zeevee™

Signal Intelligence

ZyPer Management Platform Release Notes

Software 1.8.34605

Consolidated Patch 1

October 15, 2018

Contents

Revision History

Date	Version	Fixes/Changes
September 26, 2018	1.8.34521	General Availability release
October 15, 2018	1.8.34605	ZyPerMP – Graceful handling of unknown MAC addresses
		ZyPerMP – Include active SQL DB in Trouble Report
		ZyPer4K – Fix that prevented USB leave
		ZyPerUHD – Powersave fix preventing return of video
		ZyPerUHD – Device update process change – remove reboot from sequence

1. Supported platforms

ZyPer Management Platform

- ProServer on Ubuntu v16.0.4
- Gigabyte NUC on Ubuntu v14.04.2
- Intel NUC (Generation 2) on Ubuntu v16.0.4
- VMWare appliance on Ubuntu v14.04.2

MaestroZ web interface

- Google Chrome
- Safari 10.3.2 for iPad (MaestroZ mobile mode)
- Android tablet 7.0 (MaestroZ mobile mode)

Encoders and decoders

- ZyPer4K HDMI 2.0 encoders and decoders
- ZyPer4K HDMI 1.4 encoders and decoders
- ZyPerUHD
- ZyPerHD
- ZyPerUSB

2. New features

- Shell security enhancement - Eliminates shell access
- New ZMP API revert command - Added to allow the site to return to a prior version of the software (supported after going to 1.8)
- Channel up/down command - Added to allow the user to cycle through encoders that will be paired with a decoder
- Enhanced Follow Audio features - Unifies changes to audio pairing and separation as needed
- New ZMP API set MP IP command – Added to allow the user to set the MP IP address
- ZyPerUHD sleep mode for decoders – Added to set the ZyPerUHD Displays to sleep mode instead of displaying the idle screen (not supported by all display monitors).
- New ZMP "events" API command - Added to display the server's events in telnet, Browser WebSocket and API Polling
- CEC control added for ZyPer4K HDMI 2.0 and ZyPerUHD (basic on and off support for ZyPerUHD)
- Improved EDID control – Added to control auto edid at the device level.

3. Issues resolved

Component	Issue	Other
MaestroZ	Unable to delete a device from using the "delete" button in the Device Details, "Actions"	7174
MaestroZ	lastChangeId not always updated in show device status when join or un-join a video connection	7720
ZyPerUHD Firmware	On the ZyPerUHD, if the Encoder or Decoder is factory defaulted (or is never set to static and then back to DHCP) it is mis-detected as DHCP mode but contains a Link Local address	8239 – Fixed with ZyPerUHD firmware 0.10.x
ZyPerUHD Firmware	On the ZyPerUHD, after redundancy switched over, the new master could not receive the RS232 data sent from server	8239 – Fixed with ZyPerUHD firmware .0.10.x
rcServer	On the ZyPer4K HDMI 2.0, at 4096 fast switched connection, the decoder status shows that the encoder is not streaming even though it is.	8247
rcServer	On the ZyPerUHD, video display black out periodically with video source 3840x2160p30/specific display 1920x1200	8249
rcServer	On the ZyPer4K HDMI 2.0 Encoder - Source resolution detection - When a 1080 screen is connected prior and the source is changed to a 3840 X 2160 444 or 422 format the encoder fails to recognize the resolution	8334

rcServer	rcServerMain process cpu spikes high above 100% after running a script with various operations over 18 hours	8412
rcServer	On the ZyPer4K HDMI 2.0 Encoder - Scaler and Main streams used with a UHD 60 source causes the picture to distort. Replication was as follows 1) Configured source for UHD 60 RGB 8 bit or YUV 8 bit. 2) Connect encoder to a decoder in fast switched mode. 3) Connect a multiview with the scalar stream at 60 X 60 in the view. 4) Connect the multiview to a Different decoder.	8458
MaestroZ	Audio disconnect does not work in some situations when using MaestroZ Custom Disconnect Configuration	8467
rcServer	ProServer - Redundancy - Virtual IP cannot be connected to after swap over of server.	8472
rcServer	ZMP Server automatically switched over after running over 35 hours with some background traffic operations	8476
rcServer	ZyPerHD: join video in fast-switched mode failed due to "EDID not received" - missing edid support	8531
rcServer	ZMP Error in `rcServerMain': munmap_chunk(): invalid pointer: 0x00007ffcfbef6c60	8554

4. Issues Outstanding

Component	Issue	Workaround
ZyPer4K HDMI 2.0	Fast Switched joins at 480I/576I displays video in an improper ratio horizontally	No Workaround at this time.
MaestroZ	One NUC two browsers - "Server is not available"	Wait until the F5 refresh occurs to continue working (generally within 3-5 seconds of receiving the message).
ZyPer4K HDMI 2.0	ZyPer 4K Charlie - Encoder - Incorrect FPS status (cosmetic) under 420 color formats	No Workaround at this time.

MaestroZ	On occasion the custom config containing "disconnect" actions will be show no actions after saving the config.	Close the browser and restart it if this gets into this state.
ZyPerUHD	ZyPer UHD - HDCP does not report on the UHD encoders, in addition it allows video traffic to flow to devices that do not support the HDCP version	Restart or reboot the encoder to gain the correct information.
ZyPerUHD	ZyPer UHD - Decoder - UHD 60 8 bit 420 - When connecting a UHD60 encoder to a Decoder with a display that has only 1080 support, when rebooting the device, it does not always return video	After about two minutes the video comes back and it works.
Server Redundancy	When failing over to a new master, if the old master resumes, the fail over occurs again back to the original server	No Workaround at this time, interrupts MaestroZ function for a second.
rcServer	4K HDMI 2.0 - Some Decoders may not show receiving video set to yes when video is being received and displayed.	A connect to another encoder corrects the issue, connection to the original encoder can then be made and the state is correct.
MaestroZ	When renaming Sources or Display icons, if the order of said device is changed a different device could receive the name instead. This also could prevent the user from being unable to alter the name to what they want if the name matches	Re-enter the correct name of the devices.
rcServer	Encoder videoScaledStream staying enabled when it was not actually used in Multiviews mode	By un-join all the other video connections involving the encoder that you are trying to connect with will clear this state. Then re-join the encoder to the same decoder in fast-switched mode.
Upgrade	VM: The previousVersion field showed as N/A in server info after upgraded the server from 1.7.4 to 1.8	No Workaround at this time
MaestroZ	On the ZyPer4K HDMI 2.0, join or un-join the audio with "analog-audio" prompted the unexpected Error:(29) message	Cosmetic Error, the audio join functions in MaestroZ but this error is present

5. Known limitations

ZyPer4K HDMI 2.0

ZyPer4K HDMI 2.0 - SDI Extended board - Genlock mode – Audio is limited to 2 channel support (7506) Workaround: No Workaround at this time.

ZyPer4K HDMI 2.0 - Decoder - When swapping HDMI from ZyPer4K decoders with the HDMI unplugged less than 5 seconds, the decoder fails to read the new EDID. (7669) Workaround: When power Cycling or unplugging, wait 5 seconds before plugging the unit back in.

ZyPer4K HDMI 2.0 display port decoders - For the Display port connections to a Monitor or TV that are to be shown at 3840 X 2160 60 FPS 8 bit 444. Video has been seen to stop and start again on the screen after a link training has been established. It is not every time and in testing varies depending on particular environment variables as up to 1 out of every 5 link training events. The event itself is specific to a disconnect of Display port connection or power event of the end points.

To work around this problem, the following guidelines must be implemented to obtain reliable 3840 X 2160 60 FPS during these particular instances of fault.

- For Genlocked connection, sources must be using reduced blanking timing, limiting pixel clock to 550MHz.

- Fast switched connection may also be used as the method of joining the Encoder to the Decoder.

- The below advanced timing command must be used to configure the decoder for use:

  set decoder *decoder_name|decoder_mac* display-advanced-timing sync-front-porch 48 2 sync-width 32 5 hsync-polarity auto vsync-polarity auto total-size 4000 2222

ZyPer4K HDMI 2.0 encoders with analog expansion - During connections using VGA port on the expansion board, audio may not be available for the connection. We have found that resetting port to HDMI and then back to VGA does resolve the issue. This occurs one out of every 15 to 20 connects using the VGA port on this device.

ZyPerUHD

ZyPerUHD – Decoders – When the UHD Decoder is downscaling from UHD 3840 X 2160 60 420 8 bit to 1080P 60 on a display, if a reboot (power cycle or restart command) occurs to the Decoder the Display will not return video. To recover from this state the device needs to be rejoined to display video once more.

ZyPerUHD – Decoders – CEC off and Sleep modes –

- **CEC off|on**

It has been found that on some Samsung displays, that the CEC "on" command will not returns the monitor to an active state. One monitor that experienced this issue was a Samsung 4K UN40JU6500. To activate the TV after encountering this event, a power on from the remote must be done.

- **Sleep mode**

In addition, when using the sleep mode feature to set the display to sleep (regardless of the decoder connections) displays require a 10 second window if the user wants to disable this mode. If done prior to this time, the Decoder will require a reset or power cycle to return to the proper state.

ZyPerUHD – Encoders – HDCP, interlacing state, Bit sample, Color Space and Color Format states may not report correctly on UHD encoders**.**

- HDCP status – May not report correctly
- Interlacing State – Will always show "no"
- Color Space – Will always report 444
- Color Format – Will Always report RGB
- Color bit depth – Will always report 8 bit

ZyPerUHD Encoder - It is seen sometimes under the Encoder EDID settings on the encoders that the EDID may not be the same seen under the joined decoder. This is part of the design however as the system will load an edid that it feels is most compatible. This could be an EDID that is either stored in its database or from an active decoder that shares the encoders connection.

ZyPerUHD Decoder - Display with standard timing first 2560x1440 showed bad video in source 720p60.The bad video appeared after changed the resolution from 1080p60 to 720p60 or changed resolution from 480p to 720p60 (after switching the resolution back and forth for about 1 minute or 2). This is a limitation for the ZyPerUHD device.

ZyPerUSB

ZyPerUSB - No Filtering is available for ZyPerUSB - Connections will not be able to be filtered via Storage type or HID.

ZyPerUSB – Decoder - USB Cameras that are connected to the unit when paired together will not have power to the Camera. The Camera will need to be unplugged and reconnected in order for the camera to receive power and function.

ZMP Redundancy

VMware Redundancy Support - There is no support for virtual machines hosting the ZMP image under 1.8, only single server deployments are supported.

MeastroZ - After server switched over, some Displays with video streaming color in Green showed as Yellow in new master server unless refresh the browser)

ZMP with dual NICs

Setting the Management Interface (eth1) on a ProServer or a dual NIC NUC ZMP device to an IP not accessible to the originating MaestroZ Source machine could cause an inability to access the Management port after it is set. To correct this, the user should enter the MaestroZ under the "Video-Network" IP from a device on that network and correct the Management NIC interface address.

ZyPer Management Platform – VMWare - <mark>New noted added to October version of the Release Notes.</mark>

VM ware updates – Starting in the upgrading to 1.8, on VM Hosted machines for the ZMP will require use of the update_vm to upgrade to 1.8 and beyond. Reverting to 1.7X and 1.6 versions are possible through use of the standard update_nuc file if needed.

6. Current device firmware

Device	File version
ZyPer4K HDMI2.0	3.5.2
ZyPer4K HDMI1.4	2.12.2
ZyPerUHD Encoders	0.10.3
ZyPerUHD Decoders	0.10.2
ZyPerUHD Wallplate Encoders	0.10.3

ZyPerHD Encoders	2.12.3
ZyPerHD Decoders	2.12.4

7. API Additions, changes, and deletions

Additions

- channel up|down <decoderMac|decoderName>
- events
- load encoder-edid <encoderMac|encoderName> <edid-filename>|auto|default [only-lpcm-audio]
- redundancy delete down-servers
- revert server
- send <deviceMac|decoderName> cec on|off
- send <deviceMac|decoderName> cec hex-string <hex-string> (ZyPer4K only)
- set decoder <decoderMac|decoderName> power-save enabled|disabled (ZyPerUHD only)
- set server ip server static <address:ip> <mask:ip> <gateway:ip>|none reboot
- set server ip server dhcp reboot
- set server ip management static <address:ip> <mask:ip> <gateway:ip>|none reboot
- set server ip management dhcp reboot
- set video-wall <wallName> new-name <newWallName>
- show events last
- show events since <lastChangeId:lastChangeNumber>
- set server redundancy all-servers virtual-ip address <address:ip> network-interface video|management

Changes

New video wall commands have been added to better align with other commands.

- NEW: join <encoderMac|encoderName>|none <wallName> video-wall
  - OLD:: set video-wall-encoder <deviceMac|deviceName>|none <wallName>
- NEW: set video-wall <wallName> size rows <int> columns <int> top-bezel <int> bottom-bezel <int> leftBezel <int> right-bezel <int>

- o OLD: set video-wall-decoder <deviceMac|deviceName>|none <wallName> <videoWallPositionRow:int> <videoWallPositionCol:int>
- NEW: set video-wall <wallName> decoder <deviceMac|deviceName>|none row <int> column <int>
  - o OLD: set video-wall-decoder <deviceMac|deviceName>|none <wallName> <videoWallPositionRow:int> <videoWallPositionCol:int>

NOTE: The old video-wall commands are still supported by the API, but they will not appear in the online help, and will not auto-complete.

Other changes

- NEW: set server redundancy all-servers virtual-ip address <address:ip> network-interface video|management
  - o OLD: set server redundancy all-servers virtual-ip address <address:ip> mask <mask:ip>
- NEW: load encoder-edid <encoderMac|encoderName> <edid-filename>|auto|default [only-lpcm-audio]
  - o OLD: load encoder-edid <encoderMac|encoderName> <filename>|default [only-lpcm-audio]

8. MaestroZ additions, changes, and deletions

Additions

CEC support added to ZyPer4K and ZyPerUHD encoder and decoders.

- ZyPer4K requires device firmware version 3.5.2 or later
- Distinct on/off buttons
- Input field available for custom CEC hex codes – ZyPer4K devices only
- Not supported on ZyPerHD
- Device Details\Actions
- Device connect to the ZyPer unit must have CEC enabled
- Examples:
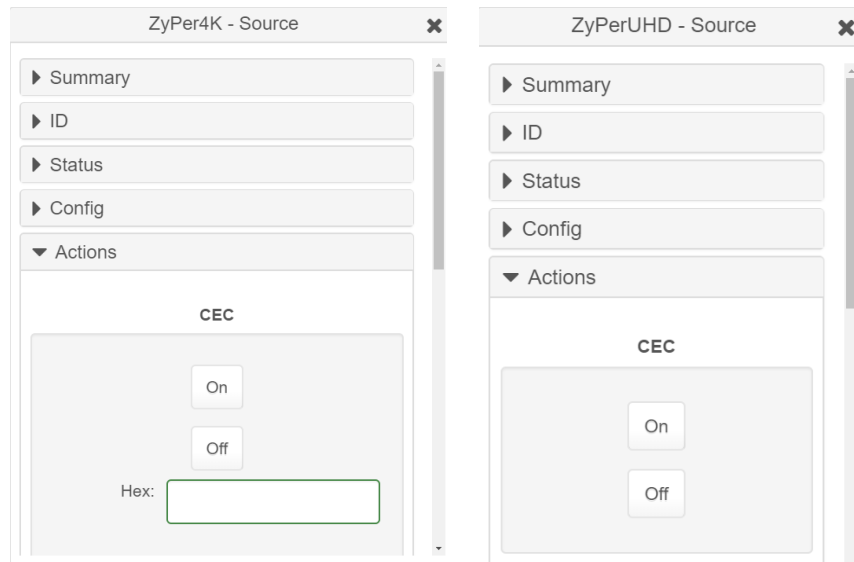
Revert

Use the Revert button if a recent software update has made a change that is not compatible with your current set up, or you have issues with a software update. It will quickly revert to the previously installed version of software and the previous version of the ZyPer database.

Dual NIC support

The ZyPer server 1.8 now can support to network interface connections. The primary network connection is now labeled Video and the secondary interface is labeled Management.

Show Advanced Controls

- Found at the bottom of the server panel
- When the checkmark is missing, some Server panel functions will be hidden or placed in read-only mode
- Place a checkmark to view and edit all available options
- Settings that can be made Read-Only:
    - EDID Mode
    - Revert button (when present)
    - Redundancy Switchover button (when in redundant server mode)

o Virtual IP address (when in redundant server mode)
- Settings that can be hidden
    - o License key field
    - o Update license button
    - o Preferred Master/Slave (when in redundant server mode)

Changes

Server panel updates

- Status section: "IP" label changed to "Video Network IP"
- EDID mode radio button made read only by default. See "Show Advanced Controls" section above for more details.
- License field hidden by default. See "Show Advanced Controls" section above for more details.
- When in redundant server mode, Virtual IP address can be set for either the Video or Network interface.

9. Upgrading and Downgrading

Unique update files required for each platform

Starting with this release, the ZyPer MP update file will be available in three, platform-specific versions. Please use the correct version for the hardware platform being updated.

File name examples:

- ZyPerMP NUC computer: update_nuc_1.8.34541.zyper
- ZyPerMP Proserver: update_proserver_1.8.34541.zyper
- ZyPerMP VMware: update_vm_1.8.34541.zyper

Known issues with upgrading and downgrading

- The following note is only applicable to moving to the 1.7.4 platform. The ZMP generation 2 hardware can only be updated through the service rcServer update command.

    The process is shown below

From the ZMP OS command line perform the below commands.
- o sudo service rcServer stop
- o sudo service rcServer update /srv/ftp/files/update_...

- After an upgrade, the browser requires a clearing of cache and refresh in order to see the "Display" Panel (8151)

- Upon upgrading the system (began in 1.7.4) there is a saved file that includes the export from the database prior update. This can be used to restore the database to the state it was in prior the upgrade. The file is called: zyper.*zyperversion*.sql and resides on the ZMP under the folder: /srv/ftp/files. Where "zyperversion" is the version the system was on prior the upgrade.

- Downgrading to 1.7.1X version of the software will require the user to clear the cache in order to see the "Roles or Users" panel.

- There is reduced support in downgrading due to the extensive additions to the newer versions. In particular the 1.3 and 1.4 versions require additional steps to recover from the change in database tables, fields and features that are not present at the time of the original version. Due to this all 1.3 and 1.4 versions should be upgraded to 1.6 prior upgrading to the new releases

- If downgrading to 1.6. or 1.5.2, you may have to clear the browser cache before logging back in to the MaestroZ – A error may occur in the browser alerting you to a cert error, this was actually due to the login to the REST server (which is not present on version prior 1.7.X), the browser may maintain this login path on the next login until the cache is cleared.

- If downgrading to either 1.5.2 and 1.6, the user in MaestroZ will not be able to add zones. This is due to the "datetime" format change in the zone table when Maria DB replaces MySQL. Reverting back keeps Maria DB thus the command sent to create the zone fails because of the format mismatch of the datetime.

- 1.5.2 cannot upgrade to releases above 1.7.X through the GUI due to the file size limitations of the new release.

Note: For versions prior 1.6, please follow the below upgrade path

1.1 to 1.3 to 1.6
1.2 to 1.3 to 1.6
1.3 to 1.6
1.4 to 1.6
1.5 to 1.6

Upgrade and downgrade support for the following platforms of the management server

- ZMP
- ZMP new
- VMware
- ProServer

Interface IP type and internet state

- Interface IP type: Defines how the interface acquired it's IP
- Internet state: Defines whether or not the server can reach the outside internet

- **ZMP**

Starting Version	Interface IP type	Internet state	Result
1.6.33213	DHCP	Online	Passed
1.6.33213	DHCP	Offline	Passed
1.6.33213	STATIC	Online	Passed
1.6.33213	STATIC	Offline	Passed
1.6.33213	Link Local	Offline	Passed
1.7.1.33493	DHCP	Online	Passed
1.7.1.33493	DHCP	Offline	Passed
1.7.1.33493	STATIC	Online	Passed
1.7.1.33493	STATIC	Offline	Passed
1.7.1.33493	Link Local	Offline	Passed
1.7.3.33736	DHCP	Online	Passed
1.7.3.33376	DHCP	Offline	Passed
1.7.3.33736	STATIC	Online	Passed
1.7.3.33736	STATIC	Offline	Passed
1.7.3.33736	Link Local	Offline	Passed
1.7.4.33922	DHCP	Online	Passed

1.7.4.33922	DHCP	Offline	Passed
1.7.4.33922	STATIC	Online	Passed
1.7.4.33922	STATIC	Offline	Passed
1.7.4.33922	Link Local	Offline	Passed

- **ZMP new**

Starting Version	Interface IP type	Internet state	Result
1.7.4.33922	DHCP	Online	Passed
1.7.4.33922	DHCP	Offline	Passed
1.7.4.33922	STATIC	Online	Passed
1.7.4.33922	STATIC	Offline	Passed
1.7.4.33922	Link Local	Offline	Passed

- **VMWARE**

Starting Version	Interface IP type	Internet state	Result
1.7.1.33493	DHCP	Online	Passed
1.7.1.33493	STATIC	Online	Passed
1.7.3.33736	DHCP	Online	Passed
1.7.3.33736	STATIC	Online	Passed
1.7.4.33922	DHCP	Online	Passed
1.7.4.33922	STATIC	Online	Passed

- **ProServer Note**: The ProServer being new to this release will contain the GA version of 1.8, there are no other versions prior this release for this platform.

Appendix A New Features

The following new features were added to 1.8.34521 GA to enhance several areas valued to our customers.

Shell security enhancement (Permanent once implemented during the upgrade)

Components: All ZyPer Management Platforms including virtual machines.

Executed: Automatically during upgrade to 1.8

Summary: Eliminating the Shell access adds an additional level of security and hides the operating system from the outside.

The following connection types have been maintained after the upgrade to 1.8

- MaestroZ access
- Telnet access
- JSON access
- FTP access

The FTP location for /srv/ftp/files (upgrade and firmware path) is intact and remains accessible after upgrade.

- SFTP – Changed and is locked out from the "zyper" user

Appearance to the user:

As seen the login places the user directly into the API shell.

```
zyper@172.16.51.86's password:
Trying 127.0.0.1...
Connected to 127.0.0.1.
Escape character is '^]'.
Zyper$ 
```

Important Notes:

- Once the shell access is implemented, it is permanently in place. Downgrading will not undue the shell lockout.
- Control-C normally used to exit the Telnet session to the OS may exit out of the application you are using to connect (telnet, putty, secure CRT, etc)

API Revert command

Components: All ZyPer Management Platforms including virtual machines.

Executed: MaestroZ, Via API command or via use of an FTP and reset of the ZMP

Summary: The Revert command was added to allow the user a simple way to roll back from an upgrade or an easy way to reboot the ZMP and execute an revert to prior version. The feature will be available for 1.8.34521 GA moving forward to future versions. It is not supported to revert back to versions prior 1.8.34521. (moving to a future release, it will be)

Appearance to the user:

There is a new field in the "show server info" output that contains the previous version field for revert function.

server(172.16.51.86);
 server.gen; hostname=zyper.local, version=1.8.34521, previousVersion=1.7.4.34922, macAddress=ac:1f:6b:82:87:3c, serialNumber=ZZMCJ800316A
 server.gen; uptime=2d:22h:29m:23s, freeMem=6.128GB, bootCount=2
 server.gen; runningInVm=false
 server.time; time=Mon Sep 24 13:21:34 2018, timezone=America/New_York
 server.license; productID=00000000-0000-0000-0000-AC1F6B82873C, license=none
 server.license; limit=unlimited, knownDevices=15, devicesUp=15, devicesExceeded=0
 server.deviceUpdates; active=0
 server.activeDeviceVersions; num_0.10.2=2, num_0.10.3=1, num_2.12.3=1, num_2.12.4=1, num_3.5.2=10
Success

There are three ways to use this feature

1) MaestroZ – If redundant ZMP configuration, this will only be available under the Slave IP MaestroZ connection

Under the Server Panel in MaestroZ there is a new button added that can be accessed by clicking the advanced options check box.

Update Server Software

Revert Server

2) API Revert command

Issued through the API, the user would log into the telnet window to the API and execute the below.

"revert server"

3) Placing a file an empty file named "revert" (← no file extension) to the "/srv/ftp/files" directory and restart the server; it should come up, but then reboot itself in the process of an automatic revert. This will automatically revert the server to the mentioned uploaded version.

Once rebooted the version loaded will be displayed in the "show server info" command and the version that was loaded before the reboot will be displayed in the "previous version" field.

Channel up/down command (Fast-Switched only)

Components: ZyPerUHD, ZyPerHD, ZyPer4K HDMI 1.4 and ZyPer4K HDMI 2.0

Executed: Via API command

Summary: ZyPer4K, ZyPerUHD and ZyPerHD Decoder units now have the ability to change the compatible encoder that it is listening for video streams.

- The command is run from the API and is decoder specific
- The use of this command changes the encoders video and audio stream assignment on the decoder.
- The system changes the assigned encoder based on its numerical suffix that will need to be added at the end of the participating encoders name.
- Participating devices will always be connected as fast switched, even if the original connection to the decoder was genlocked or genlocked scaled.
- If no connection is present, then a fast-switched connection mode will be used as well.

- If the decoder is not currently joined to an encoder and the command is used, the system will choose the encoder with the lowest suffix defined in the list of participating encoders.
- If a decoder if joined to a non-participating encoder (encoder without a suffix) than it will join to the lowest suffix defined in the participating encoders.
- If in a Mixed ZyPer Product environment (Any mix of ZyPerHD, ZyPerUHD, ZyPer4K HDMI 1.4 or HDMI 2.0), then the suffix's need to be assigned in an order that makes sense for selection. (See examples below for more details)
- Decoders will not join with non-compatible encoders; however, it is possible that ZyPer4K HDMI 1.4 units will join with ZyPer4K HDMI 2.0 units. This is not supported so if 2.0 is to be participating, then 1.4 cannot participate or vice versa.

Notes:

It's important to know that during the pairing (like any other time a decoder is joined to an encoder) the encoder device/source may be affected by the edid that may be passed down or by the connection mode.

Configuration Steps:

1) Identify all participating encoders.
2) Name all Participating encoders with a "_nnn", where nnn is an integer (channel)
3) Use the command below to cycle up or down the encoders via suffix.

   "channel up|down <decoder>

ZyPer native selection (if all devices are the same type on the system)

Device Name	Join Order
Dolamee_001	1
E1-CBS_002	2
E2-CNN_003	3
MSNBC_004	4
NESN_005	5
CAM_006	6

ZyPer Mixed selection (Some devices are different)

Decoder is ZyPer4K

Decoder is ZyPerUHD

Device Name	Device Type	Join Order
Dolamee_001	ZyPer4K	1 4K
E1-CBS_004	ZyperUHD	1 UHD
E2-CNN_002	ZyPer4K	2 4K
MSNBC_005	ZyPerUHD	2 UHD
NESN_003	ZyPer4K	3 4K
CAM_006	ZyPerUHD	3 UHD

Enhanced Follow Audio feature

Components: ZyPerUHD, ZyPer4K HDMI 1.4 and ZyPer4K HDMI 2.0

Executed: Automatically adapted in the join commands

Summary: In order to unify the audio joins between the MaestroZ GUI and the system API, the following changes were made to the functionality of joining video/audio.

Follow audio will be on if

- The join of video is fast switched mode
- The video and the HDMI downmixed audio are both coming from the same encoder
- The HDMI downmixed join is used to join the audio from the same encoder.

Otherwise the follow audio will be off.

Appearance to the user:

To check the follow audio parameters, the output of the "show device status" of the decoder, under the "device.autoAudioConnections; hdmiDownmixFollowVideo" field can be examined.

Zyper$ show device config D10
device(d8:80:39:eb:64:10);
  device.gen; model=Zyper4K, type=decoder, name=D10-ENT, state=Up, lastChangeId=204
  device.gen; firmware=3.5.2.0
  device.gen; ethernet-management-port-mode=enabled

device.hdmi; hdcp-mode=auto
device.ports; video-port=auto
device.ip; mode=dhcp, address=172.16.51.179, mask=255.255.255.0, gateway=172.16.51.1
device.rs232; sendingToMacOrIp=none(0.0.0.0), terminationChars=\n\r, baudrate=57600, dataBit=8, stop_Bit=1, parity=none
device.ir; sendingToMacOrIp=none(0.0.0.0)
device.edid; preferMode=max
device.display; iconImageName=GenericDisplay, manufacturer=Unknown, model=Unknown, location=Unknown, serialNumber=Unknown
device.displaySize; width=auto, height=auto, fps=auto, mode=stretch
device.displayTiming; totalWidth=auto, totalHeight=auto, hsyncFronPorch=auto, vsyncFronPorch=auto, hsyncWidth=auto, vsyncWidth=auto, hSyncPolarity=auto, vSyncPolarity=auto
device.connectedEncoder; macAddr=d8:80:39:eb:52:73, name=M10-73, connectionMode=fast-switched
device.audioConnections; analogSourceMac=none, analogSourceName=none, hdmiDownmixSourceMac=d8:80:39:eb:52:73, hdmiDownmixSourceName=M10-73
device.autoAudioConnections; hdmiDownmixFollowVideo=true
device.audioOutSourceType; analogOutSourceType=hdmi-downmix, hdmiOutSourceType=hdmi-downmix
lastChangeIdMax(204);

API MP IP address command

Components: ZMP including VMware and ProServer

Executed: API command

Summary: With the lock out of the OS shell, the need for the API to edit the server IP was required for our users. The command "set server ip" was updated to include management of the ZMP's network interfaces. The Video-network IP is the main server IP (known to the OS as eth0). The Management-network IP is available on the new ProServer ZMP platform and is used as a management port for device control (known to the OS as eth1). There is also controls for these interfaces to be DHCP if required.

Usage:

To set the IP for the interfaces the below commands can be issued once connected to the API

    set server ip server static <address:ip> <mask:ip> <gateway:ip>|none reboot

    set server ip server dhcp reboot

    set server ip management static <address:ip> <mask:ip> <gateway:ip>|none reboot

set server ip management dhcp reboot

Appearance to the user:

To see the IP configuration of the ZMP interfaces, the show server config now contains this additional information

Zyper$ show server config
server(172.16.51.89);
  server.gen; autoEdidMode=enabled, enhancedLogging=disabled
  server.ip-server-address; mode=dhcp, address=172.16.51.89
  server.ip-management-address; mode=static, address=192.168.20.2, mask=255.255.255.0, gateway=none

Notes: In the "show server config" output, the "ip-server-address" is the "video-network" address.

ZyPerUHD sleep mode for decoders

Components: ZyperUHD decoders with firmware 0.9.5 and above

Executed: Zyper API command

Summary: Set the ZyPerUHD Displays to sleep mode instead of displaying the idle screen.

Appearance to the user:

The Display monitor associated with the Zyper UHD decoder would go to sleep mode.

Command example:

Zyper$ set decoder uhd76 power-save enabled

Success

Zyper$ show device config uhd76
device(34:1b:22:80:51:76);
  device.gen; model=ZyperUHD, type=decoder, name=uhd76, state=Up, lastChangeId=147
  device.gen; firmware=0.10.2.0

```
 device.hdmi; hdcp-mode=force-version-1.4
 device.ports; video-port=auto
 device.ip; mode=dhcp, address=172.16.5.185, mask=255.255.0.0, gateway=0.0.0.0
 device.rs232; sendingToMacOrIp=none(0.0.0.0), terminationChars=\n\r,  baudrate=38400, dataBit=8, stop_Bit=1, parity=none
 device.power; power-save=enabled
 device.edid; preferMode=max
 device.display; iconImageName=GenericDisplay, manufacturer=Unknown, model=Unknown, location=Unknown, serialNumber=Unknown
 device.displaySize; width=auto, height=auto, fps=auto, mode=stretch
 device.displayTiming; totalWidth=auto, totalHeight=auto, hsyncFronPorch=auto, vsyncFronPorch=auto, hsyncWidth=auto, vsyncWidth=auto,
hSyncPolarity=auto, vSyncPolarity=auto
 device.connectedEncoder; macAddr=none, name=N/A, connectionMode=disconnected
 device.audioConnections; audioSourceMac=none, audioSourceName=none
 device.autoAudioConnections; audioFollowVideo=true
 device.usbUplink; macAddr=none, name=none
lastChangeIdMax(147);
Success

Zyper$ set decoder uhd76 power-save disabled
Success

Zyper$ show device config uhd76
device(34:1b:22:80:51:76);
 device.gen; model=ZyperUHD, type=decoder, name=uhd76, state=Up, lastChangeId=150
 device.gen; firmware=0.10.2.0
 device.hdmi; hdcp-mode=force-version-1.4
 device.ports; video-port=auto
 device.ip; mode=dhcp, address=172.16.5.185, mask=255.255.0.0, gateway=0.0.0.0
 device.rs232; sendingToMacOrIp=none(0.0.0.0), terminationChars=\n\r,  baudrate=38400, dataBit=8, stop_Bit=1, parity=none
 device.power; power-save=disabled
 device.edid; preferMode=max
 device.display; iconImageName=GenericDisplay, manufacturer=Unknown, model=Unknown, location=Unknown, serialNumber=Unknown
 device.displaySize; width=auto, height=auto, fps=auto, mode=stretch
 device.displayTiming; totalWidth=auto, totalHeight=auto, hsyncFronPorch=auto, vsyncFronPorch=auto, hsyncWidth=auto, vsyncWidth=auto,
hSyncPolarity=auto, vSyncPolarity=auto
 device.connectedEncoder; macAddr=none, name=N/A, connectionMode=disconnected
 device.audioConnections; audioSourceMac=none, audioSourceName=none
 device.autoAudioConnections; audioFollowVideo=true
 device.usbUplink; macAddr=none, name=none
```

lastChangeIdMax(150);

Events API Command

Components: All ZyPer Management Platforms including virtual machines.

Executed: Via API command, Browser WebSocket or API polling

Summary: To enhance error reporting abilities, we now offer a way to dump events out to API Telnet, Browser WebSocket and API polling sessions.

API Telnet Session

- To dump the output to the API Telnet session, login to through telnet to the ZMP and type "events".
- This will place you in the event shell and will display the last 10 events to the screen.
- Any new events will be displayed in real-time while in the shell as they are triggered by changes in the system.
- To exit the events a press of any key will terminate the events shell

Appearance to the user:

CEC control

Components: Zyper4K Charlie and Zyper UHD

Executed: MaestroZ and Zyper API

Summary: CEC control added for ZyPer4K HDMI 2.0 and ZyPerUHD (basic on and off for ZyPerUHD)

Appearance to the user:

By turning cec off, the Display such as Samsung TV would be powered off.

By turning cec on, the Display such as Samsung TV would be powered on.

Below are command examples worked on Samsung TV (Model: UN40JU6500FXZA) with Zyper4K decoder (firmware 3.5.2.0):

```
## power on
Zyper$ send D0F cec hex-string f004
Success

## power off
Zyper$ send D0F cec hex-string f036
Success

## "4f822100" will switch to HDMI 2
Zyper$ send D0F cec hex-string 4f822100
Success

## "4f823100" will switch to HDMI 3
Zyper$ send D0F cec hex-string 4f823100
Success

## "4f821100" will switch to HDMI 1
Zyper$ send D0F cec hex-string 4f821100
Success
```

Improved EDID control (Device Level)

Components: ZyPerUHD, ZyPer4K HDMI 1.4 and ZyPer4K HDMI 2.0

Executed: Via API command

Summary: ZyPer Encoder EDID selection has been enhanced to offer "Auto-Edid" control at the device level. There is still a Global "Auto-Edid" setting that impacts all devices when set, but the new feature allows the user more granular settings. When this new setting is used to disable the "Auto-Edid" on an encoder, the setting remains in its state regardless of the global flag.

To manipulate the device auto edid settings we use the "load encoder-edid" command. By loading an edid file, we turn the auto edid off on the device. In order to turn auto edid back on, the user must use the command again but instead of specifying a specific edid, the user will enter "auto".

To Turn off auto edid per device

load encoder-edid with a specific edid will load the edid and turn off the auto edid feature for the device.

load encoder-edid <encoderMac|encoderName> <edid-filename>

Turning on auto edid per device

load encoder-edid <encoderMac|encoderName> auto

To load encoder with default edid

 load encoder-edid <encoderMac|encoderName> default

To load encoder with only lpcm audio edid

load encoder-edid <encoderMac|encoderName> only-lpcm-audio

Appearance to the user:

The State of the Auto Edid setting for the device level is seen under device status output in the "device.autoEdid; decoder-name" field

Auto Edid Enabled:

Zyper$ show device status M10
device(d8:80:39:eb:52:73);
  device.gen; model=Zyper4K, type=encoder, name=M10-73, state=Up, uptime=3d:20h:56m:24s, lastChangeId=553
  device.temperature; main=67C
  device.firmwareUpdate; status=idle, loadingFile=none, percentComplete=0
  device.hdmiInput; cableConnected=connected, hdcp=inactive, hdcp-version=NONE, hdmi-2.0=yes, horizontalSize=3840, verticalSize=2160, fps=60.00, interlaced=no
  device.hdmiInput; active-color-mapping=YUV420, active-colorDepth=8
  device.hdmiInput; activePixelClockMhz=248
  device.edid; edid-status=valid, edid-monitor-name=BenQ LCD
  device.autoEdid; decoder-name=DF5-Oper
  device.edid; filename=none
  device.videoStream; input-fps=60.00, input-datarate=6531Mbps, compression-factor= 1.00, stream-fps=60.00, stream-datarate=6531Mbps
  device.videoScaledStream; input-fps=60.00, input-datarate=13063Mbps, stream-fps=30.00, stream-datarate=0Mbps
lastChangeIdMax(556);

Auto Edid Disabled:

Zyper$ show device status M10
device(d8:80:39:eb:52:73);
  device.gen; model=Zyper4K, type=encoder, name=M10-73, state=Up, uptime=3d:20h:37m:2s, lastChangeId=536
  device.temperature; main=67C
  device.firmwareUpdate; status=idle, loadingFile=none, percentComplete=0
  device.hdmiInput; cableConnected=connected, hdcp=inactive, hdcp-version=NONE, hdmi-2.0=yes, horizontalSize=3840, verticalSize=2160, fps=60.00, interlaced=no
  device.hdmiInput; active-color-mapping=RGB, active-colorDepth=8
  device.hdmiInput; activePixelClockMhz=497
  device.edid; edid-status=valid, edid-monitor-name=ZyPer4K
  device.autoEdid; decoder-name=auto-edid-disabled
  device.edid; filename=zyper-edid
  device.videoStream; input-fps=60.00, input-datarate=13063Mbps, compression-factor= 0.67, stream-fps=60.00, stream-datarate=8752Mbps
  device.videoScaledStream; input-fps=60.00, input-datarate=13063Mbps, stream-fps=30.00, stream-datarate=0Mbps
lastChangeIdMax(549);

Zyper$ load encoder-edid M10-73 default

Success

Zyper$ show device status M10-73

device(d8:80:39:eb:52:73);

```
device.gen; model=Zyper4K, type=encoder, name=M10-73, state=Up, uptime=4d:20h:12m:22s, lastChangeId=605

device.temperature; main=63C

device.firmwareUpdate; status=idle, loadingFile=none, percentComplete=0

device.hdmiInput; cableConnected=disconnected, hdcp=NA, hdcp-version=NA, hdmi-2.0=NA, horizontalSize=0, verticalSize=0, fps=0, interlaced=NA

device.hdmiInput; active-color-mapping=NA, active-colorDepth=NA

device.hdmiInput; activePixelClockMhz=248

device.edid; edid-status=NA, edid-monitor-name=NA

device.autoEdid; decoder-name=auto-edid-disabled

device.edid; filename=zyper-edid

device.videoStream; input-fps=60.00, input-datarate=6531Mbps, compression-factor= 1.00, stream-fps=60.00, stream-datarate=0Mbps

device.videoScaledStream; input-fps=60.00, input-datarate=13063Mbps, stream-fps=30.00, stream-datarate=0Mbps

lastChangeIdMax(615);

Success


Zyper$ load encoder-edid M10-73 only-lpcm-audio

Success


Zyper$ show device status M10-73

device(d8:80:39:eb:52:73);

device.gen; model=Zyper4K, type=encoder, name=M10-73, state=Up, uptime=4d:20h:16m:46s, lastChangeId=628

device.temperature; main=63C

device.firmwareUpdate; status=idle, loadingFile=none, percentComplete=0

device.hdmiInput; cableConnected=disconnected, hdcp=NA, hdcp-version=NA, hdmi-2.0=NA, horizontalSize=0, verticalSize=0, fps=0, interlaced=NA

device.hdmiInput; active-color-mapping=NA, active-colorDepth=NA
```

device.hdmiInput; activePixelClockMhz=497

device.edid; edid-status=NA, edid-monitor-name=NA

device.autoEdid; decoder-name=auto-edid-disabled

device.edid; filename=only-lpcm-audio

device.videoStream; input-fps=60.00, input-datarate=13063Mbps, compression-factor= 0.67, stream-fps=60.00, stream-datarate=0Mbps

device.videoScaledStream; input-fps=60.00, input-datarate=13063Mbps, stream-fps=30.00, stream-datarate=0Mbps

lastChangeIdMax(633);

Success

Miscellaneous Corrections:
8 October 2018 – Corrected typos on Pages 9, & 10. (MJT)