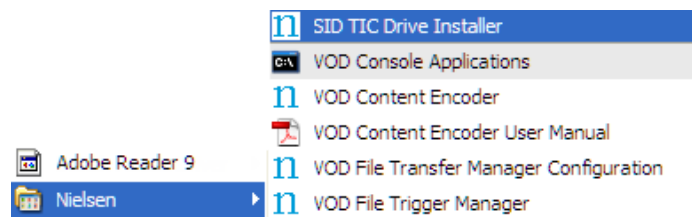


Figure 6 – VOD Content Encoder Command

- If the application can communicate with its SID/TIC Server and there is no valid profile, the VOD Content Encoder application window in Figure 7 appears.
- If the application finds a valid profile file, the Profile Editor window (Figure 8) appears. Go to step 9.
- If the application cannot communicate with its SID/TIC Server, the Encoder Configuration (System Setup) window (Figure 9) appears. Go to the next step.

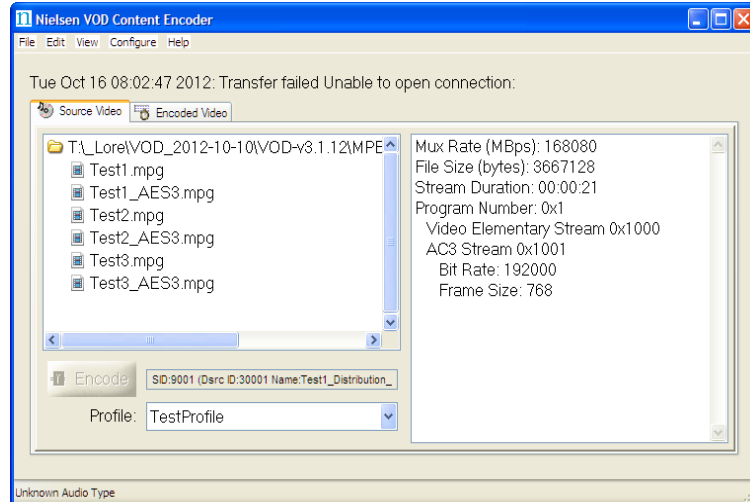


Figure 7 – VOD Content Encoder Window

4. From the **Configure** menu, select **Profile Setup**. See Figure 8.
5. On the **Profile Editor** window, enter a **Profile Name**.

Note Once you assign a Profile Name, you cannot change it. To rename a profile, you would have to delete the profile and add a new one.

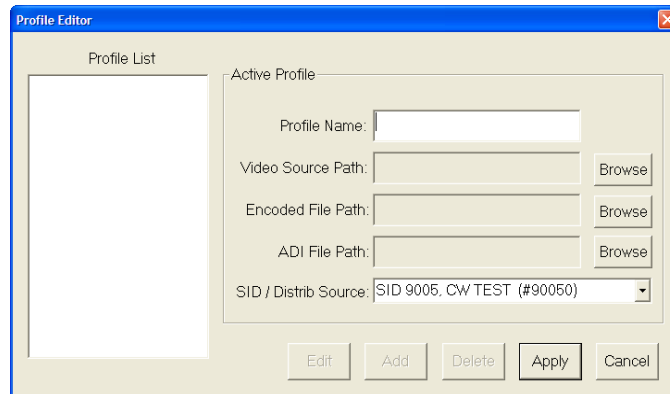


Figure 8 – Profile Editor Window

6. Browse to the location of each item in Table 6.

Table 6 – Profile Window

Field	Path
Video Source Path	Files to be encoded
Encoded File Path	Saved encoded files
ADI File Path	(If applicable) ADI-compliant files to be transferred

7. Select a **SID / Distrib Source**.
8. Click **Apply**.

9. From the **Configure** menu, select **System Setup**. The Encoder Configuration window appears. See Figure 9.

Refer to Table 7 for the settings and to Figure 10, Figure 11, Figure 12, Figure 13, and Figure 14 for the corresponding workflows.

Figure 9 – Encoder Configuration (System Setup) Window

Table 7 – Summary of Configuration Settings for Figure 9

Workflow	SID/TIC Server Parameters	Feed-Point Transfer Parameters
Figure 10 Computer 1: SID/TIC Server and Encoder	Defaults	Defaults
Figure 11 Computer 1: SID/TIC Server Computer 2: Encoder	Computers 1 and 2: IP address of SID/TIC Server, Discovery Server Port default	Defaults
Figure 12 Computer 1: SID/TIC Server and Encoder Computer 2: File Transfer Manager (FTM)	Computer 1: IP address of SID/TIC Server, Discovery Server Port default Computer 2: defaults	Computer 1: communications parameters for Computer 2 Computer 2: defaults
Figure 13 Computers 1 and 2: Redundant SID/TIC Servers Computer 3: Encoder and FTM	Computers 1, 2, and 3: 255.255.255.255, Discovery Server port default	Computers 1 and 2: defaults Computer 3: defaults
Figure 14 Computer 1: SID/TIC Server Computer 2: Encoder Computer 3: FTM	Computers 1 and 2: 255.255.255.255, Discovery Server port default Computer 3: defaults	Computer 1: defaults Computer 2: communications parameters for Computer 3 Computer 3: defaults

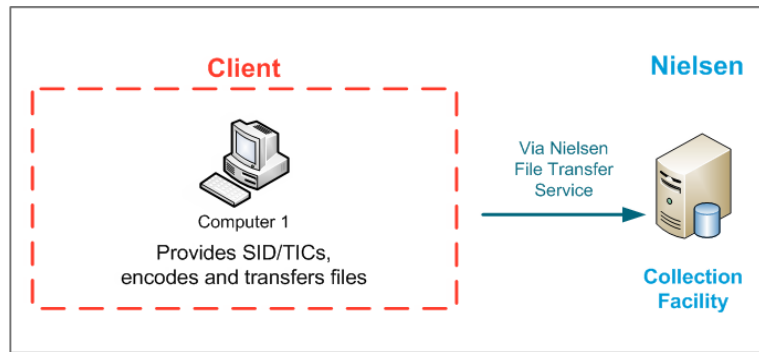


Figure 10 – Workflow 1

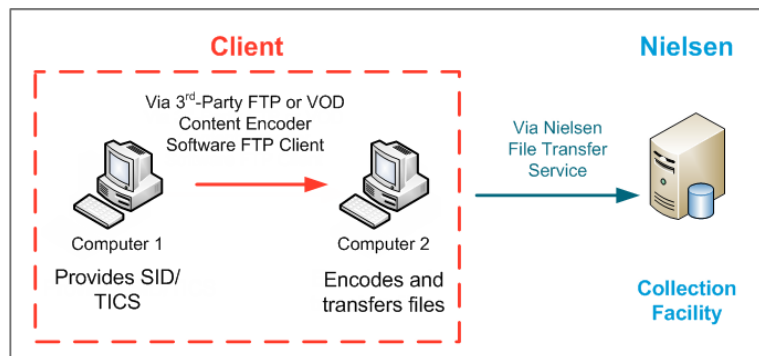


Figure 11 – Workflow 2

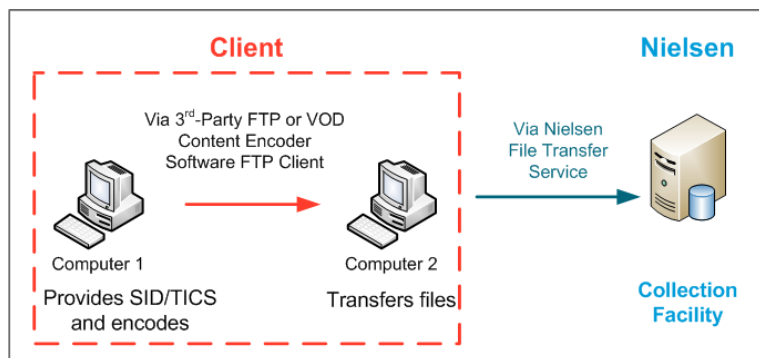


Figure 12 – Workflow 3

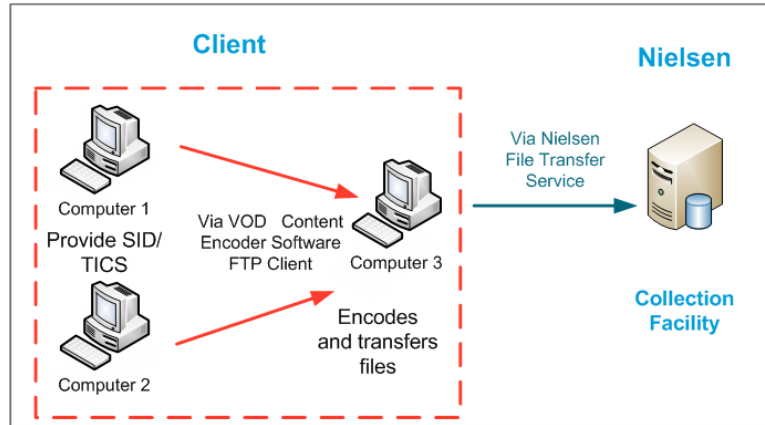


Figure 13 – Workflow 4

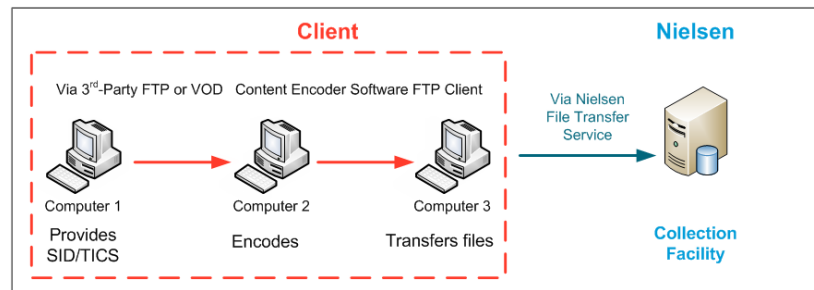


Figure 14 – Workflow 5

(Optional) Configuring the File Transfer Manager Application

Note Configuring the File Transfer Manager application is necessary if you install the VOD Content Encoder application on a separate machine.

1. From the list of programs in Windows, select **File Transfer Manager**.
2. Select the **Transfer Mode** and do one of the following:
 - If you select **Transfer to Data Collection Facility** (direct transfer to CF), the contents of File Transfer Configuration window is automatically filled with data in the configuration file provided by Nielsen. Go to step 3 and update **Metadata Folder** and **Archive Folder** to match them with your environment.
 - If you select **Transfer to Local Server** (indirect transfer to CF), go to step 3.

Figure 15 – Transfer Configuration Window

3. Complete the fields shown in Table 8.

Table 8 – Feed-Point Transfer Parameters for Figure 15

Field	Description
Metadata Folder	The local location of the metadata files to be transferred Default is C:\Program Files\Nielsen\metadata.
Archive Folder	The local location of the folder where metadata files that already transferred are stored Default is C:\Program Files\Nielsen\arch_metadata
Server Address	Supplied by Nielsen
Server Port	8080
Proxy Server	Supplied by Nielsen
Proxy Port	6380
Local Port	8080
Server Login	Supplied by Nielsen
Server Password	Supplied by Nielsen
Remote Folder	The folder on your transfer server where the metadata files are stored before transfer to the CF

4. Click **Save** and close the window. Files are sent on the set interval.

(Optional) Configuring the File Trigger Service

The VOD File Trigger Manager application is automatically installed during the VOD Content Encoder application installation. This is an optional service that you can use to manually or automatically trigger file transfers.

The File Trigger Service monitors a “watch” folder that contains an XML trigger file that initiates encoding with the content identified in the file. The File Trigger Service (the *Trigger Service*) uses SSH to send the files to the CF. The configuration application creates a configuration file that it places in the “etc” directory where the Encoder is installed.

For more details on the File Trigger Service, see “Transferring Metadata to the Nielsen Collection Facility” on page 8.

Configuring the Trigger Service to Run Manually

1. From the **Windows Start** menu, select **Nielsen > VOD File Trigger Manager**.
2. On the **File Trigger Manager** window, browse to the **XML File Path** to the trigger file watch folder. See Figure 16.

Note The [Appendix](#) shows examples of the XML files.

3. Browse to the **Scratch** folder.
4. Click **Save Config**.

Note If the Monitor File Trigger Service checkbox is checked in the VODServicesMonitorTool dialog box, the VOD File Trigger Manager service automatically restarts.

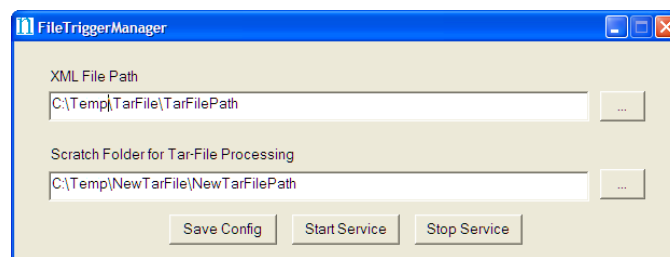


Figure 16 – File Trigger Manager Window

Configuring the File Trigger Service to Run Automatically

1. To start automatically after reboot, open the **Control Panel**.
2. Select **Administrative Tools > Services**.

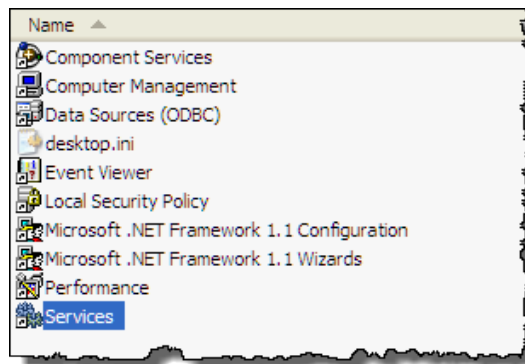


Figure 17 – Administrative Tools > Services

3. Right-click **NIELSEN VOD File Trigger Service** and select **Properties** from the menu.

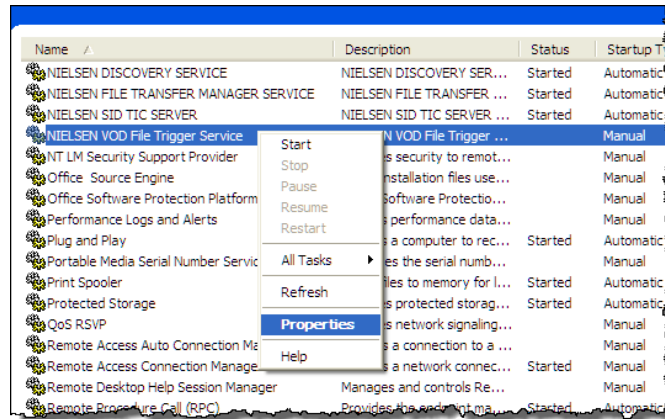


Figure 18 – File Trigger Service in Services

4. In **Startup type** on the **Properties** window, select **Automatic**.

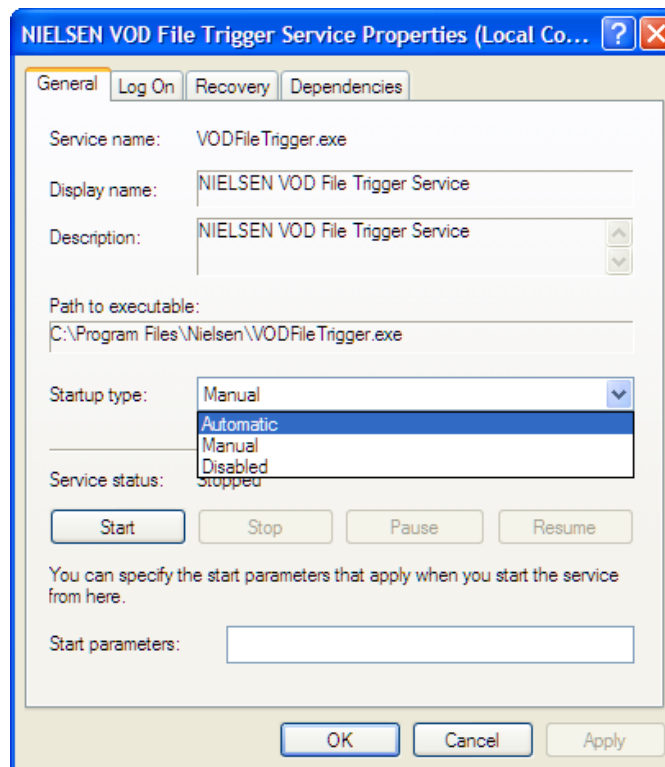


Figure 19 – File Trigger Service Properties

5. Click **OK**.

Encoding and Decoding

Encoding Using the GUI

Important All digital assets processed by the VOD Content Encoder must be clean: they cannot contain any Nielsen watermarks.

1. From the **Start** menu, start the **VOD Content Encoder** application.
2. On the **Configure** menu, select **Profile Setup**.
3. Select the profile you want and click **Apply**.

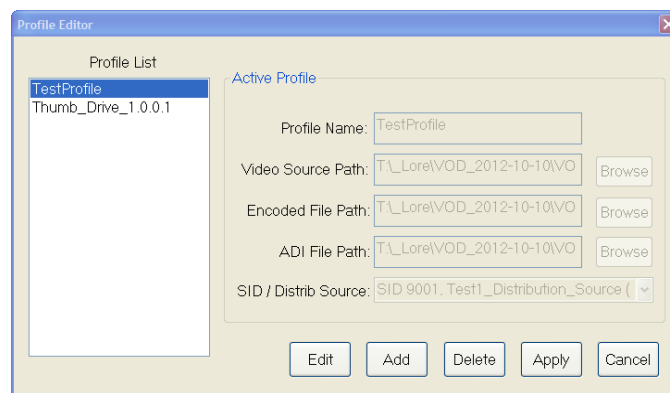


Figure 20 – Profile Editor

4. On the **Source Video** tab, select an MPEG-2 file to be encoded.

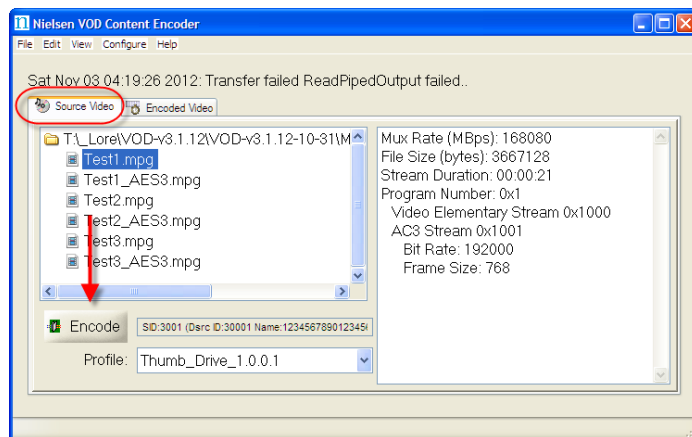


Figure 21 – Main Window

5. Click **Encode**. The Feed Point Information window appears (Figure 22). One of the following occurs:
 - o The selected file contains multiple audio channels. The Feed-Point Information window displays Total Channels with the number of channels found in the media file and Clusters fields ready for you to assign cluster IDs (circled in red in Figure

22), applicable to content with AES3 audio only. For more information, see “Audio Clusters” on page 9. Go to step 6.

- The window does not display Cluster-related fields (content with AC3 audio). Go to the next step 7.

6. Enter an ID for each channel cluster.

Figure 22 – Feed-Point Information Window

7. (Optional) If available, browse to select the corresponding ADI file. The file must be compliant with the CableLabs specification/

8. Enter the following:

- **Asset ID**—uniquely identifies the asset that is being encoded. If a CableLabs® ADI file is identified for the asset, then this field is populated with the Asset ID from the ADI file.
- **Asset Name**—descriptive name of the asset being encoded.
- **Episode ID**—(optional) uniquely identifies the episode of the asset.

Note The Dist Src ID and Name, Nielsen SID, and Duration are populated from the Encoder configuration and are read-only.

9. Click **OK**. If the encoding session completes successfully a “Watermarking succeeded” message appears. “Finished processing Status” shows a return code of 0. See Figure 23.

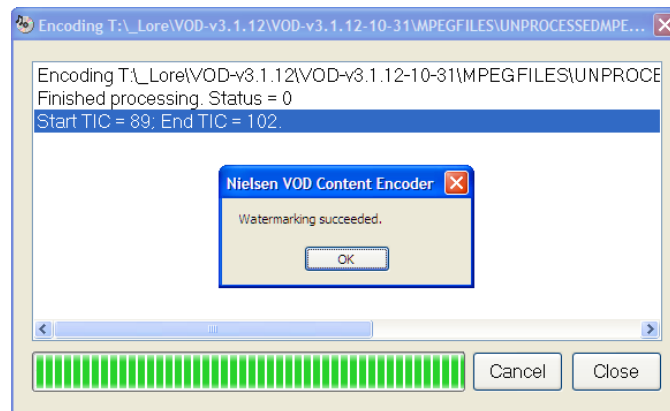


Figure 23 – Watermarking Successful Message

10. Click **OK**.
11. Click **Close**. The main window also indicates the success of the encoding process.

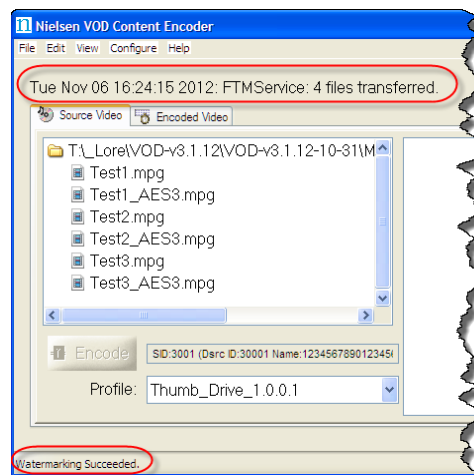


Figure 24 – Watermarking Success Indicators

Decoding Using the GUI

To verify that encoding occurred, and that TICs were inserted, decode the encoded file.

1. Start the **VOD Content Encoder** application.
2. On the **Encoded Video** tab, select the file to decode.

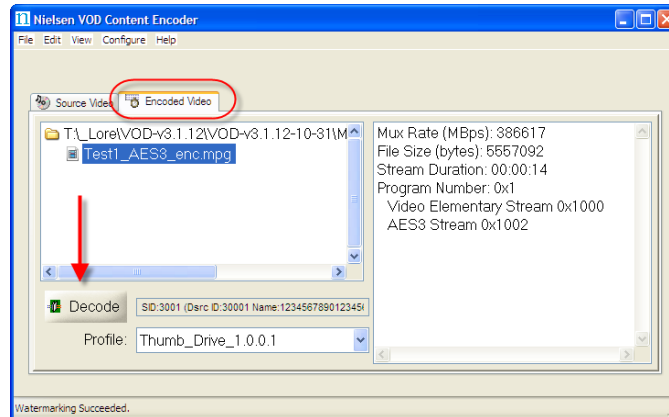


Figure 25 – Decoding

3. Click **Decode**. The Decoding status dialog box appears and fills with the SID/TIC information. When the decoding process is complete, the dialog box displays a summary of the watermarks that were detected for each SID.

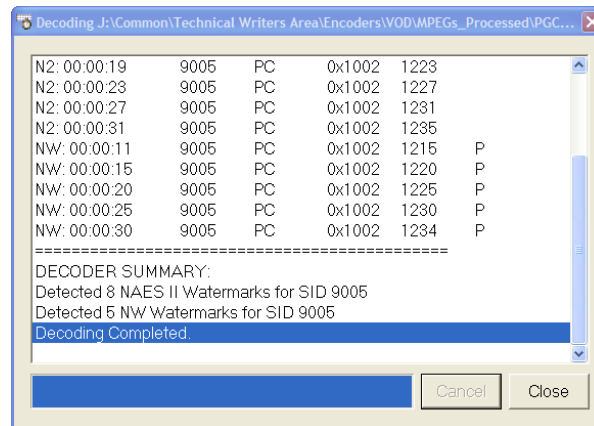


Figure 26 – Decoder Output

Encoding Using the Command Line

The command-line version of the VOD Content Encoder is called *ContentCodeCmd*. ContentCodeCmd enables you to automate encoding and decoding.

Note You can also automate file transfer. For more information, see “Transferring Metadata to the Nielsen Collection Facility” on page 8.

ContentCodeCmd Arguments

The VOD Encoder package includes a batch file, *InsertContentCodes.bat*, which includes a call to ContentCodeCmd.exe. You may edit the command line arguments in this .bat file to meet your requirements, and then execute the .bat file to conduct a single watermarking session.

Table 9 – Encoding Command Line Arguments

Argument	Description
sid	Nielsen source identifier
input	Full path name of the file containing the MPEG-2 transport stream to be watermarked
output	Full path name of the generated watermarked file
assetid	String for content to be encoded,
asset name	Descriptive name for content to be encoded; passed to the CF in the feed-point metadata file
episode	String for the episode to be encoded
adifile	Full path name for CableLabs-compliant file to be transferred to the CF
discovermask	Broadcast subnet address that defines the set of computers that the application searches in the process of “discovering” an active SID/TIC Server. The default value is 255.255.255.255. Depending upon your network configuration, you may wish to further restrict the broadcast address to a specific subnet. For example, if your subnet is 10.6.1.nnn, the UDP broadcast could be modified using the parameter <code>–discovermask 10.6.1.255</code> .
discoverport	Number of the User Datagram Protocol port on which the Discovery Server listens for UDP broadcasts. The default value is 6543. Only modify this port if it conflicts with some other service on your network.
server	Fixed network address of the host where the SID/TIC service is running. If your site uses dynamic address assignment (DHCP), you must use the <i>discovery</i> feature (do not set the server IP address).

Argument	Description
-cl <i>n</i>	<p>(For AES audio only) Values for <i>n</i> can be 2, 4, 6, or 8</p> <p>Repeatable up to 8 times, for example, for a media file with 8 channels, you could enter -cl 6 -cl 2 or -cl 4 -cl 4 or -cl 2 -cl 2 -cl 2 -cl 2</p> <p>Note Do not enter a value of zero (0).</p>

Encoding Command Line Format

When using ContentCodeCmd to encode, use this format to set the parameters described above:

```
ContentCodeCmd
-sid <SID>
--input <input file>
-output <output file>
-assetid <asset ID>
-asset name <asset name>
[-episode <episode ID>]
[-adifile <ADI file name>]
[-discovermask <UDP broadcast address>]
[-discoverport <UDP port number>]
[-server <IP address>]
[-cl <n1>]
[-cl <n2>]
...
[-cl <n8>]
```

Encoding Example 1

This example shows how to encode "C:\MPEGFILES\Unprocessed\test.mpg" with a Nielsen SID of 9001 and store the encoded file in "C:\MPEGFILES\Processed\test.mpg." The sole SID/TIC service on the network is located on a host computer with the IP address of 10.45.212.100.

```
ContentCodeCmd -sid 9001 -input "C:\MPEGFILES\Unprocessed\test.mpg" -
output C:\MPEGFILES\Processed\test.mpg --assetid "54321" -assetname
"InterestingClip" -episode "Episode 1" -server "10.45.212.100"
```

Note Because the server is automatically discovered, the -server argument is optional.

Encoding Example 2

This example shows how to encode the same file, with the same output file name, where there are two active SID/TIC Servers on the system.

```
ContentCodeCmd -sid 9001 -input "C:\MPEGFILES\Unprocessed\test.mpg" -
output C:\MPEGFILES\Processed\test.mpg -server "127.0.0.1" -assetid
"54321" -assetname "InterestingClip" -discovermask "255.255.255.255"
```

Decoding Using the Command Line

You can also use ContentCodeCmd to decode Nielsen-encoded files, display the results on the screen, or send them to a file. ContentCodeCmd reports the results in this format.

```
<stream offset>, <SID>, <code type>, <audio PID>, <TIC/timestamp>
```

The VOD Encoder package includes a batch file, DisplayCodes.bat, which contains a call to ContentCodeCmd.exe. You may adjust the command-line arguments in this .bat file to meet your requirements and then execute the .bat file to conduct a single decoding session.

Table 10 – Decoding Parameters

Parameter	Description
Stream offset	Offset from the beginning of the stream where the end of the Nielsen watermark is located. The <stream offset> is expressed as hours : minutes : seconds
SID	Nielsen source identifier
Code type	“PC” for program content or “FD” for final distributor. The VOD Content Encoder inserts “PC” watermarks. If the decoder reports “FD” watermarks, those watermarks were inserted by other Nielsen encoder
Audio PID	MPEG PID that identifies the AC-3 or AES PCM stream in which the Nielsen watermark was found
TIC/Timestamp	Numeric value that identifies a specific segment of the encoded asset. Each four-second segment of code has its own unique TIC or timestamp

Table 11 – Decoding Command Line Arguments

Argument	Description
-decode	Activity the tool should do
-input	Full path name of the file to be decoded

The following is an example of decoding a file, “C:\MPEGFILES\Processed\test.mpg,” and storing the report in a file, “C:\Temp\decoder_out.txt,” while displaying the report on the screen:

```
ContentCodeCmd -decode -input "C:\MPEGFILES\Processed\test.mpg"
```

Transferring Metadata Files to the Nielsen CF

For crediting, your plant must transfer metadata files to the Nielsen CF. There are several possible ways to transfer the files: through the content encoder itself, using the File Transfer Manager application, or using the File Trigger Service to manually or automatically transfer the files.

Transferring Files Using the VOD Content Encoder GUI

On the **File** menu in the **VOD Content Encoder** application, select **Transfer**. All files in the Nielsen\metadata directory transfer to the CF or the Local Service, depending on your configuration.

Transferring Files Using the File Transfer Manager

On the **File** menu in the **File Transfer Manager** application, select **Transfer**. All files in the Nielsen\metadata directory transfer to the CF.

Transferring Files Using the File Trigger Service

Manually Triggering File Transfer

1. From the **Windows Start** menu, select **Nielsen > VOD File Trigger Manager**.

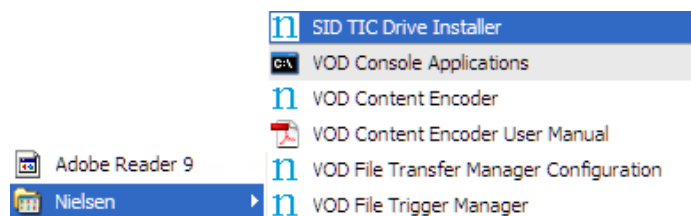


Figure 27 – VOD File Trigger Manager

2. Click **Start Service**. The Trigger Service runs until you stop it or reboot the system.

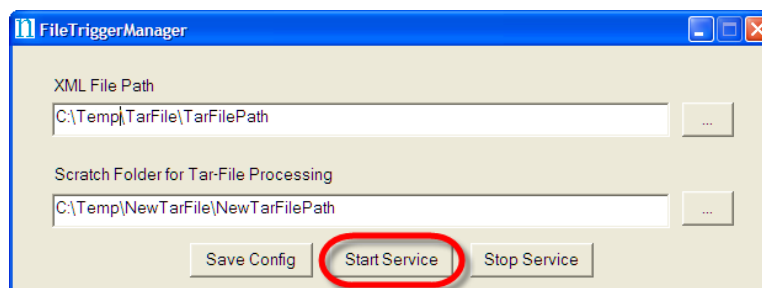


Figure 28 – File Trigger Manager Window

Note If the Trigger Service fails while processing a trigger file, it renames the trigger file (appending the ".failed" extension) instead of deleting the file. The Trigger Service does not attempt to process the renamed trigger file until the extension in the file name is changed to xml.

Note If the Monitor File Trigger Service checkbox is checked in the VOD ServicesMonitorTool dialog box, the VOD File Trigger Service automatically restarts.

3. To stop the **Trigger Service**, click **Stop Service**.
4. Close the window.

Automatically Triggering File Transfer

See "Configuring the File Trigger Service to Run Automatically" on page 29.

Note If the XML file contains a tar file path, the Trigger Service automatically processes the files according to "Using the File Trigger Service with Tar Files" on page 12.

Maintaining the Encoder

This section covers procedures that you may periodically do.

Restarting the SID/TIC Server

For instructions on restarting the SID/TIC Server, see “Verify the SID/TIC Server Is Running” on page 56.

Adding a New Distribution Source or SID

If you begin encoding content for a new distributor, you must first add a new distribution source and then add a new SID.

Important

Facilities that use two active SID/TIC Servers, must add the same SIDs and Distribution Sources to each SID/TIC Drive. Maintaining the same list of SIDs and Distribution Source information is extremely important.

Adding a New Distribution Source

1. Ensure that the Encoder has access to the SID/TIC Server.
2. Start the **SID/TIC Drive Installer** application.

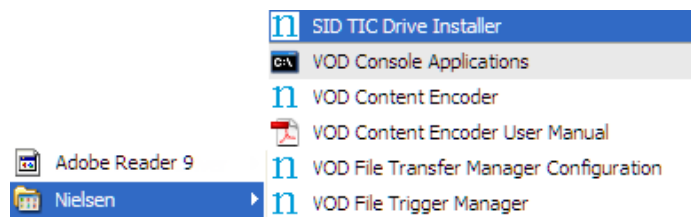


Figure 29 – SID TIC Drive Installer

3. Contact the Nielsen Encoder Support group at 800-537-4872 option 2 or send an email to Encoders@nielsen.com.

4. On the **SID/TIC Drive Installer** window, click **Add DSID** (#1 in Figure 30).

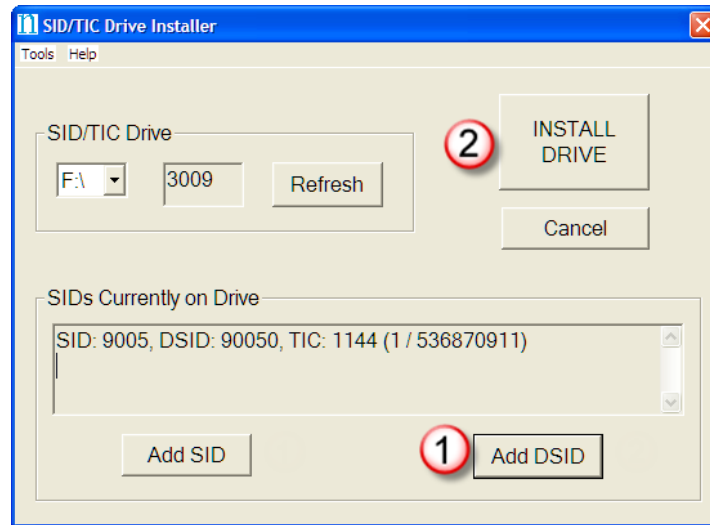


Figure 30 – SID/TIC Drive Installer

5. On the **Distribution Source List Editor** window (Figure 31), enter the new **Distribution Source ID** (#1 in Figure 31).

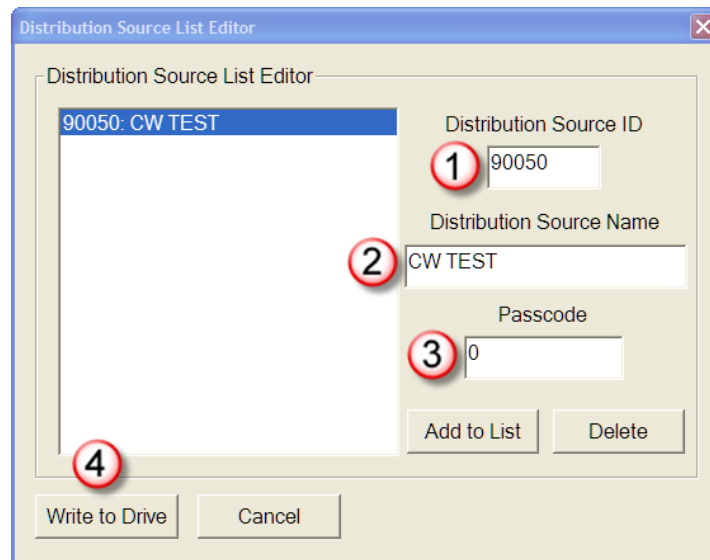


Figure 31 – Distribution Source List Editor

6. Enter the new **Distribution Source Name** (#2 in Figure 31).
7. Enter the **Passcode** (#3 in Figure 31) supplied by Encoder Support.
8. Click **Write to Drive** (#4 in Figure 31). The window closes.
9. On the **SID/TIC Drive Installer** window, click **Install Drive** (#2 in Figure 30). A message appears that the install is successful.
10. Click **OK**. The window closes.

Adding a New SID

If you are encoding for a new distributor, first add a new DSID before performing this procedure.

1. Make a note of the serial number for your SID/TIC Drive.
2. To get a new SID, contact Nielsen Encoder Support at 800-537-4872 option 2 or send an email to Encoders@nielsen.com.
3. Do one of the following:
 - If you are encoding for a new distributor, add a new DSID and then go to step 4. See “Adding a New Distribution Source” on page 40.
 - If you are not adding a new DSID, go to step 4.
4. Ensure that you have access to the SID/TIC Server host consumer.
5. Ensure that you can activate the SID/TIC Drive Installer application.
6. On the **SID/TIC Drive Installer** window, click **Add SID** (#1 in Figure 32).

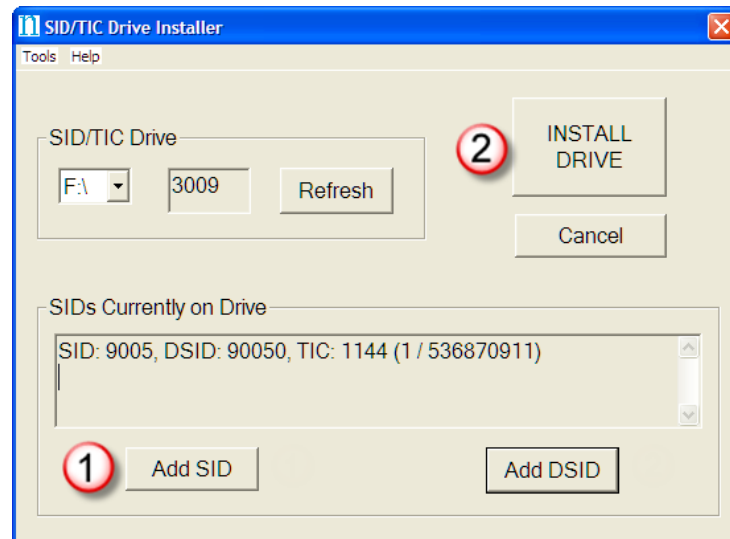


Figure 32 – SID/TIC Drive Installer

7. On the **SID/TIC Drive Editor** window, enter the **SID** (#1 in Figure 33) that Encoder Support provided.
8. Do one of the following:
 - If the **Dist Src ID** list contains the correct **DSID** (#2 in Figure 33), select it and go to step 9.
 - If the **Dist Src ID** list does not contain the **DSID**, click **Distribution Source List Editor** (#3 in Figure 33). See “Adding a New Distribution Source” on page 40.

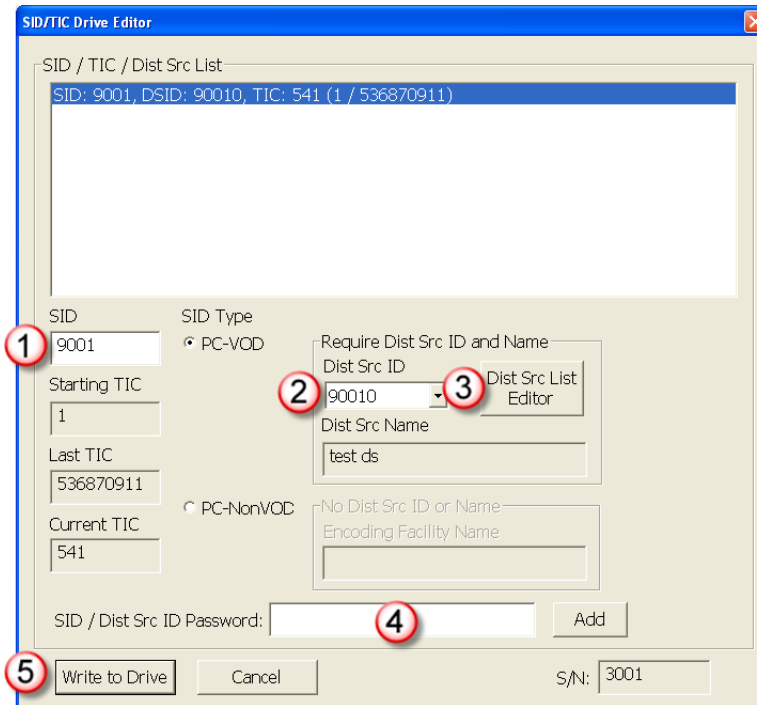


Figure 33 – SID/TIC Drive Editor Window

9. Enter the **Password** (#4 in Figure 33) that Encoder Support provided.
10. Click **Write to Drive** (#5 in Figure 33). The window closes.
11. On the **SID/TIC Drive Installer** window, click **Install Drive** (#2 in Figure 32). A message appears that the installation is successful.
12. Click **OK**. The window closes.

Adding a New Profile

A profile contains the locations you specify for the video source files, encoded files, and ADI files plus the SID and DSID.

1. On the **VOD Content Encoder** application window, from the **Configure** menu, select **Profile Setup**.
2. On the **Profile Editor** window, click **Add**.

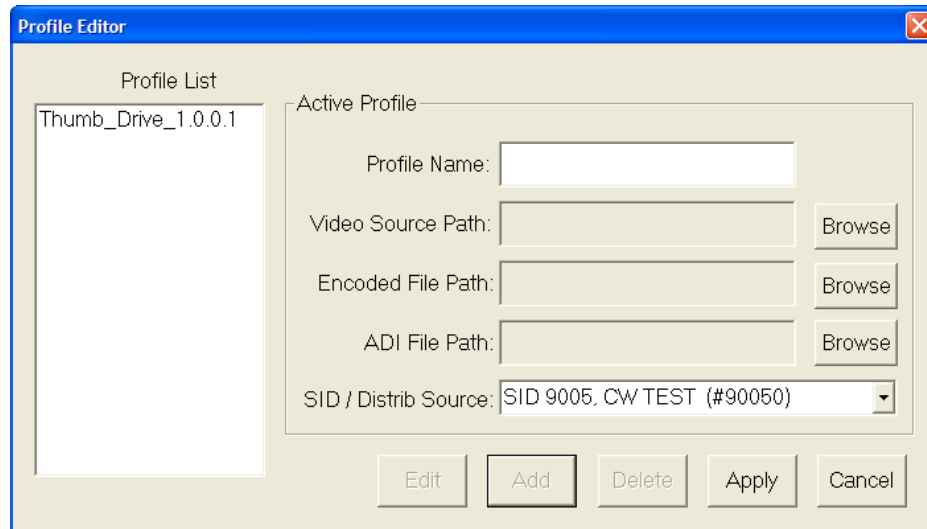


Figure 34 – Profile Editor Window

3. Enter a **Profile Name**.

Note Once you assign a Profile Name, you cannot change it. To rename a profile, you would have to delete the profile and add a new one.

4. In **Video Source Path**, browse to the location for the video source(s).
5. In **Encoded File Path**, browse to the location for the encoded file(s).
6. (Optional) In **ADI File Path**, browse to the location for the ADI file(s).
7. Select a **SID / Distrib Source**.
8. Click **Apply**. The window closes.

Editing a Profile

You can only edit the paths and distribution source. To rename a profile, you must create a new profile.

1. On the **VOD Content Encoder** application window, from the **Configure** menu, select **Profile Setup**.
2. On the **Profile Editor** window, click **Edit**.

Note You cannot change the name of an existing profile. Instead you would have to delete the existing one and create a new one.

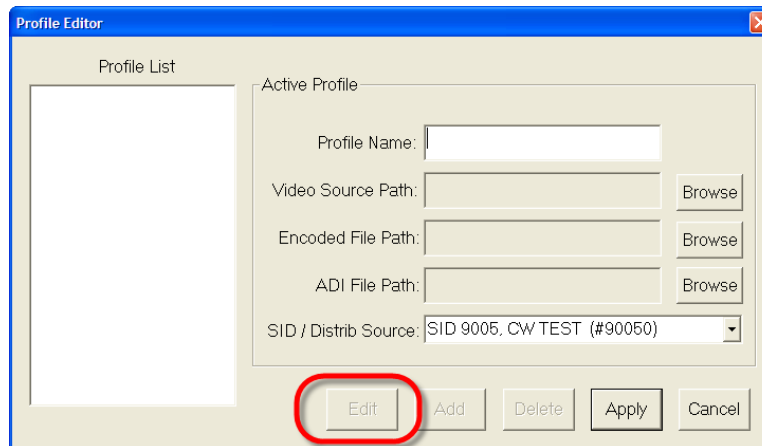


Figure 35 – Profile Editor Window

3. In **Video Source Path**, browse to the location for the video source(s).
4. In **Encoded File Path**, browse to the location for the encoded file(s).
5. (Optional) In **ADI File Path**, browse to the location for the ADI file(s).
6. Select a **SID / Distrib Source**.
7. Click **Apply**. The window closes.

Deleting a Profile

1. On the **VOD Content Encoder** application window, from the **Configure** menu, select **Profile Setup**.
2. In the **Profile List** (#1 in Figure 36), select the profile.

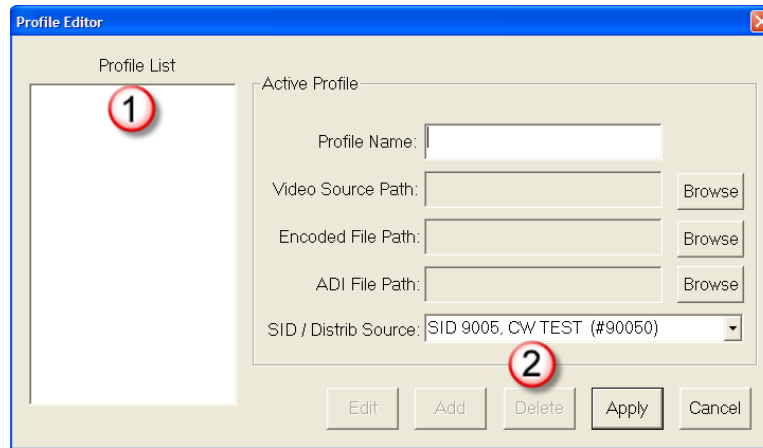


Figure 36 – Profile Editor Window

3. Click **Delete** (#2 in Figure 36). A warning message appears.

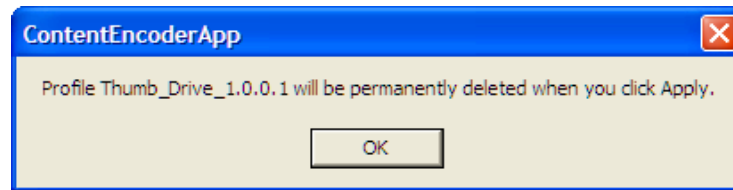


Figure 37 – Deleting Profile Warning Message

4. Click **OK**.

Important If you decide not to delete the profile, click **Cancel** rather than **Apply** on the **Profile Editor** window.
5. Click **Apply**. The **Profile Setup** window closes.

Configuring the ServicesMonitorTool

The ServicesMonitorTool is an application that, by default, monitors all services. If a metadata file transfer to the CF fails, the tool displays a notification message and restarts stopped services.

The ServicesMonitorTool is automatically installed with the VOD Content Encoder software, File Transfer Manager Software, and SID/TIC server. During installation, the ServicesMonitorTool is configured to monitor these services:

- File Transfer Service
- File Trigger Service
- Discovery Service
- SID/TIC Server Service

1. To open the **ServicesMonitorTool**, do one of the following:
 - In the **System Tray**, click the **VOD ServicesMonitorTool** icon.
 - Browse to the **Program Files > Nielsen** folder and double-click **ServicesMonitorTool.exe**.

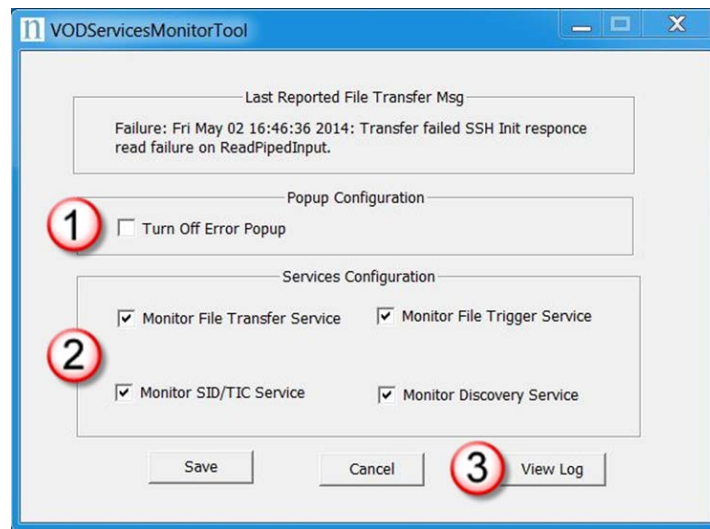


Figure 38 - ServicesMonitorTool

2. (Optional) To disable notifications of file transfer failures, on the GUI, clear the **TurnOffErrorPopup** check box (#1 in Figure 38).

Important Turning off the notification is **not** recommended.

3. To edit the services that the tool monitors (#2 in Figure 38), do the following:
 - To stop monitoring a currently monitored service, clear the check box.
 - To resume monitoring a service, check the check box.
4. To view the **VOD debug and transfer logs**, do the following:
 - a. Click **View Log** (#3 in Figure 38).

- b. Browse to the file and select it. Open the file in Windows Notepad.
5. To save the configuration to a file, click **Save**.

Note If you clicked **Cancel** or **Close** or minimized the dialog box, the settings revert to the previous configuration.

Troubleshooting

Encoder Services Are Not Running or Repeatedly Fail

Important VOD Content Encoder applications should only be installed on systems used solely for Nielsen encoding
To permit the encoding software to run without interference, antivirus and firewall programs should be disabled. If disabling is not possible, the security software must be configured to permit the files listed in the procedure below to run.

Certain Internet security virus-protection applications may interfere with the VOD Content Encoder services and produce any or all of the following issues:

- SID/TIC Discovery Server is not running or its function repeatedly fails.
- SID/TIC Server Service is not running or its function repeatedly fails.
- File Transfer Service is not running or its function does not automatically occur.
- After successful installation of the VOD Content Encoder application, the VODFTMSERVICE.exe and/or VODFileTrigger.exe files disappear from the installation folder.
- After successful installation of the SID/TIC Server application, the STSDiscovery.exe, and/or SIDTicService.exe files disappear from the installation folder.

When these issues could be related to antivirus software (see the rest of the “Troubleshooting” for other, potential causes), do the following:

1. To see whether your antivirus software may be interfering with the encoding software, do the following:
 - a. Open the history feature in the antivirus program.
 - b. Examine the events for evidence of the encoder services stopping or failing.
2. Add the following files to the “exclude” or “trust” feature in your antivirus program.

On a computer installed with...	Trust or exclude this file in antivirus software:
SID/TIC Server	SIDTicService.exe and STSDiscovery.exe
VOD Content Encoder	VODFileTrigger.exe VODFTMSERVICE.exe
File Transfer Manager	VODFTMSERVICE.exe

3. Reboot your system.
4. In **Windows Control Panel** (or equivalent), select **Administrative Tools**.
5. Select **Services** and ensure that all of the following that apply to your system are operating correctly:
 - NIELSEN DISCOVERY SERVICE Status is Started.

- NIELSEN FILE TRANSFER MANAGER SERVICE Status is Started.
- NIELSEN SID TIC SERVER Status is Started.
- NIELSEN VOD File Trigger Service Startup Type is Manual.

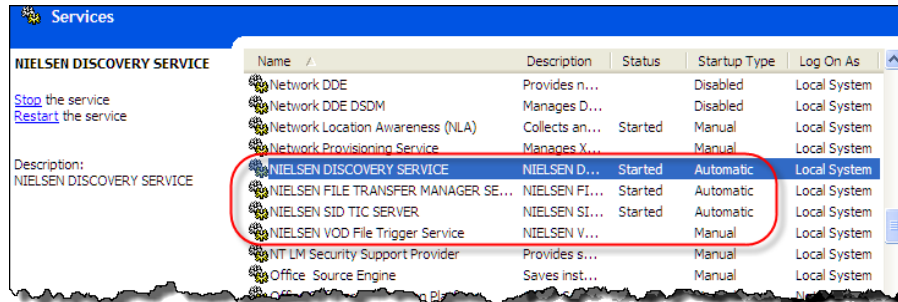


Figure 39 – Windows Services

6. If any services are missing, do the following:
 - In **Windows XP OS**, from **All Programs**, select **Nielsen > RestoreNielsenServices**.
 - In **Windows 7** or **Windows Server**, do the following:
 - a. Select **All Programs > Nielsen** and right-click **RestoreNielsenServices**.
 - b. Select **Run As Administrator**.
7. Ensure that the **ServicesMonitorTool** is running and the corresponding services check box is checked.

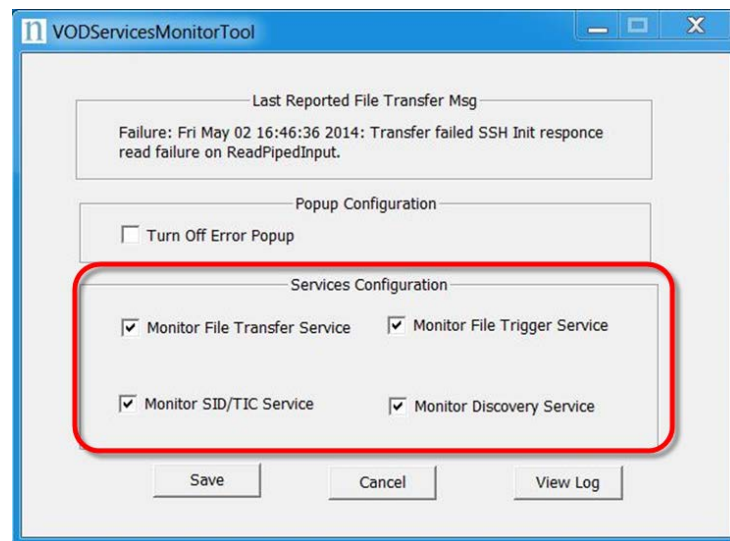


Figure 40 – ServicesMonitorTool

Files or Codes Are Missing

Use these steps to uncover root causes when encoding is not successful.

MPEG Files Missing on Source Video Tab

It may be that the incorrect profile for this encoding session was selected or you may need to create a new profile with the correct video source path.

1. From the **Start** menu, start the **VOD Content Encoder** application.
2. On the **Configure** menu, select **Profile Setup**.

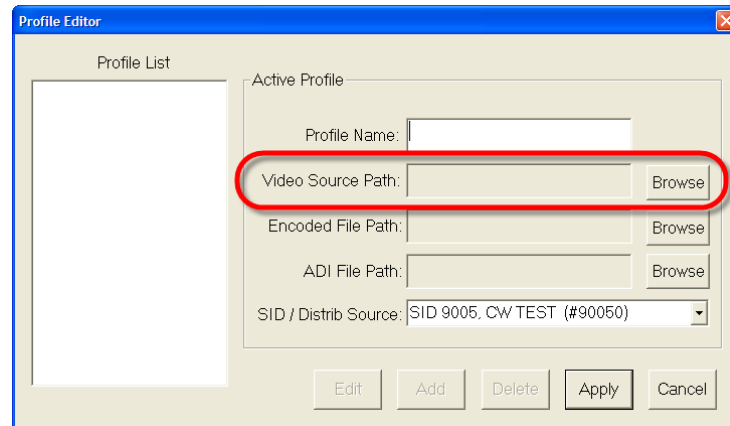


Figure 41 – Video Source Path in Profile Editor

3. Do one of the following:
 - Ensure that the **Video Source Path** specifies the location of the file that you would like to encode. See “Editing a Profile” on page 45.
 - Create a new profile. See “Adding a New Profile” on page 44.

Missing Files on the Encoded Video Tab

An incorrect profile for this decoding session may have been selected.

1. From the **Start** menu, start the **VOD Content Encoder** application.
2. On the **Configure** menu, select **Profile Setup**. See “Editing a Profile” on page 45.

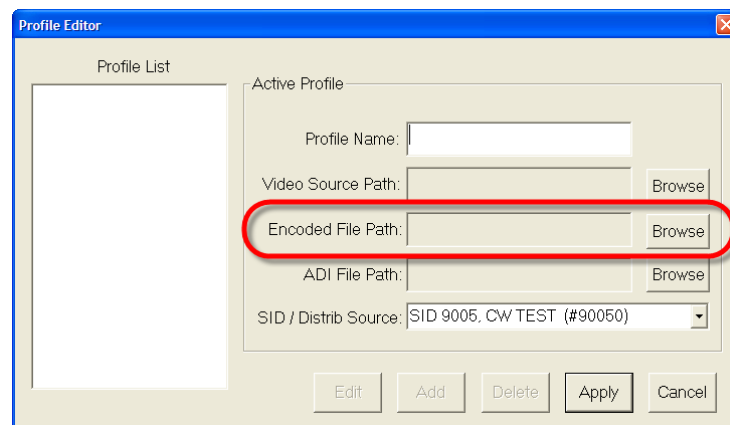


Figure 42 – Encoded File Path in Profile Editor

3. Ensure that the **Encoded-File Path** specifies the full path name of the file that you just encoded.

Unable to Create or Write to the Output File

Ensure that the encoded path that you selected is not read-only (Figure 42).

Missing or Few Watermarks When File is Decoded

If the content was difficult to encode (very quiet, for example) or if the AC-3 stream bit rate was too low, the Encoder may not have been able to insert as many audio codes as expected.

Ensure that audio levels are properly set at the broadcast facility. See the [Encoding Installation and Configuration Policy](#).

Nielsen Unable to Detect Watermarks in Encoded File

Ensure that audio levels are properly set at the broadcast facility. See the [Encoding Installation and Configuration Policy](#).

Ensure that you pitched the encoded file, not the original source file.

Encoding Takes Too Long

Ensure that other processes are not tying up the encoding system. Transferring large files to or from the Encoder host computer, for example, is very likely to slow the encoding process.

SID/TIC Request Failed or Unable to establish valid connection with SID/TIC Server

To start an encoding session, the Encoder must first establish a network connection to a properly configured, active SID/TIC Server. Even if the Server resides on the same computer as the Encoder, the Server and the Encoder application communicate using TCP/IP protocol. Communication issues may occur that prevent encoding from taking place.

If you see an error message, “SID/TIC Request Failed” or “Unable to establish valid connection with SID/TIC Server,” use the following steps to look for root causes.

1. Communications with Nielsen Fail

Check your firewall to ensure it is not preventing communications between the Server and the Encoder.

2. Communications with SID/TIC Server Fail

- a. To check whether the SID/TIC Server address is correct, on the **VOD Content Encoder** application window, select **Configure > System Setup**. See Table 7 – Summary of Configuration Settings for Figure 9 on page 24.

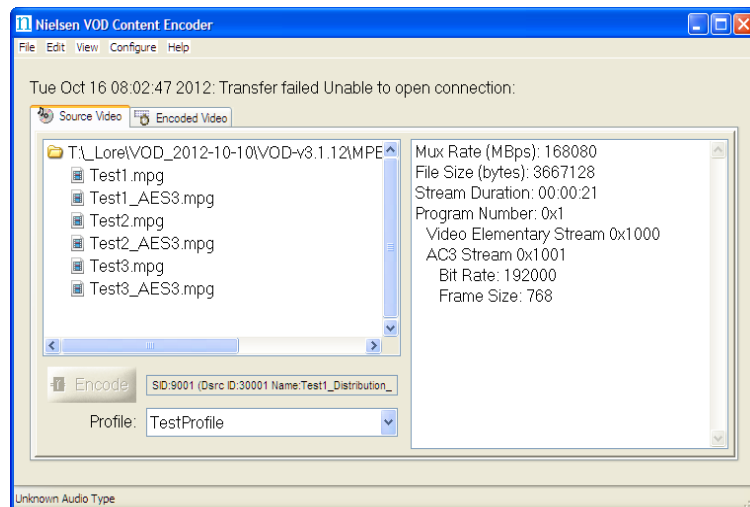


Figure 43 – VOD Content Encoder Window

- b. If the address is valid, note the following to determine whether it is a subnet mask or a specific IP address:
 - Subnet mask—if the address is set to 255. 255. 255. 255, the address is a mask, go to “**Verify the Discovery Server Is Running.**”
 - Specific IP address—if the address does not contain any 255 segments (Figure 44), the address is a specific IP address, which means the Encoder uses the “direct connection” method of connecting to the SID/TIC Server.

The image shows the 'Encoder Configuration' window. It has two main sections: 'SID/TIC Server Parameters' and 'Feed-Point Transfer Parameters'.

SID/TIC Server Parameters:

- SID/TIC Server Address or Mask:** 127 . 0 . 0 . 1
- Discovery Server Port:** 6543

Feed-Point Transfer Parameters:

- Transfer to Data-Collection Facility:** (Selected radio button)
- Transfer to Local Server:** (Unselected radio button)
- Metadata Folder:** C:\Program Files\Nielsen\metadata (with a 'Browse' button)
- Archive Folder:** C:\Program Files\Nielsen\arch_metadata (with a 'Browse' button)
- Server Address:** pmyel
- Server Port:** 8080
- Transfer Interval:** 15 Minutes
- Proxy Server:** dcmv.c4450c.com
- Proxy Port:** 6380
- Local Port:** 8080
- Server Login:** VOD00001
- Password:** (masked with asterisks)
- Remote Folder:** (empty text box)

At the bottom are 'Save' and 'Cancel' buttons.

Figure 44 - SID/TIC Server Address or Mask

3. Test the Connection to the SID/TIC Server

- a. Open a command line window.
- b. Type **ipconfig** and press **Enter**.
- c. Note the **IP Address**. This address is the IP address of the SID/TIC Server host computer.
- d. Do one of the following:
 - If the address returned matches the address in the Encoder Configuration window (Figure 44), go to “**Run a SID/TIC Server Test.**”
 - If the address returned does not match the address in the Encoder Configuration window, do the following:
 - a. Start the **VOD Content Encoder** application.
 - b. Select **Configure > System Setup**.
 - c. Enter the correct address or mask into **SID/TIC Server IP Address or Mask** in the **Encoder Configuration** window.

4. Run a SID/TIC Server Test

On the **Configure** menu in the **VOD Content Encoder** window, select **SID/TIC Server Test**. One of the following occurs:

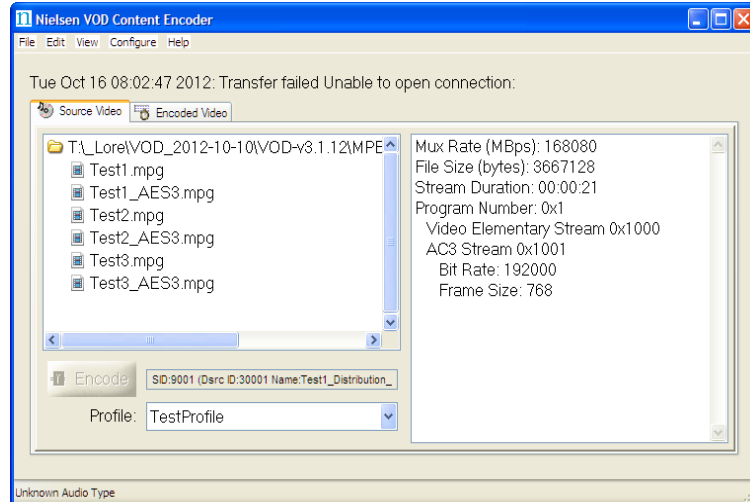


Figure 45 – VOD Content Encoder Window

- A message appears, “Discovered an active SID/TIC Server at IP address xxx.xxx.xxx.xxx.”
- The Encoder is properly communicating with the SID/TIC Server.
- A message appears, “Invalid response from SID/TIC Server at IP Address xxx.xxx.xxx.xxx.”
- It is likely that the IP address identifies a computer that has a SID/TIC Server on it, but that the SID/TIC Server is improperly configured. Recheck the SID/TIC Server setup at the specified address.
- A message appears, “Unable to discover an active SID/TIC Server at xxx.xxx.xxx.xxx.”
- A properly configured SID/TIC Server is not running at the specified address. Recheck the IP address and the configuration of the software and SID/TIC Drive at that IP address.

5. Verify the Server Software Is Installed

- Start the **SID/TIC Drive Installer** application.

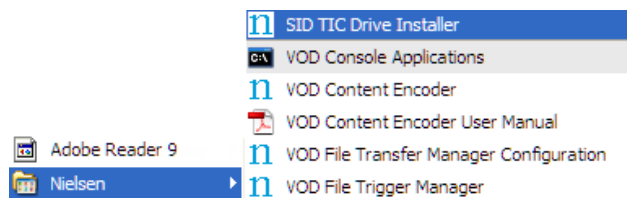


Figure 46 – SID/TIC Drive Installer

One of the following occurs:

- The command appears in the menu. Go to “**Verify the SID/TIC Server Is Running**” below.
- The SID/TIC Drive Installer application does not appear in the list of programs. This indicates the SID/TIC Server software was not properly or fully installed. Go the next step.

- b. To install the **SID/TIC Server** application, see “Installing the SID/TIC Server” on page 19.

Note The SID/TIC Server may reside on the same computer as the Encoder, or it may be on a different computer on the same subnet.

6. Verify the SID/TIC Server Is Running

- a. In **Windows Control Panel** (or equivalent), select **Administrative Tools**.
- b. Select **Services**.
- c. Check that the **Status** of the **Server** is **Started** and the **Startup Type** is **Automatic**. See #1 in Figure 47.

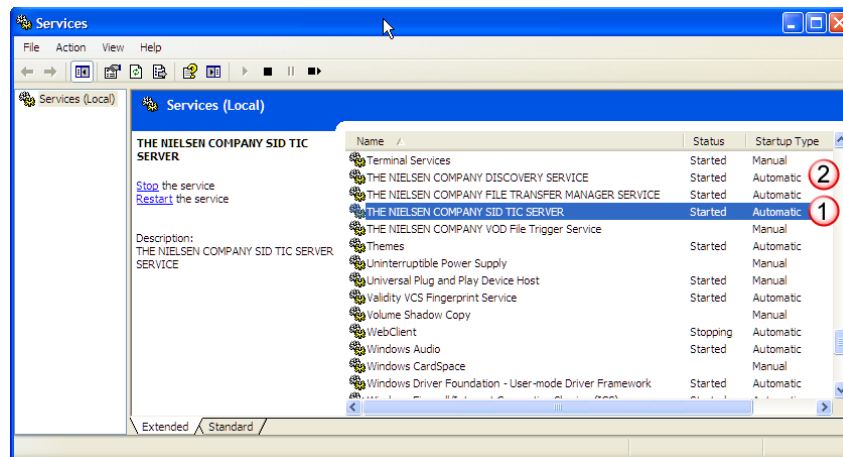


Figure 47 – Services Window

- If the settings are correct, go to “Verify the Discovery Server Is Running” on page 57.
- If the settings are not correct, do the following:
 - a. Right-click the service name and select **Properties**.
 - b. To set the **Server** to automatically start, in **Startup type** on the **General** tab (#1 in Figure 48), select **Automatic**.
 - c. In the **Service status** section, click **Start**.
 - d. Click **OK**.

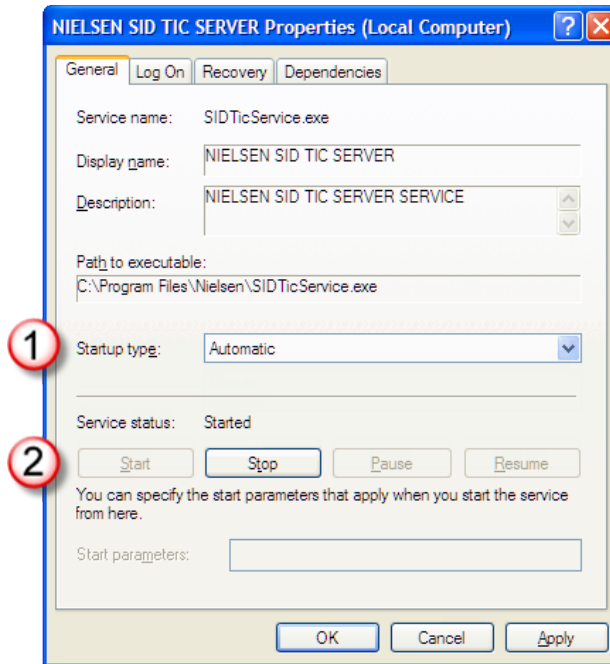


Figure 48 – SID/TIC Server Properties Window

7. Verify the Discovery Server Is Running

Use the procedure above for verifying the SID/TIC Server is running, except check that the Discovery Service is running. See #2 in Figure 47 – Services Window.

Note

This step only applies if you rely on the discovery method of identifying a SID/TIC Server. The Discovery Server should be running ONLY if you supply a subnet mask instead of a SID/TIC Server IP address on the Encoder Configuration window of the Encoder application.

8. Verify Installation of the SID/TIC Drive

Check that a Nielsen-programmed SID/TIC Drive is in a USB port on the SID/TIC Server host computer. Do one of the following:

- If the Drive is inserted and the SID/TIC Installer is installed, go to the next section, “**Check the Contents of the SID/TIC Drive.**”
- If the SID/TIC Drive is not inserted, follow the procedure in “Installing the SID/TIC Server” on page 19 to install the SID/TIC Drive databases on the host computer.

9. Check the Contents of the SID/TIC Drive

- a. From the **Start** menu (or equivalent), open the **SID/TIC Drive Installer** application.

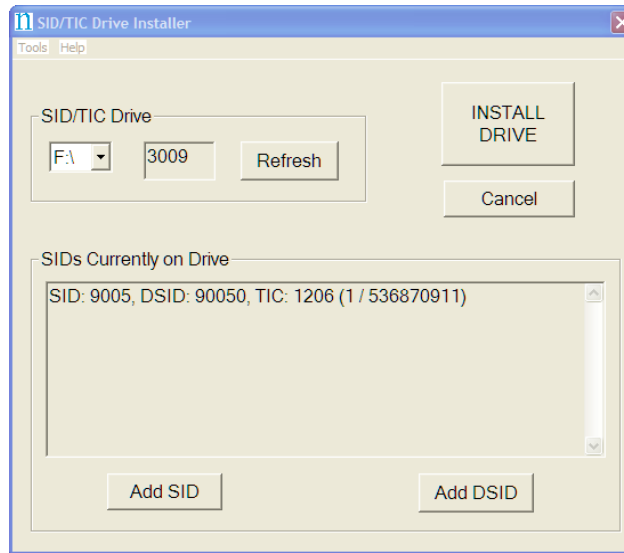


Figure 49 – SID/TIC Drive Installer Window

- b. In the section, **SIDs Currently on Drive**, verify that the following information is correct.
 - Do the expected SIDs and distribution source appear in the list?
 - If not, do most of the SIDs in the list appear to be valid? If any SIDs are missing, see “Adding a New Distribution Source” on page 40.
 - If the entries appear, are they garbled or are some missing? If so, you may need to restore the SID/TIC Drive using the databases on the host computer. Contact Nielsen Encoder Support at 800-537-4872 option 2.

10. Deactivate the Discovery Service

Important Perform this step **only** if you do **not** want the SID/TIC Server on this computer to be “discovered” by VOD Content Encoders.

- a. In **Control Panel** (or equivalent), open **Administrative Tools > Services**. See #2 in Figure 47.
- b. Right-click **Nielsen Discovery Service** and select **Properties**. See Figure 50.
- c. Change the **Startup type** to **Disabled**.

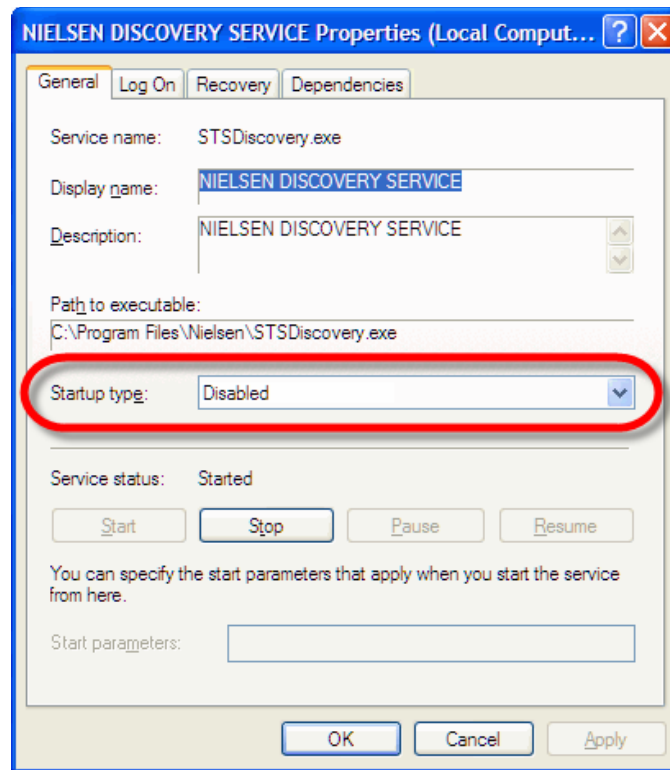


Figure 50 – Discovery Service Properties

- d. To disable monitoring of the **Discovery Service**, on the task bar, click the icon for the **ServicesMonitorTool**.
- e. Clear the check box for the **Discovery Service** (Figure 51).

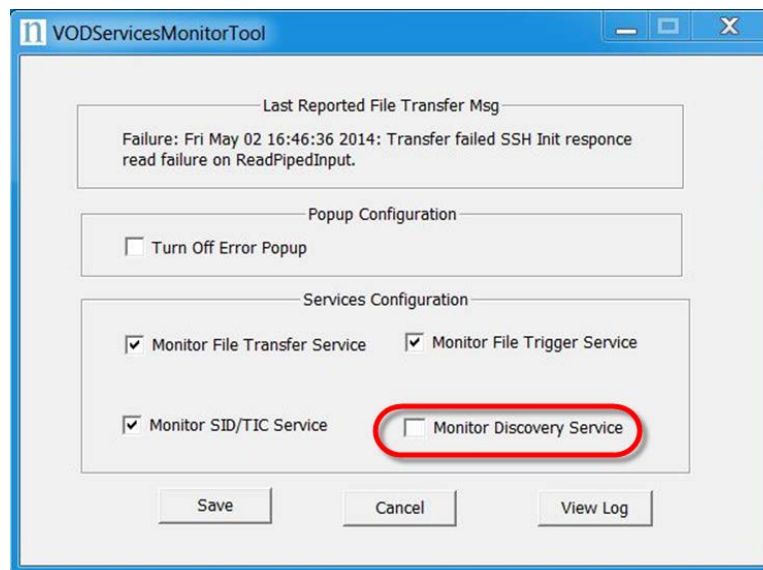


Figure 51 – Do Not Monitor Discovery Service

Troubleshooting Issues with Transferring Metadata

The VOD Content Encoder File Transfer Service periodically transfers any available feed-point metadata files to the Nielsen CF. Follow these steps when metadata has not properly transferred.

Verifying the File Transfer Service Is Correctly Operating

1. In the **VOD Content Encoder** application, select **View > Log File**.
2. Scroll through the log file and search for any of the following messages:
 - This message indicates that a file was successfully transferred to the CF at the time that the message was sent.


```
Successfully transferred file xxx_yyy_adi.xml (where xxx is the SID and yyy is the first TIC).
```
 - This message indicates that no files have been transferred since the last message from the File Transfer Manager. In the absence of other, more specific error messages, however, this is not an error report. Instead, it merely indicates that there were no feed-point metadata files ready to be transferred.


```
FTM: Transferred 0 files.
```
 - An error message in the error log or no reports from the File Transfer Manager over a long period indicates File Transfer Service may not be properly functioning. See “Verifying the File Transfer Manager Service Is Running” on page 60.

Verifying the File Transfer Manager Service Is Running

1. To ensure that the **File Transfer Manager Service** is running, in the **Control Panel**, open **Administrative Tools > Services**.

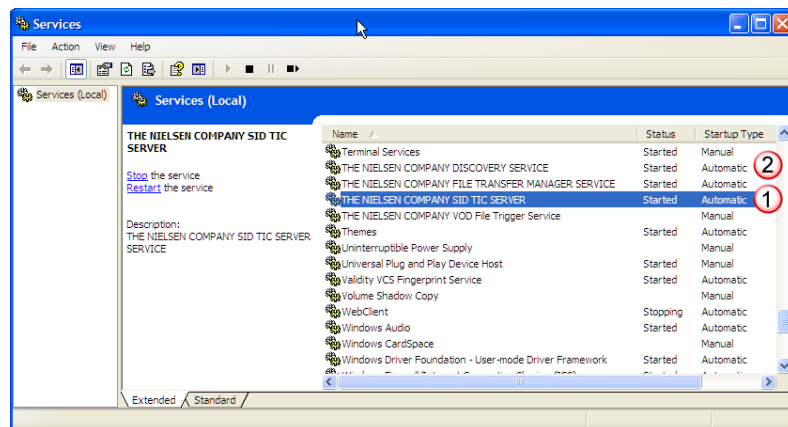


Figure 52 – Services Window

2. In the **Services** list, locate **Nielsen File Transfer Manager Service** and do one of the following:

- If **File Transfer Manager Service** does not appear in the list, the Encoder software was not properly installed. Uninstall and reinstall the **VOD Content Encoder** software as follows:
 - If the standalone File Transfer Manager (FTM) software is installed, uninstall and reinstall FTM.
 - If the VOD Content Encoder (with FTM) is installed, uninstall the Encoder and then reinstall it.
- If the **File Transfer Manager Service** DOES appear in the list (#2 in Figure 52), check the **Status** of the **Trigger Service** and do one of the following:
 - If the **Status** is not **Started**, right-click the **File Transfer Manager Service** list entry and select **Start**.
 - If the **Status** of the **File Transfer Manager Service** is **Started**, go to the next step.
- 3. From the **View** menu on the **VOD Content Encoder** window, select **Configure > System Setup**.
- 4. In the **VOD File – Transfer Configuration** window (Figure 15), verify the values are correct. See also Table 8 – Feed-Point Transfer Parameters for Figure 15 on page 28.
- 5. Click **Save**.
- 6. On the **File** menu in the **VOD Content Encoder** window, select **Transfer**. If all components are properly configured, all files should transfer from the metadata folder to the CF and the original files to the arch_metadata folder. A message should confirm that the transfer was successful. If the transfer fails, do the following:
 - Check the network configuration and firewall settings on the Encoder.
 - Verify that a third-party FTP application is NOT running on the same subnet as the **File Transfer Service** by doing the following:
 - a. In **Control Panel** (or equivalent), open **Administrative Tools > Services**. See Figure 52.
 - b. Examine the **Services** list to see if an FTP application other than the **Nielsen File Transfer Manager Service** is running.
 - c. If an FTP application is running, to prevent the application from auto-starting during boot up, do the following:
 - a. Right-click the name of the application and select **Properties**.
 - b. Change the **Startup Type** to **Disabled**.

Important If File Transfer Manager Service problems persist, call Nielsen Encoder Support to check the status of the metadata server at the Collection Facility. See “Customer Support” on page 5.

Transfer Failed: Plink Executable not Installed Error

1. To verify whether the **Plink** toolset is installed, look for **plink.exe** in the **Program files > Nielsen > VOD Installation** folder.
2. Do one of the following:
 - If **Plink** is not installed, do one of the following:
 - If the standalone File Transfer Manager (FTM) software is installed, uninstall and reinstall FTM.
 - If the VOD Content Encoder (with FTM) is installed, uninstall the Encoder and then reinstall it.
 - Copy plink.exe from the installation software to the **Program files > Nielsen > VOD Installation** folder.
 - If **Plink** is installed, double-click **plink.exe**.
3. When the next transfer interval (approximately 15 minutes) has passed, verify that metadata transferred and the error does not recur. If the error recurs, contact Nielsen Encoder Support.

SidTic Client Failed to Open Error

1. Open **Control Panel > User Accounts > Change User Account Control Settings**
2. Ensure the **User Access Control Setting** is set to low or **Never Notify** (Figure 53).

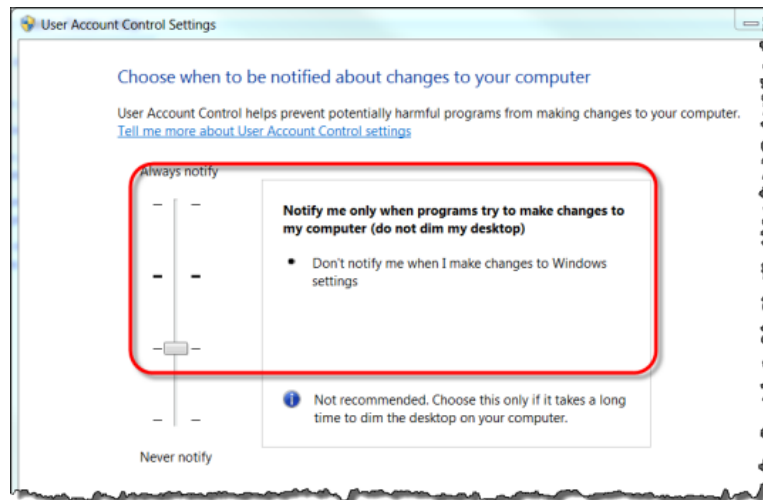


Figure 53 – User Account Control Settings

Troubleshooting General Issues

Unable to Update the Configuration on VODServicesMonitorTool

1. Open **Control Panel > User Accounts > Change User Account Control Settings**
2. Ensure the **User Access Control Setting** is set to low or **Never Notify** (Figure 53).

VODServicesMonitorTool Reports a File Transfer Issue on the SID/TIC server

1. Browse to the **Program Files => Nielsen => log** folder.
2. In the **log** folder, delete the **xfer_report.txt** file.
3. Check that the VOD Content Encoder application and File Transfer Manger software are not installed on SID/TIC server.
4. If the applications are installed, see the section, “Troubleshooting Issues with Transferring Metadata” on page 60 for more options.

Appendix

Contents of an XML Trigger File

The following is an example of a Sample-File-Trigger.xml file that includes clusters.

```
<ContentEncodingParams>
  <InputFile>
    C:\temp\VoD\Source\Sample.mpg
  </InputFile>
  <OutputFile>
    C:\temp\VoD\Encoded\Sample-enc.mpg
  </OutputFile>
  <SID>
    9000
  </SID>
  <AssetId>
    Test ID 1
  </AssetId>
  <AssetName>
    This is for File Trigger Encode Test.
  </AssetName>
  <Cluster1>
    <n1>
  </Cluster1>
  <Cluster2>
    <n2>
  </Cluster2>
  ...
  <Cluster8>
    <n8>
  </Cluster8>
</ContentEncodingParams>
```

Example:

For a total of 16 channels with cluster channels 8, 2, 2, 2, 2, enter the following:

```
<ContentEncodingParams>
...
  <Cluster1>
    8
  </Cluster1>
  <Cluster2>
    2
  </Cluster2>
  <Cluster3>
    2
  </Cluster3>
  <Cluster4>
    2
```

```

</Cluster4>
<Cluster5>
    2
</Cluster5>
</ContentEncodingParams>

```

Contents of an ADI File Trigger XML File

The following is an example of a Sample-ADI-File-Trigger.xml file. For definitions of the parameters, see Table 3 – Parameters Defined for Standard XML File-Encoding on page 11.

```

<ContentEncodingParams>
  <InputFile>
    C:\temp\VoD\Source\Sample.mpg
  </InputFile>
  <OutputFile>
    C:\temp\VoD\Encoded\Sample-enc.mpg
  </OutputFile>
  <AdiFile>
    C:\temp\VoD\ADI\Sample-ADI.XML
  </AdiFile>
  <SID>
    9000
  </SID>
  <AssetId>
    TEST0001137522386093
  </AssetId>
  <AssetName>
    TEST24S04E01_Title
  </AssetName>
</ContentEncodingParams>

```

Format of a Tar File Trigger File

The tar-file trigger file is an XML file that is formatted as follows. All nodes are required except for the optional EpisodeId node. For definitions of the parameters, see Table 4 – Tar File Parameters on page 12.

```
<ContentEncodingParams>
  <TarFilePath>
    VoDTestData\SourceTar
  </TarFilePath>
  <TarFileName>
    MyTar.tar
  </TarFileName>
  <NewTarFilePath>
    C:\VoDTestData\EncodedTar
  </NewTarFilePath>
  <NewTarFileName>
    MyTar.tar
  </NewTarFileName>
  <SID>
    9037
  </SID>
  <EpisodeId>
    1
  </EpisodeId>
</ContentEncodingParams>
```

Glossary

A

ADIFilename

The name of the CableLabs file (if any) that will be transferred to the Nielsen Data-Collection Facility along with the NMR Feed-Point Metadata File.

ADI-XML File

The ADI.XML file holds parameters (MPEG file name, asset name, asset ID, episode ID) used in content encoding. In tar-file processing, the File Trigger Service extracts a set of encoding parameters from the ADI.XML file before starting the encoding session. When the tar-file encoding session ends successfully, the Trigger Service modifies the ADI file, updating the MPEG file name and the checksum to correspond to the newly encoded MPEG file.

AssetId

The ID of the encoded content. May be derived from an Asset ID field in the CableLabs file.

AssetName

The name of the encoded content. May be derived from an Asset Name field in the CableLabs file.

C

CF

Nielsen Collection Facility.

D

Decoder

An application that processes an audio stream (PCM or AC-3) and reports on the Nielsen watermarks (NAES II, NW, or both) that it finds in the audio stream.

E

Ending TIC

The value of the last TIC reserved for this asset.

F

FD

Final Distributor. An attribute in watermark that identifies the watermark as inserted by a distributor.

FileSizeBytes

The size of the encoded file in bytes.

FileSizeSeconds

The approximate duration (in seconds) of the encoded file. This is just an approximation. For very long files, the estimated size may be incorrect by several seconds.

N

NAES II (Nielsen Audio Encoding System II)

Also known as NAES II. The second-generation method of inserting a SID (Nielsen source identifier) and time stamp into a TV signal.

NW (Nielsen Watermarks)

A Nielsen technology that places an audio watermark in a lower-frequency portion of the active program than does NAES II technology. Its lower-frequency position enables NW to be more robust and much less likely to be “compressed out” of the program audio by TV distribution providers without interfering with the viewer’s listening experience. Unlike NAES II, however, NW code cannot be overwritten by successive program distributors.

P

PC (Program Content)

An attribute in a watermark that identifies the watermark as inserted by a programming source.

Plink

Open-source software with a command-line interface that is a component of PuTTY. Plink is installed with the VOD encoder.

PuTTY

Open-source software used for terminal emulation, transferring network files, and as a serial console.

S

Scratch Folder

The scratch folder must be an empty folder. It is used in processing the tar file specified in the XML trigger file. This tar file contains the media content file and an optional ADI XML file. After encoding, encoded media content and the optional ADI XML file are packaged into a tar file specified in the XML trigger file.

SID (Source Identifier)

Unique identifier that Nielsen assigns to each subscriber (or distribution source) using audio watermarking. Included as a component of each watermark, the SID uniquely identifies the distribution source. A subscriber may have more than one SID.

StartingTIC

The value of the first TIC reserved – and the first TIC inserted into this asset.

T

Tar File

A file that is collection of multiple other files. A tar file preserves the organization of the files (folders and files) and identifying system information including dates and user permissions.

Tar-File Trigger File

A trigger file that contains a “TarFilePath” entry. When it detects a tar-file trigger file, the VOD File Trigger Service gathers many of its encoding parameters from an ADI XML file contained within the tar file referenced in the trigger file. The tar-file trigger file also identifies the SID to be used in encoding.

TIC (Time in Code)

A time code used for encoding offline content. See Time Stamp.

Time Code

See Time Stamp.

Time Stamp

A component of the watermark that identifies one of two attributes:

- A numeric representation of the date and time at which the watermark was inserted in the stream (referred to as a timestamp or time code, and typically used when streaming content is watermarked as it is being broadcast).
- A numeric representation of the time-in-content (referred to as a TIC, and typically used when watermarking audio content that is stored in a file). By subtracting the starting TIC from the TIC extracted from the watermark, one can determine how many seconds into the stored file the watermark is located.

In NAES II watermarking, the timestamp or TIC is represented as a 32-bit unsigned integer. The timestamp in Nielsen watermarking uses only 29 bits.

Trigger File

An XML file the presence of which in a specific folder triggers the start of a VOD content encode. The path where these trigger files are located is identified by the “EncoderParamFolder” setting in the EncoderConfig.txt file in the VOD ROOT / etc folder.

W

Watermark

Used as a noun, also referred to as an audio code, a watermark is a sequence of bits that the Nielsen Watermark software inserts periodically in an audio stream. The components of the watermark (SID, timestamp or TIC, and a PC or FD flag to identify the point of entry into the flow of content distribution). With these components, a watermark can uniquely identify the portion of audio from which the watermark is extracted, that is, the distribution source to which the audio content can be credited.

Used as a verb, the term “to watermark” means to insert Nielsen codes into an audio stream.

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