

C/C++ and C# ZeroMQ Example Source Codes

C/C++ ØMQ

First, download source files from [ZeroMq Download Page](#) and build the project in `builds\msvc` for Windows to produce required files. Then:

1. Open a new project.
2. Add ØMQ Include directory and Library directory from your project configuration.
3. Add **libzmq.lib** to your Linker additional dependencies.
4. Copy **libzmq.dll** to your build directory.
5. Build and run your first ØMQ applications.

ØMQ Receiver Code

```
#include "zmq.h"

int main()
{
    void *context = zmq_ctx_new();
    void *responder = zmq_socket(context, ZMQ_PAIR);
    int rc = zmq_bind(responder, "tcp://*:5555");

    printf("Receiver: Started\n");

    char buffer[128];

    while (true)
    {
        int num = zmq_recv(responder, buffer, 128, 0);

        if (num > 0)
        {
            buffer[num] = '\0';
            printf("Receiver: Received (%s)\n", buffer);
        }
    }

    return 0;
}
```

ØMQ Sender Code

```
#include "zmq.h"

#ifdef _WIN32
#include "unistd.h"
#else
#include "windows.h"
#endif

int main()
{
    char buffer[32];

    void *context = zmq_ctx_new();
    void *requester = zmq_socket(context, ZMQ_PAIR);
    int rc = zmq_connect(requester, "tcp://localhost:5555");

    printf("Sender: Started\n");

    for (int i = 0; i < 10; ++i)
    {
#ifdef _WIN32
        sleep(1000);
#else
        Sleep(1000);
#endif
        sprintf(buffer, "Message %d\0", i + 1);
        printf("Sender: Sending (%s)\n", buffer);
        int rc = zmq_send(requester, buffer, strlen(buffer), 0);
    }

    zmq_close(requester);
    zmq_ctx_destroy(context);

    return 0;
}
```

[Download ZeroMQ Sender and Receiver](#) and try running the application for windows operating systems.

C# ØMQ

First, download source files from [ZeroMq .Net Download Page](#) and build the project in `src\ZeroMQ` for Windows to produce required files. Then:

1. Open a new project.
2. Add `clrzmq.dll` you produce to your project references.
3. Copy `libzmq.dll` to your build directory.
4. Build and run your first .NET ØMQ applications.

C# ØMQ Receiver Code

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using ZeroMQ;

namespace ZeroMqNetReceiver
{
    class Receiver
    {
        static void Main(string[] args)
        {
            using (var context = ZmqContext.Create())
            using (var socket =
                context.CreateSocket(SocketType.PAIR))
            {
                socket.Bind("tcp://*:5555");

                Console.WriteLine("NET Receiver: Started");

                while (true)
                {
                    Frame request = socket.ReceiveFrame();
                    String message = Encoding.UTF8.GetString(request);
                    Console.WriteLine("NET Receiver: Received (" + message +
                    ")");
                }
            }
        }
    }
}
```

C# ØMQ Sender Code

```
using System;
using System.Collections.Generic;
using System.IO;
using System.Linq;
using System.Text;
using System.Threading;
using System.Threading.Tasks;
using ZeroMQ;

namespace ZeroMqNetSender
{
    class Sender
    {
        static void Main(string[] args)
        {
            using (var context = ZmqContext.Create())
            using (var socket = context.CreateSocket(SocketType.PAIR))
            {
                socket.Connect("tcp://localhost:5555");

                Console.WriteLine("NET Sender: Started");

                for (int i = 0; i < 10; ++i )
                {
                    Thread.Sleep(1000);

                    String message = "NET Message " + (i + 1);
                    Console.WriteLine("NET Sender: Sending (" + message +
                    ")");

                    socket.SendFrame(new
                    Frame(Encoding.UTF8.GetBytes(message)));
                }
            }
        }
    }
}
```

[Download .NET ZeroMQ Sender and Receiver](#) and try running the application for windows operating systems.