

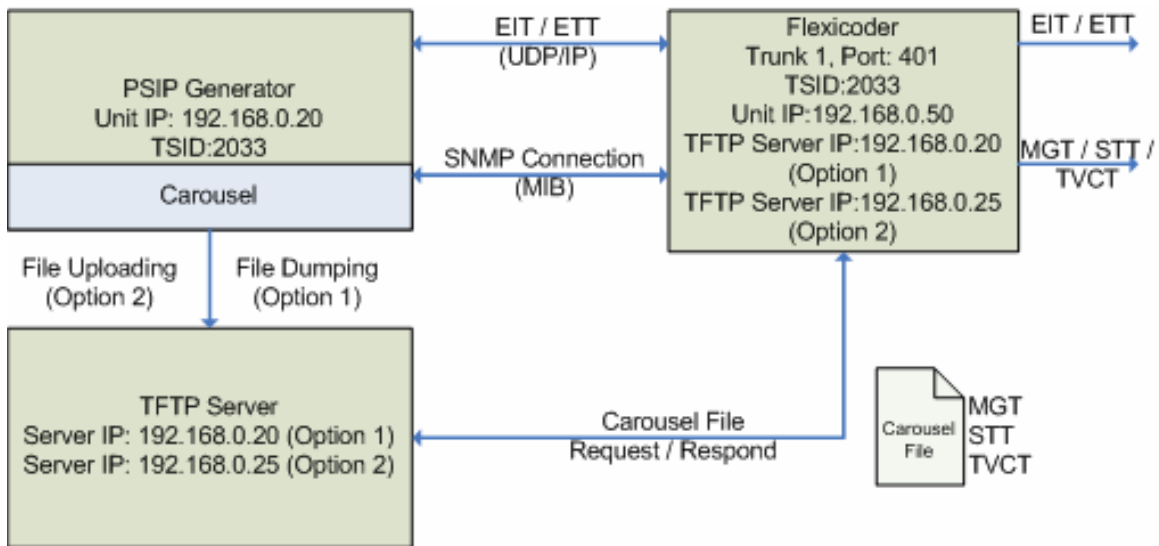
An Overview of DTVi PSIP Generator Carousel

To utilize DTVi PSIP Pro’s Carousel feature, it is suggested to know how PSIP Generator and Flexicoder are being configured in terms of IP addresses and how carousel would work for your specific environment prior to set up the carousel. PSIP Generator / TFTP Server, and the Flexicoder need to operate in the same logical network (Ethernet). Any two of them must reach each other by “Ping”. With this said, one shall test the connectivity amongst these three parties before carousel can be successfully configured.

Note:

If the PSIP Generator computer has two NIC cards (two IP addresses), the IP address to be chosen needs to be always consistent and reachable by either party.

Refer to the following diagram (example):



Function Architecture

Option 1: The TFTP Server software runs on the same computer as PSIP Generator

Option 2: The TFTP Server software runs on another computer

For easier management and shorter network latency, Option 1 is suggested unless other reasons are considered.

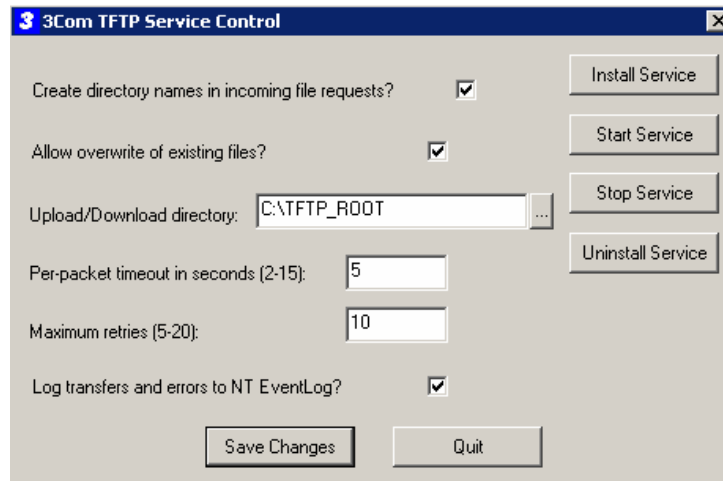
To utilize the PSIP Carousel feature, follow the steps below:

1. Utilize and configure an external TFTP Server.

TFTP Server can be downloaded at <ftp://ftp.3com.com/pub/utilbin/win32/3CTftpSvc.zip>
This is free, lightweight Windows 32-bit TFTP Server shareware software provided by 3Com. Please follow its instruction documents to install and configure the TFTP Service on your Windows.

[Quoted from Install.txt]

Place the 3CTftpSvc.exe file into your WindowsNT directory. For me, this is "C:\WINNT". You MUST place the file here, otherwise 3CTftpSvcCtrl will not know where to find it. No other location will do!!! The 3CTftpSvcCtrl.exe file is used to configure the service, and can be placed anywhere in your path.



Register:

Run 3CTftpSvcCtrl.exe. Select the "Install" button.

Configure:

Run 3CTftpSvcCtrl.exe. Answer the following questions:

- Create directory names in incoming file requests:
If a file request comes in, and contains a directory name, but that directory does not already exist - it is automatically created.
Default: True.
- Allow overwrite of existing files:
If an incoming write request contains the name of an existing file, it is overwritten with the new file. If the existing file, however, has the READONLY attribute, it will not be overwritten, even if this option is checked.
Default: False.

- Upload/Download directory:
This is the directory from which the TFTP service will serve files.
Default: C:\TFTP_ROOT.
- Per-packet timeout in seconds:
Amount of time the TFTP server will wait before retransmitting a packet.
Default: 5 seconds.
- Maximum retries:
Maximum number of resends of an unacknowledged packet before the TFTP server considers the transfer as failed.
Default: 10.
- Log transfers and errors to NT EventLog:
If checked, status about each TFTP transfer will be logged to the NT EventLog.
Use "Administrative Tools/Event Viewer" to see these messages.
Default: True.

Once you have configured the server, click "Save Changes".

Start TFTP Service:

Run 3CTftpSvcCtrl.exe. Select the "Start" button.

Special Note:

- You may need to adjust the time-out setting in TFTP Server control panel to longer latency (e.g. 10 seconds) if the TFTP Server runs on an already heavy loaded computer, or you keep seeing Flexicoder complains time out when loading the carousel file.
- You also need to set the TFTP Server IP address in Flexicoder (through Vidiem software or HyperTerminal). Make sure the TFTP Server computer is reachable bi-directionally to/from Flexicoder through network. (How to set up the IP addresses in the Flexicoder is out of the scope of this doc, please refer to Flexicoder configuration helps.)
- The TFTP Server can be configured and running on the same computer where PSIP Generator runs on (Option 1), or it can be running from any other computers within the same Ethernet (Option 2).

2. Configure the carousel function in PSIP Generator.

Set up Flexicoder entry first

Advanced → Setup → Environment → Encoder System. See Fig 1.

Select Harris (Lucent MIB).

Specify Flexicoder Port (default 401 for Trunk 1) and the IP address, then click on "Save Changes". The "Encoder connected" confirmation message should be indicated. This step

makes sure that a good SNMP connection has been established between PSIP Generator and the Flexicoder. PSIP Carousel will utilize this connection to the Flexicoder in later operation. If the Flexicoder is already connected before, you can skip this step.

Note:

If Carousel has not been utilized before, the checkbox “Turn on Carouseling” and “TFTP Server Setting” button shall be enabled.

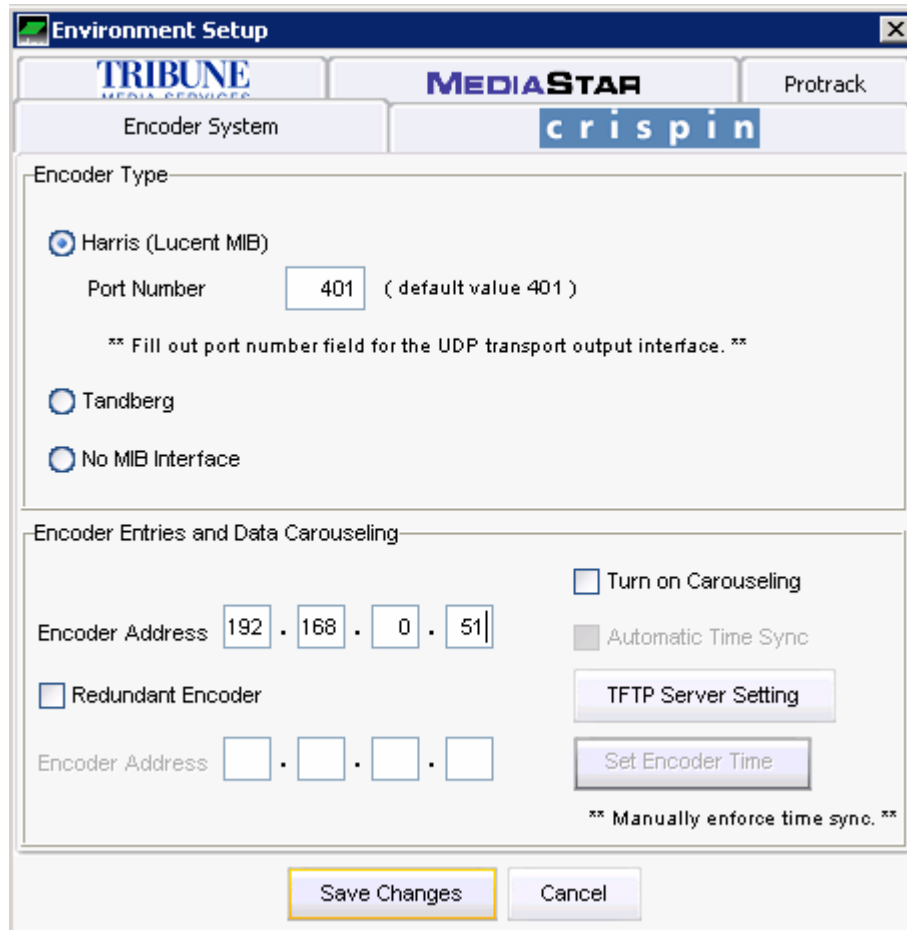


Fig 1.

Set up TFTP Server in PSIP Generator

Advanced → Setup → Environment → Encoder System. Click on “TFP Server Settings”.
See Fig 2 and Fig 3.

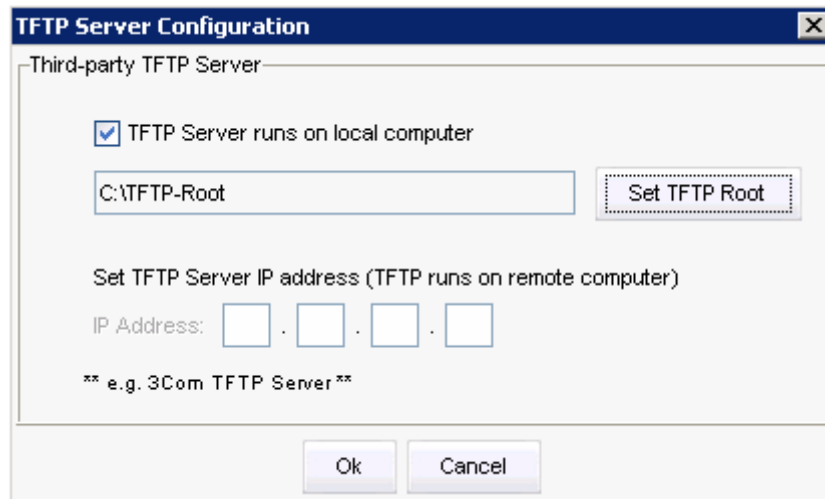


Fig 2. (Option 1)

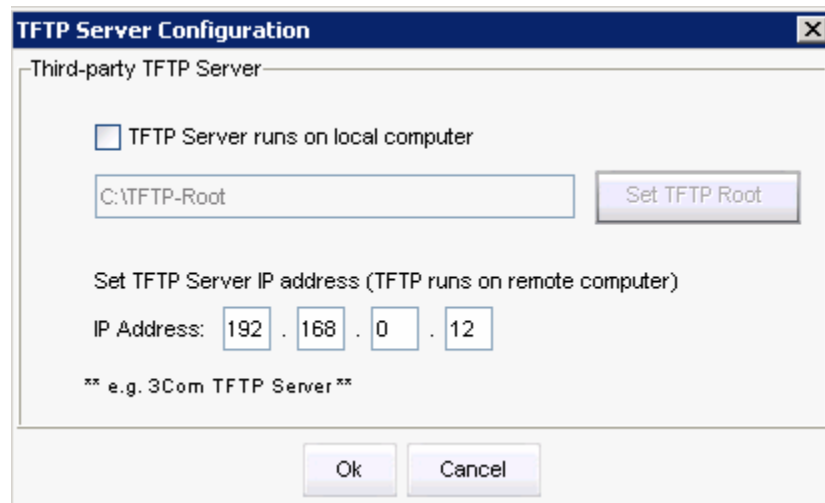


Fig 3. (Option 2)

If the TFTP Server runs on the same computer where PSIP Generator runs, **check** on “TFTP Server runs on local computer” and specify the TFTP Server root directory (Fig 2.). – This is the Option 1, according to Fig Function Diagram.

In this setup, PSIP Generator can take advantage of local TFTP Server by directly dumping the carousel file into the TFTP root directory without experiencing the time overhead uploading the carousel file through network.

If the TFTP Server runs on another computer, **uncheck** “TFTP Server runs on local computer” (Fig 3.). – This is the Option 2, according to Fig Function Diagram.

It is required to enter the IP address of the computer where TFTP Server runs on.

Turn on Carouseling / Automatic Time Sync

Now you can check on “Turn on Carouseling” and “Save Changes”. The “Carousel connected” confirmation message should be displayed. This step makes sure that the initial Carousel request (Turn on Carouseling and also set the Carousel Path in the Flexicoder) from PSIP Generator has been accepted by the Flexicoder.

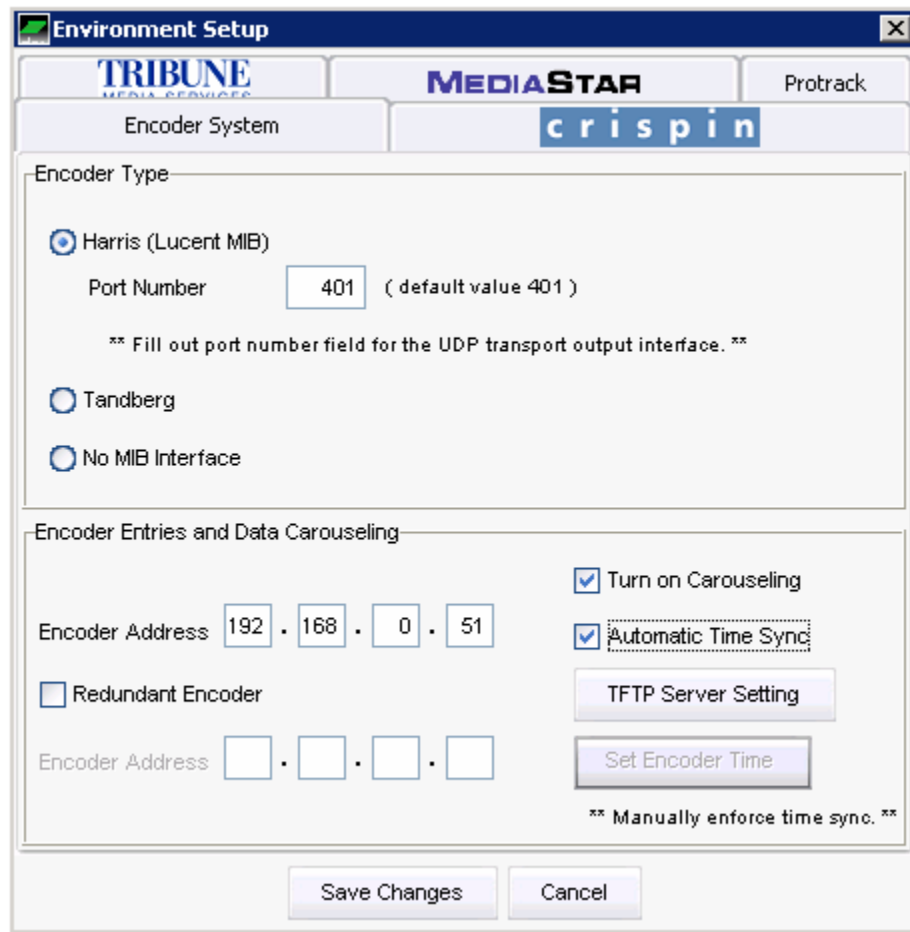


Fig 4.

The “Automatic Time Sync” is an additional feature that automatically synchronizes the Flexicoder’s time (UTC only) with PSIP Generator’s time every time when a new carousel file is updated. The Flexicoder time can be also set synchronized with an external time server (NTP), in this case, you don’t need to synchronize its time with PSIP Generator.

Alternatively, you can manually “Set Encoder Time” anytime as long as Carousel is enabled.

Note:

If redundant encoder is selected, PSIP Generator will also prompt carousel to the redundant Flexicoder.

3. Turn on the PSIP output.

After PSIP Generator is started, the carousel file should be generated and communicated to Flexicoder via the TFTP Server.

4. Basic Troubleshooting

Flexicoder reports time out (indicated in hyperterminal):

- Check Flexicoder TFTP Server IP address
- Verify network connection (IP Ping TFTP Server IP and Ping Flexicoder from TFTP computer)
- Make sure TFTP Server is fully installed and started. (Look up in NT Event log)
- Adjust time out value in TFTP Server configuration

Failed to connect to encoder (indicated by PSIP Generator)

- Check Flexicoder IP and Port (Default 401 for trunk 1) settings in PSIP environment.
- Verify network connection (Ping)
- If you see no service elements in the virtual channel setup in the PSIP Generator, it also indicates that the encoder is not communicating with PSIP Generator.

Error occurred when generating carousel file:

- Look at the error message
- Restart PSIP or Flexicoder depending on the code

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