

Java Socket Programming – Socket Server, Client example

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Pankaj - 30 Comments

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Welcome to Java Socket programming example. Every server is a program that runs on a specific system and listens on a specific port. Sockets are bound to the port numbers and when we run any server it just listens on the socket and waits for client requests. For example, tomcat server running on port 8080 waits for client requests and once it gets any client request, it responds to them.

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Java Socket Programming



A socket is one endpoint of a two-way communication link between two programs running on the network. The socket is bound to a port number so that the TCP layer can identify the application that data is destined to be sent.

In java socket programming example tutorial, we will learn how to write **java socket server** and **java socket client** program. We will also learn how server client program read and write data on the socket.

java.net.Socket and **java.net.ServerSocket** are the java classes that implements Socket and Socket server.

Java Socket Server Example

```
public class SocketServerExample {  
  
    //static ServerSocket variable  
    private static ServerSocket server;  
    //socket server port on which it will li  
    private static int port = 9876;  
  
    public static void main(String args[]) t  
        //create the socket server object  
        server = new ServerSocket(port);  
        //keep listens indefinitely until re  
        while(true){  
            System.out.println("Waiting for  
            //creating socket and waiting fo  
            Socket socket = server.accept();  
            //read from socket to ObjectInput  
            ObjectInputStream ois = new Obje  
            //convert ObjectInputStream obje  
            String message = (String) ois.re  
            System.out.println("Message Rece  
            //create ObjectOutputStream obje  
            ObjectOutputStream oos = new Obj  
            //write object to Socket  
            oos.writeObject("Hi Client "+mes  
            //close resources  
            ois.close();  
            oos.close();  
            socket.close();  
            //terminate the server if client  
            if(message.equalsIgnoreCase("exi  
        }  
    }  
}
```

Java Socket Client

```
package com.journaldev.socket;  
  
import java.io.IOException;  
import java.io.ObjectInputStream;  
import java.io.ObjectOutputStream;  
import java.net.InetAddress;  
import java.net.Socket;  
import java.net.UnknownHostException;  
  
/**  
 * This class implements java socket client  
 * @author pankaj  
 */  
public class SocketClientExample {  
  
    public static void main(String[] args) t  
        //get the localhost IP address, if s  
        InetAddress host = InetAddress.getLo  
        Socket socket = null;  
        ObjectOutputStream oos = null;
```

```
//write to socket using ObjectOutputStream  
oos = new ObjectOutputStream(socket.getOutputStream());  
System.out.println("Sending request to Socket Server");
```

To test java socket programming of server-client communication, first we need to run

`SocketServerExample` class. When you will run socket server, it will just print "Waiting for client request" and then wait for the client request.

Now when you will run `SocketClientExample` class, it will send a request to java socket server and print the response message to console.

Here is the output of java socket server

`SocketServerExample` program.

```
Waiting for the client request  
Message Received: 0  
Waiting for the client request  
Message Received: 1  
Waiting for the client request  
Message Received: 2  
Waiting for the client request  
Message Received: 3  
Waiting for the client request  
Message Received: exit  
Shutting down Socket server!!
```

Here is the output of Java socket client

`SocketClientExample` program.

```
Sending request to Socket Server  
Message: Hi Client 0  
Sending request to Socket Server  
Message: Hi Client 1  
Sending request to Socket Server  
Message: Hi Client 2  
Sending request to Socket Server  
Message: Hi Client 3  
Sending request to Socket Server  
Message: Hi Client exit
```

That's all for a quick roundup of Socket programming in java. I hope you can get started with java socket server and java socket client programming.

Reference: [Oracle Doc](#)

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Pankaj



I love Open Source technologies and writing about my experience about them is my passion.

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Comments

testtr says:

July 14, 2019 at 9:26 pm

Please do increase(width wise) the content container, it seems weird to read in such a small container, rest all of the space is just lying vacant.

[Reply](#)

sumit lohan says:

June 1, 2019 at 4:24 am

Kranthi Kumar says:

May 6, 2019 at 7:49 pm

Hi Pankaj,

I was doing socket connection and I have to read character by character. But the read method is never reaching EOF(i.e never getting -1) until I close my connection, But I cannot open and close the connection for multiple records. Is there anyway to solve this? Also while writing data, I am only able to use println method but not write method.

[Reply](#)



Lucio Jose Beirao says:

February 20, 2019 at 3:50 pm

Great implementation to start working with socket communication. The use of Object(Input/Output)Stream was very appreciated, many thanks for this.

[Reply](#)

kervin Cortez says:

January 9, 2019 at 11:10 am

hello good afternoon, I just read your post and I found it quite interesting, but I would like to know this connection that is made a travz of applications java can get to have communication through the internet. is that I am new in this language ... is that I am creating a java application that they have to communicate but they are far away and the only way to communicate is through the internet. Can work?

[Reply](#)

chutki says:

January 14, 2019 at 9:51 pm

good question but no relevant in this context

[Reply](#)

diwagar says:

July 16, 2019 at 1:41 am

yes..of course!!!!!!

[Reply](#)

avneet says:

June 12, 2018 at 10:58 am

how can I test this in the different computer?

[Reply](#)

sunusi aminu says:

July 29, 2018 at 6:01 am

You only need to connect the two computers using either wi-fi or cable.

[Reply](#)

tushar khatyri says:

June 3, 2019 at 6:11 am

i want to connect two pc on a different location, how can i do this...

not by the cable or wifi.

but with different location pc.

[Reply](#)

thank you so much but it's not enough for me

[Reply](#)

sunusi aminu says:

July 29, 2018 at 6:03 am

What do you want included to have enough?

[Reply](#)

sajid says:

August 8, 2018 at 8:30 am

i want more deep in socket programming so dude .thank you its my opinion.

[Reply](#)

nitu says:

August 30, 2017 at 3:15 am

thank for this article is very informative but I want more information so please share on the web

[Reply](#)

pranit patil says:

August 21, 2017 at 10:53 pm

Thanks a lot for this detail about socket programming in java. As beginner i was looking for this socket programming guide and information. You have defined it so well as it is so important for making program run. Keep sharing.

[Reply](#)

Ravindu Saluwadana says:

November 25, 2016 at 3:34 am

Hi guys,
is anyone can tell me how to pass jforms data to another jform through localhost?

[Reply](#)

Manqoba Ledwaba says:

November 15, 2016 at 4:23 am

hi guys,
May you please assist.
how can I send an xml message to a server & read the server response.

[Reply](#)

swap says:

May 21, 2016 at 12:39 am

any one tell me
multicent serverSocket
in java, there is any provision for accessing thread from outside class.
thread is one of socket client ...
?????

[Reply](#)

chetan Pawar says:

October 7, 2015 at 4:42 am

i am working on spring integration i try to hit controller from device but it can not send data to controller...how it can do....

[Reply](#)

Thanks for this article..

I am working with client server communication... Clients sends a request, server reads that request, and sends a response, lastly client reads the response.I tried to implement with the help of many examples.But the client sends a request successfully, and the server reads it and responses successfully but the client then cannot get the response.Please help me....

Reply

KoolMaan says:

December 11, 2014 at 7:01 am

I am working on Socket & also you had given a good & nice example but i have a problem in implementing it, I have made a server socket and client socket they are working good but when i want to communicate from other client it does not respond to that client. Please help me i am working on it for a month & i am unable to figure this out.

Please reply me as soon as possible.....

Reply



Pankaj says:

December 11, 2014 at 7:03 am

If you can send me program, I can check it out. Without having any insight of the issue, it's not possible to provide any solution

Reply

Saranya says:

July 1, 2015 at 11:19 pm

Hai Pankaj.....

I am new to socket programming..I am working with client server communication...Clients sends a request, server reads that request, and sends a response, lastly client reads the response.I tried to implement with the help of many examples.But the client sends a request successfully, and the server reads it and responses successfully but the client then cannot get the response.Please help me....

Reply

Niraj says:

September 17, 2018 at 9:33 am

Try to use the UDP protocol. I guess it will help!!!

Reply

Tejaswi says:

July 24, 2015 at 7:33 am

Hello pankaj,

This is Tejaswi.I am doing my thesis and i am responsible for wireless connetivity.I have to use a client-

send data using TCP connection. There is list of sensors attached to cc3200 .if a client request for a sensor data it just give an information regarding that data. I don't have any idea how to structure the data. Could you please help me to find a solution.

Thanks in advance.....

Best regards,

Tejaswi

[Reply](#)

Jonathan says:

May 23, 2014 at 1:55 am

Thanks for this article, It's really help you're awesome Man

[Reply](#)

shinu says:

May 22, 2014 at 3:25 am

where i put server socket file in real server

[Reply](#)

Jonathan says:

May 23, 2014 at 1:58 am

You can put anywhere you want, you just need to compile (javac SocketServerExample.java) and then run (java SocketServerExample)

[Reply](#)

Manish says:

October 23, 2013 at 6:46 am

Hi Pankaj

Thanks for this article ..

I am working on Vehicle tracking system. Device is already implemented in one place and IP and port is integrated with that GPS device . I need to received data from that gps device . If you have any sample work in java , please share with me .

Thanks

[Reply](#)

amir says:

February 13, 2014 at 5:05 am

Hi Pankaj

Thanks for this article ..

I am working on Vehicle tracking system. Device is already implemented in one place and IP and port is integrated with that GPS device . I need to received data from that gps device . If you have any sample work in java , please share with me .

Thanks

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JournalDev was founded by Pankaj Kumar in 2010 to share his experience and learnings with the whole world. He loves Open source technologies and writing on JournalDev has become his passion.

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