Journyx Technical Note

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Subject: Configuring external Apache with Journyx Timesheet

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In some environments, it may be necessary to configure the Timesheet product to operate with an existing Apache Web Server installation. Using an existing Web Server is often required to integrate with existing site infrastructure or to utilize existing SSL setups.

This document gives guidelines on how that may be done. Journyx recommends that only personnel with extensive experience in Apache administration attempt this procedure. This document first details basic requirements for an external Apache httpd setup and a second section outlines additional requirements needed to run SSL connections to the Timesheet application.

This version of this document applies ONLY to Timesheet Versions 4.6 and later for Linux and Unix (AIX, Solaris).

General Requirements

First, some background. Timesheet ships with Apache HTTP Server; in the case of Timesheet versions based on 4.6 this is Apache 1.3.6, Timesheet 5.0 uses Apache 1.3.26. Versions 5.5 and later ship with Apache 1.3.27. In order to achieve best performance, Journyx requires that the Apache used as the Web Server front-end for Timesheet support the mod_python module. Thus the following requirements on the external (target) Apache must be met.

- *httpd -v* must list the version as 1.3 or higher, but NOT 2.0 or higher.
- *httpd -l* must list mod_python.c as one of the compiled modules OR must list mod_so and be capable of loading a mod_python extension of level 2.7.3 but NOT 3.0 or higher. 2.7.8 is the preferred version.
- The user that runs the external Apache must have permissions to read all owned in the Timesheet install directories. A good way to do this is to make sure they are in the same group and set appropriate group permissions for the files.

If mod_python does not show up as one of the supported modules, then the httpd must be recompiled with that capability or with mod_so. Additionally, the Python version used by the mod_python extension must be Python Version 2.1.1 for Timesheet 4.6 and 5.0, and Python Version 2.1.3 for Timesheet 5.5 through at least the 7.X series.

In the event that the target httpd needs to be recompiled***, the Python executable found in the Timesheet install must be found in the compiling user's path***. This is found in the directory

pd/Linux/python/bin. (If you are not installing on Linux, the 'Linux' component in the path should be one of 'AIX' or 'SunOS' or 'FreeBSD')

Complete instructions on compiling Apache are beyond the scope of this document and are not covered by Journyx Support. For instructions on compiling Apache with mod_python support see the following websites.

http://www.apache.org/

http://www.modpython.org/

After the mod_python functionality has been confirmed for the target Apache httpd then the following steps may be used to install a Timesheet instance referencing the target Apache.

Unzip and un-tar the product distribution in the normal manner.

Upon running the jtinstall install script you will have to designate the externalapache option.

```
./jtinstall --externalapache /<identifier>/
```

Where <identifier> is typically the name of the installing user. For this example we suppose that the installing user is 'tsadmin'. Also suppose that we are installing in /u/tsadmin/jt (as opposed to the default of /u/tsadmin/jtime/jtime)

The tsadmin user must exist, and should be in a group such that files installed by that user can be accessed by the user under which the target Apache instance runs. Then, logged in as the tsadmin user, un-zip and un-tar the image into the tsadmin home directory.

cd to jtime and enter this command

```
./jtinstall --externalapache /tsadmin/
```

After the command has completed, you will need to add the following lines to apache's httpd.conf. Note the full path shown here as /home/tsadmin/jt/pi... may have to be modified to reflect the path to the actual install on your system.

```
############################################################
# configuration for tsadmin
############################################################
PassEnv PGDAT
PassEnv PYTHONPATH
PassEnv WTHOME
PassEnv PATH
AddHandler python-py pyc inc
PythonInterpPerDirectory On

Alias /tsadmin/icons/ /home/tsadmin/jt/pi/apache/serverroot/htdocs/image/
Alias /tsadmin/jtime /home/tsadmin/jt/pi/apache/serverroot/htdocs/
ScriptAlias /tsadmin/jtcgi/ /home/tsadmin/jt/pi/apache/serverroot/cgi-bin/

<Directory /home/tsadmin/jt/pi/apache/serverroot/cgi-bin>
        AddHandler python-program .py
        AddHandler python-program .pyc
        AddHandler python-program .python
        PythonHandler dopy
</Directory>
```

```
<Directory /home/tsadmin/jt/pi/apache/serverroot/htdocs>
        Action python-py /tsadmin/jtcgi/dopy.py
</Directory>
```

After adding those directives to the httpd.conf file then you will have to stop and restart Apache. Before restarting Apache, you will need to make sure the PYTHONPATH environment variable is set properly for the user that runs Apache. You can take the setting and place it in the appropriate rc file (.bashrc, .profile, etc.) to make sure that this is always set when starting Apache. A good way to tell what the variable should be set to is to source the Timesheeet setup file then echo the variable. Do this as the installing user.

```
cd jt/pi/bin
. ./setup
echo $PYTHONPATH
```

When you have that variable in the Apache user's environment, stop and restart httpd.

Finally, stop and restart the installation by doing the following.

```
cd ~/jt/pi/bin
. ./setup
wstop;wstart
```

Check Timesheet to see if everything is working. If the site or modules can not be found by Apache then review the Apache configuration. If the site is found, but returns no HTML, then check for permissions problems between the Apache user and the files in the Timesheet install directory.

Additional Requirements for SSL Enablement

The Apache HTTP Server shipped with Timesheet is not set up for running under SSL due to the extensive additional configuration and compilation needed to implement SSL. The SSL Apache build must compile the mod_ssl module, and that module has direct dependencies on OpenSSL modules. Since the versions of these modules that may exist on servers may not match up with versions built and distributed by Journyx, Journyx does not build nor ship the mod_ssl module. Although static compilation could be used to achieve this, a static compilation would make subsequent upgrading to for future security changes in mod_ssl or OpenSSL extremely difficult to address. Journyx encourages all customers who wish to run with SSL to build an Apache server capable of supporting SSL. This allows them to maintain it according to their own site security policies and oversight.

In addition to the above requirements, the following are needed to run Timesheet under SSL.

- *httpd -l* must list mod_ssl.c as one of the compiled modules OR must list mod_so and be capable of loading a mod_ssl (libssl.so) extension.

Complete instructions on compiling Apache are beyond the scope of this document and are not covered by Journyx Support. For instructions on compiling Apache with mod_python and mod_ssl support, see the following websites.

http://www.apache.org/

http://www.mod_ssl.org/

http://www.modpython.org/

The httpd.conf configuration detailed in the General Requirements section above is used in SSL installations but must be in the VirtualHost configuration section for the SSL port (Typically 443).

If an Apache HTTP server running SSL and configured to load mod_python is already running on the Timesheet server machine, then switching from the shipped Apache to the external Apache requires only that the httpd.conf changes be made, and a simple change be made to the Timesheet "config file".

The httpd.conf changes are described above. To change the config file login as the Timesheet install user and change directories to the Timesheet install directory. In that directory will be a file named "config" Follow these steps.

1. Change directory to the Timesheet bin directory

   ```
   cd <install directory>/pi/bin
   ```

2. Source the setup file

   ```
   . ./setup
   # Note that is dot-slash space slash setup (You can also do
   #"source setup" on some operating systems)
   ```

3. Stop the Timesheet application

   ```
   wstop;wstop
   ```

4. Copy the config file to config.save

5. Edit the config file with a text editor. Use an editor such as vi or emacs.

6. On the first line will be a number. Increment that number by one.

7. Insert a line in the config file like this.

   ```
   EXTERNALAPACHE=yes
   ```

8. Make sure you have not added any blank lines and save the config file. Restart the application.

   ```
   wstart
   ```

9. If there are errors reported on running wstart, re-check the config file to make sure that the number of lines in the config file match the number at the top of the file minus one. You can also try copying the config.save file over the config file to see if the problems go away. If they do, then there was some mistake editing the config file.

10. When wstart starts with no problems, check Timesheet to see if everything is working. If the site or modules can not be found by Apache then review the Apache configuration. If the site is found, but returns no HTML, then check for permissions problems between the Apache user and the files in the Timesheet install directory.