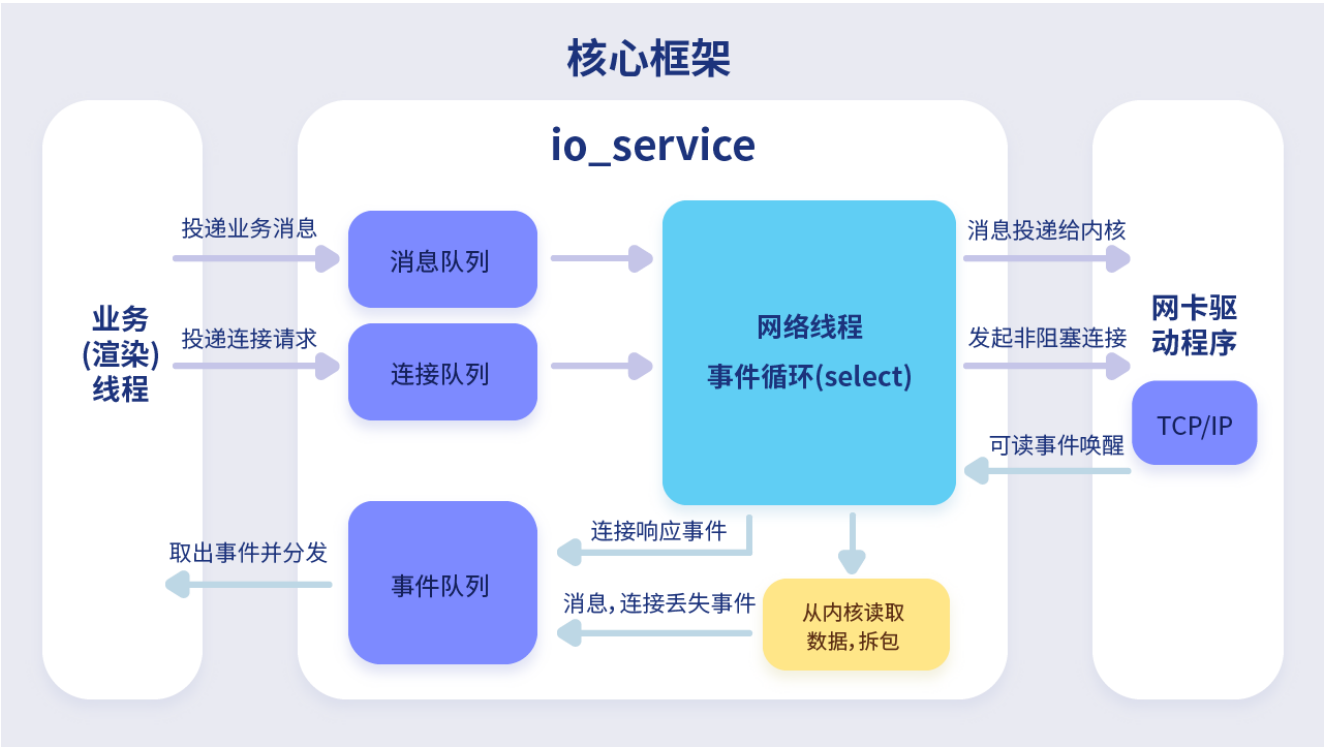


yasio 4F656568
2D878763

docs passing

yasio 2F4F2A7B2F17F2875F376265socket556C15E86E59377A54FA8E54C85B6215CE4765B625B377A517E6751B9

- 2855F327:
 - 7E8958:
 - Visual Studio 2013+
 - GCC4.7+
 - xcode9+
 - 5A6B2267 C++11,14,17 697E8928
 - 6764: x86, x64, ARM4B32
 - 644E797E: Windows, macOS, Linux, FreeBSD, iOS, Android7939
- 2F28:
 - 517E6D51: io_service
 - 4F29: io_channel
 - 4E851A88: io_transport
- 8862FE:



5F905F59
EB1F00CB

69584E7A8F68E3E4 tool.chinaz.com 6389http89655E537874651706289

C++

```
#include "yasio/yasio.hpp"
#include "yasio/obstream.hpp"
using namespace yasio;
using namespace yasio::inet;
int main()
{
    io_service service({"tool.chinaz.com", 80});
    service.set_option(YOPT_S_DEFERRED_EVENT, 0); // dispatch network event on network thread
    service.start([&](event_ptr&& ev) {
        switch (ev->kind())
        {
        case YEK_ON_PACKET: {
            auto packet = std::move(ev->packet());
            fwrite(packet.data(), packet.size(), 1, stdout);
            fflush(stdout);
            break;
        }
        case YEK_ON_OPEN:
            if (ev->status() == 0)
            {
                auto transport = ev->transport();
                if (ev->cindex() == 0)
                {
                    obstream obs;
                    obs.write_bytes("GET /index.htm HTTP/1.1\r\n");

                    obs.write_bytes("Host: tool.chinaz.com\r\n");

                    obs.write_bytes("User-Agent: Mozilla/5.0 (Windows NT 10.0; "
                                   "WOW64) AppleWebKit/537.36 (KHTML, like Gecko) "
                                   "Chrome/87.0.4820.88 Safari/537.36\r\n");
                    obs.write_bytes("Accept: */*;q=0.8\r\n");
                    obs.write_bytes("Connection: Close\r\n\r\n");

                    service.write(transport, std::move(obs.buffer()));
                }
            }
            break;
        case YEK_ON_CLOSE:
            printf("The connection is lost.\n");
            break;
        }
    });
    // open channel 0 as tcp client
    service.open(0, YCK_TCP_CLIENT);
    getchar();
}
```

Lua

```
local ip138 = "tool.chinaz.com"
local service = yasio.io_service.new({host=ip138, port=80})
local respdata = ""
```

```
service:start(function(ev)
    local k = ev.kind()
    if (k == yasio.YEK_ON_PACKET) then
        respdata = respdata .. ev:packet():to_string()
    elseif k == yasio.YEK_ON_OPEN then
        if ev:status() == 0 then -- connect succeed
            local transport = ev:transport()
            local obs = yasio.obstream.new()
            obs:write_bytes("GET / HTTP/1.1\r\n")

            obs:write_bytes("Host: " .. ip138 .. "\r\n")

            obs:write_bytes("User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64) AppleWebKit/
537.36 (KHTML, like Gecko) Chrome/79.0.3945.117 Safari/537.36\r\n")
            obs:write_bytes("Accept: */*;q=0.8\r\n")
            obs:write_bytes("Connection: Close\r\n\r\n")

            service:write(transport, obs)
        end
    elseif k == yasio.YEK_ON_CLOSE then
        print("request finish, respdata: " .. respdata)
    end
end)

-- Open channel 0 as tcp client and start non-blocking tcp 3 times handshake
service:open(0, yasio.YCK_TCP_CLIENT)

-- Call this function at thread which focus on the network event.
function gDispatchNetworkEvent(...)
    service:dispatch(128) -- dispatch max events is 128 per frame
end

_G.yaservice = service -- Store service to global table as a singleton instance
```

6D8B & 794F
4B05 3A8B



6C61
E86F

8F88 Lua 794F7A5E FF4F62535F5E4F69 yasio - ibstream_view::consume out of range! FF8F69794F7A5E9169615176FF8B4E5F576139
6642 3A8B6B8F6C1A53766238E16E 6C692F3A8B6B8F6C456F69846CF76D65286F62

- 6D8B:
 - echo_server: TCP/UDP/KCP 6B646D2168
 - echo_client: TCP/UDP/KCP 6B64A9627E
 - ssltest: SSL 6B89A9627E, 6969github.com 6B98566376864626262
 - tcptest: TCP 6B897A6F

- [speedtest](#): TCP,UDP,KCP
- [mcast](#):
- [794F3A8B](#):
- [ftp_server](#): yasio ftp
- [lua](#): Lua http TCP
- [xlua](#): xlua
- [DemoUE4](#): UE4

7F8B 6D8B & 794F
16D1 4BD5 3A8B

- C++11 msvc , gcc , clang
- git , cmake installed
- 88485946704E:

```
git clone https://github.com/yasio/yasio
cd yasio
git submodule update --init --recursive
cd build
# for xcode should be: cmake .. -GXcode
cmake ..
cmake --build . --config Debug
```


io_service Class

```
socket.select tcp, udp, kcp, ssl-client
```

```
EDD5
```

```
namespace yasio { namespace inet { class io_service; } }
```

```
6254  
1058
```

```
515167905165  
6C718420FD70
```

Name	Description
io_service::io_service	io_service

```
6C516985
```

Name	Description
io_service::start	
io_service::stop	
io_service::open	
io_service::close	
io_service::is_open	
io_service::dispatch	
io_service::write	
io_service::write_to	DGRAM

Name	Description
io_service::schedule	
io_service::init_globals	
io_service::cleanup_globals	
io_service::channel_at	
io_service::set_option	

object_pool

yasio.hpp

io_service::io_service

io_service

```
io_service::io_service();

io_service::io_service(int channel_count);

io_service::io_service(const io_hostent& channel_ep);

io_service::io_service(const io_hostent* channel_eps, int channel_count);
```

channel_count

channel_ep

channel_eps

4F698F2A5757657499575789

794F
3A8B

```
#include "yasio/yasio.hpp"
int main() {
    using namespace yasio;
    using namespace yasio::inet;
    io_service s1; // s1 only support 1 channel
    io_service s2(5); // s2 support 5 channels concurrency
    io_service s3(io_hostent{"github.com", 443}); // s3 support 1 channel
    io_hostent hosts[] = {
        {"192.168.1.66", 20336},
        {"192.168.1.88", 20337},
    };
    io_service s4(hosts, YASIO_ARRAYSIZE(hosts)); // s4 support 2 channels concurrency
    return 0;
}
```

io_service::start

54527F7C67577F7A82

```
void start(io_event_cb_t cb);
```

5365
C278

cb

7F7E464E6983FF6B8B49C9534E57 io_service::dispatch 8C73897F7A895E82

794F
3A8B

```
#include "yasio/yasio.hpp"
int main() {
    using namespace yasio;
    using namespace yasio::inet;
    auto service = yasio_shared_service(io_hostent{host="ip138.com", port=80});
    service->start([](event_ptr&& ev) {
        auto kind = ev->kind();
        if (kind == YEK_ON_OPEN)
        {
            if (ev->status() == 0)
                printf("[%d] connect succeed.\n", ev->cindex());
            else
                printf("[%d] connect failed!\n", ev->cindex());
        }
    });
}
```

```
    return 0;
}
```

io_service::stop

59697f7e67527f7a39

```
void stop()
```

6061
e80f

59697f7e67527f7a69528f88, 6951654f539990514f535e795f51685e995139
64fd791a616160fae1f77649857663880fa62

io_service::open

525f4f9939

```
void open(size_t cindex, int kind);
```

5365
c270

cindex

4f53295f39

kind

4f53788939

6061
e80f

5948 TCP, 664af9425168529997985832f14b6267fa7aef978ef382

cindex 7850c598594eio_service52c953e3794f5378cf89

kind 5f98664f4e674f504e4e:

- YCK_TCP_CLIENT
- YCK_TCP_SERVER
- YCK_UDP_CLIENT
- YCK_UDP_SERVER
- YCK_KCP_CLIENT
- YCK_KCP_SERVER

- YCK_SSL_CLIENT

io_service::close

51204F89628946854A8B89

```
void close(transport_handle_t transport);  
void close(int cindex);
```

5365
C278

transport

5C895185764F8F4A8B89

cindex

5C895185764F8F89

6C61
E88F

EB8E TCP 6F 5C4A5389409E74662C5898E6389

io_service::is_open

52A04F89624F8F4A8B8954694E525F726989

```
bool is_open(transport_handle_t transport) const;  
bool is_open(int cindex) const;
```

5365
C278

transport

4F8F4F8B536789
20831A00E3C482

cindex

4F89205F89

8F5650
B4DE3C

true: 5355FF false: 2A5355

io_service::dispatch

52	6D	7F	7E	7E	7A	4E	75	76	4E	4E	30
06	3E	51	DC	BF	08	A7	1F	84	8B	F6	02

```
void dispatch(int max_count);
```

53	65
C2	70

max_count

67 2C	6B 21	67 00	59 27	52 06	6D 3E	4E 8B	4E F6	65 70	30 02
----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

6C	61
E8	0F

905F68656C5E5F5751535F7F7E4E4E764E5290817F7A8C75, 4F59Cocos2d-x766E677E7AFF4E5351466E6E625F64(Unity,UE4)764E908F7E7A30
1A3864B9D594532873C3510C8BFE841A513891BF0B0328, 8B828432D3BF0B0C4E5CA7646380F15CE84383891BF0B02

6B	65	6C	5B	4E	5B	51	57	66	65	6E	62	75	97	97	5E	67	75	30
64	B9	D5	F9	8E	89	68	30	F4	B0	38	0F	4C	62	5E	38	09	28	02

794F
3A8B

```
yasio_shared_service()->dispatch(128);
```

io_service::write

54	4F	8F	4F	8B	8F	7A	53	90	65	63	30
11	20	93	1A	DD	DC	EF	D1	01	70	6E	02

```
int write(
    transport_handle_t thandle,
    std::vector<char> buffer,
    io_completion_cb_t completion_handler = nullptr
);
```

53	65
C2	70

thandle

4F	8F	4F	8B	53	67	30
20	93	1A	DD	E5	C4	02

buffer

89	53	90	76	4E	8F	52	7F	51	53	30
81	01	01	84	8C	0B	36	13	B2	3A	02

completion_handler

53	90	5B	62	56	8C	30
D1	01	8C	10	DE	03	02

8F5650
04DE3C

645F53897662598276, < 0 : F86F637F198F89

6C61
E88F

completion_handler 4F2F63 KCP 39

7Abuffer1A796388F5756F4E464A2A63 completion_handler 89

io_service::write_to

54UDP28834A886389766289

```
int write_to(  
    transport_handle_t thandle,  
    std::vector<char> buffer,  
    const ip::endpoint& to,  
    io_completion_cb_t completion_handler = nullptr  
);
```

5365
2270

thandle

4F834A88E3C289

buffer

89538976buffer89

to

895389768F7A575789

completion_handler

618988166E8389

8F5650
04DE3C

765F538976598276, 5F < 0 F86F6F637F198F8F1A582F26834A88F27325(TCP8F63A86678)89

6C61
E88F

63F07845F7284E DGRAM 28834A886F73 UDP, KCP 39

538988166E89 completion_handler 4F2F63 KCP 39

buffer completion_handler

io_service::schedule

```
highp_timer_ptr schedule(  
    const std::chrono::microseconds& duration,  
    timer_cb_t cb  
);
```

duration

cb

std::shared_ptr

```
// Register a once timer, timeout is 3 seconds.  
yasio_shared_service()->schedule(std::chrono::seconds(3), []()->bool{  
    printf("time called!\n");  
    return true;  
});  
  
// Register a loop timer, interval is 5 seconds.  
auto loopTimer = yasio_shared_service()->schedule(std::chrono::seconds(5), []()->bool{  
    printf("time called!\n");  
    return false;  
});
```

io_service::init_globals

```
static void init_globals(print_fn2_t print_fn);
```

```
print_fn
```

81	5B	4E	7F	7E	65	5F	62	53	51	65	30
EA	9A	49	51	DC	E5	D7	53	70	FD	70	02

6C
E8 61
OF

[illegible]

79	4F
3A	8B

```
// yasio_uelua.cpp
// compile with: /EHsc
#include "yasio_uelua.h"
#include "yasio/platform/yasio_ue4.hpp"
#include "lua.hpp"
#ifdef NS_SLUA
using namespace NS_SLUA;
#endif
#include "yasio/bindings/lyasio.cpp"

DECLARE_LOG_CATEGORY_EXTERN(yasio_ue4, Log, All);
DEFINE_LOG_CATEGORY(yasio_ue4);

void yasio_uelua_init(void* L)
{
    auto Ls = (lua_State*)L;
    print_fn2_t log_cb = [] (int level, const char* msg) {
        FString text(msg);
        const TCHAR* tstr = *text;
        UE_LOG(yasio_ue4, Log, L"%s", tstr);
    };
    io_service::init_globals(log_cb);

    luaregister_yasio(Ls);
}

void yasio_uelua_cleanup()
{
    io_service::cleanup_globals();
}
```


6C61
E80F

53786297897897865354E15845E55F637865E8369A86958(.dll,.so)52E598837869F8656E8C9954787A5E2A8869

io_service::channel_at

9A87EF83725F87624E99E36489

```
io_channel* channel_at(size_t cindex) const;
```

5365
C270

cindex

4F937965

8F5650
04DE3C

4F93E3646788, 55795F5889FA83F4F86C845E nullptr 89

io_service::set_option

887E889889

```
void set_option(int opt, ...);
```

5365
C270

opt

8893674E, 89E768 YOPT_X_XXX.

794F
3A8B

```
#include "yasio/yasio.hpp"

int main(){
    using namespace yasio;
    using namespace yasio::inet;
    io_hostent hosts[] = {
        {"192.168.1.66", 20336},
        {"192.168.1.88", 20337},
    };
    auto service = std::make_shared<io_service>(hosts, YASIO_ARRAYSIZE(hosts));
```

```
// for application protocol with length field, you just needs set this option.
// it's similar to java netty length frame based decode.
// such as when your protocol define as following
//     packet.header: (header.len=12bytes)
//         code:int16_t
//         datalen:int32_t (not contains packet.header.len)
//         timestamp:int32_t
//         crc16:int16_t
//     packet.data
service->set_option(YOPT_C_LFBFD_PARAMS,
                  0,      // channelId, the channel index
                  65535, // maxFrameLength, max packet size
                  2,      // lengthFieldOffset, the offset of length field
                  4,      // lengthFieldLength, the size of length field, can be 1,2,4
                  12,     // lengthAdjustment. If the value of length feild ==
packet.header.len + packet.data.len, this parameter should be 0, otherwise should be
sizeof(packet.header)
);

// for application protocol without length field, just sets length field size to -1.
// then io_service will dispatch any packet received from server immediately,
// such as http request, this is default behavior of channel.
service->set_option(YOPT_C_LFBFD_PARAMS, 1, 65535, -1, 0, 0);
return 0;
}
```

8B5396
F7C205

[io_event Class](#)

[io_channel Class](#)

[io_service Options](#)

[xxsocket Class](#)

[obstream Class](#)

[ibstream_view Class](#)

[ibstream Class](#)

io_channel Class

TCP/SSL/UDP/KCP

```
namespace yasio { namespace inet { class io_channel; } }
```

Name	Description
io_channel::get_service	io_service
io_channel::index	
io_channel::remote_port	
io_channel::bytes_transferred	
io_channel::connect_id	ID

io_service
io_service::channel_at

io_channel::get_service

io_service

```
io_service& get_service()
```

io_channel::index

83524f998f7a7ae3

```
int index() const
```

io_channel::remote_port

83524f998f7a7ae3.

```
u_short remote_port() const;
```

8f5650
04de3c

8f564f998f7a7ae3f7

- f98eae237efef93883a1a41798fef7ae3
- f98e67527a4f99883a012c7ef3

io_channel::bytes_transferred

835258627af358685982f8

```
long long bytes_transferred() const;
```

8f5650
04de3c

4ef8a3fa7a5f58525520ff6336585982f86cf284ef7f8858627af3586841c7

io_channel::connect_id

835258627af4f9992587658f28f63id

```
unsigned int connect_id() const;
```

8f5650
04de3c

58627af4f995528f63id



[io_service Class](#)

[io_event Class](#)

io_event Class

io_service

```
namespace yasio { namespace inet { class io_event; } }
```

Name	Description
io_event::kind	
io_event::status	
io_event::passive	
io_event::packet	
io_event::timestamp	
io_event::transport	
io_event::transport_id	ID
io_event::transport_ud	

io_event::kind

```
int kind() const;
```


8F	56	50
D4	DE	3C

4F	4E	7C	57	FF	53	4E	66	4E	4E	50
8B	F6	7B	8B	0C	EF	E5	2F	E5	0B	3C

- `YEK_ON_PACKET` : 88 69 44 75
- `YEK_ON_OPEN` : 52 56 48 47 67 F9 6E 52 57 7A 4F 93 FC 4E 88 6F A3 26 54
- `YEK_ON_CLOSE` : 53 28 6B 6E 6C F9 6E A2 57 7A 4F 93 FC 4E 88 6F A3 25 53

io_event::status

83	53	4E	4E	72	60	30
B7	D6	8B	F6	B6	01	02

```
int status() const;
```

8F	56	50
D4	DE	3C

- 0: $\begin{bmatrix} 68 & 5E \\ 63 & 38 \end{bmatrix}$
- $\begin{bmatrix} 97 & 51 & 95 & 75 & 62 & 53 & 97 & 89 & 78 & 53 & 62 & 53 & 53 & 53 & 39 \\ 5E & FA & 19 & 28 & 37 & FA & 00 & 81 & 80 & 55 & 53 & 78 & 73 & EF & 62 \end{bmatrix}$

```
io_event::passive
```

68	67	66	54	66	88	52	4E	4E
C0	E5	2F	26	2F	AB	A8	8B	F6

```
int passive() const
```

8F	56	50
D4	DE	3C

- ```

• 0: 82885241466c33c2a957ef4199766f63636f817395464654218f41a8864686646f6639
• 1: open62close8752584f99c2471f6c4e55636076894017 YASIO_ENABLE_PASSIVE_EVENT 624f4a4f7389
4f4f4f6375158f6c68884f68a8265f739576482
143a0d817c158f6c644c4f68a84265f739576482

```

```
io_event::packet
```

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 83 | 53 | 4E | 4E | 64 | 5E | 76 | 6D | 60 | 53 |
| B7 | D6 | 8B | F6 | 3A | 26 | 84 | 88 | 6F | 05 |

```
std::vector<char>& packet()
```

8F5650  
D4DE3C

886963241578, 286727454F73 std::move GC636F4E4E4E639080696389

## io\_event::timestamp

8363464E4F79785F7978F8F43380

```
highp_time_t timestamp() const;
```

8F5650  
D4DE3C

547C7E65956551795F7978F8F43380  
8C1E8D6F6F44E87384AE8D2A7F6F43382

## io\_event::transport

8363464E4F784F8F4A8B53C482

```
transport_handle_t transport() const;
```

8F5650  
D4DE3C

8F565367FF5F6552655F4E4E65FF4F8F4F8B5367505065FF4E53754F575750688F38  
D4DEE5C46C533638AD808B8BF6F60C20931A0D25C4F231486C5FF285C38403C048382

## io\_event::transport\_id

8363464E4F784F8F4A8B53C482ID82

```
unsigned int transport_id() const;
```

8F5650  
D4DE3C

324F4B4B2867747883F48564785F4EID82  
4B4B2867747883F48564785F4EID82

## io\_event::transport\_ud

887E128363288F4A8B2857656280

```
template<typename _Uty>
_Uty io_event::transport_ud();
```

```
template<typename _Uty>
void io_event::transport_ud(_Uty uservalue);
```

6C61  
E80F

73676789E1F97874 userdata 7951E8, 6F59:

- 65506FA3FA7A62524E4E6558A0 userdata
- 62636FA325574E4E656574 userdata

8B5396  
F7C205

[io\\_service Class](#)

[io\\_channel Class](#)



# ostream Class

634f4f8b525f175252f0b9

- 3.35.0 basic\_ostream C++
- ostream int16~int64 float/double, ,
- fast\_ostream

8b6c  
ed05

```
namespace yasio {
using ostream = basic_ostream<endian::network_convert_tag>;
using fast_ostream = basic_ostream<endian::host_convert_tag>;
}
```



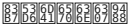


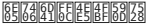
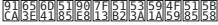
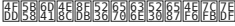
6254  
1058

515167905165  
6c718420fd70

| Name             | Description |
|------------------|-------------|
| ostream::ostream | ostream     |

5151656c  
6c718905



| Name                | Description              |
|---------------------|--------------------------|
| ostream::write      |                          |
| ostream::write_ix   | (7bit Encoded Int/Int64) |
| ostream::write_v    | (7bit Encoded Int)       |
| ostream::write_byte |                          |

| Name                                    | Description                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------|
| <a href="#">obstream::write_bytes</a>   |  |
| <a href="#">obstream::empty</a>         |  |
| <a href="#">obstream::data</a>          |  |
| <a href="#">obstream::length</a>        |  |
| <a href="#">obstream::buffer</a>        |  |
| <a href="#">obstream::clear</a>         |  |
| <a href="#">obstream::shrink_to_fit</a> |  |
| <a href="#">obstream::save</a>          |  |



: obstream.hpp

## obstream::obstream

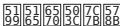
 obstream 

```
obstream(size_t capacity = 128);

obstream(const obstream& rhs);

obstream(obstream&& rhs);
```

## obstream::write



```
template<typename _Nty>
void obstream::write(_Nty value);
```

5365  
C270

*value*

8951517959  
8159636430

6C61  
E88F

\_Nty 5849795757456948671~8598263637957626979795739

## ostream::write\_ix

5632/644F6968594E7Bit Encoded Int656F887F6451516989

```
template<typename _Intty>
void ostream::write_ix(_Intty value);
```

5365  
C270

*value*

895151795989  
815963643082

6C61  
E88F

\_Intty 795753896959487957

- int32\_t
- int64\_t

64F0788879767869696F7C68AE8Fdotnet594E6165

- [BinaryWriter.Write7BitEncodedInt](#)
- [BinaryWriter.Write7BitEncodedInt64](#)

## ostream::write\_v

51514E8F5268626C6C63529F5E5788(7Bit Encoded Int).

```
void write_v(cxx17::string_view sv);
```

5365  
C270

sv

89515176596238  
81996364786282

6C61  
E88F

69F17851497Bit Encoded7678636F51515162627F26, 608972 write\_bytes 515159826362.

## ostream::write\_byte

515114A598238  
69632A578282

```
void write_byte(uint8_t value);
```

5365  
C270

value

895151765938  
819963643C82

6C61  
E88F

69F17851F8784F4E ostream::write

## ostream::write\_bytes

51515982637C38  
69635982787C82

```
void write_bytes(cxx17::string_view sv);

void write_bytes(const void* data, int length);

void write_bytes(std::streamoff offset, const void* data, int length);
```

5365  
C270

sv

5151string\_view5388685982637C.

data

8951515982637C7474985757.  
8199635982787C7474985757.



*length*

8951515982657E7E79955E.  
8169655782787C647F8A.

*offset*

8951515982657E7E79685979.  
8169655782787C647E674FF8.

6C61  
E88F

offset + length 78505F985C4E  
845C5F786F6E obstream::length

obstream::empty

5268496F524E7A82  
24AD496F263A7A82

```
bool empty() const;
```

8F5650  
04DE3C

true 7A; false 927A82

6C61  
E88F

695168784F4E length == 082  
697878494F6E

obstream::data

83536563639439  
87D8786E878882

```
const char* data() const;
```

```
char* data();
```

8F5650  
04DE3C

598260656388575739  
598260656388575739

obstream::length

8353609F5E82  
87D8497FA682

```
size_t length() const;
```

8F5650  
04DE3C

8F56604F532476685982F539  
64664126632864685782F539

## ostream::buffer

8F56604F532476685982F539  
64664126632864685782F539

```
const std::vector<char>& buffer() const;

std::vector<char>& buffer();
```

8F5650  
04DE3C

69642875632456236F22457F78 std::move 629069

794F  
3A8B

```
// ostream_buffer.cpp
// compile with: /EHsc
#include "yasio/ostream.hpp"

int main()
{
 using namespace yasio;
 using namespace cxx17;

 ostream obs;
 obs.write_v("hello world!");

 const auto& const_buffer = obs.buffer();

 // after this line, the obs will be empty
 auto move_buffer = std::move(obs.buffer());

 return 0;
}
```

## ostream::clear

6F7460FF4F4F587539  
6566416C4F4F587539

```
void clear();
```

6C61  
E80F

6BFD78651A2165buffer5158FF594E8A653759755F1753582758677583

obstream::shrink\_to\_fit

2A524065E815623A1A55655882

```
void shrink_to_fit();
```

obstream::save

6C604F764F8F52598278624F5852654F82

```
void save(const char* filename) const;
```

794F  
3A8B

```
// obstream_save.cpp
// compile with: /EHsc
#include "yasio/obstream.hpp"
#include "yasio/ibstream.hpp"

int main()
{
 using namespace yasio;
 using namespace cxx17;

 obstream obs;
 obs.write_v("hello world!");
 obs.save("obstream_save.bin");

 ibstream ibs;
 if(ibs.load("obstream_save.bin")) {
 // output should be: hello world!
 try {
 std::count << ibs.read_v() << "\n";
 }
 catch(const std::exception& ex) {
 std::count << "read_v fail: " <<
 << ex.message() << "\n";
 }
 }

 return 0;
}
```



[ibstream\\_view Class](#)

[ibstream Class](#)



# ibstream\_view Class

634f4f8b52725f57525f8032

6567

27c38f5716c77a4ef5524f63624b89f34792fa std::out\_of\_range 6568

886c  
ed05

```
namespace yasio {
 // 206f5752877a6c4f81528f6259825f6c8925a8516c4685
 using ibstream_view = basic_ibstream_view<endian::network_convert_tag>;

 // 206f5752877a6c4f81528f6259825f6c8925a8516c4685
 using fast_ibstream_view = basic_ibstream_view<endian::host_convert_tag>;
}
```

6254  
1058

62716728

| Name                         | Description                |
|------------------------------|----------------------------|
| ibstream_view::ibstream_view | 672812a ibstream_view 6961 |

5151656c  
6c718905

| Name                   | Description                                        |
|------------------------|----------------------------------------------------|
| ibstream_view::reset   | 917f5f235ff2139362<br>2b685c68f17169362            |
| ibstream_view::read    | 7d7821776c88637838                                 |
| ibstream_view::read_ix | 7d7821776c8863 (7bit Encoded Int/Int64) 7d7838     |
| ibstream_view::read_v  | 88625e9f2e57 (7bit Encoded Int/Int64) 294e86327832 |

| Name                                      | Description                                                    |
|-------------------------------------------|----------------------------------------------------------------|
| <a href="#">ibstream_view::read_byte</a>  | <code>1145982</code>                                           |
| <a href="#">ibstream_view::read_bytes</a> | <code>8853635892584881526563<br/>F8D6879A7FA68C8B367862</code> |
| <a href="#">ibstream_view::empty</a>      | <code>2824415824517A</code>                                    |
| <a href="#">ibstream_view::data</a>       | <code>83636178626788</code>                                    |
| <a href="#">ibstream_view::length</a>     | <code>83636178626788</code>                                    |
| <a href="#">ibstream_view::advance</a>    | <code>545278536168F8636669</code>                              |
| <a href="#">ibstream_view::seek</a>       | <code>78A84184F8626569</code>                                  |

`6C61  
E80F`

`ibstream_view 1924C++17892479 std::string_view, 8153775478585384235F71538F7A268D4FA7734E4E GC89`

`896C  
8142`

`54874E: ibstream.hpp`

## ibstream\_view::ibstream\_view

`6428662A ibstream_view 588C38`

```
ibstream_view();

ibstream_view(const void* data, size_t size);

ibstream_view(const ostream* obs);
```

`5365  
C278`

*data*

`85788F575348885678628850575788`

*size*

5F C0 5F 17 53 40 8F 52 63 62 59 6C 80

*obs*

F0 6F 17 53 70 61 80

istream\_view::reset

21 7F istream\_view 15 62 80 50 80

```
void istream_view::reset(const void* data, size_t size);
```

53 65  
C2 70

*data*

5F C0 5F 17 53 40 8F 52 63 62 80 67 57 80

*size*

5F 53 5F 52 53 40 8F 52 63 59 5C 80  
85 C0 8F 17 16 8C 80 36 70 6E 27 6F 82

istream\_view::read

4E 60 40 80 53 63 50 80  
CE 41 20 80 00 70 5C 80

```
template<typename _Nty>
_Nty istream_view::read();
```

8F 50 50  
04 0E 3C

8F 50 80 52 70 50  
04 0E 80 30 64 30

6C 61  
E8 0F

\_Nty 50 80 70 80 52 4E 60 40 61 1~8 50 82 63 63 70 52 62 60 70 70 57 80

istream\_view::read\_ix

80 53 7Bit Encoded Int 53 20 16 01 70 53 60 80

```
template<typename _Intty>
_Intty istream_view::read_ix();
```



8F5650  
04DE3C

32/644F63785089

6C61  
E80F

\_Intty 795F985F4E4E7C57

- int32\_t
- int64\_t

7C7D787C8B4E Microsoft dotnet 894E7D78

- [BinaryReader.Read7BitEncodedInt\(\)](#)
- [BinaryReader.Read7BitEncodedInt64\(\)](#)

ibstream\_view::read\_v

8B5353974E8F52636282

```
cxx17::string_view read_v();
```

8F5650  
04DE3C

8F568B5352794E8F526363786E786E6E6E6E GC82

6C61  
E80F

7C7D787A4B8B53 7bit Encoded Int827576797897A658FF8B8978 read\_bytes 8B534E8F525982786282

ibstream\_view::read\_byte

8B5312A578282

```
uint8_t read_byte();
```

8F5650  
04DE3C

uint8\_t5082

6C61  
E80F

675163784F4E ibstream\_view::read

ibstream\_view::read\_bytes

FB62676A9F5A598263626C63 GC82

```
cxx17::string_view read_bytes();
```

8F5650  
D4DE3C

4F6B52636274 cxx17::string\_view 7B67636F62

ibstream\_view::empty

52636069544E7A82  
24AD412F263A7A82

```
bool empty() const;
```

8F5650  
D4DE3C

true 7A; false 604E8159535414F598262

6C61  
E80F

696363784F4E length == 082

ibstream\_view::data

8F56606363639482  
646E41786E678882

```
const char* data() const;
```

8F5650  
D4DE3C

8F6E6754694E28462A598276678882

## istream\_view::length

8752609275E39

```
size_t length() const;
```

8F5659  
D4DE3C

5F52609275E39  
53404177A682

## istream\_view::advance

545279526D8B536F6839  
1140FBAB41FB66386782

```
void advance(ptrdiff_t offset);
```

5365  
C278

*offset*

89545279527659799139  
811140FBAB844FFBCE82

6C61  
E86F

82\*offset\*4F8D65FF525364E379528B536F6839  
261F70419CB1E3FBAB8B66386782

## istream\_view::seek

79528B536F6839  
FBABFB66386782

```
ptrdiff_t seek(ptrdiff_t offset, int whence);
```

5365  
C278

*offset*

84\*whence\*76517959799139  
8173844FFBCE82

*whence*

544E78644EC68F63674E59FF SEEK\_SET, SEEK\_CUR, SEEK\_END 82  
2849496C8E

|    |    |    |
|----|----|----|
| 8F | 56 | 50 |
| D4 | DE | 3C |

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 8F | 56 | 79 | 52 | 54 | 76 | 5B | 4E | 6D | 99 | 5B | 82 | 50 | 79 | 30 |
| D4 | DE | FB | A8 | 0E | F8 | F9 | 8E | 41 | 96 | 57 | 82 | 4F | FB | 02 |

## ibstream Class


|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 63 | 4F | 4E | 8F | 52 | 65 | 63 | 52 | 8F | 54 | 53 | 5E | 52 | 53 | 52 | 80 | 30 |
| D0 | 9B | 8C | DB | 36 | 70 | 6E | A0 | 7D | 8C | CD | 8F | 17 | 16 | 9F | FD | 02 |

|    |    |
|----|----|
| 8B | 6C |
| ED | D5 |

```
namespace yasio {
using ibstream = basic_ibstream<endian::network_convert_tag>;
// 00
using fast_ibstream = basic_ibstream<endian::host_convert_tag>;
}
```

|    |    |
|----|----|
| 62 | 54 |
| 10 | 58 |

|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 51 | 51 | 67 | 90 | 51 | 65 |
| 6C | 71 | 84 | 20 | FD | 70 |

| Name               | Description                                                                         |
|--------------------|-------------------------------------------------------------------------------------|
| ibstream::ibstream |  |

|    |    |    |    |
|----|----|----|----|
| 51 | 51 | 65 | 6C |
| 6C | 71 | B9 | D5 |

| Name           | Description                            |
|----------------|----------------------------------------|
| ibstream::load | 4E 65 4E 52 8F 6D<br>CE 87 F6 A6 7D 41 |

|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 7E | 62 | 5C | 6B | 7E | 67 |
| E7 | 7F | 42 | 21 | D3 | 84 |

## istream\_view

ibstream

ibstream::ibstream

```
67904E4E ibstream 5B8C30
8420002A F96102
```

```
istream(std::vector<char> blob);

istream(const ostream* obs);
```

`blob`

`obs`

`ostream`

`load`

`load(const char* filename) const;`

`load`

`load`

```
bool load(const char* filename) const;
```

`true`

`true`

`save`

`save`

`save`

`save`

`save`



# xxsocket Class

bsd socket API yasio

```
xxsocket accept_n xxx_n socket
```

```
namespace yasio { namespace inet { class xxsocket; } }
```

| Name               | Description |
|--------------------|-------------|
| xxsocket::xxsocket | xxsocket    |

| Name                  | Description |
|-----------------------|-------------|
| xxsocket::xpconnect   | TCP         |
| xxsocket::xpconnect_n | TCP         |
| xxsocket::pconnect    | TCP         |
| xxsocket::pconnect_n  | TCP         |
| xxsocket::pserve      | tcp         |
| xxsocket::swap        | socket      |
| xxsocket::open        | socket      |

| Name                                       | Description                                                                                                                                                                   |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">xxsocket::reopen</a>           |  socket                                                                                      |
| <a href="#">xxsocket::is_open</a>          |  socket     |
| <a href="#">xxsocket::native_handle</a>    |  socket     |
| <a href="#">xxsocket::release_handle</a>   |  socket     |
| <a href="#">xxsocket::set_nonblocking</a>  |  socket     |
| <a href="#">xxsocket::test_nonblocking</a> |  socket     |
| <a href="#">xxsocket::bind</a>             |             |
| <a href="#">xxsocket::bind_any</a>         |             |
| <a href="#">xxsocket::listen</a>           |  TCP    |
| <a href="#">xxsocket::accept</a>           |  TCP    |
| <a href="#">xxsocket::accept_n</a>         |  TCP    |
| <a href="#">xxsocket::connect</a>          |                                                                                            |
| <a href="#">xxsocket::connect_n</a>        |         |
| <a href="#">xxsocket::send</a>             |                                                                                            |
| <a href="#">xxsocket::send_n</a>           |         |
| <a href="#">xxsocket::recv</a>             |                                                                                            |
| <a href="#">xxsocket::recv_n</a>           |         |
| <a href="#">xxsocket::sendto</a>           |  DGRAM  |
| <a href="#">xxsocket::recvfrom</a>         |  DGRAM  |



| Name                                         | Description                                                                                       |
|----------------------------------------------|---------------------------------------------------------------------------------------------------|
| <a href="#">xxsocket::handle_write_ready</a> |  xxsocket        |
| <a href="#">xxsocket::handle_read_ready</a>  |  xxsocket        |
| <a href="#">xxsocket::local_endpoint</a>     |  xxsocket        |
| <a href="#">xxsocket::peer_endpoint</a>      |  xxsocket        |
| <a href="#">xxsocket::set_keepalive</a>      |  tcp keepalive   |
| <a href="#">xxsocket::reuse_address</a>      |  xxsocket        |
| <a href="#">xxsocket::exclusive_address</a>  |  xxsocket        |
| <a href="#">xxsocket::select</a>             |  xxsocket        |
| <a href="#">xxsocket::shutdown</a>           |  xxsocket      |
| <a href="#">xxsocket::close</a>              |  xxsocket      |
| <a href="#">xxsocket::tcp_rtt</a>            |  tcp rtt.      |
| <a href="#">xxsocket::get_last_errno</a>     |  xxsocket      |
| <a href="#">xxsocket::set_last_errno</a>     |  xxsocket      |
| <a href="#">xxsocket::strerror</a>           |  xxsocket      |
| <a href="#">xxsocket::gai_strerror</a>       |  getaddrinfo   |
| <a href="#">xxsocket::resolve</a>            |  xxsocket      |
| <a href="#">xxsocket::resolve_v4</a>         |  ipv4          |
| <a href="#">xxsocket::resolve_v6</a>         |  ipv6          |
| <a href="#">xxsocket::resolve_v4to6</a>      |  ipv4V4MAPPED |

| Name                             | Description      |
|----------------------------------|------------------|
| xxsocket::resolve_tov6           | ipv4V4MAPPEDipv6 |
| xxsocket::getipsv                | ip               |
| xxsocket::traverse_local_address |                  |

xxsocket::xxsocket

xxsocket

```
xxsocket::xxsocket();
xxsocket::xxsocket(socket_native_type handle);
xxsocket::xxsocket(xxsocket&& right);
xxsocket::xxsocket(int af, int type, int protocol);
```

handle

socketxxsocket

right

move

af

ip

protocol

TCP/UDP 0

xxsocket::xpconnect

TCP

```
int xxsocket::xpconnect(const char* hostname, u_short port, u_short local_port = 0);
```

hostname

IP 16 57 60 89

port

818f636752587a7af238

local\_port

7c5a9a4f7af23f76c6b8a58 0 887a8f67529139

6c61  
e80f

4f8152686b2c67626178ip538f68727c82

8f5658  
b4be3c

0: 7252ff < 0 5129ff9a8f xxsocket::get\_last\_errno 8753938f7939

xxsocket::xpconnect\_n

8f8c7a675258fa7aTCP8f6382

```
int xxsocket::xpconnect_n(const char* hostname, u_short port, const std::chrono::microseconds&
wtimeout, u_short local_port = 0);
```

5365  
c270

hostname

818f636752587a7af23f76c6b8a58 IP87a 16 5760 82

port

818f636752587a7af238

local\_port

7c5a9a4f7af23f76c6b8a58 0 887a8f67529139

wtimeout

fa7a8f638d63629532

8f5658  
b4be3c

0: 7252ff < 0 5129ff9a8f xxsocket::get\_last\_errno 8753938f7939

6c61  
e80f

4f8152686b2c67626178ip538f68727c82

## xxsocket::pconnect

54 8f 7a 67 57 58 ff 7a TCP 8f a3 39

```
int xxsocket::pconnect(const char* hostname, u_short port, u_short local_port = 0);
int xxsocket::pconnect(const endpoint& ep, u_short local_port = 0);
```

53 65  
c2 70

hostname

81 8f a3 60 57 58 46 67 5a ff ef 45 2f IP 57 57 57 57 57

ep

81 8f a3 60 57 58 7a 67 57 57 39

port

81 8f a3 60 57 58 7a 67 57 57 39

local\_port

67 57 98 4f 7a ff 53 ff 6f 68 a4 50 0 88 7a 8f 67 52 97 39

8f 56 50  
64 6e 3c

0: 63 52 ff < 0 51 29 6f 99 8f xxsocket::get\_last\_errno 87 53 93 ef 79 39

6c 61  
e8 0f

4f 4f c8 60 67 67 6f 67 67 67 67 ip 57 57 57 57

## xxsocket::pconnect\_n

54 8f 7a 67 57 58 ff 7a TCP 8f a3 39

```
int pconnect_n(const char* hostname, u_short port, const std::chrono::microseconds& wtimeout,
u_short local_port = 0);
int pconnect_n(const char* hostname, u_short port, u_short local_port = 0);
int pconnect_n(const endpoint& ep, const std::chrono::microseconds& wtimeout, u_short
local_port = 0);
int pconnect_n(const endpoint& ep, u_short local_port = 0);
```

53 65  
c2 70

hostname

81 8f a3 60 57 58 46 67 5a ff ef 45 2f IP 57 57 57 57 57

*ep*

818f6367525879575739

*port*

818f63675258797af339

*local\_port*

67599a4f7af3f76c6b8859 0 88798f67529139

*wtimeout*

fa7a8f6389f8f50539

8f5659  
b4de3c

0: 1052ff < 0 51296c1a87 xxsocket::get\_last\_errno 875393ef7939

xxsocket::pserve

5f546757TCP6752795439  
602f2c30 0da1d12c02

```
int pserve(const char* addr, u_short port);
int pserve(const endpoint& ep);
```

5365  
c270

*addr*

676a636a7f61 IP6a7 89

*ep*

6767575739  
2c5a504082

*port*

TCP79547af339

8f5659  
b4de3c

0: 1052ff < 0 51296c1a87 xxsocket::get\_last\_errno 875393ef7939

794f  
3a8b

```
// xxsocket-serve.cpp
#include <signal.h>
#include <vector>
#include "yasio/xxsocket.hpp"
```

```
using namespace yasio;
using namespace yasio::inet;

xxsocket g_server;
static bool g_stopped = false;
void process_exit(int sig)
{
 if (sig == SIGINT)
 {
 g_stopped = true;
 g_server.close();
 }
 printf("exit");
}
int main()
{
 signal(SIGINT, process_exit);

 if (g_server.pserve("0.0.0.0", 1219) != 0)
 return -1;
 const char reply_msg[] = "hi, I'm server\n";
 do
 {
 xxsocket cs = g_server.accept();
 if (cs.is_open())
 {
 cs.send(reply_msg, sizeof(reply_msg) - 1);
 std::this_thread::sleep_for(std::chrono::milliseconds(100));
 }
 } while (!g_stopped);

 return 0;
}
```

## xxsocket::swap

`xxsocket`

```
xxsocket& swap(xxsocket& who);
```

`who`

`xxsocket`

`xxsocket`

`xxsocket`

## xxsocket::open

xxsocket

```
bool open(int af = AF_INET, int type = SOCK_STREAM, int protocol = 0);
```

*af*

AF\_INET (ipv4) AF\_INET6 (ipv6)

*type*

SOCK\_STREAM (TCP), SOCK\_DGRAM (UDP)

*protocol*

TCP/UDP 0

true: false xxsocket::get\_last\_errno

## xxsocket::reopen

xxsocket

```
bool reopen(int af = AF_INET, int type = SOCK_STREAM, int protocol = 0);
```

*af*

AF\_INET (ipv4) AF\_INET6 (ipv6)

*type*

SOCK\_STREAM (TCP), SOCK\_DGRAM (UDP)

*protocol*

TCP/UDP 0

true: false xxsocket::get\_last\_errno

6C61  
E80F

8267socket50635F6F6851654F5151F56F6B2168636F82

## xxsocket::is\_open

52A8socket2F24F2536682

```
bool is_open() const;
```

8F5650  
D4DE3C

true: 2953666F false: 5A636682

## xxsocket::native\_handle

8368socket654F6F6F7882

```
socket_native_type native_handle() const;
```

8F5650  
D4DE3C

socket6748636F786F yasio::inet::invalid\_socket 887A2868socket82

## xxsocket::release\_handle

21636555socket6F6F78A7564382

```
socket_native_type release_handle() const;
```

8F5650  
D4DE3C

21635276socket6748636F78

## xxsocket::set\_nonblocking

8876socket74827885825A6F82

```
int set_nonblocking(bool nonblocking) const;
```



5365  
C270

*nonblocking*

true: 9798586A5F6F false: 9858215F62

8F5650  
04DE3C

0: 6262FF < 0 5929FFA987 xxsocket::get\_last\_errno 875393287932

## xxsocket::test\_nonblocking

6840socket6F644E9798586A5F62

```
int test_nonblocking() const;
```

8F5650  
04DE3C

1: 9798586A5F6F 0: 9858215F62

6C61  
E80F

6840winsock26C6A8FA374 SOCK\_STREAM 7057socket1A645E -1 32

## xxsocket::bind

7F5Asocket676767575739

```
int bind(const char* addr, unsigned short port) const;
int bind(const endpoint& ep) const;
```

5365  
C270

*addr*

676763587F53ip575739

*port*

817158737AFA39

*ep*

897158737AFA39

8F5650  
04DE3C

0: 1052FF < 0 5129FF9A8F xxsocket::get\_last\_errno 8753938F7838

## xxsocket::bind\_any

7F5Asocket276A4B61506082

```
int bind_any(bool ipv6) const;
```

5365  
C270

*ipv6*

6F547F5867674E61IPv65767  
2F26616A2C3A4B8F

8F5650  
04DE3C

0: 1052FF < 0 5129FF9A8F xxsocket::get\_last\_errno 8753938F7838

## xxsocket::listen

6F28785267EA TCP69577A63E746896589

```
int listen(int backlog = SOMAXCONN) const;
```

5365  
C270

*backlog*

6F5978546588  
8027612C7882

8F5650  
04DE3C

0: 1052FF < 0 5129FF9A8F xxsocket::get\_last\_errno 8753938F7838

## xxsocket::accept

6353464F58627A8F6388  
A307682A5237E88F6388

```
xxsocket accept() const;
```

8F5650  
04DE3C

5458627A984F78 xxsocket F88C39

## xxsocket::accept\_n

878858636F6A57664F58577A8E6389

```
int accept_n(socket_native_type& new_sock) const;
```

5365  
C278

*new\_sock*

83FAC2686C6458627A984F786554socketE3C455Z8

8F5650  
04DE3C

0: 6252FF < 0 5928FF98CF xxsocket::get\_last\_errno 8753938F7889

6C61  
E88F

82676857658F58 0 6Fnew\_sock 4FA8888F6F4A2798586A6F82

8978687A7848586CF8762A38373 xxsocket::set\_nonblocking 66socket887E4A2798586A6F82

## xxsocket::connect

FA7A8E6389

```
int connect(const char* addr, u_short port);
int connect(const endpoint& ep);
```

5365  
C278

*addr*

8F7A4867ip575789

*port*

8F7A48677A5389

*ep*

8F7A4867575789

8F5650  
04DE3C

0: f252ff < 0 5929ff1a2f xxsocket::get\_last\_errno 8753932ff7839

6061  
e88f

TCP: 5189TCP 4f69e362

UDP: f57a43375758

## xxsocket::connect\_n

f57a8fa339  
fa7a8fa339

```
int connect_n(const char* addr, u_short port, const std::chrono::microseconds& wtimeout);
int connect_n(const endpoint& ep, const std::chrono::microseconds& wtimeout);
int connect_n(const endpoint& ep);
```

5365  
c298

*addr*

8f7a4667575739  
8f7a4667575739

*port*

8f7a46677a5339  
8f7a46677a5339

*ep*

8f7a4667575739  
8f7a4667575739

*wtimeout*

f57a8fa37a89f6f5f539  
f57a8fa37a89f6f5f539

8F5650  
04DE3C

0: f252ff < 0 5929ff1a2f xxsocket::get\_last\_errno 8753932ff7839

6061  
e88f

TCP: 5189TCP 4f69e362

UDP: f57a43375758

## xxsocket::connect\_n

socket 4

```
int disconnect() const;
```

```
0: < 0 xxsocket::get_last_errno
```

SOCK\_DGRAM (UDP) socket

## xxsocket::send

```
int send(const void* buf, int len, int flags = 0);
```

*buf*

*len*

*flags*

```
==len: < len xxsocket::get_last_errno
```

## xxsocket::send\_n

```
int send_n(const void* buf, int len, const std::chrono::microseconds& wtimeout, int flags = 0);
```

5365  
C270

*buf*

89518863627680595982575739

*len*

895188636276955E39

*wtimeout*

618188F6F6F482

*flags*

618178625542678839

8F5650  
04DE3C

```
==len: 6252FF < len 598DFF9A8F xxsocket::get_last_errno 835395887839
```

xxsocket::recv

AE516863298F7A4E6751888F67769656239

```
int recv(void* buf, int len, int flags = 0) const;
```

5365  
C270

*buf*

A352786275B25A39

*len*

A352786275B25A725E39

*flags*

A35278625542678839

8F5650  
04DE3C

```
==len: 6252FF < len 598DFF9A8F xxsocket::get_last_errno 835395887839
```

6C61  
E88F

68F17869547A538F59FF53514Esocket678E695469 8288589A5E 39

## xxsocket::recv\_n

5480F2F2F2A156644E846862FA63687F56766289

```
int recv_n(void* buf, int len, const std::chrono::microseconds& wtimeout, int flags = 0)
const;
```

5365  
C278

*buf*

6368786E75625A82

*len*

6368786E75625A7F5682

*wtimeout*

636880F2F2F2F282

*flags*

636363635E5C688839  
A538786E9542678882

8F5659  
D4DE3C

```
==len: 6252FF < len 598D6C798F xxsocket::get_last_errno 835395887882
```

## xxsocket::sendto

54807A4E675388 DGRAM 68UDP696362

```
int sendto(const void* buf, int len, const endpoint& to, int flags = 0) const;
```

5365  
C278

*buf*

656188636375625A82

*len*

656188636375625A7F5682

*to*

61817868574682

*flags*

618178635542688882

8F5650  
04DE3C

==len: 6252FF < len 5989FF99FF xxsocket::get\_last\_errno 835395887839

xxsocket::recvfrom

4E815888248C7A4E675189276374986282

```
int recvfrom(void* buf, int len, endpoint& peer, int flags = 0) const;
```

5365  
C278

buf

6358786275515A89

len

6358786275515A955E82

peer

635878626468FF85FA237889

flags

635878625E5C688882

8F5650  
04DE3C

==len: 6252FF < len 5989FF99FF xxsocket::get\_last\_errno 835395887839

6C61  
E88F

68715859547A538458FF52514Esocket6788585468 828858255F 82

xxsocket::handle\_write\_ready

785Fsocket535182

```
int handle_write_ready(const std::chrono::microseconds& wtimeout) const;
```

5365  
C278

wtimeout

785F88F8F8F882



8F5650  
04DE3C

0: 80F3FF 1: F652FF < 0: 5189FF9A8F xxsocket::get\_last\_errno 876393887989

6C61  
E80F

9A585F516861897F6251696F76C95146FF69F67684A7A53846889

## xxsocket::handle\_read\_ready

7865socket278889

```
int handle_read_ready(const std::chrono::microseconds& wtimeout) const;
```

5365  
C270

*wtimeout*

7865806565F389

8F5650  
04DE3C

0: 80F3FF 1: F652FF < 0: 5189FF9A8F xxsocket::get\_last\_errno 876393887989

## xxsocket::local\_endpoint

876345374994F766757575789

```
endpoint local_endpoint() const;
```

8F5650  
04DE3C

8F58675757575789

6C61  
E80F

59676A6789788F xxsocket::connect 6289TCP8E633289E1626768626E9945846879575766 0.0.0.0

## xxsocket::peer\_endpoint

876345374994F7667A575789

```
endpoint peer_endpoint() const;
```

8F5658  
04DE3C

8F566257575739  
04DE2C30304082

6C61  
E88F

5962666969728F xxsocket::connect 1689 TCP8E63369E31626268626E99458F587957572F 0.0.0.0

## xxsocket::set\_keepalive

8B7FTCP5E52518B79C5F9C27682

```
int set_keepalive(int flag = 1, int idle = 7200, int interval = 75, int probes = 10);
```

5365  
C278

*flag*

1 : 55546555524F8B79C5F9FF 0 : 71E582

*idle*

5351725C6967464F6D60454E54FF54525E5C538B79C5F9A24B7967598D6868F46C534DFF79FF39

*interval*

5351626552C5F9B6E54F86FCB1595189C5F9A24B62F8F4F4846C534DFF68B26982

*probes*

5351626552C5F9B6E54F86FCB1595189C5F9A24B62F8F4F4846C534DFF68B26982

8F5658  
04DE3C

0 : 188F6C < 0 5129FF9A8F xxsocket::get\_last\_errno 8768938B7982

794F  
3A8B

```
// xxsocket-keepalive.cpp
#include "yasio/xxsocket.hpp"
using namespace yasio;
using namespace inet;

int main(){
 xxsocket client;
 if(0 == client.pconnect("192.168.1.19", 80)) {
```

```
 client.set_keepalive(1, 5, 10, 2);
 }
 return 0;
}
```

## xxsocket::reuse\_address

xxsocket::reuse\_address

```
void reuse_address(bool reuse);
```

xxsocket::reuse\_address

reuse

xxsocket::reuse\_address

xxsocket::reuse\_address

xxsocket::reuse\_address

## xxsocket::exclusive\_address

xxsocket::exclusive\_address

```
void exclusive_address(bool exclusive);
```

xxsocket::exclusive\_address

exclusive

xxsocket::exclusive\_address

xxsocket::exclusive\_address

xxsocket::exclusive\_address

## xxsocket::set\_optval

xxsocket::set\_optval

```
template <typename _Ty> int set_optval(int level, int optname, const _Ty& optval);
```

5365  
C270

*level*

socket89997F755239

*optname*

89997C6739

*optval*

89995039

8F5650  
04DE3C

0: 1252FF < 0 5129FF1A2F xxsocket::get\_last\_errno 8753958F7039

6C61  
E80F

64F07354bsd socket setsockopt 528878546FE32F7F736A6750886CF4696F7F7369

xxsocket::get\_optval

887Esocket899939

```
template <typename _Ty> _Ty get_optval(int level, int optname) const
```

5365  
C270

*level*

socket89997F755239

*optname*

89997C6739

8F5650  
04DE3C

846E89995039

6C61  
E80F

64F07354bsd socket getsockopt 528878546FE32F7F736A6750886CF4696F7F7369

## xxsocket::select

7952socket846848484839

```
int select(fd_set* readfds, fd_set* writefds, fd_set* exceptfds, const
std::chrono::microseconds& wtimeout)
```

5365  
C270

*readfds*

F2F84848F2F878657439

*writefds*

F2514848F2F878657439

*exceptfds*

55584848F2F878657439

*wtimeout*

7851484889F8484839

8F5650  
D4DE3C

0:80F2FF > 0:6252FF < 0:5989FF998F xxsocket::get\_last\_errno 875893887839

## xxsocket::shutdown

73E8TCP4885909939

```
int shutdown(int how = SD_BOTH) const;
```

5365  
C270

*how*

73E890997988FFEF204E48674E50

- SD\_SEND : 51899099
- SD\_RECEIVE : 63639099
- SD\_BOTH : 88E873E8

8F5650  
04DE3C

0: 1852FF < 0: 5129FF992F xxsocket::get\_last\_errno 8762932F7932

## xxsocket::close

732Fsocket6F2A62767F446662

```
void close(int shut_how = SD_BOTH);
```

5365  
C270

*shut\_how*

732F1A937B576F6F2F454B4545674E52

- SD\_SEND : 53891A99
- SD\_RECEIVE : 63539999
- SD\_BOTH : 7128285325
- SD\_NONE : 58287325

8F5650  
04DE3C

0: 1852FF < 0: 5129FF992F xxsocket::get\_last\_errno 8762932F7932

6C61  
E80F

5267 shut\_how != SD\_NONE 6C62F07B1A488328 shutdown 6C808C786522 close 62

## xxsocket::tcp\_rtt

8752TCP8F6379RTT89

```
uint32_t tcp_rtt() const;
```

8F5650  
04DE3C

8458TCP79RTT65F36C634F: 5E79 89

## xxsocket::get\_last\_errno

xxsocket::get\_last\_errno

```
static int get_last_errno();
```

xxsocket::get\_last\_errno

```
0: errno > 0 ? xxsocket::strerror(errno) : 0;
```

xxsocket::get\_last\_errno

xxsocket::get\_last\_errno

## xxsocket::set\_last\_errno

xxsocket::set\_last\_errno

```
static void set_last_errno(int error);
```

xxsocket::set\_last\_errno

error

xxsocket::set\_last\_errno

xxsocket::set\_last\_errno

xxsocket::set\_last\_errno

## xxsocket::not\_send\_error

xxsocket::not\_send\_error

```
static bool not_send_error(int error);
```

xxsocket::not\_send\_error

error

xxsocket::not\_send\_error

8F5650  
04DE3C

true : socket69586C false : socket7260F27E6179938BFC655373E6socket7E6290AF62

6C61  
E80F

4E536389644F8F6E50 < 0 F6FC837869F07832

xxsocket::not\_recv\_error

7260F27E6179938BFC655373E6socket7E6290AF62

```
static bool not_recv_error(int error);
```

5365  
C270

error

79EF7832

8F5650  
04DE3C

true : socket69586C false : socket7260F27E6179938BFC655373E6socket7E6290AF62

6C61  
E80F

4E536363644F8F6E50 < 0 F6FC837869F07832

xxsocket::strerror

5C958B788F634E597B4E30  
8619EE616C623A57263262

```
static const char* strerror(int error);
```

5365  
C270

error

79EF7832

8F5650  
04DE3C

79EF7F697059784E30  
8619EE616C623A57263262



## xxsocket::gai\_strerror

`getaddrinfo`

```
static const char* gai_strerror(int error);
```

`error`

*error*

`error`

`error`

`error`

## xxsocket::resolve

`resolve`

```
int resolve(std::vector<endpoint>& endpoints, const char* hostname, unsigned short port = 0,
 int socktype = SOCK_STREAM);
```

`endpoints`

*endpoints*

`endpoints`

*hostname*

`hostname`

*port*

`port`

*socktype*

`socktype`

`socktype`

`0: 0 > 0 0 xxsocket::strerror 0`

## xxsocket::resolve\_v4

IPv4

```
int resolve_v4(std::vector<endpoint>& endpoints, const char* hostname, unsigned short port = 0, int socktype = SOCK_STREAM);
```

*endpoints*

*hostname*

*port*

*socktype*

*socket*

0: > 0 1A 8F xxsocket::strerror

## xxsocket::resolve\_v6

IPv6

```
int resolve_v6(std::vector<endpoint>& endpoints, const char* hostname, unsigned short port = 0, int socktype = SOCK_STREAM);
```

*endpoints*

*hostname*

*port*

*socktype*

socket7957397b8b62

8f5650d4de3c

0: 636366ff > 0 9a2f xxsocket::strerror 8f634a8876f5884f6939

## xxsocket::resolve\_v4to6

4f89675754535476c5e3606f67652b24IPv457575f8f634aIPv6 V4MAPPED685f393c6f62

```
int resolve_v4to6(std::vector<endpoint>& endpoints, const char* hostname, unsigned short port = 0, int socktype = SOCK_STREAM);
```

5365c270

*endpoints*

8f5153653983faC27062

*hostname*

5754396f6062

*port*

7af339ef

*socktype*

socket7957397b8b62

8f5650d4de3c

0: 636366ff > 0 9a2f xxsocket::strerror 8f634a8876f5884f6939

## xxsocket::resolve\_tov6

89676760632b64606757576f89676760632b64606757576fIPv457574f8f634aIPv6 V4MAPPED685f393c6f62

```
int resolve_tov6(std::vector<endpoint>& endpoints, const char* hostname, unsigned short port = 0, int socktype = SOCK_STREAM);
```

5365  
2270

*endpoints*

8f21536339  
93fa2263b2

*hostname*

6f5439  
0f00b2

*port*

7af339  
ef53b2

*socktype*

socket795739  
79b0b2

8f5650  
04de3c

0: 659389ff > 0 1a27 xxsocket::strerror 6c624a887e9589ef6932

## xxsocket::getipsv

87526767536379IP538868695f4f39  
87526767536379IP538868695f4f39

```
static int getipsv();
```

8f5650  
04de3c

- ipsv\_ipv4: 6767626263IPv4538839
- ipsv\_ipv6: 6c624a887e9589ef6932IPv6538839
- ipsv\_dual\_stack: 6767626263IPv454IPv66c624a887e9589ef6932

6c61  
e80f

558450506263c3685388696f78625455587e4f514f78IPv4894f6f

8b82 7a8862626262 2062626262 wifi 8d 8276517e 626c654a4e5889e3wifi6f

80wifi8a5b5aIPv46c624a887e9589ef6932: <https://github.com/halx99/yasio/issues/130>

794f  
3a8b

```
// xxsocket-ipsv.cpp
#include <vector>
#include "yasio/xxsocket.hpp"
using namespace yasio;
using namespace yasio::inet;
```

```
int main(){
 const char* host = "github.com";
 std::vector<ip::endpoint> eps;
 int flags = xxsocket::get_ipsv();
 if(flags & ipsv_ipv4) {
 xxsocket::resolve_v4(eps, host, 80);
 }
 else if(flags & ipsv_ipv6) {
 xxsocket::resolve_tov6(eps, host, 80);
 }
 else {
 std::cerr << "Local network not available!\n";
 }
 return 0;
}
```

## xxsocket::traverse\_local\_address

674E6767575769  
9A3E676A564069

```
static void traverse_local_address(std::function<bool(const ip::endpoint&)> handler);
```

5365  
C270

### handler

674E5757568C39  
9A3E30400E0362

794F  
3A8B

```
// xxsocket-traverse.cpp
#include <vector>
#include "yasio/xxsocket.hpp"
using namespace yasio;
using namespace yasio::inet;
int main(){
 int flags = 0;
 xxsocket::traverse_local_address([&](const ip::endpoint& ep) -> bool {
 switch (ep.af())
 {
 case AF_INET:
 flags |= ipsv_ipv4;
 break;
 case AF_INET6:
 flags |= ipsv_ipv6;
 break;
 }
 return (flags == ipsv_dual_stack);
 });
 YASIO_LOG("Supported ip stack flags=%d", flags);
}
```

```
 return flags;
}
```

|    |    |    |
|----|----|----|
| 8B | 53 | 96 |
| F7 | C2 | 05 |

[io\\_service Class](#)



## io\_service options

io\_service

| Name                         | Description                                                                                                                                                                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>YOPT_S_DEFER_EVENT_CB</i> | Set defer event callback<br>params: callback:defer_event_cb_t<br>remarks:<br>a. User can do custom packet resolve at network thread, such as decompress and crc check.<br>b. Return true, io_service will continue enqueue to event queue.<br>c. Return false, io_service will drop the event. |
| <i>YOPT_S_DEFERRED_EVENT</i> | Set whether deferred dispatch event, default is: 1<br>params: deferred_event:int(1)                                                                                                                                                                                                            |
| <i>YOPT_S_RESOLV_FN</i>      | Set custom resolve function, native C++ ONLY<br>params: func:resolv_fn_t*                                                                                                                                                                                                                      |
| <i>YOPT_S_PRINT_FN</i>       | Set custom print function native C++ ONLY<br>parmas: func:print_fn_t<br>remarks: you must ensure thread safe of it                                                                                                                                                                             |
| <i>YOPT_S_PRINT_FN2</i>      | Set custom print function with log level<br>parmas: func:print_fn2_t<br>you must ensure thread safe of it                                                                                                                                                                                      |
| <i>YOPT_S_EVENT_CB</i>       | Set event callback<br>params: func:event_cb_t*                                                                                                                                                                                                                                                 |
| <i>YOPT_S_TCP_KEEPALIVE</i>  | Set tcp keepalive in seconds, probes is tries.<br>params: idle:int(7200), interal:int(75), probes:int(10)                                                                                                                                                                                      |
| <i>YOPT_S_NO_NEW_THREAD</i>  | Don't start a new thread to run event loop.<br>params: value:int(0)                                                                                                                                                                                                                            |
| <i>YOPT_S_SSL_CACERT</i>     | Sets ssl verification cert, if empty, don't verify.<br>params: path:const char*                                                                                                                                                                                                                |



| Name                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>YOPT_S_CONNECT_TIMEOUT</code>     | Set connect timeout in seconds.<br>params: connect_timeout:int(10)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <code>YOPT_S_DNS_CACHE_TIMEOUT</code>   | Set dns cache timeout in seconds.<br>params: dns_cache_timeout : int(600),                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <code>YOPT_S_DNS_QUERIES_TIMEOUT</code> | Set dns queries timeout in seconds, default is: 5000.<br>params: dns_queries_timeout : int(5000)<br>remark:<br>a. this option must be set before 'io_service::start'<br>b. only works when have c-ares<br>c. since v3.33.0 it's milliseconds, previous is seconds.<br>d. the timeout algorithm of c-ares is complicated, usually, by default, dns queries will failed with timeout after more than 75 seconds.<br>e. for more detail, please see:<br><a href="https://c-ares.haxx.se/ares_init_options.html">https://c-ares.haxx.se/ares_init_options.html</a> |
| <code>YOPT_S_DNS_QUERIES_TRIES</code>   | Set dns queries tries when timeout reached, default is: 5.<br>params: dns_queries_tries : int(5)<br>remarks:<br>a. this option must be set before 'io_service::start'<br>b. relative option: <code>YOPT_S_DNS_QUERIES_TIMEOUT</code>                                                                                                                                                                                                                                                                                                                           |
| <code>YOPT_S_DNS_DIRTY</code>           | Set dns server dirty.<br>params: reserved : int(1)<br>remarks:<br>a. this option only works with c-ares enabled<br>b. you should set this option after your mobile network changed                                                                                                                                                                                                                                                                                                                                                                             |
| <code>YOPT_C_LFBFD_FN</code>            | Sets channel length field based frame decode function.<br>params: index:int, func:decode_len_fn_t*<br>remark: native C++ ONLY                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <code>YOPT_C_LFBFD_PARAMS</code>        | Sets channel length field based frame decode params.<br>params:<br>index:int,<br>max_frame_length:int(10MBytes),<br>length_field_offset:int(-1),<br>length_field_length:int(4),<br>length_adjustment:int(0),                                                                                                                                                                                                                                                                                                                                                   |

| Name                          | Description                                                                                                                               |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <i>YOPT_C_LFBFD_IBTS</i>      | Sets channel length field based frame decode initial bytes to strip.<br>params: index:int, initial_bytes_to_strip:int(0)                  |
| <i>YOPT_C_REMOTE_HOST</i>     | Sets channel remote host.<br>params: index:int, ip:const char*                                                                            |
| <i>YOPT_C_REMOTE_PORT</i>     | Sets channel remote port.<br>params: index:int, port:int                                                                                  |
| <i>YOPT_C_REMOTE_ENDPOINT</i> | Sets channel remote endpoint.<br>params: index:int, ip:const char*, port:int                                                              |
| <i>YOPT_C_LOCAL_HOST</i>      | Sets local host for client channel only.<br>params: index:int, ip:const char*                                                             |
| <i>YOPT_C_LOCAL_PORT</i>      | Sets local port for client channel only.<br>params: index:int, port:int                                                                   |
| <i>YOPT_C_LOCAL_ENDPOINT</i>  | Sets local endpoint for client channel only.<br>params: index:int, ip:const char*, port:int                                               |
| <i>YOPT_C_MOD_FLAGS</i>       | Mods channel flags.<br>params: index:int, flagsToAdd:int, flagsToRemove:int                                                               |
| <i>YOPT_C_ENABLE_MCAST</i>    | Enable channel multicast mode.<br>params: index:int, multi_addr:const char*, loopback:int                                                 |
| <i>YOPT_C_DISABLE_MCAST</i>   | Disable channel multicast mode.<br>params: index:int                                                                                      |
| <i>YOPT_C_KCP_CONV</i>        | The kcp conv id, must equal in two endpoint from the same connection.<br>params: index:int, conv:int                                      |
| <i>YOPT_T_CONNECT</i>         | Change 4-tuple association for io_transport_udp.<br>params: transport:transport_handle_t<br>remark: only works for udp client transport   |
| <i>YOPT_T_DISCONNECT</i>      | Dissolve 4-tuple association for io_transport_udp.<br>params: transport:transport_handle_t<br>remark: only works for udp client transport |

| Name                        | Description                                                                           |
|-----------------------------|---------------------------------------------------------------------------------------|
| <code>YOPT_B_SOCKOPT</code> | Sets io_base sockopt.<br>params: io_base*,level:int,optname:int,optval:int,optlen:int |

8B5396  
F7C205

[io\\_service Class](#)



API

54547A95  
7D0D7AF4

```
namespace yasio {}
```

5151656C  
6C71B9D5

| Name                   | Description            |
|------------------------|------------------------|
| yasio::host_to_network | 4B6A59825F8C717E59825F |
| yasio::network_to_host | 717E59825F8C717E59825F |
| yasio::xhighp_clock    | 876A6362A7F6F433       |
| yasio::highp_clock     | 876A6362A7F6F433       |
| yasio::clock           | 876A6362A7F6F433       |
| yasio::set_thread_name | 8B7E8C23887F7A5A       |
| yasio::basic_strerror  | 686F72592B45           |

yasio::host\_to\_network

4B6A59825F8C717E59825F82

59654E  
3487F6

yasio/detail/endian\_portable.hpp

```
template <typename _Ty>
inline _Ty host_to_network(_Ty value);
inline int host_to_network(int value, int size);
```

5365  
c270

value

818f637d7950ffvalue7657\_Ty 2345294f011~859827d507c5739

size

818f637d7950ff3c694857827d6cfafd2f1~4598239

8f5650  
64be3c

7f7e59825f695039

794f  
3a8b

```
#include <stdio.h>
#include <inttypes.h>
#include "yasio/detail/endian_portable.hpp"
int main(){
 uint16_t v1 = 0x1122;
 uint32_t v2 = 0x11223344;
 uint64_t v3 = 0x1122334455667788;
 // output will be: net.v1=2211, net.v2=44332211, net.v3=8877665544332211
 printf("net.v1=%04" PRIx16 " ", net.v2=%08" PRIx32 " ", net.v3=%016" PRIx64 "\n",
 yasio::host_to_network(v1),
 yasio::host_to_network(v2),
 yasio::host_to_network(v3));
 return 0;
}
```

yasio::network\_to\_host

7f7e59825f695039

59654f  
3487f6

yasio/detail/endian\_portable.hpp

```
template <typename _Ty>
inline _Ty network_to_host(_Ty value);
inline int network_to_host(int value, int size);
```

5365  
c270

value

818f637d7950ffvalue7657\_Ty 2345294f011~859827d507c5739

size

818f637665506765598265ff5380691~4598239

8f5658  
646e3c

4f5758825f785839

794f  
3a8b

```
#include <stdio.h>
#include <inttypes.h>
#include "yasio/detail/endian_portable.hpp"
int main(){
 uint16_t v1 = 0x2211;
 uint32_t v2 = 0x44332211;
 uint64_t v3 = 0x8877665533442211;
 // output will be: net.v1=1122, net.v2=11223344, net.v3=1122334455667788
 printf("host.v1=%04" PRIx16 " ", host.v2=%08" PRIx32 " ", host.v3=%016" PRIx64 " \n",
 yasio::network_to_host(v1),
 yasio::network_to_host(v2),
 yasio::network_to_host(v3));
 return 0;
}
```

yasio::xhighp\_clock

876863627978936382

59654e  
3487f6

yasio/detail/utils.hpp

```
template <typename _Ty = steady_clock_t>
inline highp_time_t xhighp_clock();
```

6a675365  
2177c278

\_Ty

- yasio::steady\_clock\_t: 8f685527767ff2f2f27179f2f283
- yasio::system\_clock\_t: 8f68787fUTCf8f263

8F5650  
040E3C

7E797F63F36389

## yasio::highp\_clock

8762AE7379F2F36389

59654E  
3487F6

yasio/detail/utils.hpp

```
template <typename _Ty = steady_clock_t>
inline highp_time_t highp_clock();
```

6A675365  
217FC270

\_Ty

- yasio::steady\_clock\_t: 8F5650527C7E63F3638979F2F363
- yasio::system\_clock\_t: 846E7B7EUTC F2F363

8F5650  
040E3C

7E797F63F36389

## yasio::clock

835368797E65956389  
8762E802A7F8F43382

59654E  
3487F6

yasio/detail/utils.hpp

```
template <typename _Ty = steady_clock_t>
inline highp_time_t clock();
```

6A675365

\_Ty

- yasio::steady\_clock\_t: 846E53527C7E63F3638979F2F363



- `yasio::system_clock_t`: 8A5B7C7EUTC F2F453

8F5659  
04DE3C

EB797E65256238  
62A7F6F43382

## yasio::set\_thread\_name

8B7B8573897E7A6439  
66628373896B6082

59654E  
3487F6

`yasio/detail/thread_name.hpp`

```
inline void set_thread_name(const char* name);
```

5365  
C278

*name*

87898B7E7E7A5479  
86818E6E6F6B6DFA

6C61  
E80F

5165754E8B65597E7A7A5E875E677538  
64FD78217F8ECAAD1A6F6B6B8F5E38692862

## yasio::basic\_strfmt

51656A67FF685F535B7B4E6288585B7B4E38  
FD78217F8E8C8F16572B3216858D5B7B3282

59654E  
3487F6

`yasio/detail/strfmt.hpp`

```
template <class _Elem, class _Traits = std::char_traits<_Elem>,
 class _Alloc = std::allocator<_Elem>>
inline std::basic_string<_Elem, _Traits, _Alloc> basic_strfmt(size_t n, const _Elem*
format, ...);
```

5365  
2270

*n*

5758buffer5959  
1058

*format*

686F597843FF54695155 printf 7854

8F5650  
04DE3C

8F68685F535278 std::string 7C5759784E39  
040E3C6F106E84

6C61  
E80F

6B994F73FCE778634F75597E584859785254  
0E997F736CE778634F75597E584859785254

- yasio::strfmt: 686F52597855
- yasio::wcsfmt: 686F5358597845

794F  
3A8B

```
#include "yasio/detail/strfmt.hpp"
int main() {
 std::string str1 = yasio::strfmt(64, "My age is %d", 19);
 std::wstring str2 = yasio::wcsfmt(64, L"My age is %d", 19);
 return 0;
}
```



| Name                               | Description                                                            |
|------------------------------------|------------------------------------------------------------------------|
| YASIO_HAVE_KCP                     | kcpkcp                                                                 |
| YASIO_HEADER_ONLY                  | yasio                                                                  |
| YASIO_SSL_BACKEND                  | SSLSSL OpenSSL/MbedTLS 3.36.0 (YASIO_HAVE_SSL) 1 (OpenSSL) 2 (mbedtls) |
| YASIO_ENABLE_UDS                   | unix domain socket unix win10 RS5+                                     |
| YASIO_HAVE_CARES                   | c-aresc-ares yasioDNS 10 c-ares                                        |
| YASIO_VERBOSE_LOG                  |                                                                        |
| YASIO_NT_COMPAT_GAI                | Windows XP getaddrinfo API                                             |
| YASIO_USE_SPSC_QUEUE               | SPSC io_service::write                                                 |
| YASIO_USE_SHARED_PACKET            | std::shared_ptr                                                        |
| YASIO_HAVE_HALF_FLOAT              | half.hpp                                                               |
| YASIO_DISABLE_OBJECT_POOL          |                                                                        |
| YASIO_DISABLE_CONCURRENT_SINGLETON |                                                                        |
| YASIO_ENABLE_PASSIVE_EVENT         | open/close                                                             |



yasio 7C535974  
98050406

yasio 76706853597446468458TCP 6F694EUDP 6C826763897A697E63618067526F4E6F45786476656F597439734F6582674E79695F:

- 1A2Fio\_service0909 YOPT\_C\_LFBFD\_PARAMS 8B7F4F99536539
- 1A2Fio\_service0909 YOPT\_C\_LFBFD\_FN 8B7F815845639F5E8361F078 decode\_len\_fn\_t 09

6C61E80F

8158456870637F46705878F86C554E598269468863int58F86C455846897F78678845A806C6247363F8F8863ARM87775982F98F8288 SIGBUS 6258E2A8882F45C289837FE961637F467078828 io\_channel::\_\_builtin\_decode\_len 09

YOPT\_C\_LFBFD\_PARAMS

8B7F4F99C262C36289

5365C278

max\_frame\_length

6759539F5E6F888756893A5E586389

length\_field\_offset

637F46696978F84E68686368628859824F7889

length\_field\_length

637F466969596F6C62631~489829298( uint8\_t,uint16\_t,uint24\_t,int32\_t )89

length\_adjustment

637F466C63745C8899585978426C8F5243A8F04FA88A18868595468684F6C5592F5E58685C8328886853F86C6F5269584E 0 6C526124A 8869597F5E 89

6C61E80F

886F639F5E58688F984F7872810C57825E7F7838886777517F897853955E5873:

```
int io_channel::__builtin_decode_len(void* d, int n)
{
 int loffset = uparams_.length_field_offset;
 int lsize = uparams_.length_field_length;
 if (loffset >= 0)
 {
 int len = 0;
 if (n >= (loffset + lsize))
```

```
{
 ::memcpy(&len, (uint8_t*)d + loffset, lsize);
 len = yasio::network_to_host(len, lsize);
 len += uparams_.length_adjustment;
 if (len > uparams_.max_frame_length)
 len = -1;
}
return len;
}
return n;
}
```

## decode\_len\_fn\_t

41 93 93 73 68 68 53 9f 56 fd 78 6f 57 88 89

```
typedef std::function<int(void* d, int n)> decode_len_fn_t;
```

53 65  
c2 70

*d*

65 93 53 63 62 88 58 82 57 57 89

*n*

6f 93 53 63 62 9f a6 89

8f 56 50  
84 b6 3c

84 68 88 68 53 78 62 6e 99 9f a6 89

- > 0 : 93 78 63 9f 56 fd 57 89
- == 0 : a3 62 78 62 46 89 4f 93 78 88 68 53 68 99 9f 56 6f yasio 55 42 4a 7f 7e a3 63 63 62 6f 48 63 63 52 63 63 62 6f 4f 6b 21 83 73 62 51 78 89
- < 0 : 93 78 63 9f 56 62 56 6c 4f 29 61 55 52 48 85 4f 88 63 66 89

6c 61  
e8 0f

93 78 88 68 53 9f a6 fd 78 5f 98 29 7e 7a 58 51 76 6f 4f 59 f9 4e Lua 19 46 2f 61 88 7e 2a 5a 49 93 78 88 68 53 9f a6 fd 78 89

## yasio Interop

Unity C# yasio C: [https://github.com/yasio/yasio/blob/master/yasio/bindings/yasio\\_ni.cpp](https://github.com/yasio/yasio/blob/master/yasio/bindings/yasio_ni.cpp)

## OpenNSM2

Unity yasio-3.37.1 NetworkServiceManager unity: <https://github.com/yasio/OpenNSM2>





|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 91 | 70 | 95 | 98 | 89 | 78 |
| CD | B9 | EE | 98 | E3 | 54 |

[illegible]

1. `yasio,libevent,libev,libuv`  
`iocp,kqueue,epoll,select`  
`TCP`
2. `yasio`  
`TCP`
3. `yasio`  
`TCP,UDP,KCP`  
`Transport`
4. `yasio`  
`select`

[illegible]

6563FF4F97894F8DOpenSSL6280MbedTLS30  
2F010C4600819D56160502

[https://github.com/yasio/ftp\\_server/blob/master/ftp\\_server.cpp#L98](https://github.com/yasio/ftp_server/blob/master/ftp_server.cpp#L98)

3.30

**[REDACTED]** iOS**[REDACTED]**SIGPIPE**[REDACTED]**APP**[REDACTED]**TCP**[REDACTED]**32**[REDACTED]**: Broken pipe  
**[REDACTED]**: <https://github.com/yasio/yasio/issues/170>

**ios** **ec=65, detail:No route to host**

- **ios**:
  - **APP** **ios14.1+** **Local Network Permission**
  - **10161** **SNMP via TLS**
- **APP** **49152~65535**
- **https://www.speedguide.net/port.php**

**macOS** **UDP** **40** **Message too long**

- **macOS** **UDP** **9126**
- **socket** **UDP**:
  - **xxsocket**: **sock\_udp.set\_optval(SOL\_SOCKET, SO\_SNDBUF, (int)65535);**
  - **io\_service**: **https://github.com/yasio/yasio/blob/master/tests/speed/main.cpp#L223**

**io\_service** **schedule**

**io\_service**

**std::thread**

**https://github.com/yasio/yasio/issues/244**

**xxsocket** **\_nodelay**

**\_nonblock** **internal**

**YOPT\_TCP\_KEEPALIVE**

**https://github.com/yasio/yasio/issues/117**

## Lua

### • c++11:

- `kaguya` `c++` `lua_newuserdata`, `placement new`  
`xcode clang release`
- `bing.com` `LUA_USER_ALIGNMENT_T=max_align_t`
- `max_align_t` `xcode clang` `long double` `16`
- <http://lua-users.org/lists/lua-l/2019-07/msg00197.html>

### • c++14:

- `sol2` `sol2` `kaguya` `sol2` `lua_newuserdata`  
`clang release`

### • c++17:

- `sol2` `xcode` `ios11` `C++17` `new` `Aligned allocation/deallocation`  
`-faligned-allocation`
- `ios10` `std::shared_mutex` `yasio` `Apple` `pthread`
- `Lua` `double` `max_align_t` `C11` [https://en.cppreference.com/w/c/types/max\\_align\\_t](https://en.cppreference.com/w/c/types/max_align_t) `Lua` `ANSI C89` `LUA_USER_ALIGNMENT_T`
- `C++11` `std::max_align_t` [https://en.cppreference.com/w/cpp/types/max\\_align\\_t](https://en.cppreference.com/w/cpp/types/max_align_t)

`max_align_t` `__stddef_max_align_t.h`

## Can't load xxx.bundle on macOS?

The file `xxx.bundle` needs change attr by command `sudo xattr -r -d com.apple.quarantine xxx.bundle`

## xxsocket resolve socketype

- `winsock`
- `0` `IP`

`F41A38C1EE98`

`F7C265 987E5E52F3`