



# **123LiveHelp Server Software**

## **User Manual**

**Version 3.2**

<http://www.123livehelp.com>  
Powered by [TOPCMM](#)

## TABLE OF CONTENTS

<b>123LiveHelp Server Software</b> .....	<b>1</b>
<b>1. Introduction</b> .....	<b>4</b>
<b>2. Requirements</b> .....	<b>4</b>
2.1 Server Requirements .....	4
2.1.1 Supported Platforms .....	4
2.1.2 Hardware requirements .....	4
2.1.3 Java Virtual Machine (JVM) Requirements .....	4
2.1.4 Port requirements .....	4
<b>3. Download and Installation</b> .....	<b>5</b>
3.1 Windows Install .....	5
1. Get the free Windows package of 123LiveHelp here: .....	5
2. Install 123livehelp.exe .....	5
3. <i>NT service</i> .....	6
4. Start the chat server. ....	6
5. To stop the chat server: .....	8
6. To restart the chat server: .....	8
3.2 Linux Install .....	9
1. Get the free Linux package of 123LiveHelp here:.....	9
2. Decompress download file. ....	9
3. Start the server manually .....	9
4. Stop the server manually .....	9
5. Restart the server manually .....	9
6. Auto-start server after system reboot .....	9
3.3 Other Unix Operating System .....	10
1. Install JRE 1.4.2 or above( we recommend JRE 1.5) .....	10
2. Get the free other OS package. ....	10
3. Decompress downloaded file.....	10
4. Set JRE Environment variable.....	10
5. Start the chat server.....	10
<b>4. User Interface</b> .....	<b>10</b>
4.1 Admin Panel .....	12
4.1.1 How to access Admin Panel .....	12
4.1.2 Admin Panel Functions .....	13
1. Monitor.....	13
2. Logs.....	14
3. Account Manager.....	14
4. Search.....	15
5. Department .....	16
6. Ban and UnBan: .....	17
4.2 Staff Panel.....	18
4.2.1 How to access Staff Panel.....	18
4.2.2 Staff and the department.....	18
4.2.3 Staff Online/Offline Button .....	20
4.2.4 Functions of Staff Panel: .....	20
1. Menu .....	21

2. Customer list .....	21
3. Proactive Chat Invitations. ....	22
4. User Info .....	23
5. Predefined messages .....	24
6. Information .....	24
7. Chat window .....	24
4.3 Customer Chat Client .....	25
4.4 Live Help Remote Controller (MSN edition) .....	28
<b>5. Integration .....</b>	<b>29</b>
<b>Option A: .....</b>	<b>29</b>
<b>Option B: .....</b>	<b>30</b>
<b>6. Configuration .....</b>	<b>31</b>
6.1 Client Configuration .....	31
6.1.1 config.xml .....	32
6.1.2 Init Parameter/ Client APIs.....	33
6.2 Server Configuration .....	34
6.2.1 lhserver.xml .....	34
1) Connection Configuration .....	35
2). Global Configuration .....	37
3). Mail-smtp-server Configuration .....	38
6.2.2 default.xml .....	38
1) General setting .....	38
2) Record-per-page Setting .....	40
3) Encrypt-message Setting .....	40
4) Enable-guest-login .....	40
5) Modules setting.....	40
<b>7. Customize transcript style .....</b>	<b>41</b>
<b>8. Expansion API.....</b>	<b>42</b>

## 1. Introduction

123 Live Help Server Software is a full-featured solution for your sales rep. or supporter to one-to-one chat with website visitors, to promote online sales of product or service. It shortens sales cycle and increases customer satisfaction and confidence. It can also increase agent productivity and reduce service costs. 123LiveHelp makes your web site live and interactive.

## 2. Requirements

### 2.1 Server Requirements

#### 2.1.1 Supported Platforms

- Windows 95/98/NT/ME/2000/XP/Vista
- Solaris/Sparc 2.6, 7,8,9
- Solaris/Intel 2.6,7,8,9
- Compaq Tru64
- IRIX
- HP-UX 10.20, 11
- AIX 4.3.x
- Linux Redhat 6.2, 7.1, 7.2, 7.3, 9
- Linux Caldera
- TurboLinux
- Mac OS Classic 8.1 - 9.X
- Mac OS X 10.0 - 10.1
- Mac OS X Server

#### 2.1.2 Hardware requirements

123 Live Help Server Software will be compatible with most server hardware. The minimum hardware requirements are as follows:

- 586/200 MHz or faster processor
- 64 MB of RAM or more
- 100 MB free hard disk space or more

Dedicated PII/400 MHz with 256 MB RAM is eligible to handle 500 or more concurrent users.

Adding extra RAM and processors will improve the performance of 123LiveHelp.

#### 2.1.3 Java Virtual Machine (JVM) Requirements

[Sun™ Java@ 1.4](#) and above is required to run 123LiveHelp. We recommend using J2SE v 1.4.2\_08 or v 1.5 JRE.

For the current version of JDK, visit <http://java.sun.com/>.

#### 2.1.4 Port requirements

This software needs at least two free ports, and the port value can be any one that is lower than 65535 as long as it is not already taken by other application.

Default ports are: 8969, 8968

1: 8969: The main port of 123LiveHelp server, all the three chat clients (admin, staff and customer panels) should connect to this port.

2: 8988: The port for the HTTP server of 123LiveHelp server. Why HTTP server is needed? Because in some network environment, the connection via proxy will fail the main port 8969, in that case HTTP server will be useful. In addition, when user needs to check the logs, HTTP server is also required.

### 3. Download and Installation

#### 3.1 Windows Install

1. Get the free Windows package of 123LiveHelp here:

<http://www.123livehelp.com/download.html>

Download the Windows version: 123livehelp.exe

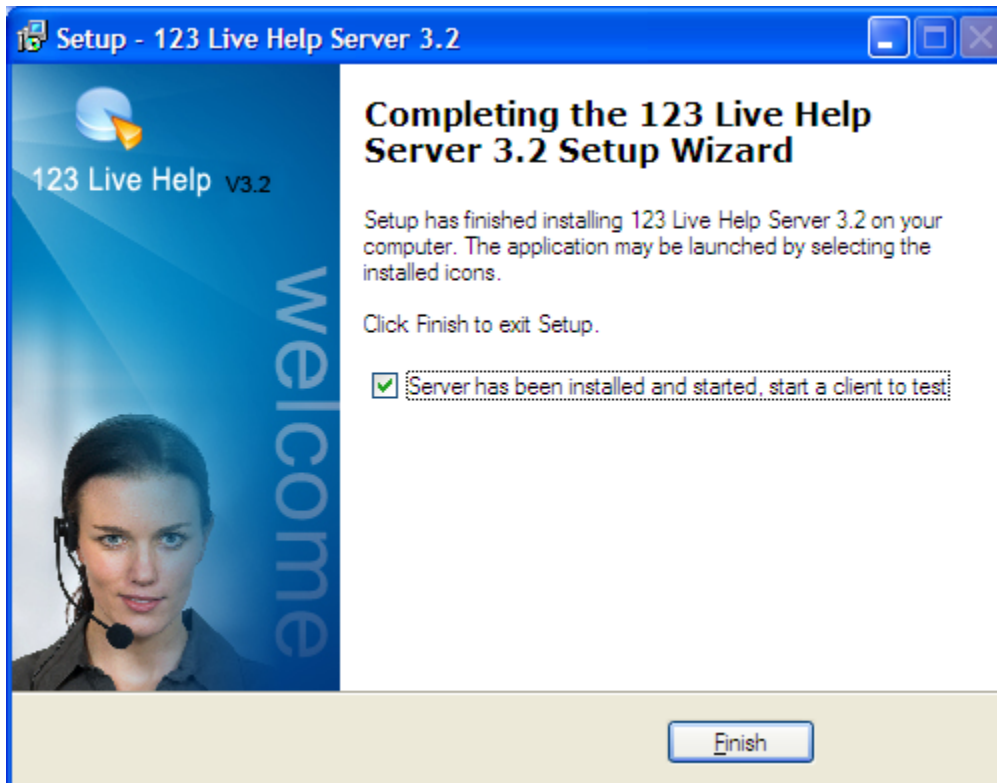
2. Install 123livehelp.exe

Double-click "123livehelp.exe" to initiate the installation and it will take a few minutes to install following the simple instructions of it.



### 3. NT service

After 123 Live Help Server Software has been installed, wait a few seconds while 123 Live Help Server( from now on we'll call it " the chat server") as a Windows NT service is automatically started( you don't have to start it manually).



Moreover, the chat server as a Windows NT service will be automatically loaded and started each time when you reboot your server computer.

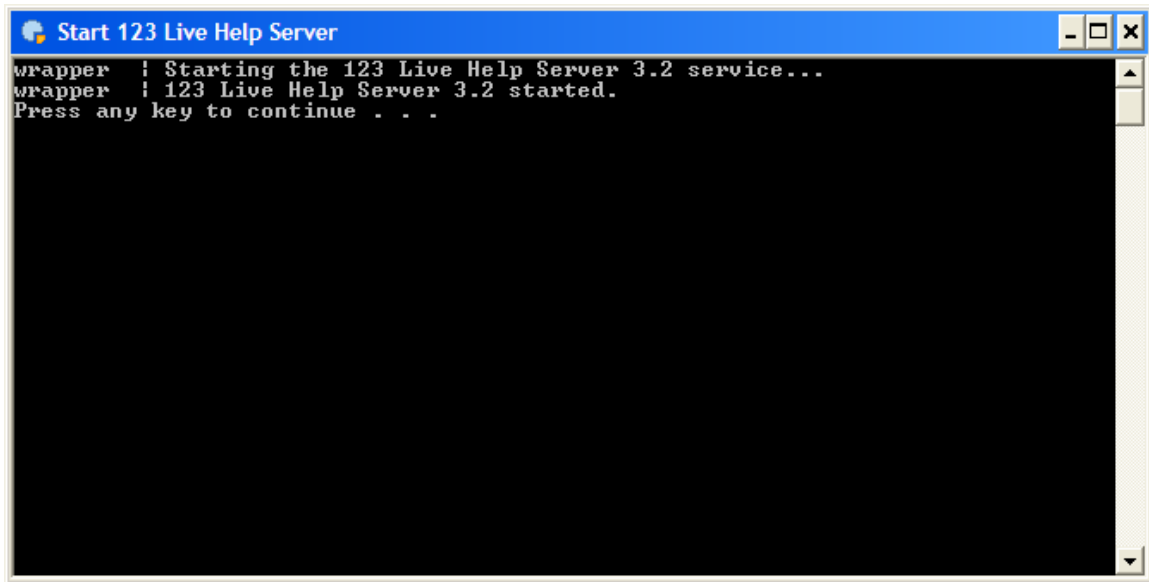
### 4. Start the chat server.

This can be done by starting the server in service mode or console mode, if it was stopped before. These modes are explained below:

a) Starting in service mode:

(In the Windows system)

Start->Programs->123 Live Help Server 3.2-> Server->Start 123livehelp.



```
Start 123 Live Help Server
wrapper | Starting the 123 Live Help Server 3.2 service...
wrapper | 123 Live Help Server 3.2 started.
Press any key to continue . . .
```

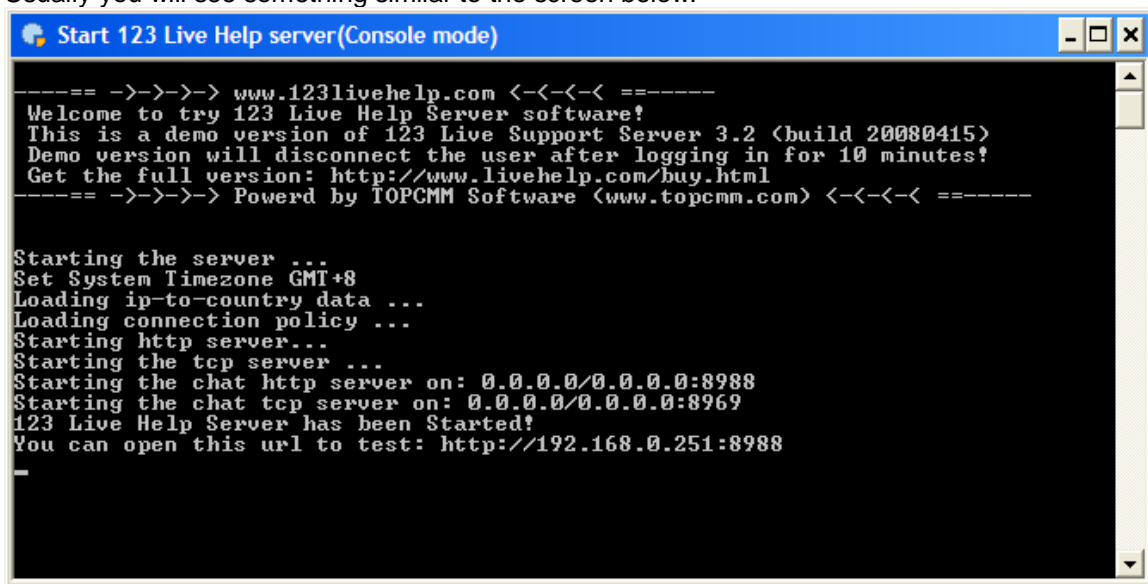
If an error occurs, it may be the chat server has already been started before or there is a problem with the server configuration. To check the error type, please start in console mode.

b) Starting in console mode:

(In the Windows system)

Start->Programs->123 Live Help Server 3.2> Server ->Start 123livehelp (console mode).

Usually you will see something similar to the screen below:



```
==== ->->-> www.123livehelp.com <-<-<-< =====
Welcome to try 123 Live Help Server software!
This is a demo version of 123 Live Support Server 3.2 (build 20080415)
Demo version will disconnect the user after logging in for 10 minutes!
Get the full version: http://www.livehelp.com/buy.html
==== ->->-> Powerd by TOPCMM Software (www.topcmm.com) <-<-<-< =====

Starting the server ...
Set System Timezone GMT+8
Loading ip-to-country data ...
Loading connection policy ...
Starting http server...
Starting the tcp server ...
Starting the chat http server on: 0.0.0.0/0.0.0.0:8988
Starting the chat tcp server on: 0.0.0.0/0.0.0.0:8969
123 Live Help Server has been Started!
You can open this url to test: http://192.168.0.251:8988
-
```

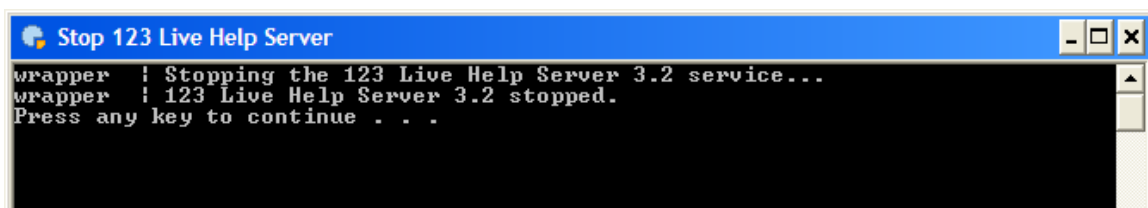
Console mode is helpful to get error details.

Console mode does not need to be used unless there is a problem with the process of starting the chat server. After the problem has been fixed, it is recommended to stop the chat server and start again in service mode.

#### 5. To stop the chat server:

a) If you are in service mode, please stop the server in the following way:

Start->Programs->123 Live Help Server 3.2->Server->Stop 123livehelp.



```
Stop 123 Live Help Server
wrapper | Stopping the 123 Live Help Server 3.2 service...
wrapper | 123 Live Help Server 3.2 stopped.
Press any key to continue . . .
```

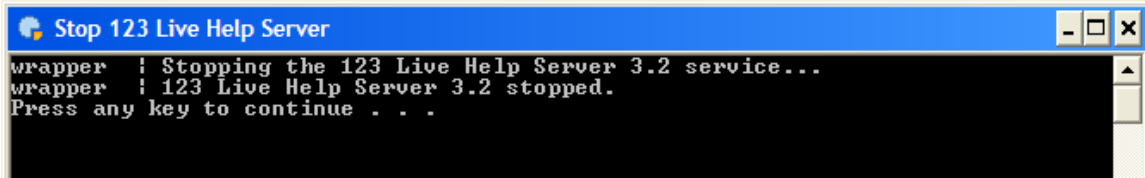
b) If you are in console mode, please stop the server by simply closing the pop-up DOS window.

#### 6. To restart the chat server:

a) If you are in service mode, please restart the server in the following way:

Start->Programs->123 Live Help Server 3.2->Server->Restart 123livehelp.





- b) If you are in console mode, please close the DOS window first, then restart the server in the following way:

Start->Programs->123livehelp ->server-> start 123livehelp (console mode)

Note: After configuring the server parameter manually, you have to restart the chat server to make the changes effective.

### 3.2 Linux Install

#### 1. Get the free Linux package of 123LiveHelp here:

<http://www.123livehelp.com/download.html>

Download the linux version: 123livehelp.tar.gz

You may download with this command:

```
$ wget http://www.123livehelp.com/download/123livehelp.tar.gz
```

#### 2. Decompress download file.

You may use the below command to uncompress the download file.

```
$ tar xzf 123livehelp.tar.gz
```

#### 3. Start the server manually

After uncompressing 123livehelp.tar.gz , you will get a folder named: "123livehelp", access this directory and start the server with the commands:

```
$ cd 123livehelp
```

```
$ ./lserver.sh start
```

#### 4. Stop the server manually

After started the chat server, you may stop the server with the command:

```
$ ./lserver.sh stop
```

#### 5. Restart the server manually

```
$ ./lserver.sh restart
```

#### 6. Auto-start server after system reboot

Step 1:

Modify lserver.sh, find the LHSERVER\_HOME section, define which directory lserver.sh is located. For example, if you uncompressed the 123livehelp.tar.gz into /usr/local/123livehelp, make sure lserver.sh is in the directory of /usr/local/123livehelp, then delete the two “#” before the two rows below in lserver.sh to make them effective:

```
FCSERVER_HOME=/usr/local/123lserver
```

```
export FCSERVER_HOME
```

Step 2:

Modify /etc/rc.local file, add one row:

[/usr/local/123lhserver/lhserver.sh](#)

just replace "/usr/local/123lhserver/" with your FCSERVER\_HOME value.

### 3.3 Other Unix Operating System

#### 1. Install JRE 1.4.2 or above( we recommend JRE 1.5)

For other unix os server, you have to install a JRE 1.4.2 or above first, we recommend JRE 1.5, you may download it here:

<http://java.sun.com/j2se/1.5.0/download.jsp>

#### 2. Get the free other OS package.

<http://www.123livehelp.com/download.html>

Download the other OS version: 123livehelp\_s.tar.gz

#### 3. Decompress downloaded file.

You may use the following command to uncompress the downloaded file.

```
$ gzip -d 123livehelp_s.tar.gz
```

```
$ tar xvf 123livehelp_s.tar
```

#### 4. Set JRE Environment variable

Run the java application, please set JAVA\_HOME env variable and PATH env variable.

For example, JRE installed in: /usr/local/java/jre , you should set:

```
JAVA_HOME=/usr/local/java/jre;export JAVA_HOME
```

```
PATH=$PATH:/usr/local/java/jre/bin;export PATH
```

#### 5. Start the chat server

1. After setting the JAVA\_HOME you may start the server with the command: (Remember to put all code below in one single line.)

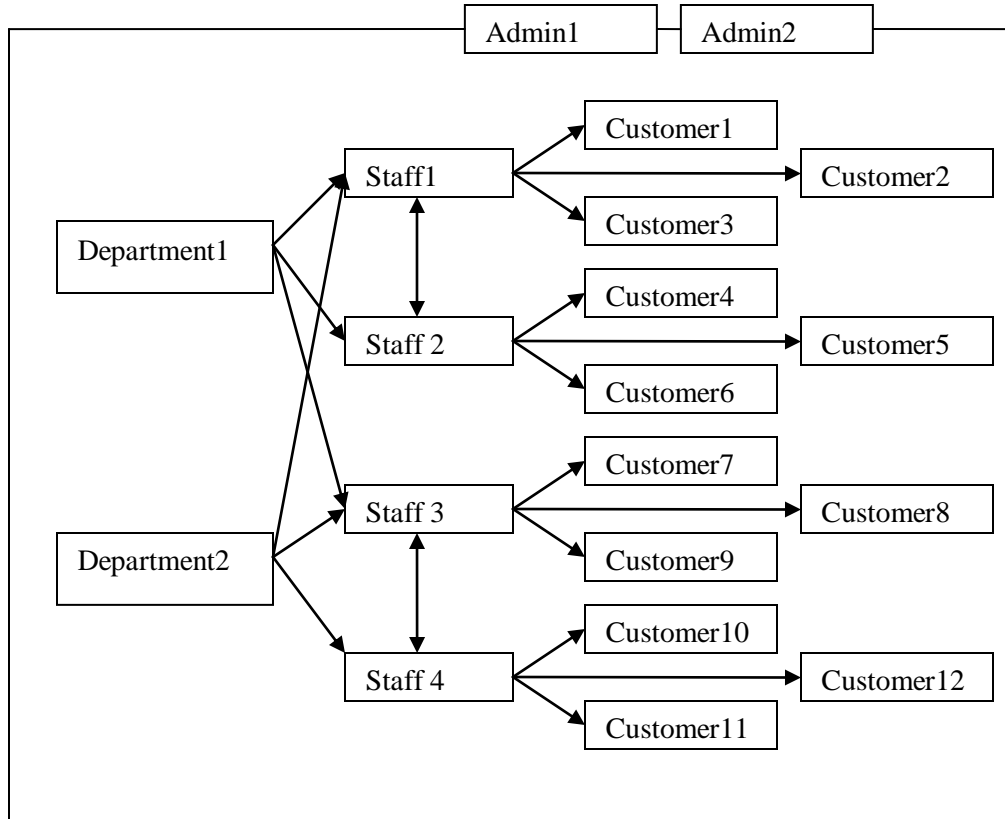
```
$ java -classpath CLASSPATH:lib/lhserver.jar: jar:lib/log4j.jar:lib/jdom.jar:lib/xerces.jar  
com.topcmm.jchat.LHServer &
```

## 4. User Interface

There are three kinds of user interfaces of 123 Live Help: admin panel, staff panel and customer chat client. Different interfaces have different functions and will serve as entrances for users on different levels with various authorities.

#### Various user levels

- **Admin** has overall power to supervise all the departments/chat rooms and all the staff and clients.
- **Staff** manages specific room(s) and offer service to clients, staff will be monitored by admin.
- **Customer**, the end customer seeks help from staff and has the least power over the platform.

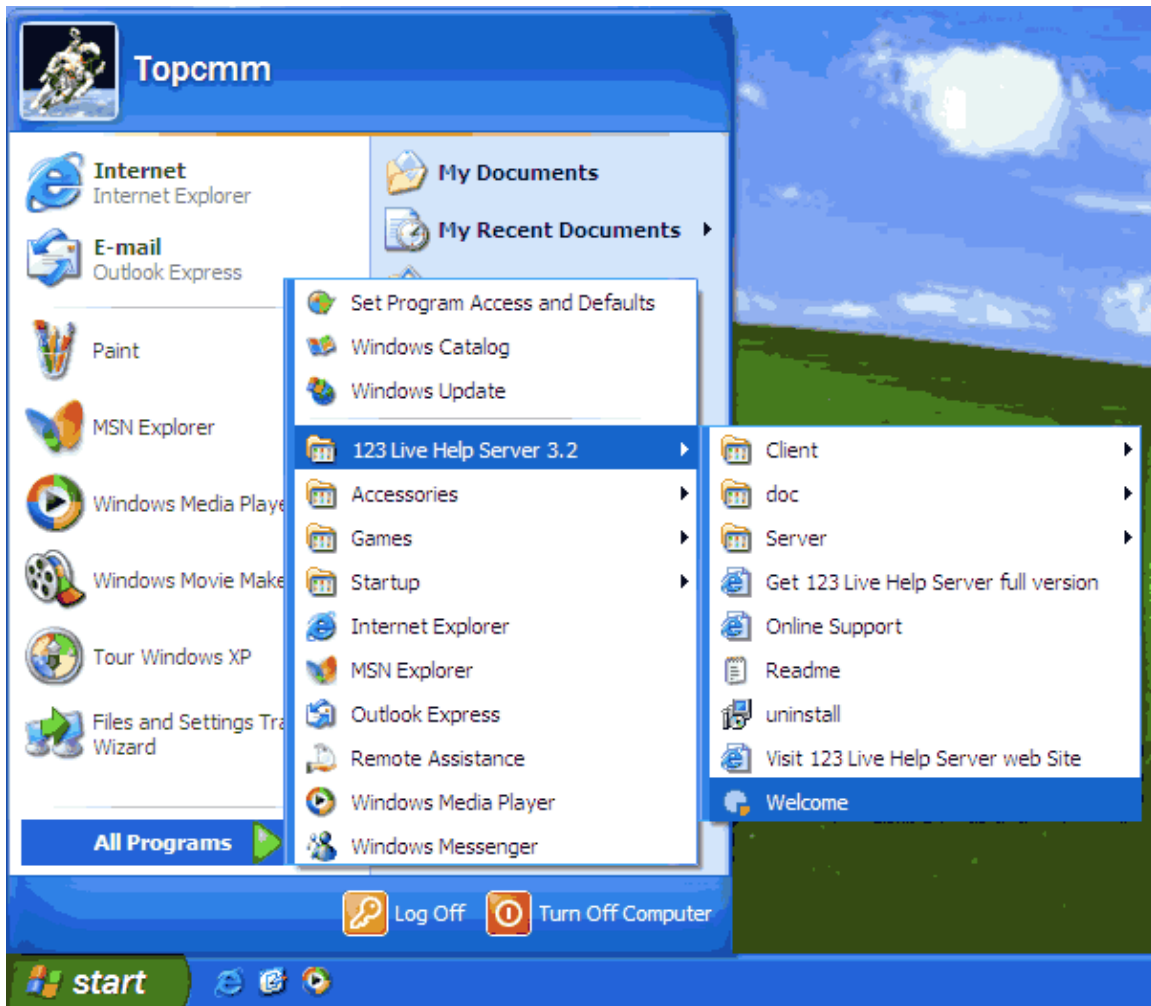


All these three kinds of chat clients can be accessed from the **Welcome Page**, which can be activated when installation is finished by choosing the checkbox before the sentence: Server has been installed and started, start a client to test.

**Welcome Page** can also be opened manually in the start menu:

**Start-> Programs-> 123 Live Help Server3.2> Welcome**

As showing below:



A page named “index.html” will be opened with 3 options.

You're recommended to keep this page somewhere only to yourself and only publish the Staff status button to your users.

We will discuss the three options below.

#### 4.1 *Admin Panel*

##### 4.1.1 **How to access Admin Panel**

123 Live Help Server offers a user-friendly Admin web interface to manage and configure the chat server.

There are two shortcuts in the start menu to access Admin Panel and test.

1. Choose “Admin Panel” in “Welcome Page”
2. Click “Admin Panel” in start menu directly, if Windows users.

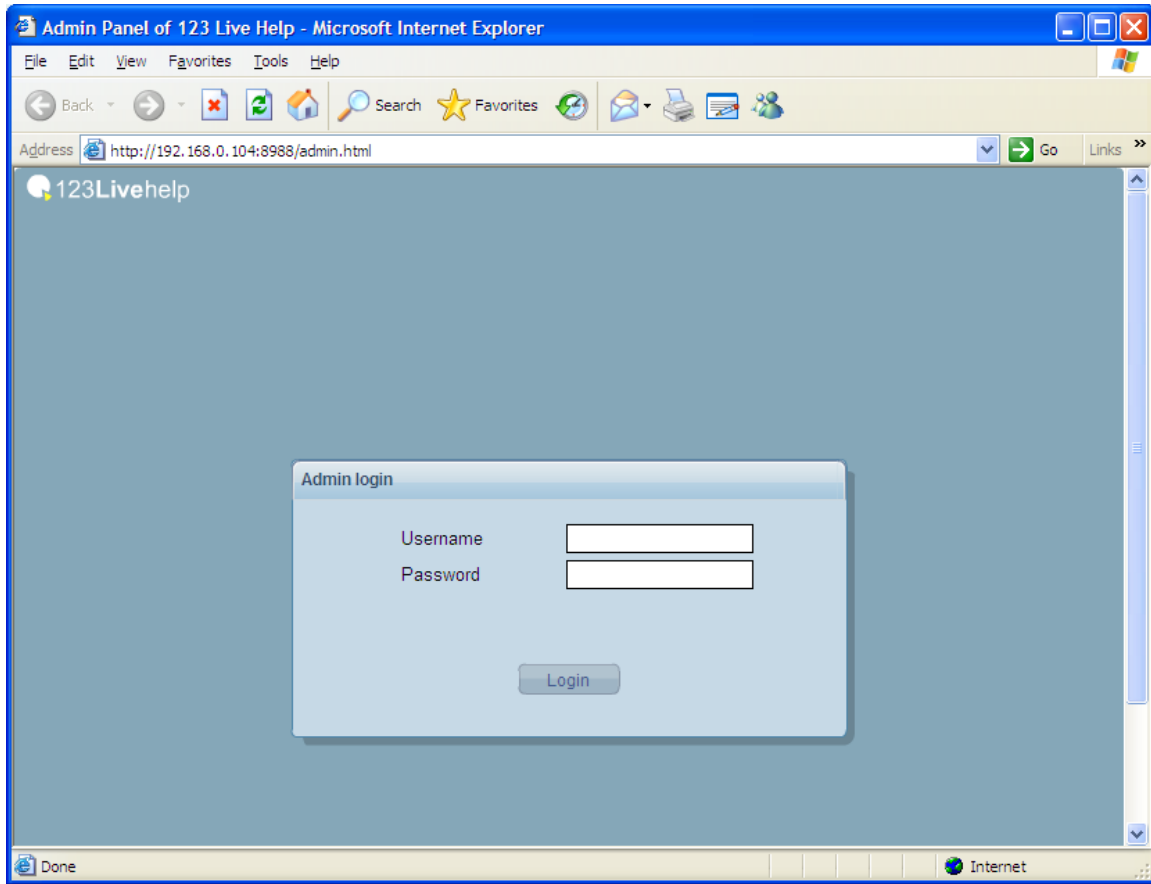
**Start-> Programs-> 123 Live Help Chat Server 3.2-> Client-> Admin Panel**

##### **Test account:**

Default account: admin, password: admin

**Note:** Don't forget to change admin password before officially launching your server to evade any security risk.

**Login Panel:**  
Admin login entrance:



#### 4.1.2 Admin Panel Functions

Some key features are as follow:

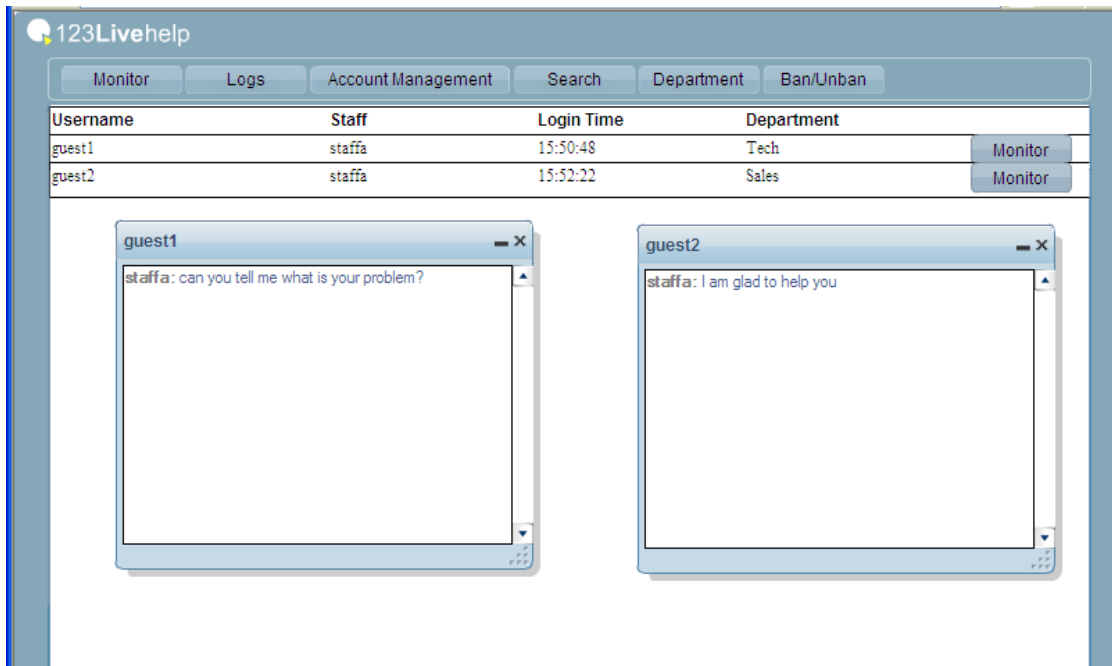
##### 1. Monitor

In monitor panel, admin have super power to monitor all the one-to-one communications between staff and the customers.

Admin can open multiple conversation windows to monitor but can't join the chat directly. Once any connection is built between visitor and the staff, admin can monitor online customer's nickname and logon time, staff name and department they are in, etc.

The screenshot of the Monitor Panel:

With two conversation windows activated by clicking the "Monitor" button.



## 2. Logs

Here records all the activities on the live help server, including connecting, logging in, logging out, entering department, establishing one-to-one chat, etc. Everybody's activities are all recorded here, including the admin himself.

## 3. Account Manager

Admin can add, modify and delete two kinds of accounts in this panel: admin accounts, or staff accounts.

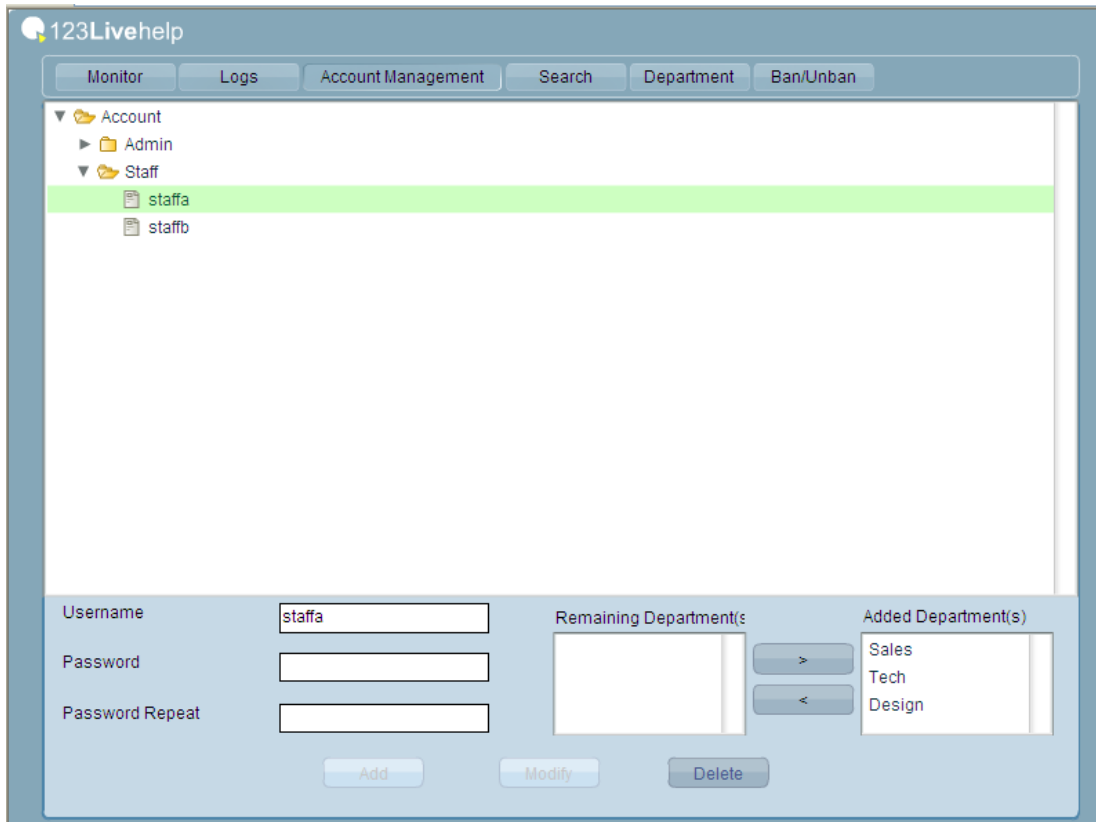
There is an account tree in this page, click a category to view existing admin accounts, staff accounts with their rating status( if any).

Choose a folder name in the "account tree" before adding any new account.

Choose an account name in the "account tree" before modifying or deleting it.

### Note:

After adding admin, you don't need to designate him to any department, because admin has super power over all available department; adding staff accounts is different, please bear in mind to designate him into specific department(s) at first. Or he can see no visitor at all even if he successfully logs in the Staff Panel.



#### 4. Search

- **Basic Search**

Just leave all the options as default or null in search panel to perform basic search, you will get the chat record of current day in current department.

- **Advanced Search**

You can define more options before “search” to get more precise results. Choose time and/or “customer name” and/or “staff name” and/or “department” before clicking “search” to perform search.

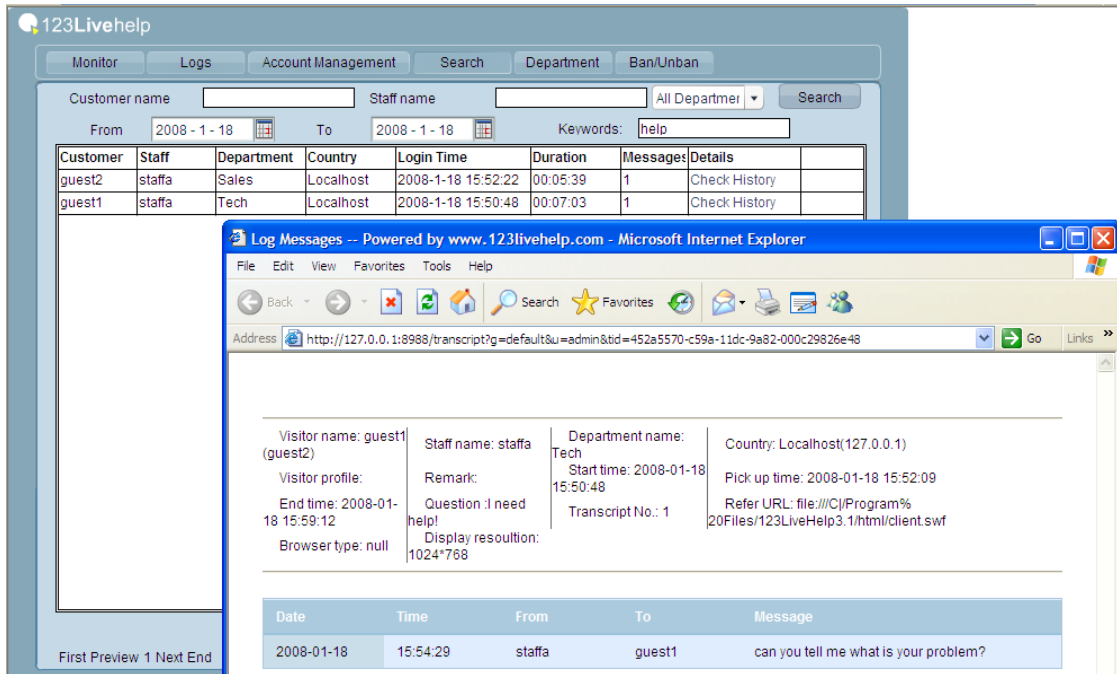
**Search result:**

Every entry of search result includes following items:

Customer name, Staff name, country(of customer), IP(of customer), Login Time (of customer), Department (if customer and staff), Details Link.

Click the “Check History” button to check details in a new popup window, with customer details, including his nickname, department he chose, the staff who have served him, customer’s country and IP address, and the remark words the staff added to describe the customer, and the full conversation log between the staff and the customer.

As displayed in the picture below:



## 5. Department

### Admin to customer:

You may need to create multiple departments to allocate visitors for staff to serve them better, for example, "Pre-Sales" and "Post-sales Technical Support".

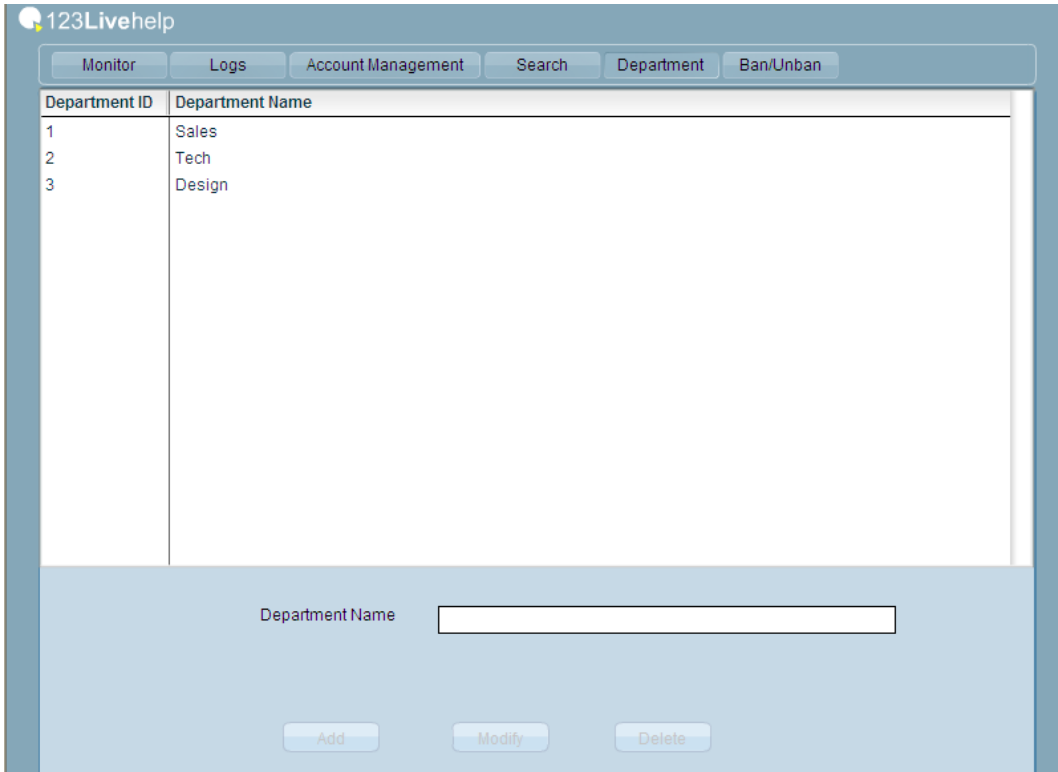
### Admin to staff:

Once again we'd emphasize, don't forget to designate new staff to specific department(s) first or the new staff can't see any visitors at all!

One department can have multiple staff members and one staff can manage multiple departments. [Like the diagram shows](#) before.

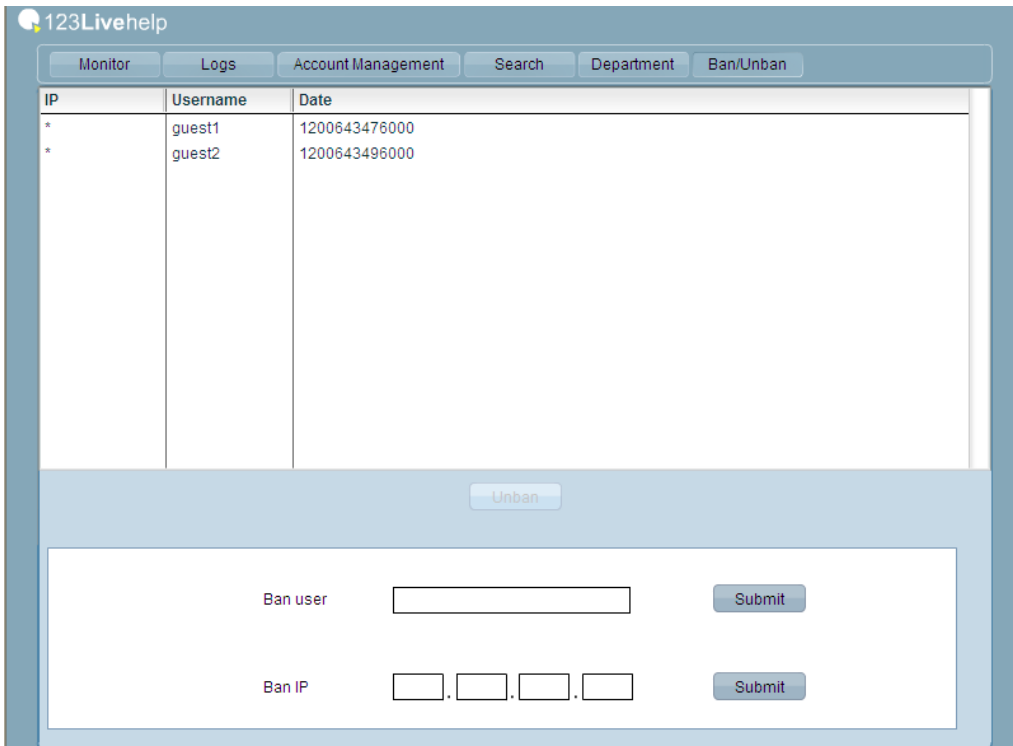
Here is a screenshot of the department management panel, as you can see, departments can be added, modified or deleted.





### 6. Ban and UnBan:

Admin can ban or unban an user by users' ID or user's IP in this panel, and there is a ban list in this panel with all the banned IP or banned users being listed here. As showing below:



## **4.2 Staff Panel**

### **4.2.1 How to access Staff Panel**

There are two shortcuts in the start menu to access Staff Panel and test.

1. Choose "Staff Panel" in "Welcome Page"
2. Click "Staff Panel" in start menu directly, if Windows users.

#### **Start-> Programs-> 123 Live Help Server 3.2-> Client-> Staff Panel**

This is a platform for staff members to manage chat and offer live help and support to website visitors/ customers.

Default size is 800\*600 pixels, you can configure it to full screen.

#### **Default test accounts:**

Username: staffA, password: test

Username: staffB, password: test

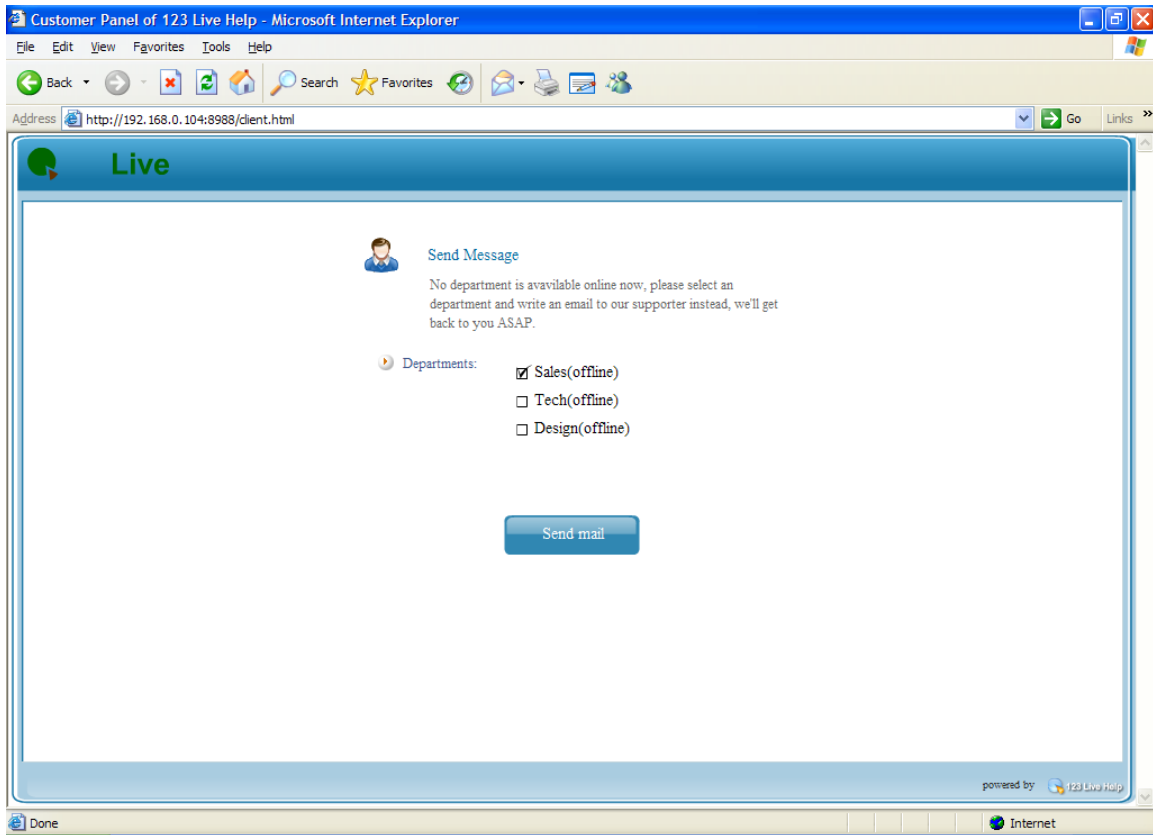
### **4.2.2 Staff and the department**

Once logging in, the staff will automatically enter the departments he belongs to which is predefined by admin.

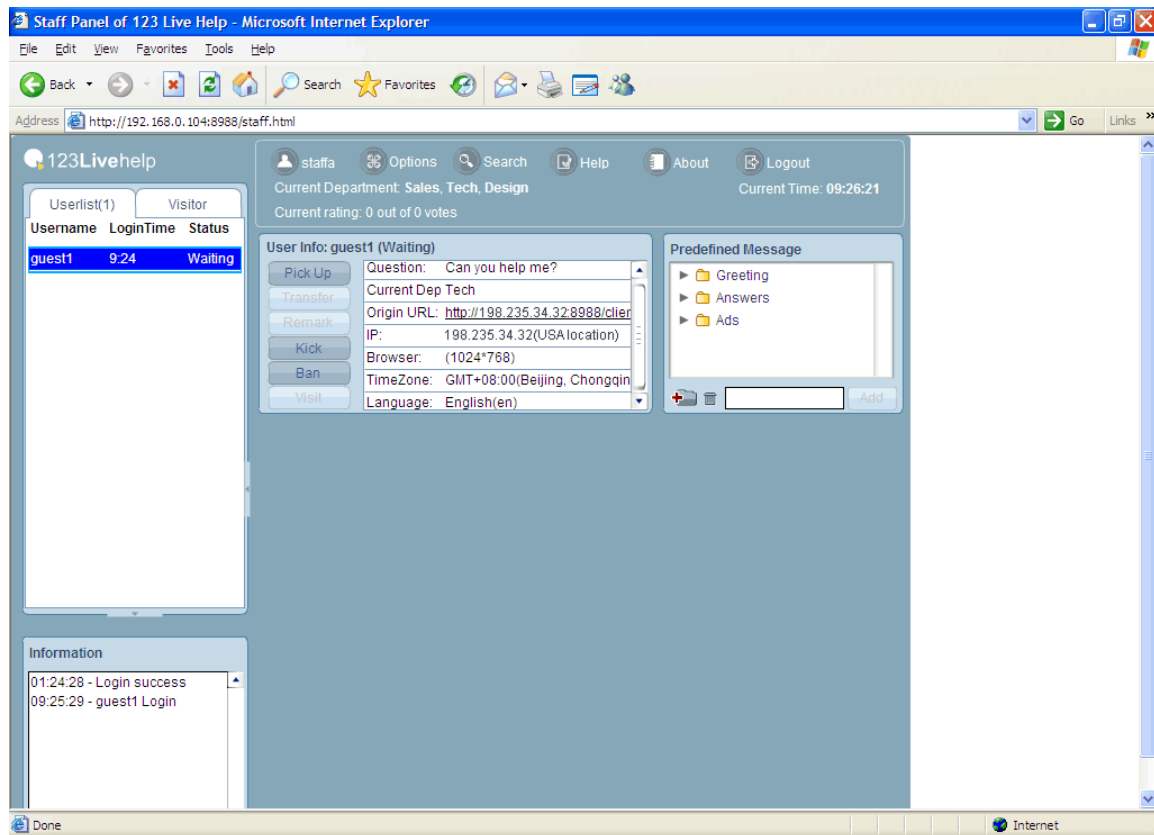
As long as there's active staff member online, the department he's in charge will become "live" in customer's login page list.

Whereas, departments without staff display as offline in gray color and can't be chosen from the list.

#### **Screenshot of the customer's chat client:**



**Staff Panel Preview:**



#### 4.2.3 Staff Online/Offline Button

You are recommended to place a chat button on your webpage, showing the availability of the general staff team(online or offline) with the built-in presence detector.

If one or more staff online,



If no staff online,



You may log in a staff member and refresh the “Welcome Page” to view the “online” chat button;

Then log out the staff member and refresh the “Welcome Page” to view the “offline” chat button.

The graphics can be replaced. You can design by your own or hire us to design for you.

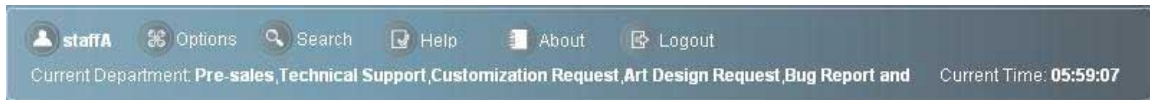
#### 4.2.4 Functions of Staff Panel:

There are following sub-panels in this panel:

1. Menu
2. Customer list

3. User Info
  4. Predefined messages
  5. Information
  6. Chat window
- We'll explain how they work one by one.

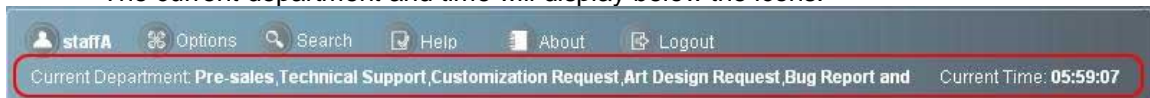
## 1. Menu



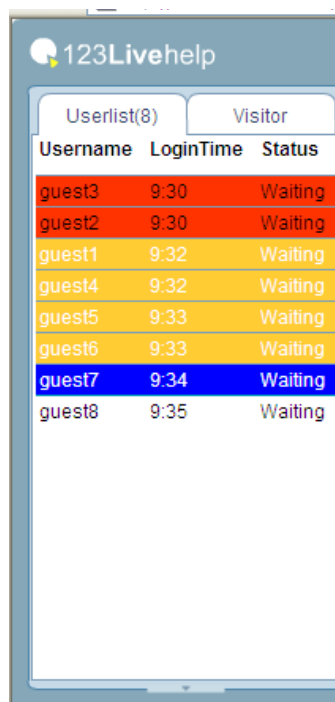
In the top menu, there are six graphic icons:

- The first person icon is not clickable; it shows current ID of the staff.
- Options: here are some basic options for staff, like controlling the interface elements, enable/disable sounds, or change staff password.
- Search: The staff can search chat scripts here, between customer and himself or other staff.
- Help: help document for the staff.
- About: software logo, name, version and copyright.
- Logout: it is where the staff logs out.

The current department and time will display below the icons.



## 2. Customer list



Username	LoginTime	Status
guest3	9:30	Waiting
guest2	9:30	Waiting
guest1	9:32	Waiting
guest4	9:32	Waiting
guest5	9:33	Waiting
guest6	9:33	Waiting
guest7	9:34	Waiting
guest8	9:35	Waiting

Top left of the panel shows the **user list**, including following information: customer name, when does he/she log in, status (waiting, chatting, or staff lost connection, or disconnected).

There are four degrees of the waiting customer, displayed by background colors and distinguished by their waiting time period, from short to long, the background color would change from white, blue, orange, to red.

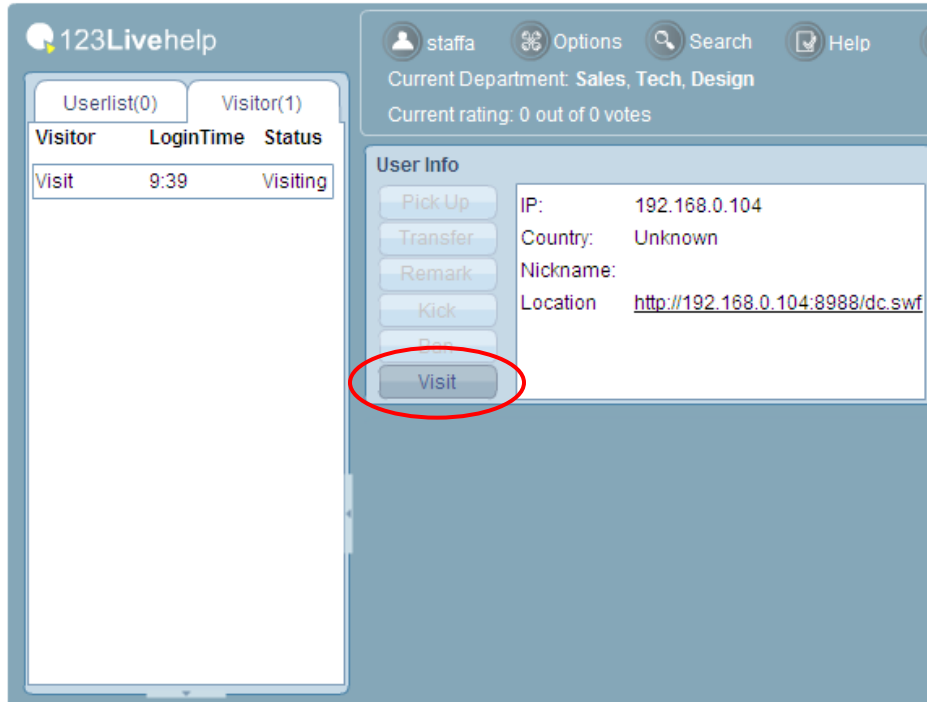
As shown in the left picture.

### 3. Proactive Chat Invitations.

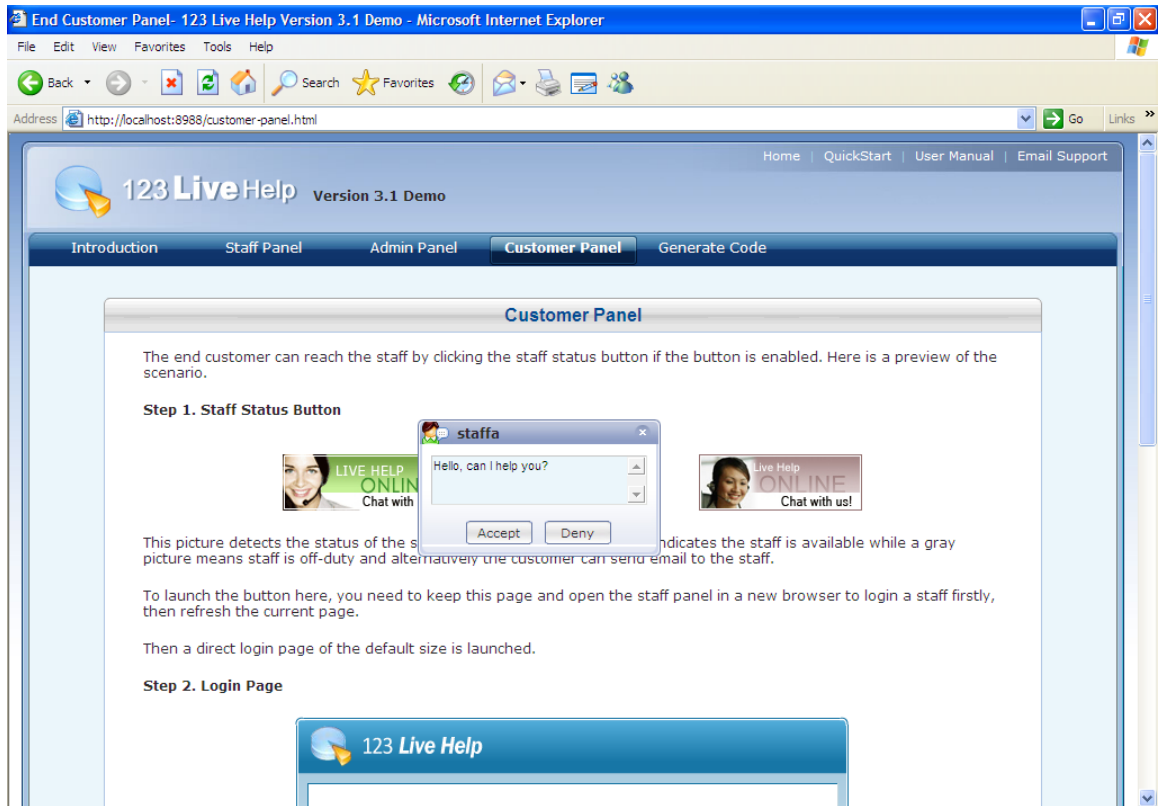
Check it out! The userlist tab has been switched to **visitor** tab.

Top left of the panel shows the visitor list; the staff member can monitor a website and invite a visitor from the certain webpage to chat to up-sell product or offer help. The visitors won't have to click any chat button on the webpage, they will instead be greeted by some friendly notification that the staff would chat with them to offer assistance. What's more, the invitation won't be blocked by pop-up killer.

As shown in the picture below.



When the staff clicks the visit button, and submit some message, an invitation window with warm greeting will appear on the client's page.



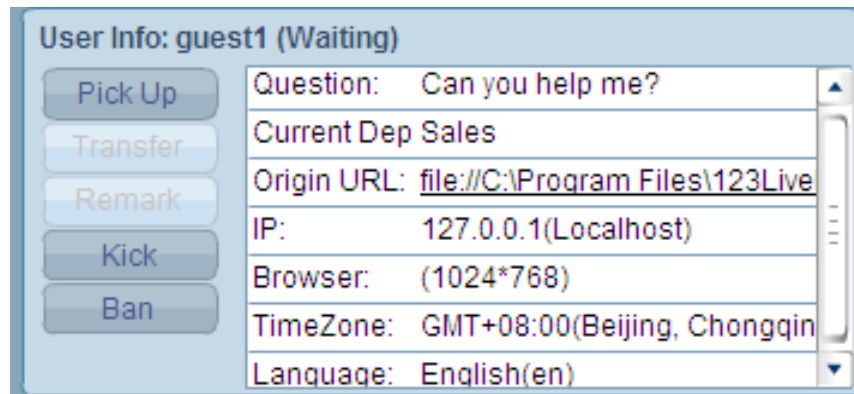
This is the demo page in customer panel. Admin could generate this code in the “generate code” page, which can be added to your website to launch this function. In “generate code” page, you could customize the code, including the invite window’s style, color, etc.



Click a user in customer list, then check out the five buttons in the customer profile sub-panel, you may noticed the “Pick Up” button is now available. Click it and staff can chat with the customer. (You can also double click the user name to start conversation.)

After the connection with a customer is established, the “Pick Up” button becomes invalid while the other two buttons now valid: “Transfer” and “Remark”. The first button is used to transfer the conversation with one customer to another staff, the second is to add more details for current customer for future reference.

#### 4. User Info



Following information is shown in this panel: customer name, IP, country, login time, current department, status, location (to show the customer is on which webpage), client's time zone, language (OS), and nickname (user's nickname).

Transfer: Staff can transfer user to another staff across the department.

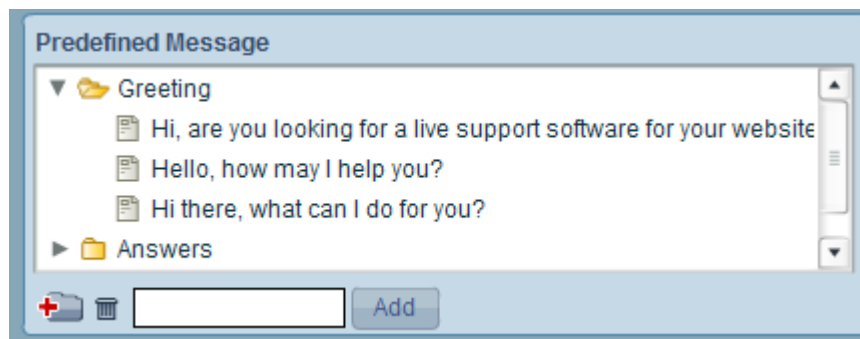
Remark: Staff can supply more details for current customer by "remark" button.

We have introduced three buttons in this sub-panel, and the rest two buttons, one "kick" one "ban", staff can kick/ban rude user out of the conversation.

Kick is kick only, not accompanied with "Ban"

Staff can ban user by user's ID or user's IP or both user's ID and IP

## 5. Predefined messages



This can be very handy for staff, especially when there is large traffic on the website. When one staff simultaneously dealing with multiple customers with repeated questions, these canned answers can be extremely helpful to save time.

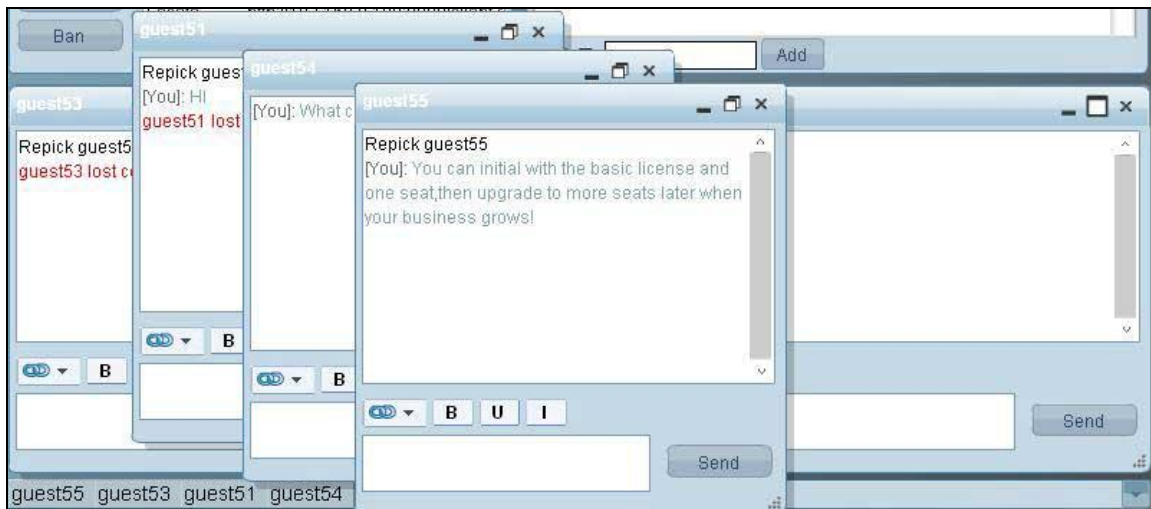
Canned answers can be added or removed, they can also be categorized.

## 6. Information

Here shows the latest activities in current department: connect, login, logout, disconnect, etc. If this information is not needed, staff can click the arrow above to close it temporarily to save space.

## 7. Chat window





One-to-one private messages between staff and customer are managed in this sub-panel.

- **Window Control**

Private messages (PM) can be maximized (to full sub-panel), minimized(to be just a small tag in the bottom list- it's called PM Management Sub-panel), restored to original size or closed.

By default it is maximized.

PM windows can be dragged to expected position.

There are two ways to activate a PM window to front: click its top blue bar, or choose the specific small tag in the bottom PM Management Sub-panel.

- **PM Management Sub-panel**

When staff is chatting with customer A and if new message comes from customer B in an inactive window, the small tag of B will blink in the PM window management sub-panel to remind the staff.

When inactive user disconnect, his small tag will blink too.

### 4.3 *Customer Chat Client*

There are two shortcuts in the start menu to access customer chat client and test.

1. Choose "Customer Panel "Welcome Page".
2. Click "Customer Chat Client" in start menu directly, if Windows users.

**Start-> Programs-> 123 Live Help Chat Server 3.2-> Client-> Customer Chat Client**

Showing below:

Customer chat client is pure flash and web-based so the customers who visit your website don't need to download any plug-in to chat with your staff members. The 123LiveHelp client SWF can be embedded into any webpage of a website and can be resized.(Recommended size: width>=495, height>=376.)

By default client will login as unregistered guest.

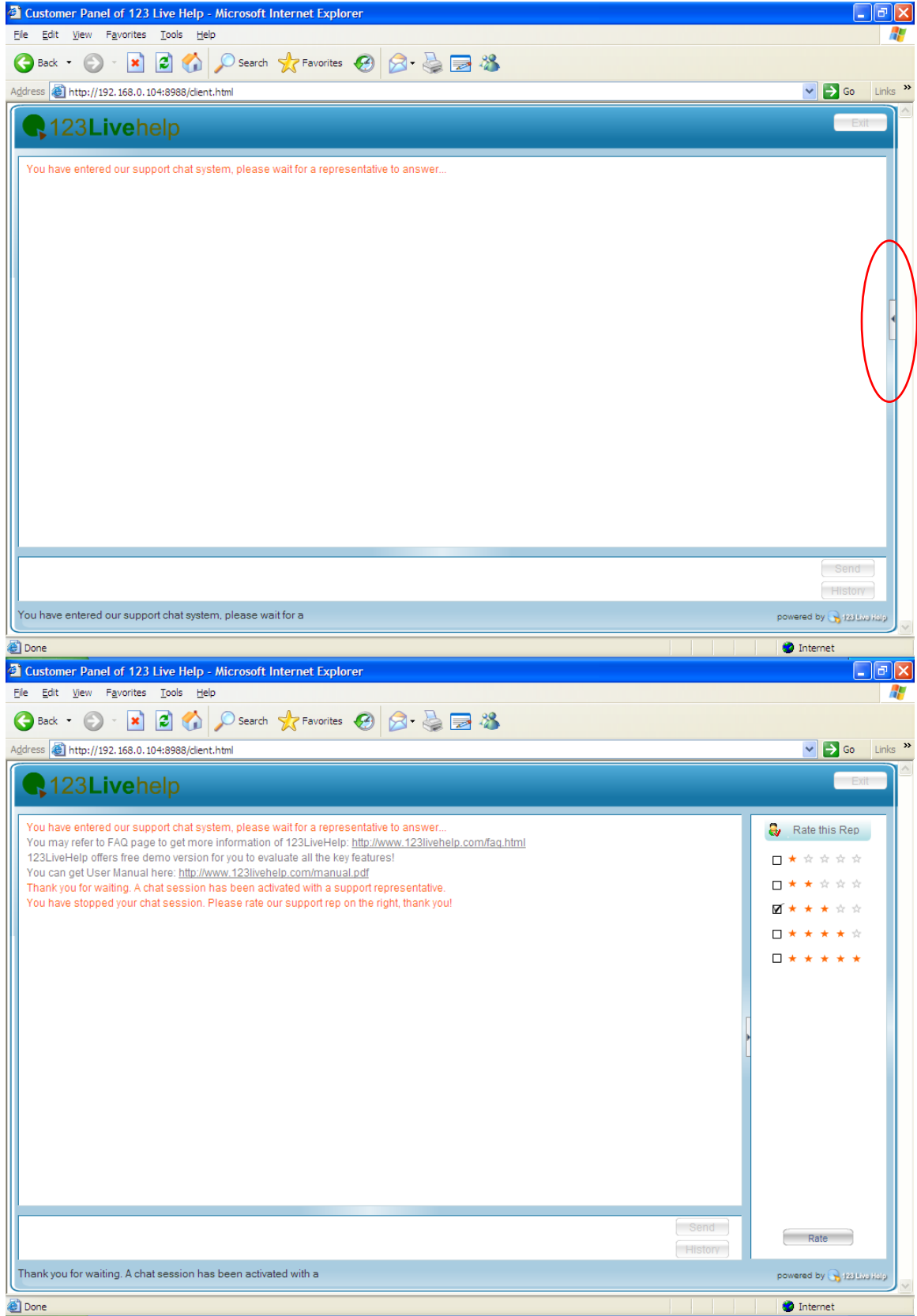
**Customer choose department:**

Before logging in, the customer will be required to choose a department first so that the staff can classify the customer's intentions proactively. Click "submit" to wait in queue to request support and service. After an available staff accepts the request, the customer will be informed of the good news and the input area becomes functional.

**Customer rate staff:**

Once the conversation starts, the customer can rate how helpful an staff is, from one star to five stars, in a stretchable rating panel. Click the small arrow at the right of the conversation window to stretch the rating panel.

As shown below:



**One staff transfer chat with a customer to another staff:**

If staff A transferred one customer to staff B, the customer will get notification and be aware of the process, too.

**History**

Customer can check the chat script by clicking this button. A webpage with conversation logs will pop-up.

**Exit**

Customer can quit the conversation by closing the chat panel.

**4.4 Live Help Remote Controller (MSN edition)**

Administrator may create a robot in live help and then grant the access of the robot to the reliable person(s) to remote monitor live help via MSN.

The configuration is in the "lhserver.xml"

```
<remote-controller enable="Off">
  <bot account="" password=""></bot>
  <language value="en"></language>
</remote-controller>
```

XML Child	Parameter	Type	Default value	Description
Remote-controller	enable	String	Off	Enable or disable the remote controller function
Bot	account	String	null	Robot account. For example: <a href="mailto:bot@hotmail.com">bot@hotmail.com</a>
Bot	password	String	null	Robot password
language	value	String	en	Display language of the Robot.

Furthermore, there are four steps to configure the MSN Robot.

- 1) Create Robot MSN Account**  
Room owner sign up a new Windows Live ID/ Windows Live Messenger Account as the Robot account. For example: [bot@hotmail.com](mailto:bot@hotmail.com)
- 2) Open the lhserver.xml**  
Administrator open the lhserver.xml enter the Robot MSN account [bot@hotmail.com](mailto:bot@hotmail.com) and its password, following the instructions above.
- 3) Add monitor(s)**  
Open <LiveHelp3.2 installed dir>/etc/groups/default.xml. Find the element <msn-monitor>, then add your friends' msn account. e.g.:  

```
<msn-monitor>
  <monitor>moniotr1@hotmail.com</monitor>
  <monitor>moniotr2@hotmail.com</monitor>
</msn-monitor>
```
- 4) Monitor room via Bot**  
Your friends add Bot MSN to their MSN friend list to monitor and control the room externally.

**Clarification:**

Please be aware that so far two kinds of MSN account are involved, the account of the Robot and the one of your friends'.  
The previous one works as a bridge connecting the room and the room manager. The latter ones will be used to monitor chat room eventually.

**5) Change the language**

If you want to change the language, follow the <LiveHelp3.2 installed dir>/etc/language/bot/language\_en.xml, fill the new language and rename the file following this format: "language\_" + your language's short name + ".xml".

e.g. language\_fr.xml

Then open the lhserver.xml, find element <remote-controller>, change the "en" to your language's short name.

**6) Restart Live Help server**

To apply the changes.

**Tips**

The following commands are available on MSN to control the live help externally.

Click the nudge button to get help!

Command list:

/help	Get the help list.
/staff	Get the online staff list.
/con	Get the online conversation list.
/monitor	Monitor the real time conversation. e.g. /monitor guest1
/stopmonitor	Deactivate monitor the real time conversation.
/search	Search the message logs. e.g. /search 2008-1-1 2008-2-1 keyword After search, you can use "/view page" to browse all the result.

## 5. Integration

Here is a quick tutorial to integrate 123 Live Help to your website, usually it takes only a few minutes.

Firstly you need to install 123 Live Help free demo version, which can be obtained freely from this page: <http://www.123livehelp.com/download.html>, choose one edition suits your OS, download and install it.

Secondly, once you got the welcome page working locally, you can move forward to integrate the new 123livehelp chat clients with your existing website.

Basically 123livehelp can integrate any kind of web server, whether apache, IIS or others. If the chat server (of 123 Live Help) and web server are located on the same server, you have two options to do so. (If not, please consult our engineer for details.)

Before we proceed, please be aware that we're talking about the integration of the chat clients to your webpage, and 123 Live Help chat clients are composed of three parts, they are respectively for admin, staff and customer.

**Option A:**

**Use the HTML pages in the demo installation package as chat client entrance.**

Copy the "html" folder in the directory: "<123LiveHelp3.2 installed directory>/html/" to your web server path.

Then the "index.html" in this folder can be the entrance of your customer/staff/admin.

(Of course you can modify this page to suit your needs and style, at least don't forget to change password of admin and staffs.)

### **Option B:**

#### **Embed 123 Live Help chat clients' SWFs to your own webpage.**

Two steps:

##### 1) Copy client files

Copy the client components to your web server, including "client.swf", "config.xml" and "lang" folder, keep them in the same directory.

##### 2) Embed flash HTML code (object tag) to webpage.

```
<script language="javascript" src="<live help server ip>:<live help server
port>/live_status.js"></script>
<!-- e.g
                <script language="javascript" src="127.0.0.1:8969/live_status.js"></script>
-->
<script language="javascript" src="123livehelp.js"></script>
<script language="javascript">
var parameters="";
if(urlLink==undefined)
{
    var urlLink;
    try
    {
        urlLink=window.location.href;
    }
    catch(e)
    {
        try
        {
            urlLink=document.URL;
        }
        catch(e)
        {
            urlLink="";
        }
    }
}
if(urlLink.indexOf("?")!=-1)
{
    parameters=urlLink.substring(urlLink.indexOf("?"));
}
var urlValue="client.swf"+parameters;
openSWF(urlValue,"100%","100%","livehelp","topcmm_123livehelp");
</script>
```

```
<noscript>
  <DIV id="livehelp">
    <object classid="clsid:D27CDB6E-AE6D-11cf-96B8-444553540000"
codebase="http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=6,
0,29,0" width="100%" height="100%" id="topcmm_123livehelp">
  <param name="movie" value="client.swf">
    <param name="wmode" value="transparent" />
    <param name="quality" value="high">
    <embed src="client.swf" quality="high" wmode="transparent"
pluginspage="http://www.macromedia.com/go/getflashplayer" type="application/x-shockwave-
flash" width="100%" height="100%" name="topcmm_123livehelp"></embed>
  </object>
</DIV>
</noscript>
```

You may configure the Staff and Admin Panels in the similar way.

As to the invitation window code, please use the “generate code” page by choosing from the top menu in welcome page.

**Note: live\_status.js**

It reflects the data change of the chat server at real-time, including all the online staff and their department, and all available departments. The physical destination of the JS file is flexible and defined in “default.xml”, three samples:

```
<live-status-file enable="On"></live-status-file>
<live-status-file enable="On">c:\website\live_status.js</live-status-file>
<live-status-file enable="On">website\live_status.js</live-status-file>
```

The first case is in the default client folder of the installation folder, the second is absolute address while the third is relative address. Just make sure the address can be accessed via HTTP.

Once the destination is acquired by the chat server, it will generate a “live\_status.js” there. Therefore, the “live\_status.js” will be on the chat server. So, in the client HTML, if the html folder and the JS can be visited via the same domain, it can be relative address like this: `<script src="live_status.js"></script>`. Otherwise if they’re on different domains, it should be: `<script src="domain:port/live_status.js"></script>`. No matter in what case, the point is to ensure the client to read the JS without problem.

## 6. Configuration

### 6.1 Client Configuration

The configuration for the live help chat clients are:

- config.xml

It is located at `<123LiveHelp3.2 installed directory>/html/`

### 6.1.1 config.xml

This file controls the basic configuration of the Admin Panel, Staff Panel and Customer Chat Client.

You can modify the parameters referring to the table below:

(Among them, some are just for client.swf which only serves the end customer.)

Parameter	Type	Default Value	Description
ServerHost-> Host	String	*	The host of the primary server. It has to match the server host.
ServerHost-> Port	Number	8969	The port of the primary server.
secondaryServerHost-> Host	String	*	The host of the secondary server. It has to match the server secondary host.
secondaryServerHost-> Port	Number	8968	The port of the secondary server.
Enable	On/Off	off	Usually the secondary server is unnecessary, you may turn it off.
httpServerHost-> Host(only for client.swf)	String	*	The host of the build in http server of 123LiveHelp, In some network environment, such as connection via proxy which will fail the main port 8969, http server is useful. Otherwise, when user needs to check the logs, http server is also required.
httpServerHost-> Port(only for client.swf)	Number	8988	The port of the build in http server of 123LiveHelp,
homeUrl(only for client.swf)	String	<a href="http://www.123livehelp.com">http://www.123livehelp.com</a>	The web address of your homepage, clicking logo will direct visitors to this page.
Logo(only for client.swf)	String	123livehelplogo.swf	The logo picture of your website, jpg or swf format. Recommended size: 210*40 pixels.
language	String	*	The language setting. By default it's "*". Language value can be either defined to "*" or a specific language. eg: "en" for English. If "*", it will automatically detect the language of every user's OS and assign a corresponding language to user from the existing language collection.
message(only for client.swf)	String		The auto messages displayed to visitors while they're waiting in queue until some available staff to start the conversation.
Message-> interval(only for client.swf)	Number	20	The time interval between two messages, unit: seconds.
Message-> enable(only for client.swf)	Boolean	true	Enable or disable the auto-message feature.
Message-> m(only for client.swf)	String		Predefined messages for waiting customers.



### 6.1.2 Init Parameter/ Client APIs

This is used to make client.swf to get some initialization parameter by URL.

e.g.: [http://localhost/client.swf?init\\_user=user&init\\_password=password](http://localhost/client.swf?init_user=user&init_password=password)

There are many initial parameters used in 123livehelp3.2 in order to integrate 123livehelp swf files to web page more conveniently.

#### 1)init\_user & 2)init\_password

These two parameters are used for member auto-login 123livehelp.

To client.swf, these two ones are not so important comparing to 123flashchat since 123livehelp is just for online sale and most customers are guest users instead of member users.

#### 3)init\_nickname

This parameter is very important for customer login. Without it, customer will use a default name just like "guest\_xx", and it will make a headache to staff or admin.

#### 4)init\_room

We now use the conception "department" instead of "room" in 123livehelp. But in order to be compatible to the old version, init\_room is still used and it means initial department in fact.

#### 5)init\_key

This is for swf identification. In order to identify the swf whether it is a legal file, it needs to send the key to server when beginning to connect to 123livehelp server.

#### 6)init\_root

This is the root path to 123livehelp client. We can load or call the 123livehelp files which includes swf, xml, language and other files through this path.

#### 7)init\_url

This is the url which customer is visiting. And this parameter will be sent to staff as one user information item in the user info panel.

#### 8)init\_question

Customer can send a question to staff before login 123livehelp for asking help.

#### 9)init\_logo

This is the file name of logo in client.swf. If you set this parameter, the logo file which maybe a jpg or a swf must be already placed in the 123livehelp root directory.

#### 10)init\_group

This is the group name. In a 123livehelp host or server, there are several groups, and with some clients in each group. Any client which want to get service from 123livehelp server should join in a group or the server may refuse its connection. The default value for this parameter is "default" which can also be set in config.xml.

#### 11)init\_host & 12)init\_port

These two parameters can let swf connects to server through the host address and the port specified by these two ones.

#### 13)init\_secondaryHost & 14)init\_secondaryPort

These two ones are used after the first connection by init\_host and init\_port is failed.

15)init\_lang

This is used for configuring 123livehelp language. There are only two kinds of language now, "en" for english, "zh-CN" for simplified Chinese. More language will be realized later.

16) init\_color

There are five kinds of color for user selecting:  
red, green, blue, violet, black, and the default one is blue.

17)init\_dc

when staff invites a webpage visitor, it will send parameter "init\_dc = 1" to client.swf, and staff will receive the "dc" attribute which just display a star in front of username in the user list.

with init\_dc, parameter "init\_room" will not work for auto entering department any more. In another word, init\_dc can disable the function of auto entering department. Without it, init\_room will still work for auto entering department in deed.

18)init\_staff

This parameter will be passed from dc to clien.swf then to server with attribute "staff", so server can only send this invited customer to the appointed staff.

Parameter	Description
init_host	To initialize the server's host name(IP address or DNS name)
init_port	To initialize the server's port.
init_user	To initialize the user's name.
init_password	To initialize the user's password.
init_url	To initialize the login URL of the client. The staff side will know the user open the client in which URL.
init_video	To enable or disable the video of the client Value: True/false

## 6.2 Server Configuration

By default, all configuration for the chat server is controlled by two files:  
**lhserver.xml**, which is located at:

<123livehelp installed directory> /etc/lhserver.xml

- **default.xml** which is located at:

<123livehelp installed directory> /etc/group/default.xml

Windows users can also access both files from start menu.

### 6.2.1 lhserver.xml

#### How to edit it?

In Windows, you may open lhserver.xml in notepad to edit it. If you now open it with IE browser, you may check source code by right-click to edit it directly.

In Unix, you may use vi to edit lhserver.xml.

After modifying this configuration file, please open it in a browser to test.

If syntax error pop up, please configure it again before launching the chat room.

After modifying this file, you have to restart the chat server to make it effective.

There are three parts of configurations in lhserver.xml,

- **<Connection>** Configuration

- <Global> Configuration
- <Mail-stmp-server> Configuration

## 1) Connection Configuration

### Two servers

In the Connection Section, you can set two servers and listen to two ports.

In the Connection Section, you can set two servers and listen to two ports.

[primary-server](#)

[secondary-server](#)

There are four reasons as to why there is a second server port option. They are listed below:

- 1) Any version before Flash Player 7 only allows access on a high port (1024-65535) due to security reasons, while a low port is forbidden. If you are okay with high port you will not need to set secondary-server. However if you need to set port lower than 1024, you will need a secondary-server.
- 2) If the port of your primary-server is lower than 1024 like 80, then only users with Flash Player 7 or newer versions will be able to access the chat while users with flash player 6 can't.  
In this case a secondary-server will be necessary. The port for the secondary server should be greater than 1024, which will allow users with an earlier version of Flash Player to access chat.
- 3) If you are going to set a high port for your primary-server, then usually you will not need a secondary-server. You will be able to leave the option as default: enable="off".
- 4) Using two servers with two ports is just a temporary solution while some users are still using Flash players earlier than version 7.  
When Flash player 7 or higher version becomes mainstream, we will take off the secondary-server for future versions of 123 Flash Chat.

To help understanding, please study two tables below:

Parameter	High port (1024-51127)	Low port (<1024)
>=Flash player 7	✓	✓ Primary server
	✓ secondary server	✗

Table1

Parameter	High port (1024-51127)	Low port (<1024)
>=Flash player 7	✓ Primary server	✓
	✓ (unnecessary)	✗

Table2

To modify the Parameters, please refer to the table below:

Parameter	Type	Default Value	Description
port	Number	8969	The server port must be identical with the port value in config.xml.
ip	String	*	Set the Server address. A default "*" means the live help server

			<p>will bind to all IP addresses of your server.</p> <p>The host value in config.xml can be a random IP address or any domain name which points to this IP address. Either way, clients will be able to connect to the server.</p> <p>If you set IP address of the server to the specific IP address of your server, then the live help server will only bind to this IP. This will mean that in config.xml, to connect the live help server, you can only use this specific IP address or the domain name which points to this IP address.</p>
--	--	--	---

**http-server:**

To modify the Parameters, please refer to the table below:

Parameter	Type	Default Value	Description
port	Number	8988	The server port must be identical with the port value in client.xml.
ip	String	*	Set the Server address. A default "*" means the chat server will bind to all IP addresses of your server. The host value in config.xml can be a random IP address or any domain name which points to this IP address. Either way, clients will be able to connect to the server. If you set IP address of the server to the specific IP address of your server, then the live help server will only bind to this IP. This will mean that in config.xml, to connect the live help server, you can only use this specific IP address or the domain name which points to this IP address.
enable	String	On	Enable or disable the http server
documentRoot	String	html	The directory out of which you will serve your documents. By default, all requests are taken from <123livehelp installed directory>/html directory.
maxUploadSize	Number	1024	Setting the max file can be uploaded to the server, if the value less than or equals to 0, this means the server will not accept any upload files.

**Cross-domain-policy**

The chat server use the cross-domain-policy to ensure security.

`<cross-domain-policy>`

`<allow-access-from domain="*" /></allow-access-from>`

`</cross-domain-policy>`

By default it permits access to the connection originating from any domain.

To limit access from a specific domain name, you can configure your server in the following way:

```
<cross-domain-policy>  
  <allow-access-from domain="www.mydomain.com" /></allow-access-from>  
</cross-domain-policy>
```

To allow all URLs on mydomain.com to be accessible, you can configure your server in the following way:

```
<cross-domain-policy>  
  <allow-access-from domain="*.mydomain.com" /></allow-access-from>  
</cross-domain-policy>
```

To allow multiple domain names to be accessible you can configure your server in the following way:

```
<cross-domain-policy>  
  <allow-access-from domain="www.myfriendsdomain.com" /></allow-access-from>  
  <allow-access-from domain="*.mydomain.com" /></allow-access-from>  
  <allow-access-from domain="11.22.33.44" /></allow-access-from>  
</cross-domain-policy>
```

## 2). Global Configuration

To modify the Parameters, please refer to the table below:

Parameter	Type	Default Value	Description
message-handle-workers	Number	10	It deals with messages. To handle high frequency messages with over 1000 chat users in one room, please set it to a higher value. Normally you will not need to change it.
listen-workers	Number	5	If the maximum number of users is over 1000, please configure it with larger number. Normally you will not need to change this.
http-listen-workers	Number	5	The value of http-listen-workers determine on the purpose of the http server. If you use the http server to receive the upload files mainly, please set it to a bigger value (about 20~50), if you use the http server act as a proxy server, setting the value equals to the listen-workers is enough.
http-message-handle-workers	Number	10	It can deal with messages from the HTTP server. To handle high frequency messages from your HTTP chat server with over 1000 users, please set it to a higher value. Normally you will not need to change it.
max-connection	Number	10000	The user maximum in all rooms will be limited by the license you've purchased.
user-timeout	numbers	300	If a still logged-in user does not send a request to the chat server for a predefined period of time, chat server will stop serve him and the connection will be cut. For example:

			If a user clicks another URL in their current browser instead of quitting 123 Flash Chat first, their connection will be cut by this setting. But if the 123 Flash Chat user is inactive inside their current browser their connection will still be kept as the flash client will send request to the chat server at intervals to keep the connection alive.
user-connection-timeout	numbers	20	A user will get "failed to log in" error message when it exceeds the predefined period of time to try to connect to the chat server.
data-path	String	data	Sets the folder name in which following data files are stored: member folder; ban-ip list; ban-user list, etc.
admin-logs-path	string	logs	Name of the folder of admin log data files.
max-connections-per-ip	Number	10	Connection limit of each IP. By default it is "10". If configure it to "0", then one IP can login unlimited connections, this can be used for performance test.
time-zone	Number	0	Set your local time zone. between -12 to 12. For example, -5: GMT-5 , 8: GMT+8 Default is 0: GMT
data-base-mode	String	Default	Set the data base mode you used with the live help server. Default Mysql

### 3). Mail-smtp-server Configuration

When no staff is available and client will be suggested to send email to admin-email, you need to configure smtp server here.

Parameter	Type	Default Value	Description
host	String	localhost	Host of the smtp mail server.
port	Number	25	Port of the smtp mail server.
auth-user	String	/	Username of the smtp mail server, if any.
auth-password	String	/	Password of the smtp mail server, if any.
ssl	String	Off	Whether using the ssl mode to encrypt messages.

## 6.2.2 default.xml

### 1) General setting

To modify the Parameters, please refer to the table below:

Parameter	Type	Default Value	Description
max-connection	Number	10000	Maximum connection at the same time in current group.
max-message-length	Number	512	Maximum characters of a message.
integrated-	String	None	123livehelp can integrate your own user database,

other-database			<p>like that of your forum, or portal system.</p> <p>The modes are :</p> <p>None - not using any integrated database to authorize a user, can only login as guest.</p> <p>Mysql - using mysql database</p> <p>Oracle - using oracle database</p> <p>ODBC - using ODBC DSN to connect database</p> <p>Common - using all kinds of database, advanced setting</p> <p>URL - using web url to authorize user's login information.</p> <p>If it is set to "None", when a new user click "register", he or she will register in your chat room, If set to "Mysql", "Oracle" or "common", then when user click "register", a new window will pop up and he or she will be directed to another url which is set by you in client configuration.</p>
Auth-url	String	/	<p>You can just leave it blank or even delete this line. It is only necessary when "integrated-other-database" is set to URL.</p> <p>It means the URL you use to authorize users must have 2 arguments. One is the %username%, the other is %password%.</p> <p>eg:</p> <pre>&lt;auth-url&gt;http://www.yourhost.com/login_chat.php?username=%username%&amp;password=%password% &lt;/auth-url&gt;</pre> <p>In this URL, "&amp;" means the character "&amp;" in xml.</p> <p>That is to say when the user input username "myname" and password "mypassword", the chat server will visit "http://www.yourhost.com/login_chat.php?username=myname&amp;password=mypassword" in order to get the login information which will be numbers between 0 to 7, each with a different meaning.</p> <p>0 - login successfully;  1 - wrong password;  2 - the username can't be used;  3 - login error, e.g. error in connecting database;  4 - username not existing;  6 - guest login not allowed;  7 - username banned.</p>
site-key	String	XH00-YPWS-TI3E-KQLW	<p>The code to validate your website. You can modify this value, but it must be the same with the siteKey value in client configuration, otherwise the client can't connect your server.</p>
admin-email	String	admin@your_domain.com	<p>When no staff is available, client will be directed to a page to send message to this email.</p>
live-status-	On/off	on	<p>The status of the staff( online or offline) will be</p>

file-> Enable			record in a file if enable= "On", if enable="Off", then no record will be generated. By default it's "On". live-status-file: The path name of the staff status record file. By default it's "", indicating default html directory, and the name of the record file is "live_status.js".
---------------	--	--	---

## 2) Record-per-page Setting

Parameter	Type	Default Value	Description
record-per-page->text	number	50	Configure the max record can be displayed in each page in search panel.

## 3) Encrypt-message Setting

Parameter	Type	Default Value	Description
encrypt-message ->enable	On/Off	Off	Configure whether or not to encrypt message. By default it's "Off", means disable this feature.  Chat messages can be encrypted by using RSA, which ensure the privacy and chat security.

## 4) Enable-guest-login

Parameter	Type	Default Value	Description
enable-guest-login	On/off	On	Allow unregistered guest to log in or not. When its value is 'on', the client side will login the user by the filling -the username and password_-,this will require you to integrate the database first to validate the user account.

## 5) Modules setting

### 5.1 Flashcom-audio-video module

With flashcom-audio-video module enabled, you can add webcam and voice chat. In video-voice chat, 8k/sec bandwidth is used by default. And this bandwidth consumption is adjustable.

Unlike the basic text chat, this webcam chat module is developed based on flash media server, and can fully integrate current 123livehelp.

If you don't obtain the flash media server yet, you can buy directly from macromedia:  
<http://www.macromedia.com>: Flash Media Server or Flash Communication Server.

### Video Control

The code to activate video function to 123flashchat, sample:



```
<flashcom-audio-video targetURI="rtmp:/123livehelp" video="Off"
audio="Off"></flashcom-audio-video>
```

Parameter	Type	Default value	Description
targetURI	string		The Uniform Resource Identifier (URI) of the application on the Flash Media Server that should run when the connection is made.
audio	On/Off	On	Enable the audio mode
video	On/Off	On	Enable the video mode

## 7. Customize transcript style

The apache velocity template engine is implemented to ensure the transcript style can be customized. About how to use the apache velocity template engine to do it, please refer to the URL below: <http://velocity.apache.org/engine/devel/developer-guide.html>

There are three transcript velocity template in <123livehelp installed directory>/etc/groups/  
[admin\\_transcript.vm](#): define the transcript style for admin panel,  
[staff\\_transcript.vm](#): define the transcript style for staff panel,  
[visitor\\_transcript.vm](#): define the transcript style for client (and chat history email)

We provide the following method for you to invoke in xxx.vm template Interface:

Transcript:

String getBrowserType() (return the visitor browser type)  
String getDepartmentName() (return the department name)  
String getDisplayResoulution() (return the visitor monitor display resolution)  
long getEndTime() (return the end time in milliseconds)  
String getId() (return the transcript session ID)  
long getPickUpTime() (return the staff pick up visitor time in milliseconds)  
String getPlain() (return the transcript content in JSON format)  
String getQuestion() (return the visitor's question)  
int getRate() (return the staff rating)  
String getReferUrl() (return the visitor origin URL)  
String getRemark() (return the staff remark)  
String getStaffName() (return the staff name)  
long getStartTime() (return the start time in milliseconds)  
String getVisitorCountry() (return the visitor country)  
String getVisitorIp() (return the visitor IP)  
String getVisitorName() (return the visitor name)  
String getVisitorNick() (return the visitor nickname)  
String getVisitorProfile() (return the visitor profile)

Vector<TranscriptContent> getTranscriptContentList() (return the transcript content list)  
int getTranscriptNum() (return transcript content number)  
String getStartTimeStr() (return the start time in yyyy:mm:dd hh:mm:ss format)  
String getEndTimeStr() (return the end time in yyyy:mm:dd hh:mm:ss format)  
String getPickUpTimeStr() (return the pick up time in yyyy:mm:dd hh:mm:ss format)  
String htmlspecialchars(String s) (escape the HTML code)  
String htmlspecialchars(String s) (unescape the HTML code)

You could invoke methods of the transcript instance by \$transcript.method in xxx.vm template.

TranscriptContent:

String getFrom() (return the message sender)  
String getMessage() (return the message content)  
String getTo() (return the message receiver)  
String getDate() (return the date in yyyy:mm:dd format)  
String getTime() (return the time in hh:mm:ss format)  
int getType() (0 means staff message and 1 means visitor message)

You can use

“#foreach( \$transcriptConent in \$transcript.getTranscriptContentList().iterator())”  
to get the TranscriptContent instance, and use the \$transcriptConent.method to invoke the methods of TranscriptContent instance.

## 8. Expansion API

If the data-base-mode of 123 Live Help is Mysql, you can get the message logs from the database use your own program. The message logs are saved in the Transcript table. Below is the structure of this table

Column	Type	Description
id	varchar(255)	Primary key
group_id	int(11)	Flag of the group
parent_session_id	varchar(255)	If the staff transfer the visitor to another staff, it will store the previous transcript ID
visitor_name	varchar(255)	Visitor's name
visitor_nick	varchar(255)	Visitor's nickname
visitor_country	varchar(255)	Visitor's country
visitor_ip	varchar(128)	Visitor 's IP address
visitor_profile	varchar(255)	Visitor's profile
start_time	bigint(20)	Store the start time when visitor enters the 123 live help.
pick_up_time	bigint(20)	Visitor 's pickup time
end_time	bigint(20)	Conversation's end time
department_name	varchar(255)	Department name
staff_name	varchar(255)	Staff's name
remark	varchar(255)	Transcript's remark
refer_url	varchar(255)	Visitor 's refer URL

plain	text	Message details
browser_type	varchar(255)	Visitor 's browser types
display_resoultion	varchar(255)	Visitor's display resolution
rate	int(11)	Transcript's rating
transcript_num	int(11)	Transcript 's number
question	text	Visitor's question
staff_response_times	int(11)	Staff response time
staff_response_total_used_time	bigint(20)	Total length in time of the staff's response
type	int(11)	It is not used yet

Note:

- 1) To store the time, we use milliseconds forms which start from 1970-1-1 00:00. These columns are start\_time, pick\_up\_time and end\_time. And staff\_response\_total\_used\_time stores the conversation length (millisecond).
- 2) In column plain we store the message logs in JSON format. You can get the format details in <http://www.json.org/>. Below is the structure of the plain column.

attribute	Description
a	Main attribute
a	Data
b	Time
c	From
d	To
e	Message
f	Message type 0 staff message 1 client message 2 offline message

And this is a JSON example:

```
{"a":[{"f":"1","d":"staffa","e":"Can you help me?","b":"13:58:52","c":"guest5","a":"2008-04-03"}, {"f":"0","d":"guest5","e":"Yes","b":"13:58:54","c":"staffa","a":"2008-04-03"}]}
```

----- End. -----