Senomix Timesheets
for Windows

Self-Installed Server
Installation Guide

v5.3

www.senomix.com

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1.0 - Server Service Installation

The following steps outline how to install the Senomix Timesheets Server on your office's server computer. The Windows Service Timesheets Server package can be installed on all compatible versions of Windows (that is, Windows 10 or later) and should be installed on a reliable computer with a high-speed connection to your company network.

To ensure that all .dlls and associated files are properly registered on your server computer, we recommend the server package be installed directly at the computer and not via remote sessions such as a Windows Terminal Services connection. If installation of the server program must be performed through a remote session, please ensure the remote server session is in its appropriate 'install mode' before proceeding (as described in this Microsoft Support Note regarding remote installation: http://support.microsoft.com/kb/252330).

Please Note:

If your server computer uses an anti-virus security system with active scanning, you must whitelist all Senomix applications running on that computer in order to avoid the possibility of server data corruption.

Active scanning anti-virus systems (such as those provided with Symantec Endpoint, Norton Internet Security, or Kaspersky Anti-Virus) will prevent the writing of data files to your computer's hard drive if they identify those files as being a possible threat. If your Senomix data files coincidently have the same digital pattern as a piece of a known virus (so, a 'false positive' virus scan result), your virus scanning system will prevent writing of that data to your hard drive, resulting in a corruption of your Senomix database.

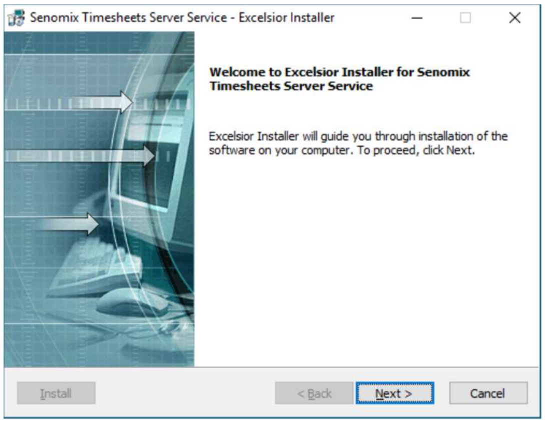
To avoid that possibility, if you are running anti-virus software on your server computer, you must instruct your active scanning anti-virus security software to allow your Senomix server to read and write its data files without interference. That is accomplished either by adding your Senomix applications to your security software whitelist, or by excluding your Senomix applications from active scanning entirely.

If you would prefer not to exclude your Senomix applications from active scanning by your anti-virus security system, we recommend transitioning to a hosted plan (where we can manage your server program and application data for you) rather than proceeding with a self-installed system.

To install the Senomix Timesheets Server Windows Service:

1. Locate the Windows Service installation file you downloaded from Senomix.

2. Double-click the application file to start the installation process, then clear any Windows User Account Control or security prompts requesting your permission to start the installation process. Once installation permission has been granted, you will be brought to the first step in the installation process:



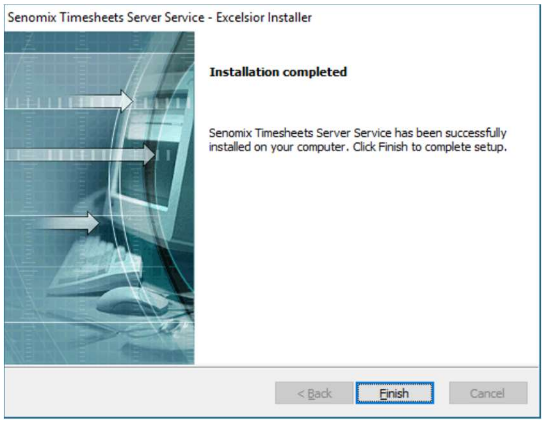
Senomix Timesheets Server Service - Excelsior Installer

Welcome to Excelsior Installer for Senomix Timesheets Server Service

Excelsior Installer will guide you through installation of the software on your computer. To proceed, click Next.

Accepting the default settings for installation is recommended.

Follow the installation steps through to completion:



Senomix Timesheets Server Service - Excelsior Installer

Installation completed

Senomix Timesheets Server Service has been successfully installed on your computer. Click Finish to complete setup.

With installation complete, click the ‘Finish’ button.

3. Before your Senomix server program can be started, system data for the Senomix Timesheets Server Service must be copied to the root directory for Windows Services. The data files to copy to your services root directory will have been provided to your office as a .zip package attachment to your system registration email. If you cannot locate that .zip package attachment, please contact Senomix Support at support@senomix.com to receive your data files.

With your data file .zip package in-hand, extract the included data directories \st_conf and \st_data to your Windows Services root directory at \windows\sysWOW64\. When installed, those directories will appear on your server computer as:

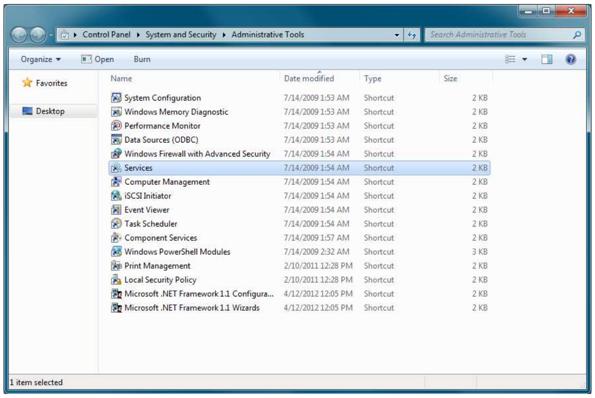
\windows\SysWOW64\st_conf; and
\windows\SysWOW64\st_data

and will contain all data files for use with your Senomix Timesheets server.

If you would prefer to locate your system data in a different directory or drive partition than the default server root directory, please see Section 4.0 of this guide after your installation is complete.

4. To start the service and confirm that the Senomix Timesheets Server has been correctly installed, open your server computer's Windows Services list.

Your services list can be opened on Windows through your Cortana search menu by typing 'Services' in your Cortana search box:

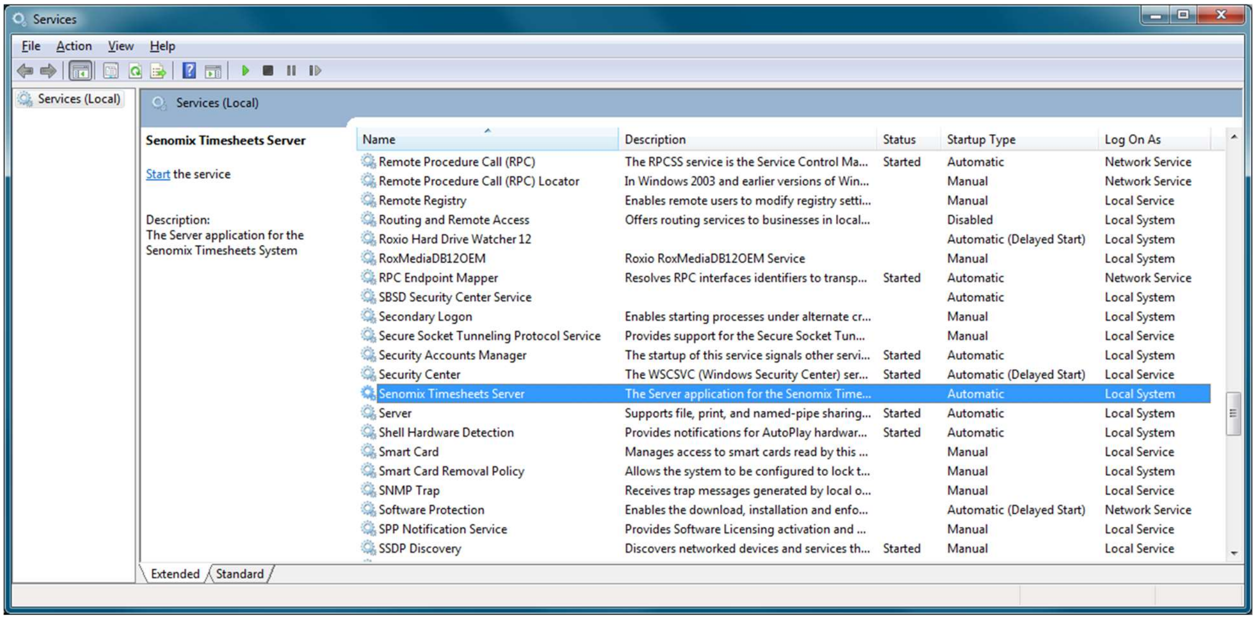


Control Panel ▸ System and Security ▸ Administrative Tools
Search Administrative Tools
Organize
Open
Burn
Favorites
Desktop

Name	Date modified	Type	Size
System Configuration	7/14/2009 1:53 AM	Shortcut	2 KB
Windows Memory Diagnostic	7/14/2009 1:53 AM	Shortcut	2 KB
Performance Monitor	7/14/2009 1:53 AM	Shortcut	2 KB
Data Sources (ODBC)	7/14/2009 1:53 AM	Shortcut	2 KB
Windows Firewall with Advanced Security	7/14/2009 1:54 AM	Shortcut	2 KB
Services	7/14/2009 1:54 AM	Shortcut	2 KB
Computer Management	7/14/2009 1:54 AM	Shortcut	2 KB
iSCSI Initiator	7/14/2009 1:54 AM	Shortcut	2 KB
Event Viewer	7/14/2009 1:54 AM	Shortcut	2 KB
Task Scheduler	7/14/2009 1:54 AM	Shortcut	2 KB
Component Services	7/14/2009 1:57 AM	Shortcut	2 KB
Windows PowerShell Modules	7/14/2009 2:32 AM	Shortcut	3 KB
Print Management	2/10/2011 12:28 PM	Shortcut	2 KB
Local Security Policy	2/10/2011 12:28 PM	Shortcut	2 KB
Microsoft .NET Framework 1.1 Configura...	4/12/2012 12:05 PM	Shortcut	2 KB
Microsoft .NET Framework 1.1 Wizards	4/12/2012 12:05 PM	Shortcut	2 KB

1 item selected

Once your Services dialog has been opened, you will see a list of all services registered on your server computer, with an item named “Senomix Timesheets Server” now listed in that directory:



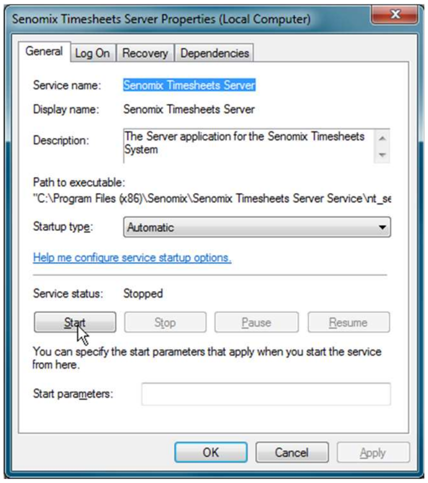
Senomix Timesheets Server

Start the service

Description:
The Server application for the Senomix Timesheets System

Name	Description	Status	Startup Type	Log On As
Remote Procedure Call (RPC)	The RPCSS service is the Service Control Ma...	Started	Automatic	Network Service
Remote Procedure Call (RPC) Locator	In Windows 2003 and earlier versions of Win...		Manual	Network Service
Remote Registry	Enables remote users to modify registry setti...		Manual	Local Service
Routing and Remote Access	Offers routing services to businesses in local...		Disabled	Local System
Roxio Hard Drive Watcher 12			Automatic (Delayed Start)	Local System
RoxMediaDB12OEM	Roxio RoxMediaDB12OEM Service		Manual	Local System
RPC Endpoint Mapper	Resolves RPC interfaces identifiers to transp...	Started	Automatic	Network Service
SBSD Security Center Service			Automatic	Local System
Secondary Logon	Enables starting processes under alternate cr...		Manual	Local System
Secure Socket Tunneling Protocol Service	Provides support for the Secure Socket Tun...		Manual	Local Service
Security Accounts Manager	The startup of this service signals other servi...	Started	Automatic	Local System
Security Center	The WSCSVC (Windows Security Center) ser...	Started	Automatic (Delayed Start)	Local Service
Senomix Timesheets Server	The Server application for the Senomix Time...		Automatic	Local System
Server	Supports file, print, and named-pipe sharing...	Started	Automatic	Local System
Shell Hardware Detection	Provides notifications for AutoPlay hardwar...	Started	Automatic	Local System
Smart Card	Manages access to smart cards read by this ...		Manual	Local Service
Smart Card Removal Policy	Allows the system to be configured to lock t...		Manual	Local System
SNMP Trap	Receives trap messages generated by local o...		Manual	Local Service
Software Protection	Enables the download, installation and enfo...		Automatic (Delayed Start)	Network Service
SPP Notification Service	Provides Software Licensing activation and ...		Manual	Local Service
SSDP Discovery	Discovers networked devices and services th...	Started	Manual	Local Service

Double-click the entry to select the service, and start it by clicking the “Start” button:


Senomix Timesheets Server Properties (Local Computer)
General
Log On
Recovery
Dependencies
Help me configure service startup options.
Start
Stop
Pause
Resume
OK
Cancel
Apply

Service name: Senomix Timesheets Server

Display name: Senomix Timesheets Server

Description: The Server application for the Senomix Timesheets System

Path to executable:
"C:\Program Files (x86)\Senomix\Senomix Timesheets Server Service\nt_se

Startup type: Automatic

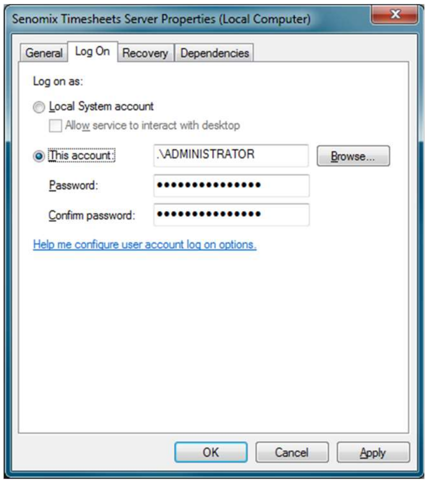
Service status: Stopped

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Be sure the service is started under an account which will remain active without a current user (such as the “Local System account”) or else the Timesheets Server service will be halted by Windows when the logged in user disconnects. You can confirm the ‘owner’ of the service by viewing the “Log on as” option under the “Log On” tab of the service’s properties.

The Senomix Timesheets Server service can be set to run under a different user account as best fits your office's security settings. For example, the standard "Administrator" account could be used to run the service on system start:



Log on as:

○ Local System account

□ Allow service to interact with desktop

● This account: .\ADMINISTRATOR

Password: •••••••••••••••

Confirm password: •••••••••••••••

Help me configure user account log on options.

Your Senomix Timesheets Server is now started and ready for your first system login.

5. With your Senomix Timesheets Server program started, you can now connect to your applications for time entry and system administration through the insecure http sign-in page at:

http://insecure-self-installed-sign-in.senomix.com

We recommend further securing your system with an issued SSL certificate (which will allow use of the secure https sign-in page at https://www.senomix.com/timesheet), please continue through Section 1.1 of this guide for those instructions.

For a step-by-step introduction to using Senomix Timesheets, please see the Getting Started Guides provided on your Help page at:

www.senomix.com/help

6. Your Senomix Timesheets Server is now installed as a part of your office's IT infrastructure.

To ensure your system data remains protected and intact regardless of any data emergencies your office may encounter, a few additional precautions must be followed to secure your system:

As noted at the start of these installation steps, please ensure your Senomix Timesheets Server program has been **white-listed in any anti-virus or network scanning software** installed on your systems. If your Senomix server program is not cleared of any interference in your anti-virus systems, those system will eventually trigger a 'false-positive' virus scanning result **and corrupt your office's Senomix database**. Symptoms of that data corruption would include time and expense records which suddenly go 'missing', or effort hour and expense data which is incorrectly recorded.

To ensure your Senomix Timesheets data is included in **your office's data backups**, be sure to include the \st_conf and \st_data directories noted above in your regular scheduled backup process. Those directories include all data you will require for data recovery in the event of a hard drive failure or other data-loss situation.

The \st_conf and \st_data directories to include in your data backups are:

\windows\SysWOW64\st_conf; and
\windows\SysWOW64\st_data

Please be certain to regularly test your data backups.

As long as your office has a set of off-site data backups available for access, your system will be able to survive any sort of data disaster.

If the computer on which you have installed the Senomix Server
is not included in your office's regularly scheduled backup process,
be sure to make a backup of its contents at least once per day
to ensure your timesheet data remains secure.

1.1 – SSL Securing Your Senomix Timesheets Server

This section outlines the steps required to secure your Senomix Timesheets Server program with an SSL certificate.

An installed SSL certificate will allow your system to connect through the https sign-in page at:

https://www.senomix.com/timesheet

Before continuing:

Please confirm your Senomix Timesheets Server Service
is at the latest version.

The Digital Signature of your “Timesheets Server.exe”
should have a timestamp of:

`January 25, 2022 8:01:02 PM`

If your server is operating at an earlier version,
please contact us at support@senomix.com
to obtain the latest.

Web browser encryption algorithms change often. A version check can save you hours of trouble.

If you would prefer to use an HTTPS-secured system for your office without needing to manage SSL certificates yourself, we recommend moving to a hosted Senomix plan. Under a hosted Senomix plan, all system management, security, backups and upgrades are handled for you.

Please note: sign-ins for SSL-secured systems are handled with a user’s email address. The discontinued username attribute is not available for current Senomix systems. If any of your system users are still connecting with an old username, please ensure an email address is set on their user record to allow their system sign-in.

To follow the instructions provided in this section, you will need the **Java keytool** utility and an SSL certificate provided by a recognized certificate authority that maps to your hosting server computer's domain name.

To ensure compatibility with your generated certificate, we recommend using the Java SDK version 1.0.8_202 to install your keytool (Java versions after the _202 release may use an incompatible PKCS12 algorithm).

If you plan to use an internal certificate authority to generate a self-signed certificate, please contact us at support@senomix.com for additional details.

After you have installed the Java SDK 1.0.8_202 keytool and have an SSL certificate ready, please follow these steps to SSL-secure your office's Senomix Timesheets Server program with a PKCS12 keystore:

1. On the server computer hosting your office's Senomix Timesheets Server program, create a temporary directory in which your generated keys and certificates will be placed.

For this example, the directory name c:\temp_key_creation\ will be used.

Open the MS DOS prompt on your server computer, and move to your c:\temp_key_creation\ directory.

2. Confirm your hosting server computer's DNS name is recognized with a command line ping (for example, `ping [server.domain.name]`, where [server.domain.name] is the DNS name of your hosting server computer). The received response should indicate your DNS name is active and available for your keystore.

Next, confirm the Java SDK version in use for keytool by entering at the command line:

```
java -version
```

that command should indicate you are using Java version 1.0.8_202.

If you are not using the Java 1.0.8_202 version of keytool, your certificate may have compatibility issues.

3. At your MS DOS prompt, enter the -genkey command to create a PKCS12 key, as follows:

```
keytool -genkey -alias [server.domain.name] -keyalg RSA
 -storetype PKCS12 -keystore senomixcert.pfx -keysize 2048
```

where [server.domain.name] is the DNS name of your hosting server computer.

When prompted, enter your new keystore's password. Note that password for reference, as it will be used later in these steps.

4. When prompted for “What is your first and last name?”, enter your [server.domain.name].

The entered [server.domain.name] must be an exact match to the text used for your server computer’s DNS name. Other attributes may be set as you like.

5. Confirm your created keystore contents with the command:

```
keytool -list -v -keystore senomixcert.pfx
```

Enter your keystore password when prompted. Your password should be accepted, with output displaying your expected server domain name as the “Alias name” attribute.

6. With your PKCS12 keystore prepared and confirmed, issue a Certificate Signing Request (CSR) with the -certreq command, as follows:

```
keytool -certreq -alias [server.domain.name] -storetype PKCS12
 -keystore senomixcert.pfx -file [server.domain.name].csr
```

where [server.domain.name] is the DNS name of your hosting server computer.

When prompted, enter the keystore password you set in Step 3.

7. Follow the instructions of your SSL certificate authority to obtain your certificate files.

8. Once your certificate authority has validated your Certificate Signing Request, you should receive two files named:

[server_domain_name].crt

and

[server_domain_name].ca-bundle

With the “.” period characters in your provided domain name replaced with “_” underscores in those filenames.

Place those files into your c:\temp_key_creation\ directory and return to your MS DOS prompt.

9. At your MS DOS prompt, import your certificate and certificate reply into your keystore with the two separate commands:

```
keytool -import -trustcacerts -alias root -storetype PKCS12
 -file [server_domain_name].ca-bundle -keystore senomixcert.pfx
```

AND

```
keytool -import -trustcacerts -alias [server.domain.name]
 -storetype PKCS12 -file [server_domain_name].crt
 -keystore senomixcert.pfx
```

where [server.domain.name] is the DNS name of your hosting server computer, and [server_doman_name] is the underscore-set filenames for your certificates.

When prompted for each of those commands, enter the keystore password you set in Step 3.

10. Your senomixcert.pfx is now ready for use.

Copy your senomixcert.pfx keystore to the /st_conf directory of your office's Senomix Timesheets Server service, at /windows/sysWOW64/st_conf/

If you have relocated your server's data directories outside of /windows/sysWOW64/ (using the senomix_data_location.txt file described elsewhere in this guide), you must create an /st_conf directory under /windows/sysWOW64/ into which you can place your SSL configuration files. Your Senomix server's data files may be placed at a different directory location, but your SSL configuration files must be placed in an /st_conf directory located in your Windows services root directory.

11. In your Senomix Timesheets Server program's /st_conf directory, create a text file named: `keystorePass.txt` and enter in that file the password you set for your keystore in step 3. Be certain not to include any extra spaces or carriage returns in that file. The keystorePass.txt file must contain only the text used for your keystore password.

12. Download the latest Java cacerts file from Senomix through this web page link:

https://www.senomix.com/docs/senomixcacerts_2022_07.zip

Extract the contained file named `senomixcacerts` from the downloaded .zip package and place it in your /st_conf directory.

13. Shut down and **start your Senomix Timesheets Server program** through your Windows Services tools.

14. Your Senomix Timesheets Server should now be initialized to use an SSL secured websocket and allow system sign-ins from the https page:

https://www.senomix.com/timesheet

Using your regular system username, password, and DNS name Senomix Account value, sign in to your system. If you are able to connect to your account through that HTTPS page, your Senomix Timesheets server is now SSL secured.

You may now delete the temporary c:\temp_key_creation\ directory created in step one, or archive those files with your server computer's other configuration management data.

If a connection was not successful through the HTTPS page, attempt a sign-in through your insecure HTTP sign-in page at:

http://insecure-self-installed-sign-in.senomix.com

If that HTTP connection succeeds, your Senomix Timesheets Server has not been SSL secured. Confirm the `keystorePass.txt`, `senomixcacerts`, and `senomixcert.pfx` files have been placed in your server computer's /Windows/sysWOW64/st_conf directory, that the files are named exactly as shown (so, all lower-case with the exception of the "P" in keystorePass.txt) and that the steps listed above have been followed to process your SSL certificate for use.

If neither sign-in option works, please check your Windows Services list to confirm your Senomix Timesheets Server program is running, and use your java keytool to test that your senomixcert.pfx is valid.

If you would prefer to use an HTTPS-secured system
without needing to manage SSL certificates yourself,
we recommend moving to a hosted Senomix plan.

Under a hosted Senomix plan, all system management,
security, backups, and upgrades
are handled for you.

2.0 - Server Operation

To start the Senomix Server, use your Windows Administrative Tools (as described in the previous section). The server operates as a background process on your server computer. Once the server has started, your Windows Services list will show the application “Senomix Timesheets Server” as operational.

To stop the server, select the Senomix Timesheets Server in your Windows Administrative Tools Services list and select “Stop”.

3.0 - Network Configuration

General Firewall Configuration

If your office is using an external firewall, router, switch or VPN between the computers running the Server and Client Applications (as will be the case for employees using Senomix Timesheets via iPad, iPhone, Android phones and tablets, or off-site or from a home office), **you must ensure that TCP port 8052 is open for traffic sent to the server**. The Timesheets Server receives network connections on TCP port 8052, with the client applications initiating their remote connection through the standard 'ephemeral' ports for their operating system.

If all computers are running behind the same firewall (and so will not have any traffic passing through that network shield), you should not need to adjust your office's network firewall for Senomix Timesheets traffic.

Network Configuration for External Connections

For most office networks, the only adjustment required to allow external Senomix traffic from employees working off-site or via phone or tablet devices will be on the side of the computer running your Timesheets Server. If that computer is located behind a router (for example, if it is connecting to the internet through a wireless wi-fi access point), you will need to set your router to port forward all traffic arriving on TCP port 8052 to the internal IP address of the computer which is running your Senomix Timesheets Server.

Instructions for the Senomix Timesheets port forward configuration of most models of network router can be found through this web page link:

https://portforward.com/ports.htm

Select "Senomix Timesheets" in that list of applications and follow the instructions to identify the router of interest to you.

If your particular model of router cannot be found through those pages, please refer to the documentation provided with your router for appropriate port forwarding instructions.

To ensure your server computer's IP address does not change on your network when that computer is rebooted, be sure to set that computer to have a static IP address assigned by your router. Instructions for setting static IP addresses for most types of network router can be found through this link:

http://www.portforward.com/networking/staticip.htm

For client-side connections (that is, everyone accessing the Timesheet Entry, Administration and Reports apps from outside of your office), no adjustments should be required beyond permitting Senomix Timesheets traffic through the PC's network shields (for example, your virus scanner or firewall software).

VPN / Firewall Troubleshooting

If you have configured your router and firewall to permit Senomix Timesheets traffic but are still having difficulty using Senomix Timesheets through your office's firewall or Virtual Private Network (VPN):

- Ensure that your VPN, firewall and network devices have been set to an MTU of at least 1500 (which is the generally accepted value for maximum packet size on the Internet).

- Check that your VPN and firewall have not been set to discard fragmented packets.

  If any network devices between the client and server applications of Senomix Timesheets have been set with an MTU (Maximum Transmission Unit) value lower than the standard maximum of 1500 bytes, it is likely that Senomix Timesheets traffic will have been fragmented in transit by those devices. Permitting fragmented packets ensures older or mis-configured network devices will not interfere with your system's operation.

- Check that your firewall and virus scanning systems have not been set to discard or block websocket traffic.

4.0 - Optional Relocation of System Data Directories

This section describes how Senomix Timesheets Server data can be set to be referenced from a directory other than the standard \windows\SysWOW64 directory. If you are looking for instructions on **moving your Senomix Timesheets Server to a completely different computer**, please see the guide named “How to Move the Senomix Timesheets Server”, available for reference from the Senomix web site.

If you would prefer to store the system data for your Senomix Timesheets Server in a location other than the default \windows\SysWOW64 root directory, you can specify an alternate location by entering the new data path in a text file named senomix_data_location.txt

If used, that text file must be placed in your Senomix Timesheets Server’s root directory \windows\SysWOW64. The file is then read on start of the Senomix Timesheets Server Windows Service, with all system data read from the indicated location.

To relocate your server data:

1. Ensure the Senomix Timesheets Server Windows Service has been halted. The server program must be shut down prior to relocating your data.

2. Before relocating your data, ensure the \st_conf and \st_data directories have been backed up to an external data storage medium (hard drive, DVD, or archive tape). The \st_conf and \st_data directories contain all of your office’s Senomix Timesheets data and must be backed up regularly to ensure no possibility of data loss due to hard drive failure or loss of hardware due to power surge, fire, flood, theft, etc. As long as your server’s \st_conf and \st_data directories have been backed up, you will be able to recover your Senomix Timesheets system from any possible data loss event.

3. Identify the new location of your Senomix data and move the \st_conf and \st_data directories and all contained data files to that location.

For this example, we are assuming the data has been moved to a directory named ‘senomix’ on the D: partition of the server computer’s hard drive. Thus, the data directories would be moved on the server computer as follows:

```
D:\senomix\st_conf\
D:\senomix\st_data\
```

Please note: Server performance and stability may be affected if the data files are relocated to a network drive or other location which is not on the same physical computer from which the server program is operating. If an alternate data location is desired, we recommend that the data directories be placed on a hard drive partition located on the same computer from which the server program is run.

4. Confirm the \st_conf and \st_data directories have been moved from the default root directory of \windows\SysWOW64. All Senomix data should now be in the directory specified for your alternate data location, with the \st_conf and \st_data directories removed from the old root directory.

5. Create a text file named senomix_data_location.txt and place it in the root directory of your Senomix Timesheets Server, \windows\SysWOW64. So, the file will be stored as:

```
C:\WINDOWS\SysWOW64\senomix_data_location.txt
```

6. In the senomix_data_location.txt text file, enter a single line of text which indicates the directory in which the \st_conf and \st_data directories have been stored. This line will indicate the full path of the new data location and must be specified in the form:

```
[drive letter:]\[directory name]\
```

In this example, the text entered in the senomix_data_location.txt file will be:

```
D:\senomix\
```

With the data path entered, save and close the senomix_data_location.txt text file.

7. Start the Senomix Timesheets Server Windows Service. The server program will now retrieve and reference system data files from the new location.

Please note: All of your office's Senomix Timesheets data is stored in the \st_conf and \st_data directories of your server install and so those directories must be included in your office's regular scheduled data backups. If relocating your data to an area different than the standard root directory, please ensure that your backup scripts are updated to include the \st_conf and \st_data directories at your new server data location.

5.0 - System Uninstall

The Senomix Timesheets Server Windows Service program can be uninstalled using the Windows Control Panel “Add or Remove Programs” dialog.

If you want to **transfer the Senomix Timesheets Server to another computer**, be sure to copy all files and sub-directories to the new computer (as instructed in the “How to Move the Timesheets Server” guide) before uninstalling your system.

To uninstall the Senomix Timesheets Server program, first halt the Senomix Timesheets Server Service by using the “Stop” button provided in your Windows Administrative Tools Services list.

With your Senomix Timesheets Server halted, choose to “Uninstall” the program from your “Add or Remove Programs” dialog. After confirming the uninstall in the message boxes which follow, the application will be removed from your system.

After uninstallation, some data directories may still remain on your hard drive. Those directories can be deleted manually using your Windows Explorer. The application directories can be found under the c:\Program Files (x86)\Senomix directory (for example, “c:\Program Files (x86)\Senomix\Senomix Timesheets Server Service”).