

## IP Camera device search protocol

### Introduction

This protocol can be used to search IP camera in LAN, and set up the basic network parameter.

The searching process is: client pc broadcast search bag to LAN,(destination port is 10000),after receiving the search bag,the ipcamera in LAN broadcast to Wan searching for response bag(destination port is the original port of search bag).

The setting process is: client pc broadcast set bag to LAN,(destination port is 10000),the ipcamera will check if the bag is sent to itself when it receives the set bag,if yes,it will do corresponding operation and broadcast the operation result in LAN(destination port is the original port of set bag).

Based on the UDP protocol.

### Data type definition

Data type	Length(unit: Byte)	Byte order
INT8	1	
INT16	2	Low in the front、high in the back
INT16_R	2	Low in the back、high in the front
INT32	4	Low in the front、high in the back
INT32_R	4	Low in the back、high in the front
BINARY_STREAM	N	

### Command format

All protocols are composed by different orders,and all the orders are following the same format:

composition	type	description
TCP Header	BINARY_STREAM[4]	Camera operate protocol: “MO_I”
Operation code	INT16	To distinguish different orders in the same protocol
reserve	INT8	=0
reserve	BINARY_STREAM[8]	
Text length	INT32	Text length in the orders

reserve	INT32	
text	BINARY_STREAM[n]	Text in the orders

### Detailed command

#### Search Req

- 1) monitor user broadcast the command to the internet,to obtain the basic network information of all the cameras connected in Lan.
- 2) Operation code:0
- 3) Sending direction:monitor user>broadcast address(the address is 255.255.255.255, the port is 10000)
- 4) Text fields:

field	type	description
reserve	INT8	=0
reserve	INT8	=0
reserve	INT8	=0
reserve	INT8	=1

#### Search\_Resp

- 1) when the camera receives search req command,it should broadcast this command to report its network configuration and device information.
- 2) Operation code:1
- 3) Sending direction:camera> broadcast address(the address is 255.255.255.255, the port is search req command's original port)
- 4) Text fields:

fields	type	description
camera ID	BINARY_STREAM[13]	
Camera name	BINARY_STREAM[21]	
IP	INT32_R	
mask	INT32_R	
gateway IP	INT32_R	
DNS	INT32_R	
reserve	BINARY_STREAM[4]	
Sys_software version	BINARY_STREAM[4]	a.b.c.d
App_software version	BINARY_STREAM[4]	a.b.c.d
Camera port	INT16_R	
dhcp enabled	INT8	0: dhcp disabled; 1: dhcp enabled Note: system software x.x.2.2 and above have this field

**Init\_Req**

- 1) user can broadcast the command to network to set up some camera's network configuration.
- 2) Operation code:2
- 3) Sending direction: monitor user>broadcast address(the address is 255.255.255.255, the port is 10000)
- 4) Text fields:

fields	type	description
reserve	INT8	=0
reserve	INT8	=0
reserve	INT8	=0
reserve	INT8	=1
camera ID	BINARY_STREAM[13]	
User	BINARY_STREAM[13]	
password	BINARY_STREAM[13]	
IP	INT32_R	
mask	INT32_R	
gateway IP	INT32_R	
DNS	INT32_R	
Camera port	INT16_R	

**Init\_Resp**

- 1) when the camera receives Init Req command,checkout the ID included in the command, it will do corresponding operation and broadcast this command to the network to confirm.
- 2) Operation code:3
- 3) Sending direction:camera>broadcast address(the address is 255.255.255.255,the port is:Init Req command's original port)
- 4) text fields

fields	type	description
Setting result	INT16	0: succeed
		1: user err
		5 pwd err
		6 pri err