

Using the Cisco IP/TV Streaming Solution With TANDBERG Codecs

TANDBERG

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Table of Contents

1.	INTRODUCTION.....	3
2.	ABOUT IP/TV.....	3
3.	TANDBERG ON STREAMING.....	4
4.	USING CISCO IP/TV WITH TANDBERG CODECS	5
4.1.	PARAMETER SETTINGS	5
4.2.	DEFINING CODEC AS SERVER	6
4.3.	DEFINING A PROGRAM.....	6
4.4.	RECORD A STREAMING SESSION	8
4.5.	TO VIEW A RECORDING	9
4.5.1.	<i>OnDemand program</i>	9
4.5.2.	<i>Scheduled Program</i>	9
4.6.	COMBINING A RECORDED STREAM WITH A PC PRESENTATION.....	10

1. Introduction

This document gives a description of how to use the Cisco IP/TV Streaming products together with TANDBERG codecs.

2. About IP/TV

IP/TV is a software application that delivers full-screen, full-motion video to desktop PCs over private IP-routed networks and the public Internet.

IP/TV works on the client/server model, with a server acting as the central content-distribution point to deliver information via IP multicast to desktop clients.

The IP/TV solution can be delivered as a software solution only, or bundled together with servers from Cisco (the 3400 series).

Cisco IP/TV consists of three primary functional components:

- **IP/TV Content Manager** — Enables central management of the environment.
- **IP/TV Broadcast and Archive Servers** — Enables real-time encoding and delivery of live, scheduled, and on-demand video.
- **IP/TV Viewer** — Provides high quality reception of video streams and synchronized media, either as a standalone application or browser plug-in for Web access.

The Content Manager and the Broadcast and Archive Servers can for demo purposes be installed on one single server, but this is not recommended in a commercial environment. Both these servers require license keys in order to operate.

The Viewer is the client application that displays the streaming audio and video on the end users terminal. There are no licenses required to install the Viewer on a PC.

For more information about or how to install the Cisco IP/TV solution, please refer to the installation and user manual from Cisco

<http://www.cisco.com/en/US/products/sw/conntsw/ps1869/index.html>)

Note: The Cisco IP/TV products will be integrated with the Cisco Content Delivery Network (CDN), as a Content Edge Delivery component. This integration will happen gradually, and a full integration of the IP/TV product is expected to take approx. 18 months (i.e. Q2/Q3 2004). A first release is however expected in Q3 2003 (dates are not confirmed).

3. TANDBERG on Streaming

The majority of streaming clients available on the market today (e.g. QuickTime, RealPlayer and VIC) supports H.261/RTP video streaming directly from the TANDBERG codecs. This implies that streaming session from any of the TANDBERG codecs can be viewed in real time by any of these clients on the end-user's PC.

Another requirement for a streaming solution is the capability of recording a streaming session for later retrieval and presentation using a streaming client.

Although the majority of the streaming server vendors state that they will be supporting H.261/RTP in the near future, the Cisco IP/TV solution is the only one so far that has been tested and verified compliant.

The following chapters will describe how to use the Cisco IP/TV solution in conjunction with TANDBERG endpoints. This includes information about how to store a streaming session on the server as well as how to order later retrieval of the streamed session to an end user. The document also describes possibilities for streaming a PowerPoint presentation together with an audio/video stream.

It should be noted that the user interface and procedures for recording such a stream using the Cisco IP/TV solution is somewhat cumbersome.

Note: It is also possible to record a video session from a TANDBERG endpoint using IP/TV in combination with a video capture card. This is however not covered in this document.

4. Using Cisco IP/TV with TANDBERG codecs

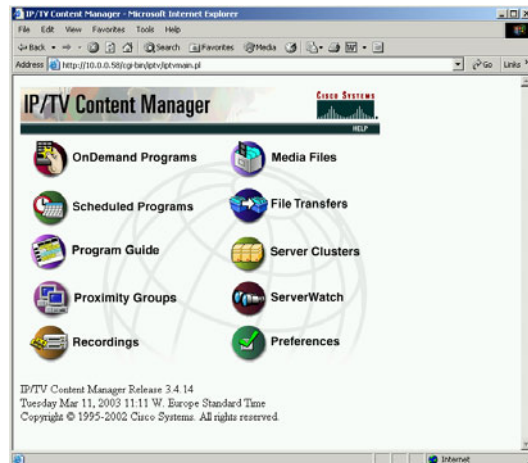
This chapter gives an overview of how to record a stream from a TANDBERG codec using the Cisco IP/TV Streaming solution.

4.1. Parameter settings

Open the web console for the IP/TV Content Manager. This can be done by typing in the IP address of the server on which the Content Manager is running in your web browser.

As the Content Manager is an administrator's tool, a login/password sequence is usually needed. Password and ID is set when installing the software on the server.

Once authenticated, your browser should display a web page as depicted to the right. This web page will throughout this document be referred to as the 'Home Page' of the Content Manager.

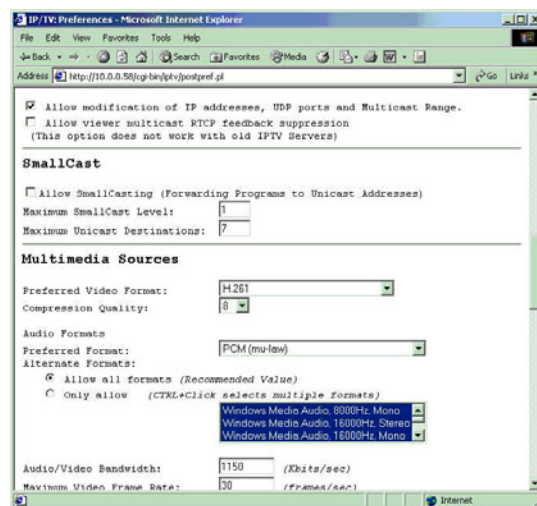


To ensure that you will be allowed to set all needed parameters for recording a streaming session, click on the 'Preferences' option on the main page of the Content Manager.

A web page showing numerous parameters will be shown in your browser. Scroll down approx. halfway down the page, and make sure that the parameter 'Allow modification of IP addresses, UDP ports and Multicast Range' is ticked off.

In order to store this setting, scroll all the way down to the bottom of the web page and click on 'Revise Preferences'

You should now return to the 'Home page'.



4.2. Defining Codec as server

In order to record a streaming from a codec, the codec needs to be defined as a server in the IP/TV system.

From the 'Home page' select 'Server Clusters' and then choose 'New Server'.

Enter the IP address of the TANDBERG codec in the 'Server Name' field, and add a suitable description under 'Server Information'. Otherwise, accept the default values suggested and click on 'Revise Servers' at the bottom of the page.

4.3. Defining a Program

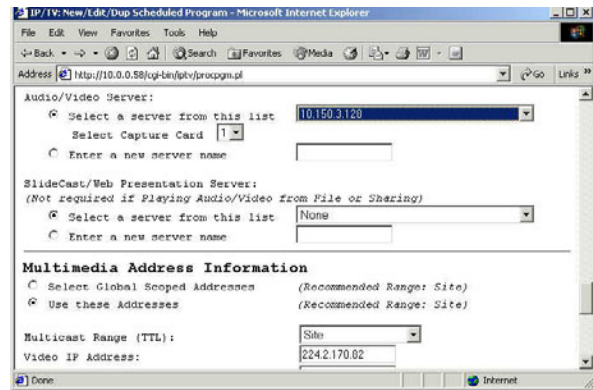
Now select 'Scheduled Programs' from the top of the page, followed by 'New Program'. Select 'Advanced Program (Show All Options)' and then click on the 'Create Program' at the bottom of the page.

Choose a suitable name for the session, a description and select 'Play Program Continuously'

Scroll further down the page until you see the 'Multimedia Source Information'.

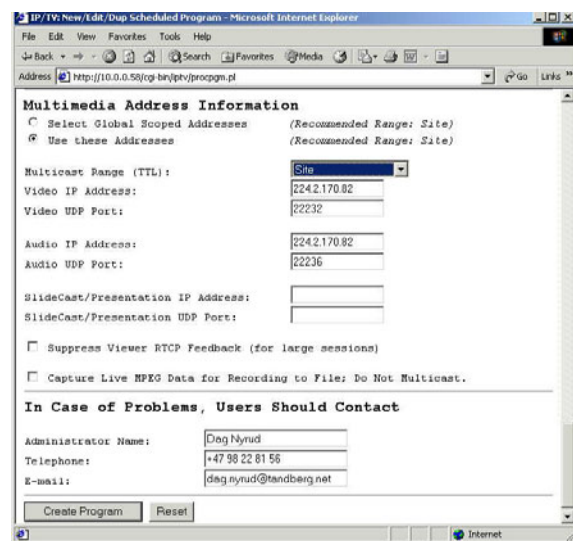
Select 'capture Live Video/Data'.

Scroll further down until you see that parameter 'Audio/Video Server'. Select the IP address of the TANDBERG codec you entered as the 'Server Name'.



Scroll further down until you see 'Multimedia Address Information'. Select 'Use These Addresses' and enter the Multicast addresses as defined in the streaming settings on the codec for both video and audio. The port number for the video shall be the same as the 'Address port setting' on the streaming settings on the codec, while the audio port number is 4 more than the Video port.

Enter Administrator name and phone number, and select 'Create Program'



You should now be able to see a representation of the Program name in your IP/TV client. By double-clicking on this link, you will receive the streaming from the codec directly to your IP/TV client. The stream is however not stored anywhere.

4.4. Record a streaming session

To record a streaming session, you need to create a recording using the Content Manager. From the 'Home page' select 'Recordings', then 'New Recording'. Select the Program, and then click 'Create Recording'.

Give the recording a suitable name and set the recording schedule, i.e. when the recording will start. It is often a good idea to start the recording approx. 5 minutes before the actual streaming is expected to take place. As long as there is no stream received, nothing will be recorded (i.e. any 'empty' space in the beginning of the recording will not be included).

The screenshot shows the 'New Recording' web form. The 'Name' field contains 'Training session 1'. The 'Description' field contains 'A 15 minute training presentation.'. Under 'Program Information', the 'Name' is 'Training session 1' and the 'Schedule' is 'Play Program Continuously'. The 'Recording Schedule' section shows 'Record Program once on Jan 14 03 at 17:00' and 'Length: 1 Hours'. The local time is 'Tuesday Jan 14, 2003 17:18. Timezone: W. Europe Standard Time. Note: All times use a 24-hour clock (hh:mm) and are in local time.'

Scroll further down the page and give the file name for the recording a suitable name. Also choose the Archive Server where you want it recorded.

Enter contact details (name and phone number) and finally select 'Create Recording'

For a recording to take place, you obviously need to start the streaming from the codec according to the time schedule defined above.

The screenshot shows the 'Recording Instructions' section of the form. The 'Record Audio' and 'Record Video' checkboxes are checked. The 'Record to this file:' field contains 'instruction1.rpl'. The 'Do not overwrite existing file' checkbox is checked. The 'On this Server:' section has 'Select a server from this list' selected, with 'TANDBERG-9860T6.lysaker.tandberg.net' chosen from the dropdown. The 'Last repeat ends on' is set to 'Jan 15 03 at 10:00'.

Once the recording is completed, you will see a representation of your recording under 'Media files' on the Content Manager.

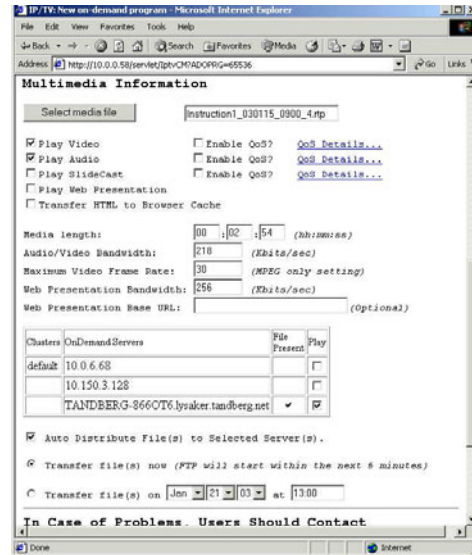
4.5. To view a recording

In order to make a recording available to end users, you can either define the recording as a new on-demand program or define a new scheduled program which will multicast the recording at a defined date and time.

4.5.1. OnDemand program

On-demand programs are recorded sessions that can be viewed by end-users whenever they want. To define your recording as an on-demand program, select OnDemand Programs in the Content Manager and then select 'New Program'.

Enter a suitable name and description of the program. Under 'Multimedia Information' you then click on the 'Select Media File' button in order to see the available recordings stored on the media server. A pop-up window will appear, showing the available recordings on the media server(s). Your recording should be listed here. Select your recording and verify that the following parameters on the 'New Program'

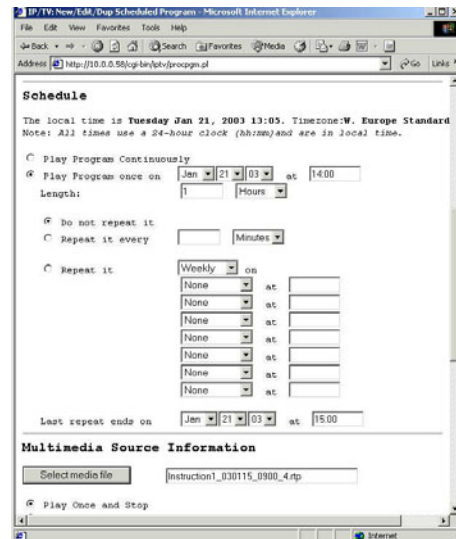


4.5.2. Scheduled Program

Scheduled Programs allows recordings to be multicast at a set date and time. This allows end-users to 'tune-in' to the session and view the recording at this specified time. To define your recording as a schedule program, select 'Scheduled Programs' on the Content Manager, followed by 'New Program'. Select 'Basic Media File Program' and then click on 'Create Program'.

Enter a suitable name and description of the program, followed by the date and time for the multicast to take place. You then select the media file to be used in very much the same way as for an on-demand program. Finally, enter contact detail and select 'Create Program'.

Your recording will now be multicast on the defined date and time.



4.6. Combining a recorded stream with a PC Presentation

The Cisco IP/TV solution also includes functionality for presenting a PowerPoint presentation or a WEB browsing session together with the recorded (or real-time) audio/video stream. IP/TV offers two ways of doing this, using either their Web Presenter application or their SlideCast application. For more information, and a description of the differences between these applications, please refer to the Cisco manuals.

Unfortunately, a PC presentation cannot be recorded together with the audio and video streams from the TANDBERG codecs. The reason for this is that the code for indicating actions on the PC presentations (e.g. flip to next PowerPoint slide) needs to be embedded into the media streams. This can only be done if the media stream is stored in MPEG format, which TANDBERG unfortunately does not yet support.

It is however possible to manually combine a PC presentation when streaming a recorded audio/video session. A person then needs to control the PC presentation and manually perform the actions of the PC presentations to synchronise with the recorded audio/video stream.