Tax-Aide Appointment System

Installation and Configuration Manual

June 29, 2023

Version 9.01

This appointment system (referred to in this document as TAAS) was developed by AARP Foundation Tax-Aide volunteers from Colorado to replace paper or spreadsheet type systems. It provides a convenient platform for managing appointments for individual sites, coordination of scheduling across multiple sites, or a central scheduling point for many sites. New sites and users can be added by any Appointment Manager and users can be assigned either viewing or scheduling permissions at their own or multiple sites as desired. Sites can optionally allow internet access to taxpayers for scheduling their own appointments or add themselves to a callback list for subsequent scheduling.

TABLE OF CONTENTS

Introduction 2
Overview 2
Prerequisites 2
Windows or Linux Installation 2
Step 1: Create a folder 2
Step 2: Create a database 3
Step 3. Create a database user name and password. 4
Step 4: Setup 5
Appointment reminders: 7
Step 5: Configuration 9
The Site Options Tab: 11
The Tools Menu: 13
MacOS Installation 14
Step 1: Create a folder 14
Troubleshooting tips 15
Reporting problems 15
Check the PHP version and extensions 15
The Trace tool 15
Environment settings 16
Appendix 1 - Prerequisite Components 17
Windows Prerequisites 17
MacOS Prerequisites 17
MySQL 17
Also Recommended 17
Appendix 2 – Database Schema 18
Appendix 3 – Program Module Flow 20
Appendix 4 – Update History 21

Introduction

Overview

The software for the Appointment system is delivered in a zip file containing numerous PHP executable files (.php, .css), image files (.png, .gif, .ico) and supporting documents (.pdf).

This is a web application, not a desktop application. These files must be installed on a web server. The Appointment system has been successfully deployed on Windows, Linux, and MacOS servers.

Access to the Appointment system is via a public-facing web page.

Prerequisites

TAAS requires these components to work

- MySQL database – version 4.6 or later
- PHP – version 7.0 or later
- An HTTP web server, e.g. IIS or Apache.

If you do not have all these already installed on your server, please refer to Appendix 1.

Windows or Linux Installation

Step 1: Create a folder

Create a new folder to hold the Appointment system files. If you are using a website creation system (like Wordpress, Joomla or Drupal), you want the folder to be outside of that environment. It's usually best to add the new directory immediately above your website root folder to keep the access link simple, for example:

https://mywebsite.net/myappts

For IIS installations, it's OK to create your folder below the default:

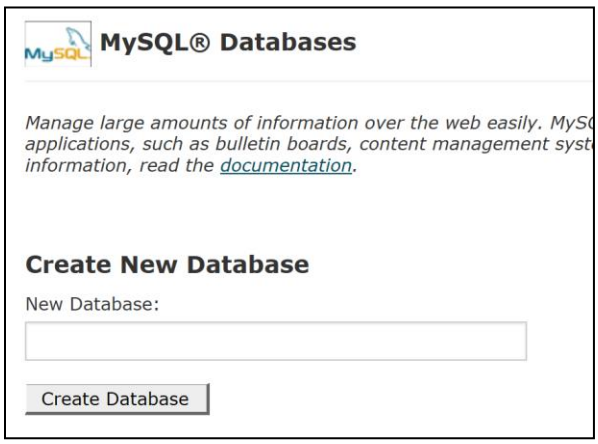
C:\inetpub\wwwroot

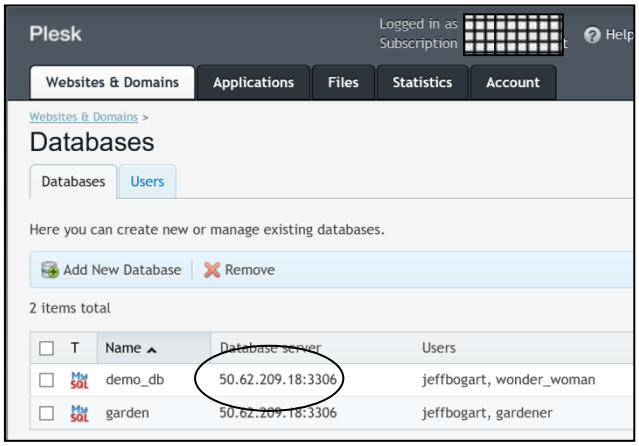
After you create your folder:

- Enable full permissions to this folder for your web server app and for yourself.
- Unzip and copy the files into the new folder

Step 2: Create a database

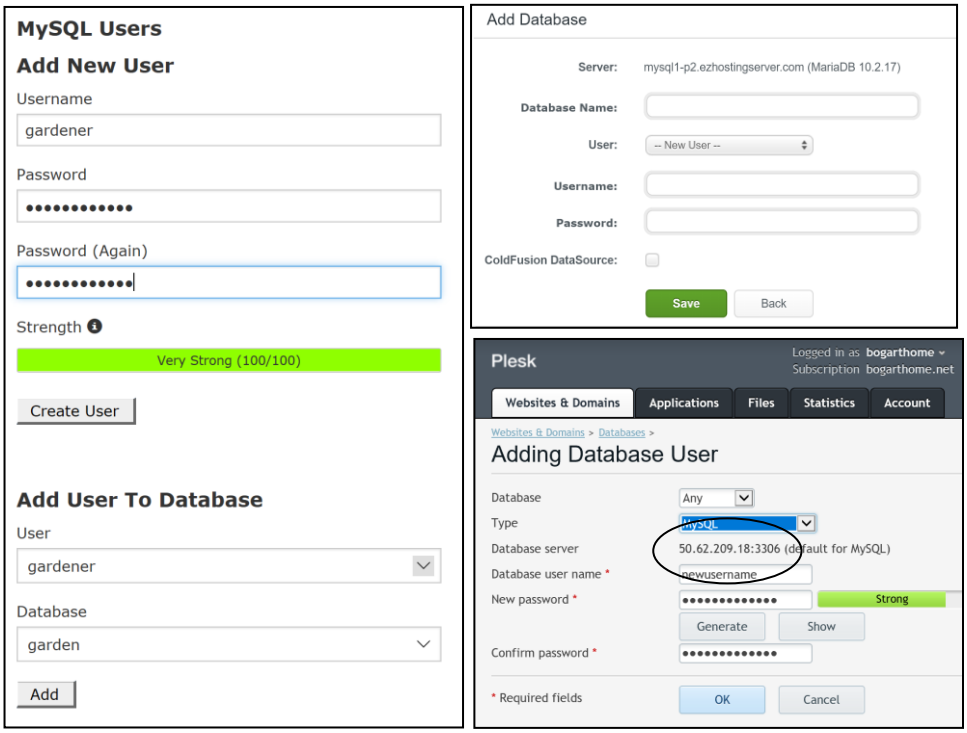
The Appointment System uses a MySQL database interface. Creation of the database varies with the host server, but may look like one of the following:





Important - Record the host name of your database (an IP address or "localhost"). You'll need that information later.

Step 3. Create a database user name and password.



Be sure your new user has full access privileges to the database, typically the default. If you already have a user name set up for other databases, you could use that same user here of course.

NOTE: Please avoid ampersands and quotes in passwords.

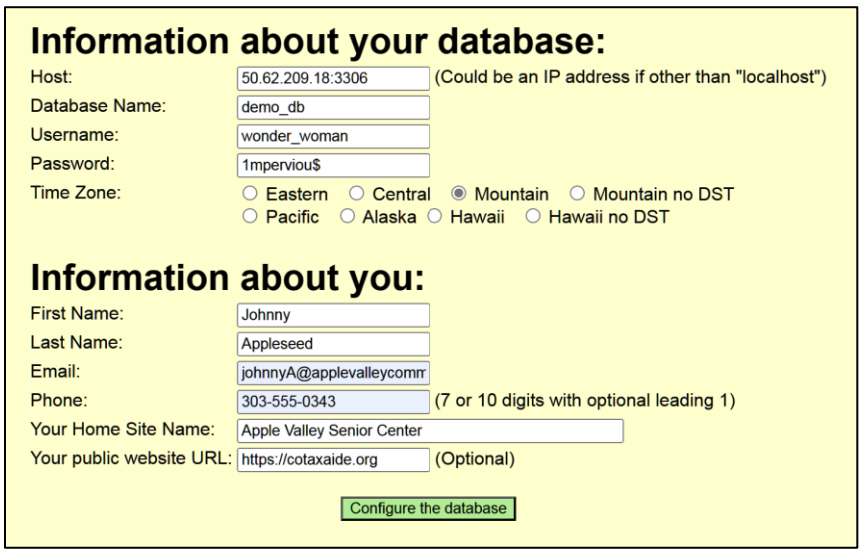
Step 4: Setup

To initialize the system, invoke index.php from your browser:

http://localhost/apptsys/index.php

The page below will display. You will need to enter:

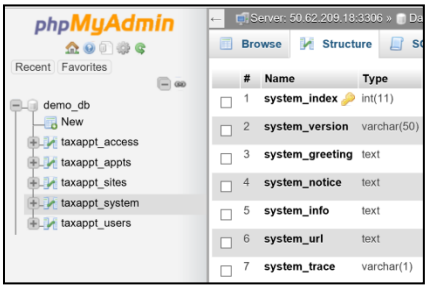
- Database host name (recorded from step 2 above).
- The database name, user name and password.
- Your personal information – name, phone, email, home site name. (your initial password will be "admin").



The setup program will create new subfolders in your appointment folder:

- Images - all .png and .jpg files will be moved to this directory.
- appt_session_dir - where global session variables are stored. (overrides the PHP system session location setting if it exists)
- appt_error_log – a text file where error messages may appear. It also contains information about actions taken by the appointment system users. Viewing using the Trace capability can help troubleshoot problems a user is experiencing.
- crontab.bat – a file that is executed as a scheduled task to send email reminders.
- crontab.txt – (for future use)

The setup program will also create the database tables and their fields:



In addition to entries in the taxappt_system table, there should be one entry in the taxappt_users table (you) and two entries in the taxappt_sites table (your site and an “Unassigned” site).

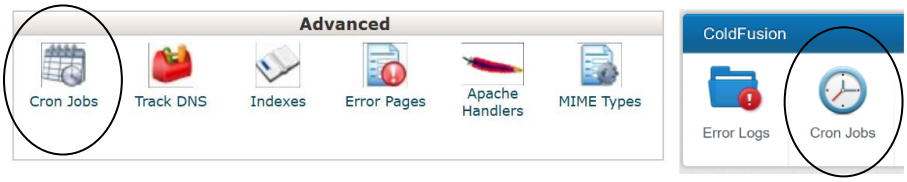
The setup program will also create a new PHP file, *opendb.php*. This file uses the information you entered to provide the needed code statements to connect the database to the Appointment system.

If you need to run setup again for some reason, simply delete the *opendb.php* file and it will be re-created. Re-running setup will not change the contents of the database other than to add new tables or table fields during an update process. But it may set your password back to “admin”.

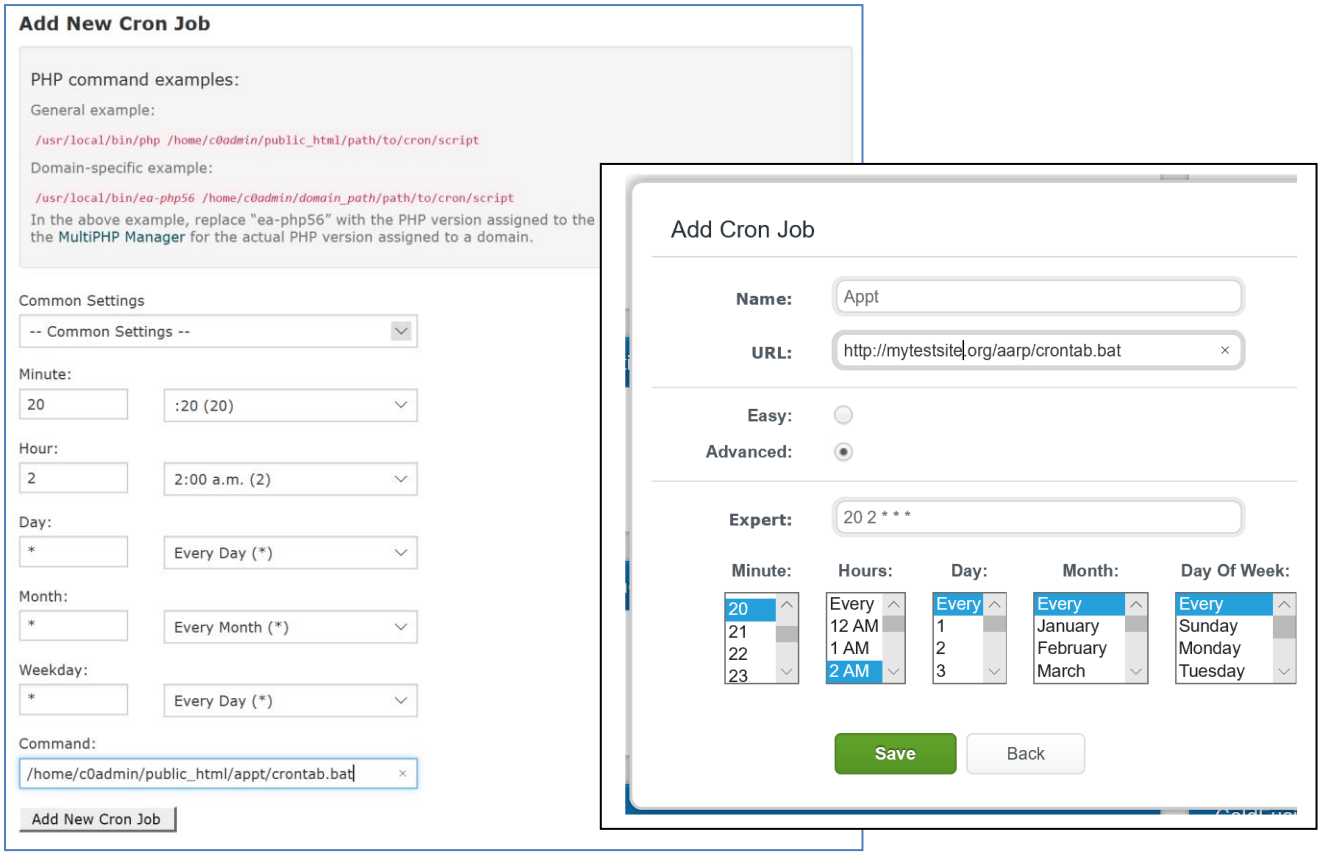
Appointment reminders:

One final step is to set up a scheduled task to run which will send email reminders to those who have upcoming appointments.

On Linux systems, that means setting up a cron job. Look for the cron icon:



Click the Cron Jobs icon and you will be presented with a form to fill in:



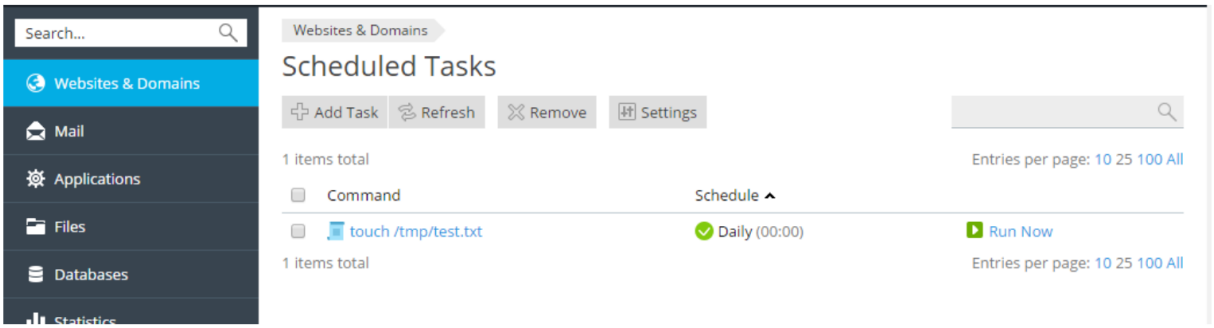
These examples are set to run at 2:20 am every day.

Note that the time set is the server time, not necessarily your local time if the server is not in your time zone.

The command entry is the full path from your home directory to the crontab.bat file that was created during the installation process.

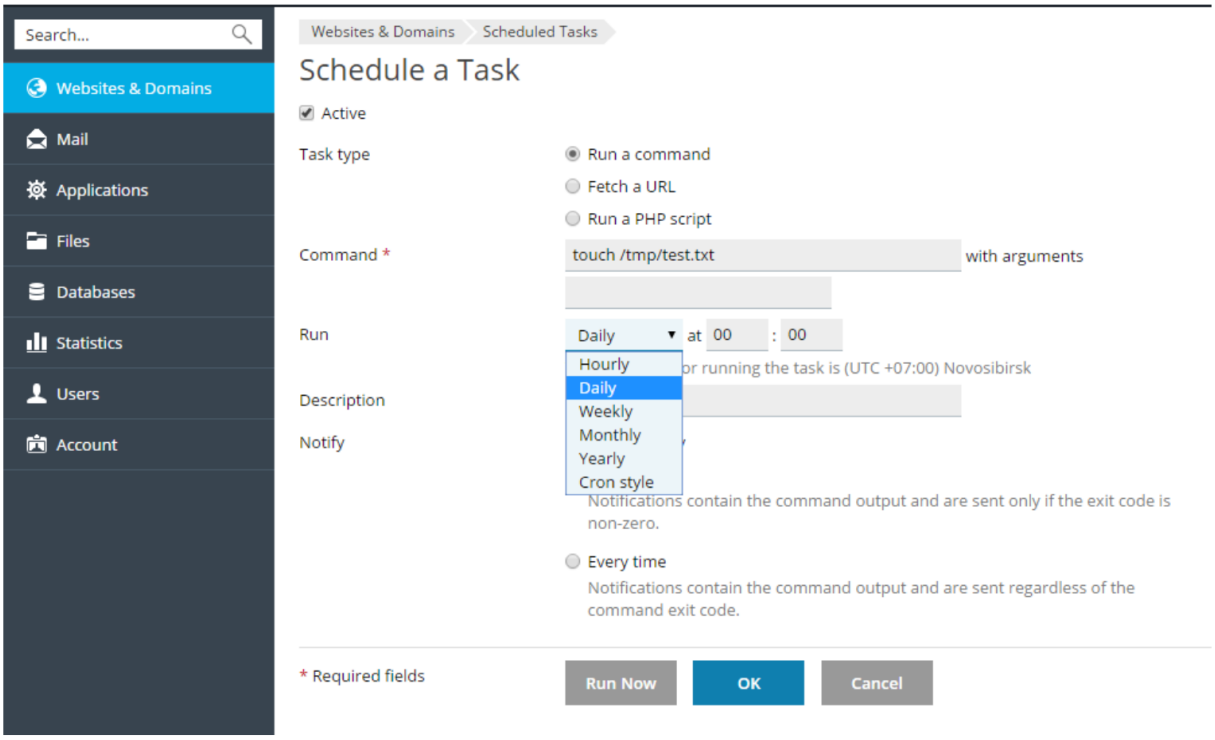
An example Plesk screen for scheduling on a windows system:

To see all scheduled tasks created for a subscription, go to **Websites & Domains** > **Scheduled Tasks**.



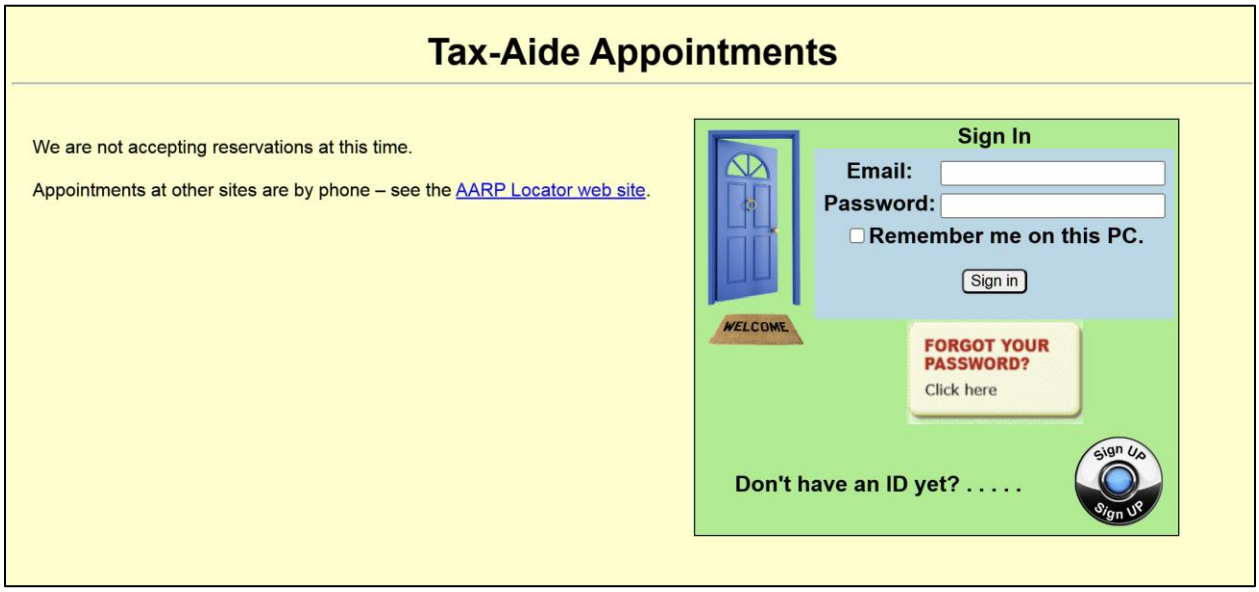
For every task in the list you can change the settings of the task (by clicking on the task's name), activate it by clicking the icon, deactivate it by clicking the icon, or run the task immediately.

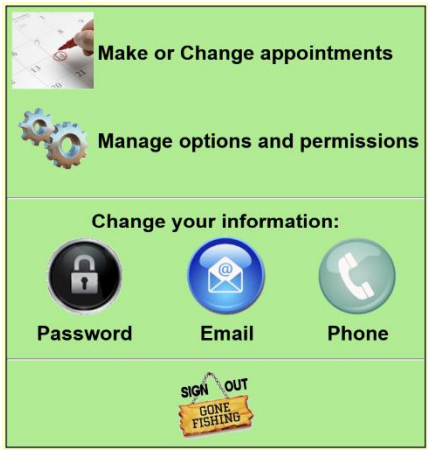
To create a scheduled task, go to **Websites & Domains** > **Scheduled Tasks** > **Add Task**.



Step 5: Configuration

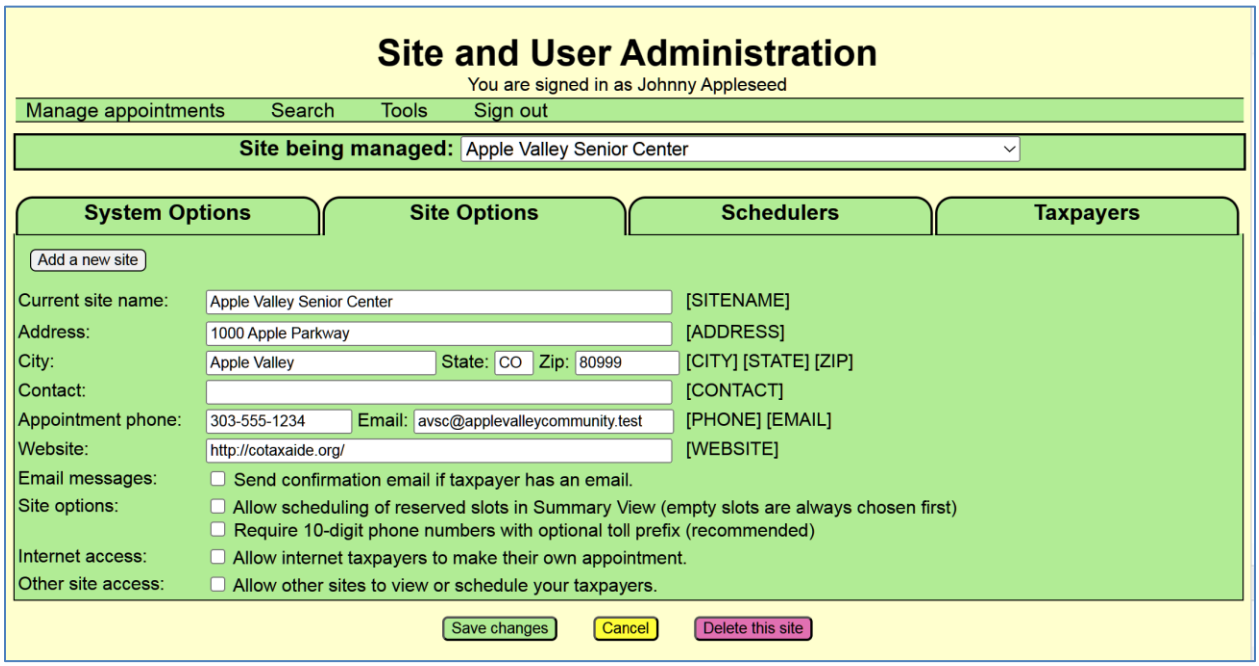
If setup runs properly, you will then be presented with the login page:





Sign in with your email and initial password ("admin"). You should change that password as soon as possible.

Then, choose "Manage options and permissions". It will take you to your home site configuration tab.

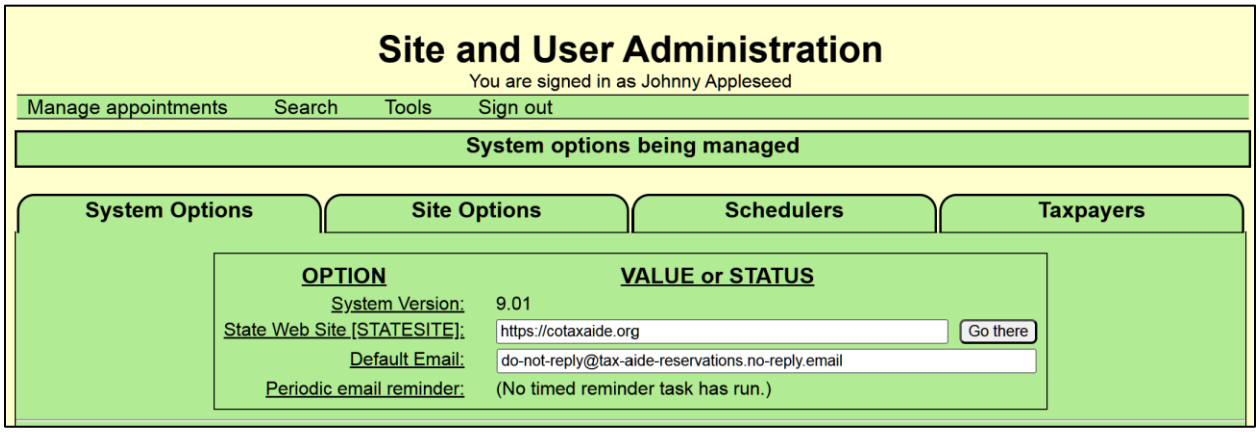


Complete filling out the information and options for your home site. More details about the options are in the *Appointment help.pdf* document, included as one of the TAAS files.

The System Options Tab:

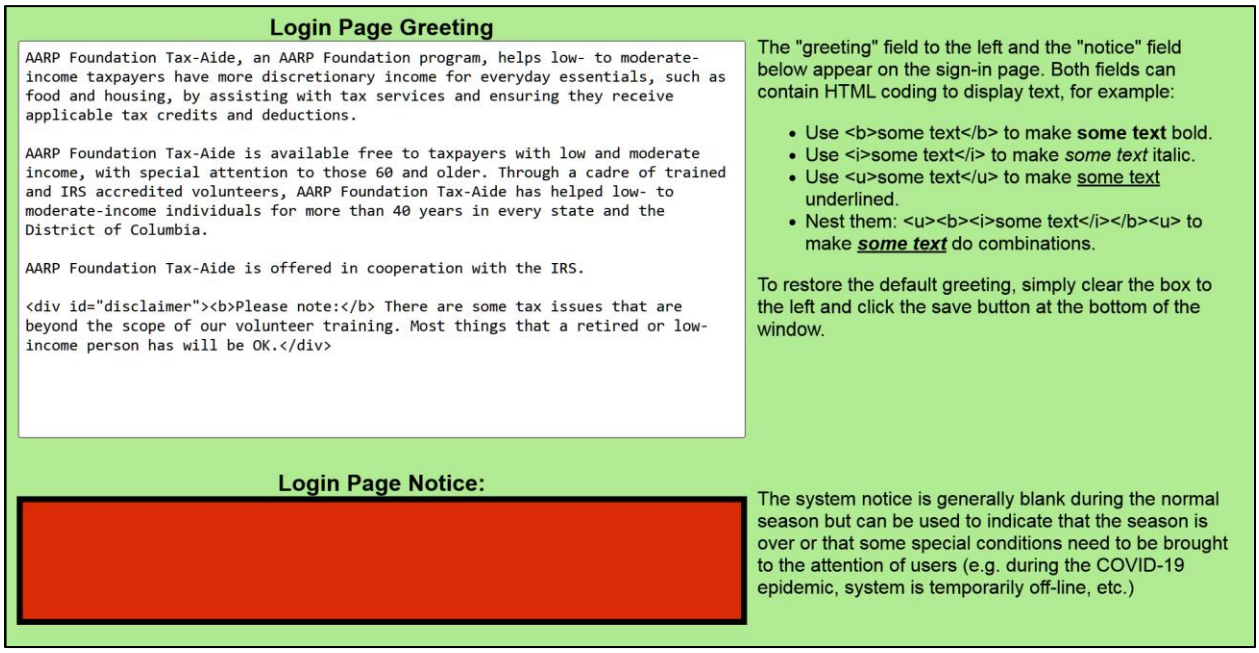
As the System Administrator, you have a tab for System Options that others do not. Here, you can customize the Login Greeting, the Login Notice, the default site Confirmation message and attachment links available to the sites in their messages.

The State Website should point to a web page that is accessible to the public such as lists of what to bring. The [STATESITE] shortcode in appointment confirmation messages will be replaced by what you enter in that field.

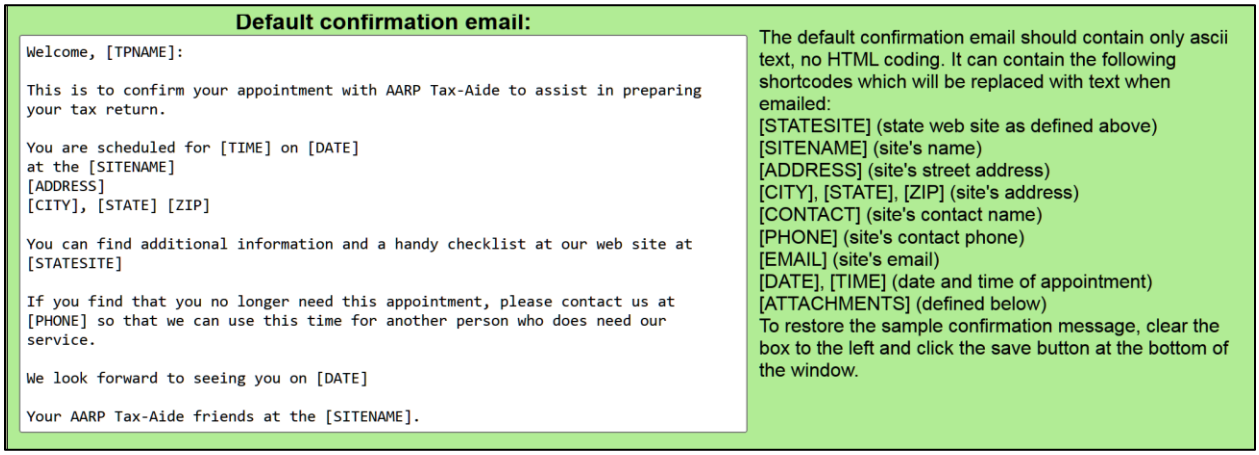


Below the options is the Login Greeting and Login Notice setup:

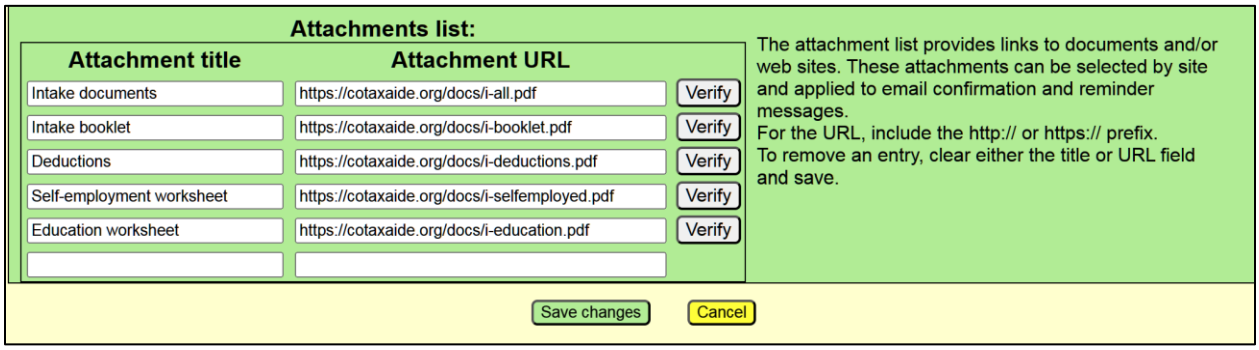
The Login Greeting and Login Notices use HTML coding for the messages. They will initially be blank. The default Login Page greeting will appear after you *Save changes* the first time. To restore the default Login Greeting, simply delete the entire greeting and select S*ave changes* (buttons will appear at the bottom of the screen). To remove the Login Notice, delete the notice and it will not appear on the login screen. The notice will have no effect on the ability to use the system but acts only as a deterrent to warn internet clients that the system is not active for their use or to indicate service limitations (for example, during the COVID epidemic period).



Scrolling down the tab gives access to the default Confirmation/Reminder message that is available to each site. Each site can create their own but if they delete their message, this will be the replacement.



And down a little more is the definition of attachments that are available to the sites for selection using the [ATTACHMENTS] shortcode:



There is no limit to the number of attachments that can be defined – as you add an attachment, a new blank line will be added to the end of the list.

At the bottom of the page, save and cancel buttons will appear if changes have been made on this tab.

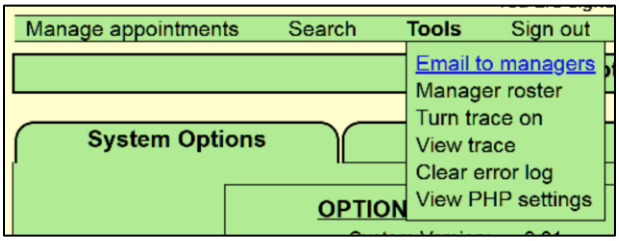
Also, as System Administrator, you have full access to all sites and all users and can change all permissions including adding additional Administrators (it's a good idea to have a backup). This can be helpful when the Appointment Managers at sites need assistance in configuring their setups.

You also have access to a site called "Unassigned". The purpose of this site is to list users (in the Taxpayer tab) who have login accounts but are not associated with any site. Perhaps a person created a login ID but never made an appointment. You may wish to purge names on this list if they haven't been used for a long time.

That's it! You are now ready to add additional sites and their Appointment Managers, Schedulers and appointment slots for each site. For those tasks, see the *Appointment help.pdf* file included in the TAAS distribution files.

The Tools Menu:

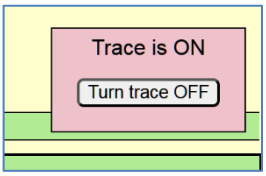
The tools menu is only available to Adminstrators.



Email to managers opens your email application on your PC and pre-loads the send-to list with all Administrators and Appointment Managers.

Manager roster produces a new window listing all Administrators and Appointment Managers in the system with their email address, phone number and home site name. This can be copied and pasted into an excel spreadsheet.

Turn trace on/off provides messages in the appt_error_log as an aid to troubleshooting. When the trace is active, a red indicator box at the top right of the window indicates this status. Turn the trace off by clicking the button in the red box or the Tools menu choice.



View trace provides a view of the information in the appt_error_log by grouping transactions by the user that was logged on. It can give a way to figure out who did what and when if a problem is reported.

Clear error log deletes the information in the appt_error_log. The log can get quite large as the season progresses and if all is well, there is no need to save that information. If you do wish to save the information, use the View trace menu and then use the view source function in the browser to save it to your PC before clearing the error log.

View PHP settings provides a new window showing all settings for PHP and its extensions as an aid to troubleshooting. This invokes the *show_phpinfo.php* file, which can also be run directly as a URL, for example:

https://mywebsite.net/myappts/show_phpinfo.php

MacOS Installation

Step 1: Create a folder

Create a new folder to hold the Appointment system files. It's fine to use the default MacOS Apache folder:

/Users/<username>/Sites

After you create your folder:

- Enable full permissions to this folder for your web server app and for yourself.
- Unzip and copy the files into the new folder

Then follow Steps 2 through 5 in the Windows Installation section.

Troubleshooting tips

Reporting problems

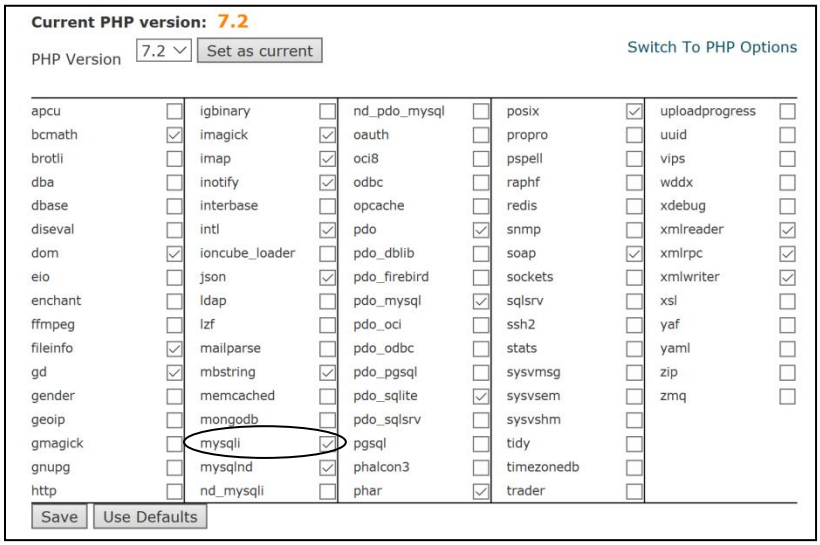
To ask questions or to report problems, please send an email to: tools@cotaxaide.org.

Check the PHP version and extensions

On your server dashboard there will be a place to select the version of PHP that is being used. The icon may be something like:

The application has been tested on several PHP versions and it's best to use the latest (8.1 as of this writing) since the later versions have significant performance improvements. The current version of TAAS requires PHP version 7.0 or later.

If, during setup, the database doesn't get created, verify that *mysqli* is included in the extensions.



The Trace/Error log tool

From the Tools menu option, you can turn trace on or off.

This produces messages in the *appt_error_log* file whenever an action is taken and is helpful when the action does not do what was expected – especially if a real error is logged because of that action. If such occurs, please report it so that it can be investigated and repaired. Send the *appt_error_log* file along plus any other information that you think might be helpful.

With trace on, the *appt_error_log* can get rather large as time goes on. After using this tool for troubleshooting, it's a good idea to erase the *appt_error_log*. It will be recreated when needed.

Environment settings

The *environment.php* module is designed to set the required PHP options and create the necessary subfolders.

You may gain some insight by running the *show_phpinfo.php* module as a URL:

https://mywebsite.net/myappts/show_phpinfo.php

If you have difficulty with the installation or operation and find a setting that is causing problems, please report it. The default settings on servers vary. We'll be glad to help you get set up if you run into trouble.

Database problems

Issues with the database are often related to the query construction. If you can determine which query is causing a problem (usually an error message in the appt_error_log file), add an "error_log($query)" message, copy the query and paste it into the SQL section of the MySQL database interface. It will give a clue that may help repair the query.

Appendix 1 - Prerequisite Components

Windows Prerequisites

Assuming you want to use IIS as your web server, we highly recommend that you use Microsoft Web Platform Installer. It provides a robust system to install and configure many well-known web components. It works well for installing MySQL and PHP.

https://www.microsoft.com/web/downloads/platform.aspx

MacOS Prerequisites

Apache and PHP come pre-installed on MacOS. There are numerous articles available to assist you with configuring these components.

https://coolestguidesontheplanet.com/install-apache-mysql-php-on-macos-mojave-10-14/

https://www.iodocs.com/installing-apache-php-mysql-mac-os-x-macos-sierra/

MySQL

If you're not already using MySQL, we recommend the Community Server edition.

https://dev.mysql.com/downloads/

If you install version 8.0 or greater of MySQL, we recommend you choose the Legacy Encryption option to ensure compatibility with third party tools.

Also Recommended

One of the best free database management tools for MySQL is phpMyAdmin. It is well supported and very powerful for a wide range of DBA tasks.

https://www.phpmyadmin.net/

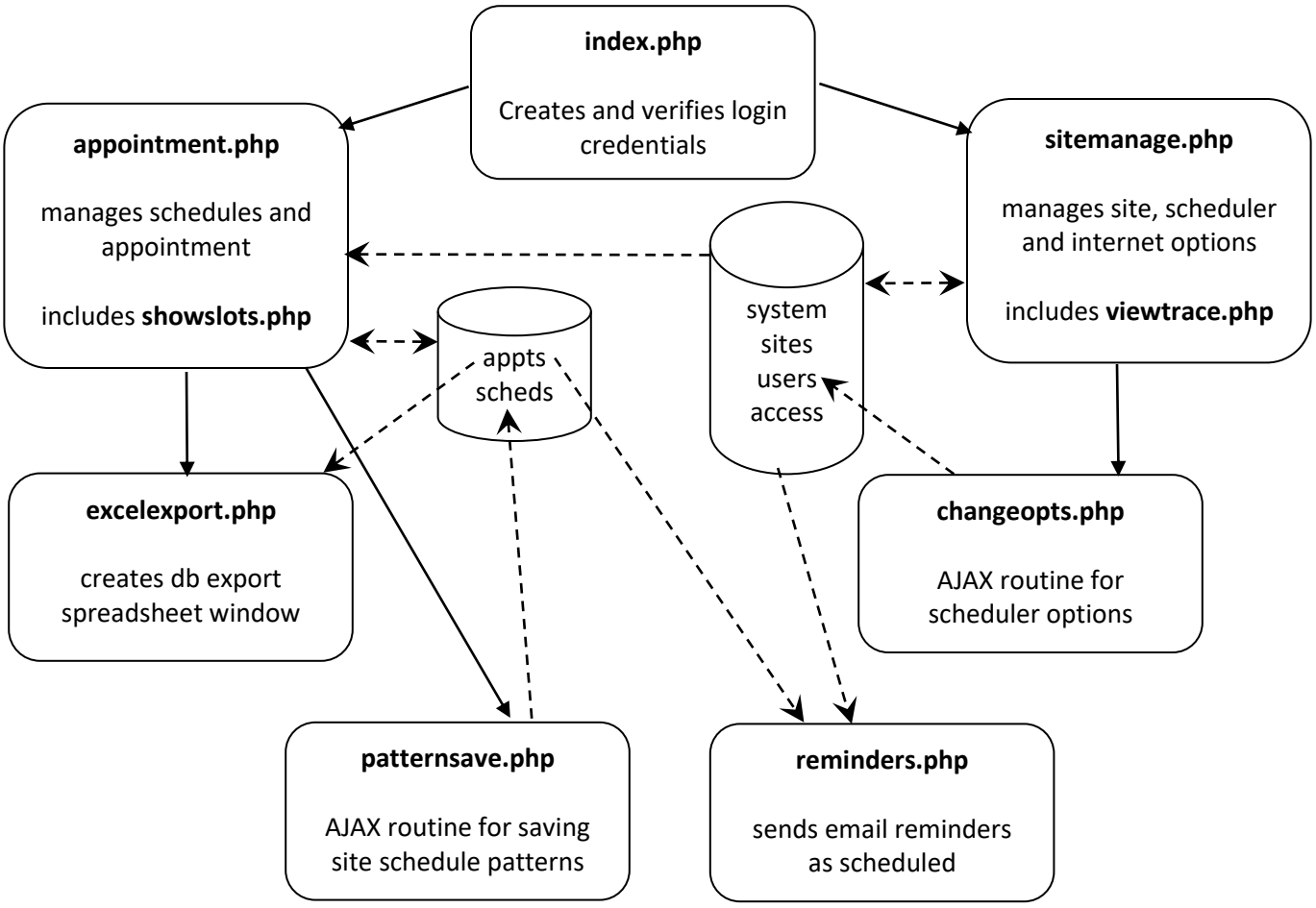
Appendix 2 – Database Schema

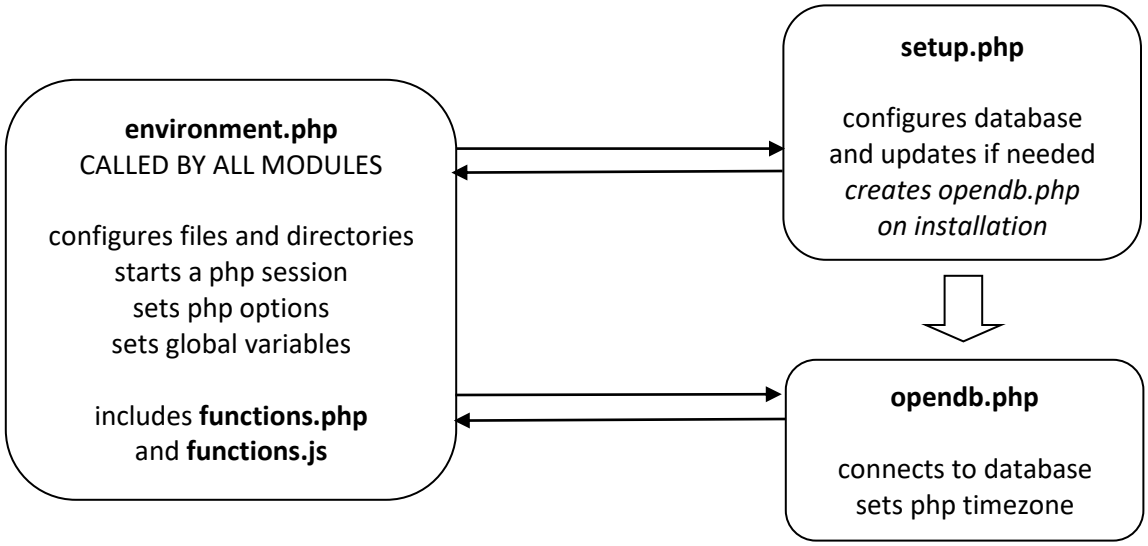
Table	Field	Option	Description
taxappt_system	system_index	1	Only one record in this table
	system_version	(number)	Version number from the setup.php file
	system_greeting	(text)	Login page greeting message
	system_notice	(text)	Login page notice (doesn't print if blank)
	system_info		Reserved for future use
	system_url		URL to state web site
	system_trace	T	"T" if trace is active
	system_email		Default email address for emails
	system_reminders	(date)	The date and time when the last scheduled crontab.bat ran
	system_confirm	(text)	Default confirmation message
	system_attach	(text)	List of attachments available for use with the [ATTACHMENTS] shortcode. "|" delimits each attachment
taxappt_sites	site_index	(number)	Index of the record for the site (1 = Unassigned)
	site_name	(text)	Site name
	site_address	(text)	Address, phone, contact with "|" as a delimiter
	site_inet	S:n R:n C:n N:n	Internet scheduling allowed Restrict scheduling to CB list if CB list > avail slots Restrict scheduling to CB list Allow scheduling but cannot add to the CB list n = Number of appointments allowed by this site
	site_contact	(text)	Contact person
	site_message	(text)	Email message to be sent when appt is made or changed. Not sent if first 4 characters are "NONE".
	Site_instructions	(text)	Additional instructions for the taxpayer when making their own appointment
	site_addedby	(index)	Index of site that created this site
	site_open	(date)	Date site is open for internet scheduling
	site_closed	(date)	Last date site is open for internet scheduling
	site_schedule		Reserved for future use
	site_help	(URL)	
	site_sumres	"checked"	Allow selection of RESERVED slot from Summary View
	site_reminder	(number)	Number of days prior to appointment to send reminder
	site_lastrem	(number)	Number of days since last email to not send a reminder
	site_10dig	"checked"	10-digit phone numbers are required
	site_attach	(text)	Names of attachments to be listed using the [ATTACHMENTS] shortcode. Separated by "|".
taxappt_users	user_index	(number)	Index of the record for this user
	user_name	(text)	Abbreviated name for status history messages
	user_email	(email)	User's email address
	user_phone	(phone)	User's phone number
	user_last	(text)	User's last name
	user_first	(text)	User's first name
	user_home	(index)	Index of user's home site (Appt Mgrs, Schedulers only)
	user_appt_site	(index)	Index of user's last appointment site (Inet scheds only)
	user_options	A M 1-63	Administrator Appointment Manager Bit map value of Scheduler permissions: 1 = view Callback list 2 = add/change Callback list

Table	Field	Option	Description
			4 = view Appointment availability (Summary View) 8 = add/change Appointments 16 = (reserved for future use) 32 = allowed to use RESERVED slots
	user_lastlogin	(timestamp)	Date and time of last login
	user_pass		User password. Initial dagger indicated a temporary password sent to the user. Now formatted as: oldPW † 6-dig code † date
	user_sitelist	(indexes)	Indexes of sites to which the user has permissions delimited with "|"
	user_excel_export		Ordered list of fields to export to excel. Preceding * in field name indicates skip box was checked.
taxappt_access	acc_index	(index)	Index of the permission entry in the table
	acc_owner	(index)	Index of the site who has given this permission
	acc_location†	(index)	Index of site to whom the owner wishes to give permissions (i.e. who is listed on the Scheduler tab)
	acc_user†	(index)	Index of the user to whom the owner gave permissions
	acc_option	M, 1-63	The permission option (see above table)
taxappt_appts	appt_no	(index)	Index of the appointment slot
	appt_date	(date)	Slot date (1900-01-01 is unused, Callback or Deleted)
	appt_time	(time)	Slot time
	appt_name	(text)	Client's name
	appt_location	(index)	Index of the site for which the appointment is made
	appt_phone	(phone)	Client's phone number
	appt_need	(text)	Client's need information
	appt_status	(text)	Status history – each event separated by "%0A"
	appt_wait	(number)	A number, used for Callback list sorting
	appt_change	(timestamp)	When the appointment was last added or changed
	appt_by	(text)	Full name of the person who made the appointment
	appt_type	D|A	D = Deleted record, A = Archived record
	appt_tracking		Reserved for future use
	appt_emailsent	(date)	Date when the last email was sent
	appt_tags	(text)	Tags content
	appt_info	(text)	Info content
taxappt_scheds	Sched_index	(index)	Index of the schedule pattern
	Sched_location	(index)	Index of the site to which the pattern belongs
	Sched_name	(text)	The name of the pattern
	Sched_pattern		The pattern: d1, d2 | , dow1, dow2, … | , n1, n2, n3, n1, … d1 = starting date as yyyy-mm-dd d2 = ending date as yyyy-mm-dd dow1 – dow7 = Mon, Tue, Wed, etc n1 = number of slots n2 = time as hh:mm in 24 hr format n3 = number of slots reserved n1 – n3 is repeated up to 8 times as needed

†Only one of acc_user or acc_location is populated to give permissions for the user or site respectively.

Appendix 3 – Program Module Flow





Appendix 4 – Update History

New in version 5.00:

- Management window:
  - New option to require entry of 10-digit phone numbers.
  - New option by Scheduler to allow or deny using reserved slots for an appointment.
  - Search by name, phone or email of internet registered persons.
  - Sites are prevented from removal if any appointment slots are present – to remove a site, go to the appointment screen and "Start over" to remove all.
  - Sites are prevented from removal if any Schedulers are assigned – move them to another site or delete them.
  - New option to delete all members of the "Taxpayers" tab who have not logged in since a given date.
  - Site Appointment Managers now have access to the "Unassigned" site – a list of internet users who have created a login but have not completed a registration at any site.
  - Addition of a default system email "From" address to be used if email is sent without a site email address.
  - Ability to schedule reminder emails on a site basis (if set up for the system).
  - Administrable limit on the number of appointments an internet user can make.
- Appointment window:
  - The calendar now scrolls from the earliest appointment date to one month past the last appointment date.
  - The current date is highlighted in the calendar.
  - Schedulers can now go to an earlier than current date by clicking on the calendar day.
  - Daily view appointments now sorted by: assigned, available, RESERVED.
  - Separate the Notes field into 3 depending on desired use:
    - Tags field displays with the name on the Daily view but does not print on the check-in sheet or the ERO report.
    - Notes field continue to be footnotes on the check-in sheet,
    - Info field is miscellaneous information for Schedulers,
  - Added search by Tags option.
  - An additional column in Daily, Callback and Deleted views to indicate that the Info field has information – hover the mouse over the icon to see the information.
  - Search shows any match to phone or email at any site in the system, not just your own.
  - Allow ampersand (&) in name and email fields.
  - The status log for an appointment now shows when an email was sent.
  - The "cancel" button on the appointment entry form is now labeled "close".
  - Deleting "Reserved for #..." entries in the Callback list no longer are added to the Deleted list.
  - Ability to save and recall a schedule pattern and use patterns saved at other sites to which you have access.
  - Ability to delete the "Deleted list".
- Internet window:
  - The calendar was removed because it was hiding sites that could be selected and provided no additional information not already available in the list of available appointments.

New in version 6.00

- Management window:
  - A new field for each site to give additional information to the taxpayer when making their appointment.
- Internet window:
  - Display of the additional information for the site

New in version 7.00

- Management window:
  - Minor reformatting to keep table headers visible and scrolling changes
  - Minor reformatting to keep page-bottom buttons visible
  - Changed view of site messages to display in a new browser window (vs alert window)
- Appointment window:
  - Flexibility for excel export to re-order and omit selected fields
  - Added ability to copy an appointment
  - Added ability to send an email message to a taxpayer
  - Added ability to move all Callback list to Deleted list
  - Added shortcode support for site information field on user appointment window
  - Changed blue indications for internet-registered appointments
  - Minor reformatting to keep table headers visible and scrolling changes
  - Moved some routines to new functions.php, functions.js and showslots.php to reduce module size and duplication

New in version 8.00

- opendb.php problem fix
  - The line containing "mysqli_conncet_error()" has a parameter $dbcon prior to version 8. The parameter is not permitted using PHP version 8.0. This is corrected by fixdbv8.php, which is run from setup.php.
- Management window:
  - Added ability to delete the appt_error_log to prevent it getting too large or if no longer needed.
  - Added ability to tailor the default confirmation/reminder message for the system.
  - Added ability to add document or web page links as attachments to confirmation, reminder or user instruction messages via an [ATTACHMENTS] shortcode.
- Appointment window:
  - Changed export to create a download file, courtesy of Mark Doernhoefer.
  - Changed the null date (for callback and deleted record detection) from 0000-00-00 to 1900-01-01 so that database strict options work properly.
  - Added ability to select among available attachments to apply to confirmation, reminder or user instruction messages via the [ATTACHMENTS] shortcode to create a list. Individual attachments can be included in-line by placing the attachment name within brackets,
    e.g: [Intake booklet]
  - Added 2 new status buttons for "Sent documents" and "Responded by email".
- PHP 8 fixes in version 8.02
  - htmlspecialchars_decode does not accept undefined as an input so changed to always produce null if found. This change occurred in most code modules.
  - Operator === changed to == in functions.php module.

- Changes in 8.03
    - Excel export order and options for a user was saved as a cookie, now saved in the user's database.
    - When a change is made to a taxpayer appointment, the display now returns to the taxpayer's line rather than the top of the appointment list.
    - If only one entry is found in a search, the resulting search list is skipped and the display goes directly to the found entry.

New in version 9.00

- Major internal restructuring
    - In prior releases, most User database values were available in SESSION globals such as $_SESSION["UserName"]. To ease maintenance and make all values available, these are all stored in a single session array holding the user's entire record, now accessed as $_SESSION["User"]["user_name"]. This affected most code modules.
    - Other changes throughout were made to use new capabilities of PHP and JavaScript where they can be used to simplify coding such as the ?? null-coalescing operator.
    - In prior releases of appointment.php, only the site information to which the user has permissions was saved as global variables and many individual tables were created as needed for a particular capability. Now, all site data is retained in a site array and additional information is added as new array keys in the site array.
- Login window
    - In prior releases, when requesting a new password, an 8-character string was emailed to the requester. This has now been changed to a 6-digit number like two-factor authorization uses, a more familiar process. The number is only valid on the date requested and either the number or the old password can be used for access.
- Management window
    - Passwords in user's administration window are now hidden but can still be changed.
    - A new site option to allow internet users to make an appointment but not add themselves to a callback list. Appointment Managers should use the additional instructions message to instruct internet users what to do if this option is chosen.
- Appointment window
    - Added an "Archived" flag to the appointment record, for use when an appointment is removed in the schedule configuration process by mistake. To be implemented in a later release to aid in recovery of the record.
    - In Export to Excel, added the field that specifies who made the appointment. Also added the ability to only export a single day's appointments.
    - Visual indication in user entry form if a phone number or email address is not in the proper format.
    - Corrected some issues related to permissions when a user has access to multiple sites with mixed levels of permissions.
    - Searches now only show matches in the current year so prior year data does not appear. Also, an option to show or hide matches from the deleted list. Searches on tags only match on sites the user is allowed to access to prevent confusion with other sites using similar tags. The same search function is now used when adding an appointment with icons to indicate how a match occurred (name, phone or email).
    - When moving an appointment, a new option to mark the old appointment slot as RESERVED to prevent it being used inadvertently.
    - A new report showing current site statistics information for the current year.
    - Clearing appointments by day of week is now allowed.

Acknowledgements:

Many thanks to the following who have provided significant assistance in creating this application:

Jeff Bogart (CO1)
Barry Berlin (CO1)
Bill Peterson (KS1)
Hans Jahns (ME1)
Joanne Barnard (CO1)
Maggie Barrington (CO1)
Mark Love (ME1)
Steve Anderson (KS1)
Mark Doernhoefer (CA1)