Cinegy Event Manager 26.2 Manual

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Table of Contents

Automatic Live Mode Switching . . . 2
Local Cinegy Event Manager . . . 4
1 Overview . . . 4
1.1 Trigger Events . . . 4
2 Installation . . . 6
Remote Cinegy Event Manager . . . 7
3 Installation on Remote PC . . . 8
4 Installation on Playout Servers . . . 14
Plug-in Implementation . . . 15
5 Configuration . . . 16
5.1 NVISION Router . . . 17
5.2 Cinegy Subtitling Control . . . 17
5.3 Cinegy Route/Stream Switcher . . . 18
5.4 RossTalk Router . . . 18
5.5 Evertz Router . . . 19
5.6 Cinegy PowerShell Command . . . 19
5.7 Cavena Subtitling Control . . . 20
5.8 Common GPI Device . . . 21
5.9 UTAH Scientific . . . 21
5.10 FOR-A Router . . . 22
5.11 VikinX Series . . . 22
5.12 Kramer Devices . . . 22
5.13 Sencore IRD Control . . . 23
5.14 Blackmagic Videohub . . . 24
5.15 Guramex Switcher . . . 25
5.16 Cinegy HTTP Data Repeater Event Plugin . . . 25
5.17 Harris Router . . . 26
Secondary Events Syntax . . . 27
6 Event Service . . . 27
6.1 Controlling the Nevion VikinX Router . . . 28
Event Commands Format . . . 28
Device Configuration . . . 28
6.2 Controlling the Kramer Electronics Router . . . 28
Event Commands Format . . . 28
6.3 Controlling the Grass Valley NVision Router . . . 29
6.4 Controlling the Imagine Communications Router . . . 29
6.5 Controlling the Evertz Router . . . 30
6.6 Controlling the UTAH Scientific Router . . . 31
6.7 Controlling the Blackmagic Videohub Router . . . 31
6.8 GPI Driven Devices . . . 32
Event Commands Format . . . 32
6.9 Controlling FOR-A Router . . . 32
6.10 Controlling Cinegy Route . . . 32

Setting Permissions 33
6.11 Controlling Cinegy Stream Switcher 33
1 Cinegy Stream Switcher Configuration 33
2 Local Cinegy Event Manager Configuration 33
3 Cinegy Air Configuration 33
6.12 Controlling PowerShell 34
6.13 Controlling RossTalk Router 34

The events system was designed to provide the maximal flexibility for the external event handler developers for handling their devices.

If it is necessary to support several devices, then the specified Cinegy Event Manager should be created to receive the events and internally process different commands and send them to different devices. In doing so Cinegy Event Manager can handle all events internally or manage the internal system of plug-ins.

For each playout server there can be only one Cinegy Event Manager in the system (it is explicitly set up in the server configuration). That is why the Event Server should handle all the commands. If it is necessary to create several modules to handle different commands independently, then this structure should be created inside the events handler. The described method is the simplest but it implies the creation of a completely stand-alone service for all needs.

If the collateral use of the external event handlers along with developed by Cinegy is required, then another model of the event handler implementation should be used. It takes only to implement the handler plug-ins for each device and the existent Cinegy developed Cinegy Event Manager can be used.

Cinegy Air supports secondary events that can be used to control external devices, such as external SDI switches or GPI signal generating, for example.

To install the external Cinegy Event Manager, use one of the following ways:

- local
- remote

The local Cinegy Event Manager is installed on the playout server and can be used in case you have, for example, just one channel that should be switched between the playout and external live signal through the external SDI switcher.

Remote Cinegy Event Manager allows you to control one video switcher from several playout servers (channels) independently. In this case, you have to install the external Cinegy Event Manager on a separate PC, which should be connected to the controlled device.

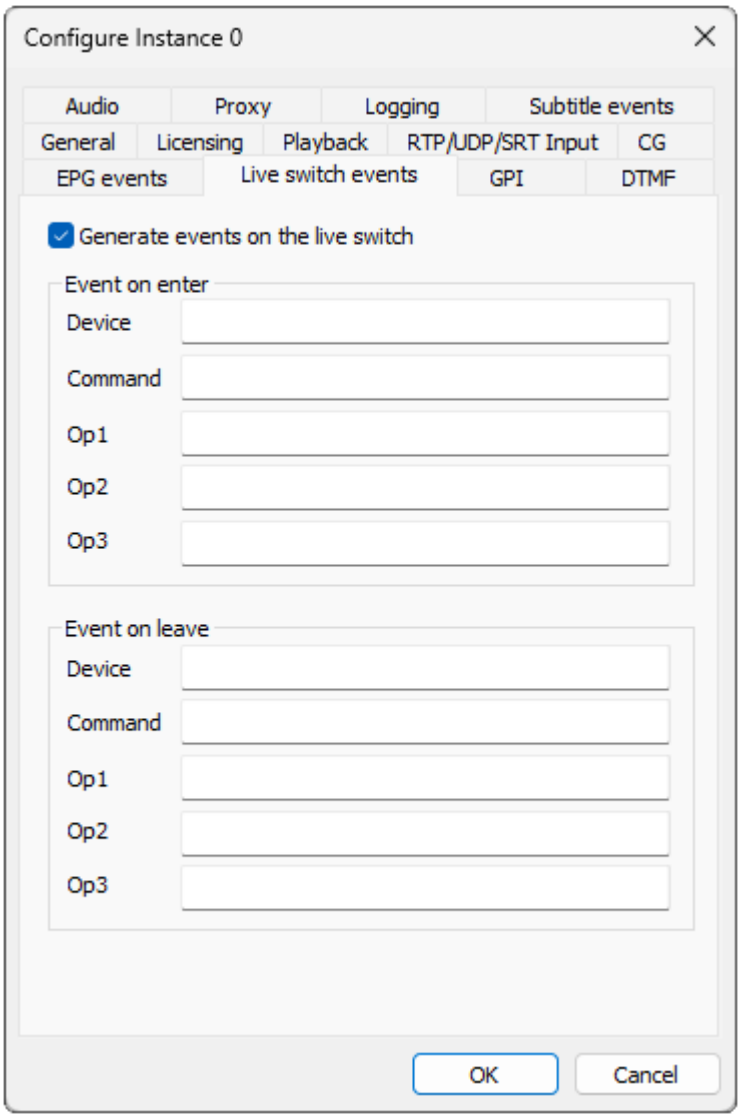
Automatic Live Mode Switching

If you need to use the external device to switch between the playout and external live signal, use the automatic live mode switching feature that allows you to define the events, which will be automatically sent at the beginning and at the end of each live item.

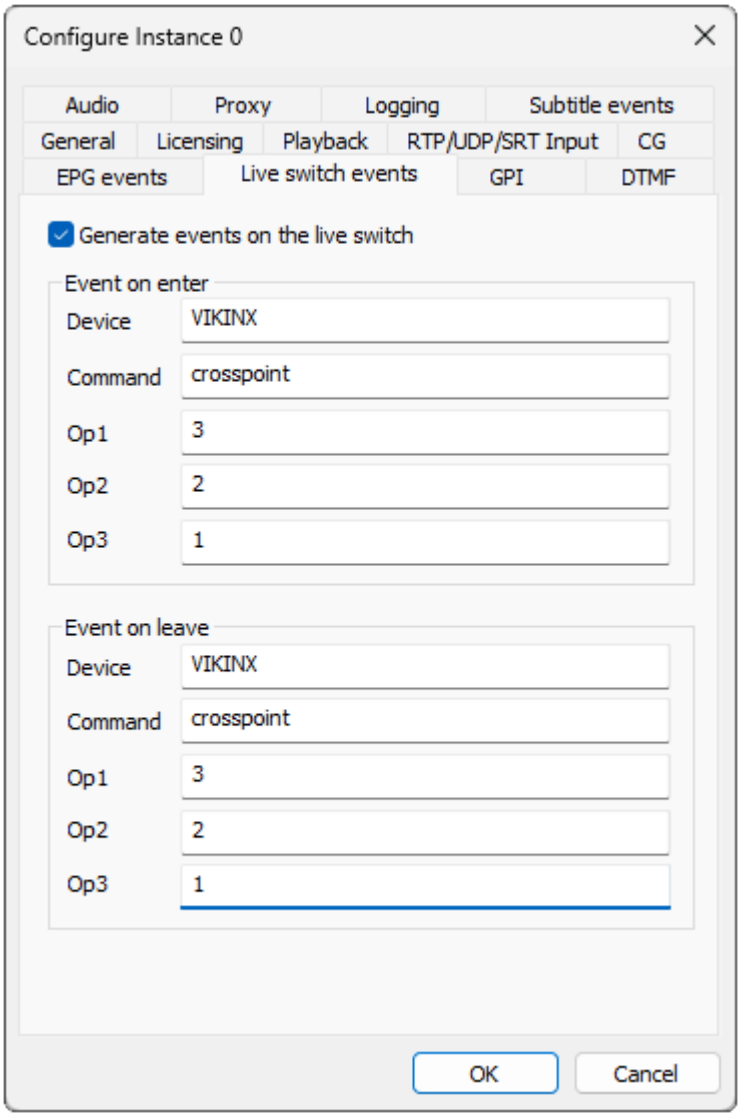
You can configure live mode switching via the Cinegy Playout configuration utility following the steps below:

1. Start the Cinegy Playout Configurator on the corresponding playout server and open the "Live switch events" tab.
2. Fill in the corresponding event commands for "enter" and "leave" live mode(s).

Please make sure that the "Generate event on the live switch" option is enabled.



The example below displays configuration for automatic connection of input 1 to output 1 at level 3 for the live items and input 2 to output 1 for the items that should be played out by the Cinegy Playout server (this example is given for the VikinX switcher).


Configure Instance 0
Audio
Proxy
Logging
Subtitle events
General
Licensing
Playback
RTP/UDP/SRT Input
CG
EPG events
Live switch events
GPI
DTMF
Generate events on the live switch
Event on enter
Device
VIKINX
Command
crosspoint
Op1
3
Op2
2
Op3
1
Event on leave
Device
VIKINX
Command
crosspoint
Op1
3
Op2
2
Op3
1
OK
Cancel

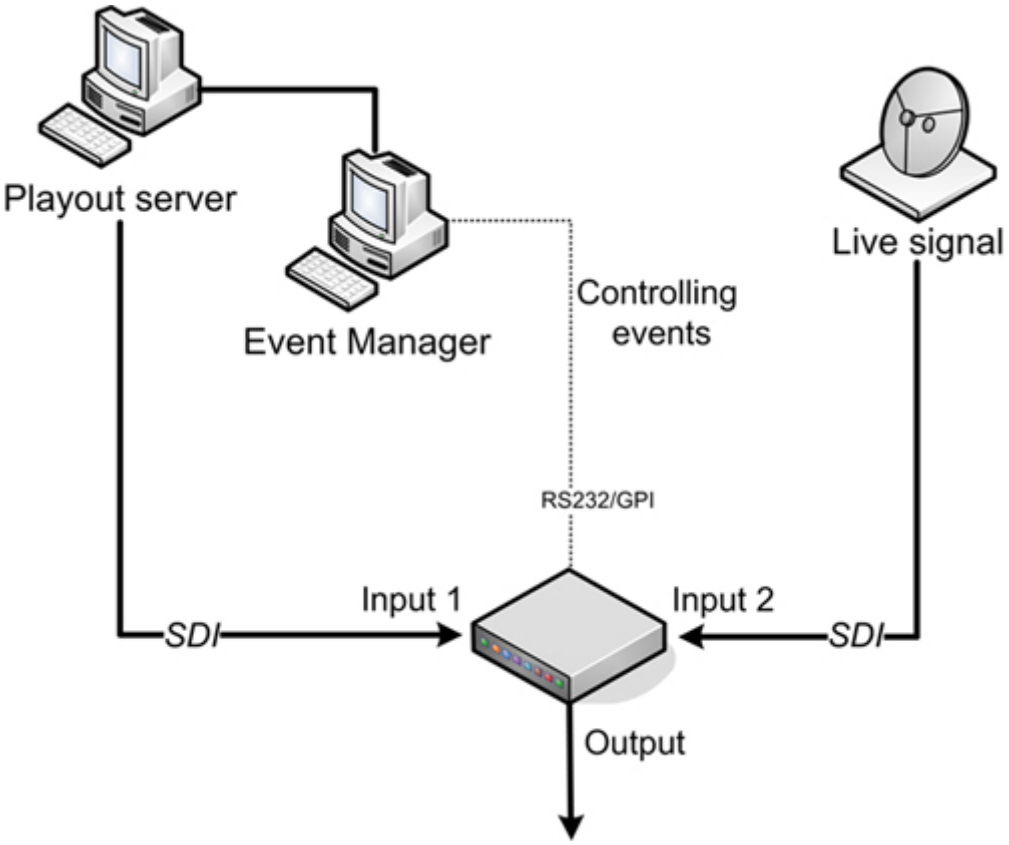
Local Cinegy Event Manager

Chapter 1 Overview

Cinegy Event Manager can be used by many different Cinegy applications, as well as any third-party applications, that wish to control supported devices via the single, unified API exposed by Event Manager. For example, Event Manager may be used by:

- Cinegy Capture to change SDI routers before triggering recordings
- Cinegy Air to request subtitling servers to react to changes in the playlist and to notify them of the current playlist timecode
- Cinegy Route to request IRD decoders to update their IP tuner to a different source when a Virtual Destination is changed.

The following diagram shows the typical configuration of controlling just one device for one playout server.



This given diagram presents the situation when you have one playout server and one external live signal, which should be switched by means of the secondary events (via local Cinegy Event Manager).

1.1 Trigger Events

The easiest way to trigger an event is to configure a secondary event within a Cinegy application - for example setting up a routing request within a playlist and pushing that playlist on air.

However, when troubleshooting problems or developing plug-ins, it can be helpful to trigger an event easily and repeatedly under controlled conditions. In this case, it is recommended that a test event is defined within a script and then triggered on the Event Manager machine.

An example script demonstrating how to trigger such an event is available on GitHub here.

Chapter 2 Installation

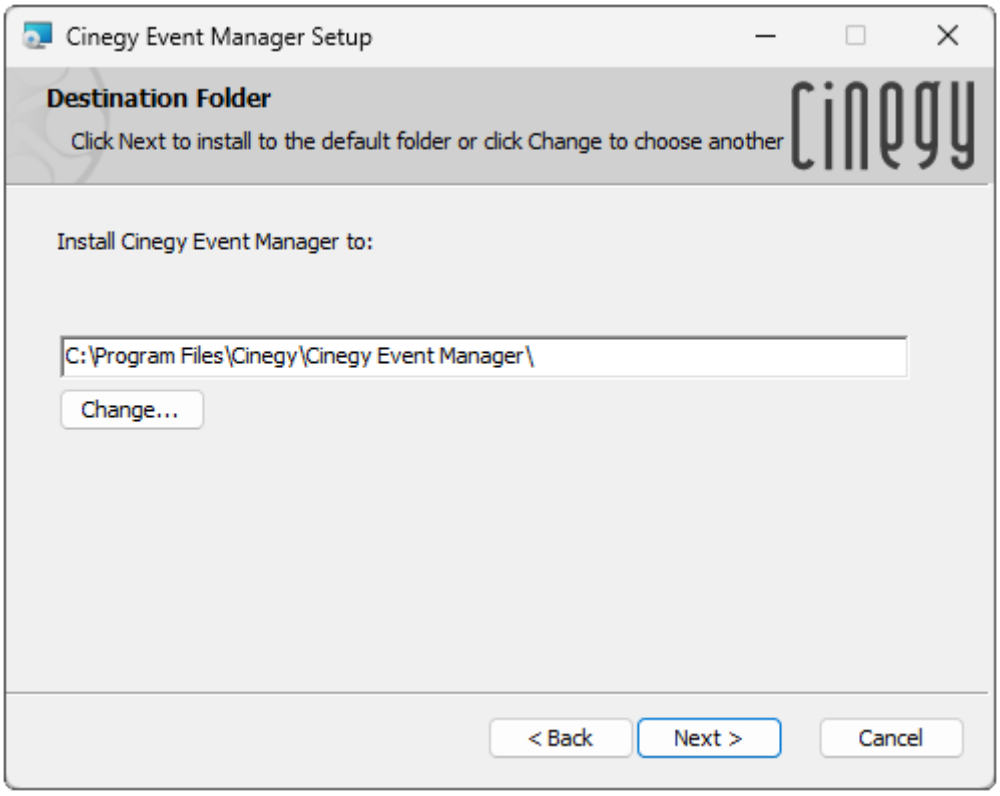
Before you start the installation, please do the following:

- Make sure the computer you are using has the required Microsoft Windows operating system installed along with the recommended service packs. Details for system recommendations are available here.
- Download the latest Cinegy Event Manager installation package. Copy the installer to a shared location in your network so that all client machines can access the package for convenient installation.

The installation should be started on the Cinegy Playout server. In this case, video switcher should be connected to this PC via the RS232 port (COM).

The local Cinegy Event Manager installation is executed in several steps:

1. Run the Setup.exe file from the "CinegyEventManager" directory of your installation package. The "Cinegy Event Manager Setup" wizard appears. Press "Next" to proceed with the installation or "Cancel" to abort and exit the setup wizard.
2. Read and accept the license agreement and proceed with installation.
3. Define the folder where Cinegy Event Manager will be installed.

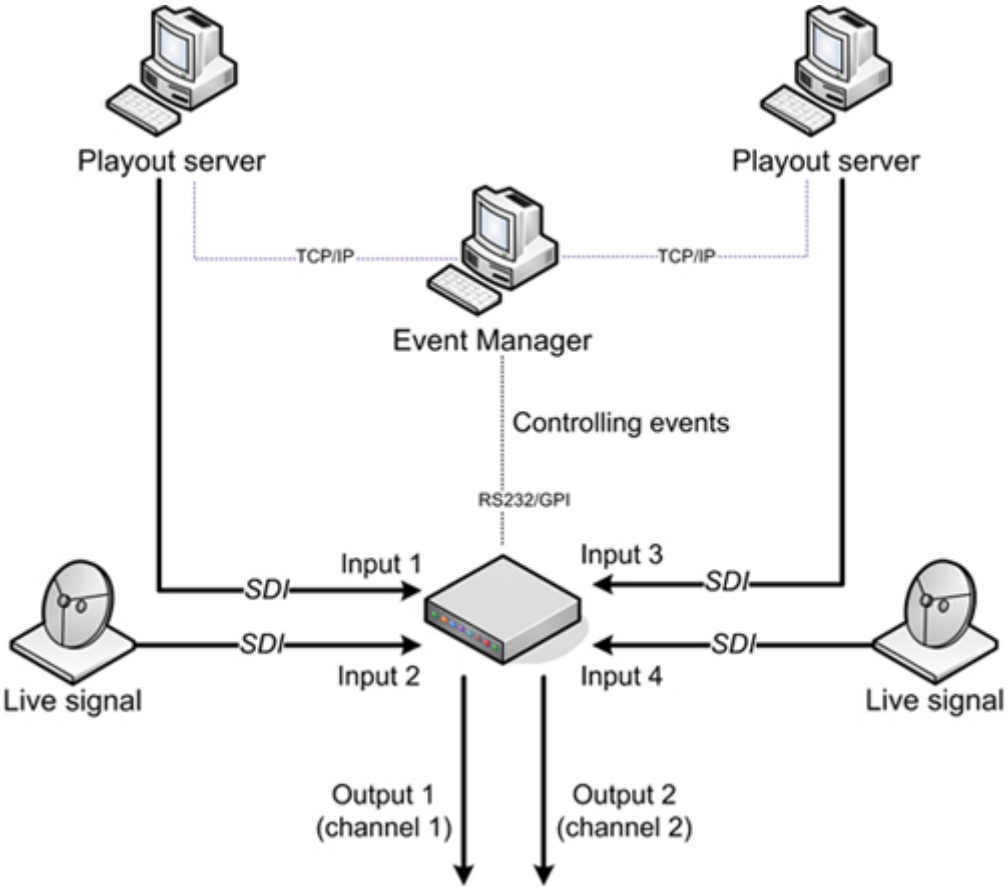


4. In the following dialog, you will be asked to confirm your decision to install Cinegy Event Manager. Press the "Back" button to return to the previous steps and change the installation folder if needed or press "Install" to begin the installation. The progress bar will show the status of the installation process.
5. A dialog will inform you that the installation is complete. Press the "Finish" button to exit the setup wizard.

Remote Cinegy Event Manager

To control one device from different Cinegy Playout servers simultaneously, Cinegy Event Manager should be installed on a separate PC connected to this device. The remote access to the computer should be configured via network from each Cinegy Playout server controlling the external device.

The diagram below shows one of the possible configurations with remote Cinegy Event Manager.



The presented configuration allows you to use one external device for different channels independently.

Chapter 3 Installation on Remote PC

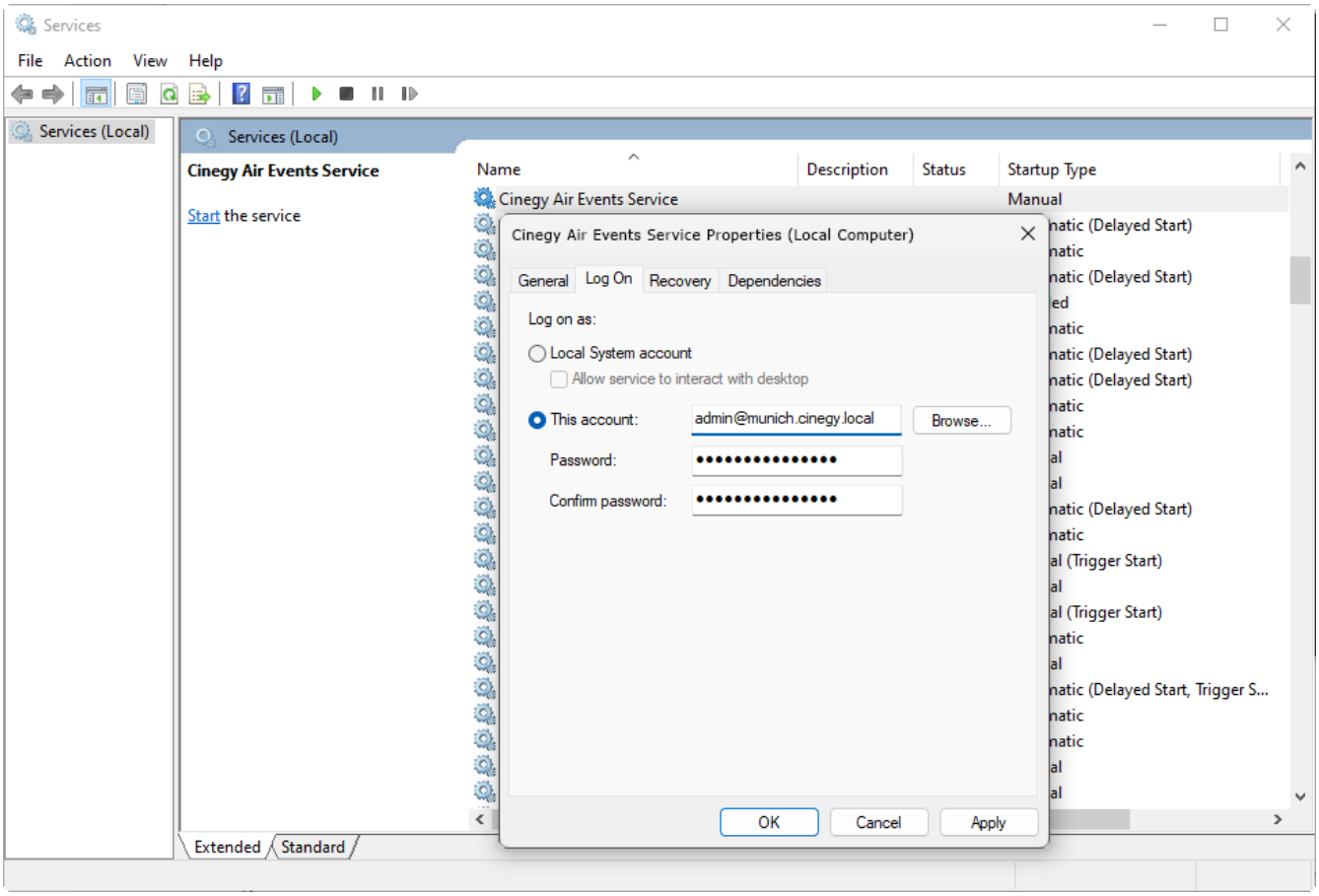
To install the external event service remotely, follow the instructions below:

Install Cinegy Event Manager as an application. To do so run the Setup.exe file from the "CinegyEventManager" directory of your installation package and follow the installation wizard instructions.

Cinegy Event Manager should be additionally installed as a standard Windows service. To do this, run the EventsSvcManager.exe file from the folder where Cinegy Event Manager is installed with the "service" parameter, as follows:

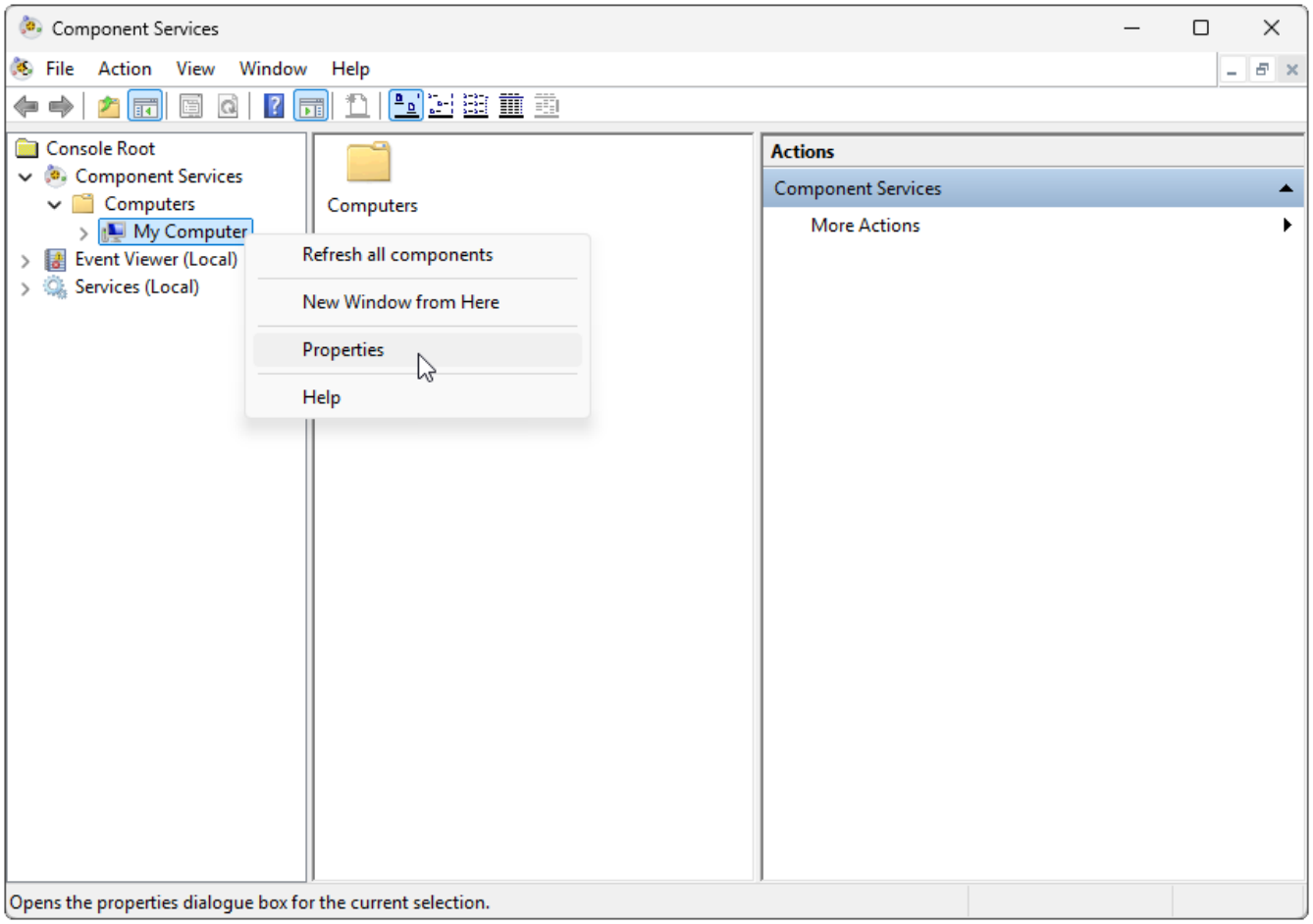
```
EventsSvcManager.exe -service
```

After installation, you need to change the startup type of the Cinegy Air Events Service to "Automatic (Delayed Start)" and specify the required user account under which the service will run:

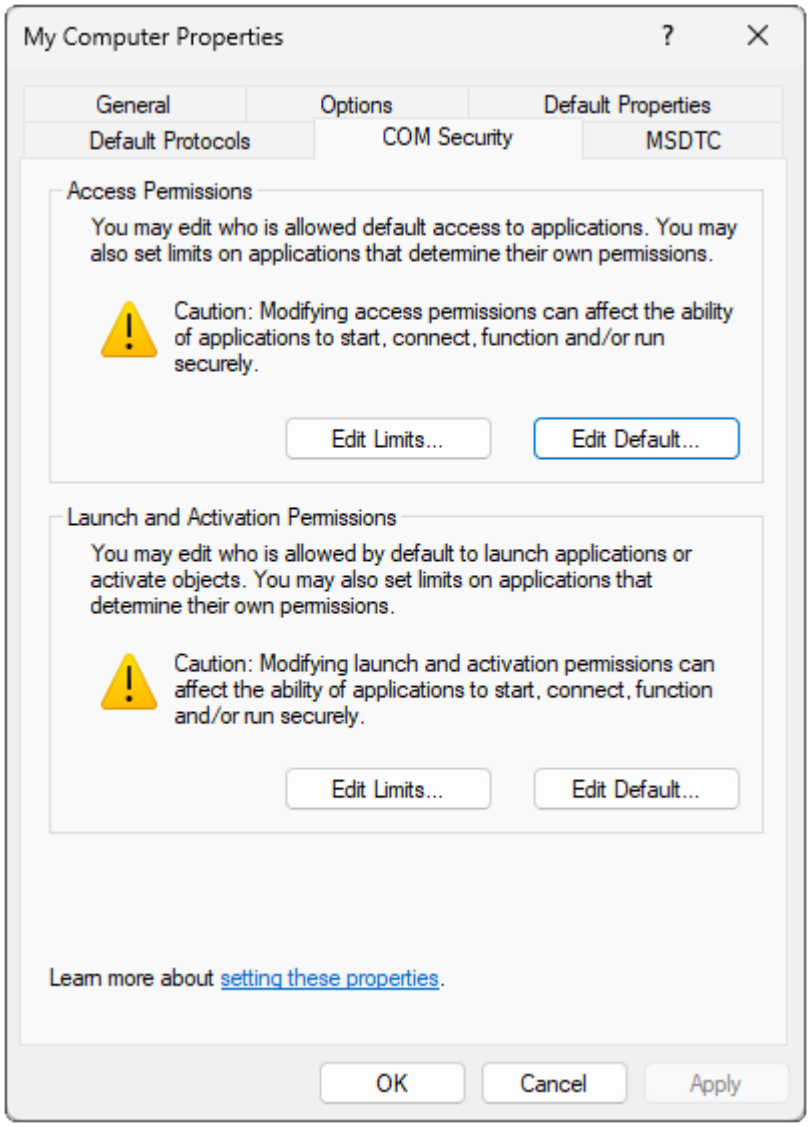


Restart the service to apply the changes.

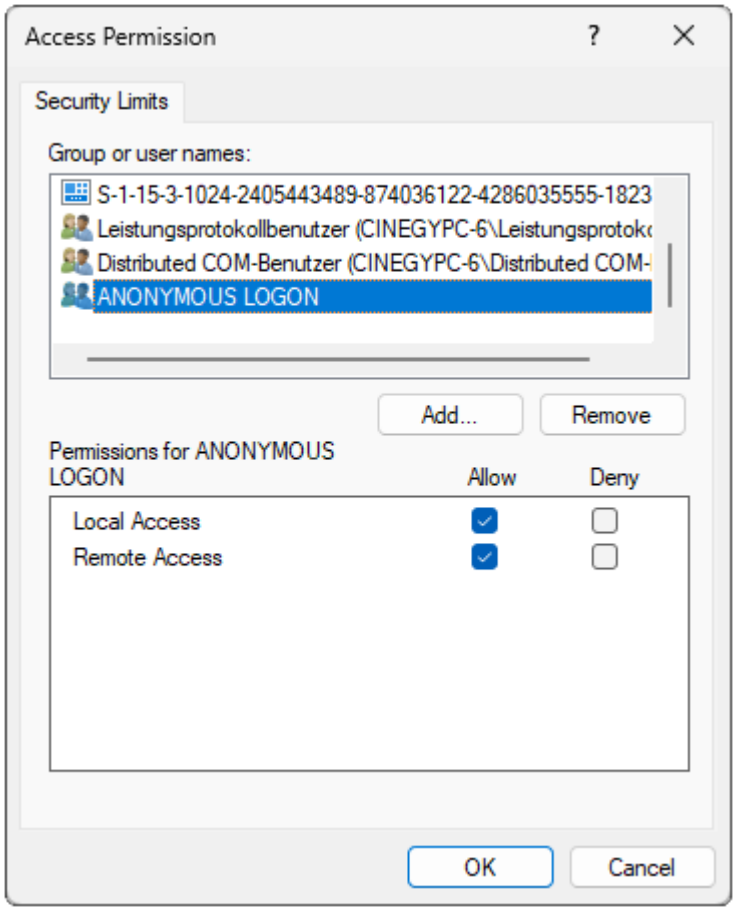
Set all the remote permissions to enable the service start remotely. Open the "Windows Tools" folder in the Control Panel and double-click "Components Services". Then right-click "My Computer" in the dialog that appears and select the "Properties" command from the context menu:

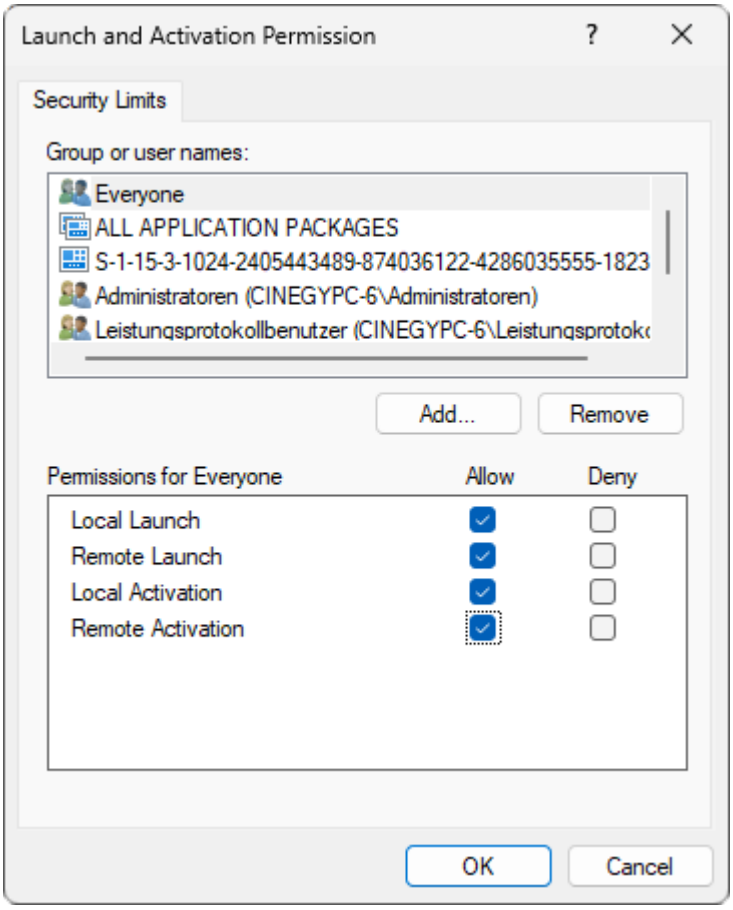


The "My Computer Properties" dialog appears. Here select the "COM Security" tab:



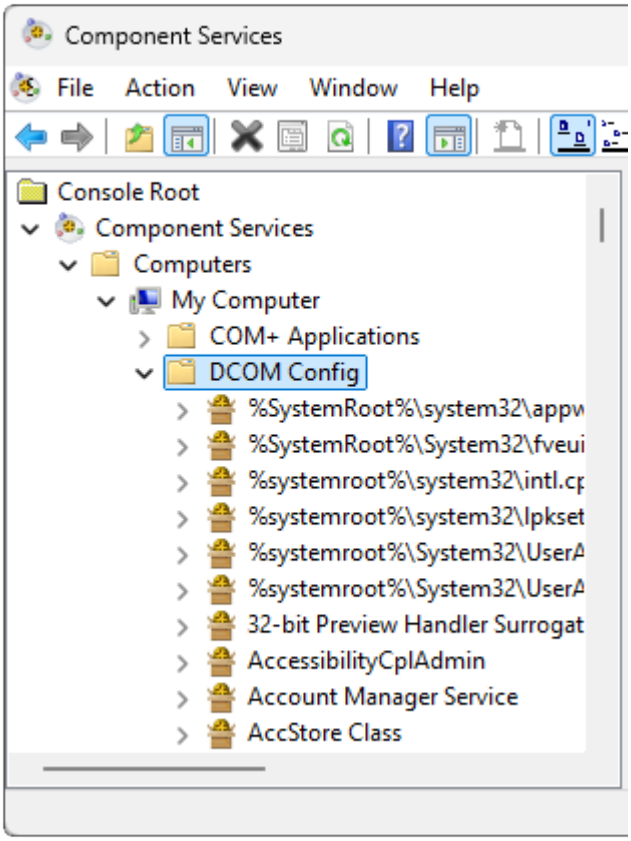
Press the "Edit Limits…" buttons for both sections and allow all remote rights for the "Everyone" user (or for the appointed user logged on to all the Cinegy Playout servers) as shown below:

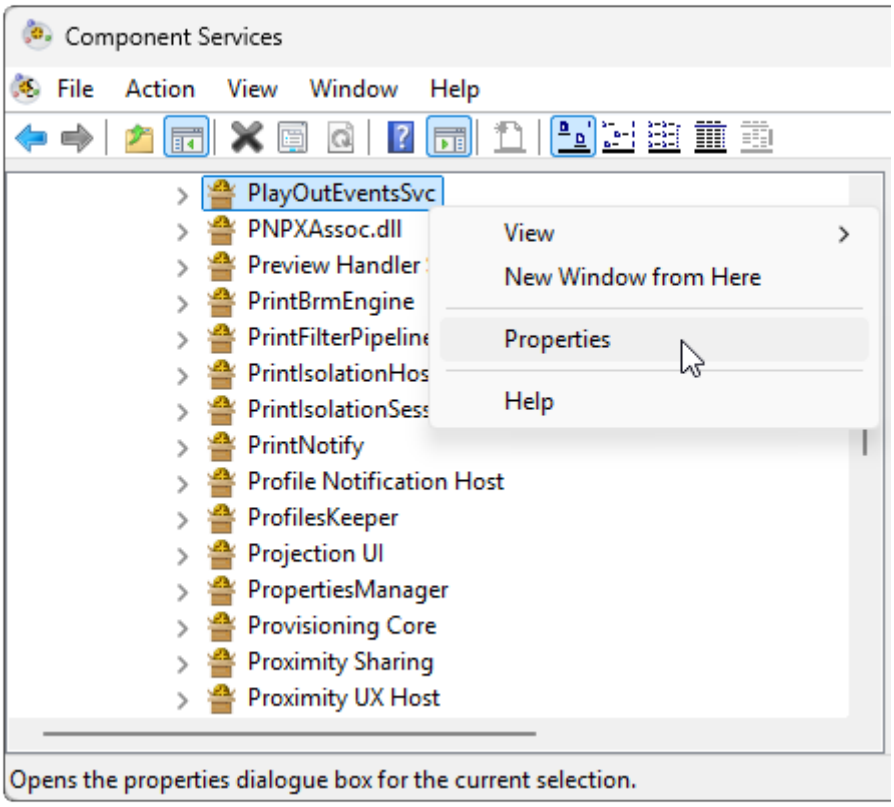




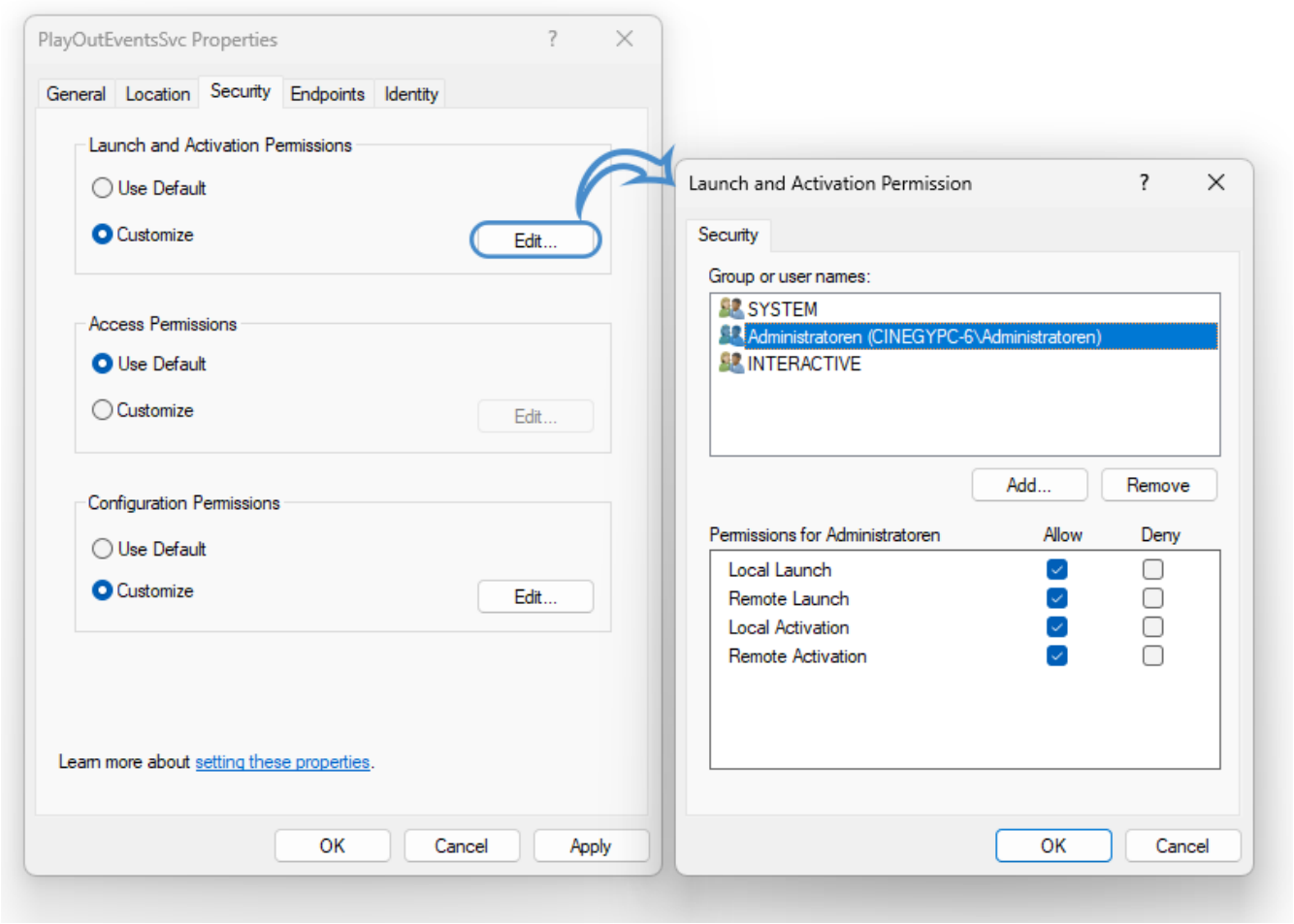
Press "OK" to apply your settings; return to the "Component Services" dialog.

Select the "DCOM Config" folder and find there the PlayOutEventSvc component. Right-click it and select the "Properties" command from the context menu.



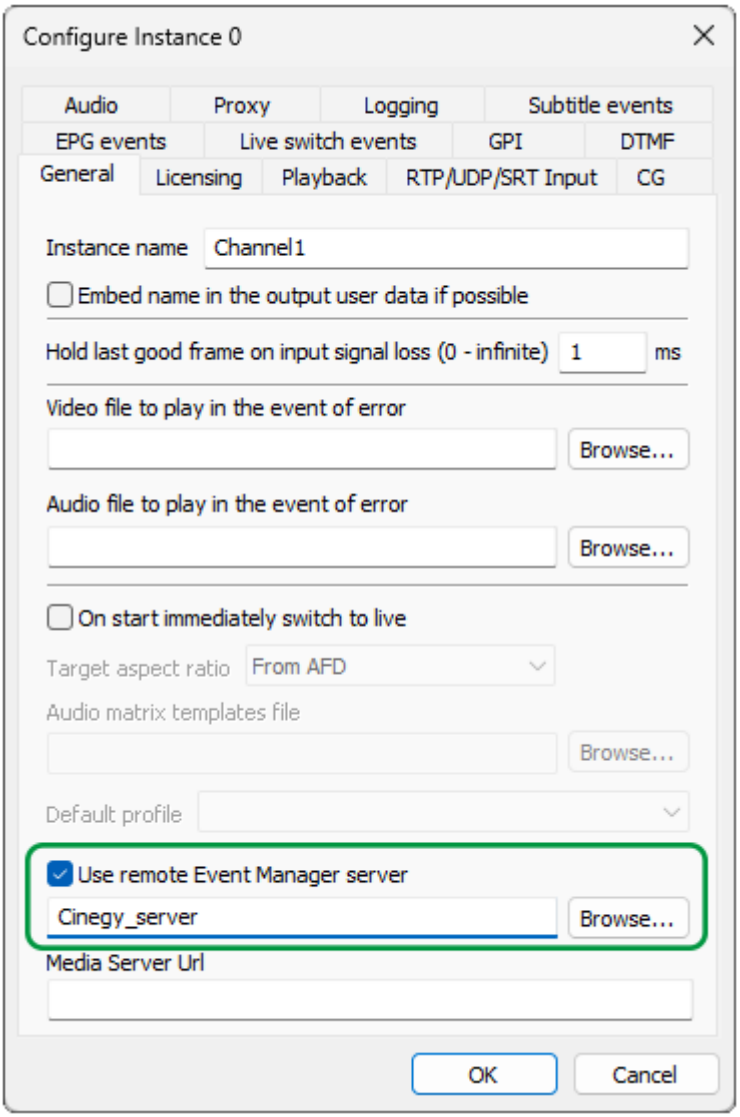


The "PlayOutExSvc Properties" dialog appears. Here open the "Security" tab and set the "Customize" radio button in the "Launch and Activation Permission" section. Press the "Edit" button and set up "Launch Permissions" in the same way as described above for the "My Computer" folder.


PlayOutEventsSvc Properties
General
Location
Security
Endpoints
Identity
Launch and Activation Permissions
Use Default
Customize
Edit...
Access Permissions
Use Default
Customize
Edit...
Configuration Permissions
Use Default
Customize
Edit...
Learn more about setting these properties.
OK
Cancel
Apply
Launch and Activation Permission
Security
Group or user names:
SYSTEM
Administratoren (CINEGYPC-6\Administratoren)
INTERACTIVE
Add...
Remove
Permissions for Administratoren
Allow
Deny
Local Launch
Remote Launch
Local Activation
Remote Activation
OK
Cancel

Chapter 4 Installation on Playout Servers

To set up the remote event service locally, use the Cinegy Playout Configurator to configure each playout instance that will use the remote Event Manager. To do so, start the Cinegy Playout Config utility, select the corresponding playout instance and define the remote PC (where the Event Manager is installed) in the "Global" tab.

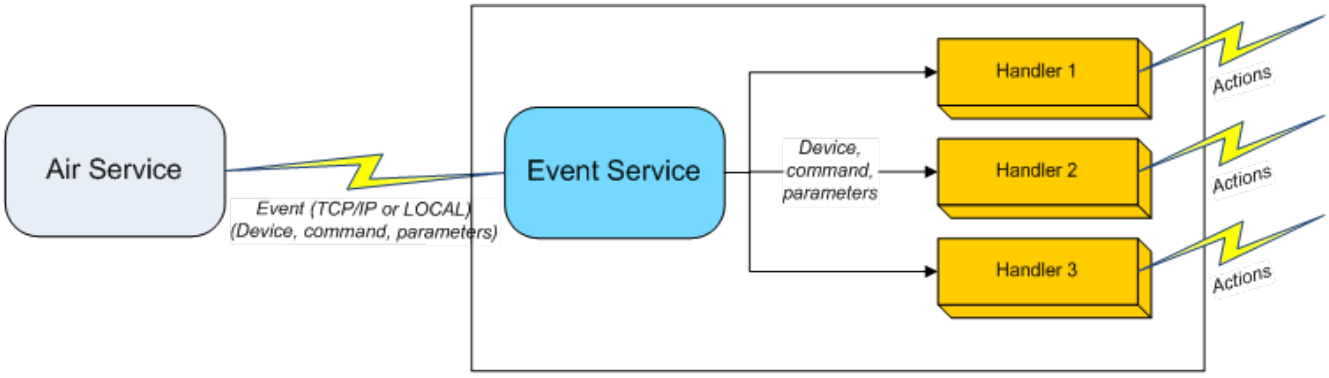


Make sure that the "Use remote Event Manager server" option is enabled. To find the corresponding server, use the "Browse…" button.

From now on, every event commands will be transferred to the remote event service to control the external device.

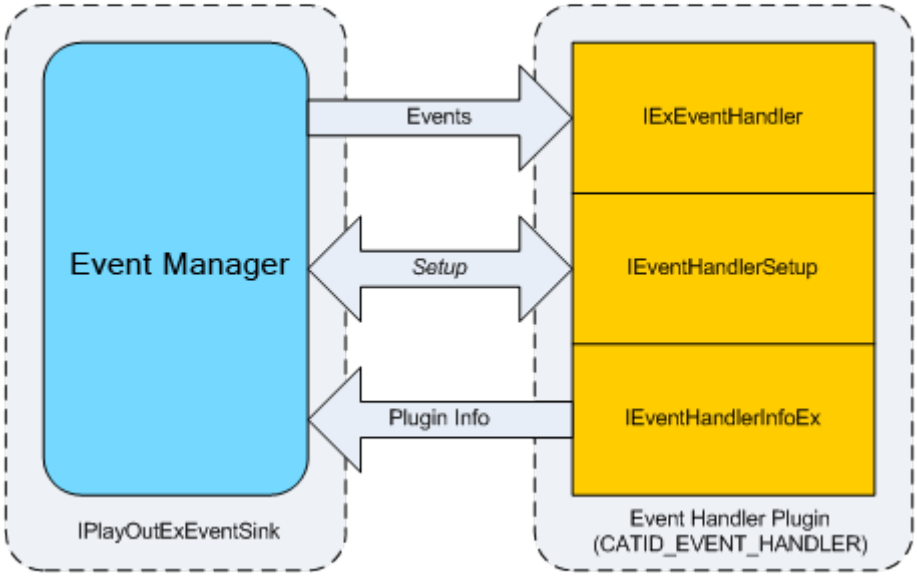
Plug-in Implementation

The general chart of the events handling that Cinegy uses can be represented by the following diagram:



There is "Event Manager" which receives all the commands from Air Service and then broadcasts them to all registered plug-ins "Handler 1", "Handler 2" and so on. The handler itself is a COM object that implements the specifies set of interfaces (see below).

The schematic interaction of Cinegy Event Manager with each handler can be represented as follows:



Each plug-in must meet the following demands:

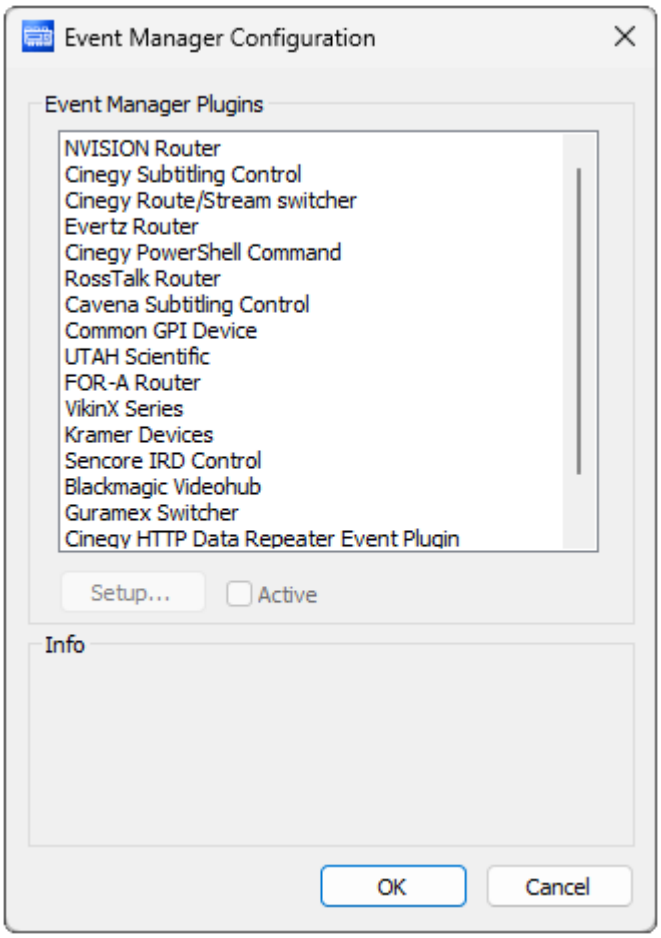
- to implement IExEventHandler, IEventHandlerSetup and IEventHandlerInfoEx interfaces;
- to be registered in the CATID_EVENT_HANDLER COM-category.

If the plug-in has no own settings it is not necessary to implement IEventHandlerSetup, the other two are mandatory.

Cinegy Event Manager itself implements IplayOutExEventSink interface and receives events from the Cinegy Playout service directly.

Chapter 5 Configuration

The Cinegy Event Manager Configurator can be launched from Start > All Programs > Cinegy > Cinegy Event Manager > Event Manager Config.



To configure the specified device, select it from the list of supported plug-ins and press the "Setup…" button.

Each device should be configured individually. The current settings of the selected devices are displayed within the "Info" field.

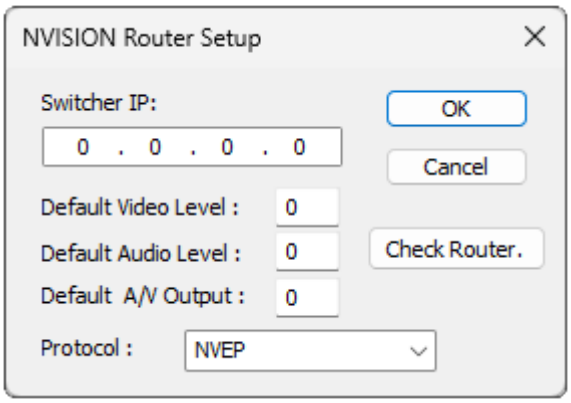
Select the "Active" checkbox to activate the selected plug-in.

Following is the list of supported devices and applications:

- NVISION router
- Cinegy Subtitling Control
- Cinegy Route/Stream Switcher
- RossTalk Router
- Evertz Router
- Cinegy PowerShell Command
- Cavena Subtitling Control
- Common GPI Device
- UTAH Scientific
- FOR-A Router

- VikinX Series
- Kramer Devices
- Sencore IRD Control
- Blackmagic Videohub
- Guramex Switcher
- Cinegy HTTP Data Repeater Event Plugin
- Harris Router

5.1 NVISION Router

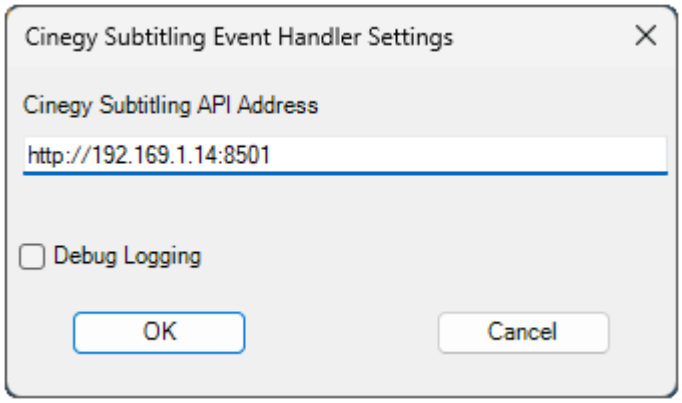


Here enter via the keyboard the switcher IP, default video and audio level values, and default A/V output value. Select the protocol type (NVEP or NVISION9000) from the corresponding drop-down list.

Press the "Check Router" button to check the NVISION router state.

Press "OK" to finish the NVISION Router setup.

5.2 Cinegy Subtitling Control

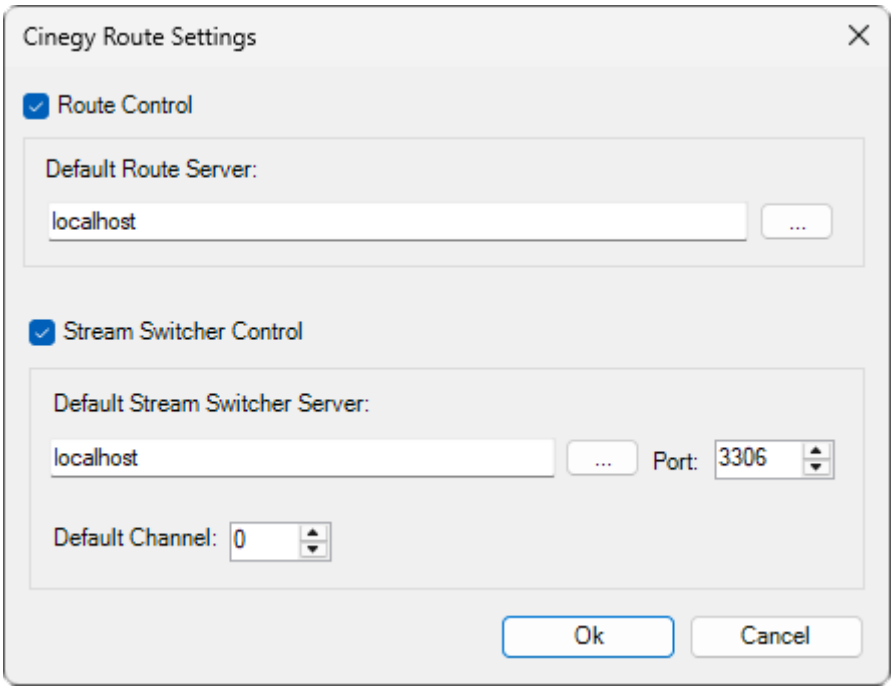


In the "Cinegy Subtitling API Address" field define the URL address in the following format: `http://<server_name>:8501`, where *<server_name>* is the server IP address or network name of the machine where Cinegy Subtitling Service is running.

The "Debug Logging" checkbox enables enhanced logging for troubleshooting purposes into the Cinegy Event Manager log. By default, this log can be stored at the following location: C:\ProgramData\Cinegy\CinegyAir.

Press "OK" to finish the setup.

5.3 Cinegy Route/Stream Switcher



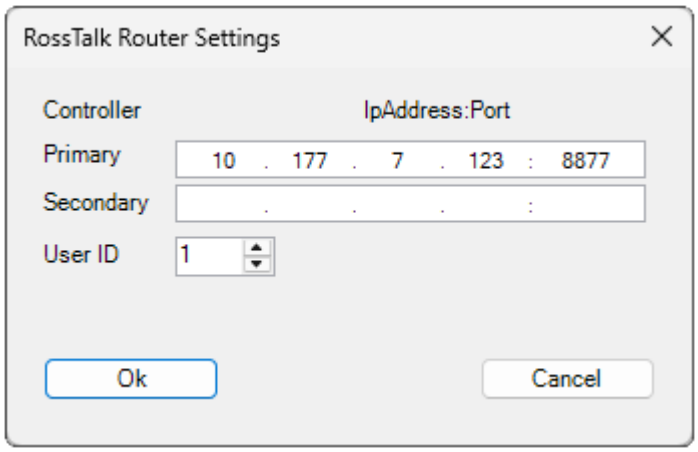
Select the "Active" option, then press the "Setup" button. In the configuration window that appears, select the corresponding options to define the following parameters:

- **Default Route Server** – default host link to be used by the Cinegy Route plug-in.
- **Default Stream Switcher Server** – the machine where the Cinegy Stream Switcher service is installed. Enter the computer name via the keyboard or use the "…" button and select it from the list of available computers in the network.
- **Port** – the Cinegy Stream Switcher control port.

In the "Default Channel" field define the default channel (by zero-based numerical index) to address.

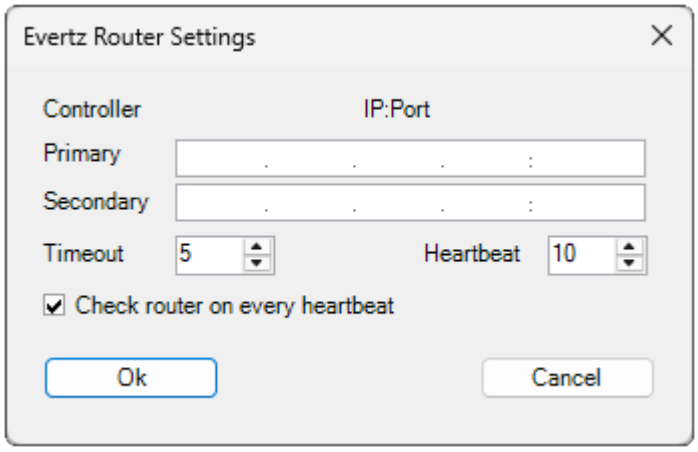
Refer to this article for more information on configuring **Cinegy Stream Switcher**.

5.4 RossTalk Router



The configurator allows specifying a primary and secondary router for high-availability setups. Define the primary and secondary router IP addresses. If no secondary router exists, the "Secondary" field should be left blank. User ID is the numeric user/panel ID that will be used to request the switch.

5.5 Evertz Router



Here define the primary and secondary (if available) switcher control interface IPs and define their connection port numbers.

In the "Timeout" field define the time interval in seconds for Evertz Router to report a successful command completion; otherwise, an error is reported into the Event Service log file.

In the "Heartbeat" field specify the time interval in seconds for the event handler plug-in to report its status into the Event Service log file.

Select the "Check router on every heartbeat" option to additionally enable the Evertz Router status check-out. Having configured Evertz Router setup, press "Ok" to save the changes.

5.6 Cinegy PowerShell Command



This plug-in allows Cinegy Event Manager to trigger a custom Microsoft PowerShell script. This script can be used to carry out any operation that might be desired - for example, making an HTTP REST request to a third-party device or triggering some custom parameters to be written to the log file. It allows simple extension to Cinegy Event Manager without any requirement for creating a full plug-in, and can be an excellent mechanism for prototyping device control.



Please ensure that an up-to-date PowerShell installation is available and working on the Event Manager hosting server. Version 5.1 of PowerShell or later is recommended, although older versions may function, they remain untested.

To allow Cinegy Event Manager to execute PowerShell scripts, the execution policy for the current user needs to be changed. To do this, follow the steps:

1. Type `Powershell` into the Windows search bar.

2. Click "Windows Powershell ISE (x86)" to launch it.
3. In the console that appears, type in `Get-ExecutionPolicy -List` to display the current execution policies.
4. Type in `Set-ExecutionPolicy -ExecutionPolicy Bypass -Scope CurrentUser` to change the execution policy to "Bypass" for the current user.
5. Check the current status by execution 'Get-ExecutionPolicy -List'. The list will be as follows:

```
        Scope ExecutionPolicy
        ----- ---------------
MachinePolicy       Undefined
   UserPolicy       Undefined
      Process       Undefined
  CurrentUser          Bypass
 LocalMachine       Undefined
```



Read the following **post** to learn how to use Cinegy Event Manager to host a PowerShell script.

The dialog allows the specification of the specific PowerShell file to call when Event Manager invokes the plug-in. This file should be accessible to the machine and/or any user account that Event Manager might be configured to run under.

The script that is executed will be passed a single object, generally referred to as a 'provider' object. This object contains methods to allow the script to push back messages to print into the Event Manager log output, as well as containing the details of the standard Event Manager arguments that are available to the script as inputs. The 'Device Name' parameter for this plug-in shall always be POWERSHELL to accept responsibility to execute.

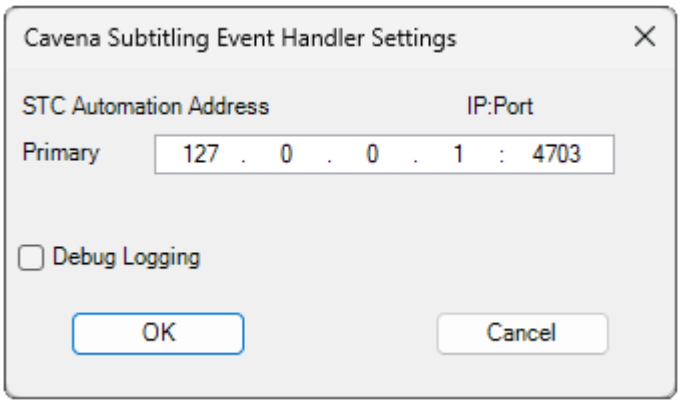
An example script showing the available inputs and usage of the provider logging interface is available on GitHub here.

The Debug Logging checkbox enables enhanced logging for troubleshooting purposes into the Event Manager log. This log can be located by default at this location:

C:\ProgramData\Cinegy\CinegyAir

Press "OK" to finish the setup.

5.7 Cavena Subtitling Control



This plug-in allows Cinegy Event Manager to send control requests to Cavena subtitling software for the purpose of commanding real-time subtitle generation that may be combined with Cinegy Air output for broadcast.

For more details about Cavena configuration and recommended architectures, please see this post.

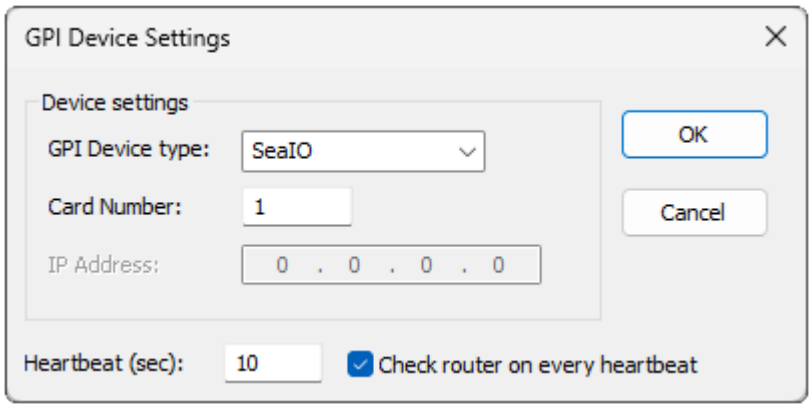
This dialog allows the specification of the primary Cavena Subtitle Transmission Control (STC) unit IP address and port.

The Debug Logging checkbox enables enhanced logging for troubleshooting purposes into the Event Manager log. This log can be located by default at this location:

C:\ProgramData\Cinegy\CinegyAir

Press "OK" to finish the setup.

5.8 Common GPI Device



Choose the required card model from the drop-down list.

For the SeaI/O-530E card model define card number (from 0 to 7) to be used to connect the GPI device. For the SeaMAX card model define the "Slave ID" parameter and IP protocol.

In the "Heartbeat" field specify the time interval in seconds for the event handler plug-in to report its status into the Event Service log file.

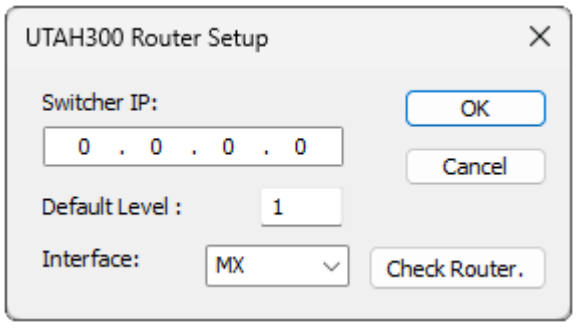
Select the "Check router on every heartbeat" option to additionally enable the selected GPI Device status check-out.

Press "OK" to finish the setup.

Only SeaI/O-530E device controlled via Ethernet is supported for SeaMAX card model.

For the list of supported GPI video boards refer to the **Cinegy Air System Recommendations**.

5.9 UTAH Scientific

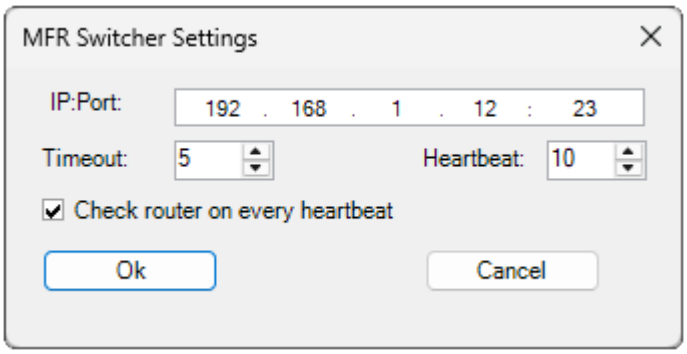


Use the keyboard to define the switcher IP to be used to connect the UTAH300 Router and default level. Choose the required Router interface type (MX, PL or Unet) from the corresponding drop-down list.

Press the "Check Router" button to check the UTAH300 Router state.

Press "OK" to finish the UTAH300 Router setup.

5.10 FOR-A Router



Define the router control interface IP address and port.

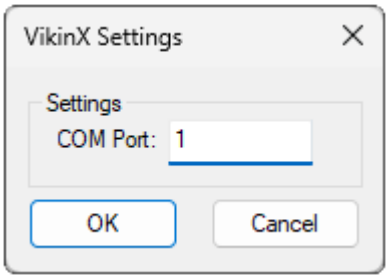
In the "Timeout" field define the time interval in seconds for FOR-A MFR Router to report a successful command completion; otherwise, an error is reported into the Event Service log file.

In the "Heartbeat" field specify the time interval in seconds for the event handler plug-in to report its status into the Event Service log file.

Select the "Check router on every heartbeat" option to additionally enable the selected router status check-out.

Press "Ok" to apply the changes.

5.11 VikinX Series

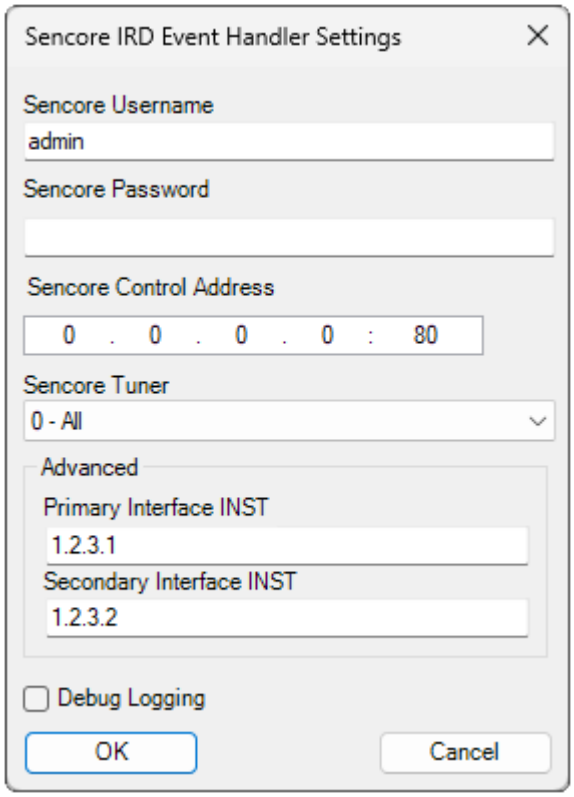


Here define the COM port number (from 1 to 8) to be used to connect the VikinX device and press "OK".

5.12 Kramer Devices

Port 1 is used to connect the Kramer device by default and cannot be changed.

5.13 Sencore IRD Control



This plug-in allows Sencore IRD decoder / encoder hardware to be adjusted to different IP sources, for example allowing a Sencore device to be tuned to match Cinegy Route virtual destination whenever it is updated. It operates by using the Sencore REST API interfaces, which wrap SNMP configuration management calls within an HTTP protocol.

Every element in the config form may be over-ridden with each command sent, by setting a replacement value inside the OP1 name/value pair (these name/value pairs should be URL encoded if they contain any illegal characters for a URL).

The possible parameters are:

controlip

controlport

username

password

primaryinst

secondaryinst

tuneridx

Where any parameter is omitted, the defaults specified within this configuration form will be used instead. If no valid combination is specified, the device will fail to operate correctly and the Event Manager logs should be checked for more information.

An example set of arguments to trigger a Sencore IRD correctly, with a few parameters over-riden, is shown below:

DEVICE=SENCORE

COMMAND=TUNE

OP1=controlIp=10.186.4.70&controlport=80

OP2=

OP3=rtp://@239.5.2.1:1234?serviceid=53515

The dialogs that may provide defaults not specified within the OP1 string are described below:

Sencore Username (control parameter 'username') - this refers to the username that will be passed via web service calls when Event Manager issues commands to the Sencore device.

Sencore Password (control parameter 'password') - this refers to the username that will be passed via web service calls when Event Manager issues commands to the Sencore device.

Sencore Control Address (control parameters 'controlip' and 'controlport') - this refers to the TCP IP address port configured in the Sencore device that shall be used communicating with the Sencore device.

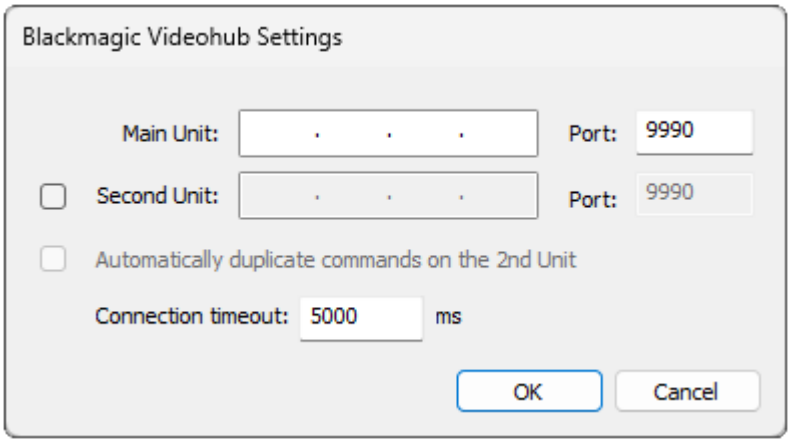
Sencore Tuner (control parameter 'tuneridx') - this refers to the tuner 'index' in the Sencore device that will be re-tuned during tuning events. You may select all available tuners to be updated (index 0), or specifically just the primary (index 1) or secondary (index 2) tuners to be updated.

Advanced: Primary Interface INST / Secondary Interface INST (control parameters 'primaryinst' and 'secondaryinst') - these text boxes allow updating the SNMP OID values associated in the Sencore device that are used when issuing commands. The default values should work, but upon encountering problems the 'Debug Logging' should be enabled and the Event Manager logs should be checked for feedback from the Sencore unit.

Debug Logging - this checkbox enables enhanced logging for troubleshooting purposes into the Event Manager log. This log can be located by default at this location:

C:\ProgramData\Cinegy\CinegyAir

5.14 Blackmagic Videohub



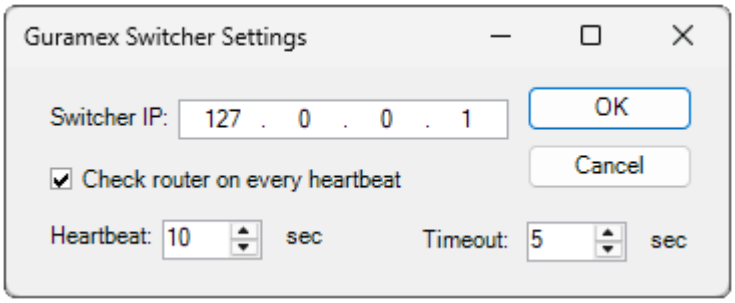
Use the keyboard to enter the main unit address and modify its port number, if needed. To enable the second unit, select the corresponding checkbox and define its parameters, as described for the main unit.

To duplicate commands on the second unit automatically, select the corresponding checkbox.

Define the desired connection timeout interval in milliseconds.

Press "OK" to finish the Blackmagic Videohub device setup.

5.15 Guramex Switcher



By using the keyboard, enter the switcher IP to be used for connection to Guramex Switcher.

In the "Heartbeat" field specify the time interval in seconds for the event handler plug-in status to be reported into the Event Service log file.

Leaving the "Check router on every heartbeat" option selected will additionally enable the Guramex Switcher status check-out.

Press "Ok" to apply the changes.

5.16 Cinegy HTTP Data Repeater Event Plugin



This plugin allows Cinegy Event Manager to send HTTP POST requests to a specified endpoint. In the plugin settings, a fixed URL (for example, http://127.0.0.1:8888/test/) is defined. When an event is triggered, Event Manager generates an HTTP request and sends it to the configured URL.

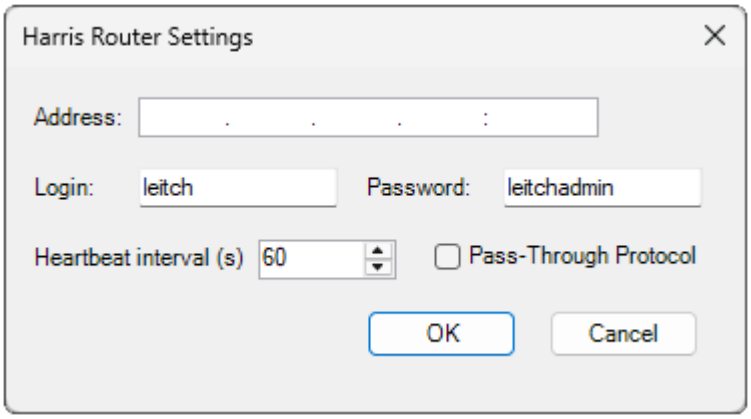
It is expected that a user-provided service will be running at this URL to receive and process these requests. The receiving service can parse the incoming parameters and handle them according to the user's specific scenario.

Based on the implementation, the plugin constructs a composite URL in the following format:

<base_url>?device=XXX&command=XXX&op1=XXX&op2=XXX&op3=XXX

Here, each XXX value is dynamically taken from the event parameters, including the device name itself.

5.17 Harris Router



Here enter the Harris Router address and port number. If Cinegy Event Manager is installed locally, "localhost" is defined by default.

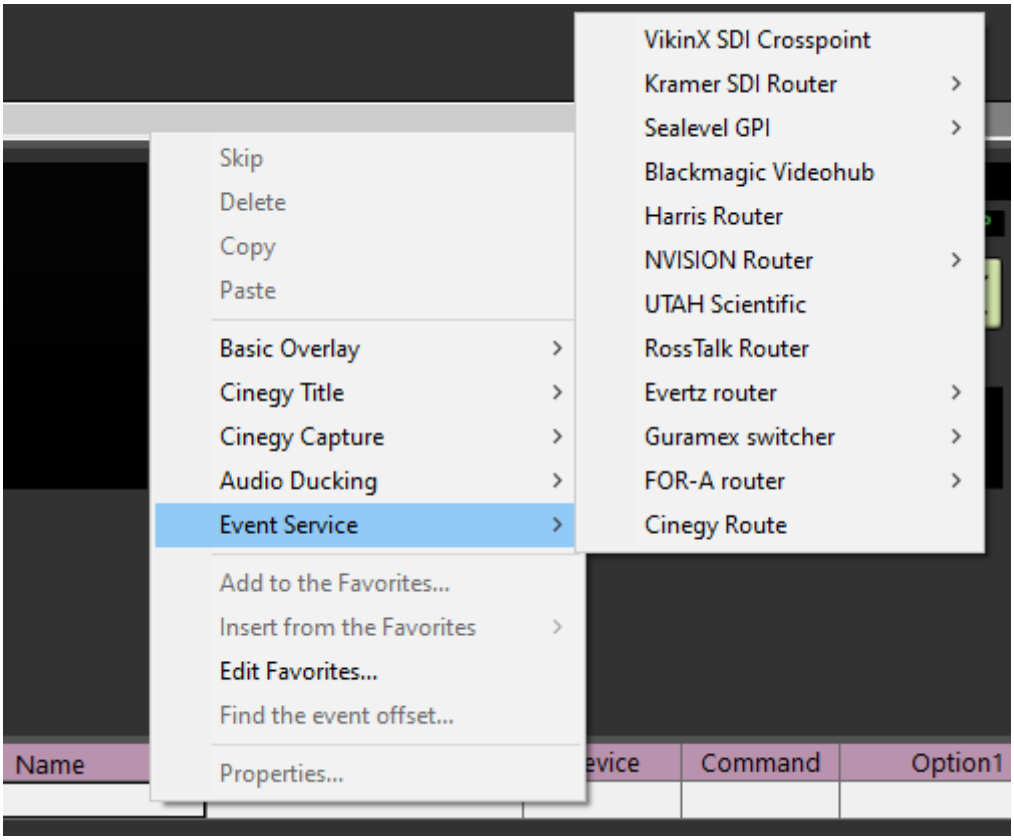
Also, enter the login credentials and the desired heartbeat interval in seconds.

Select the "Pass-Through Protocol" checkbox to switch protocol type from terminal to pass-through.

Press "OK" to finish the Harris Router setup.

Secondary Events Syntax

Chapter 6 Event Service



The context menu of the secondary events panel provides the "Event Service" submenu with access to the following supported external devices and applications:

- VikinX SDI Crosspoint
- Kramer SDI Router
- Sealevel GPI
- Blackmagic Videohub
- Harris Router
- NVISION Router
- UTAH Scientific
- RossTalk Router
- Evertz Router
- FOR-A Router
- Cinegy Route
- Cinegy Stream Switcher
- Microsoft PowerShell



The Open API is available for the customers to implement the support for any other devices. The controlling commands syntax is described in the **Cinegy Air Event Service API Manual**.

6.1 Controlling the Nevion VikinX Router

Event Commands Format

Having installed the external event service as described in the **Remote Cinegy Event Manager** article, you can use this service to control the VikinX VD0808 router or any other device from Nevion (formerly Network Electronics) using the same protocol.

The table below shows the events format used to control this device.

Device	Command	Op1	Op2	Op3	Description
VIKINX	crosspoint	<Level>	<In>	<Out>	Set the crosspoint at level <Level> from input <In> to output <Out>.

For example, this event will connect input 1 to output 2 at level 4:

Device: *VIKINX*

Command: *crosspoint*

Op1: *4*

Op2: *1*

Op3: *2*

If this event is sent to the VikinX event service, the following message appears in the service console window:

```
25.08.2022 12:00:32.107 EVENT: VIKINX crosspoint 4 1 2 : succeeded.
```

It means that the service has received the event successfully.

Device Configuration

You can use the configuration utility to define the device settings (e.g. the COM port number used to connect the VikinX VD0808 device). This utility is automatically started by running the InsatallLocalService.bat and InsatallRemoteService.bat files.

6.2 Controlling the Kramer Electronics Router

Event Commands Format

The table below shows the events format used to control any Kramer Electronics device compatible with its "Protocol 2000".

Device	Command	Op1	Op2	Op3	Description
KRAMER	crosspoint_video	<Machine number>	<In>	<Out>	Set the video crosspoint only on the device defined by <Machine number> from video input <In> to video output <Out>.
KRAMER	crosspoint_audio	<Machine number>	<In>	<Out>	Set the audio crosspoint only on the device defined by <Machine number> from audio input <In> to audio output <Out>.
KRAMER	crosspoint_all	<Machine number>	<In>	<Out>	Set both the video and audio crosspoints on the device defined by <Machine number> from input <In> to output <Out>.

6.3 Controlling the Grass Valley NVision Router

The table below shows the events format used to control the Grass Valley NVision router using the NV 9000 protocol:

Device	Command	Op1	Op2	Op3	Description
NVISION	crosspoint	<In>	<Out>	<Level>	Set both the video and audio crosspoints from input <In> to output <Out>. The current use of video/audio crosspoint is defined by the <Level> parameter.
NVISION	crosspoint_all	<In>	<Out> or empty	–	Set both the video and audio crosspoints from input <In> to output <Out>. The level <Level> for both video and audio crosspoints and output <Out> (if empty) are defined in the device configuration.
NVISION	crosspoint_video	<In>	<Out>	–	Set the video crosspoint only from video input <In> to video output <Out>. The level <Level> is defined in the device configuration.
NVISION	crosspoint_audio	<In>	<Out>	–	Set the audio crosspoint only from audio input <In> to audio output <Out>. The level <Level> is defined in the device configuration.

Use the configuration utility to define the device settings. This utility is automatically started by running the InsatallLocalService.bat and InsatallRemoteService.bat files.

6.4 Controlling the Imagine Communications Router

The table below shows the events format used to control the router from Imagine Communications (formerly Harris Broadcast) using the Leitch protocol. Two types of this protocol are supported: terminal and pass-through.

Device	Protocol Type	Command	Op1	Op2	Op3	Description
HARRIS	terminal	crosspoint	<Level>:<In>,<Out>	–	–	Set the crosspoint at level <Level> from input <In> to output <Out>. To use multiple outputs, list them separated by commas. Additional crosspoint requests can be included in the <Op1> line by separating each set with a "/" separator.

Device	Protocol Type	Command	Op1	Op2	Op3	Description
HARRIS	pass-through	crosspoint	<Level>/<Out>,<In>	–	–	Set the crosspoint at level <Level> and define for output <Out> and input <In> values in Hexadecimal number from 0 to FFF0.

Each crosspoint field is treated as a completely separate command.

For example, with terminal protocol type, the event with the following configuration will connect input 2 to output 3 at level 1 and input 4 to outputs 5 and 6 at level 2:

Device: *HARRIS*

Command: *crosspoint*

Op1: *1:2,3 / 2:4,5,6*

Op2: –

Op3: –

For example, with pass-through protocol type, the event with the following configuration will take input 31 (hex. 1F) on levels 0, 1, and 4 to output 4:

Device: *HARRIS*

Command: *crosspoint*

Op1: *014/4,1F*

Op2: –

Op3: –

6.5 Controlling the Evertz Router

The table below represents the events format to control the Evertz router using the Quartz protocol. Two types of commands are supported: crosspoint and quartzcustom.

Device	Command	Op1	Op2	Op3	Description
Evertz	crosspoint	<Level>	<Dest>	<Srce>	Set the crosspoint at level <Level> using the "V,A,B,C,D,E,F,G…" format. Set the destination number or the output <Dest> and the source number or the input <Srce>.
Evertz	quartzcustom	Contains any QUARTZ command	–	–	The command is used to extend the basic functionality.

For example, the event with the following crosspoint command configuration will connect Video in destination 1 to source 2 on levels V,A,B,C:

Op1=*VABC* Op2=*1* Op3=*2*

Use the quartzcustom command for the same configuration instead of the crosspoint command:

Op1=*.SV1,2*



Refer to the Evertz Application Note 65 of the Quartz Routing Switcher Remote Control Protocol for more details.

6.6 Controlling the UTAH Scientific Router

The table below shows the events format used to control the UTAH Scientific router.

Device	Command	Op1	Op2	Op3	Description
UTAH	crosspoint	<In>	<Out>	<Level>	If the level is not defined, this data is taken from the settings.
UTAH	disconnect	<In>	<Out>	<Level>	If the level is not defined, this data is taken from the settings.

6.7 Controlling the Blackmagic Videohub Router

The table below shows the events format used to control the Blackmagic Videohub router.

Device	Command	Op1	Op2	Op3	Description
BMDVIDEOHUB	crosspoint	main crosspoint	reserve crosspoint (optional)	–	The "crosspoint" definition has the following format: <[O|M]out>,<[I]in> [<[O|M]out>,<[I]in>…] Ports can have the following prefixes: **I(i)** – input port, no need to use at all; **O(o)** – output port (default); **M(m)** – monitoring output port (should always be set explicitly).

Delimiters between the output/input pair are `,` or `:`, no white space is allowed.

Delimiters between the route commands are: `space`, `;`, `\t` (tab).

For example:

2,1 – route output port 2 to input port 1;

o2,i1 (or O1,I1 etc.) – route output port 2 to input port 1;

2:1 – route output port 2 to input port 1;

M2,1 – route monitoring output port 2 to input port 1;

3,2 4,2 o5,2 – three route commands in one sequence (output port 3 to input port 2, output port 4 to input port 2, output port 5 to input port 2).

6.8 GPI Driven Devices

General Purpose Input/Output (GPIO) interface is the universal interface that can be used to communicate with any devices which support the GPI protocol. Cinegy supports the SeaLevel GPI board, which should be installed in order to use the GPI signaling.

Event Commands Format

The table below shows the events format used to control two different models of GPI driven devices.

Device	Command	Op1	Op2	Op3 (Optional)	Description
GPI SealO	setpin	<pin number> [0..7]	value (0 or 1)	not used	Set the value (0 or 1) on the specified GPI pin.
GPI SeaMAX		<pin number> [0..15]		"Slave ID" of device to execute command.	
GPI SealO	setbyte	<byte mask> [0..255]	not used	not used	Set all the pins by mask.
GPI SeaMAX		<byte mask> [0..65535]		"Slave ID" of device to execute command.	

If Op3 is empty, default Slave ID from settings is used.

6.9 Controlling FOR-A Router

The table below shows the events format used to control FOR-A MFR Router:

Device	Command	Op1	Op2	Op3
FOR-A	ConnectCrossPoint	Level	Source	Destination

For example, this event will connect input 1 to output 2 at level 4:

Device: *FOR-A*

Command: *ConnectCrossPoint*

Op1: *4*

Op2: *1*

Op3: *2*

6.10 Controlling Cinegy Route

The table below shows the event format used to control physical source switching for virtual destinations using the Cinegy Route external device.

Device	Command	Op1	Op2	Op3
CINEGY_ROUTE	crosspoint	Cinegy Route server (hostname or IP-address)	Cinegy Route physical source	Cinegy Route virtual destination

Setting Permissions

Controlling Cinegy Route through Cinegy Event Manager requires additional permissions setup, which depends on whether Cinegy Event Manager is running locally or remotely.

The local Cinegy Event Manager is installed on the playout server. This means that starting the Cinegy Playout engine will force Cinegy Event Manager to start under the same user account. Thus, the user running the Cinegy Playout engine must be added to the "Routing Users" group via Cinegy Route Manager.

Similarly, Cinegy Event Manager service running on a remote computer should be started under the user with the "Routing Users" privileges.

6.11 Controlling Cinegy Stream Switcher

Cinegy Stream Switcher is a tool for automatic switching of RTP/UDP stream sources in redundant configurations. For example, Cinegy Stream Switcher can be used to monitor RTP output from master and slave Cinegy Playout instances. When one of streams is lost, Cinegy Stream Switcher will automatically switch to another one, so the output is not interrupted.

The setup procedure consists of three stages requiring specific application configurations. Each stage is described in detail further in this article.

1 Cinegy Stream Switcher Configuration

Install and configure the Cinegy Stream Switcher tool for automatic switching of RTP stream sources in redundant configuration as described in the **Cinegy Stream Switcher Manual**.

2 Local Cinegy Event Manager Configuration

Install Cinegy Event Manager. After the installation is completed, configure the Cinegy Route/Stream Switcher plug-in.

3 Cinegy Air Configuration

The final setup stage contains the description of the Cinegy Air control application configuration.

To implement the Cinegy Stream Switcher control, add the event manually on the secondary events panel; alternatively use the "Edit Favorites…" context menu command from the secondary events panel to preconfigure the event and apply it to the needed playlist item. In the configuration window that appears, press the "New Item…" button. In the "Event properties" window specify the corresponding event parameters:

- **Name** – specify the name for the event;
- **Offset** – define the time offset from the item start/end (depending on the value defined in the "From" field);
- **Device** – specify the STREAM_SWITCHER as the device that will receive the event;
- **Command** – enter a command name via the keyboard. The supported device commands description is given in the table below.

Command Name	Action Taken
START	Causes a stopped channel to start. If already started, no action.
STOP	Causes a started channel to stop. If already stopped, no action.
MAIN	Triggers a change to the MAIN IP source. If already MAIN, no action.
BACKUP	Triggers a change to the BACKUP IP source. If already BACKUP, no action.

Command Name	Action Taken
CONFIG	Loads the settings as contained in the OP3 parameter passed in.

- **Option1…3** – define the command options. An overview of the command options is represented in the table below.

Command Options	Action Taken
OP1	The name or IP address of the Stream Switcher Server to address. If empty, the plug-in default parameter is used.
OP2	The channel zero-based numerical index to address. If empty, the plug-in default parameter is used.
OP3	Contains XML profile data to apply to the channel as replacement settings.  This option is used by **CONFIG** command only.

- **Description** – provide the event description;
- **ID** – define the secondary event ID which is logged into the as-run log for every event raised.

The sample XML profile file is provided below:

```
<Stream UniqID="StrSwCfg" MainUrl="rtp://239.1.1.2:1235"
BackupUrl="rtp://239.1.1.3:1236" OutputUrl="rtp://239.1.1.4:1237"
StreamName="Stream_02" MaxDelay="5000" MaxRtpLoss="5"><ErrorLevel Key="0" Value="3"
/><ErrorLevel Key="1" Value="0" /><ErrorLevel Key="2" Value="0"
/><ErrorLevel Key="3" Value="0" /><ErrorLevel Key="4" Value="0" /><ErrorLevel Key="5"
Value="0" /><ErrorLevel Key="6" Value="0" /><ErrorLevel
Key="7" Value="0" /><ErrorLevel Key="8" Value="0" /><ErrorLevel Key="9" Value="0"
/><ErrorLevel Key="10" Value="0" /><ErrorLevel Key="11" Value="0" /></Stream>
```

6.12 Controlling PowerShell

The table below shows the events format used to control custom Microsoft PowerShell scripts. The event syntax should be manually entered in the corresponding fields in the secondary events panel or via "New Item" command in the "Edit Favorite Events" dialog.

Device	Command	Op1	Op2	Op3
POWERSHELL	Argument to be used by PowerShell script	Argument to be used by PowerShell script	Argument to be used by PowerShell script	Argument to be used by PowerShell script

 Refer to the **Cinegy PowerShell Command** section for a detailed description of triggering PowerShell scripts via Cinegy Event Manager.

6.13 Controlling RossTalk Router

The table below shows the events format used to control RossTalk Router:

Device	Command	Op1	Op2	Op3
ROSSTALK	XPT	<source number>	<destination number>	optional, see description below

The "XPT" RossTalk command (a "cross-point" command) is supported:

- OP1 is mapped to the S = source parameter (required);
- OP2 is mapped to the D = destination parameter (required);
- OP3 may be:
  - a simple number, which will map to the L = level parameter and trigger the injection of the I = default user parameter from the configurator;
  - a string containing at least one : symbol, which will then be appended as-is to the XPT command (effectively allowing custom command suffix and bypass setting any automatic default user parameter);
  - empty / unset (the command will be terminated automatically with the I = default user parameter from the configurator).