ZyPer Control Option Tips

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Disclaimers

Kramer module/driver offerings

Kramer provides modules/drivers for third-party control systems as a courtesy to our channel partners to speed development time. In addition to the modules/drivers, our fully documented ZyPer Management Platform API allows our customers to connect to nearly any control system.

Kramer support for control products

The Kramer support team is available to assist you in getting your new ZyPer encoders, decoders, and management system working correctly and providing direction with API calls for desired functionality.

Kramer limitation

Given the variety of capabilities across various control products, Kramer cannot commit to deep-rooted knowledge that would allow us to address all support requests. Further, the drivers provided may not include all commands needed for a particular solution that your organization has devised.

How you can prepare

While Kramer provides modules/drivers and the API, your organization will need expertise on the chosen control system and may require technical support from the control system vendor.

Where to find documentation

All ZeeVee and ZyPer documentation can be found on our website here: https://www.zeevee.com/documentation/.

The API for is fully documented in the ZyPer Management Platform User Manual, found here:

https://www.zeevee.com/zyper_management_platform_user_manual

Table of Contents

Kramer Modules/Drivers

Kramer provides many different control options for the ZyPer family of products. (ZyPer4K, ZyPerUHD60, ZyPerUHD). This includes the availability of modules or built in support directly for the following 3rd party control systems.

Support

Modules/Drivers for 3rd party control systems are provided as a courtesy to developers in an effort to reduce development time. They are provided "as-is" from Kramer with no additional support provided other than the accompanying documentation. See ***Disclaimers*** section at the beginning of this document.

Module/Driver Basics

A module or driver is an interface between the primary controller (Kramer Control, Crestron, RTI, Control4 etc..) and the ZyPer Management Platform (ZMP). Think of the module or driver as a translator. It will translate commands from the primary control system into the appropriate commands that can be understood by the ZyPerMP.

Note: Not all ZyPerMP API commands are supported by the module/driver. Our goal has been to support the most common and basic commands to allow routing of video from any source to any destination as well as some special features such as multiview and video walls.

Source Code - ConnectivityXchange

Kramer makes the source code to several drivers/modules available for free on the Github ***ConnectivityXchange***.

https://github.com/ConnectivityXchange

Getting Started

To get started, simply clone this repository to your local environment. The codebase is licensed under the GPL-3.0 license, which means you are free to use, modify, and distribute the software. For more details, please refer to the LICENSE file.

ConnectivityXchange Repositories

- Control 4 repository.
- Crestron repository.
- QSC repository.
- RTI repository.

Modifying the Code

ConnectivityXchange encourages AV enthusiasts to modify the code to better suit their needs. Whether you're enhancing functionality or addressing specific requirements, we invite you to delve into the codebase. However, please ensure that any modifications also adhere to the terms of the GPL-3.0 license.

Contributing

We welcome and value your contributions to improve ConnectivityXchange. If you've developed improvements, bug fixes, or new features, feel free to submit a pull request. Our team will review your changes and, upon acceptance, incorporate them into the main code. We're committed to acknowledging your contributions, and as a token of our gratitude, we'll immortalize your name in the credits as a contributor.

Configuration Tips

Documentation

You will need to know the ZyPer Management Platform API commands to perform actions that are not provided by the module/driver. Kramer provides a fully open API for this purpose. Please download the ZyPer Management Platform User Guide from the following link:

https://www.zeevee.com/zyper_management_platform_user_manual/

API commands are listed in Chapter 3 of the manual. “Advanced Operation”

Basic Setup

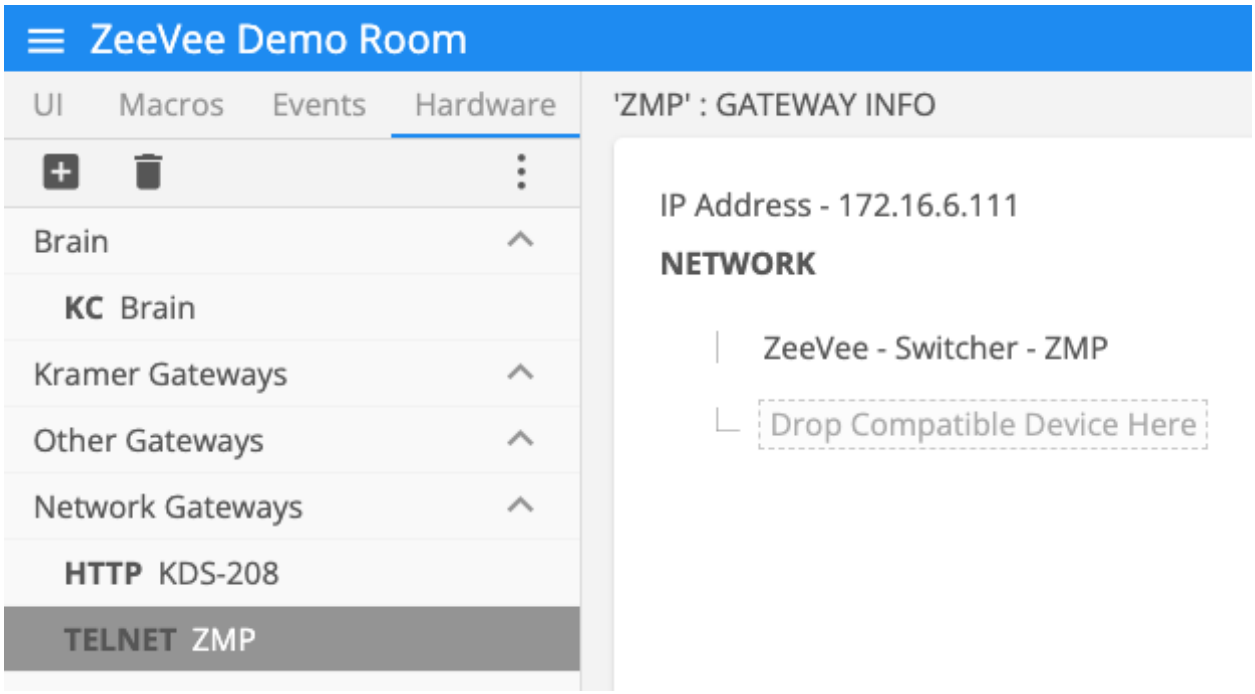
Regardless of the control system used to control the ZyPer equipment, it is a requirement that the ZyPer Management Platform (ZMP) must be present.

1. The ZMP IP address should be configured either via DHCP or given a static address.
2. The ZMP IP address MUST be on the same network as the primary hardware controller. (Kramer Control Brain, *Crestron* 4-Series controller, *Control4* EA1, EA3, EA5, *DTVGameControl* iPad)
3. All ZyPer endpoints should be configured using either the ZMP Graphical User Interface (GUI) or via the ZMP API (Telnet or SSH).
    a. Assign all endpoints a logical name (Encoders and Decoders)
    b. Design/create any video walls and give them logical names
    c. Design/create any multiview displays and give them logical names (ZyPer4K only)

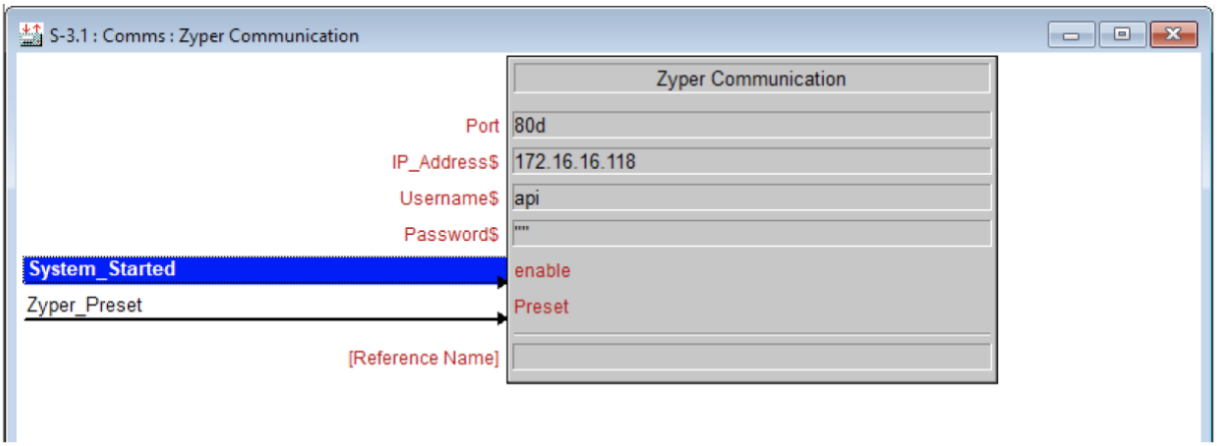
Module/Driver Setup

Every control system is different but will have some common features when it comes to basic setup and configuration.

1. The IP address of the ZMP must be provided so that the primary controller can communicate with the ZMP.
    a. Where the IP address is provided will vary based on the control system. Below are some examples:
        i. Kramer Control – Builder under the Hardware Tab.

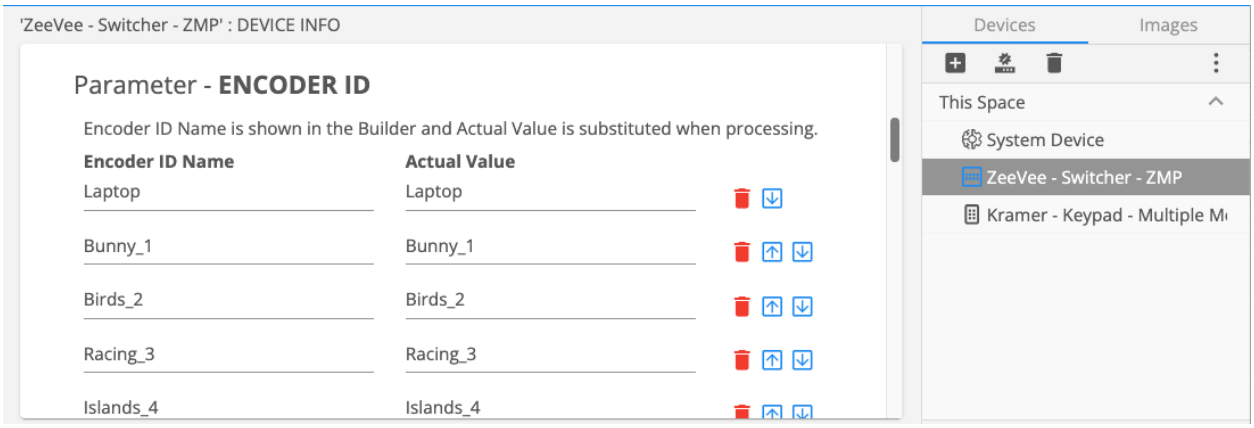


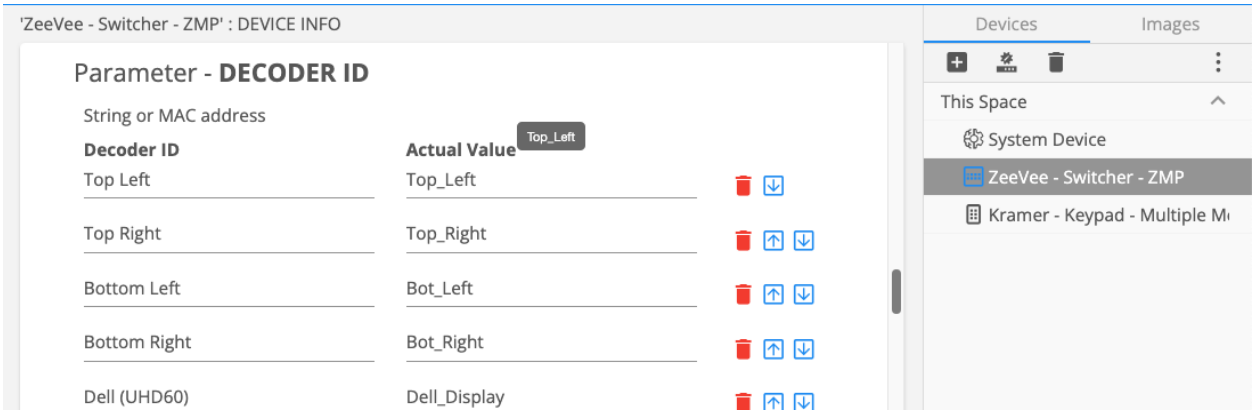
        ii. Crestron – SIMPL Windows under IP_Address field for the Zyper Communication logic module. See image below:



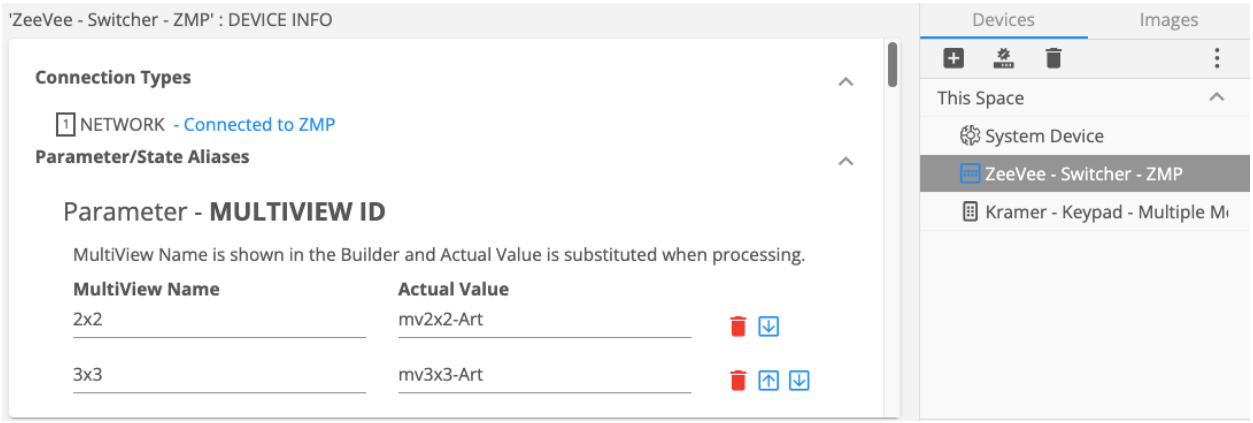
iii. Control4 – Composer, System Design-Properties tab, IP Address field.

2. The names of the endpoints must be provided. Similar to the IP address detailed above.
   a. Kramer Control – Encoder ID, Decoder ID and Device ID fields for the ZeeVee Switcher – ZMP





3. The names of Multiview's (ZyPer4K only) need to be provided.
    a. Kramer Control – Multiview ID field for ZeeVee Switcher – ZMP



    b. Crestron – SIMPL Windows in the appropriate Multiview logic module.
    c. Control4 – Create a "virtual" encoder and assign it appropriate multiview name and set the "Input Join Type" to multiview.

Important Crestron Note

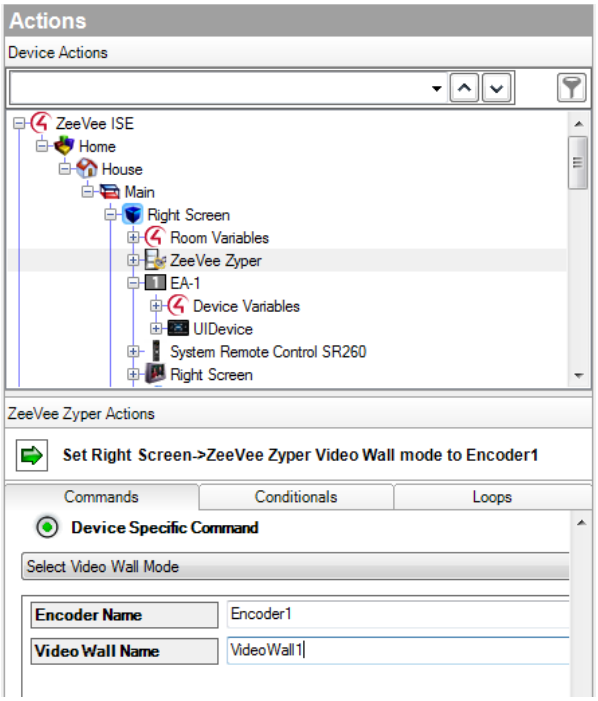
The Crestron **CP4N Series-4 Controller** has a special LAN port labeled "Control Subnet". This port should never be connected to the ZyPer AV network. (The LAN with Kramer encoders and decoders). This "Control Subnet" can be on the same network port as the ZyPer Management Platform "Management Network".

Using the "Control Subnet" interface on the Video Network will cause catastrophic issues with the system.

Video Walls

Video walls are configured differently depending on the control system.

a. Kramer Control – A video wall is assigned a VideoWall ID. Wall should be created beforehand using ZyPer Management Platform GUI. The wall name is then assigned a VideoWall ID in Kramer Control. Use Join VideoWall command.
b. Crestron – Similar to IP address and multiview. SIMPL Windows in the appropriate Video Wall logic module.
c. Control4 – Video walls need to be assigned to a special programmed command. For example, a Red Button press on the SR260 remote control. In *Composer* highlight the room, select Programming and Commands. Select the "Red Button". Then in the Actions window select ZeeVee ZyPer, scroll down to Device Specific Command. Enter the Encoder and Video Wall Names. (See image below)



RS232

The ZyPer Management Platform (ZMP) must first be linked to the specific endpoint to send RS232 information. This can be done with either the dataConnect or switch command.

Examples:

dataConnect Dec1 server rs232 tunnelPort 1234

switch Dec1 server rs232

Note: The feature of dataConnect was added to allow a third party to connect to the ZMP server with a specific port and pass raw or telnet API commands (depending on the mode) to the server and port which is designated for a particular encoder or decoder.

Important Note: Issuing the dataConnect or switch command can cause the ZyPer endpoint to reboot to enable the link. Disconnecting the link can also cause the endpoint to reboot. The link should only be established once and then left alone to prevent undesired endpoint reboots.

When using any control system; that system is communicating with our ZMP and not to any specific endpoint.

When sending RS232 commands to a decoder via the ZMP you must follow very specific syntax.

The command is: send <decoder_name> rs232 text

Here are examples on this. (Assume decoder name is *Dec1*)

Input command: send Dec1 rs232 Hello

Received at Dec1: Hello (Note, no line feed or carriage return)

Input command: send Dec1 rs232 Hello\r\n

Received at Dec1: Hello (with carriage return and line feed)

Input command: send Dec1 rs232 Hello World

Received at Dec1: Nothing. You get an error. Bad syntax. You cannot have a space between Hello and World.

Input command send Dec1 rs232 Hello_World

Received at Dec1: Hello_World (Note, no line feed or carriage return)

Input command send Dec1 rs232 “Hello World”

Received at Dec1: Hello World (Note, no line feed or carriage return)

Input command send Dec1 rs232 “Hello World”\r\n

Received at Dec1: Nothing. You get an error. Bad syntax. Token \r\n is invalid.

You need to contain the line feed and carriage return symbols inside the quotes in this case.

Input command send Dec1 rs232 “Hello World\r\n”

Received at Dec1: Hello World (with carriage return and line feed)

Text can also be Hexadecimal Code as shown below:

Input command:

send Dec1 rs232 \x48\x65\x6c\x6c\x6f\x20\x57\x6f\x72\x6c\x64\x0A\x0D

Received at Dec1: Hello World (with carriage return and line feed)

The ZyPer Management Platform also can receive RS232 communications that were input into a ZyPer endpoint. To view any such RS232 string, you use the “show responses” command.

Example:

Zyper$ show responses DEC1 rs232 since 0

device(d8:80:39:59:bf:57);

device.rs232Response.0; string="Have a great day!\x0D"

device.rs232Response.1; string="\x0A"

lastChangeId(2);

Success

Important Crestron Note

When using Crestron as the control system, you need to append an extra \ symbol before the Carriage return symbol. Otherwise, carriage return does not work.

Example using Crestron to turn on/off LG display.

LG TV

ON

send DecoderName rs232 \x6B\x61\x20\x30\x30\x20\x30\x31\\x0D

OFF

send DecoderName rs232 \x6B\x61\x20\x30\x30\x20\x30\x30\\x0D

Important Kramer Control Note

When using Kramer Control as the control system, you need to append an extra \ symbol before the Carriage return symbol and Line Feed symbol. Otherwise, carriage return does not work.

Examples using Kramer Control to send Hello World with carriage return and line feed.

Note: The Hex code must be in quotes as well.

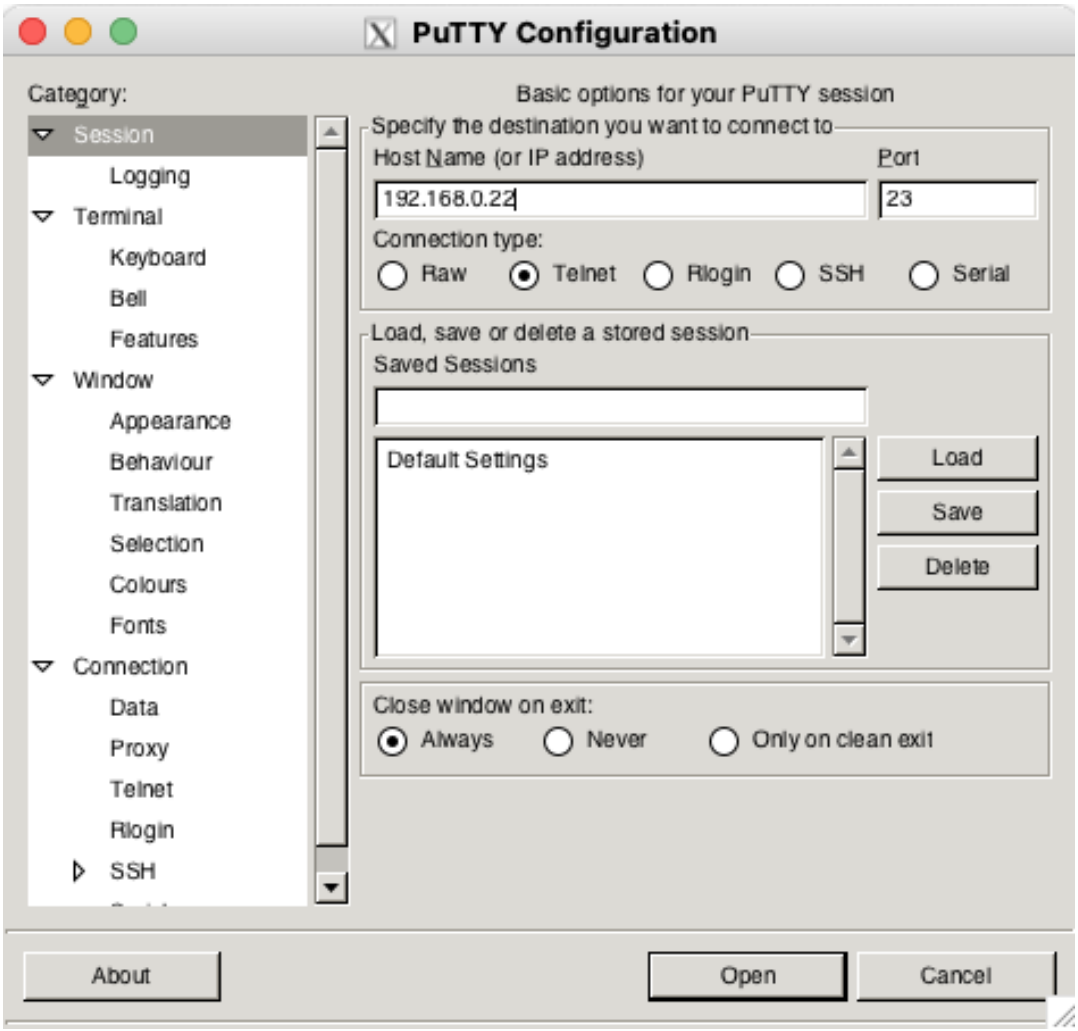
"\x48\x65\x6c\x6c\x6f\x20\x57\x6f\x72\x6c\x64\\x0A\\x0D"

Plain text with \r\n must also include the extra \ symbol.

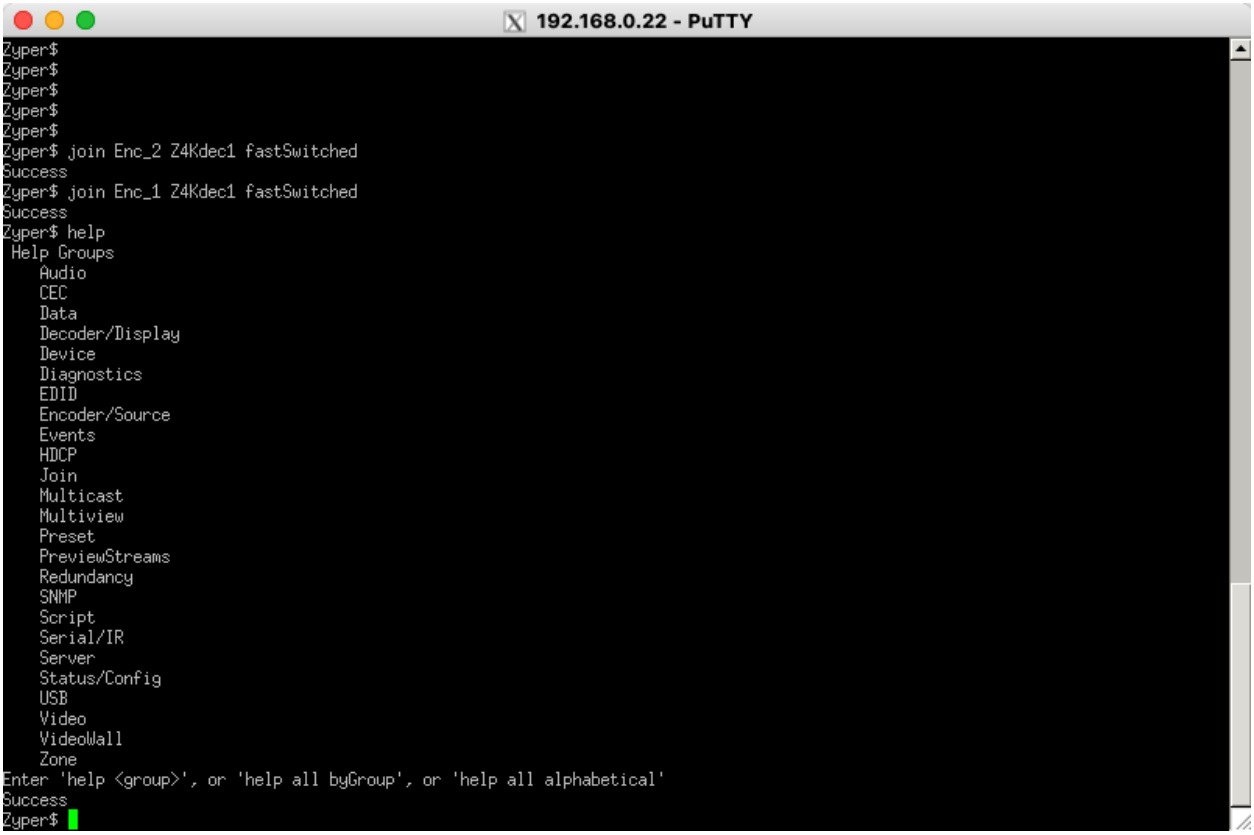
“Hello World\\r\\n”

Troubleshooting Tips

If a command issued from a 3rd party control system is not working, the first thing to do is confirm the command works when issued directly in the API. To do this you should Telnet or SSH into the API using a tool such as Putty.



Once the Telnet or SSH session is open, you can issue any API command to the ZyPer Management Platform manually. You can also use the HELP feature of the API to learn the correct API commands and syntax.



Once the command is working via Telnet directly to the ZMP, copy the exact syntax as needed into the 3rd party control system.

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Crestron HTTP directly to ZyPerUHD60

It is possible to directly control features of the ZyPerUHD60 when the ZyPer Management Platform is not present in the system. This is done by sending HTTP commands directly to the ZyPerUHD60 encoder or decoder. Please see the HTTP commands section of the ZyPerUHD60 User Manual for details on specific commands. Link Below:

ZyPerUHD60 User Manual

To issue HTTP commands from a Crestron control system the appropriate command is GET The Crestron control system must be forced into using HTTP version 1.0 for any commands.

Below is example of command using cURL and then an example of the same command using Crestron GET

curl http://172.22.0.23/cgi-bin/query.cgi?cmd=e+e_reconnect::001CD5010A35

GET /cgi-bin/query.cgi?cmd=e+e_reconnect::001CD5010A35 HTTP/1.0\n\n

Appendix: Module Versions

The table below provides the most updated version information regarding various modules/drivers available from Kramer.

Module/Driver	Version/Date	Notes
Kramer Control	October 2024	ZeeVee Switcher - ZMP
Crestron (Kramer)	Version 1.0.2.1 September 19, 2023	Source available on ConnectivityXchange
Crestron (SDVoE)	Version 1.0.0.1 September 27, 2021	ZIP file
Control4	Revision 20210323 March 23, 2021	Source available on ConnectivityXchange
RTI	Revision 20180508 October 5, 2018	Source available on ConnectivityXchange
Q-Sys	Version 2.0 build 2.0.0.3 April 24, 2024	Source available on ConnectivityXchange
Game View	Integrated in Gave View Application	Previously DTVGameControl
Barco Overture	Version 1.02 January 28, 2019	Password protected ZIP file
Extron	Available from Extron	Please contact Extron
ISAAC	Integrated	Contact Smart Monkeys
Utelogy	Integrated	Contact Utelogy
Universal Remote Control (URC)	Version 1.0.2022.0428.1 June 30, 2022	Contact URC
Aveo Systems	Integrated October 1, 2022	Contact Aveo
Pepperdash	Integrated	Contact Pepperdash