Delta Media Server

Broadcast Stream Capture in Delta Using Zixi

User Guide

7THSENSE

Broadcast Stream Capture in Delta Using Zixi : User Guide

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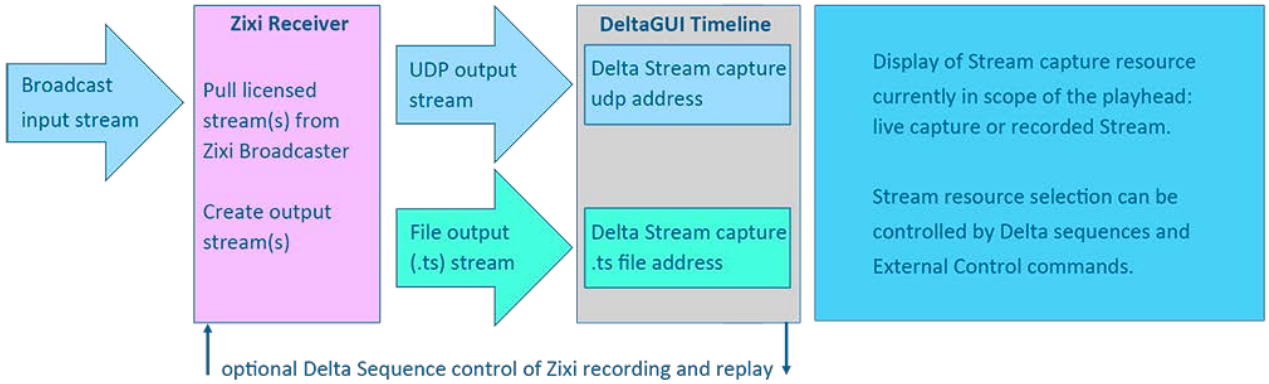
Overview

Delta can capture broadcast streams via the Stream capture resource on the timeline. Since broadcasts are generally licensed, and Zixi Broadcaster widely used, we can use the licensed Zixi Receiver to provide a UDP stream.

This can be live-streamed to the display as any other resource, or sent to a transport stream (.ts) codec file by Zixi Receiver. This recorded movie file can then be played on the Delta timeline also as a Stream capture resource, but using the recorded file path as the address



If capture and replay are a regular requirement, we can use http calls to Zixi and, using Delta External Control commands, control the recording and playback once the live stream segment has been received and/or played.

Requirements

- Delta 2.6.54 or later
- Zixi Receiver licence
- cURL (command line utility) to use External Controls back to Zixi for recording.

Install and Configure Zixi

Install Zixi Receiver

Run the installer for the Zixi Receiver software on the Delta server being used for the broadcast capture.

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Zixi Receiver will install as a web service, which can be accessed in your web browser on **127.0.0.1:4300**. This will open the log-in page, for which the login credentials are:

Username: admin

Password: 1234

Credentials and the default port can be changed.

- Zixi Receiver User Guide

Status Page

Logging in takes you to the Zixi 'Status' page where you will first activate your Zixi license. This will have been provided by Zixi or the broadcasting network. Activation is completed by selecting *Options* > *Activate License* and typing in the supplied activation key:

This page displays the current status of Zixi, with some useful information, such as how many input and output streams you have, as well as licensing information. There is also information displayed on how long your stream has been active, which can be useful for diagnosing issues with dropped network connections.

Adding an Input (Pull) Stream

With Zixi Receiver installed and licensed, you can configure your input and output streams. The first thing to do is add your **Pull** input stream details for the required broadcast. The required details will be provided by the source (broadcaster) sending the stream:

- Host IP
- Port Number
- Stream ID
- Password

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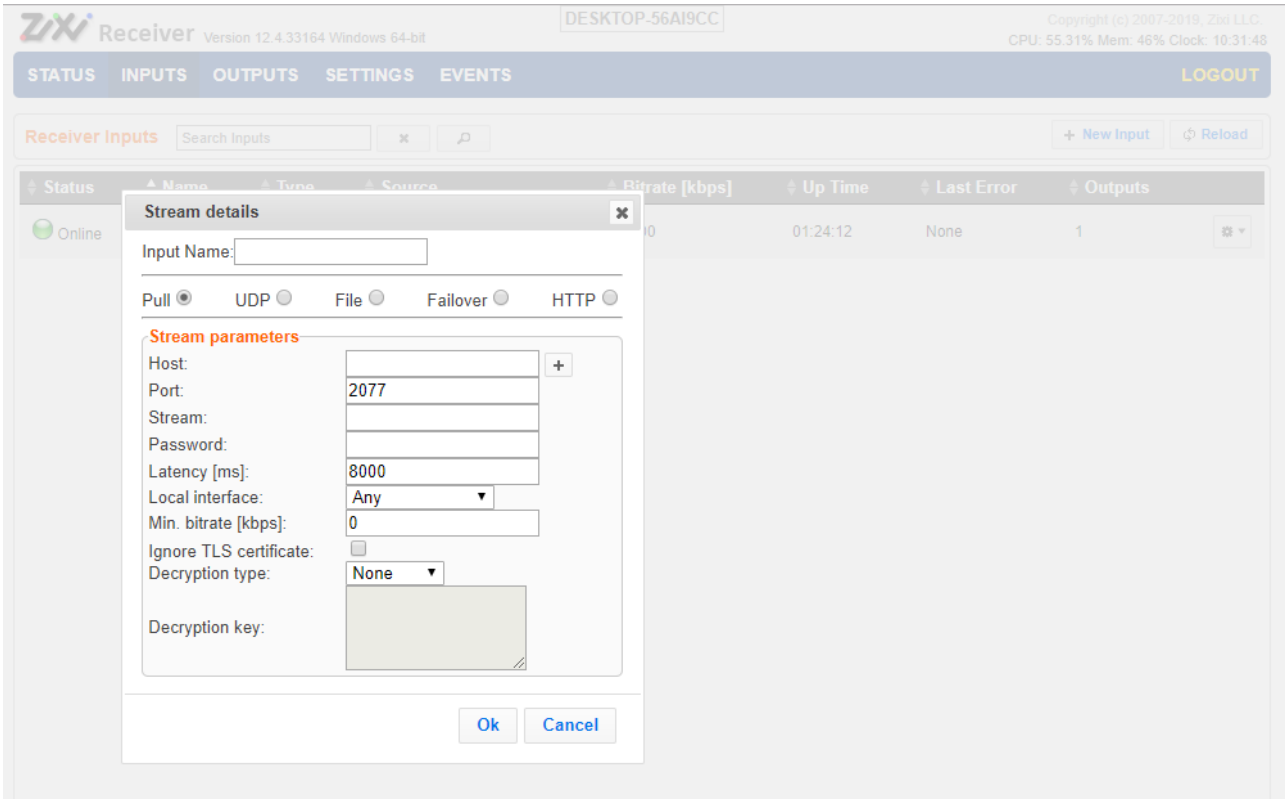
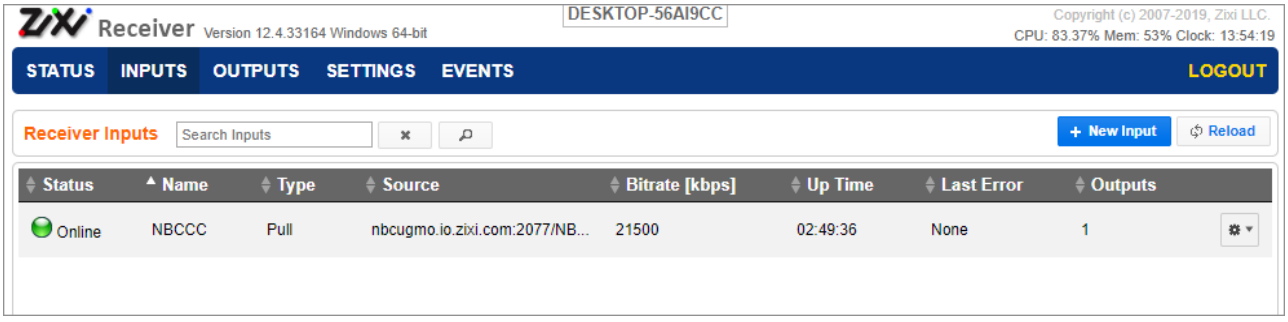
- AES-128 Decryption Key



The Input Name you give to this is an internal reference of your own.

Click OK when you are done, and you should see a new ‘Input’ stream in the Zixi Inputs page:



The Status of ‘Online’ with the green dot is a healthy input. If it goes amber or red, then it generally is a sign that the connection has been dropped. It could also mean that the parameters that have been entered when creating the Input are incorrect, in this instance you should delete the input and re-create.

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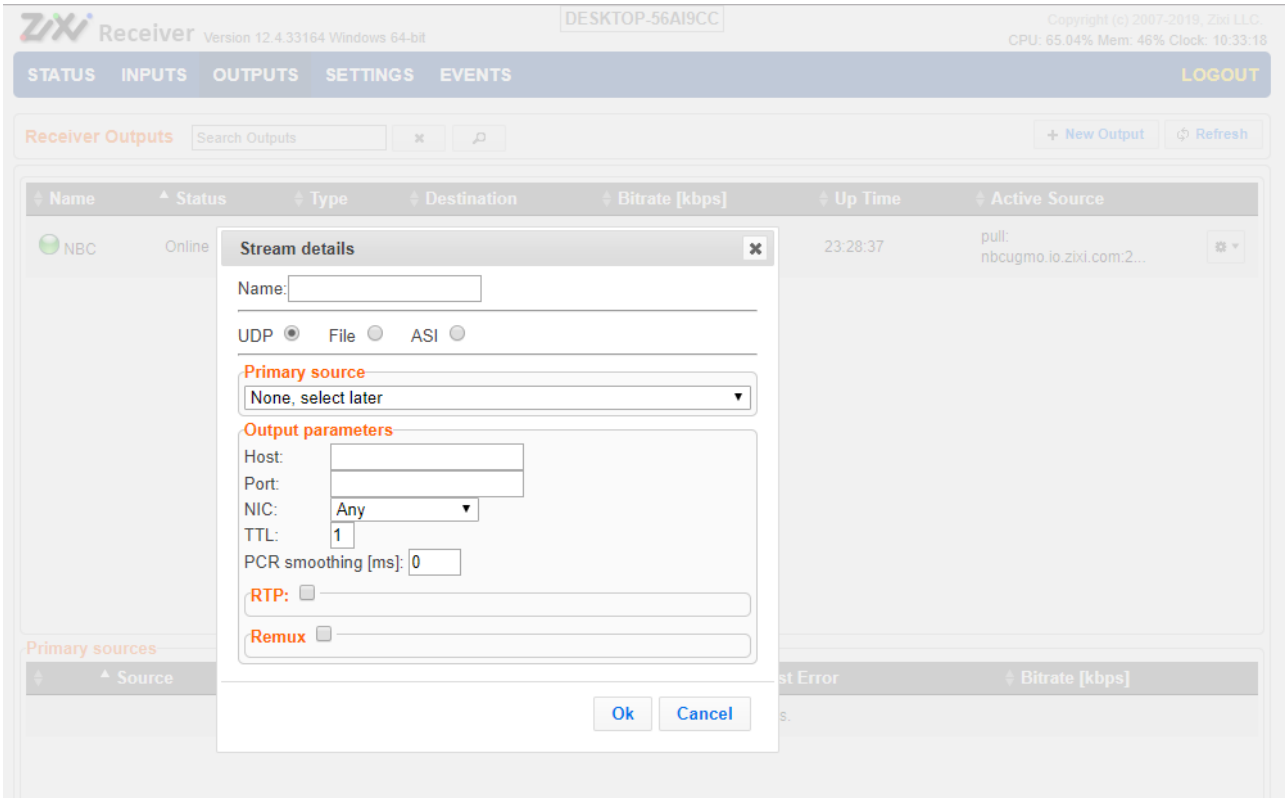
Adding an Output (UDP) Stream

Next create an Output from Zixi Receiver. This will take the broadcast input stream and re-broadcasts it back out of Zixi as a UDP stream, which can be played back in Delta. Click the Output tab at the top of the Zixi browser page, and select 'New Output'.



Select UDP as the output type. Click the dropdown and select the broadcast input source that you set up above.

Output parameters

As Zixi will be run locally on the playback server, specify the **Host ID** as 127.0.0.1 (localhost).

We recommend you configure the **port number** to be in the > 8000 range, to ensure it doesn't interfere with any of the UDP ports already being used by Delta (the 7thSense Stack web interface uses port 8000 for its system Overview page.)

From the **NIC** dropdown, select 'localhost'. The name of this output stream is an internal reference of your own.

Click OK when you are done, and you should see a new 'Output' stream in the Zixi Outputs page:

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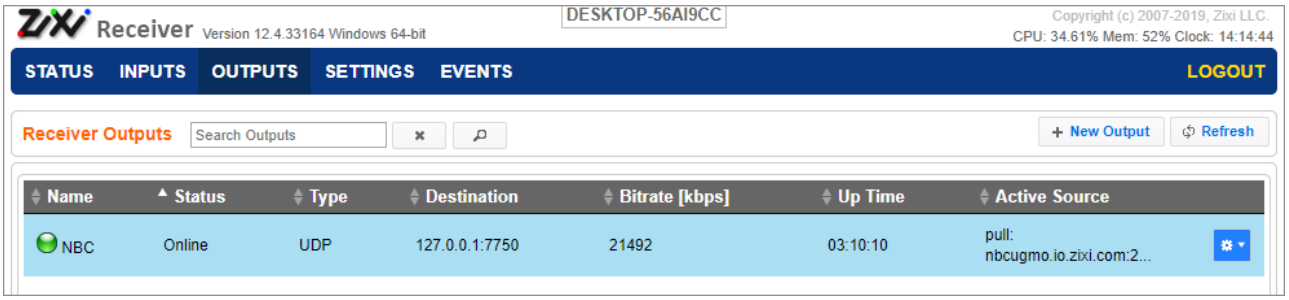

Adding an Output (File) Stream

Sending an output to a file will create a transport stream (.ts) file, which can also be played back via a Delta timeline Stream resource. If you want to record and playback a broadcast stream, it is best to specify the output folder to which the recorded files will be exported as the Delta \Movies drive. (Zixi has its own default, but this is more consistent in Delta.)

Find **receiver-private-settings.xml** in C:\Program Files\Zixi\Receiver. Edit this so that the output location points at the Delta server Movies folder:

```
<?xml version="1.0" encoding="utf-8"?>
<ROOT_FOLDER>
     <PATH>E:\Movies</PATH>
</ROOT_FOLDER>
```

Note that we shall use a Delta External Control command to record, which uses a default file name. The recorded movie path will therefore now be **E:\Movies\rec.ts**. Each time you record you will overwrite this file, unless you intervene or, for example, add a batch script to preserve previous files.

Configure Delta

Streaming the Live Broadcast by UDP

Now that the Zixi setup is complete, the next step is to configure Delta to receive the input stream. Open DeltaServer and DeltaGUI and add a 'Stream' capture resource to the DeltaGUI Timeline. This first stream resource is where you will specify the UDP address of the stream that we're broadcasting out of Zixi.

Double-click the timeline Stream to access to Resource Editor and go to the Timeline tab. When adding the Address, the syntax is: udp://127.0.0.1:####.

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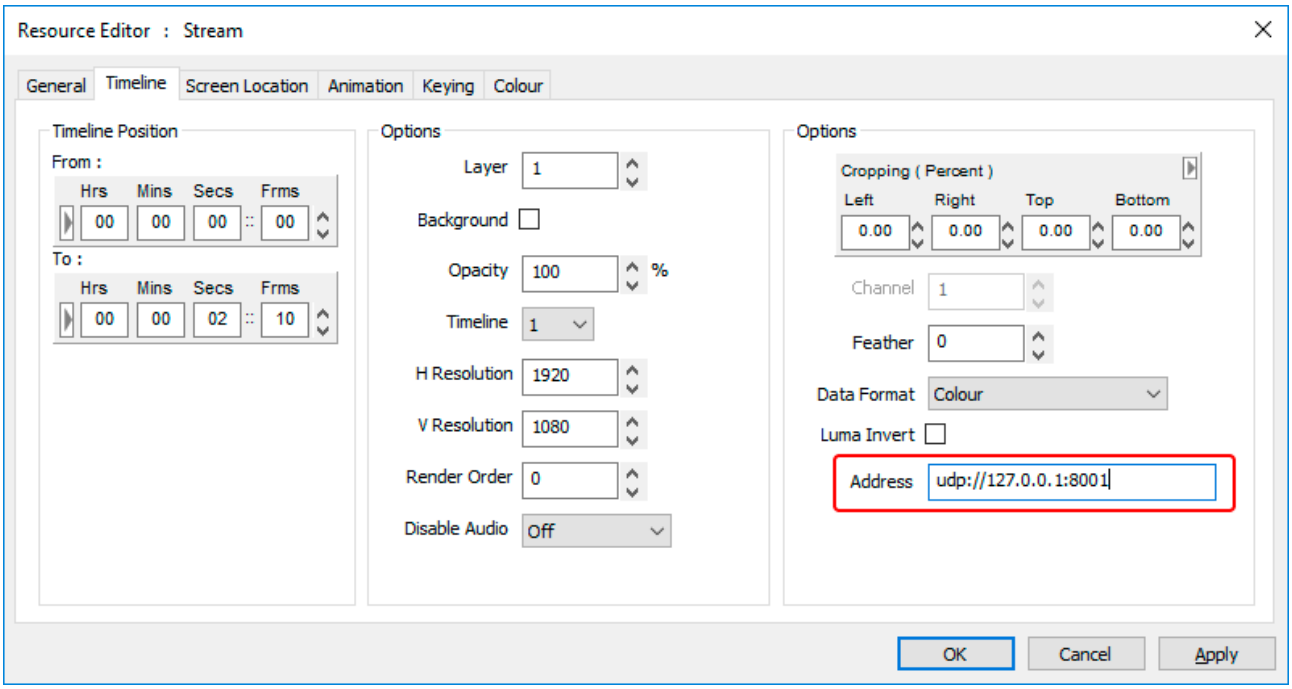

The four digits (####) are the UDP port number as previously defined in the UDP output in Zixi. Find or confirm this from the Destination column of the Zixi Output tab. Click OK and close the Resource Editor. You should now be able to see the live UDP stream in the playback window, when the playhead is over the resource:

Example news stream only.

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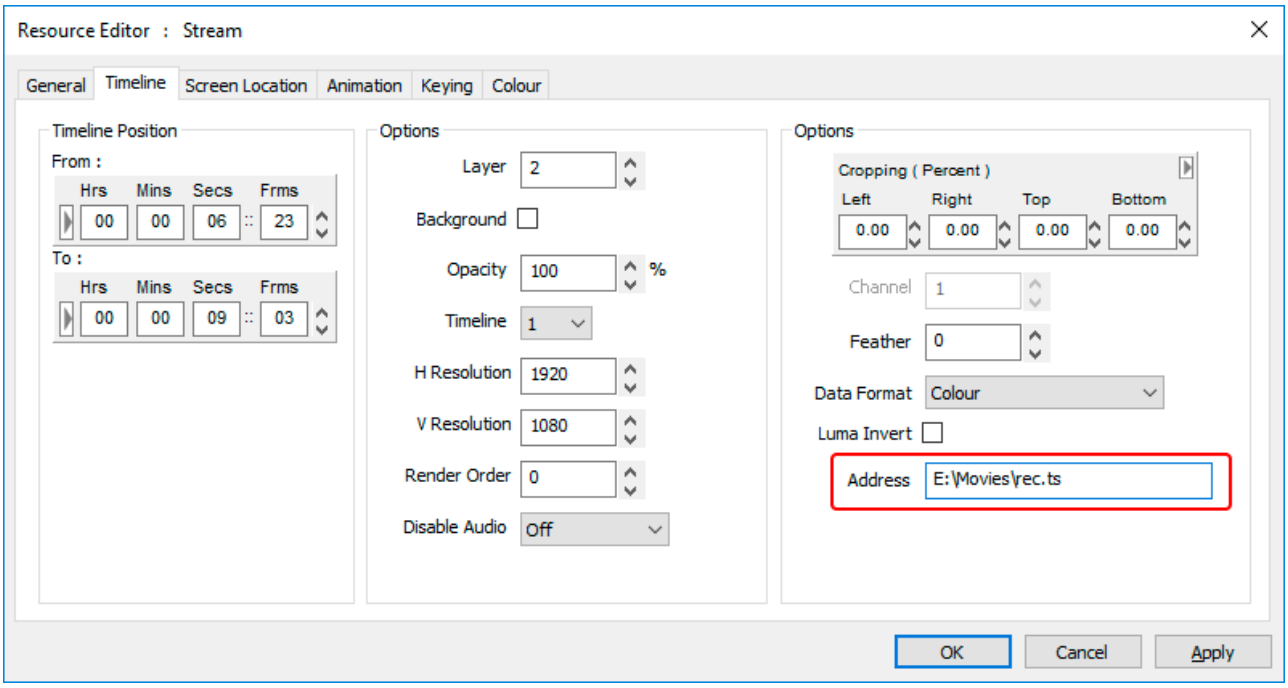
Playing Back a Recorded Broadcast Stream

A second Stream capture resource on the Delta timeline will serve as the playback for the recorded rec.ts file. We already specified the file location in the Zixi file output stream.

Double-click the timeline Stream to access to Resource Editor and go to the Timeline tab. The address of this resource is the path of the rec.ts:



The DeltaGUI timeline will now show two different Stream resources on the timeline, one being the UDP live stream resource, and one being the recorded file resource. How you place these in order to move between them is your choice: use different layers, timeline position, enable/disable layers, switch to the Reserve timeline – all are available choices. Remember that if all your show is doing is to play Streams, the Streams can play without the timeline itself running. The playhead just needs to be over the required resource.

You can play the streams manually, or automate the whole process of recording during live capture and then replaying as a continuous loop.

External Control Commands for Zixi

There are external control commands for starting and stopping Zixi recording: STARTZIXI and STOPZIXI:

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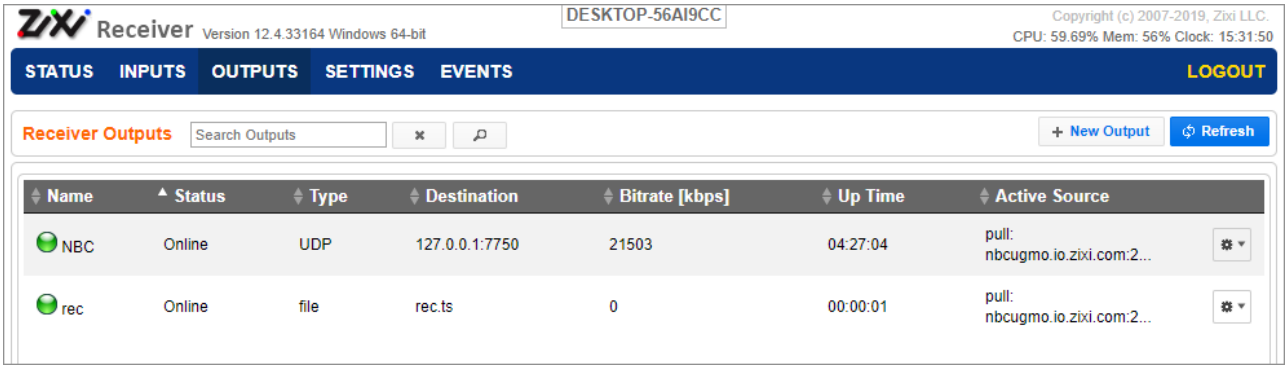
STARTZIXI:

This command can be sent via a sequence or standard external control protocol. It sends an HTTP call to the Zixi Receiver (on localhost) that creates a new file output called 'rec.ts'. This tells Zixi to create a recording of the current stream and save it as a .ts (Transport Stream) file. The rec.ts file can be played back in Delta complete with audio, as a 'Stream' resource on the timeline, by configuring the address as the directory address of the file, but only once the STOPZIXI command has been run.

STOPZIXI:

This command can be sent via a sequence or standard external control protocol. It sends an HTTP call to the Zixi Receiver to stop, and to remove the current recording file output to rec.ts. If there is nothing being recorded, then running this command will simply do nothing. Once any such file output has been removed from Zixi, the .ts file is ready to be played back in Delta as a 'Stream' resource.

When you start recording from the stream using the STARTZIXI command, you will see a new file output created in the output window of the Zixi web interface. This will remain until the STOPZIXI command is sent, when the file output will be removed as a file output in Zixi.



When the output is removed from Zixi, the playhead can be moved to being over the Stream resource using the file path address for 'rec.ts', and you will see playback of the recorded resource.

Use of External Control commands and Sequences is covered in the appropriate version Delta User Guide.

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Troubleshooting

Recorded files are not saving to the Movies folder

This can be solved by changing the **receiver-private-settings.xml** to point towards the Movie folder. This xml file can be found at C:\Program Files\Zixi\Receiver:

```
<?xml version="1.0" encoding="utf-8"?>
<ROOT_FOLDER>
     <PATH>E:\Movies</PATH>
</ROOT_FOLDER>
```

If you find it is still not working right away, it may be worth stopping the Zixi Receiver service in Windows Services, before editing the xml. Do a restart after editing the xml also, and ensure you restart the Zixi Receiver service.

Recorded files are a blank output / the files are 0 kB in size

The STARTZIXI command will send a command to Zixi to start recording a file from the input stream. If the recorded file is 0 kB in size, or appears as a black output in Delta, it could be that the source stream is not being picked up correctly. You can see if this is the case by looking at the Zixi output window: if the file is recording, but the indicator is amber (rather than green), it could mean the source is not correctly configured. This can be fixed by ensuring the SOURCE ID of the Zixi input stream is set to 1. Stop the Zixi Receiver service and edit the **receiver-config.xml**. This can be found at C:\Program Files\Zixi\Receiver. The ID Tags **must** have '1' as the ID:

```
<?xml version="1.0" encoding="utf-8"?>
<ZIXI_IN>
     <ID>1</ID>
</ZIXI_IN>
```

Once this is set, save the xml and restart the Zixi Receiver service.

The live UDP stream goes blank in the Playback Window

This will most likely be a networking issue. Check in the browser that you have an Internet connection. You can also look at the Zixi web interface to see the status of the input stream. If the network has been lost, the Input message should show an error that it's disconnecting, with the colour being amber:

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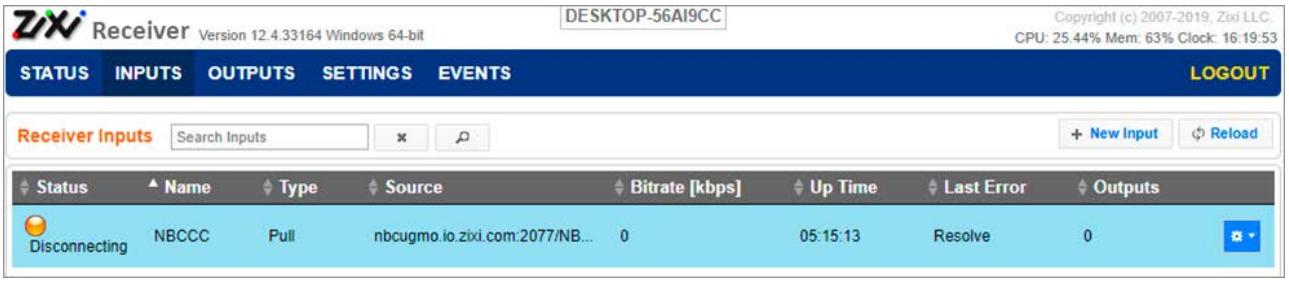

Once you have resolved the network issues, the stream should automatically regain connection.

Document Information

Date	Document edition	Software version	Revision Details	Author/Editor
May 2019	1	Delta 2.6.54 or later	New release	Andie Davidson

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