



**Release Notes for  
ZyPer Management Platform  
Software 1.7.4.33922**

**May 10, 2018**

## Revision History

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## 1.7.4.33922

Release 1.7.4.33922 is full GA release of the ZyPer Management platform. This release includes new modes for resolution control and scaler stream refinement. It will also contain several fixes in ZyPerUHD product line. To support these fixes, new firmware for the ZyPerUHD hardware will be supplied under this release. We are also releasing a 3<sup>rd</sup> generation of our ZyPer management platform hardware to be distributed for general release.

### 1. Supported Platforms

- ZMP on NUC, Ubuntu and Ubuntu VM
- All Current ZyPer4K, ZyPerUHD and ZyPerHD encoders and decoders
- ZyPer4K Decoder – Featured Output: HDMI 2.0
- ZyPer4K Encoder – Featured Inputs: HDMI 2.0, Display Port, SDI and Analog Expansion board, featuring VGA, Component, Composite and S-video Sources.
- MaestroZ running on:
  - Google Chrome version 66.0.3359 or higher
  - Safari 10.3.2 for iPad
  - Mobile Devices: Android tablet 7.0, MS Surface Windows 10, iPad IOS 10.3.2 and higher

### 2. New Features

- New API command to alter the selection of the ZyPer decoder resolution to equal the max resolution defined by the monitor.
- New API command to alter the selection of the ZyPer decoder resolution to equal the native resolution defined by the monitor.
- Scaling selection refinement for ZyPer4K HDMI 2.0 (Fast Switched at 720, 1080, 3840 X 2160 and 4096 X 2160)
- Faster Switching Times under ZyPerUHD devices
- New Intel NUC hardware platform provided for general distribution.

**NOTE:** Installing software older than 1.7.4 on the intel NUC is not recommended. Please see section “8. Upgrading and downgrading” on page 6 for more information

### 3. Issues Resolved

- rcServer - 2400 baud rate was missing from the featured speeds under the API.
- ZyPerUHD - New faster switching time
- ZyPer4K HDMI 2.0 - Stream reconnect failed with an erroneous error that the stream is too large
- ZyPer4K HDMI 2.0 – If a joined source changes to a higher resolution, the “preferred resolution” may be reported incorrectly
- ZyPer4K HDMI 2.0 – Corrected issue where “Error:(29)...” appears in show device config output
- ZyPer4K HDMI 2.0 - Analog-audio not supported on capabilities on the decoder

### 4. Issues Still Outstanding

- Accessing MaestroZ from two browsers at the same time may result in "Server is not available." **Workaround: Wait until the F5 refresh occurs to continue working.**
- MaestroZ - rcServer - lastChangeld not always updated in show device status when join or un-join a video connection. **Workaround: refresh the browser by hitting F5.**
- ZyPerUHD - RCServer detects ZyPerUHD units as DHCP mode instead of link local from initial startup or factory defaulted states. **Workaround: Reset the UHD device to DHCP, reboot the UHD device.**
- ZyPerUHD - After a redundancy switched over, the new master may not receive RS232 data. **Workaround: Reset the RS232 connection.**
- MaestroZ - Join or un-join of an analog-audio may generate an unexpected message in the log panel: "Error:(29) Device DCD does not support or cannot change". **Workaround: This is just an erroneous error message that may sometimes appear when disconnecting fast-switched joins and it can be ignored.**

- ZyPer4K HDMI 2.0 – After a fast-switched connection with a streaming outputting a stream of 4096x2160, the decoder status may report that the encoder is not streaming even though it is. **Workaround: This is just a message; the decoder will stream video and audio.**
- MaestroZ - On occasion the custom config containing "disconnect" actions will be show no actions after saving the config. **Workaround: Close the browser and restart it if this gets into this state.**

## 5. Known Limitation

- ZyPer4K HDMI 2.0 devices with firmware 3.4.0 does not support interlace video at this time.
- ZyPer4K HDMI 2.0 devices edid-prefer-mode - when using one encoder joined to two decoders that are set to different edid modes, the edid reloads constantly causing both screens to flash. This is fixed, but there is a few second blanked out video and audio on all screens connected when the setting is altered to either max or strict.
- ZyPer4K HDMI 2.0 decoder scaler will only output RGB 8-bit 720, 1080, 3840 X 2160 and 4096 X 2160 in fast-switched mode
- ZyPerUHD – Decoders cannot downscale other than 1080.
- ZyPerUHD – USB connections will fail if the firmware is different on the two devices. (.0.9.4 and .0.5.5/0.6.1).
- ZyPerUHD – RS232 support for devices with firmware version 0.9.4 requires ZMP running server version 1.7.4 or later.
- New Intel NUC hardware platform requires ZyPer Management Platform version 1.7.4.33922 or later.

## 6. ZyPerUHD, ZyPerHD and ZyPer4K Updates

### ZyPerUHD Firmware .9.4.0 Encoder

- Fast Switched connection speed enhanced to 1 second.
- Auto IP given when DHCP times out.
- Analog audio port – Noise on switching encoders or rebooting the devices

### ZyPerUHD Firmware .9.4.0 Decoder

- Fast Switched connection speed enhanced to 1 second.
- Auto IP given when DHCP times out.
- Analog audio port – Noise on switching encoders or rebooting the devices

## 7. API command changes, additions, and deletions.

### New API commands

- set decoder <decoderMac|decoderName> edid-prefer-mode max|strict
- set decoder <decoderMac|decoderName> display-size auto|source

This is a new command for fast switched connections, it allows the user to choose between taking either the max resolution or the strict (native) resolution from the display (defined in the edid)

**Note:** See Appendix A for more details on this feature and how it was implemented.

### Changed API commands

- set device <deviceMac|deviceName> rs232 9600|2400|19200|38400|57600|115200 7-bits|8-bits 1-stop|2-stop even|odd|none

An additional baud rate speed of 2400 was added to the API command.

## New log messages

- “Source resolution is larger than the display can support”

This message will appear in the API’s Device Status output when a source resolution from a genlocked or fast switch (with display-size set to source) is higher than what the display can support.

## 8. Upgrading and downgrading:

### Known issues with upgrading and downgrading

- There is reduced support in downgrading due to the extensive additions to 1.7.4. Software versions 1.3 and 1.4 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 1.7.4.
- Upon upgrading the system to 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.
- 1.5.2 cannot upgrade to 1.7.4 through the GUI due to the file size limitations of the new release. Workaround is to upgrade through the API.
- If downgrading to 1.6. or 1.5.2, users signing in to MaestroZ may be alerted by a cert error, preventing users from logging in. Clearing the browser cache should clear the error.
- If downgrading from 1.7.4.33922 to either 1.5.2 and 1.6, 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.
- New ZMP Intel NUC hardware cannot be not be downgraded through MaestroZ or through telnet. Users must downgrade through ssh, using the service rcServer update command. The process is shown below
  - SSH into the ZyPer Management Platform
  - `sudo service rcServer stop`
  - `sudo service rcServer update /srv/ftp/files/<UpdateFilename>`

### Upgrade Paths

Starting Version	IP Assignment type	Offline or Online	Result
1.5.2.32532	DHCP	Online	Passed
1.5.2.32532	Link Local	Offline	Passed
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
1.7.3.33736	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

## Appendix A - Feature Specifics

### Feature: Display's Preferred Resolution Selection From EDID

The Preferred Resolution, obtained from the display's EDID, indicates the best resolution to use for the display. Technically, the Preferred Resolution may not be the display's native resolution (the actual number of display pixels), although it is hard to understand why that would ever be the case. Unfortunately, a number of displays claim a Preferred EDID that is not the native resolution, and in most of those cases, it further incorrectly indicates it is the native resolution.

There are now two modes for selecting the Preferred Resolution from the display EDID:

```
set decoder <decoder> edid-prefer-mode max|strict
```

**“max”** – Default mode. Selects the largest resolution defined in the EDID. This has been the operating mode prior to this command. In almost all cases, this is the native resolution of the display. However, some displays can accept a resolution above the native (and scale down). In this case, it is better to use the “strict” mode.

**“strict”** – The Preferred Resolution is selected as defined in the EDID 1.3 specification. EDID 1.3 specifies that the first Detailed Timing Descriptor in the Standard Timing Information block is always the preferred resolution, although it is only the native resolution if the native-resolution flag is set. If the native-resolution flag is not set, then the maximum resolution will be chosen (falls back to “max” mode).

**Note:** All comparisons of “resolution” actually mean comparisons of the associated Pixel Clock. The Pixel Clock represents the entire resolution definition: horizontal and vertical size, fps, bit-depth and color decimation (RGB/4:4:4, 4:2:2, 4:2:0).

The command will immediately reanalyze the active EDID and if needed change the preferred resolution and reconnect to the encoder.

The reason for the “max” mode, and for it being the default, is that many displays do not follow the EDID 1.3 specification, claiming a native, Preferred Resolution below the display's actual native resolution. It is fairly common for a UHD display to have an HD resolution as the specified preferred resolution.

**Note:** ZyPer4K and ZyPerUHD, depending on mode, may support only a limited set of output resolutions, particularly when the scaler is enabled. The ZyPer Management Platform will choose the active resolution-based decoder capability, scaler mode and preferred resolution. However, the display's Preferred Resolution is displayed regardless of what the decoder ultimately actually uses. The active resolution is displayed in the decoder status as well.

#### Example Edid for these settings

##### “max” mode set (default mode)

Pre-requisites:

- The Join must be made in fast switched.
- Display-size must be set to auto on the decoder

Effect:

- The highest resolution defined in the edid from the following fields will be chosen. In the below example EDID, “4096 x 2160” will be chosen from the VIC 3 field as the max resolution as it is highest defined resolution out of all the highlighted fields below.

Monitor name: SAMSUNG

Manufacturer: SAM Model c3f Serial Number 16778753



Made week 42 of 2014  
 EDID version: 1.3  
 Digital display  
 Maximum image size: 89 cm x 50 cm  
 Gamma: 2.20  
 Supported color formats: RGB 4:4:4, YCrCb 4:4:4  
**First detailed timing is native timing**  
 Established timings supported:

### Above the CEA Extension Block

**Detailed mode:** Clock 594.000 MHz, 1872 mm x 1053 mm  
**3840** 4016 4104 4400 hborder 0  
**2160** 2168 2178 2250 vborder 0  
 +hsync +vsync

**Detailed mode:** Clock 148.500 MHz, 1872 mm x 1053 mm  
**1920** 2008 2052 2200 hborder 0  
**1080** 1084 1089 1125 vborder 0  
 +hsync +vsync

### Below the CEA extension block

>>> Vendor-specific data block, OUI 000c03: HDMI <<<  
 Source physical address 1.0.0.0  
 Supports\_AI  
 36bit YUV-444  
 30bit YUV-444  
 Maximum TMDS clock: 300MHz  
 Base EDID image size is in units of 1cm  
**HDMI VIC 0 3840x2160@30Hz**  
**HDMI VIC 1 3840x2160@25Hz**  
**HDMI VIC 2 3840x2160@24Hz**  
**HDMI VIC 3 4096x2160@24Hz**

1 native detailed modes

**Detailed mode:** Clock 74.250 MHz, 1872 mm x 1053 mm  
**1920** 2448 2492 2640 hborder 0  
**540** 542 547 562 vborder 0  
 +hsync +vsync interlaced

**Detailed mode:** Clock 85.500 MHz, 1872 mm x 1053 mm  
**1366** 1436 1579 1792 hborder 0  
**768** 771 774 798 vborder 0  
 +hsync +vsync

### “strict” mode set

Pre-requisites:

- The Join must be made in fast switched.
- Display-size must be set to auto on the decoder
- In order to take the native resolutions, the “Native Resolution” flag must be present in the Edid of the monitor. If not, our system will fall back to its default mode and choose the max Edid in the file

Effect:

- The native resolution will be the first resolution seen in the Detailed Mode field prior the CEA extension block. In the below example EDID, “3840 x 2160” will be chosen on the highlighted field.

Monitor name: SAMSUNG  
 Manufacturer: SAM Model c3f Serial Number 16778753  
 Made week 42 of 2014  
 EDID version: 1.3  
 Digital display  
 Maximum image size: 89 cm x 50 cm  
 Gamma: 2.20  
 Supported color formats: RGB 4:4:4, YCrCb 4:4:4  
**First detailed timing is native timing**  
 Established timings supported:

#### Above the CEA Extension Block

**Detailed mode:** Clock 594.000 MHz, 1872 mm x 1053 mm  
 3840 4016 4104 4400 hborder 0  
 2160 2168 2178 2250 vborder 0  
 +hsync +vsync  
 Detailed mode: Clock 148.500 MHz, 1872 mm x 1053 mm  
 1920 2008 2052 2200 hborder 0  
 1080 1084 1089 1125 vborder 0  
 +hsync +vsync

#### Below the CEA extension block

>>> Vendor-specific data block, OUI 000c03: HDMI <<<  
 Source physical address 1.0.0.0  
 Supports\_AI  
 36bit YUV-444  
 30bit YUV-444  
 Maximum TMDS clock: 300MHz  
 Base EDID image size is in units of 1cm  
 HDMI VIC 0 3840x2160@30Hz  
 HDMI VIC 1 3840x2160@25Hz  
 HDMI VIC 2 3840x2160@24Hz  
 HDMI VIC 3 4096x2160@24Hz

1 native detailed modes  
 Detailed mode: Clock 74.250 MHz, 1872 mm x 1053 mm  
 1920 2448 2492 2640 hborder 0  
 540 542 547 562 vborder 0  
 +hsync +vsync interlaced  
 Detailed mode: Clock 85.500 MHz, 1872 mm x 1053 mm  
 1366 1436 1579 1792 hborder 0  
 768 771 774 798 vborder 0  
 +hsync +vsync

#### Overriding Preferred Resolution Selection

It should rarely be required. But if the EDID supplied by the display is not correct, or for some reason ZMP chooses a Preferred Resolution that is not desired, the following command will force the decoder to a specific output resolution:

```
set decoder <decoder> display-size width <int> height <int> fps <float>
```

When set, the decoder output resolution will remain as specified without exception.

**Note:** When in this mode, it is very possible that no video will be displayed, and with no warning from ZMP. It is up to the user to ensure that the output settings are valid for the display.

### Scaler Control

ZyPer4K HDMI 2.0 (aka Z4K) and ZyPerUHD (aka ZUHD) decoders have output scaling. Besides the obvious benefit of supporting HD-only displays with a UHD source, the other major benefit is faster switching times. With Z4K, there is virtually no delay. With ZUHD it is less than a one second.

However, there are some cases where disabling the scaler produces a better image. Of course, if the scaler is disabled and the source provides a resolution greater than the display's ability, it will be black. To solve this problem, we have a new mode that disables the scaler, but only if the display can handle the source resolution.

The decoder display-size command now has an option called "source".

```
set decoder <decoder> display-size source
```

When in "source" mode the scaler is disabled if the display can handle the received resolution. Otherwise it is automatically enabled (e.g. if the source is 480 and the Preferred Resolution is 1080 then the scaler is disabled, but if source is UHD and the Preferred Resolution is 1080, then the scaler is enabled).

**The downside to this mode:** switching time between non-scaled resolutions is about 3 seconds. Switching time between scaled and non-scaled resolutions is closer to 4s.

## Active Output Resolution Selection

Selecting the correct output resolution for a decoder is, unfortunately, a fairly complicated endeavor. Clearly depends on the display (Preferred Resolution), but also on the decoder capability and the source resolution.

**Remember:** All comparisons of “resolution” actually mean comparisons of the associated Pixel Clock. The Pixel Clock represents the entire resolution definition: horizontal and vertical size, fps, bit-depth and color decimation (RGB/4:4:4, 4:2:2, 4:2:0).

Also, setting “edid-prefer-mode” only affects **which** Preferred Resolution is chosen. It does not affect **when** that Preferred Resolution is used (or if it is used). Although the chosen Preferred Resolution is always reported in the decoder status output (as is the chosen active output resolution).

## ZyPer4K HDMI 1.4 Devices

No scaler, effectively always in “display-size source” mode. Source is always sent to output. If output can’t handle source, there will be no video.

Decoder Preferred Resolution is only status; it is never used to affect the decoder output resolution. Decoder “display-size” overrides (specified width, height and fps) are ignored.

## ZyPer4K HDMI 2.0 Devices

Presently, the ZyPer4K decoder active resolution is limited to a number of resolutions: 4096x2160, 3840x2160, 1080x1920 or 1280x720. The closest lower resolution is used.

There are a number of exceptions to the Z4K operation.

- Scaler always converts to 8bit 444/RGB. That means UHDp60 4:2:0 is converted to UHDp60 4:4:4. UHDp60 YUV 4:2:0 bit rate is lower than HDM 1.4. But UHDp60 4:4:4 is not. In this case, the output FPS is divided by 2.
- If in genlock-scaled, video-wall or window mode, decoder FPS must equal encoder FPS
  - Means 1080p60 scaling to UHD must be UHDp60, which won’t work if display is only UHDp30 capable.
    - If UHDp60 > decoder Preferred Resolution, then the output is left at 1080p60.
- If source is 1080i
  - Output must be input FPS \* 2
  - If decoder resolution > 1080, it is set to 1080.

### display-size = auto

When in this mode, the output resolution will always be the **Preferred Resolution**. There really is no reason not to use this mode with the Z4K and will produce the lowest switching times.

### display-size = source

When in this mode, the output resolution will always be the **encoder resolution**, *unless the source resolution greater than the encoder resolution* (same case as display-size auto).

This mode may provide better video at or below the preferred resolution of the display. However, the switching time is somewhat slower (~3.3s).

#### display-size = width, height and FPS

Same operation as display-size = auto, but effectively using a manually entered Preferred Resolution. Generally, only used if the EDID is incorrect.

#### ZyPerUHD

The ZyPerUHD scaler scales up fine (source resolution lower than display preferred). However, it can only scale down from UHD to 1080.

Even with this limitation, the vast majority of installations will be fine. The exception comes with PC-based resolutions. For example, a case that will not work well:

- 1080-only display and source resolution of 1920x1200

But this should be pretty unusual. For the cases where VESA/PC resolutions such as 1920x1200, 2560x1440 and 2560x1600 are needed, all displays must be at least that resolution or greater. For example, a 1920x1200 display can handle **all** resolutions up to 1920x1200 and it can also handle UHD, since the decoder will output UHD scaled down to 1080 (which is fine for a 1920x1200 display).

And, clearly, all of those resolutions will be fine if the displays are UHD capable (scaling up works, plus, the new mode “display-size source” can be used).

If a configuration that causes downscaling that is not handled well, likely generating poor video, a warning will be generated.

#### display-size = auto

When in this mode, the output resolution will always be the **Preferred Resolution**, *unless the source resolution greater than the preferred resolution*.

This mode provides the fastest switching time (less than 1 second). However, there may be some cases where video quality is less than when using display-size = source.

If source is greater than decoder Preferred Resolution, then decoder output **will be 1920x1080** (unless the display does not support it) with the preferred FPS. As noted, the only case this normally works for is when the source is 3840x2160.

#### display-size = source

When in this mode, the output resolution will always be the **encoder resolution**, *unless the source resolution greater than the encoder resolution* (same case as display-size auto).

This mode may provide better video at or below the preferred resolution of the display. However, the switching time is somewhat slower (~3.3s).

#### display-size = width, height and FPS

Same operation as display-size = auto, but effectively using a manually entered Preferred Resolution. Generally, only used if the EDID is incorrect.

### 1.7.3.33736

Release 1.7.3.33736 is released for a replacement version to 1.7.1 that includes support for enhanced API commands and ZyPer4K Display port output decoders. It will also contain several major fixes in MaestroZ, including a patch for the Zone panel “create” function. The release contains a full ZMP platform so that direct upgrades can be done from 1.5.2 and 1.6. Along with this patched version, we also released a new Ubuntu OVA file for virtualized machines.

#### 1. Supported Platforms

- ZMP on NUC, Ubuntu, and Ubuntu VM. Redhat is not supported in this release.
- All Current ZyPer4K, ZyPerUHD and ZyPerHD encoders and decoders
- ZyPer4K Decoder – Featured Output: HDMI 2.0, Display Port 1.2a (Video only)
- ZyPer4K Encoder – Featured Inputs: HDMI 2.0, Display Port, SDI and Analog Expansion board, featuring VGA, Component, Composite and S-video Sources.
- MaestroZ running on:
  - Google Chrome version 55.0.2883 or higher
  - Mobile Devices: Android tablet 7.0, MS Surface Windows 10, iPad IOS 10.3.2 and higher

#### 2. New Features

- Display Port 1.4 Decoders (video only)
- New API commands for advanced video manipulation on ZyPer4K decoders.
- Independent analog audio routing for ZyPerUHD
- New API command for ZyPerUHD decoders to accept source resolution instead of scaling to max display resolution. See section 7 below for more information.

#### 3. Issues Resolved

- ZyPerUHD unit stopped receiving RS232 data from server
- Zones cannot be created in the Zone Panel
- Do not display cert message upon MaestroZ login
- ZyPerUHD joins are not scaling properly - 4K source to a 1080 display does not show any video, decoder did not downscale
- ZyPer4K HDMI2.0 - Decoder - Display Port - The device capabilities under the API command output does not show that the device is display port capable.
- After Upgrade, the config file used for join configurations was not being recreated
- AJAX responses to show responses for IR or RS232 don't contain actual response data

#### 4. Issues Still Outstanding

- MaestroZ custom join configurations should not allow settings not supported by the hardware – **No Workaround**
- MaestroZ, Mobile - Zone - tap-tap to add a decoder to a zone – **No Workaround**
- One NUC two browsers - "Server is not available"– **No Workaround**
- When swapping HDMI from ZyPer4K decoders with the HDMI unplugged less than 5 seconds, the decoder fails to read the new EDID. – **Workaround is to keep the cable removed for over 5 seconds before re-connecting it.**
- API lastChangeld not always updated in show device status when join or un-join a video connection– **Workaround is to refresh the browser**
- Tet server timezone not able to change to a new time zone - stays at default - **No workaround**

- ZyPer4K Gen3 - Encoder - Incorrect FPS status under 420 color formats – **No Workaround**

## 5. Known Limitation

- On ZyPer UHD Encoder/Decoder Joins will experience a short delay of 2 seconds to display video. This will also occur between swapping encoder assignments to the decoder. This is a known limitation of the hardware within the ZyPerUHD devices.

## 6. ZyPerUHD, ZyPerHD and ZyPer4K Updates

### ZyPer4K Firmware 3.4.0 Encoder

- Change to TTL (Time to live) value from 1 to 32 for Video and audio streams
- Corrected an issue where scaled stream (used in Multiview) would not be set if the source was not detected.
- Network data packing for compressed video streams –This change does affect compatibility between new 3.4.0.0 firmware and previous 3.3.x.x firmware when streaming compressed video stream from the encoder to decoders. It is therefore required to update all devices in the same setup to 3.4.0.0 firmware when streaming video resolutions that use compression.
  - 4K60 8-bit RGB and YCbCr 4:4:4
  - 4K60 10-bit YCbCr 4:2:2
  - 4K60 12-bit YCbCr 4:2:2
  - 4K60 12-bit YCbCr 4:2:2
  - 4K30 12-bit RGB and YCbCr 4:4:4
- Corrected an issue where audio would occasionally be lost when disconnecting and reconnecting the source HDMI cable to an encoder.

### ZyPer4K Firmware 3.4.0 Decoder (3.4.0.5 for the Display Port output)

- Support for Display Port version of the ZyPer 4K Decoder
- Network data packing for compressed video streams –This change does affect compatibility between new 3.4.0.0 firmware and previous 3.3.x.x firmware when streaming compressed video stream from the encoder to decoders. It is therefore required to update all devices in the same setup to 3.4.0.0 firmware when streaming video resolutions that use compression.
  - 4K60 8-bit RGB and YCbCr 4:4:4
  - 4K60 10-bit YCbCr 4:2:2
  - 4K60 12-bit YCbCr 4:2:2
  - 4K60 12-bit YCbCr 4:2:2
  - 4K30 12-bit RGB and YCbCr 4:4:4

## 7. API command changes, additions, and deletions.

### New API commands (ZyPerUHD)

- `join<encoderMac|encoderName>|video-source|none<decoderMac|decoderName> audio`

Establishes the independent audio connection between a ZyPerUHD encoder and decoder  
Use the set command to define the active audio stream

- `set encoder <encoderMac|encoderName> audio-stream source hdmi|analog`

Sets the current active audio stream to HDMI or analog  
Use the join command to send audio to the specified decoder

- set decoder <decoderMac|decoderName> display-size source

Instructs the decoder to output the same resolution as the input source instead of scaling to the highest resolution supported by the display plugged into the decoder.

## 8. Upgrading and downgrading:

### Known issues with upgrading and downgrading

- **All 1.3 and 1.4 versions should be upgraded to 1.6 prior upgrading to 1.7.3.** There is reduced support in downgrading due to database changes introduced in the 1.7.x release. 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.
- **Downgrading from 1.7.3.33736 to either 1.5.2 and 1.6, 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.
- Upon upgrading the system to 1.7.3, 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.
- 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.



## Upgrade Paths

Starting Version	IP Assignment type	Offline or Online	Result
1.5.2.32532	DHCP	Online	Passed
1.5.2.32532	DHCP	Offline	Passed
1.5.2.32532	STATIC	Online	Passed
1.5.2.32532	STATIC	Offline	Passed
1.5.2.32532	Link Local	Offline	Passed
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

### APPENDIX: Upgrade requirements for redundant ZMPs

In order to properly upgrade the ZMP without losing customer data, joins and configuration, the below requirements must be followed.

- The upgrade must occur on the primary or existing ZMP first. This ensures that the customer data will be migrated to the latest software. Secondary servers must not be online at the time.
- After upgrading the primary ZMP the server must remain up and running on the network where the ZMP endpoints are. This server will remain in standalone mode for now.
- The new ZMP can be placed online and upgraded as needed. After the server is online the redundancy information will be available.
- Login to the master (original) ZMP IP address and configure the redundancy IP and subnet with the appropriate commands
- Check to make sure that the new server is now running as slave and that the configuration is saved.

In order to downgrade back to a prior version, turn the new or secondary server off and then proceed with the downgrade.

## 1.7.1.33459

Release 1.7.1.33559 is a patched version of 1.7.1.33348 that includes expanded upgrade support and fixes for a Redhat installation. The release contains a full ZMP platform so there is no need to upgrade first to the original 1.7.1. released version. Along with this patched version, we also released a new Redhat version and Ubuntu OVA file for virtualized machines.

Below are the supported upgrade paths.

**The following is the supported paths for upgrading and downgrading in this version.**

**Offline Upgrade:** ZMP Ethernet is connected to a switch with Static, Dynamic or Link Local IP configured but no access to the Internet

Version	Static	Dynamic	Link Local
1.3	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first
1.4	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first
1.5.2	Supported	Supported	Supported
1.6	Supported	Supported	Supported
1.7 Beta	Not Supported	Not Supported	Not Supported

## 1.7.1.33348

Release 1.7.1 is a major release for the ZyPer Management Platform (ZMP). This release contains the support for Multiview for 1080 displays, advanced video controls through the API, new ZyPer4K, ZyPerHD and ZyPerUHD firmware and ZMP master/slave redundancy. In addition, Users and Roles have now been added to the MaestroZ application. Enhancements to the GUI include: Redundancy controls under the server panel, User Panel for configuring and managing users and a “Roles” Panel for assigning permissions to users.

### 1. Supported Platforms

- ZMP on NUC, Ubuntu VM, Redhat
- All Current ZyPer4K, ZyPerUHD and ZyPerHD encoders and decoders
- ZyPer4K Decoder – Featured Output: HDMI 2.0
- Zyper4K Encoder – Featured Inputs: HDMI 2.0, Display Port, SDI and Analog Expansion board, featuring VGA, Component, Composite and S-video Sources.
- MaestroZ running on:
  - Google Chrome version 55.0.2883 or higher
  - Safari 10.3.2 for iPad
  - Mobile Devices: Android tablet 7.0, MS Surface Windows 10, iPad IOS 10.3.2 and higher

### 2. New Features

- Master/slave ZMP redundancy

- Multiview Support for 1080 Displays on ZyPer4K decoders
- New API commands for advanced video manipulation on ZyPer4K decoders.
- User and Roles assignments available to refine user access (**MaestroZ only**)
- Separate USB joins for ZyPerUHD Encoder and Decoders (no longer automatically joins when video joins)

### 3. Issues Resolved

- Can't update ZyPer4K firmware with ZMP
- User isn't prevented from dragging and dropping the same display to multiple video wall locations
- Device IP address isn't displayed in status menu
- Right clicking to display the context menu may not always work
- Configuration changes to an offline ZyPerHD encoder reported success and did not save change
- The MaestroZ source panel did not always report correct HDMI cable connection status
- The flash-leds API command not supported on Charlie units
- ZyPerHD - Cable Status does not change when unplugged on the Encoder  
ZyPer4K Alpha/Bravo – Slow join connection time with new video source in fast-switched and genlocked mode - takes from 6-8 seconds

### 4. Issues Still Outstanding

- MaestroZ custom join configurations should not allow settings not supported by the hardware – **No Workaround**
- MaestroZ, Mobile - Zone - tap-tap to add a decoder to a zone – **No Workaround**
- One NUC two browsers - "Server is not available"– **No Workaround**
- When swapping HDMI from ZyPer4K decoders with the HDMI unplugged less than 5 seconds, the decoder fails to read the new EDID. – **Workaround is to keep the cable removed for over 5 seconds before re-connecting it.**
- API lastChangeId not always updated in show device status when join or un-join a video connection– **Workaround is to refresh the browser**
- ZyPerHD - Firmware update issue – Sometimes the firmware filename is saved with the incorrect name on ZyPerHD encoders – **No Workaround**
- Charlie 4K - Encoder - Incorrect FPS status under 420 color formats – **No Workaround**

### 5. Known limitations

- On ZyPerUHD Encoder/Decoder Joins will experience a short delay of 2 seconds to display video. This will also occur between swapping encoder assignments to the decoder. This is a known limitation of the hardware with the ZyPerUHD devices.

### 6. ZyPerUHD, ZyPerHD and ZyPer4K Updates

- ZyPer4K Firmware 3.3.2 HDMI2.0 Encoder
  - Support for Flash LEDs devices
  - Support for Factory Defaults devices
- ZyPer4K Firmware 3.3.2 HDMI2.0 Decoder
  - Support for Flash LEDs on devices
  - Support for Factory Defaults on
  - Support for Multiview under for 1080p Displays
  - Power cycle an Encoder that is joined to decoder that is joined in Genlock mode can occasionally cause the decoder decompressor to hang – Fixed
- ZyPerUHD Firmware 0.6.1 Decoder

- Fixed issues with connecting to the Encoder to acquire the image output after reboot or power cycle.
- ZyPerHD Firmware 2.12.3 Encoder
  - Latest firmware supported on Encoder
- ZyPerHD Firmware 2.12.4 Decoder
  - Fix provided for “RGB limited” resolutions using the 16 to 235 color range

## 7. Upgrading and downgrading

Known issues with upgrading and downgrading

- 1) During the upgrading there are certain instances of the MaestroZ Custom Join config information is not copied over to the 1.7.1 release. This is seen in 1.3 to 1.7.1 upgrades and a particular case going from 1.4 to 1.7.1. Any upgrades from 1.3 to any higher release require that all MaestroZ sessions should be closed prior upgrade to prevent the “Join Configuration” from being overwritten on reconnect.
- 2) There is reduced support in downgrading due to the extensive additions to 1.7.1. 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 1.7.1
- 3) Upon upgrading the system to 1.7.1 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.

**The following is the supported paths for upgrading and downgrading in this version.**

**Offline Upgrade:** ZMP Ethernet is connected to a switch with Static, DHCP or Link Local IP configured but no access to the Internet.

Version	Static IP Address	DHCP	Link Local
1.3	Not Supported	Must upgrade to 1.6	Not Supported
1.4	Not Supported	Must upgrade to 1.6	Not Supported
1.5.2	Not Supported	Supported	Not Supported
1.6	Not Supported	Supported	Not Supported
1.7 Beta	Not Supported	Not Supported	Not Supported

**Online Upgrade:** ZMP Ethernet is connected to a switch with Static, DHCP or Link Local IP configured with access to the Internet.

Version	Static IP Address	DHCP	Link Local
1.3	Must upgrade to 1.6 in order to support backing rev to 1.7.1	Must upgrade to 1.6 in order to support backing rev to 1.7.1	Not Supported
1.4	Must upgrade to 1.6 in order to support backing rev to 1.7.1	Must upgrade to 1.6 in order to support backing rev to 1.7.1	Not Supported
1.5.2	Supported	Supported	Not Supported
1.6	Supported	Supported	Not Supported
1.7 Beta	Not Supported	Not Supported	Not Supported

**Downgrade Support**

**Upgrade was done Offline**

Version	Upgrade was Offline (no internet access)
1.3	Supported (must revert to 1.6 first)
1.4	Supported (must revert to 1.6 first)
1.5.2	Supported
1.6	Supported
1.7 Beta	Not Supported

**Upgrade was done Online**

Version	Upgrade was Online (internet access)
1.3	Supported (must revert to 1.6 first)
1.4	Supported (must revert to 1.6 first)
1.5.2	Supported
1.6	Supported
1.7 Beta	Not Supported

Upgrading ZMPs in a standalone single server environment on this version will remain the same as prior versions.

**Online Upgrade:** ZMP Ethernet is connected to a switch with Static, Dynamic or Link Local IP configured with Internet access available.

Version	Static	Dynamic	Link Local
1.3	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first
1.4	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first	Must be on 1.5.2 or upgrade to 1.6 first
1.5.2	Supported	Supported	Supported
1.6	Supported	Supported	Supported
1.7 Beta	Not Supported	Not Supported	Not Supported

**Downgrade Support**

Original Version	
1.3	Supported reverting back to 1.6
1.4	Supported reverting back to 1.6
1.5.2	Supported
1.6	Supported
1.7 Beta	Not Supported

### **Upgrade requirements for redundant ZMPs**

**In order to properly upgrade the ZMP without losing customer data, joins and configuration, the below requirements must be followed.**

- The upgrade must occur on the primary or existing ZMP first. This ensures that the customer data will be migrated to the latest software. Secondary servers must not be online at the time.
- After upgrading the primary ZMP the server must remain up and running on the network where the ZMP endpoints are. This server will remain in standalone mode for now.
- The new ZMP can be placed online and upgraded as needed. After the server is online the redundancy information will be available.
- Login to the master (original) ZMP IP address and configure the redundancy IP and subnet with the appropriate commands
- Check to make sure that the new server is now running as slave and that the configuration is saved.

**In order to downgrade back to a prior version, turn the new or secondary server off and then proceed with the downgrade.**