Recently owner of a new Reolink camera : E1-Zoom, I've discovered by deeping searchs functions that can be used on this camera that there is one hidden :*the Patrol mode*.

Through this tutorial bellow, here the method to verify if it's working, able to activate, configure and use it.

Working on : E1-Zoom with latest firmware update (preset functionality added)

Good reading

In order to be able to do this, I relied on the bash script, provided by @nechry from jeedom community, and made some modifications to use this mode.

here the script modified : Reolink_API_PTZ_Commands.sh.txt

IMPORTANT:All the operations described below are performed in a Linux terminal, locally or via ssh and *executed from the directory in which the script is located*.

- Retreive the bash script locally in your linux computer `wget https://community.jeedom.com/uploads/short-url/bm2VzgGAgbCaXNzDegAyjcU2BVB.txt -O Reolink_API_PTZ_Commands.sh`

- make the script executable `chmod +x Reolink_API_PTZ_Commands.sh`

INFO:Before using it, you must modify it with your parameters. Here the method (in bash commands):

- edit the script Reolink_API_PTZ_Commands.sh and change the values of the username et passwd variables with those you use to access to your camera (lines 7 et 8 of the script) :

```
username="yourcameralogin"
passwd="yourcamerapassword"
```

!! CAUTION !!:In the next parts of this tutorial, all commands are case sensitive.

1 / Checking for the presence of the Patrol feature.

To check the presence of the functionality, we use the "GetPtzPatrol" and "PtzCtrl StartPatrol" commands to do the tests.

- 1st check:Test of the "GetPtzPatrol" command

Type:

`./Reolink_API_PTZ_Commands.sh "IP" GetPtzPatrol` *(replace "IP" with the IP of your camera)*

result:

```json
[
   {
      "cmd":"GetPtzPatrol",
      "code":0,
      "value":{
         "PtzPatrol":[
            {
               "channel":0,
               "enable":0,
               "id":1,
               "name":"cruise1",
               "preset":null,
               "running":0
            },
            {
               "channel":0,
               "enable":0,
               "id":2,
               "name":"cruise2",
               "preset":null,
               "running":0
            },
            {
               "channel":0,
               "enable":0,
               "id":3,
               "name":"cruise3",
               "preset":null,
               "running":0
            },
            {
               "channel":0,
               "enable":0,
               "id":4,
               "name":"cruise4",
               "preset":null,
               "running":0
            },
            {
               "channel":0,
               "enable":0,
               "id":5,
               "name":"cruise5",
               "preset":null,
               "running":0
            },
            {
               "channel":0,
               "enable":0,
               "id":6,
               "name":"cruise6",
               "preset":null,
               "running":0
            }
         ]
      }
   }
]
```

The GetPtzPatrol command is working... that's a good sign! .. let's move on to the next one.

- 2nd check:Test of the "PtzCtrl StartPatrol" command

Type:

```
./Reolink_API_PTZ_Commands.sh "IP" PtzCtrl StartPatrol (replace "IP" with the IP of your camera)
```

result:

```
[
    {
        "cmd":"PtzCtrl",
        "code":1,
        "error":{
            "detail":"param error",
            "rspCode":-4
        }
    }
]
```

NB: We have the same result for the "PtzCtrl StopPatrol" command: `./Reolink_API_PTZ_Commands.sh "IP" PtzCtrl StopPatrol` *(replace "IP" with the IP of your camera)*

Indeed, the "PtzCtrl StartPatrol" (or "PtzCtrl StopPatrol") command expects a parameter:the identifier of the chosen "cruise"; identifier that can be found via the GetPtzPatrol command.

If we execute the command with the identifier (in the example below, we take the first id = 1)

`./Reolink_API_PTZ_Commands.sh "IP" PtzCtrl StartPatrol 1` *(replace "IP" with the IP of your camera)*

result:

```
[
    {
        "cmd":"PtzCtrl",
        "code":1,
        "error":{
            "detail":"set config failed",
            "rspCode":-13
        }
    }
]
```

The result is consistent : the command works with the argument but cannot be executed. This is perfectly normal ; if we take the result of the first command:"GetPtzPatrol", all the "cruises" have no defined presets (preset:null) and they are all deactivated (enable:0)

If all these tests are successful, we go to the configuration step.

2 / Setting up the presets for a "cruise" .

IMPORTANT:The Patrol feature uses the presets defined by the camera's PTZ Preset feature. This is the case with the E1-Zoom.

The Preset is a camera position that includes PAN angle, TILT angle, lens focus, and other position parameters.

INFO:Each preset has an identifier. This can be found through the web interface of the Camera -Preset function-.

To do this operation of setting up the presets for Patrol mode, we use the "SetPtzPatrol" command with a precise parameter detailed in the example below.

Example:

```
 ./Reolink_API_PTZ_Commands.sh "IP" SetPtzPatrol
"{\"channel\":0,\"enable\":1,\"id\":1,\"preset\":[{\"dwellTime\":3,\"id\":1,\"speed\":10}, {\"dwellTime\":4,\"id\":2,\"speed\":20}]}
```

In the configuration example above, we set the "cruise" id:1 with 2 defined presets (id:1 and id:2) and **we activate it** (enable:1).

For each preset to be defined in the command settings, 3 fields must be filled in:

- dwellTime:Stop time in seconds on the preset
- id:Identifier of the preset
- speed:Speed of the camera to go to the preset

If you want more presets in the configuration, just add an additional block after the one defined in the example above.

!! ATTENTION !!:*separate the blocks with a comma. No comma at the end of the last block*

NB:all the blocks are defined in an array ([])

Block format: {\"dwellTime\":xxx,\"id\":y,\"speed\":zz} *(replace xxx, y and zz with the desired values)*

Another Example (with 5 defined presets -id:1, id:2, id:4, id:5 and id:7-)

```
./Reolink_API_PTZ_Commands.sh "IP" SetPtzPatrol
"{\"channel\":0,\"enable\":1,\"id\":1,\"preset\":[{\"dwellTime\":3,\"id\":1,\"speed\":10}, {\ "dwellTime\":4,\"id\":2,\"speed\":20},
```

Via the GetPtzPatrol command, the configuration set up is displayed (example with 5 cruise presets -id:1- and "cruise" enabled -enable:1-):

```
./Reolink_API_PTZ_Commands.sh "IP" GetPtzPatrol
```
(replace "IP" with the IP of your camera)

result:

```
[
    {
        "cmd":"GetPtzPatrol",
        "code":0,
        "value":{
            "PtzPatrol":[
                {
                    "channel":0,
                    "enable":1,
                    "id":1,
                    "name":"cruise1",
                    "preset":[
                        {
                            "dwellTime":3,
                            "id":1,
                            "speed":10
                        },
                        {
                            "dwellTime":4,
                            "id":2,
                            "speed":20
                        },
                        {
                            "dwellTime":10,
                            "id":4,
                            "speed":10
                        },
                        {
                            "dwellTime":5,
                            "id":5,
                            "speed":20
                        },
                        {
                            "dwellTime":15,
                            "id":7,
                            "speed":15
                        }
                    ],
                    "running":0
                },
                {
                    "channel":0,
                    "enable":0,
                    "id":2,
                    "name":"cruise2",
                    "preset":[
                        {
                            "dwellTime":3,
                            "id":1,
                            "speed":10
                        },
                        {
                            "dwellTime":4,
                            "id":2,
                            "speed":20
                        },
```

```json
        {
          "dwellTime":10,
          "id":4,
          "speed":10
        },
        {
          "dwellTime":5,
          "id":5,
          "speed":20
        },
        {
          "dwellTime":15,
          "id":7,
          "speed":15
        }
      ],
      "running":0
    },
    {
      "channel":0,
      "enable":0,
      "id":3,
      "name":"cruise3",
      "preset":[
        {
          "dwellTime":3,
          "id":1,
          "speed":10
        },
        {
          "dwellTime":4,
          "id":2,
          "speed":20
        },
        {
          "dwellTime":10,
          "id":4,
          "speed":10
        },
        {
          "dwellTime":5,
          "id":5,
          "speed":20
        },
        {
          "dwellTime":15,
          "id":7,
          "speed":15
        }
      ],
      "running":0
    },
    {
      "channel":0,
      "enable":0,
      "id":4,
      "name":"cruise4",
      "preset":[
        {
          "dwellTime":3,
          "id":1,
          "speed":10
        },
        {
          "dwellTime":4,
          "id":2
```

```json
                                    "id":2,
                                    "speed":20
                                },
                                {
                                    "dwellTime":10,
                                    "id":4,
                                    "speed":10
                                },
                                {
                                    "dwellTime":5,
                                    "id":5,
                                    "speed":20
                                },
                                {
                                    "dwellTime":15,
                                    "id":7,
                                    "speed":15
                                }
                            ],
                            "running":0
                        },
                        {
                            "channel":0,
                            "enable":0,
                            "id":5,
                            "name":"cruise5",
                            "preset":[
                                {
                                    "dwellTime":3,
                                    "id":1,
                                    "speed":10
                                },
                                {
                                    "dwellTime":4,
                                    "id":2,
                                    "speed":20
                                },
                                {
                                    "dwellTime":10,
                                    "id":4,
                                    "speed":10
                                },
                                {
                                    "dwellTime":5,
                                    "id":5,
                                    "speed":20
                                },
                                {
                                    "dwellTime":15,
                                    "id":7,
                                    "speed":15
                                }
                            ],
                            "running":0
                        },
                        {
                            "channel":0,
                            "enable":0,
                            "id":6,
                            "name":"cruise6",
                            "preset":[
                                {
                                    "dwellTime":3,
                                    "id":1,
                                    "speed":10
                                },
```

```
                    {
                        "dwellTime":4,
                        "id":2,
                        "speed":20
                    },
                    {
                        "dwellTime":10,
                        "id":4,
                        "speed":10
                    },
                    {
                        "dwellTime":5,
                        "id":5,
                        "speed":20
                    },
                    {
                        "dwellTime":15,
                        "id":7,
                        "speed":15
                    }
                ],
                "running":0
            }
        ]
    }
  }
]
```

In the previous example, we see the configuration pushed by the command SetPtzPatrol has been set for all "cruises".

In fact, for the E1-Zoom, we will only be able to configure *one and only one* possible "cruise" (the other "cruises" retrieving the configuration of the first).

IMPORTANT NOTE: There are other cameras -cf post Reolink - having this Preset feature (and using CGI) which could potentially also have this hidden Patrol mode.

If the configuration has been carried out successfully ("rspCode":200), we go to the execution step.

3 / Execution of the configured "cruise", from the "PtzCtrl" command.

Having carried out the previous operations, we can launch the "cruise" that we have activated.

Following the previous example (5 presets), type the following command:

`./Reolink_API_PTZ_Commands.sh "IP" PtzCtrl StartPatrol 1` * (replace "IP" with the IP of your camera) *

result:

```
[
    {
        "cmd":"PtzCtrl",
        "code":0,
        "value":{
            "rspCode":200
        }
    }
]
```

The camera scans the different presets according to their configurations. The "cruise" is carried out in 2 passes. In the case of the 5 presets, this is how the scan is performed:

-> Start Home position

-> preset 1 (dwellTime 3s, speed 10)

-> preset 2 (dwellTime 4s, speed 20)

-> preset 4 (dwellTime 10s, speed 10)

-> preset 5 (dwellTime 5s, speed 20)

-> preset 7 (dwellTime 15s, speed 15)

-> preset 1 (dwellTime 3s, speed 10)

-> preset 2 (dwellTime 4s, speed 20)

-> preset 4 (dwellTime 10s, speed 10)

-> preset 5 (dwellTime 5s, speed 20)

-> preset 7 (dwellTime 15s, speed 15)

-> preset 1 (dwellTime 3s, speed 10)

-> Return to Original Position

NB: The "cruise" can be stopped at any time via the StopPatrol command, by specifying the id of the "cruise":

`./Reolink_API_PTZ_Commands.sh "IP" PtzCtrl StopPatrol 1` *(replace "IP" with the IP of your camera)*

result:

```
[
   {
      "cmd":"PtzCtrl",
      "code":0,
      "value":{
         "rspCode":200
      }
   }
]
```

** FAQ:**

- How to reset the "cruises" - revert to the initial state before any modification - (enable:0):

`./Reolink_API_PTZ_Commands.sh "IP" SetPtzPatrol "{\"channel\":0,\"enable\":0,\"id\":1,\"preset\":[]}"`

- Do we have to reset the configuration to set a new one:

   NO:By putting a new configuration, it overwrites the previous one.