08-SRS流媒体服务器-HTTP-FLV推拉流

1 根据配置文件进行初始化

```
#0  SrsHttpStreamServer::initialize_flv_entry (this=0xa11fd0, vhost="__defaultVhost__")
    at src/app/srs_app_http_stream.cpp:1163
#1  0x00000000005028d3 in SrsHttpStreamServer::initialize_flv_streaming (this=0xa11fd0)
    at src/app/srs_app_http_stream.cpp:1154
#2  0x0000000000500a2a in SrsHttpStreamServer::initialize (this=0xa11fd0) at
src/app/srs_app_http_stream.cpp:873
#3  0x0000000000561eb7 in SrsHttpServer::initialize (this=0xa11e00) at
src/app/srs_app_http_conn.cpp:279
#4  0x00000000004c84c0 in SrsServer::initialize (this=0xa11ea0, ch=0x0) at
src/app/srs_app_server.cpp:757
#5  0x00000000005bcb57 in run (svr=0xa11ea0) at src/main/srs_main_server.cpp:395
#6  0x00000000005bb769 in do_main (argc=3, argv=0x7fffffffe4f8) at
src/main/srs_main_server.cpp:184
#7  0x00000000005bb8ad in main (argc=3, argv=0x7fffffffe4f8) at
src/main/srs_main_server.cpp:192
```

http_remux 配置

```cpp
1  SrsLiveEntry::SrsLiveEntry(std::string m)
2  {
3      mount = m;
```

```
 4
 5        stream = NULL;
 6        cache = NULL;
 7
 8        req = NULL;
 9        source = NULL;
10
11        std::string ext = srs_path_filext(m);    // 根据mount的值，比如[vhost]/[app]/[stream].flv
12        _is_flv = (ext == ".flv");
13        _is_ts = (ext == ".ts");
14        _is_mp3 = (ext == ".mp3");
15        _is_aac = (ext == ".aac");
16  }
```

http不光支持FLV的拉流

```
# http-flv darren
  http_remux {
      enabled    on;
      mount      [vhost]/[app]/[stream].flv;       # 支持.flv .ts .aac .mp3的使用
      hstrs      on;
  }
```

vhost配置

比较复杂，具体提供多个客户使用时再考虑

https://github.com/ossrs/srs/wiki/v3_CN_RtmpUrlVhost

2 RTMP推流时

推流的时候根据url创建对应的handler，拉流的时候根据url找到对应处理的handler

#0 SrsLiveEntry::SrsLiveEntry

#1 0x0000000000500ffa in SrsHttpStreamServer::http_mount (this=0xa11dc0, s=0xa3bf80, r=0xa3ae90)
    at src/app/srs_app_http_stream.cpp:907

#2 0x00000000005620f5 in SrsHttpServer::http_mount (this=0xa118f0, s=0xa3bf80,
r=0xa3ae90)
    at src/app/srs_app_http_conn.cpp:308
#3 0x00000000004cd3cc in SrsServer::on_publish (this=0xa103a0, s=0xa3bf80, r=0xa3ae90)
    at src/app/srs_app_server.cpp:1608
#4 0x00000000004e6a9b in SrsSource::on_publish (this=0xa3bf80) at
src/app/srs_app_source.cpp:2466
#5 0x00000000004d89f2 in SrsRtmpConn::acquire_publish (this=0xa30ce0, source=0xa3bf80)
    at src/app/srs_app_rtmp_conn.cpp:940
#6 0x00000000004d7a74 in SrsRtmpConn::publishing (this=0xa30ce0, source=0xa3bf80) at
src/app/srs_app_rtmp_conn.cpp:822
#7 0x00000000004d5229 in SrsRtmpConn::stream_service_cycle (this=0xa30ce0) at
src/app/srs_app_rtmp_conn.cpp:534
#8 0x00000000004d4141 in SrsRtmpConn::service_cycle (this=0xa30ce0) at
src/app/srs_app_rtmp_conn.cpp:388
#9 0x00000000004d2f09 in SrsRtmpConn::do_cycle (this=0xa30ce0) at
src/app/srs_app_rtmp_conn.cpp:209
#10 0x00000000004d10fb in SrsConnection::cycle (this=0xa30d58) at
src/app/srs_app_conn.cpp:171
---Type <return> to continue, or q <return> to quit---
#11 0x0000000000509c88 in SrsSTCoroutine::cycle (this=0xa30f70) at
src/app/srs_app_st.cpp:198
#12 0x0000000000509cfd in SrsSTCoroutine::pfn (arg=0xa30f70) at
src/app/srs_app_st.cpp:213
#13 0x00000000005bdd9d in _st_thread_main () at sched.c:337
#14 0x00000000005be515 in st_thread_create (start=0x5bd719 <_st_vp_schedule+170>,
arg=0x700000001, joinable=1,
    stk_size=1) at sched.c:616

一个source，对应一个
#0 SrsLiveStream::SrsLiveStream (this=0xa3da40, s=0xa3bbd0, r=0xa3ad40, c=0xa3d520)
    at src/app/srs_app_http_stream.cpp:514
#1 0x00000000005010bb in SrsHttpStreamServer::http_mount (this=0xa11fd0, s=0xa3bbd0,
r=0xa3ad40)
    at src/app/srs_app_http_stream.cpp:912
#2 0x00000000005620f5 in SrsHttpServer::http_mount (this=0xa11e00, s=0xa3bbd0,
r=0xa3ad40)
    at src/app/srs_app_http_conn.cpp:308
#3 0x00000000004cd3cc in SrsServer::on_publish (this=0xa11ea0, s=0xa3bbd0, r=0xa3ad40)
    at src/app/srs_app_server.cpp:1608

#4 0x00000000004e6a9b in SrsSource::on_publish (this=0xa3bbd0) at src/app/srs_app_source.cpp:2466
#5 0x00000000004d89f2 in SrsRtmpConn::acquire_publish (this=0xa30d00, source=0xa3bbd0)
    at src/app/srs_app_rtmp_conn.cpp:940
#6 0x00000000004d7a74 in SrsRtmpConn::publishing (this=0xa30d00, source=0xa3bbd0) at src/app/srs_app_rtmp_conn.cpp:822
#7 0x00000000004d5229 in SrsRtmpConn::stream_service_cycle (this=0xa30d00) at src/app/srs_app_rtmp_conn.cpp:534
#8 0x00000000004d4141 in SrsRtmpConn::service_cycle (this=0xa30d00) at src/app/srs_app_rtmp_conn.cpp:388
#9 0x00000000004d2f09 in SrsRtmpConn::do_cycle (this=0xa30d00) at src/app/srs_app_rtmp_conn.cpp:209
#10 0x00000000004d10fb in SrsConnection::cycle (this=0xa30d78) at src/app/srs_app_conn.cpp:171
#11 0x0000000000509c88 in SrsSTCoroutine::cycle (this=0xa30f90) at src/app/srs_app_st.cpp:198
#12 0x0000000000509cfd in SrsSTCoroutine::pfn (arg=0xa30f90) at src/app/srs_app_st.cpp:213
#13 0x00000000005bdd9d in _st_thread_main () at sched.c:337
#14 0x00000000005be515 in st_thread_create (start=0x5bd719 <_st_vp_schedule+170>, arg=0x700000001, joinable=1,
    stk_size=1) at sched.c:616

3 HTTP-FLV/TS/AAC/MP3拉流

每个播放的SrsFlvStreamEncoder是独立的

断点：SrsHttpCorsMux::initialize
　　　　SrsHttpCorsMux::SrsHttpCorsMux
　　　　SrsHttpCorsMux::serve_http
断点：SrsLiveStream::do_serve_http
断点：SrsHttpServeMux::hijack
　　　SrsHttpServeMux::SrsHttpServeMux
　　SrsHttpServeMux::initialize

#0 **SrsHttpServeMux::hijack** (this=0xa11dd0, h=0xa11eb0) at src/protocol/srs_http_stack.cpp:618

#1 0x0000000000500294 in SrsHttpStreamServer::SrsHttpStreamServer (this=0xa11dc0, svr=0xa103a0,

   __in_chrg=<optimized out>, __vtt_parm=<optimized out>) at src/app/srs_app_http_stream.cpp:841

#2 0x0000000000561c45 in SrsHttpServer::SrsHttpServer (this=0xa118f0, svr=0xa103a0)

   at src/app/srs_app_http_conn.cpp:260

#3 0x00000000004c7675 in SrsServer::SrsServer (this=0xa103a0, __in_chrg=<optimized out>,

   __vtt_parm=<optimized out>) at src/app/srs_app_server.cpp:635

#4 0x00000000005bb735 in do_main (argc=3, argv=0x7fffffffe4f8) at src/main/srs_main_server.cpp:181

#5 0x00000000005bb8ad in main (argc=3, argv=0x7fffffffe4f8) at src/main/srs_main_server.cpp:192

#0 SrsFlvStreamEncoder::SrsFlvStreamEncoder (this=0xa57820) at src/app/srs_app_http_stream.cpp:250

#1 0x00000000004fe2fd in **SrsLiveStream::do_serve_http** (this=0xa3da20, w=0x7ffff7eb5bd0, r=0xa5d7c0)

   at src/app/srs_app_http_stream.cpp:562

#2 **0x00000000004fe108 in SrsLiveStream::serve_http** (this=0xa3da20, w=0x7ffff7eb5bd0, r=0xa5d7c0)

   at src/app/srs_app_http_stream.cpp:544

#3 0x000000000049c86f in SrsHttpServeMux::serve_http (this=0xa11fe0, w=0x7ffff7eb5bd0, r=0xa5d7c0)

   at src/protocol/srs_http_stack.cpp:711

#4 0x0000000000562080 in SrsHttpServer::serve_http (this=0xa11e00, w=0x7ffff7eb5bd0, r=0xa5d7c0)

   at src/app/srs_app_http_conn.cpp:300

#5 0x000000000049d6be in SrsHttpCorsMux::serve_http (this=0xa52930, w=0x7ffff7eb5bd0, r=0xa5d7c0)

   at src/protocol/srs_http_stack.cpp:859

#6 0x0000000000561086 in SrsHttpConn::process_request (this=0xa5d120, w=0x7ffff7eb5bd0, r=0xa5d7c0)

   at src/app/srs_app_http_conn.cpp:161

#7 0x0000000000560ce8 in SrsHttpConn::do_cycle (this=0xa5d120) at src/app/srs_app_http_conn.cpp:133

#8 0x00000000004d10fb in SrsConnection::cycle (this=0xa5d120) at src/app/srs_app_conn.cpp:171

#9 0x0000000000509c88 in SrsSTCoroutine::cycle (this=0xa5d1c0) at src/app/srs_app_st.cpp:198

#10 0x0000000000509cfd in SrsSTCoroutine::pfn (arg=0xa5d1c0) at src/app/srs_app_st.cpp:213
#11 0x00000000005bdd9d in _st_thread_main () at sched.c:337

#0 SrsHttpFileServer::serve_http (this=0xa122b0, w=0x7ffff7f42bd0, r=0xa71210)
    at src/protocol/srs_http_stack.cpp:360
#1 0x000000000049c86f in SrsHttpServeMux::serve_http (this=0xa11ed0, w=0x7ffff7f42bd0, r=0xa71210)
    at src/protocol/srs_http_stack.cpp:711
#2 0x00000000005620a1 in SrsHttpServer::serve_http (this=0xa118f0, w=0x7ffff7f42bd0, r=0xa71210)
    at src/app/srs_app_http_conn.cpp:303 这里是http_static->mux.serve_http(w, r); 不属于直播的
#3 0x000000000049d6be in SrsHttpCorsMux::serve_http (this=0xa840f0, w=0x7ffff7f42bd0, r=0xa71210)
    at src/protocol/srs_http_stack.cpp:859
#4 0x0000000000561086 in SrsHttpConn::process_request (this=0xa70cc0, w=0x7ffff7f42bd0, r=0xa71210)
    at src/app/srs_app_http_conn.cpp:161
#5 0x0000000000560ce8 in SrsHttpConn::do_cycle (this=0xa70cc0) at src/app/srs_app_http_conn.cpp:133
#6 0x00000000004d10fb in SrsConnection::cycle (this=0xa70cc0) at src/app/srs_app_conn.cpp:171
#7 0x0000000000509c88 in SrsSTCoroutine::cycle (this=0xa70f00) at src/app/srs_app_st.cpp:198
#8 0x0000000000509cfd in SrsSTCoroutine::pfn (arg=0xa70f00) at src/app/srs_app_st.cpp:213
#9 0x00000000005bdd9d in _st_thread_main () at sched.c:337

Breakpoint 16, SrsHttpFileServer::SrsHttpFileServer (this=0xa122b0,

 root_dir="`\006\241\000\000\000\000\000\021\000\000\000\000\000\000\000\021\000\000\000\000\000\000\000\204\301\376\366\377\177\000\000\360\034\241\000\000\000\000\000\000\000\"\364\322\352!\350\264`\340\377\377\377\177\000\000\260\"\241\000\000\000\000\000`\340\377\377\377\177\000\000\312\347W\000\000\000\000\000p\026\241\000\000\000\000\000\000\000\300\036\241\000\000\000\000\000\260\337\377\000\b", '\000' <repeats 11 times>,

"\320\375\240\000\000\000\000\000p\026\241\000\000\000\000\000\300\337\377\377\
377\177", '\000' <repeats 11 times>,
"\341\377\377\377\177\000\000\300\035\241\000\000\000\000\000\000!\241\000\000\00
0\000\000\021\000\000\000\000\000\000\000\021\000\000\000\000\000\000\000p\026\
241\000\000\000\000\000\060\005\241\000\000\000\000\000"...)
    at src/protocol/srs_http_stack.cpp:336
336   SrsHttpFileServer::SrsHttpFileServer(string root_dir)
(gdb) bt
#0   SrsHttpFileServer::SrsHttpFileServer (this=0xa122b0,

 root_dir="`\006\241\000\000\000\000\000\021\000\000\000\000\000\000\000\021\000\0
00\000\000\000\000\000\204\301\376\366\377\177\000\000\360\034\241\000\000\000\0
00\000\000\000"\364\322\352!\350\264`\340\377\377\377\177\000\000\260\"\241\000\000\
000\000\000`\340\377\377\377\177\000\000\312\347W\000\000\000\000\000p\026\241\0
00\000\000\000\000\300\036\241\000\000\000\000\000\260\337\377\000\b", '\000'
<repeats 11 times>,
"\320\375\240\000\000\000\000\000p\026\241\000\000\000\000\000\300\337\377\377\
377\177", '\000' <repeats 11 times>,
"\341\377\377\377\177\000\000\300\035\241\000\000\000\000\000\000!\241\000\000\00
0\000\000\021\000\000\000\000\000\000\000\021\000\000\000\000\000\000\000p\026\
241\000\000\000\000\000\060\005\241\000\000\000\000\000"...)
    at src/protocol/srs_http_stack.cpp:336
#1   0x000000000057d19e in SrsVodStream::SrsVodStream (this=0xa122b0,
    root_dir="0\005\241\000\000\000\000\000\021\000\000\000\000\000\000\000\021",
'\000' <repeats 24 times>,
"\"\364\322\352!\350\264\064\003n\000\000\000\000\000\000\f\241\000\000\000\000\
000`\340\377\377\377\177\000\000\000\"\364\322\352!\350\264\000\000\000\000\000\
000\000\000\000\f\241\000\000\000\000\000\360\034\241\000\000\000\000\000\300\3
41\377\377\377\177\000\000\320\340\377\377\377\177\000\000\024\037V\000\000\000\
000\000\220\340\377\377\377\177\000\000\360\030\241\000\000\000\000\000\320\340
\377\377\377\177\000\000\000\000\000\000\000\000\000\000\000\000`\037\241\000\000\000\00
0\000\020\000\000\000\000\000\000\000\020\000\000\000\000\000\000\000s\277l\000
\000\000\000\000h \241\000\000\000\000\000"...) at src/app/srs_app_http_static.cpp:54
#2   0x000000000057e7ca in SrsHttpStaticServer::initialize (this=0xa11ec0) at
src/app/srs_app_http_static.cpp:235
#3   0x0000000000561f14 in SrsHttpServer::initialize (this=0xa118f0) at
src/app/srs_app_http_conn.cpp:283
#4   0x00000000004c84c0 in SrsServer::initialize (this=0xa103a0, ch=0x0) at
src/app/srs_app_server.cpp:757

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Breakpoint 2, SrsHttpResponseWriter::write (this=0x7ffff7eb5bd0, data=0x7ffff7eb5470 "FLV\001\005", size=9)

    at src/service/srs_service_http_conn.cpp:727
727 {
(gdb) bt
#0 SrsHttpResponseWriter::write (this=0x7ffff7eb5bd0, data=0x7ffff7eb5470 "FLV\001\005", size=9)

    at src/service/srs_service_http_conn.cpp:727
#1 0x00000000004fde19 in SrsBufferWriter::write (this=0x7ffff7eb5860, buf=0x7ffff7eb5470, count=9, pnwrite=0x0)

    at src/app/srs_app_http_stream.cpp:506
#2 0x000000000040e9e1 in SrsFlvTransmuxer::write_header (this=0xa71b10,

    flv_header=0x7ffff7eb5470 "FLV\001\005") at src/kernel/srs_kernel_flv.cpp:411
#3 0x000000000040e90d in SrsFlvTransmuxer::write_header (this=0xa71b10, has_video=true, has_audio=true)

    at src/kernel/srs_kernel_flv.cpp:399
#4 0x00000000004fd11a in SrsFlvStreamEncoder::write_header (this=0xa68b10, has_video=true, has_audio=true)

    at src/app/srs_app_http_stream.cpp:355
#5 0x00000000004fd04f in SrsFlvStreamEncoder::write_tags (this=0xa68b10, msgs=0xa6da30, count=10)

    at src/app/srs_app_http_stream.cpp:340
#6 0x00000000004ff0dc in SrsLiveStream::do_serve_http (this=0xa3d9d0, w=0x7ffff7eb5bd0, r=0xa91c00)

    at src/app/srs_app_http_stream.cpp:677
#7 0x00000000004fe108 in SrsLiveStream::serve_http (this=0xa3d9d0, w=0x7ffff7eb5bd0, r=0xa91c00)

    at src/app/srs_app_http_stream.cpp:544
#8 0x000000000049c86f in SrsHttpServeMux::serve_http (this=0xa11fe0, w=0x7ffff7eb5bd0, r=0xa91c00)

    at src/protocol/srs_http_stack.cpp:711
#9 0x0000000000562080 in SrsHttpServer::serve_http (this=0xa11e00, w=0x7ffff7eb5bd0, r=0xa91c00)

    at src/app/srs_app_http_conn.cpp:300
---Type <return> to continue, or q <return> to quit---

#10 0x000000000049d6be in SrsHttpCorsMux::serve_http (this=0xa3aa60, w=0x7ffff7eb5bd0, r=0xa91c00)
    at src/protocol/srs_http_stack.cpp:859
#11 0x0000000000561086 in SrsHttpConn::process_request (this=0xa626e0, w=0x7ffff7eb5bd0, r=0xa91c00)
    at src/app/srs_app_http_conn.cpp:161
#12 0x0000000000560ce8 in SrsHttpConn::do_cycle (this=0xa626e0) at src/app/srs_app_http_conn.cpp:133
#13 0x00000000004d10fb in SrsConnection::cycle (this=0xa626e0) at src/app/srs_app_conn.cpp:171
#14 0x0000000000509c88 in SrsSTCoroutine::cycle (this=0xa62a70) at src/app/srs_app_st.cpp:198
#15 0x0000000000509cfd in SrsSTCoroutine::pfn (arg=0xa62a70) at src/app/srs_app_st.cpp:213
#16 0x00000000005bdd9d in _st_thread_main () at sched.c:337
#17 0x00000000005be515 in st_thread_create (start=0x5bd719 <_st_vp_schedule+170>, arg=0x900000001, joinable=1,
    stk_size=1) at sched.c:616
#18 0xffffffffffffffff in ?? ()

断点：b srs_app_recv_thread.cpp:600

SrsResponseOnlyHttpConn::pop_message