UDP packet format per chip

Streaming type	retain	payload length	serial number	Frame size	Frame size	timestamp	payload
1	1	2	4	4	4	4	n <= 1452
Differentiate data	retain	Used for UDP sharding, recording the length of each shard	frame sequence number, increasing by 1	Indicates the size of the entire frame data	When UDP sharding, the offset of the shard is recorded in the frame	Represents the relative time of audio and video frames in milliseconds	Streaming Header + Streaming Data

| | | | The fragments of data belonging to the same frame of audio (video) correspond to the same serial number. The audio frame corresponds to the same sequence number of the video frame that is played simultaneously | | | | |

List of streaming types

type	numeric value	Type description
PCM_TYPE_AUDIO	0x1	audio
JPEG_TYPE_VIDEO	0x2	JPEG video
H264_TYPE_VIDEO	0x3	H264 video
PREVIEW_TYPE	0x4	Preview image
DATE_TIME_TYPE	0x5	Used for time synchronization packages
MEDIA_INFO_TYPE	0x6	Video Media Information Pack
PLAY_OVER_TYPE	0x7	Video end package
LAST_VIDEO_MARKER	1<<7	Finally the video ends the package

UDP chunk format (the entire frame jpeg exists in one chunk, each chunk has up to 44 UDP packets, i.e. 44 * 1472 = 64768, 64768 / 1024 = < 98B)

UDP One Packet (1472)	.....	UDP last packet (<=1472)	The last packet of UDP can be out of order between other shards

UDP chunk format (the whole frame jpeg exists in multiple chunks, each chunk has up to 44 UDP packets, i.e. 44 * 1472 = 64768, 64768 / 1024 = < 98B)

UDP One Packet (1472)	.....	UDP One Packet (1472)	
UDP One Packet (1474)	.....	UDP One Packet (1474)	The last packet of UDP can be out of order between other shards

payload list

Media head	data	Types of use
Live stream or playback streaming audio	Live stream or playback streaming audio data	Streaming Type + Frame Size + Ordinal Number + Timestamp + [Other Fields For Live Stream]
Live stream or playback stream JPEG video	Live stream or playback streaming video JPEG data	Streaming Type + Frame Size + Ordinal Number + Timestamp + [Other Fields For Live Stream]
Live stream or playback of H264 video	Live stream or playback streaming video H264 data	Streaming Type + Frame Size + Ordinal Number + Timestamp + [Other Fields For Live Stream]
Preview image	Preview graph data	Streaming type + Frame size
Time synchronization package	Time synchronization data	Streaming type + Frame size
Video Media Information Pack	Media information data	Streaming type + frame size
Video end package	not	Type + Frame Size: 0, when the current video is the last, Type: (PLAY_OVER_TYPE | LAST_VIDEO_MARKER).

Video media information header structure

wide	high	Frame rate	Audio sample rate	Total time	File path
2byte	2byte	4byte	4byte	4byte	nbyte

Time synchronized header structure

year	month	day	time	divide	second
6bit	4bit	5bit	5bit	6bit	6bit

Time example	u32 date_time;
	date_time |= tm_time->tm_sec;
	date_time |= tm_time->tm_min << 6;
	date_time |= tm_time->tm_hour << 12;
	date_time |= tm_time->tm_mday << 17;
	date_time |= tm_time->tm_mon << 22;
	date_time |= (tm_time->tm_year - 2015) << 26;

TCP packet format

Streaming type	retain		Frame size	offset		payload
1	1	2	4	4	4	n <= 1440
Differentiate data	retain	Used for UDP sharding, recording the length of each shard	frame sequence number, increasing by 1	Indicates the size of the entire frame data	When UDP sharding, the offset of the shard is recorded in the frame	Represents the relative time of audio and video frames in milliseconds	Streaming Header + Streaming Data

Note: TCP real-time streams use four types: type + frame size + serial number + timestamp, and each TCP packet of data is one frame of data, and the subpacking mechanism is not adopted.