

영상플랫폼 구조개선 성능평가

2015/06/08

(주) 엠앤엘솔루션

현재 진행된 성능 시험 요약

요약

성능시험장비: 슈퍼마이크로 – 인텔 2.13GHz (8 core)/16GB 메모리, 운영장비 대비 저사양

실제운영장비: HP DL380 – 인텔 2.40GHz (8 Core)/16GB 메모리

○ 무 부하

구분	CPU			메모리			특이사항
	기준 값	시험 값	적합여부	기준 값	시험 값	적합여부	
무 부하	60%	45%	적합	–	1.1G		

○ 2시간 성능

구분	최대성능 목표치				운영기능 목표치 (CPU 60% 이하)				적합 여부	특이사항
	기준 값	시험 값	CPU	메모리	기준 값	시험 값	CPU	메모리		
VGA	900	900	99.1	1.4	540	640	56.2	1.4	적합	ISP/OSP 50개
HD	350	360	95.5	1.1	210	252	51.8	1.1	적합	ISP/OSP 30개
FHD	80	80	96.2	1.1	48	40	94	1.1	부적합	

FHD 환경에 대한 최적화 필요
실제운영장비에서 시험/확인필요

현재 진행된 성능 시험 요약

요약

성능시험장비: 슈퍼마이크로 – 인텔 2.13GHz (8 core), 운영장비 대비 저사양

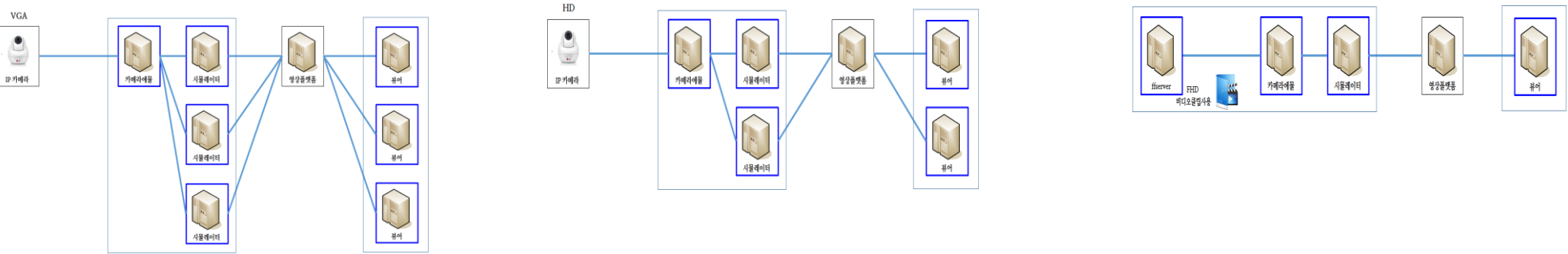
실제운영장비: HP DL380 – 인텔 2.40GHz (8 Core)

○ 장시간(24시간) 성능

구분	최대성능 목표치				운영기능 목표치				적합 여부	특이사항
	기준 값	시험 값	CPU	메모리	기준 값	시험 값	CPU	메모리		
VGA	900				540					진행 中
HD	350				210					진행 中
FHD	80				48					진행 中

엘앤엘솔루션 회사 서버 최대 15대를 이용하여,

{영상플랫폼 및 시뮬레이터} 3 세트 구성 및 장시간 시험 진행 中 (4일간; VGA/HD/FHD only 3세트 + 혼합)

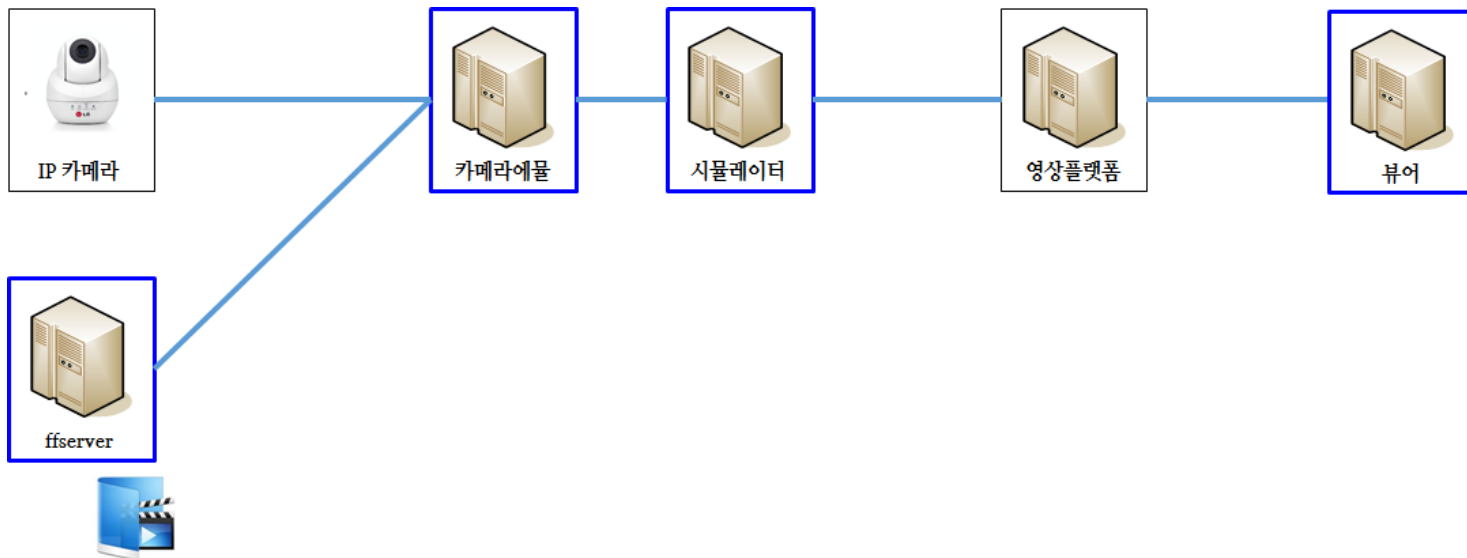


이슈사항

이슈사항

○ 구조개선 외 시뮬레이터 개발 병행 이슈

- 고 용량 및 다양한 성능조건(VGA/HD/FHD)의 성능 시험환경을 만족하는 시뮬레이터 개발에 어려움
- 시뮬레이터 시스템 만 4개
- 기존 시뮬레이터 재사용 불가 (녹화서버: ISA/ISP/EB 시뮬레이션 역할, 기존 영상품질: 실제데이터가 아닌 벌크데이터)



개발지연관련

○ 구조개선 자체

- 시스템 아키텍처의 구조적 문제개선 (통합관리키 기반)
- 고객대응 환경개선을 위한 구조 변경 (로그통합, 고객대응키 사용)

○ 시뮬레이터 자체

- 장시간 시험 시 시뮬레이터 패킷 전송과정 중에 블록현상으로 인한 성능시험 불가
(현상) 시뮬레이터의 소켓전송시 시스템블록에 의한 현상 (6/8 확인)
(원인) OSP 부하집중에 따른 성능이슈
(대응) OSP 개수확장, 부하분배로직개선, 시뮬레이터 넌블록모드 설정 (6/9)

시험환경 구성

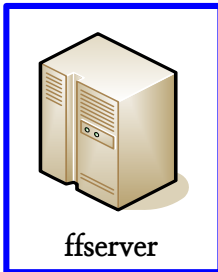
시뮬레이터 구성

VGA/HD



IP 카메라

FHD



ffserver

비디오클립을 바꿔가면서
다양한 대역의 미디어 송출이
가능

FHD
비디오클립사용



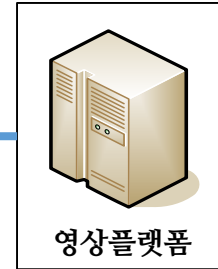
카메라에물

실제 카메라 또는
스트리밍 서버와
연동하여 영상소스
를 획득



시뮬레이터

실제 카메라를 시뮬레이션
하며, 카메라 에뮬레이터가
획득한 영상소스를 영상플랫
폼으로 송출



영상플랫폼



뷰어

제약사항)

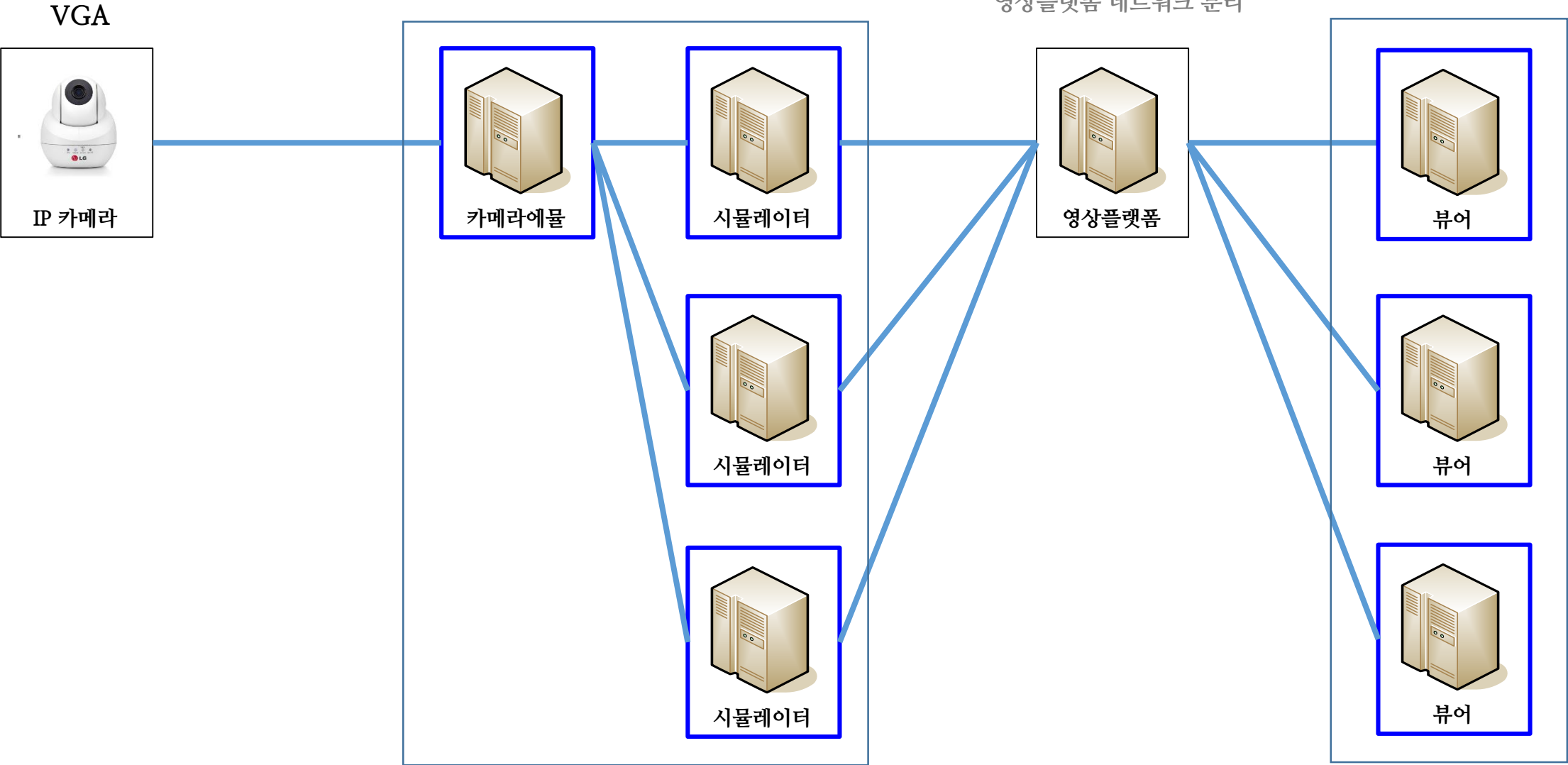
맘카:카메라에물레이터:시뮬레이터:뷰어 = 1:1:1:1

“맘카”에서 히든메뉴를 통해 접근 가능한 카메라에물레이터는 서버에 1개만 가능
프로세스 당 생성 가능한 TCP/IP 소켓자원 할당 제약(1024개)으로

- 340개 제약 (예: 뷰어 - 제어/스트리밍/데이터베이스)

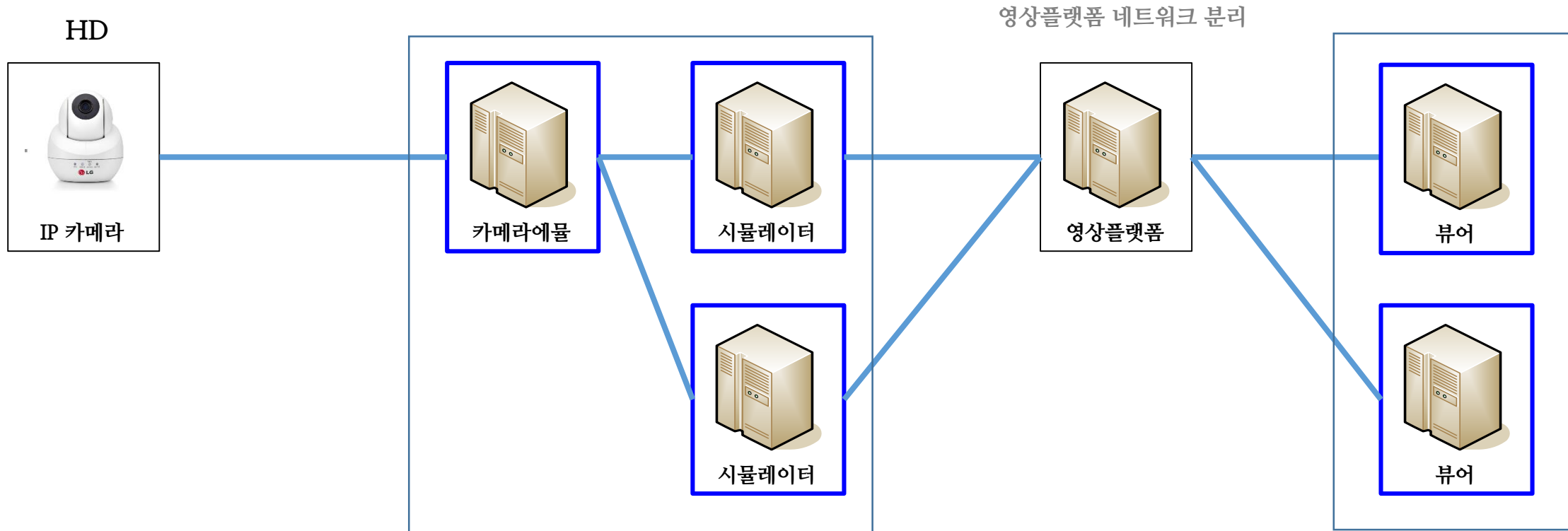
시험환경 구성

VGA 최대



시험환경 구성

HD 최대



시험환경 구성

FHD 최대

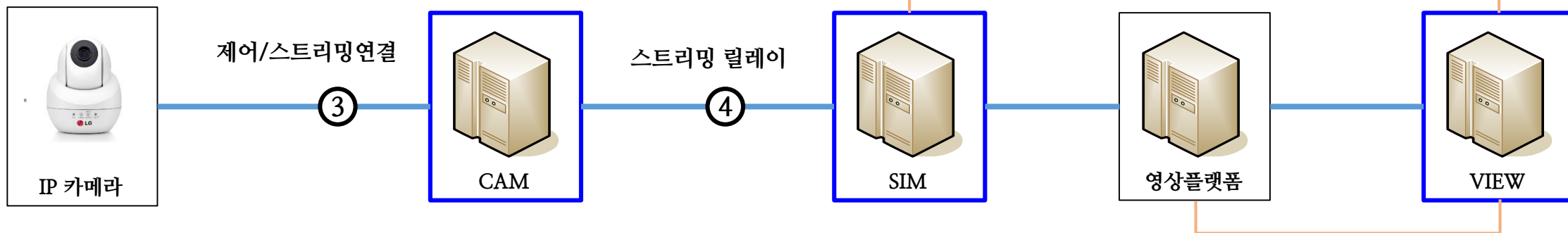
FHD

영상플랫폼 네트워크 분리



성능 시뮬레이션

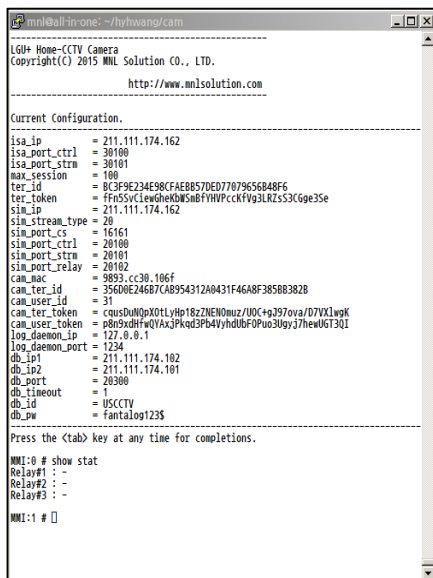
시뮬레이션 절차



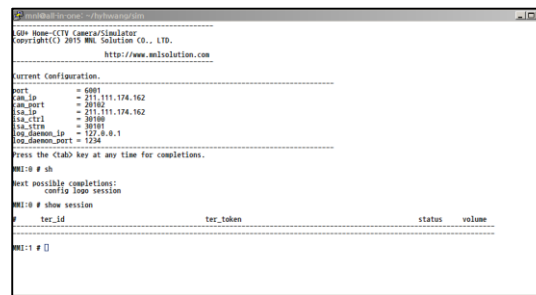
② 카메라의 hidden 메뉴 주소수정



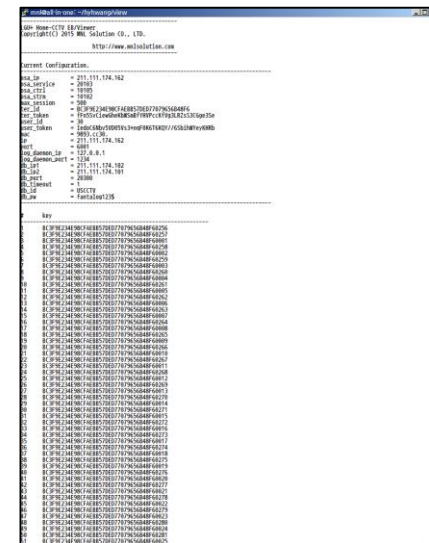
① CAM 기동



④ SIM 기동



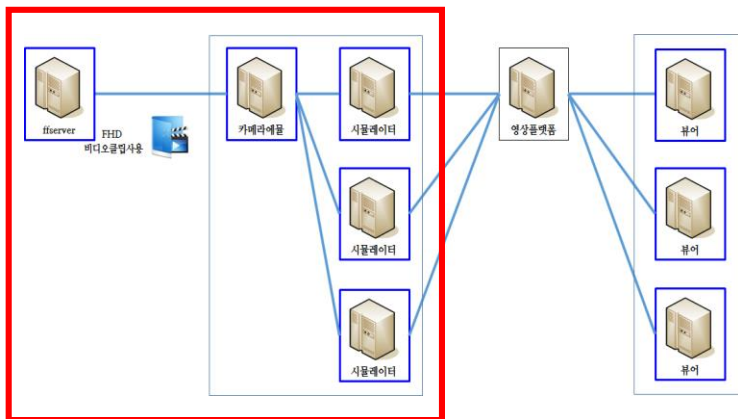
⑤ VIEW 기동



성능 시뮬레이션

시뮬레이션

ffmpeg/ffserver RTSP 서버를 이용하여 mp4화일을
카메라 에뮬레이터를 통하여 스트리밍



```
root@dellr420: /home/hyhwang/mp4
configuration: --arch=amd64 --disable-stripping --enable-avresample --enable-
pthreads --enable-runtime-cpudetect --extra-version='7:1.2.6-1-trusty1' --libdi
r=/usr/lib/x86_64-linux-gnu --prefix=/usr --enable-bzlib --enable-libdc1394 --e
nable-libfreetype --enable-frei0r --enable-gnutls --enable-libgsm --enable-libm
p3lame --enable-librtmp --enable-libopencv --enable-libopenjpeg --enable-libopu
s --enable-libpulse --enable-libschrödinger --enable-libspeex --enable-libtheo
ra --enable-vaapi --enable-vdpau --enable-libvorbis --enable-libvpx --enable-zl
ib --enable-gpl --enable-postproc --enable-libcdio --enable-x11grab --enable-li
b264 --shlibdir=/usr/lib/x86_64-linux-gnu --enable-shared --disable-static
libavutil 52. 18.100 / 52. 18.100
libavcodec 54. 92.100 / 54. 92.100
libavformat 54. 63.104 / 54. 63.104
libavdevice 53. 5.103 / 53. 5.103
libavfilter 3. 42.103 / 3. 42.103
libswscale 2. 2.100 / 2. 2.100
libswresample 0. 17.102 / 0. 17.102
libpostproc 52. 2.100 / 52. 2.100
Wed Jun 10 07:45:11 2015 Opening file '/home/hyhwang/mp4/dino.mp4'
Wed Jun 10 07:45:11 2015 Ffserver started.
Wed Jun 10 07:45:11 2015 211.111.174.161:0 - - "PLAY live/streamid=0 RTP/TCP"
Wed Jun 10 07:45:11 2015 211.111.174.161:0 - - "PLAY live/streamid=1 RTP/TCP"
Wed Jun 10 07:46:13 2015 211.111.174.93:0 - - "PLAY live/streamid=0 RTP/TCP"
Wed Jun 10 07:46:13 2015 211.111.174.93:0 - - "PLAY live/streamid=1 RTP/TCP"

root@mupoon: ~/cam
08:16:37. Current 484254 Bytes Read, 3783 Kbps (CH0: 3018 Kbps, CH2: 130 Kbps)
08:16:38. Current 418114 Bytes Read, 3266 Kbps (CH0: 1838 Kbps, CH2: 65 Kbps)
08:16:39. Current 424304 Bytes Read, 3314 Kbps (CH0: 2431 Kbps, CH2: 90 Kbps)
08:16:40. Current 394534 Bytes Read, 3082 Kbps (CH0: 1978 Kbps, CH2: 145 Kbps)
08:16:41. Current 392134 Bytes Read, 3063 Kbps (CH0: 2032 Kbps, CH2: 90 Kbps)
08:16:42. Current 378469 Bytes Read, 2956 Kbps (CH0: 1939 Kbps, CH2: 122 Kbps)
08:16:43. Current 373096 Bytes Read, 2914 Kbps (CH0: 1903 Kbps, CH2: 144 Kbps)
08:16:44. Current 420541 Bytes Read, 3285 Kbps (CH0: 2039 Kbps, CH2: 144 Kbps)
08:16:45. Current 341625 Bytes Read, 2668 Kbps (CH0: 1516 Kbps, CH2: 97 Kbps)
08:16:46. Current 309727 Bytes Read, 2419 Kbps (CH0: 1448 Kbps, CH2: 160 Kbps)
08:16:47. Current 284239 Bytes Read, 2220 Kbps (CH0: 1216 Kbps, CH2: 185 Kbps)
08:16:48. Current 409301 Bytes Read, 3197 Kbps (CH0: 2310 Kbps, CH2: 75 Kbps)
08:16:49. Current 484122 Bytes Read, 3782 Kbps (CH0: 2717 Kbps, CH2: 106 Kbps)
08:16:50. Current 458024 Bytes Read, 3578 Kbps (CH0: 2669 Kbps, CH2: 121 Kbps)
08:16:51. Current 422556 Bytes Read, 3301 Kbps (CH0: 2660 Kbps, CH2: 122 Kbps)
08:16:52. Current 383369 Bytes Read, 2995 Kbps (CH0: 2064 Kbps, CH2: 91 Kbps)
08:16:53. Current 575172 Bytes Read, 4493 Kbps (CH0: 2946 Kbps, CH2: 8 Kbps)
08:16:54. Current 596223 Bytes Read, 4657 Kbps (CH0: 3308 Kbps, CH2: 22 Kbps)
08:16:55. Current 603706 Bytes Read, 4716 Kbps (CH0: 3280 Kbps, CH2: 87 Kbps)
08:16:56. Current 633583 Bytes Read, 4949 Kbps (CH0: 4137 Kbps, CH2: 8 Kbps)
08:16:57. Current 555051 Bytes Read, 4336 Kbps (CH0: 3593 Kbps, CH2: 63 Kbps)
08:16:58. Current 491778 Bytes Read, 3842 Kbps (CH0: 2945 Kbps, CH2: 81 Kbps)
```

```
root@mupoon: ~/sim
21 BC3F9E234E98CFAEBB57DED77079656848F6040A Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e040A 3
22 BC3F9E234E98CFAEBB57DED77079656848F6050A Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e050A 3
23 BC3F9E234E98CFAEBB57DED77079656848F6040B Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e040B 3
24 BC3F9E234E98CFAEBB57DED77079656848F6050B Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e050B 3
25 BC3F9E234E98CFAEBB57DED77079656848F6040C Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e040C 3
26 BC3F9E234E98CFAEBB57DED77079656848F6050C Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e050C 3
27 BC3F9E234E98CFAEBB57DED77079656848F6040D Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e040D 3
28 BC3F9E234E98CFAEBB57DED77079656848F6050D Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e050D 3
29 BC3F9E234E98CFAEBB57DED77079656848F6040E Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e040E 3
30 BC3F9E234E98CFAEBB57DED77079656848F6050E Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e050E 3
31 1944657 605

MM1:3 #

root@mupoon: ~/sim_1
12 BC3F9E234E98CFAEBB57DED77079656848F6060B Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e060B 3
13 BC3F9E234E98CFAEBB57DED77079656848F6060C Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e060C 3
14 BC3F9E234E98CFAEBB57DED77079656848F6060D Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e060D 3
15 BC3F9E234E98CFAEBB57DED77079656848F6060E Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e060E 3
16 BC3F9E234E98CFAEBB57DED77079656848F6060F Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e060F 3
17 BC3F9E234E98CFAEBB57DED77079656848F60610 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0610 3
18 BC3F9E234E98CFAEBB57DED77079656848F60611 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0611 3
19 BC3F9E234E98CFAEBB57DED77079656848F60612 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0612 3
20 BC3F9E234E98CFAEBB57DED77079656848F60613 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0613 3
21 50594246 18838

MM1:3 #

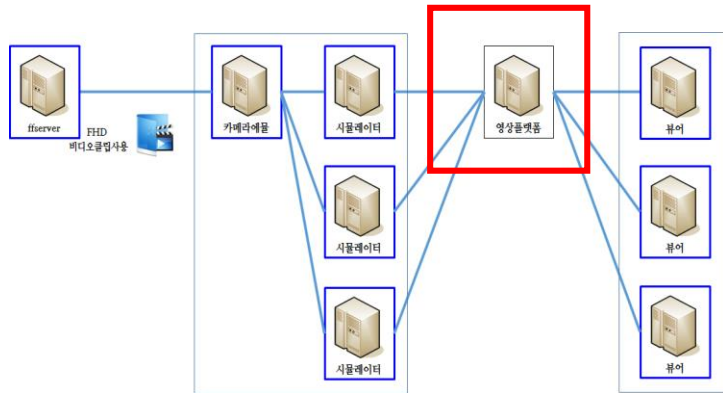
root@mupoon: ~/sim_2
12 BC3F9E234E98CFAEBB57DED77079656848F6070B Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e070B 3
13 BC3F9E234E98CFAEBB57DED77079656848F6070C Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e070C 3
14 BC3F9E234E98CFAEBB57DED77079656848F6070D Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e070D 3
15 BC3F9E234E98CFAEBB57DED77079656848F6070E Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e070E 3
16 BC3F9E234E98CFAEBB57DED77079656848F6070F Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e070F 3
17 BC3F9E234E98CFAEBB57DED77079656848F60710 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0710 3
18 BC3F9E234E98CFAEBB57DED77079656848F60711 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0711 3
19 BC3F9E234E98CFAEBB57DED77079656848F60712 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0712 3
20 BC3F9E234E98CFAEBB57DED77079656848F60713 Ffn5SvC1ewgheKbWmbFYHVPccKfVg3LRZs53Cg3e0713 3
21 46348612 17416

MM1:3 #
```

성능 시뮬레이션

시뮬레이션

시뮬레이션을 통한 call setup 과정 수행



```
mnl@all-in-one: ~/hyhwang/isa
/svc/cctv/stream/isp isp 21 12572
/svc/cctv/stream/isp isp 22 12574
/svc/cctv/stream/isp isp 24 12579
/svc/cctv/stream/isp isp 25 12581
/svc/cctv/stream/isp isp 26 12586
/svc/cctv/stream/isp isp 27 12593
/svc/cctv/stream/isp isp 28 12602
/svc/cctv/stream/isp isp 29 12607
/svc/cctv/stream/isp isp 30 12614
/svc/cctv/stream/isp isp 23 12997
/svc/cctv/stream/isp isp 11 13783
/svc/cctv/stream/isp isp 13 35803
/svc/cctv/stream/isp isp 1 12527
/svc/cctv/stream/isp isp 2 12528
/svc/cctv/stream/isp isp 3 12529
/svc/cctv/stream/isp isp 4 12530
/svc/cctv/stream/isp isp 5 12531
/svc/cctv/stream/isp isp 6 12532
/svc/cctv/stream/isp isp 7 12535
/svc/cctv/stream/isp isp 8 12537
/svc/cctv/stream/isp isp 9 12539
/svc/cctv/stream/isp isp 10 12542

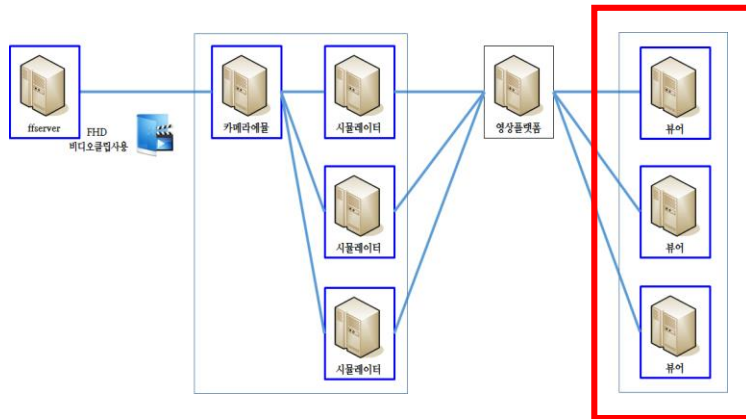
mnl@all-in-one: ~/hyhwang/osa
/svc/cctv/stream/osp osp 10 12350
/svc/cctv/stream/osp osp 11 12352
/svc/cctv/stream/osp osp 12 12357
/svc/cctv/stream/osp osp 13 12358
/svc/cctv/stream/osp osp 14 12361
/svc/cctv/stream/osp osp 15 12364
/svc/cctv/stream/osp osp 16 12366
/svc/cctv/stream/osp osp 17 12367
/svc/cctv/stream/osp osp 18 12370
/svc/cctv/stream/osp osp 19 12372
/svc/cctv/stream/osp osp 20 12374
/svc/cctv/stream/osp osp 21 12379
/svc/cctv/stream/osp osp 22 12381
/svc/cctv/stream/osp osp 23 12383
/svc/cctv/stream/osp osp 24 12386
/svc/cctv/stream/osp osp 25 12387
/svc/cctv/stream/osp osp 26 12388
/svc/cctv/stream/osp osp 27 12390
/svc/cctv/stream/osp osp 28 12391
/svc/cctv/stream/osp osp 29 12395
/svc/cctv/stream/osp osp 30 12401

mnl@all-in-one: /log/cctv/stream/20150610
07:50:47.628697 INFO SIM CONNECT TO ISA/STREAM (fd=52: 211.111.174.162:30101 -> 192.168.4.12:30863)
07:50:47.628736 INFO ISA CAMERA-INFO-REQ (1001 20 bytes) > fd=10 211.111.174.93:30863
07:50:47.628800 INFO SIM UPDATE SSOC (fd=52: 0x7f30c30000)
07:50:47.628841 INFO SIM CAMERA-INFO-REQ (1001 20 bytes) < fd=52 211.111.174.162:30101
07:50:47.628862 INFO SIM CAMERA-INFO-RESP (2001 76 bytes) > fd=52 211.111.174.162:30101
07:50:47.629110 INFO ISA CAMERA-INFO-RESP (2001 76 bytes) < fd=10 211.111.174.93:30863
07:50:47.629142 INFO ISA * SELECT B.TER_ID, B.TER_MAC FROM TER_STREAM_INFO A, TER_INFO B WHERE A.TER_ID = B.TER_ID AND A.TER_TOKEN = 'fnsSvClewhehN5mbFYHVPccKfVg3Lz53Cgpe3Se616'
07:50:47.632173 INFO ISA * SELECT TER_MODEL FROM TER_INFO WHERE TER_ID = 'BC3F9E234E98CFAE8B570ED77079656848F60616' ORDER BY REGIST_DATE DESC LIMIT 1
07:50:47.635841 INFO ISA HANDOVER TO ISP (fd=10: /svc/cctv/stream/isp/isp, 29)
07:50:47.635888 INFO ISP281 RECEIVE FROM ISA (BC3F9E234E98CFAE8B570ED77079656848F60616)fnsSvClewhehN5mbFYHVPccKfVg3Lz53Cgpe3Se616[0]19893, cc30, 1558)
07:50:47.637166 INFO ISP291 RTSP SETUP
07:50:47.637280 INFO ISP292 RTSP SETUP (DESCRIBE)
07:50:47.638685 INFO SIM RTSP SETUP (SETUP)
07:50:47.638746 INFO ISP293 RTSP SETUP (SETUP)
07:50:47.639134 INFO ISP294 RTSP PLAY
07:50:47.639343 INFO SIM RTSP SETUP (PLAY)
07:50:47.639395 INFO ISP295 * UPDATE TER_STREAM_INFO SET ISA_IP='211.111.174.162', ISA_IP_TYPE='ipv4', ISA_SERVICE_PORT='30102', ISA_STATUS=2, REGIST_DATE=SYSDATE WHERE TER_ID='BC3F9E234E98CFAE8B570ED77079656848F60616'
07:50:47.641436 INFO OSA * SELECT TER_MODEL FROM TER_INFO WHERE TER_ID='BC3F9E234E98CFAE8B570ED77079656848F60616' ORDER BY REGIST_DATE DESC LIMIT 1
07:50:47.649221 INFO OSA1 * UPDATE USER_STREAM_INFO SET OSA_STREAM_URL='(null)', OSA_IP='211.111.174.162', OSA_IP_TYPE='ipv4', OSA_CONTROL_PORT='10105', OSA_STREAM_PORT='10102', STREAM_TYPE='rtsp', OSA_STREAMING_START, (TER_ID=BC3F9E234E98CFAE8B570ED77079656848F60616, URL=rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.653151 INFO OSA1 CREATE-SESSION-RESP (9000 24 bytes) > fd=10 211.111.174.91:60660
07:50:47.653236 INFO OSA1 HANDOVER TO OSP (fd=10: /svc/cctv/stream/osp/osp, 29)
07:50:47.653318 INFO OSA1 * SELECT TER_ID FROM TER_INFO WHERE TER_ID='BC3F9E234E98CFAE8B570ED77079656848F60616'
07:50:47.653375 INFO OSP291 CREATE-SESSION-RESP (9000 24 bytes) > fd=10 211.111.174.162:30101
07:50:47.653416 INFO OSP292 * SELECT OSA_STATUS FROM USER_STREAM_INFO WHERE STREAM_TOKEN='fnsSvClewhehN5mbFYHVPccKfVg3Lz53Cgpe3Se616' ORDER BY REGIST_DATE DESC LIMIT 1
07:50:47.653988 INFO EB/V1 CREATE-SESSION-RESP (9000 24 bytes) > fd=10 211.111.174.162:30101
07:50:47.855553 INFO EB/V1 * SELECT OSA_STATUS FROM USER_STREAM_INFO WHERE STREAM_TOKEN='fnsSvClewhehN5mbFYHVPccKfVg3Lz53Cgpe3Se616' ORDER BY REGIST_DATE DESC LIMIT 1
07:50:47.861158 INFO EB/V1 * CHECK FOR OSA STATUS CHECK (ter_id=BC3F9E234E98CFAE8B570ED77079656848F60616, status=1, retry=0/5, timeout=2000 msec)
07:50:47.861662 INFO EB/V1 STREAM-READY-REQ (1101 68 bytes) > fd=10 211.111.174.162:10105
07:50:47.861727 INFO OSA1 CONNECTED FROM VIEWER/CONTROL (fd=10: 211.111.174.91:56714 -> 211.111.174.162:10105)
07:50:47.861774 INFO OSA1 STREAM-READY-REQ (1101 68 bytes) < fd=10 211.111.174.91:56714
07:50:47.861810 INFO OSA1 * SELECT TER_ID FROM USER_STREAM_INFO WHERE STREAM_TOKEN='fnsSvClewhehN5mbFYHVPccKfVg3Lz53Cgpe3Se616' ORDER BY REGIST_DATE DESC LIMIT 1
07:50:47.864515 INFO OSA1 * SELECT A.TER_TOKEN, B.TER_MAC, B.USER_ID FROM TER_STREAM_INFO A, TER_INFO B WHERE A.TER_ID = B.TER_ID AND B.TER_ID = 'BC3F9E234E98CFAE8B570ED77079656848F60616'
07:50:47.875389 INFO OSA1 HANDOVER TO ISP (fd=10: /svc/cctv/stream/isp/isp, 28)
07:50:47.882643 INFO OSA1 HANDOFF FROM OSA (BC3F9E234E98CFAE8B570ED77079656848F60616)fnsSvClewhehN5mbFYHVPccKfVg3Lz53Cgpe3Se616[0]19893, cc30, 1557)
07:50:47.882673 INFO OSP281 STREAM-READY-RESP (2101 144 bytes) > fd=34 211.111.174.91:56714
07:50:47.882805 INFO EB/V1 STREAM-READY-RESP (2101 144 bytes) < fd=10 211.111.174.162:10105
07:50:47.883264 INFO EB/V1 OPTION (rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.883327 INFO OSA1 CONNECTED FROM VIEWER/STREAM (fd=10: 211.111.174.91:40534 -> 211.111.174.162:10102)
07:50:47.883373 INFO OSA1 * SELECT STREAM_TOKEN, TER_ID FROM USER_STREAM_INFO WHERE OSA_STREAM_URL='rtsp://211.111.174.162:10102/0610075047481262'
07:50:47.898477 INFO OSA1 * SELECT A.TER_TOKEN, B.TER_MAC, B.USER_ID FROM TER_STREAM_INFO A, TER_INFO B WHERE A.TER_ID = B.TER_ID AND B.TER_ID = 'BC3F9E234E98CFAE8B570ED77079656848F60616'
07:50:47.907129 INFO OSA1 * SELECT TER_MODEL FROM TER_INFO WHERE TER_ID='BC3F9E234E98CFAE8B570ED77079656848F60616' ORDER BY REGIST_DATE DESC LIMIT 1
07:50:47.909800 INFO OSA1 HANDOVER TO ISP (fd=10: /svc/cctv/stream/isp/isp, 28)
07:50:47.909873 INFO OSP281 HANDOFF FROM OSA (BC3F9E234E98CFAE8B570ED77079656848F60616)fnsSvClewhehN5mbFYHVPccKfVg3Lz53Cgpe3Se616[0]19893, cc30, 1557)
07:50:47.910151 INFO EB/V1 DESCRIBE (rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.910247 INFO OSP281 RTSP SETUP (DESCRIBE)
07:50:47.910629 INFO EB/V1 SETUP (rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.910725 INFO OSP281 RTSP SETUP (SETUP)
07:50:47.910989 INFO EB/V1 SETUP (rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.911113 INFO OSP281 RTSP SETUP (SETUP)
07:50:47.911448 INFO EB/V1 PLAY (rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.911511 INFO OSP281 RTSP SETUP (PLAY)
07:50:47.911566 INFO OSP281 URL=rtsp://211.111.174.162:10102/0610075047481262 (ter_id=BC3F9E234E98CFAE8B570ED77079656848F60616)
07:50:47.911651 INFO OSP281 * UPDATE USER_STREAM_INFO SET OSA_STREAM_URL='rtsp://211.111.174.162:10102/0610075047481262', OSA_IP='211.111.174.162', OSA_IP_TYPE='ipv4', OSA_CONTROL_PORT='10105', OSA_STREAMING_START, (TER_ID=BC3F9E234E98CFAE8B570ED77079656848F60616, URL=rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.911841 INFO EB/V1 STREAMING START, (TER_ID=BC3F9E234E98CFAE8B570ED77079656848F60616, URL=rtsp://211.111.174.162:10102/0610075047481262)
07:50:47.911939 INFO EB/V1
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07:50:47.925681 INFO EB/V1
07:50:47.925701 INFO EB/V1
07:50:47.925721 INFO EB/V1
07:50:47.925741 INFO EB/V1
07:50:47.925761 INFO EB/V1
07:50:47.925781 INFO EB/V1
07:50:47.925801 INFO EB/V1
07:50:47.925821 INFO EB/V1
07:50:47.925841 INFO EB/V1
07:50:47.925861 INFO EB/V1
07:50:47.925881 INFO EB/V1
07:50:47.925901 INFO EB/V1
07:50:47.925921 INFO EB/V1
07:50:47.925941 INFO EB/V1
07:50:47.925961 INFO EB/V1
07:50:47.925981 INFO EB/V1
07:50:47.926001 INFO EB/V1
07:50:47.926021 INFO EB/V1
07:50:47.926041 INFO EB/V1
07:50:47.926061 INFO EB/V1
07:50:47.926081 INFO EB/V1
07:50:47.926101 INFO EB/V1
07:50:47.926121 INFO EB/V1
07:50:47.926141 INFO EB/V1
07:50:47.926161 INFO EB/V1
07:50:47.926181 INFO EB/V
```


성능 시뮬레이션

시뮬레이션

FHD를 3개의 시뮬레이션을 통해서 수집된 화면 (80세션, CPU 점유율 38%)



<pre>root@echoprint: ~/view 23:13:23. Current 12440157 Bytes Read, 97188 Kbps (CH0: 91503 Kbps, CH2: 5705 Kbps) 23:13:24. Current 14161356 Bytes Read, 110635 Kbps (CH0: 104931 Kbps, CH2: 5773 Kbps) 23:13:25. Current 13442932 Bytes Read, 105022 Kbps (CH0: 99410 Kbps, CH2: 5624 Kbps) 23:13:26. Current 12236096 Bytes Read, 95594 Kbps (CH0: 89752 Kbps, CH2: 5923 Kbps) 23:13:27. Current 12697415 Bytes Read, 99198 Kbps (CH0: 93466 Kbps, CH2: 5765 Kbps) 23:13:28. Current 13413980 Bytes Read, 104796 Kbps (CH0: 99285 Kbps, CH2: 5514 Kbps) 23:13:29. Current 12667366 Bytes Read, 98963 Kbps (CH0: 93277 Kbps, CH2: 5697 Kbps) 23:13:30. Current 13168682 Bytes Read, 102880 Kbps (CH0: 97032 Kbps, CH2: 5882 Kbps) 23:13:31. Current 13138736 Bytes Read, 102646 Kbps (CH0: 96926 Kbps, CH2: 5750 Kbps) 23:13:32. Current 14361135 Bytes Read, 112196 Kbps (CH0: 106471 Kbps, CH2: 5756 Kbps) 23:13:33. Current 13365704 Bytes Read, 104419 Kbps (CH0: 99314 Kbps, CH2: 5612 Kbps) 23:13:34. Current 12973799 Bytes Read, 101357 Kbps (CH0: 95619 Kbps, CH2: 5773 Kbps) 23:13:35. Current 14320062 Bytes Read, 111875 Kbps (CH0: 106219 Kbps, CH2: 5794 Kbps) 23:13:36. Current 13892717 Bytes Read, 108536 Kbps (CH0: 102880 Kbps, CH2: 5653 Kbps) 23:13:37. Current 14106433 Bytes Read, 110206 Kbps (CH0: 104481 Kbps, CH2: 5801 Kbps) 23:13:38. Current 12942731 Bytes Read, 101115 Kbps (CH0: 95492 Kbps, CH2: 5645 Kbps) 23:13:39. Current 14460902 Bytes Read, 112975 Kbps (CH0: 107362 Kbps, CH2: 5719 Kbps) 23:13:40. Current 9784646 Bytes Read, 76442 Kbps (CH0: 70635 Kbps, CH2: 5830 Kbps) 23:13:41. Current 13125043 Bytes Read, 102539 Kbps (CH0: 96650 Kbps, CH2: 5955 Kbps) 23:13:42. Current 15792900 Bytes Read, 123382 Kbps (CH0: 117825 Kbps, CH2: 5604 Kbps) 23:13:43. Current 16022891 Bytes Read, 125178 Kbps (CH0: 119658 Kbps, CH2: 5648 Kbps) 23:13:44. Current 12362135 Bytes Read, 96579 Kbps (CH0: 93067 Kbps, CH2: 5733 Kbps) 23:13:45. Current 22860021 Bytes Read, 178593 Kbps (CH0: 78597 Kbps, CH2: 5833 Kbps)</pre>	<pre>root@hls: ~/view 23:17:55. Current 12450442 Bytes Read, 97269 Kbps (CH0: 91601 Kbps, CH2: 5667 Kbps) 23:17:56. Current 13648302 Bytes Read, 106627 Kbps (CH0: 101049 Kbps, CH2: 5577 Kbps) 23:17:57. Current 13819673 Bytes Read, 107966 Kbps (CH0: 102082 Kbps, CH2: 5883 Kbps) 23:17:58. Current 12202732 Bytes Read, 95333 Kbps (CH0: 89679 Kbps, CH2: 5665 Kbps) 23:17:59. Current 12609331 Bytes Read, 98510 Kbps (CH0: 92768 Kbps, CH2: 5742 Kbps) 23:18:00. Current 13397321 Bytes Read, 104666 Kbps (CH0: 99439 Kbps, CH2: 5710 Kbps) 23:18:01. Current 12748694 Bytes Read, 99599 Kbps (CH0: 93770 Kbps, CH2: 5840 Kbps) 23:18:02. Current 13233091 Bytes Read, 103383 Kbps (CH0: 97726 Kbps, CH2: 5656 Kbps) 23:18:03. Current 12771930 Bytes Read, 99780 Kbps (CH0: 94252 Kbps, CH2: 5664 Kbps) 23:18:04. Current 13681805 Bytes Read, 106889 Kbps (CH0: 101109 Kbps, CH2: 5779 Kbps) 23:18:05. Current 12589291 Bytes Read, 98353 Kbps (CH0: 92340 Kbps, CH2: 6001 Kbps) 23:18:06. Current 14262048 Bytes Read, 111422 Kbps (CH0: 105892 Kbps, CH2: 5530 Kbps) 23:18:07. Current 14307929 Bytes Read, 111780 Kbps (CH0: 106084 Kbps, CH2: 5705 Kbps) 23:18:08. Current 13773736 Bytes Read, 107607 Kbps (CH0: 101908 Kbps, CH2: 5721 Kbps) 23:18:09. Current 14527497 Bytes Read, 113496 Kbps (CH0: 107774 Kbps, CH2: 5744 Kbps) 23:18:10. Current 10770220 Bytes Read, 84142 Kbps (CH0: 78420 Kbps, CH2: 5731 Kbps) 23:18:11. Current 16060000 Bytes Read, 125468 Kbps (CH0: 120013 Kbps, CH2: 5638 Kbps) 23:18:12. Current 10270231 Bytes Read, 80236 Kbps (CH0: 74615 Kbps, CH2: 5652 Kbps) 23:18:13. Current 12212169 Bytes Read, 95407 Kbps (CH0: 89374 Kbps, CH2: 6045 Kbps) 23:18:14. Current 16550319 Bytes Read, 129299 Kbps (CH0: 123627 Kbps, CH2: 5717 Kbps) 23:18:15. Current 16008578 Bytes Read, 125067 Kbps (CH0: 119310 Kbps, CH2: 5788 Kbps) 23:18:16. Current 13067403 Bytes Read, 102089 Kbps (CH0: 96385 Kbps, CH2: 5703 Kbps) 23:18:17. Current 10594135 Bytes Read, 82766 Kbps (CH0: 77262 Kbps, CH2: 5504 Kbps)</pre>
<pre>root@dellr420: ~/view 08:12:44. Current 7942067 Bytes Read, 62047 Kbps (CH0: 58311 Kbps, CH2: 3735 Kbps) 08:12:45. Current 8556610 Bytes Read, 66848 Kbps (CH0: 63403 Kbps, CH2: 3456 Kbps) 08:12:46. Current 8716188 Bytes Read, 68095 Kbps (CH0: 64439 Kbps, CH2: 3690 Kbps) 08:12:47. Current 7716487 Bytes Read, 60285 Kbps (CH0: 56724 Kbps, CH2: 3592 Kbps) 08:12:48. Current 7981311 Bytes Read, 62353 Kbps (CH0: 58691 Kbps, CH2: 3684 Kbps) 08:12:49. Current 8565739 Bytes Read, 66919 Kbps (CH0: 63351 Kbps, CH2: 3591 Kbps) 08:12:50. Current 8060940 Bytes Read, 62976 Kbps (CH0: 59359 Kbps, CH2: 3628 Kbps) 08:12:51. Current 8411341 Bytes Read, 65713 Kbps (CH0: 62034 Kbps, CH2: 3678 Kbps) 08:12:52. Current 8037226 Bytes Read, 62790 Kbps (CH0: 59209 Kbps, CH2: 3592 Kbps) 08:12:53. Current 8564461 Bytes Read, 66909 Kbps (CH0: 63333 Kbps, CH2: 3575 Kbps) 08:12:54. Current 8128559 Bytes Read, 63504 Kbps (CH0: 59784 Kbps, CH2: 3755 Kbps) 08:12:55. Current 9011647 Bytes Read, 70403 Kbps (CH0: 66855 Kbps, CH2: 3571 Kbps) 08:12:56. Current 9057588 Bytes Read, 70762 Kbps (CH0: 67192 Kbps, CH2: 3590 Kbps) 08:12:57. Current 8640778 Bytes Read, 67506 Kbps (CH0: 63836 Kbps, CH2: 3680 Kbps) 08:12:58. Current 9233332 Bytes Read, 72135 Kbps (CH0: 68487 Kbps, CH2: 3668 Kbps) 08:12:59. Current 6878167 Bytes Read, 53735 Kbps (CH0: 50173 Kbps, CH2: 3629 Kbps) 08:13:00. Current 10116763 Bytes Read, 79037 Kbps (CH0: 75401 Kbps, CH2: 3647 Kbps) 08:13:01. Current 6485974 Bytes Read, 50671 Kbps (CH0: 47103 Kbps, CH2: 3579 Kbps) 08:13:02. Current 7737592 Bytes Read, 60449 Kbps (CH0: 56771 Kbps, CH2: 3710 Kbps) 08:13:03. Current 10503673 Bytes Read, 82059 Kbps (CH0: 78405 Kbps, CH2: 3654 Kbps) 08:13:04. Current 10070843 Bytes Read, 78678 Kbps (CH0: 75140 Kbps, CH2: 3557 Kbps) 08:13:05. Current 8389818 Bytes Read, 65545 Kbps (CH0: 61808 Kbps, CH2: 3780 Kbps) 08:13:06. Current 6678877 Bytes Read, 52178 Kbps (CH0: 48806 Kbps, CH2: 3407 Kbps)</pre>	<pre>root@all-in-one: /home/mnl top - 08:11:12 up 172 days, 19:32, 13 users, load average: 11.26, 11.52, 10.65 Tasks: 673 total, 1 running, 670 sleeping, 2 stopped, 0 zombie Cpu(s): 5.0%us, 31.7%sy, 0.0%ni, 62.1%id, 0.0%wa, 0.0%hi, 1.2%si, 0.0%st Mem: 16382264k total, 7094712k used, 9287552k free, 274792k buffers Swap: 16729084k total, 3118392k used, 13610692k free, 2980684k cached PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND 12339 mnl 20 0 170m 6900 1448 S 25 0.0 131:45.68 osp 12348 mnl 20 0 170m 6412 1448 S 23 0.0 133:47.57 osp 12350 mnl 20 0 170m 6412 1448 S 23 0.0 134:06.50 osp 12387 mnl 20 0 170m 6424 1456 S 23 0.0 128:40.97 osp 12335 mnl 20 0 170m 6424 1456 S 22 0.0 128:38.91 osp 12337 mnl 20 0 170m 6416 1448 S 22 0.0 127:22.65 osp 12338 mnl 20 0 170m 6408 1448 S 22 0.0 128:20.48 osp 12345 mnl 20 0 170m 6412 1448 S 22 0.0 133:04.56 osp 12352 mnl 20 0 170m 6420 1456 S 22 0.0 129:04.23 osp 12391 mnl 20 0 170m 6424 1456 S 22 0.0 128:15.19 osp 12343 mnl 20 0 170m 6424 1456 S 22 0.0 131:49.23 osp 12383 mnl 20 0 170m 6424 1456 S 22 0.0 129:27.84 osp 12336 mnl 20 0 170m 6412 1448 S 22 0.0 127:18.52 osp 12341 mnl 20 0 170m 6416 1448 S 22 0.0 129:03.66 osp 12357 mnl 20 0 170m 6412 1448 S 22 0.0 129:59.48 osp 12386 mnl 20 0 170m 6424 1456 S 22 0.0 129:26.63 osp 12390 mnl 20 0 170m 6424 1456 S 22 0.0 126:37.64 osp</pre>

성능 시뮬레이션

유틸리티

와이어샤크(wireshark) 플러그인 개발, 패킷 분석/검증용으로 별도 제공

