TimeControl® Online

Reference Guide

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Introduction

About this Guide

The TimeControl Reference Guide is designed primarily for TimeControl Administrators who are responsible for configuring and maintaining TimeControl. Users who will be using TimeControl primarily for entering timesheet data should refer to the *TimeControl User's Guide*. Database Administrators should read the *TimeControl Installation and Setup Guide.*

Assumptions

This guide assumes that you have been assigned as the Database Administrator, TimeControl Administrator, or both. It also assumes that you are familiar with Windows operating systems (i.e. file structures, Windows Explorer, the Start menu, installing software and references to mouse operations), database applications, computer networks, project management environments, and a compatible browser you will use to access TimeControl.

Stylistic Conventions

Be advised, the colors and contents of the screenshots in this guide may not necessarily be identical to those on your computer; this varies according to your desktop theme and your particular TimeControl configuration.

Commands are expressed by the | symbol. For instance, to indicate the selecting the **Tools** folder followed by **Options** the following would be used:

Select **Tools** | **Options**

Please take into account that all menus and fields within the application are translatable and, therefore, certain menu selections mentioned herein may not apply in your case.

The following font distinctions are also used:

Bold-Arial: expresses a menu, field, tab, command, or other item as it appears in the application

Bold-Courier: denotes a key command such as `Ctrl` or `Tab`

Times Roman-Italics: used for file and document names

Configuring TimeControl

Overview

Following the initial installation and set-up of TimeControl, you (the TimeControl Administrator) can configure the system to suit the needs of your organization. Determining the configuration for your TimeControl system is, perhaps, the most important element in securing a successful and effective implementation. While it is true that TimeControl is very flexible, and that changes can always be made to your configuration, changes that modify existing timesheet data may be awkward or difficult to accomplish.

There are several elements to be considered in the configuration of TimeControl:

- Who is the TimeControl Administrator responsible for the system overall?

- Is the TimeControl Administrator responsible for the orderly execution of the timekeeping process and, if not, who is?

- How long should a timesheet be? This must be configured in timesheet periods using the Period Generator which is found in the Maintenance tab.

- Who will approve each person's timesheet? This is configured in the Employee Table.

- What reports will be required of the system, and what summaries or models of that data will be required in order to produce them?

- Will the system be linked to external applications for project control purposes, and, if so, at what level will it be integrated, and which fields should be shared?

HMS, and its distributors and agents around the world, offer consulting services to assist organizations during the implementation process of TimeControl. If you would like more information on how these services might help you, visit the HMS Software website at www.timecontrol.com, or simply call your TimeControl supplier.

The following sections introduce you to the different components in configuring your TimeControl system.

Global preferences

Some key decisions must be made in the System Preferences area of TimeControl. This functionality is discussed in System Preferences in the Functional Reference area later in this guide. Key decisions will include how your approval process will be established and what critical elements such as project names should be included in your timesheet.

User Profiles

User Profiles are discussed later in this document in the Administration chapter of the Functional Reference area. It is important to think of what data, what menu functions and what reports should be visible to different users at different times and this will largely be configured in the User Profiles area. There is no limit to the number of User Profiles which can be created but each profile requires consideration and possibly maintenance. A user can be part of only one profile.

How long should a timesheet be?

TimeControl supports timesheets of various lengths. How to create different lengths of timesheets is described in the Period Generator section of the Maintenance chapter of the Functional Reference area later in this guide. Specifically, TimeControl supports the following timesheet lengths:

- Daily
- Weekly
- Bi-weekly (every two weeks)
- Bi-monthly (from the 1st to the 15th of the month then from the 16th to the end of the month)
- Monthly
- Custom

Determining the ideal timesheet length when you are using TimeControl to accommodate the needs of multiple interested parties is a subject for discussion. We have included a tutorial discussion paper on "Choosing your Timesheet Length" in the appendices later in this guide. You can create multiple timesheet periods but each Employee can be associated to only one at one time.

Integrating with Project Management Systems

TimeControl manages its integration with project management applications through interrelated tables that define how links should be accomplished. Information on links with specific project management systems can be found in the *Links* section of this guide. TimeControl supports links with Microsoft Project, Microsoft Project Server, Microsoft Project Online, Deltek EPM, BrightWork, Hard Dollar, and Oracle-Primavera P6 Professional and Primavera EPPM as well as many others.

Moving Data between TimeControl to Project Management

When data is returned to the project management application, TimeControl first finds the activity that matches the charge code listed for that project. It then looks for a resource budget or requirement listing that matches the resource code defined for that employee. If it finds a match, it moves the actual data into the activity's actual resource progress without further delay. If TimeControl cannot find the activity, the affected data is rejected without further delay. If the activity is found but the resource record is not, TimeControl takes one of the following actions based on the user's request:

- It can reject the data.
- It can accept the data and create a budget of 0 hours.
- It can accept the data and create a budget equal to the actual imported.

Projects

The Project Table defines which projects are linked to TimeControl and in what manner. The type of project management system, the location of the project schedule file and the type of transfer are defined in the Project Table. For more details about the Project Table, see the *Project Table* section of this guide.

Activities/Charges

Activities in a project management application can be transferred to TimeControl as Charge Codes. TimeControl supports hierarchical activity numbering where it is supported by the project management system. This allows summary tasks to become "parent" charge codes. TimeControl, however, allows time to be charged only against the lowest level charge codes, and not against the parent or summary charge. When returning

data to the project management system, TimeControl must be able to find the matching activity in order to transfer actual hours back to the project schedule. If this activity ID is not found upon transfer back to the schedule, the charge will be rejected, as it will have no "home" to return to.

Resources/Employees

Like most timesheet applications, TimeControl has a table of employees. Data for each timesheet is generally entered by an employee who submits a single timesheet for each week. The activities or charges for which time is billed at a particular rate are listed on these timesheets.

In most project management systems, resource allocation and leveling are done at different levels. Sometimes, resources are defined at the employee level. In this case, it seems rather simple to link a single resource item in the project management system to a single employee in the timesheet system. However, it is much more common for resources to be managed at higher levels in the project schedule. Resource disciplines, skills, categories, or even departments are often used.

Each employee record in TimeControl's Employee Table includes a field called **Resource**. This field is linked to TimeControl's Resource Table. The Resource Table allows TimeControl to take the actual resource code from the project management system and assign it an easily recognizable name. In the Employee Table, this name can then be chosen from a drop-down list of resources.

When TimeControl returns data to the project management system, it does not use the employee number. It looks to the resource field and aggregates data by resource code.

This provides the ultimate in configuration management for your system. If the project management application uses generic resources to schedule and resource level, then the resource code for that discipline can be input to the employees' records which are part of that resource group. If the project management system uses named resources, then the resource code for that employee can be used.

While this is remarkably flexible, there is a limitation for organizations performing multi-project management. The limitation is that whichever level of resource management used in one project must be the same in all projects. This ensures that data from an employee returns to the proper resource pool. If, for example John Smith is allocated as a mechanical engineer in project ABC with the resource code MENG, he cannot also be listed in another project as an individual with a resource code of JSMITH.

Organizations that do manage multiple projects, but have not resolved these naming conventions must do so as part of a successful project management configuration to properly link TimeControl data.

Functional Reference

Overview

This chapter looks at the TimeControl's main menu from an Administrator's perspective. It details all the commands that are available to you from the main TimeControl page. The contents of this menu can be tailored for each user or for a group of users through TimeControl's User Profiles.

Logging into TimeControl

To log into TimeControl, you will need to know your username and password. Your TimeControl Administrator will provide you with these. If you have forgotten your password, the TimeControl Administrator can change it for you. For information on changing your password, see the section on *Options* in this guide.

➢ TimeControl is designed to work with several browsers including Firefox, Chrome, Edge, Mozilla and Safari.

1. Your Administrator will supply you with a Web address to point to with your browser, for example, https://timecontrol.mycompany.com. Simply direct your Web browser to this address. The TimeControl Login page appears in your browser window.

2. Enter your username and password in the login dialog box then click **OK**. This displays the main menu for TimeControl.

3. You can elect for TimeControl to save your user name to make it easier to log in next time.

4. You can also elect to stay logged in.
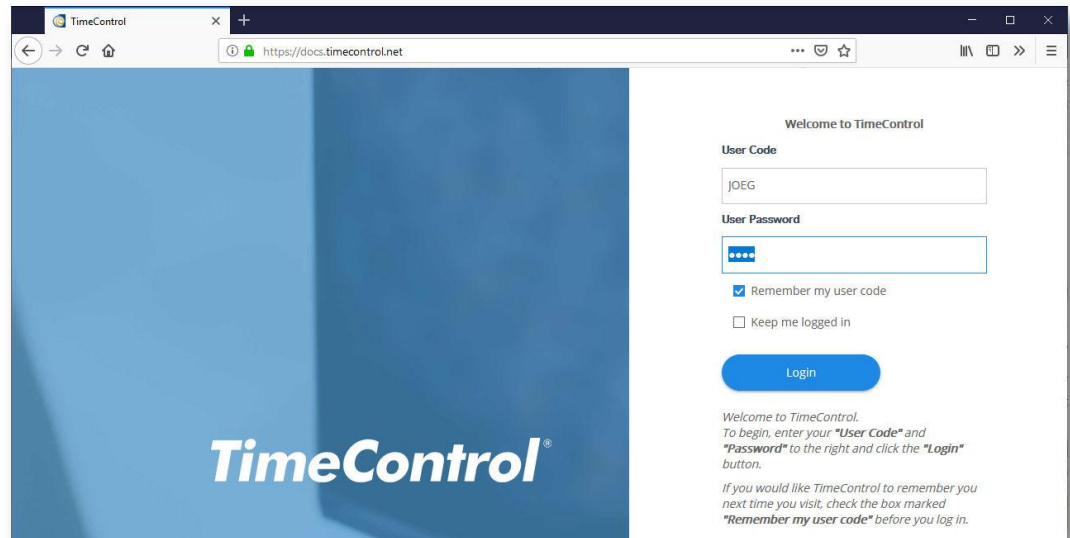
5. If you have been listed as an alternate user for someone else, then you will be presented with the option to log in either as yourself or as that user. If you log in as another user, you will have all the privileges and access of that user.   It will appear that you have logged in as that user but in the background, TimeControl will be tracking that it is you, not them that is performing these functions.
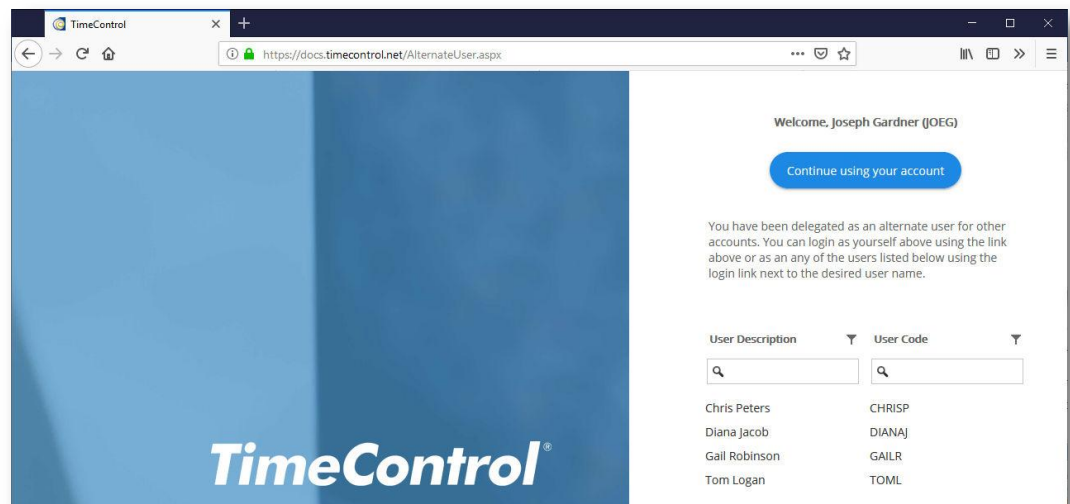
Note: If you have been listed as an alternate user by multiple users as is the case in the above example, you do not need to log out every time. Once logged in, in the header area of TimeControl you will see a down-arrow next to the alternate you have first logged in

as. You can then simply select any other alternate user to which you have rights and you will immediately be re-logged in as that user. This will be reflected at the top of the screen.

The following chapter describes the most commonly used features of TimeControl from a user's perspective. Screens are displayed using Firefox and may vary with other browsers.
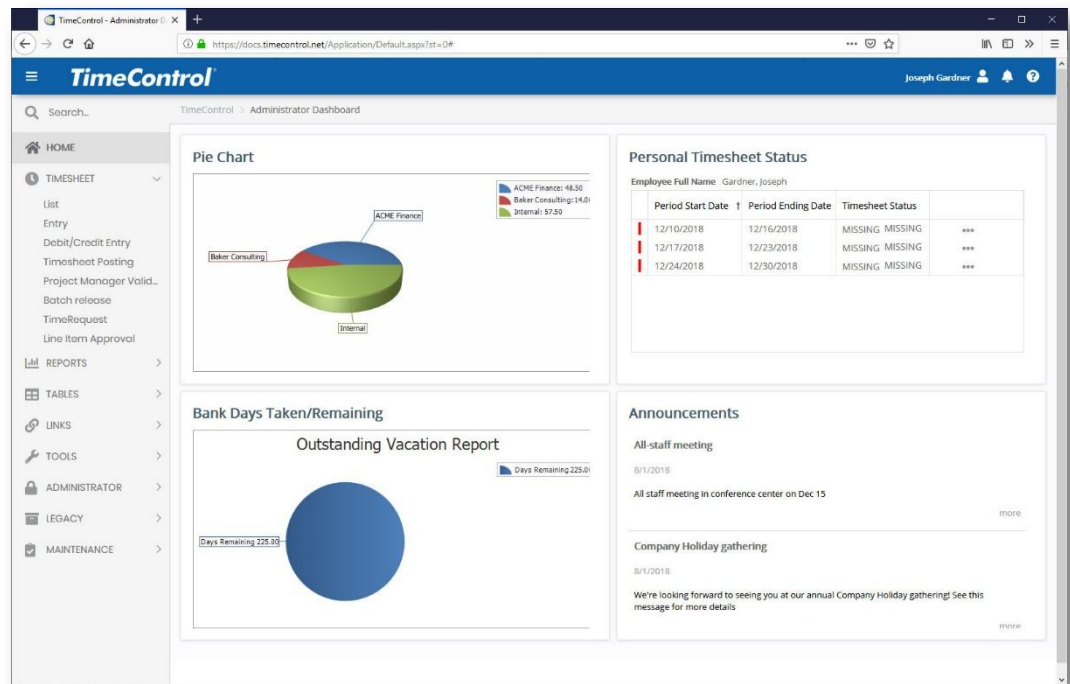
The menu in TimeControl is displayed as a series of selections grouped into categories on the left side of the screen. The categories and selections displayed are dependent on the User Profile assigned to the User. Within each category, selections show different functions. You can collapse or expand a category by clicking on the **>** arrow to the right of it. Clicking on the arrow updates the menu and displays that function in the area immediately below it. To hide or display the menu, click on the ▤ at the top left of the screen.

Logging Out of TimeControl

If you wish to log out of TimeControl select the Name and icon at the top right area of the screen.   Joseph Gardner 👤

You can then select logout. If you have been listed as an alternate user by other TimeControl Users, you will see their login names presented in the same area and you can simply select a login name to switch your login to be that person.

You can also move to see settings for your account, see Support Information that may be required during a call to HMS Technical Support or go to the Help screen.
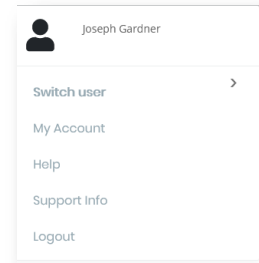
Exiting TimeControl

When you are ready to exit TimeControl, you may simply close the browser window. This closes the application.

Timesheet Menu

Timesheet List

The Timesheet List shows a list of all timesheets to which the current user has access.

For information on displaying and filtering the timesheet list as well as commands such as Batch Release which can be activated from the Timesheet List, please refer to the *TimeControl User's Guide*.

Timesheet Entry

The Timesheet Entry page forms the core of data entry for end users of TimeControl.

For information on creating timesheets and entering timesheet data, please refer to the *TimeControl User's Guide*.

Debit/Credit

The Debit/Credit (Db/Cr) function makes TimeControl one of the most powerful project-oriented timesheet systems in the market today. Debit/Credit allows adjustments to be made to posted timesheets. Posted timesheets are those timesheets that have completed the approval process and have been processed into the posted state. Just as Debit/Credit functions found in most accounting systems, a Debit/Credit entry here can be controlled to have a balance of 0 when it is complete. The ability to force a balanced Debit/Credit is configured in the System Preferences screen.

This means that, in practical terms, existing hours can be redistributed without changing the total hours worked.

Note: The number of permutations of TimeControl's' configurations are virtually limitless. For organizations who wish to have hours changed and are not concerned with the resulting change in total hours worked, this option can be configured by using "unbalanced Debit/Credits in System Preferences.

➢ To create a new Debit/Credit:
   1. Select **Add Debit/Credit** from the Timesheet tab.
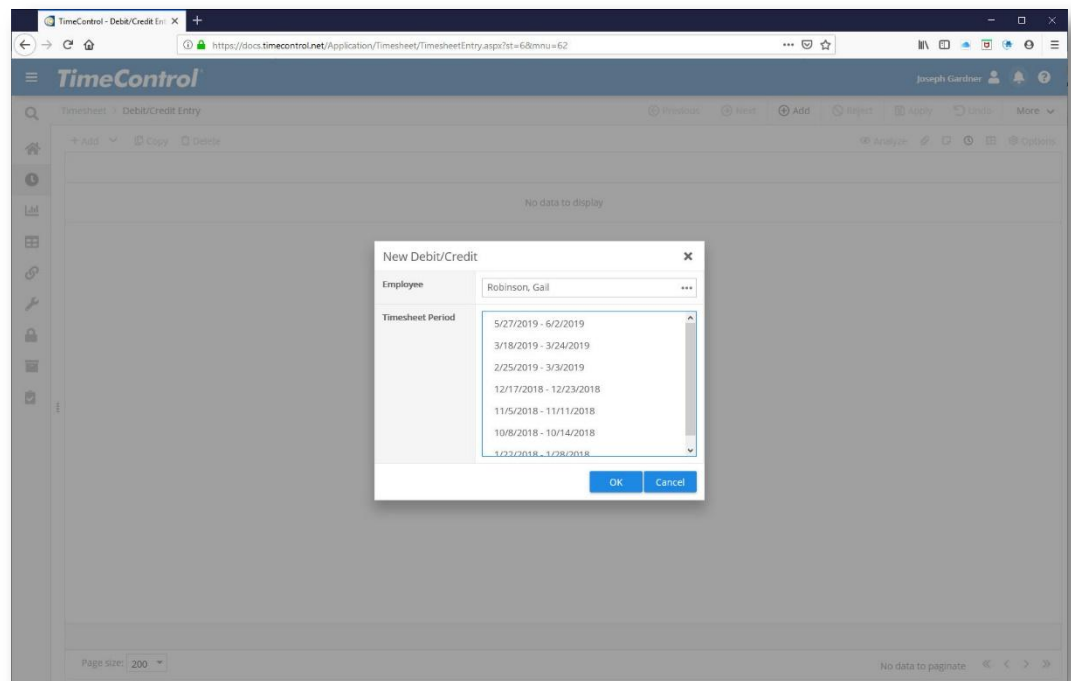
   2. Select the Employee and then the **Select Posted** tab in order to see a list of posted timesheets. Click Ok to create the Debit/Credit header.
   3. If you know the exact employee name and timesheet period, enter them and click **OK**.

4. To adjust an existing entry, click the **Append** button. This creates a blank debit/credit line. Alternately, select the line you wish to change and select **Reverse Entry**. The line will be completely duplicated with negative entries, effectively reversing its effect on the timesheet.

5. Select the desired Project, Charge Code and Rate then enter a negative number of hours worked.

6. Create an additional entry to associate these hours to another charge item.

7. Click **Apply** when you are finished making your adjustments then click **Release**. Debit/Credit timesheets must be released and approved just as regular timesheets. Validation rules will apply, but these rules can be tailored to identify conditions specific to Debits/Credits.

Depending on the **System Preferences** you have configured, there are internal restrictions within a Debit/Credit entry to insist that after any alterations, the sum of the updated timesheet must equal the exact sum of the original timesheet. This ensures that data already posted will contain the same totals.

Restrictions on rate adjustments, and which charges can be selected, are managed through the Charge filters in the User Table and Validation Rules.

For auditing purposes, the source of each line item is identified at the far right of the timesheet. In addition, existing timesheet lines cannot be simply deleted. To remove their impact from the system, a reversing entry must be made.

Just like all timesheet functions, a full audit trail is maintained for all Debit/Credit entries.

> ✓ **Tip** You can set your System Preferences to allow unbalanced Debit/Credits. See page The Administration Chapter for more information on System Preferences later in this guide.

Inline Debit/Credit

TimeControl includes an option for how to create adjustments as a Debit/Credit in the system. The resulting data will be the same regardless of which option is chosen. The Inline Debit/Credit displays the timesheet but instead of insisting on reversing entries explicitly, it allows the user to enter the changes directly on the timesheet. The advantages of Inline Debit/Credit are twofold. First, the entry is simpler for the end-user. Just change the original entries and the adjustment is complete. The concepts of reversing entries or negative values is hidden into the background. Second, using Inline Debit/Credit allows an option to un-accept line item approvals in the Project Manager Validation Screen and Line Item Approval Screens. If those features are being used then Inline Debit/Credit may be very attractive.

The disadvantage of using Inline Debit/Credit is that the easy of use of creating an adjustment may make it easier to generate incorrect changes. The standard Debit/Credit entry surfaces those changes by default.
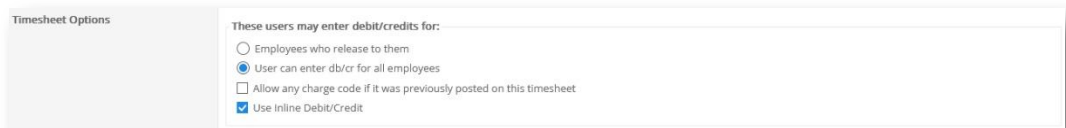
To use Inline Debit/Credit, the feature must be first activated in the Administrator | System Preferences | Timesheet Tab in Debit / Credit Options.

Select Use Inline Debit/Credit to activate the option for this system. Decide here if you wish Inline Debit / Credit to shift all affected Project Manager Validation lines and Line Item Approval lines to Unapproved. This will shift those lines back even if they have been approved in the past. Remember, this will not affect lines that have already been exported to external systems.

Now the option has to be activated at the User Profile level in Administrator | User Profiles | General Tab in the These Users may enter debit/credits for: section.

Once this has been completed, Inline Debit / Credit will be the default Debit / Credit entry view for new Debit / Credit entries.

To create the Debit/Credit from either the Timesheet Entry menu or by clicking Adjust in the Timesheet List function. The Debit/Credit entry displays the original timesheet along with any other already-posted adjustments.

Instead of reversing an entry or creating a new line with negative entries, just go to the cell you wish to adjust and change it. In this case we see that on Tuesday and Wednesday, this user incorrectly entered 6 hours per day on the Design Reports charge code. Those hours should have been entered on the Design Security charge code. We simply make the changes

If all entries have been corrected, click Apply at the top right of the screen as we would for any timesheet or debit/credit entry.

The hours that have been changed simply appear as adjusted. Behind the scenes, the same Debit/Credit entries you would typically have made in a Debit/Credit are still there. Click Show Debits/Credits to display the full detail.

TimeControl shows the full details of the Debit/Credit including the lines created by the original poster and any adjustments made including both the positive and negative values. In the case where a line was only partially changed as in the example above, the entire line is reversed, just as it would be by using the Reverse Line option in a traditional Debit/Credit. Then both the positive and negative values are displayed alongside the user name of who just did the changes.

Just like in a traditional Debit/Credit, the lines which have already been posted are all locked and show the lock icon.

Inline Debit/Credit effects on PM Validation and Line Item Approvals

When using Inline Debit/Credit, you can elect to have changes made in a Debit/Credit to automatically change the status of lines in the Project Manager Validation and Line Item Approval (LIA) modules to Unapproved. This can be an advantage when you want to make sure that a line that was changed by administration is not forgotten or a line that was previously rejected is now reverted to an unapproved/review-needed status.

As an example, prior to doing an Inline Debit/Credit, a PM Validation screen might look like this:

An Inline Debit/Credit is created as was described above affecting the POLAR.3 and POLAR.4 charge codes.

When we return to PM Validation, we can see the detailed debit credit entries.

All cells for the POLAR.3 timesheet line have been reversed. Then new lines were created to show the Debit/Credit entries to add for POLAR.3. Also new PM Validation lines were created for the new entries in the Debit/Credit. All of these PM Validation lines were marked by Inline Debit/Credit as UnApproved/Pending. This includes the previously accepted lines and rejected lines which all can now be reviewed.

Debit/Credit in the TimeControl Mobile App

Adjustments to posted timesheets can also be done directly from the TimeControl Mobile App. Access to this functionality is dependent on the user having Debit/Credit rights.

First go to the Timesheet List and select **Posted** timesheets. Select the timesheet you wish to add a Debit/Credit to.
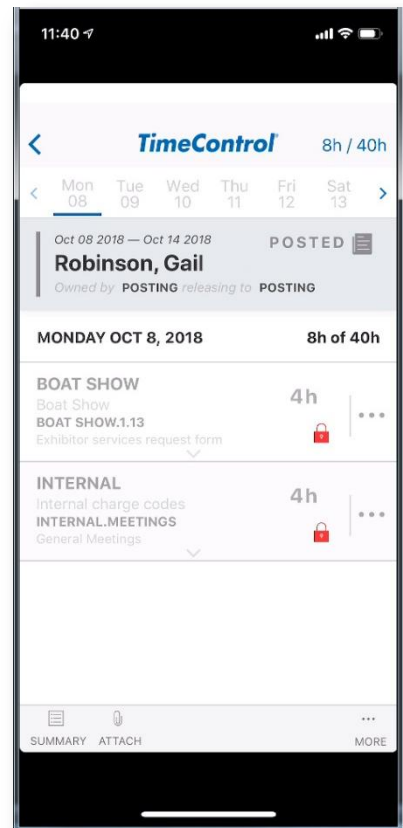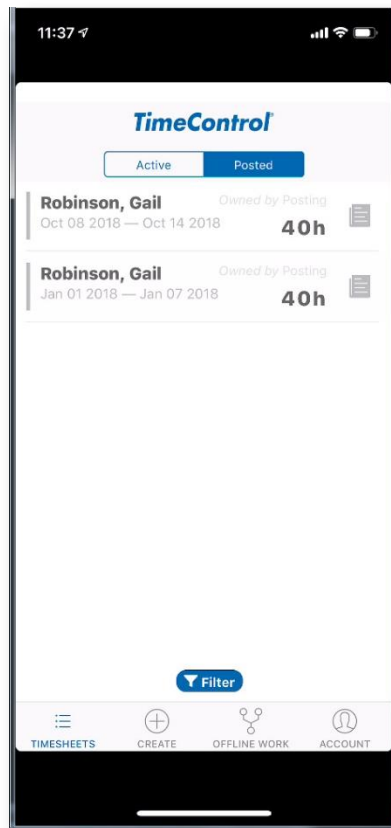
Now click on More… on the bottom right of the screen.

If you have rights to add a Debit/Credit adjustment to this timesheet, you will see the Adjust command as selectable. Otherwise the command will either not appear or be greyed out. Select **Adjust** and TimeControl will create a Debit Credit for this timesheet.
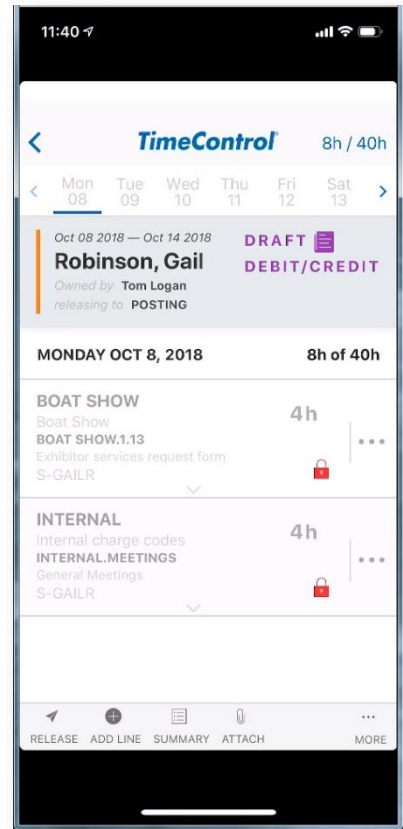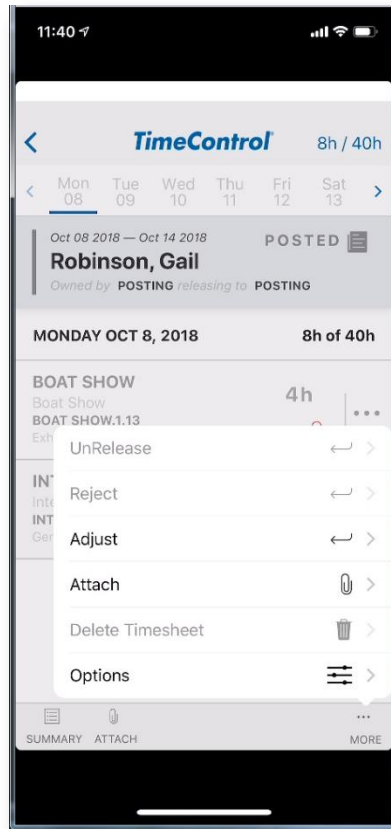
Just like in the web interface, you cannot delete or edit an existing line. Adjustment entries must be negative and positive entries on this screen. All the rules in the Debit/Credit command described earlier are followed in the TimeControl Mobile App.

You can click on the "…" ellipses on the right of any line and make a copy of that line which will be editable.

Make any changes you wish to that line. Scroll down to enter positive or negative entries for each day.

Save each entry and then return to view the timesheet.

You may need to scroll left and right through the days of the timesheet to see the effects of all the changes you may have made.

If your system has been set to require balanced Debit/Credit adjustments then you will need to ensure the adjusted timesheet has the same total of hours as the original timesheet.
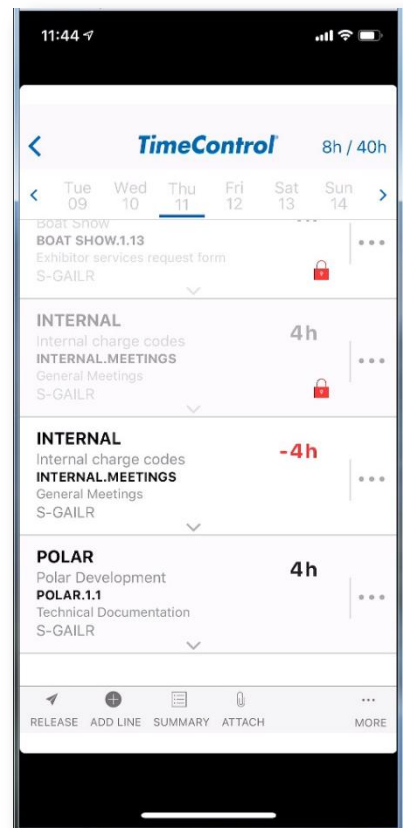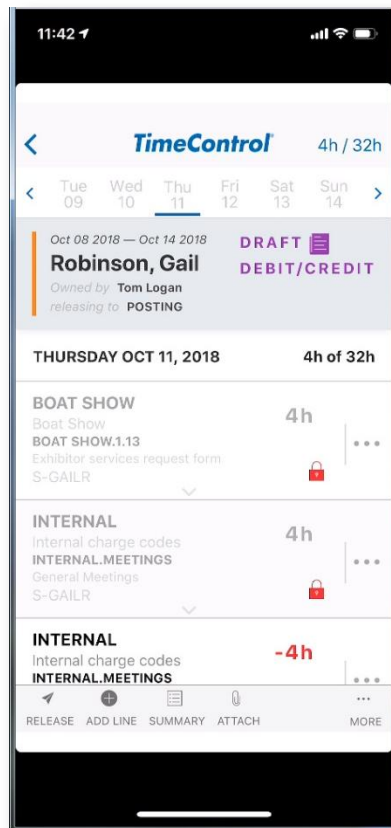
Once you're satisfied that you have made all the adjusting entries you require, you can release the Debit/Credit Adjustments for approval just as you would with the web interface. If there are Validation Rules issues, you will be advised as you release.

Once you return to the Timesheet List, you will see the Adjustment entry as a purple entry.
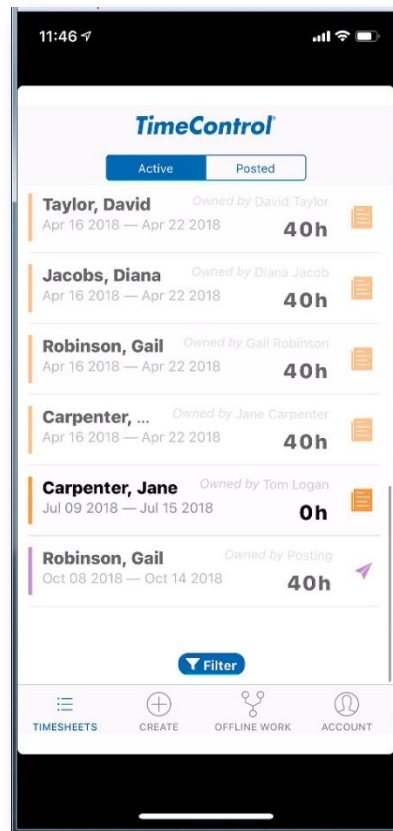
Posting Timesheets

TimeControl includes a formal process for posting timesheets. This process takes timesheet data from the Timesheet Entry table and moves it to a Posted table (there are several posted tables as each timesheet includes header and detail information).

This process allows the Timesheet Entry tables to remain small as they are regularly purged. Furthermore, the format of the posted data is different from the entry tables.

TimeControl entry data is stored as one record per charge line, per timesheet. This record has seven fields that record hours per day-of-the-week. This format is ideal for entry data as it makes for few records to be manipulated and, generally, delivers better performance. TimeControl posted data must, however, be much more flexible for reporting and exporting purposes. For this reason, during the posting process, timesheet data is rationalized to one record per actual date, per charge item, per timesheet. This makes for a larger yet much more flexible file. In addition, in any client/server environment, only the data required must be retrieved. This

inevitably makes for better performance in the reporting and exporting functions.

Posting must be done on a regular basis. Non-posted timesheet data cannot be reported against, and will not be exported back to external systems, which may be linked to TimeControl.

Timesheets may be posted at any time or posting can be scheduled using the TimeControl scheduler to occur at regular intervals. For very large organizations, it is sensible to allow posting to be executed from multiple locations for smaller groups of data or to schedule the posting to occur at regular intervals.

Scheduled Posting

To create a scheduled posting job that will run at a regular time,

1. Select **Timesheet | Posting**. This displays the Timesheet Posting Window
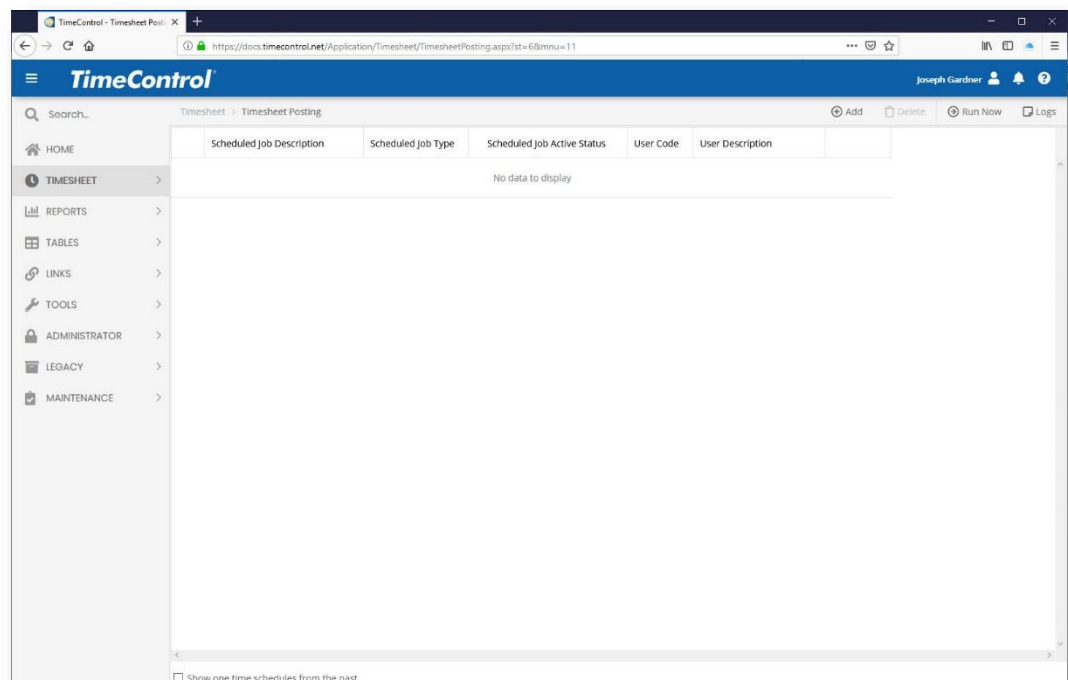
In the example above, we have no scheduled posting jobs. The actions on this screen are controlled by the Action Menu on the right.

1. Click on **Add** to add a scheduled posting
2. You can enter here the description of the job to be scheduled and optionally, whether you'd like to be notified. You can elect to be notified

each time the job runs or in case it is ever not able to run or both. Make your selections and select Next to continue.

3. Now tell TimeControl when you'd like this work to be scheduled. You can select monthly, weekly or daily schedule types and then enter the time of day for each event. If you wish to schedule items to occur hourly, you'll need to enter multiple events.
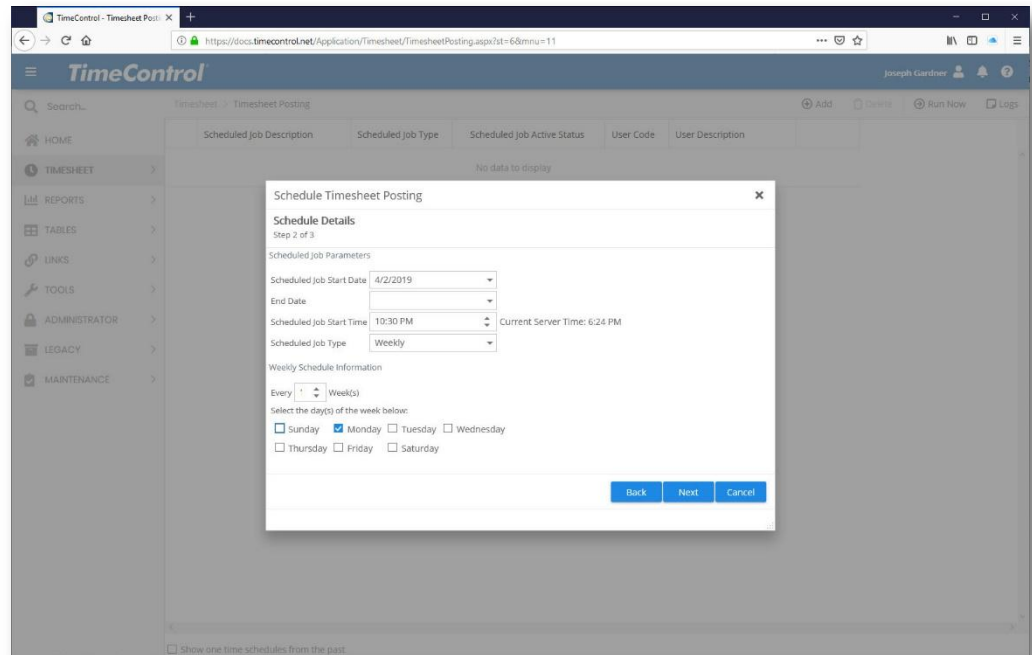
4. You can determine the frequency of your entry and then the days of weeks on which you'd like the job to run. Make your selections then press Next to continue.
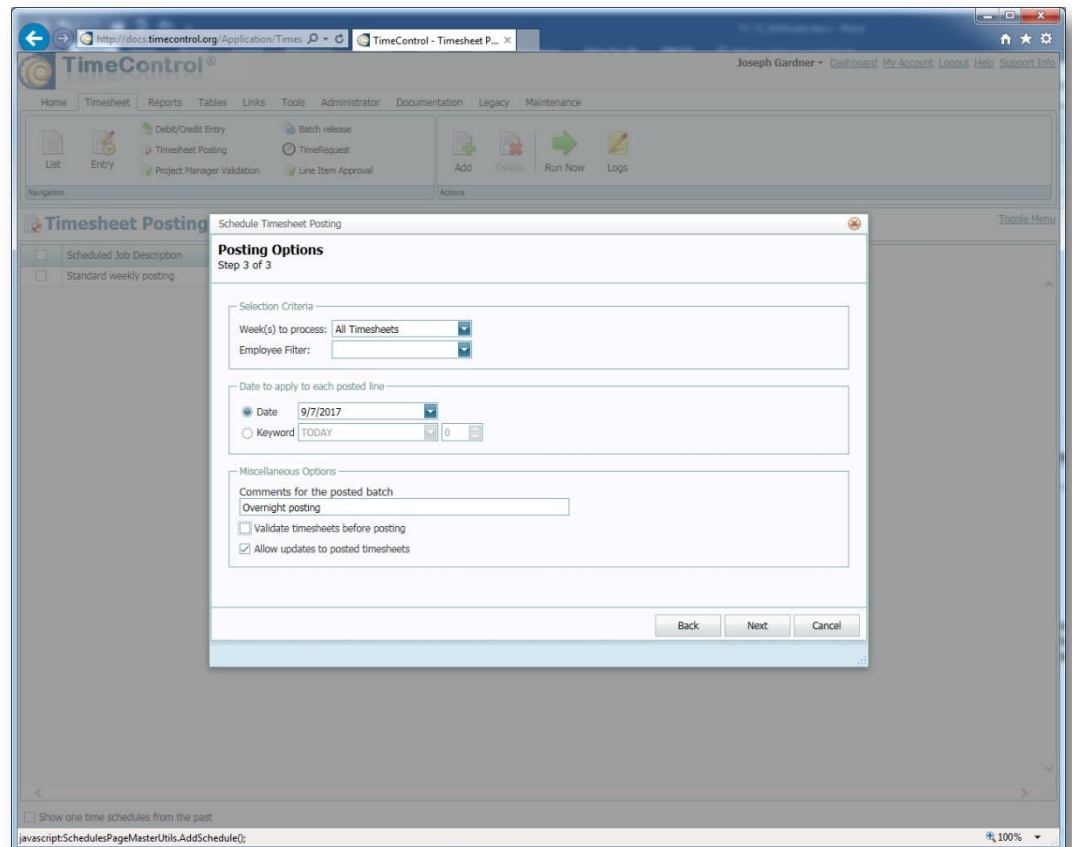
5. You can decide to post all pending timesheets which have been submitted for posting or you can select a number of weeks or a specific employee filter's collection of timesheets.
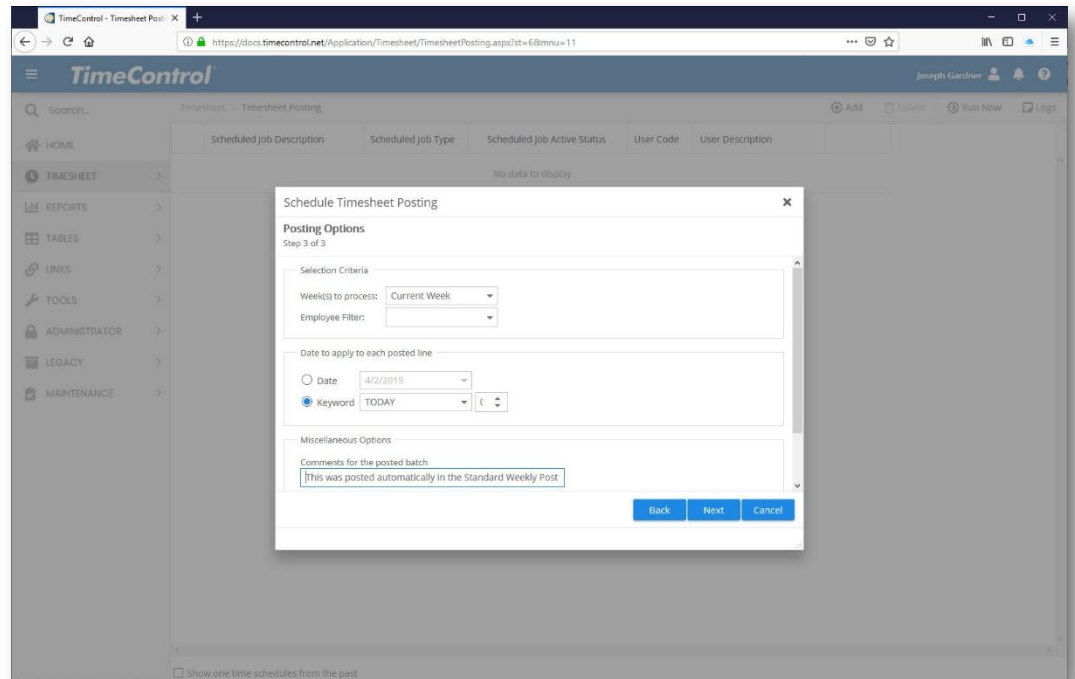
Finally tell TimeControl what you'd like to use for the log entry when the TimeControl scheduler runs this job. TimeControl also allows you to create an automated Posting Batch comment by using keywords like today's date. Click Next to submit the job to the TimeControl scheduler.

When you return to the Posting main screen, you will see the newly saved job on the scheduled list.
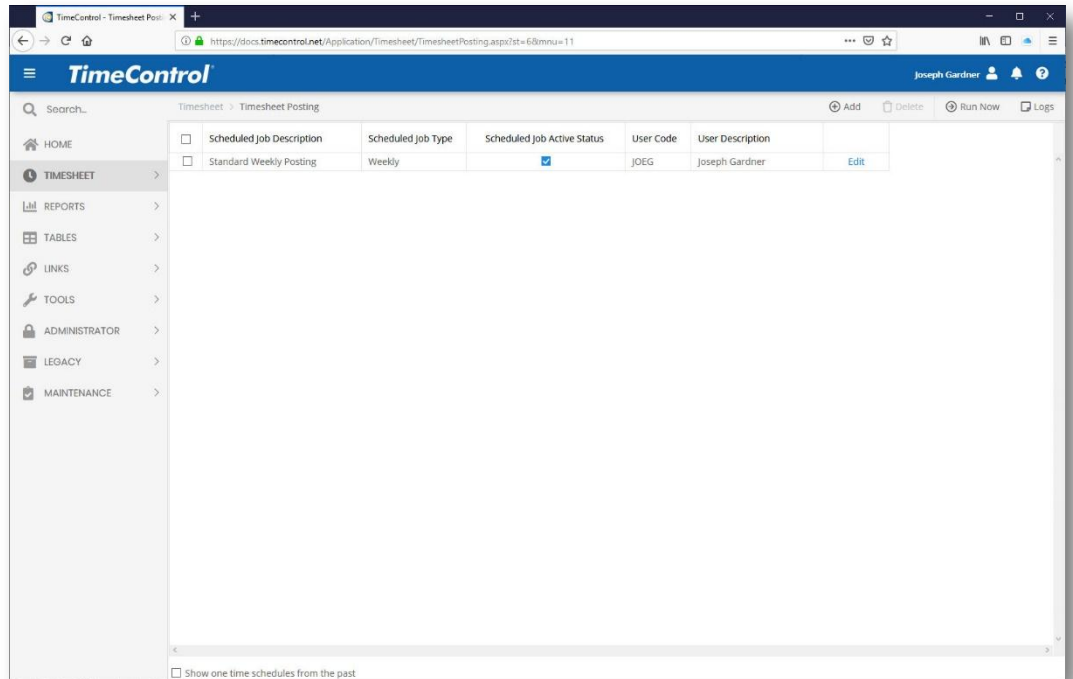
Run Posting On Demand

To post timesheets at any time on demand, First select **Timesheet | Posting**. You will see a list of any scheduled Posting jobs.
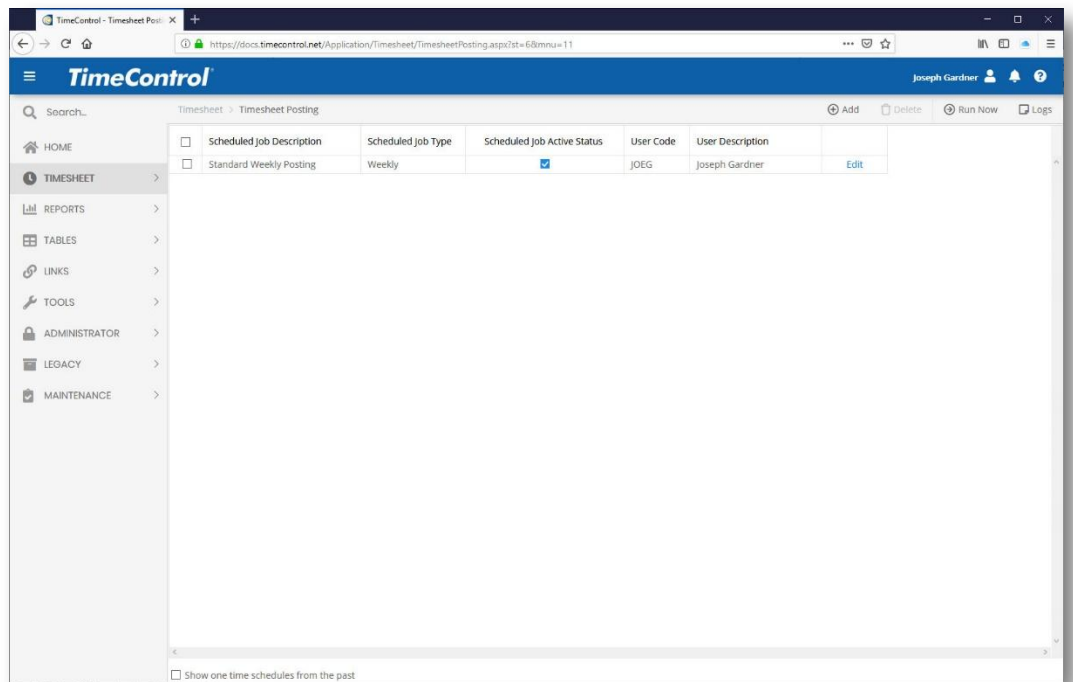
1. Select **Run Now** from the Actions Menu.
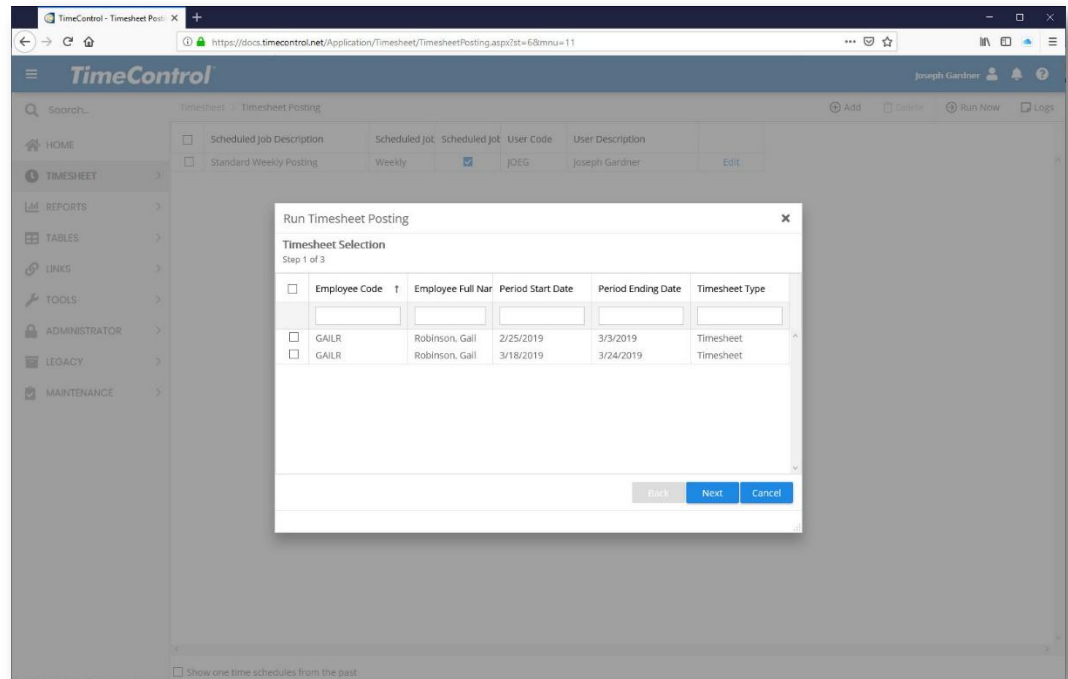
You will see a list of all possible timesheets which can be posted.
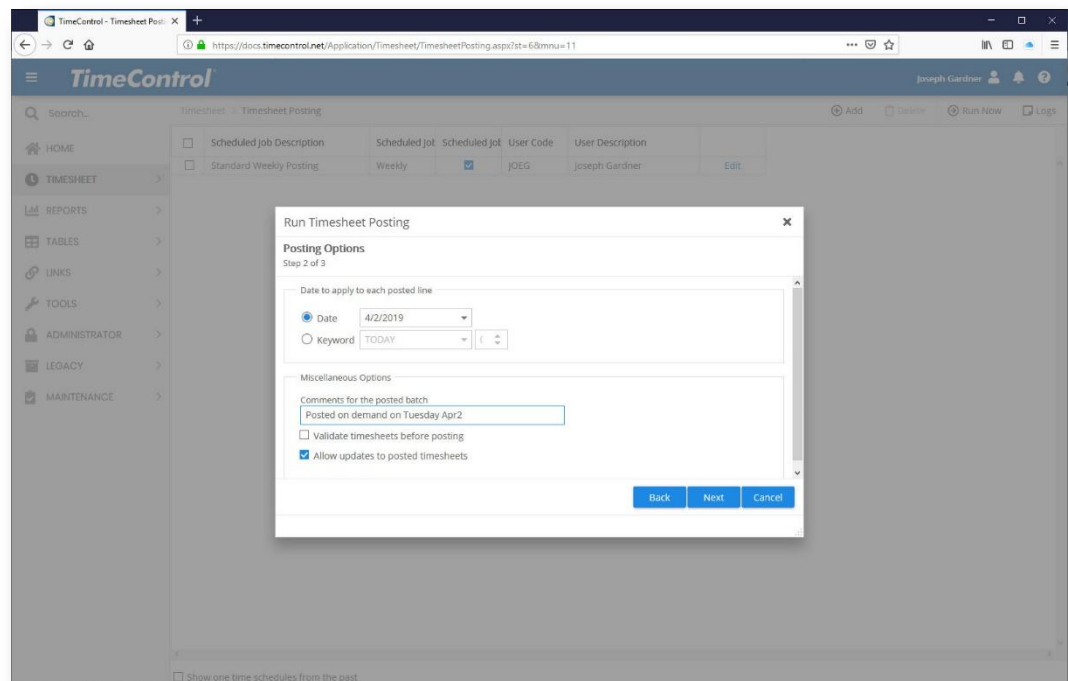
2. Select the timesheets you wish, search for a timesheet using the fields at the top of each column or select all timesheets by clicking the checkbox at the top of the selection column. Click **Next** to continue.

3. In the final page of the Timesheet Posting Wizard, enter a comment or description to identify this batch of posted timesheets. A description for this Posting batch should be entered in case if, for some reason, the batch must be reposted or located at some future time.

    TimeControl also allows you to create an automated Posting Batch comment by using keywords like today's date.
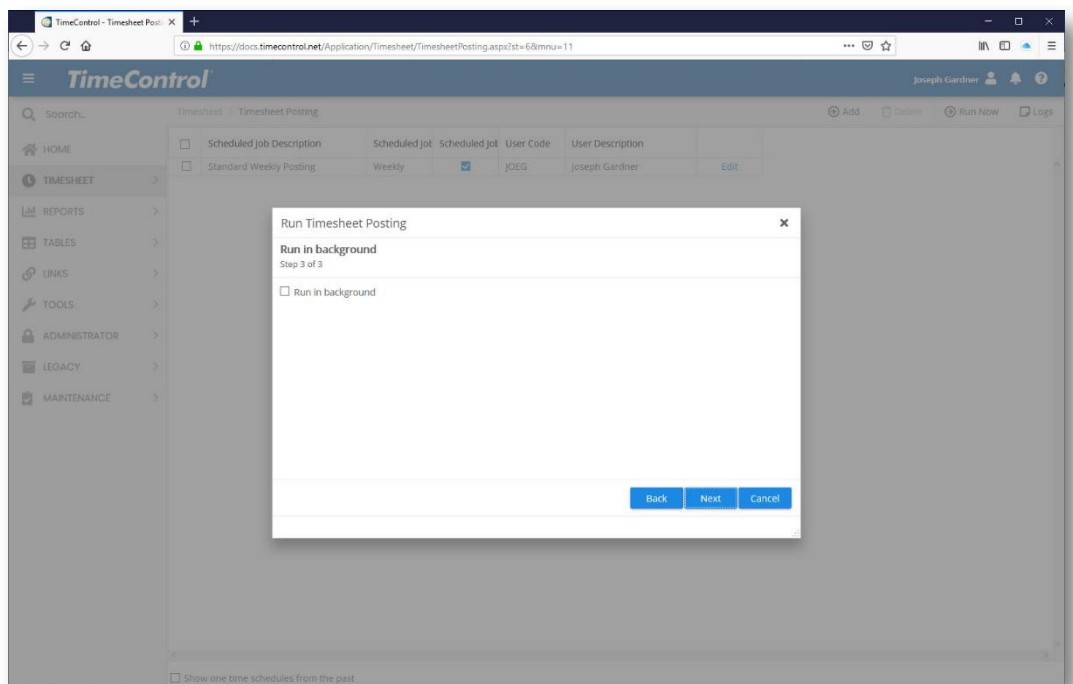
4. Click **Next** to continue.

5. TimeControl will ask you if you would like to do this posting in the background. If you click this option, you can also elect to have TimeControl send you an email once the process is complete. TimeControl will then start the process on the server and immediately return you to the interface where you can continue working in the system. If you do not select this option, then TimeControl will show you the progress of the process as it executes and then present log of the posting process.
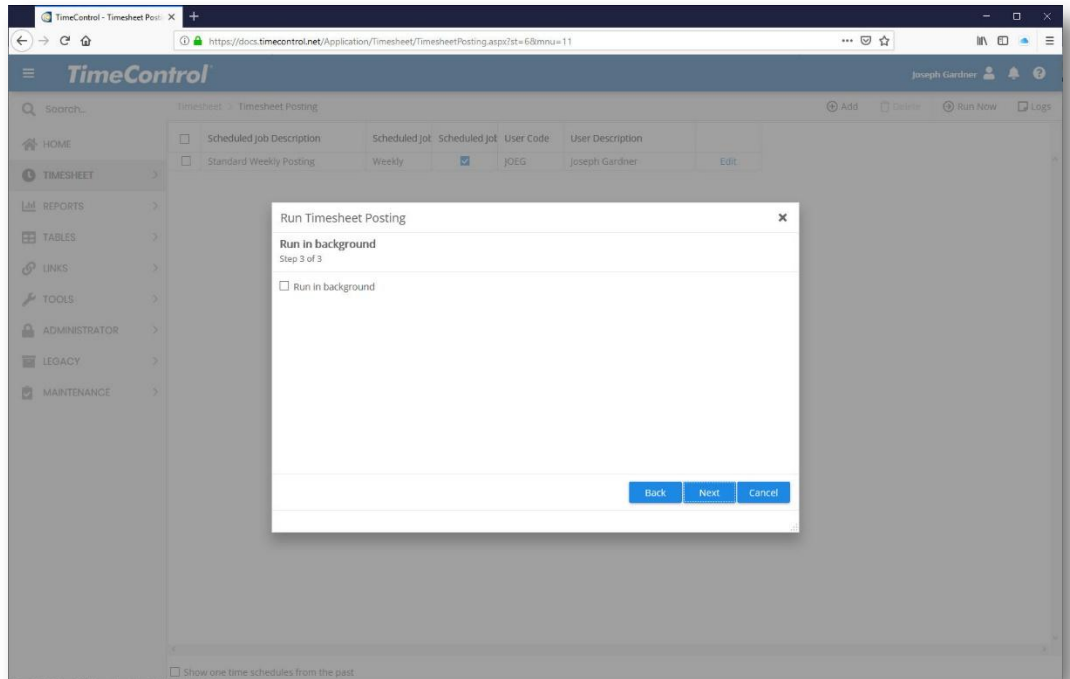
If you ran Posting in the background this log will have been saved in the log list, available from the Posting menu in the Actions area.

If, for some reason, the posting encounters any errors, the entire transaction is rolled back. This ensures that only valid data ends up in the posted file.

Just prior to and just after the Posting process, TimeControl will check to see if the Administrator has created any Pre- and Post- Posting Procedures. This option is more fully described in the Administrator Menu functions. A Pre- and Post- Posting procedure can be created in order to create effects from or to TimeControl data or to trigger effects in other systems or within TimeControl at the moment data is posted.

Examples of Pre- and Post- posting procedures might include updating labor rates from a payroll system just prior to posting the timesheets or extracting data from TimeControl to a payroll system just after posting the timesheets.

Partial Posting

TimeControl includes the ability to post a partial timesheet in midweek. This functionality is designed for organizations which might have payroll or invoicing which must be posted up to and including the middle of or end of a financial period which falls in the middle of the week and which must be posted immediately. TimeControl always stores posted data based on the date the work was performed. So exporting or reporting data for a financial

period that falls mid-week is never a problem. However, in situation where the financial period falls in mid-week and the payroll or invoicing must be done the next day, before the week is over, Partial Posting may be useful. For example, if your payroll semi-monthly and done on the 15th and last day of the month and you pay on the Wednesday following the week in with the 15th occurred, you do <u>not</u> need Partial Posting. Simply post as usual at the end of your week and transfer your data to payroll normally. If, however, your payroll is semi-monthly on the 15th and last day of the month and you pay the next business day after the 15th, then you <u>will</u> want to consider Partial Posting.

Partial Posting is available as a System Preferences setting as not all organizations will require it. Here's how it works:

Here is a regular timesheet with data entered for Monday, Tuesday and Wednesday. The TimeControl Administrator has elected to do a Partial Posting for data up to and including Wednesday:

The Administrator selects Timesheet Posting as usual and elects to run it now. Partial Posting is not available as a scheduled service.

There is an option for this TimeControl to Partial Post. The Administrator selects the Partial Posting option, the date they wish data included up to and the week ending date of the timesheets in question.
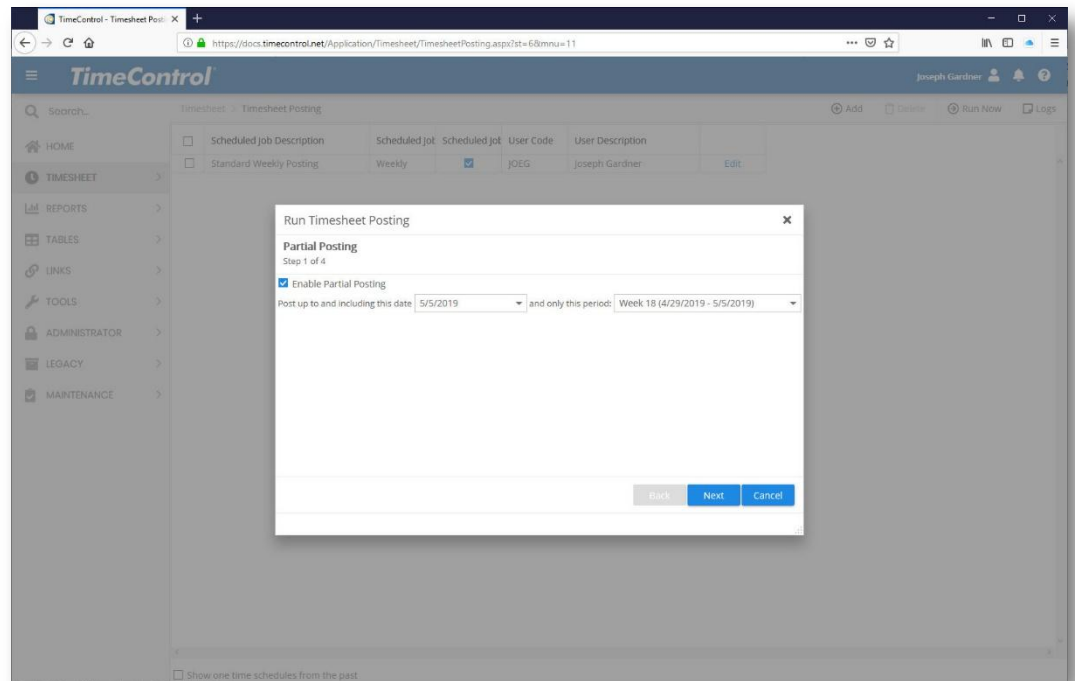
Now TimeControl displays all timesheets which match the criteria.
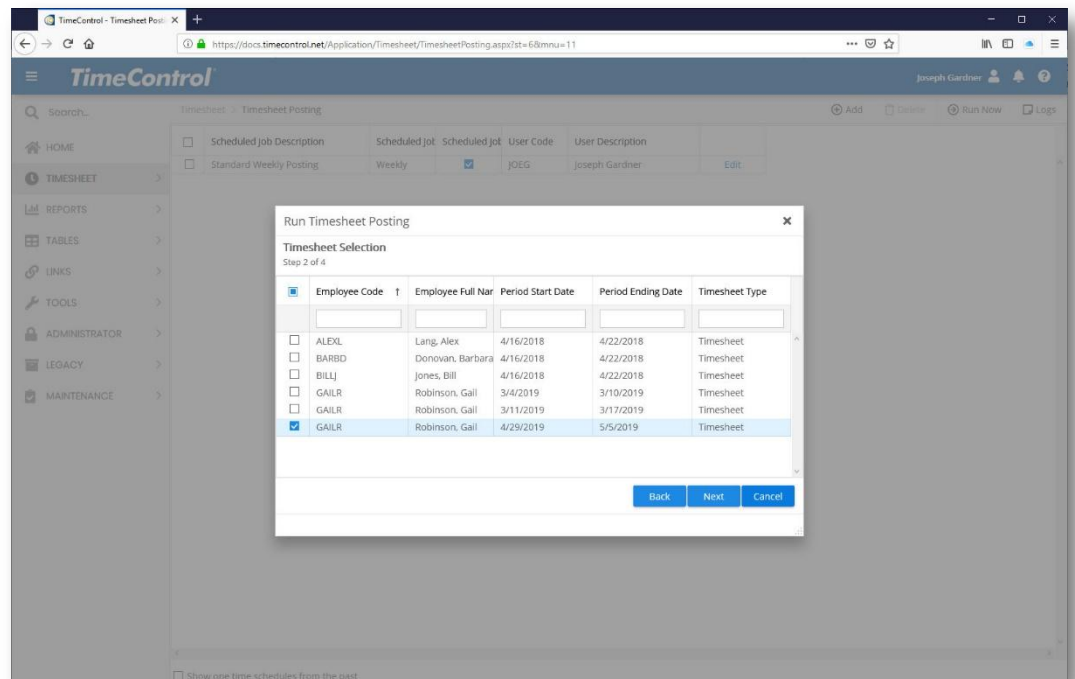
Note that the data that TimeControl will select is likely not released.
The timesheets may be released or may be in draft mode.
TimeControl is looking through all non-posted data for dates which

match the criteria. Also, since the timesheet has not been released, Validation Rules will <u>not</u> be checked in this data.
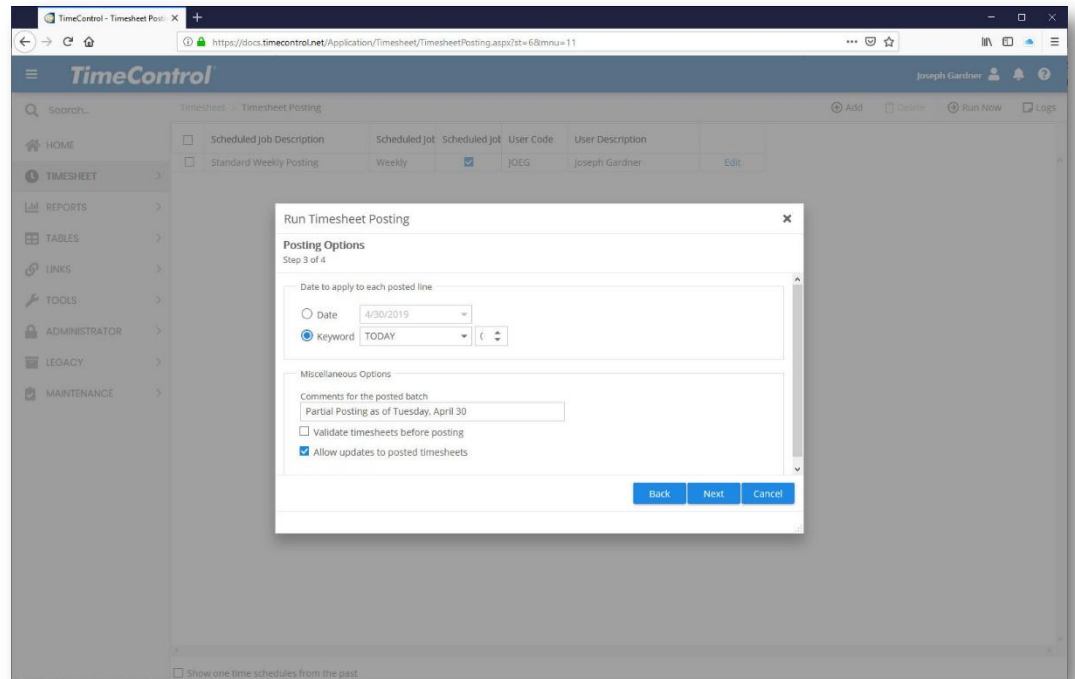
TimeControl now posts the relevant date and locks the rows that were relevant in the timesheet. The data that has been posted is now immediately available for transfer to project management systems and for export to other financial systems such as Payroll and Invoicing.

The timesheets affected have not been released. They are still available for users to complete the end of the timesheet.

The lines of the timesheet which were posted are no longer editable. But, the timesheet is now in draft mode. If a user had pre-populated a line which had entries on that line which went beyond the partial posting date, TimeControl duplicates the line leaving the entries to be partially posted in the original line and creating a new line with only the entries beyond the partial posting date.

The user can add additional lines to the timesheet to complete their week. If they realize that a posted line was in error, they can reverse that line by selecting it, copying it, and entering negative values where required.

At the end of the week, the timesheet will be released, go through whatever Validation Rules are applicable to it and then will be released as normal. TimeControl will only post the unposted lines to complete the timesheet cycle.

Partial posting can be executed numerous times so if following a Partial Posting errors are identified or if some users did not have their timesheets ready in time for the Partial Posting, then redoing the posting numerous times for that given date will only post the new items which are unposted. Items already posted in any previous Partial Posting will not be affected.

Since Partial Posting is being done with draft timesheet data, you may wish to create processes to ensure that the right data is available for the Partial Posting process. For example:

- A Missing Timesheet Report could be viewed or Missing Timesheet Email reminder could be sent only for those employees who have not started a timesheet at all by the Partial Posting date.

- An exception report of unposted data could be reviewed by the Administrator for data which is likely in error (for example more than 24 hours in a single day or not enough hours in a single day).

Project Manager Validation

As a project-oriented timesheet system, TimeControl includes a function specifically designed for project managers to view timesheet data.

For project managers who must approve timesheet data that is to be assessed against their projects, looking at information timesheet by timesheet is ineffective. It forces them to sift through many lines of information that may be utterly irrelevant to the project in question.

The **Project Manager Validation** view displays information by Project, Task, and Resource Assignment down to the Employee level in a hierarchical format. The data for the Project Manager Validation screen becomes available once the timesheet has been posted. This ensures that the project manager is already looking at a complete picture of hours posted against their project and at data that has already passed the internal automatic tests for a valid timesheet and the approval of the individual's supervisors.

Approving data in this manner allows a Matrix Approval process to be implemented where both organizational and project oriented approvals can be part of the same approval process. More information on TimeControl's unique Matrix Approval Process for Labor Actuals can be found elsewhere in this guide.

This function, like all others in TimeControl, can be controlled through Menu-level security.

The Projects viewed within the Project Manager Validation screen are controlled by the **Project Owner** field in the Project Table. This means that a project manager may not be looking at all of the data for a particular employee, only that timesheet data that is relevant to that project manager's projects.

Some fields and functions within the Project Manager Validation are controlled by the Project Manager's User Profile. First, the function itself, of course, is available or not based on the Menu-level security. Second, the visibility of the **Adjust** button is dependent on the Project Manager having rights to the Debit/Credit menu function in their User Profile. Next, the Rate values 1-9 are controlled through field-level security. Multiple rate values are possible in TimeControl for each Rate code. For example, one rate value might be used for internal cost, another for billing cost and a third for average project cost. It might be appropriate for a project manager to have the right to see one or two of those values but not the third and this can be controlled in the Field Level Security of the User Profile. In the General Tab of the User Profile is also a section specific to the Project Manager Validation:

This controls what data the Project Manager can see in the Project Manager Validation screen. The options are:

- View all of the data that is as yet unapproved has not yet been transferred

- View only that data which is as yet unapproved and yet not transferred where I am the project owner and;

- View all data that is unapproved and not yet transferred based on a specific filter

Once data has been transferred to its appropriate project management system, it will no longer be visible in the Project Manager Validation screen.

➢ To view the Project Manager Validation screen and approve timesheet data:

1. Select **Timesheet | Project Manager Validation**. The Project Manager Validation dialog box appears:

2. Data is listed as one line per project. Only those projects with data from the selected time period are displayed. You can expand all data by clicking "Expand" at the top right or click on the + sign next to the project to expand that line only to the next level. The hierarchy of the data is:

   Project

      Task (hierarchical)

            Resource Assignment

                Employee

                     Timesheet lines

3. To approve a line item, click on the Approve ✅ button

4. To reject a line item, click on the Reject ❌ button

5. To unapproved or return a line item back to its original state, click the Unapprove ➖ button.

6. You can change the approvals of any hierarchy from the lowest level to the highest by clicking on the Approve, Reject or Unapprove button next to that level. Clicking on the Approve button next to a project then automatically approves all data that is listed below.

7. By going through the timesheet data from the previous week (or other selectable period) that have been assigned to you, you can determine what data is acceptable and ready to be sent back to the project management system.
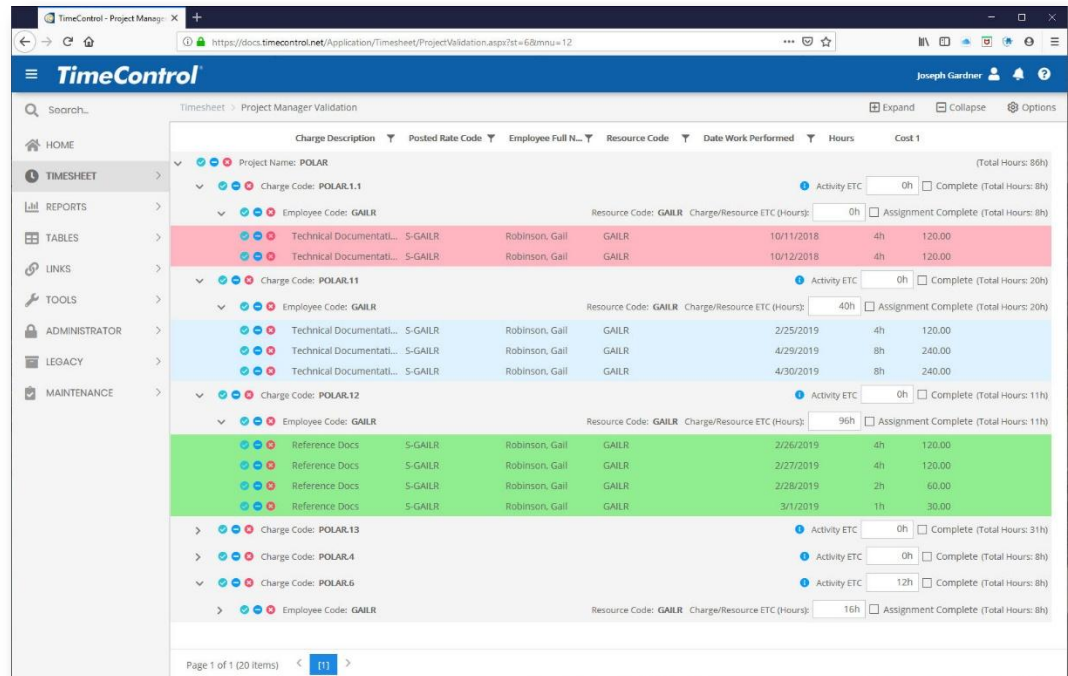
> ➢ To update Estimate to Complete:

From this screen, project managers can also update the estimate to complete (ETC) at the resource assignment or task level. Individuals are able to update their ETC right on their timesheet but by updating the number of hours remaining but a project manager may wish to update this data before sending it back to the project scheduling system. To change the data the project manager can

1. Update the Resource Assignment ETC by entering or changing the hours in that field. Since this will affect all employees who have the same resource code, this works best when resources in the project system are managed at the employee level. When resources in the project system are at the skill or category level and TimeControl data is coming from many employees into one resource assignment, HMS recommends that the ETC update be done in the project management system.

2. The Resource Assignment ETC can also just be marked as zero by clicking the "Assignment Complete" checkbox.

3. Update the Activity ETC with hours remaining. This means the task still has work to do independent of the assignment seen here.

4. The Activity can be marked complete by clicking the Activity Complete checkbox. In this case, all assignments will be marked as complete.

More information on the associated activity can be displayed by clicking the Information 🛈 button next to the activity.
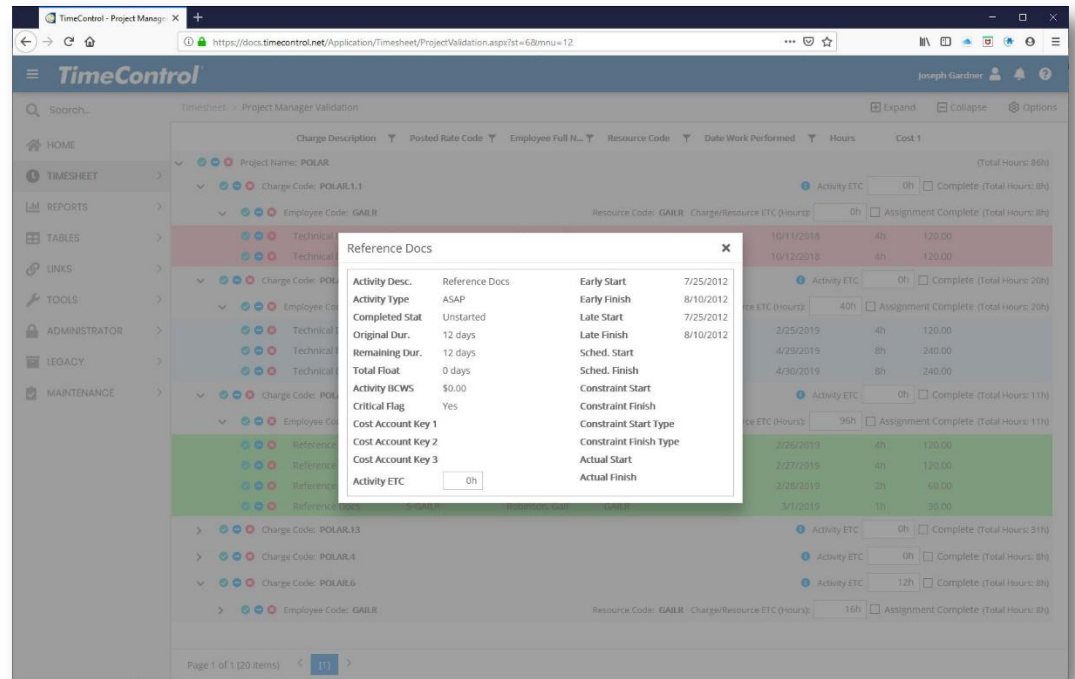
The list of tasks and assignments can be sorted by clicking the sort ▼ button at the top of relevant columns.

The list of tasks and assignments can be filtered by clicking the filter ⬇ button at the top of relevant columns.

➢ What happens to rejected data?

In the TimeControl Links module, the user can decide to transfer all posted data to a relevant project or only that data that has been approved. If this option is chosen then the rejected data will not be transferred into the project management system. The project manager must then correct the rejected timesheet data or ask that the data be corrected by an administrator. Posted timesheet data cannot simply be deleted.

➢ Correcting Timesheet data

TimeControl is designed so that project managers can correct timesheet data in an auditable fashion. This is done through the Debit/Credit view. A project manager who has rights to create a Debit/Credit can go directly to that view with the relevant timesheet data displayed and ready to be adjusted by clicking on the **Adjust** link to the right of the offending timesheet line.

Once in the Debit Credit view, the Project Manager can reverse the line in question and add a new line with the correct data. If TimeControl has been configured to only allow "Balanced Debit/Credits" then the number of hours must balance. If not, then the total on the timesheet may be different than the supervisor has already approved.

Debit/Credits done in this way will immediately be posted so that when the Project Manager returns to the Project Manager Validation view the new changes are instantly visible and both the reversed line(s) and the new line(s) of data can be immediately approved.

> **Note:** It is important for a process to be developed which tracks any outstanding rejected lines until they have all been adjusted and approved. Leaving orphaned lines that are auditable in TimeControl but not acceptable to the project manager opens the door to data which will not total the same amounts in the project vs. the timesheet system.

➢ Project Manager Screen Options

Clicking on the Options button in screen actions allows the display

The Options view allows the Project Manager to determine what data (from the data to which they have access) and what fields they wish to display on the Project Manager Validation screen. The options are divided into a Filter Tab and a Fields Tab

The Filter tab allows the Project Manager to hide or display approved, rejected and pending items and also to show a range of data.
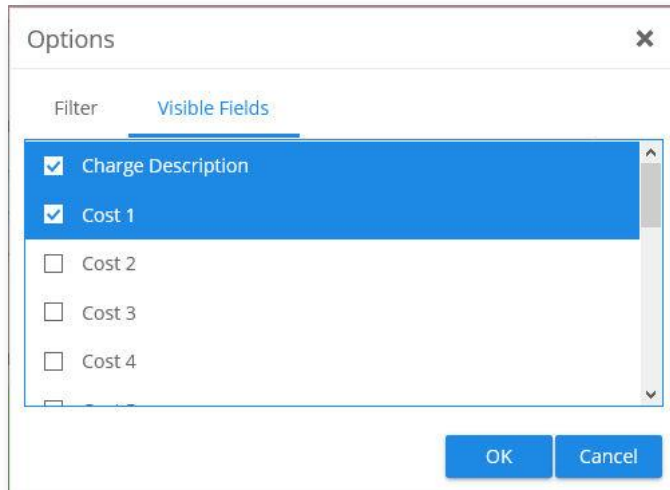
The Visible Fields Tab allows the project manager to select what fields (from the fields available through User Profiles) the project manager can see.

Line Item Approval

Line Item Approval Overview

Just as the Project Manager Validation Screen allows a project manager to approve of each timesheet line for inclusion to the link to the project management system, TimeControl's Line Item Approval allows other line-item approval processes to be added to the approval architecture. Using Line Item Approval, a TimeControl Administrator could create one or as many as they wish axes of approval for timesheet lines. For example, a timesheet approval process might include its normal organizational approval for the timesheet totals and items such as overtime and vacations. Then, a second perspective of approvals might be done by project managers on a line-by-line basis through the Project Manager Approvals. Simultaneous to the project managers, another level of approvals could be done by an account manager and yet another by an onsite client representative.

The number of possible approval mechanisms to create with the combination of organizational approvals, Project Management Approvals and unlimited Line Item Approvals is infinite.

The fundamental aspects of the Line Item Approval mechanism are these:
- Line Item Approvals are distinct from Project Management Approvals in the PM Validation module as PM Validation is tied directly to charges which

originated in an external Project Management System.

- Line Item Approvals are always associated to an export Interface Definition. Creating a definition for Line Item Approvals is, therefore, in the Interface Definition module.

- Line Item Approvals can send email notifications whenever a line is rejected.

- The entire timesheet is never rejected in a Line Item Approval. The data has already been posted and may have already been used for Payroll, Human Resources or other processes that do not require approval of each line.

- Filtering can be used in a Line Item Approval to bypass this particular approval process. For example, perhaps unbillable lines need not be reviewed in this process and can proceed directly to the export transaction file.

- Line Item Approvals allow sequential approvals

- There is no limit to the number of Line Item Approval definitions but there will be only one per Export file.

Here is an example of a Line Item Approval Workflow. Remember, this is not your Approvals process, only an example.
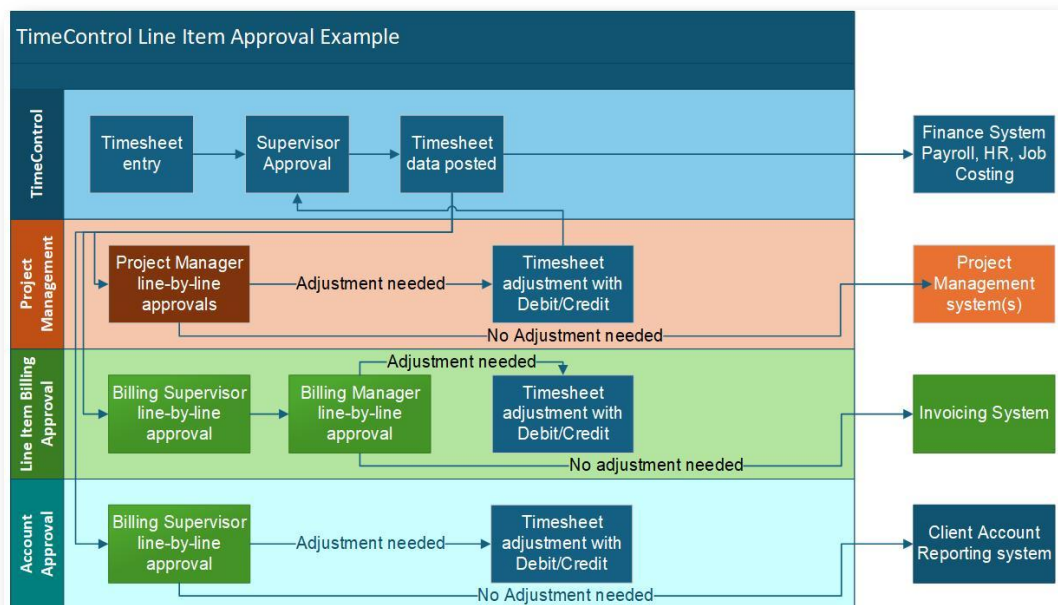
When creating an approval architecture, the approvals can be as simple as having no approvals required at all, having only one level of approvals, having

only automated approvals, having matrix approvals with just organizational and project management approvals or having a multi-threaded approval process like the example above.
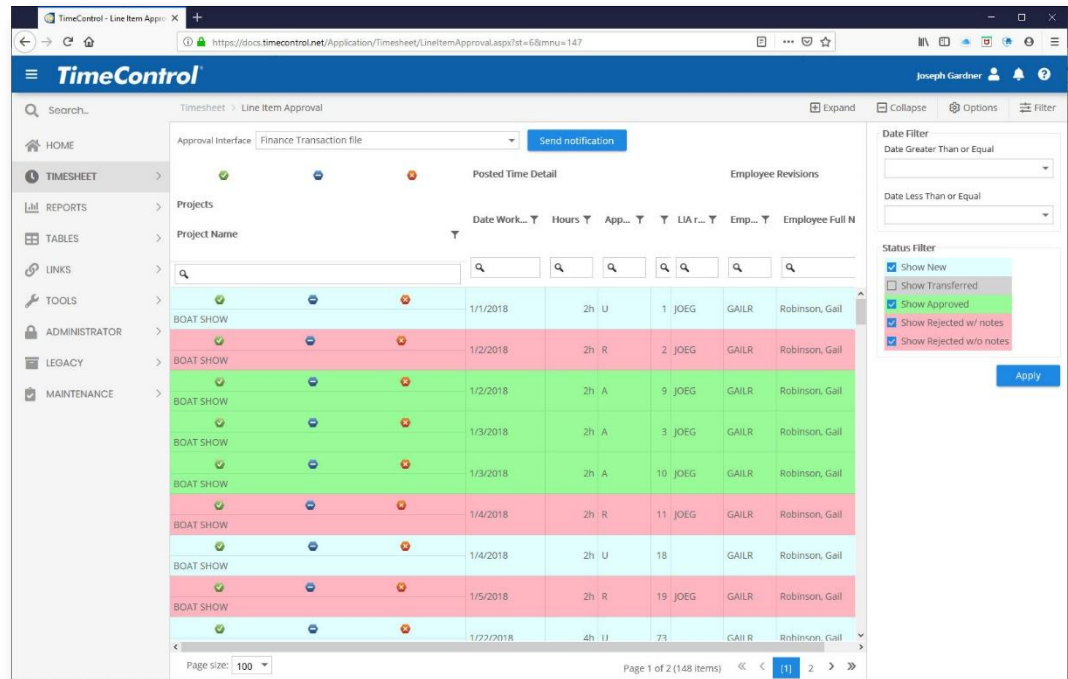
Creating a Line Item Approval definition

Line Item Approvals are associated to an export of data which will be used to integrate TimeControl with other external products. Line Item Approval definition is associated to a Table Export definition which is created in the Interface Definition area of TimeControl.
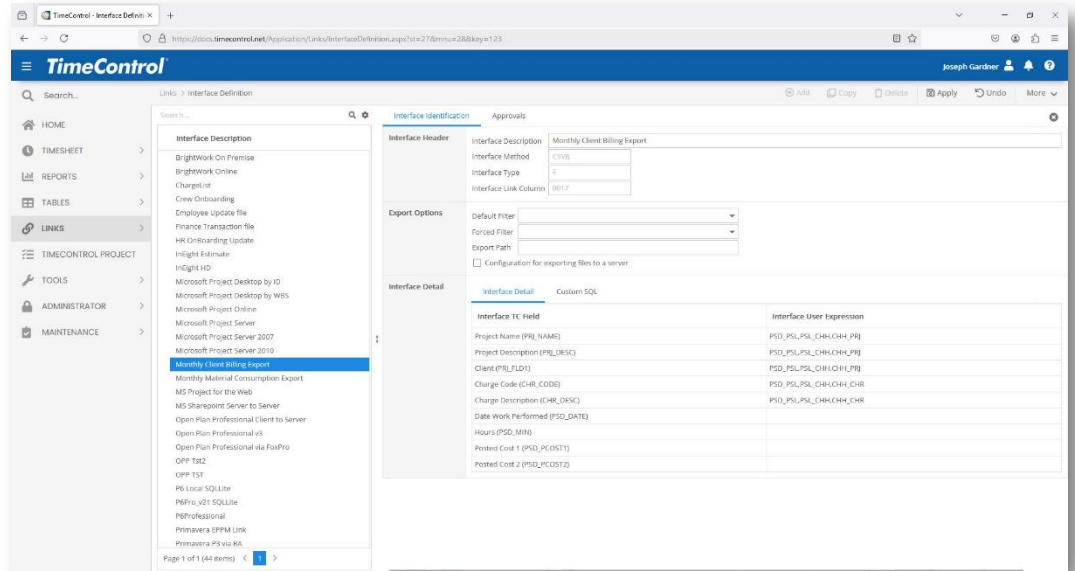
Once you have navigated to the export definition to which you wish to add Line Item Approvals, click on the Approvals Tab.

Now select "Enable Line Item Approvals for this interface and the screen will expand with a number of options.
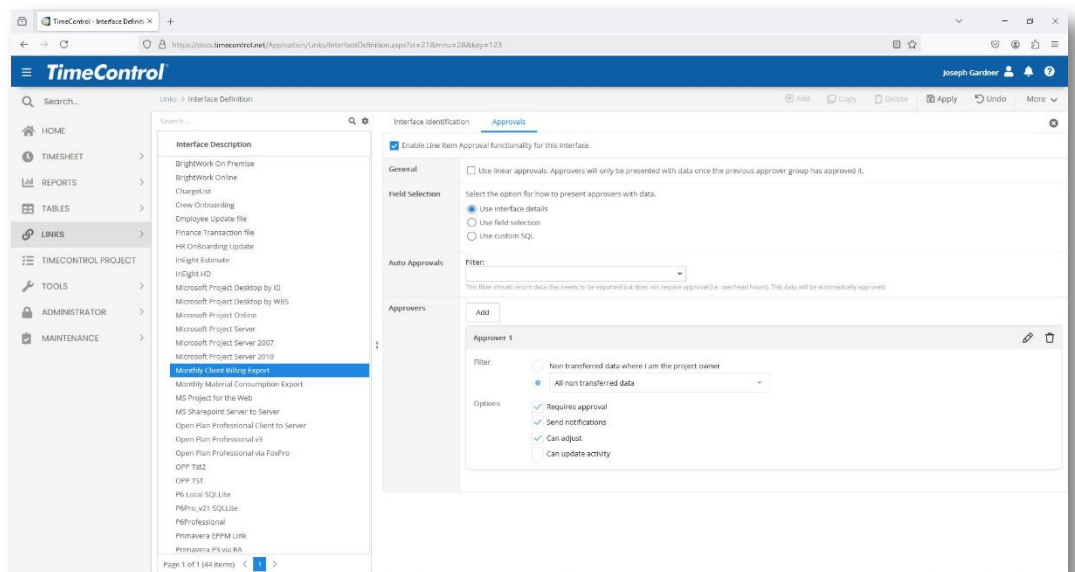
One of the first options is to determine if you wish multiple line item approvers to work in sequence. This can have challenging process implications if there is not good and rapid communication between these levels. Next, you must select which fields to display in the Line Item Approval screen. The default is to select the same fields as the export interface.

If you prefer, you can use the Field Selection mechanism used in multiple areas of TimeControl to select the fields from the interface to display.
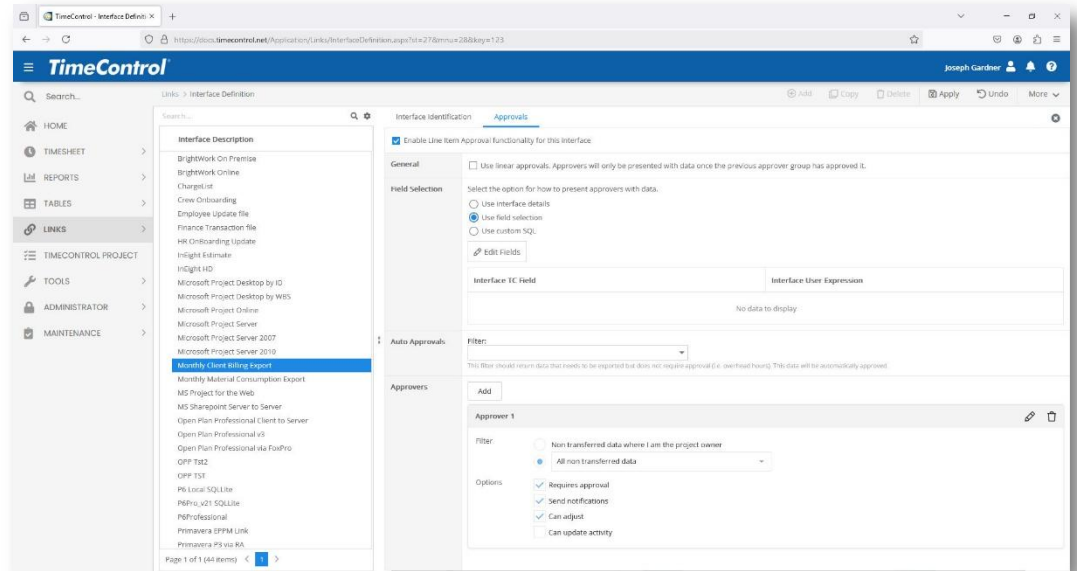
To use the Field Selection, click Edit Fields.
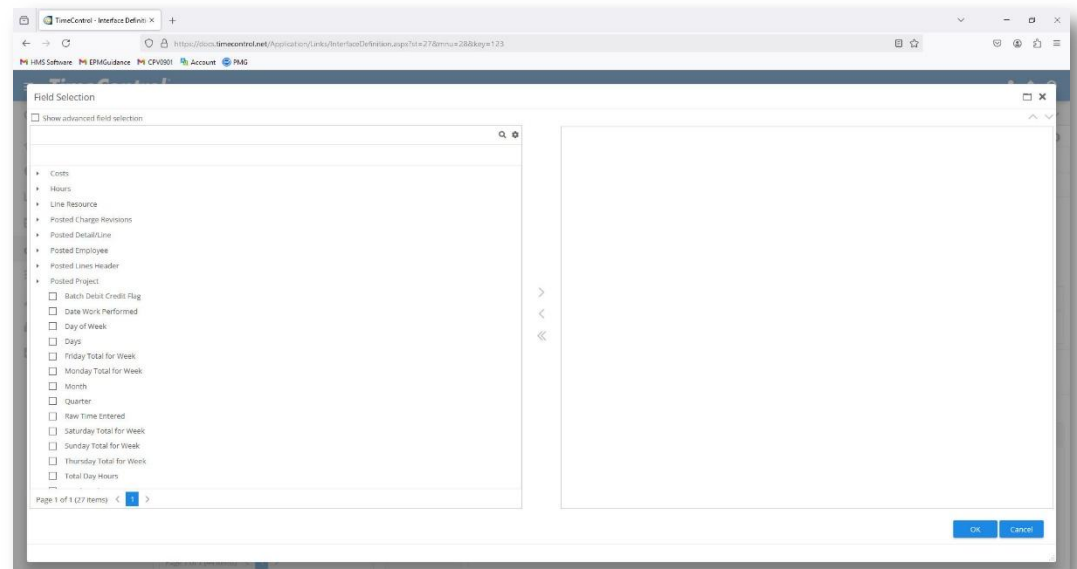
Now select one ore more fields from the left and click the right arrow in the middle of the screen between the panels to move those fields into your selection.
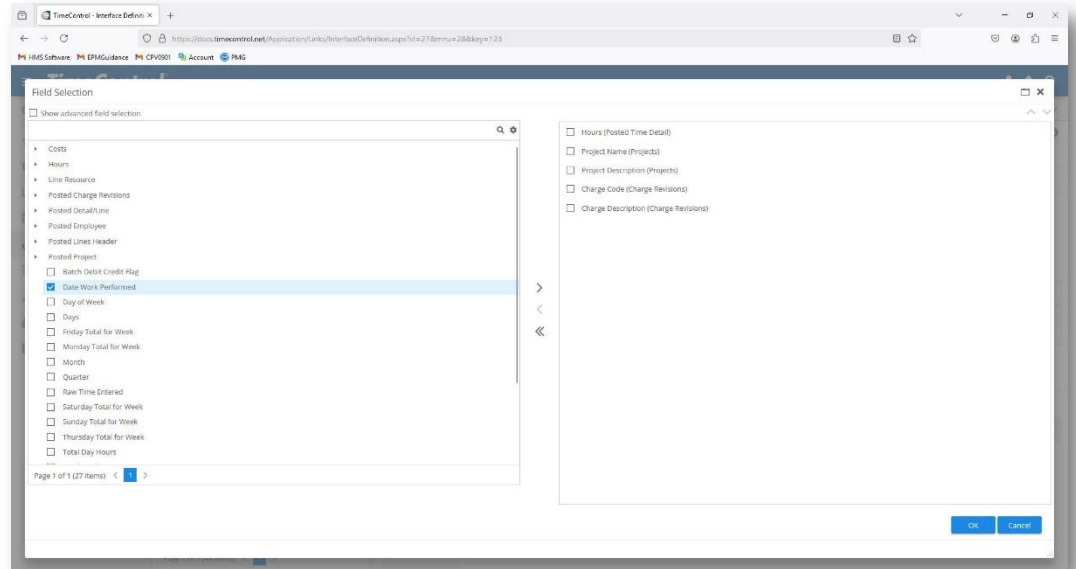
You can adjust the order in which you'd like the fields to appear by clicking the field checkbox on the right then using the up and down arrows at the top right of the selection box to move that or those fields.
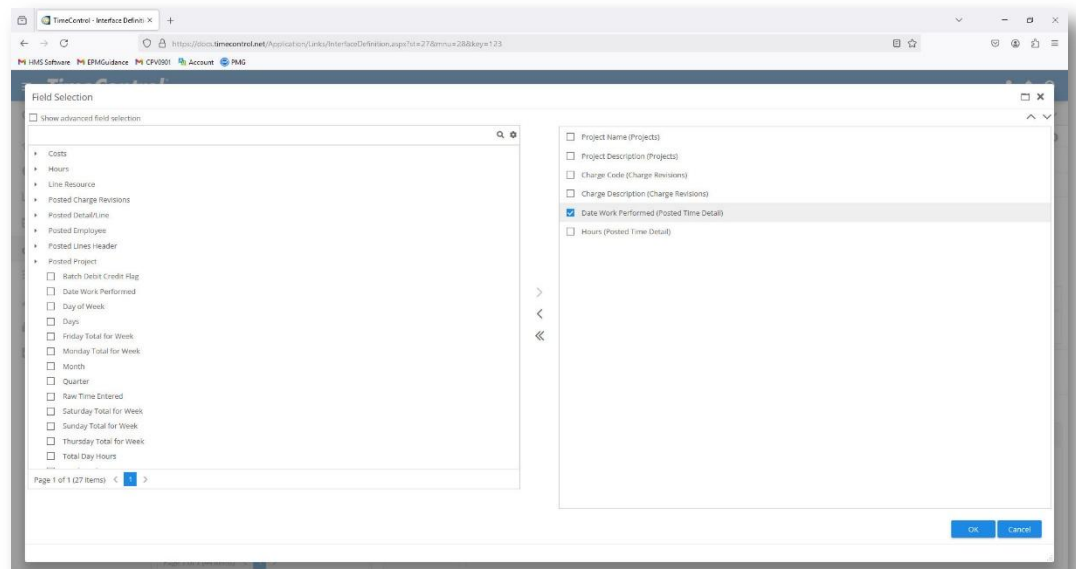
When you click Ok, you will be returned to the Interface Definition and should see all the fields you selected.
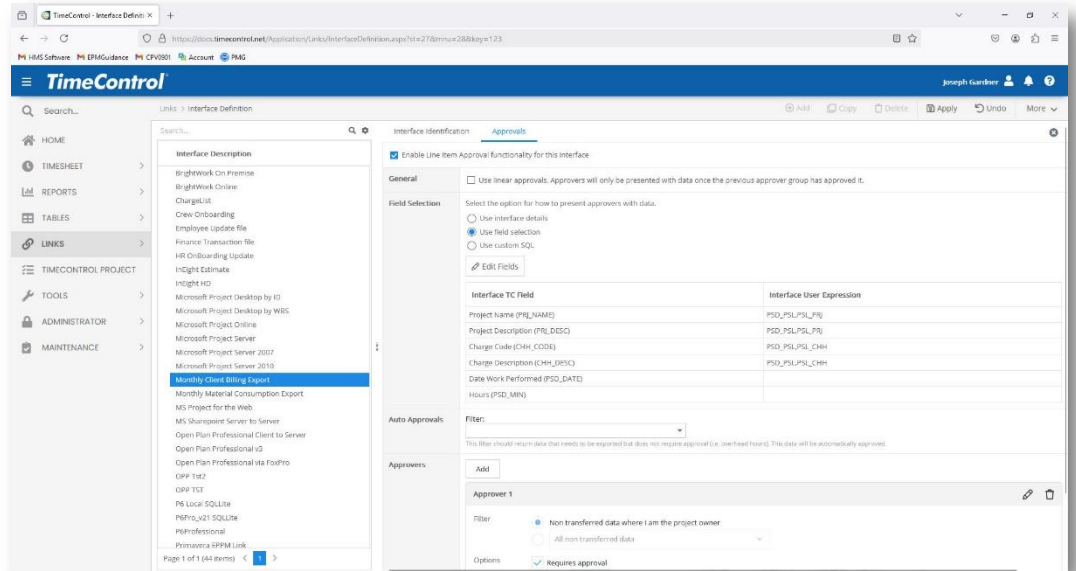
If you are satisfied with the selection, click Apply at the top right to save the definition.

For more complex selections, you can even enter your own custom SQL directly to select the fields you wish.
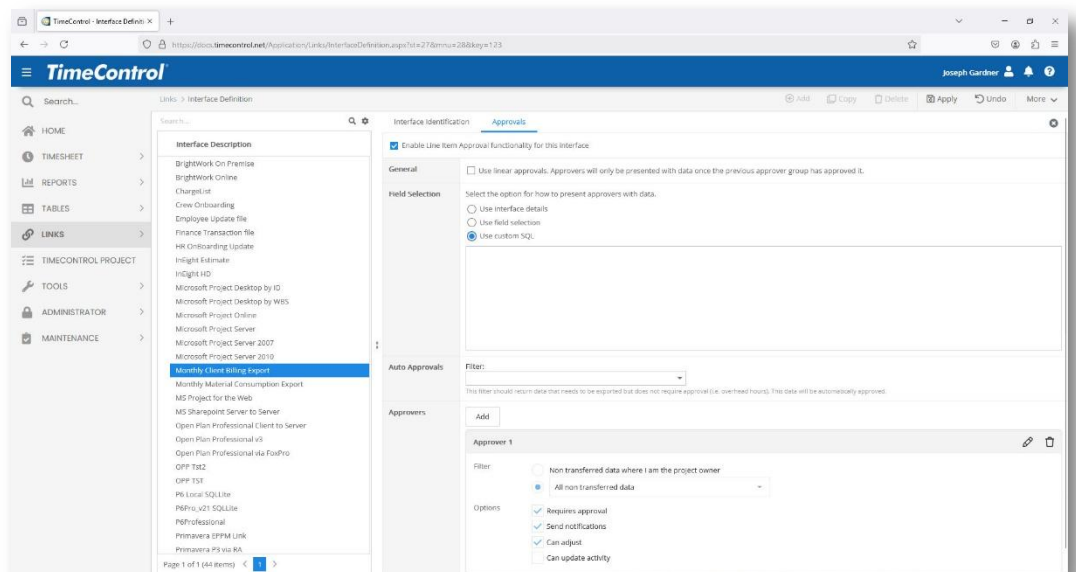
Now you can define one or two approvers. The default selection is to show all data where the current user is the owner of the project but you can also use a predefined filter to determine which data a user can see.

There are several options for each approver. First, determine if the selected filter requires approval before the data can be exported. If this is selected, only data marked as approved will be sent during an export.

Next, determine if you wish to send notifications of changes or rejections of data. The email will be sent at the end of each Line Item Approval session to indicate to users that a line item has been rejected along with a note about that line item so the user can take corrective action.

If you have elected to have a second approval level of each line, you can add that second approver definition by clicking Add. Now a second approver definition will appear. The two approvers will work in parallel unless you have selected to use linear approvals and pass those approvals in sequence.
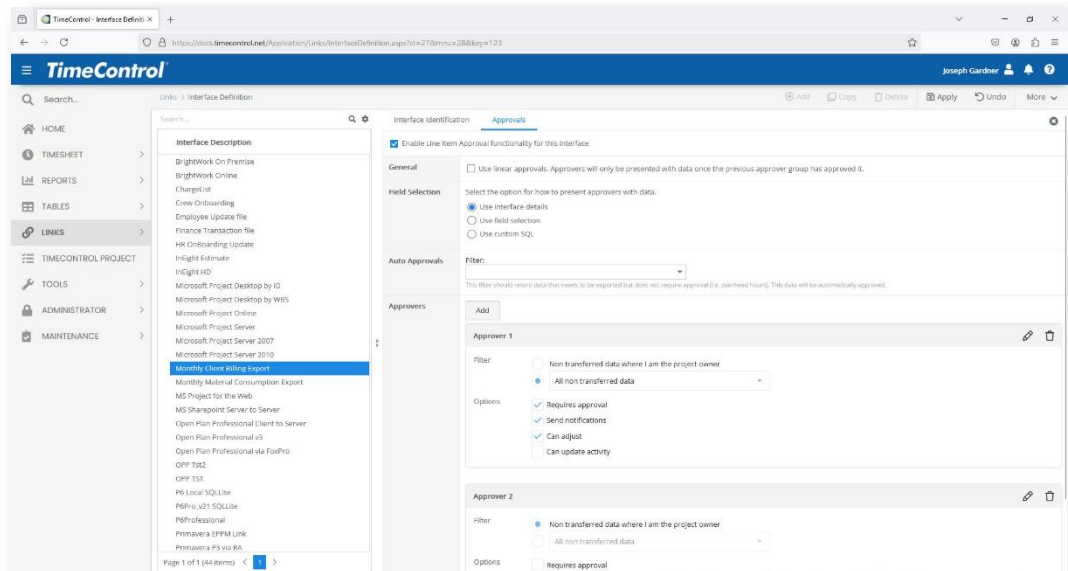
Line item approval Adjustments with Inline Debit/Credit

The Inline Debit/Credit functionality includes benefits beyond TimeControl's regular Debit/Credit function. TimeControl's Inline Debit/Credit functionality includes the ability to change the status of approved or rejected lines in the Line Item Approval module to Unapproved/Pending/New.   If an Inline Debit/Credit is created and accepted, then, once that Debit/Credit is posted, it will optionally change any lines in the Line Item Approval selection back to Unapproved.   More information on how to configure and use Inline Debit/Credit can be found elsewhere in this Guide.

Line item approval of non-labor entries

TimeControl allows the Line Item Approval module to work not only on labor entries from timesheets but also line items from Material, Equipment and other non-labor entries. This allows an extension to the Matrix Approval Process for Labor Actuals™ to include non-labor actuals. Approvals for Materials and equipment could, for example, be done first at the entry screen, next in a sequence of approvals for the global entry and finally on a line-by-line basis.

Line Item Approval Process tutorial

The following is a step by step tutorial of using the functionality described above for Line Item Approval. Your screens and data may differ based on how you have configured your TimeControl, but the basic process will be the same. We have not shown every possible permutation of how this feature is used only given the basic flow of creating Line Item Approvals.

First, determine what data is required by your external system that needs to be exported from TimeControl. Prepare a spreadsheet that identifies the columns, something like this that might be prepared for payroll.

Fields in Payroll System	Fields in TimeControl
Employee Code	Employee Code
Employee Name	Employee Name
Week Ending Date	Posted Week Ending Date
Pay Code	Rate Code
Hours	Hours

If you already have posted data in TimeControl that you do not want approved before it is exported then no filter is required. If you already have posted data in TimeControl that you want approved before it is exported then you should create a filter to be used during the creation of the Table Export

Here is an example for the export of data from Posted timesheets:

To start, navigate to Administrator->Filters and create a filter based on the Posted Time Detail.
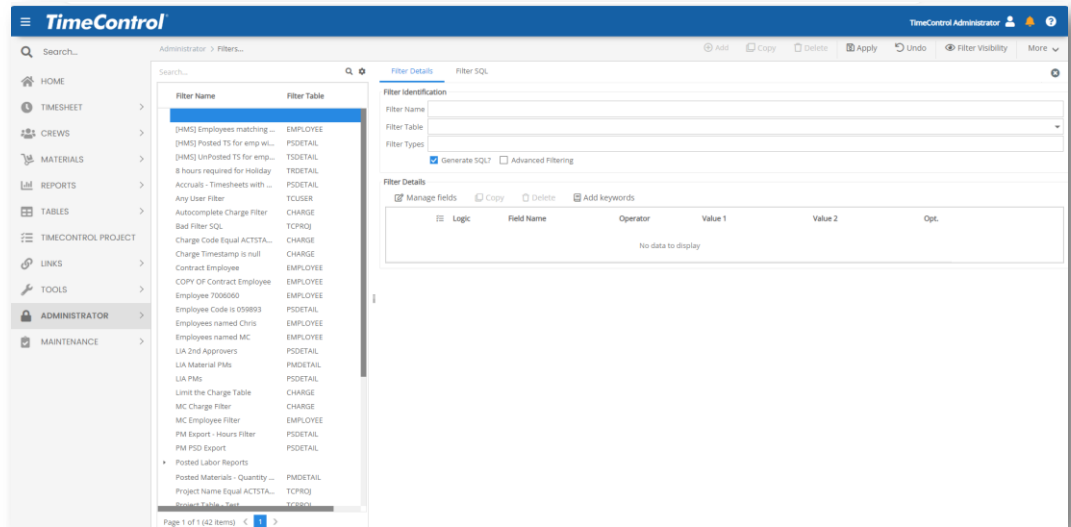
Enter the details of the filter like this and click Apply to save.
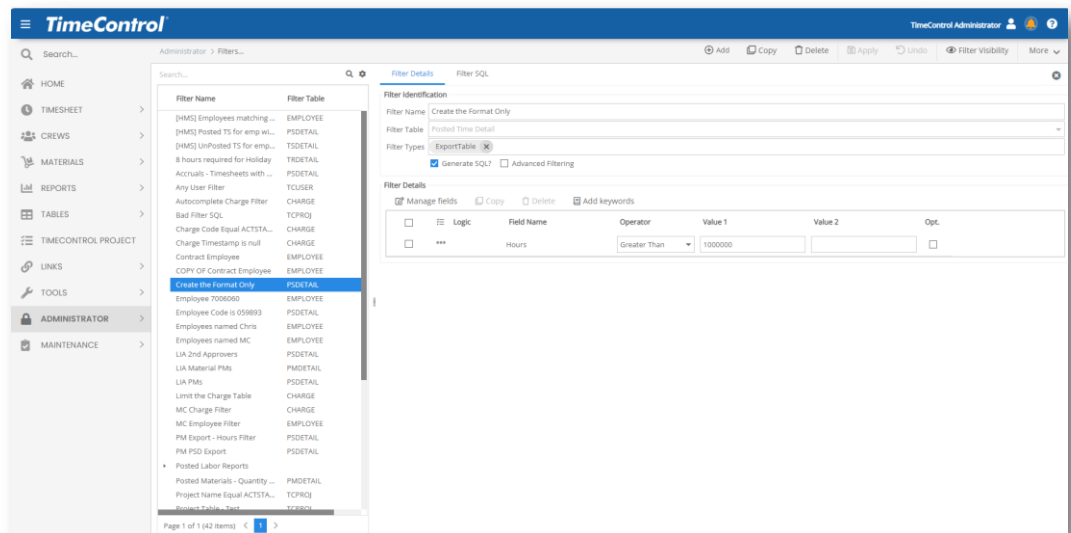
Now, navigate to Links->Export Tables and create a table export and add all the fields you require. Select Run now and then choose Export Wizard and click Next
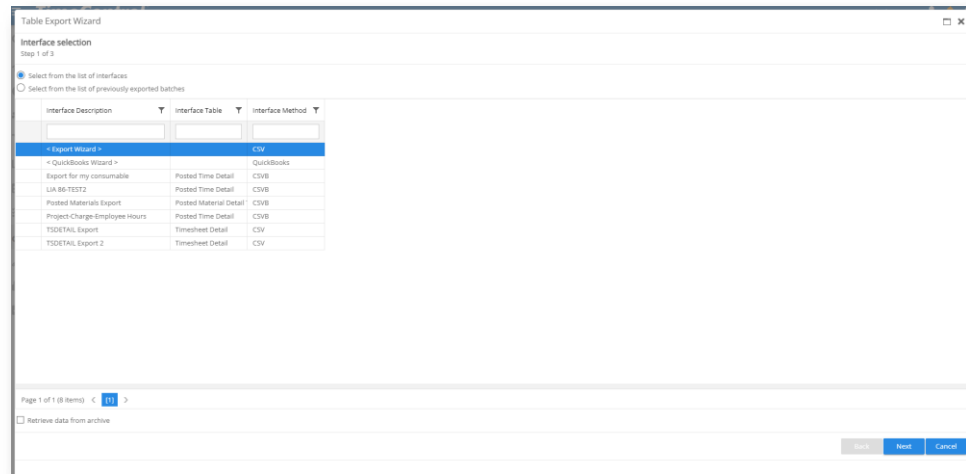
Choose all your columns for the export and click OK.
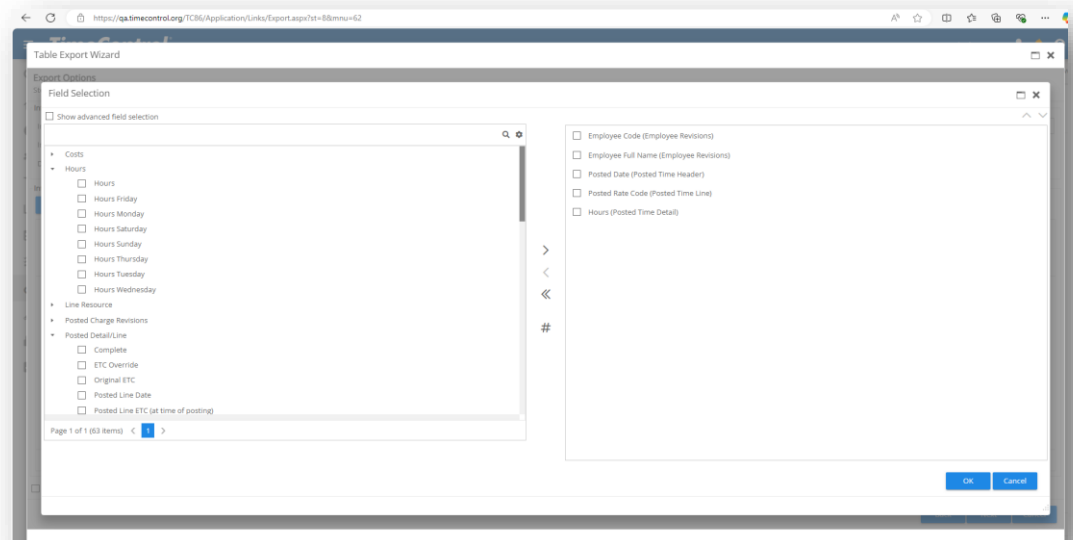
Once you click OK you should see this screen:

Make sure to check the box to save the export and further check the box to enable batch tracking. Both are required for this process. If you chose to create the filter in step 3 then, when the filter option dialog comes up, select the filter you created earlier for this process called 'Create the Format Only' and click ok. The export will indicate there is no data to export and ask you if you want to continue. Click Yes and the format will be saved/

Once the export format is created you can now setup up the approval paths for the posted data.

Approving the data can include one or more approvers and for each approver we will need to configure the data appropriately.

Following along with this example of data being prepared to export to payroll let's assume we have a user from payroll who will do the line item approving and this approval is a single level approval.

Create (or use an existing if you already have one) a user defined field in the Employee table called Payroll Approver and make this a text field of 50 characters.

Once created we can use Manage External Links to link this employee field to the user table in TimeControl.

Update all the employee records for the folks that will have their data approved (probably all records) to indicate the user that will do their approval. In this step you can identify one user per employee and in most cases that same user will be used for all employees, but if you have multiple divisions each requiring a different approver then you could use a different approver for each division. The update of the records can be done manually or this can be done using a table import for the employee table.

Navigate to Administrator->Filters and create a filter based on the Posted Time Detail and choose the new employee field (Payroll Approver) in the filter and create it as follows and save the filter.

In the Filter SQL tab, enter something like this noting the value of EMH_FLD5 will be different in your environment. The number is based on the position in the user defined fields of the Employee table, in this case 5.

SELECT PSD_KEY FROM PSDETAIL JOIN PSHEADER ON PSD_PSH=PSH_KEY JOIN EMPHIS ON PSH_EMH=EMH_KEY WHERE EMH_FLD5='[USR_CODE]'

> **Note**. The format includes the single quotes around the columns called [USR_CODE].
>
> **Note**: If you are not certain of the effects of SQL when entering it in this fashion, please consult HMS Software.

Navigate to Interface definition and complete the process as follows:

1) Enable Line Item Approvals

2) Click the Add button to add the Approver level 1

Then assign the Payroll Approver filter as shown above and save the Interface

Now you can use the Line Item Approval Interface to approve the data before you export it. The Export "View" should be selected to activate the approval structure that has just been defined above.
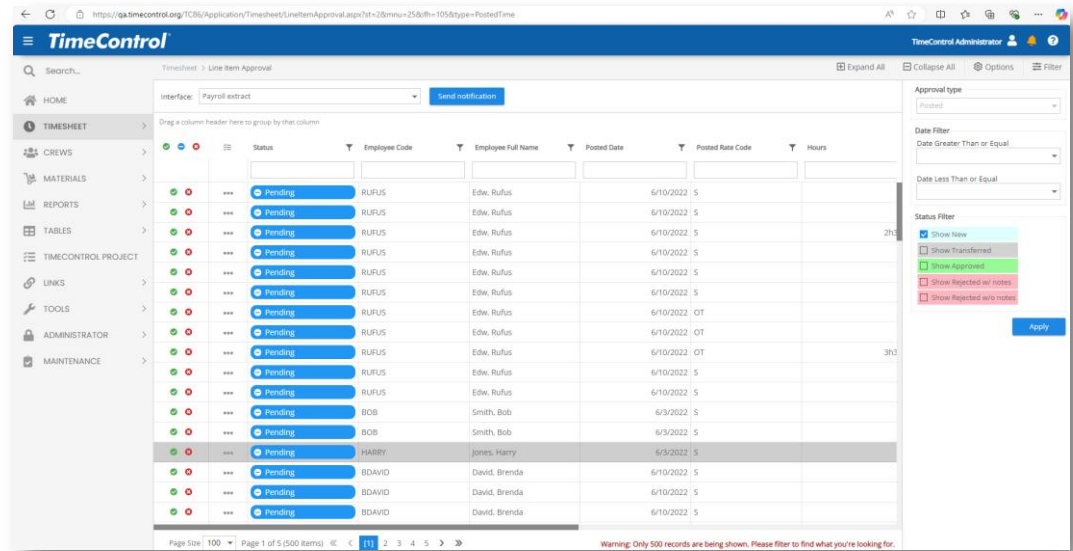
Batch Release

For users who need to release many timesheets simultaneously, TimeControl includes a Batch Release function. Batch release allows you to release only the timesheets that you currently own. There are two methods of releasing multiple timesheets at one time from your control to the control of the next person in the authorization chain. The first method is activated from the TimeControl menu.

➢ To create a batch release:

1. Select **Timesheet | Batch Release** from the main menu. The Batch Approval Wizard appears. Click Load to see all timesheets which you currently own or the Filter icon to see only a subset of these timesheets.
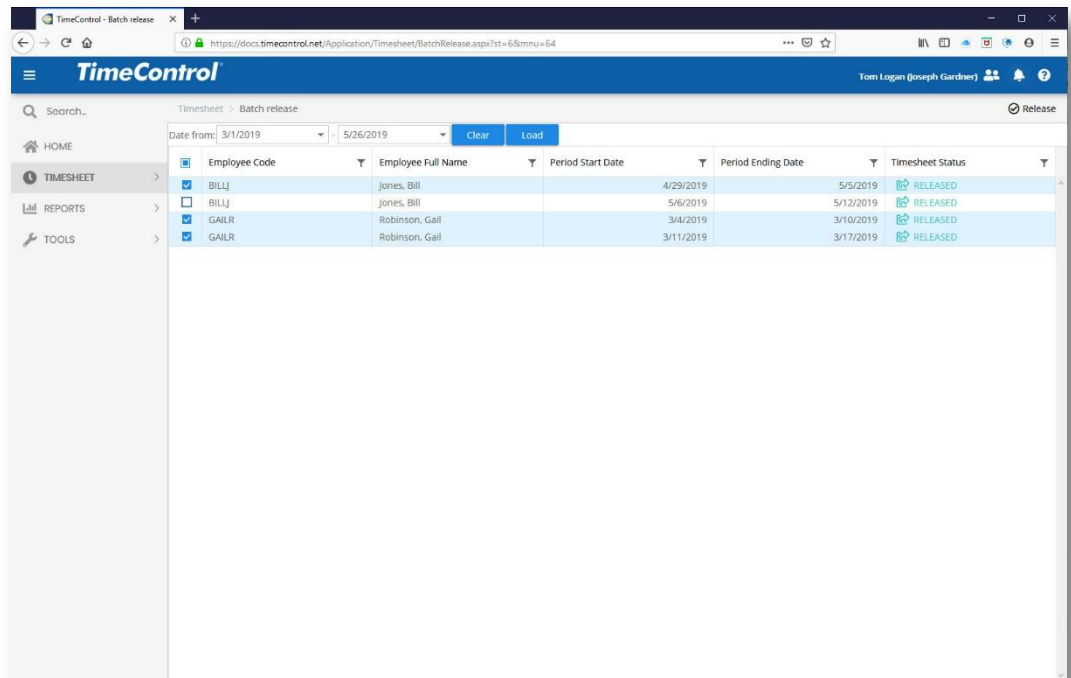
2. You can filter by entering a date range in the **Week Ending From** and **To** fields. You can enter a date manually, according to your system localization, or click the calendar icon to select a date.

3. Click **Next** to continue. A list of matching timesheets appears.

4. By default, all the timesheets on this list are selected. Deselect any timesheet that you do not want to release at this time then click **Next** to continue. This displays a pre-validation log warning you of any errors in your selected timesheets. If any of the selected timesheets do not meet the validation criteria, they will not be released.

5. Click **Next** to continue. This displays the **Batch Release Options** page.
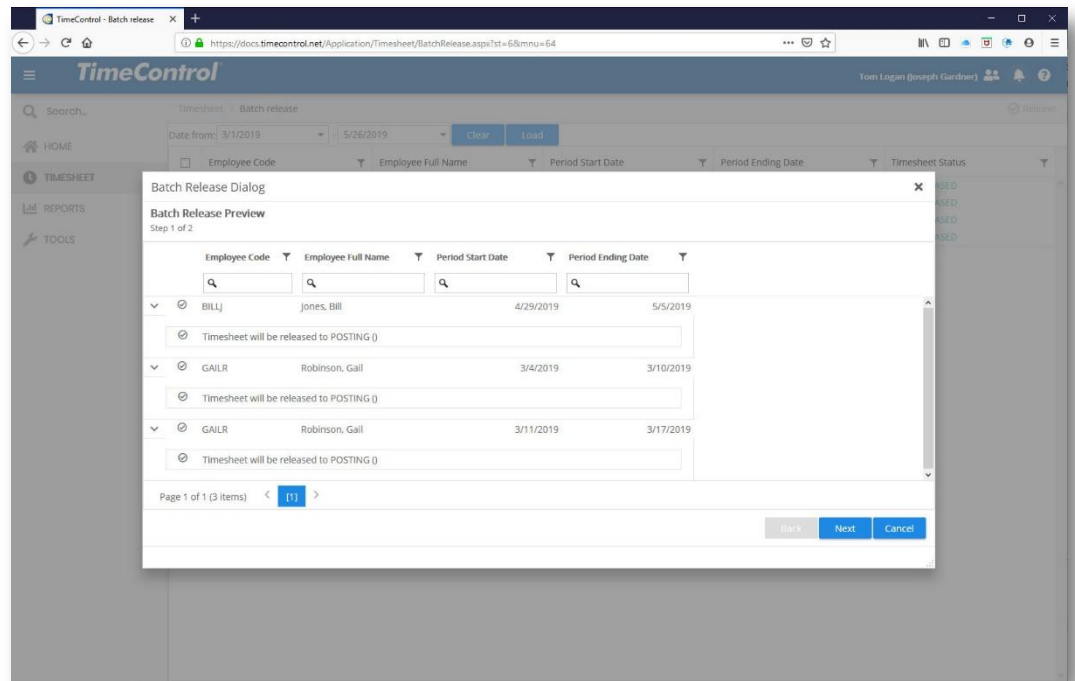
- **Timesheet Options: Delete Empty Lines** is selected for you. This removes timesheet lines that do not have hours entered. **Send Email Notification** allows you to send an email or system notification to the timesheet recipients.

- With the **Batch Release Options**, you can either include or exclude the timesheets that had warnings in the pre-validation log.
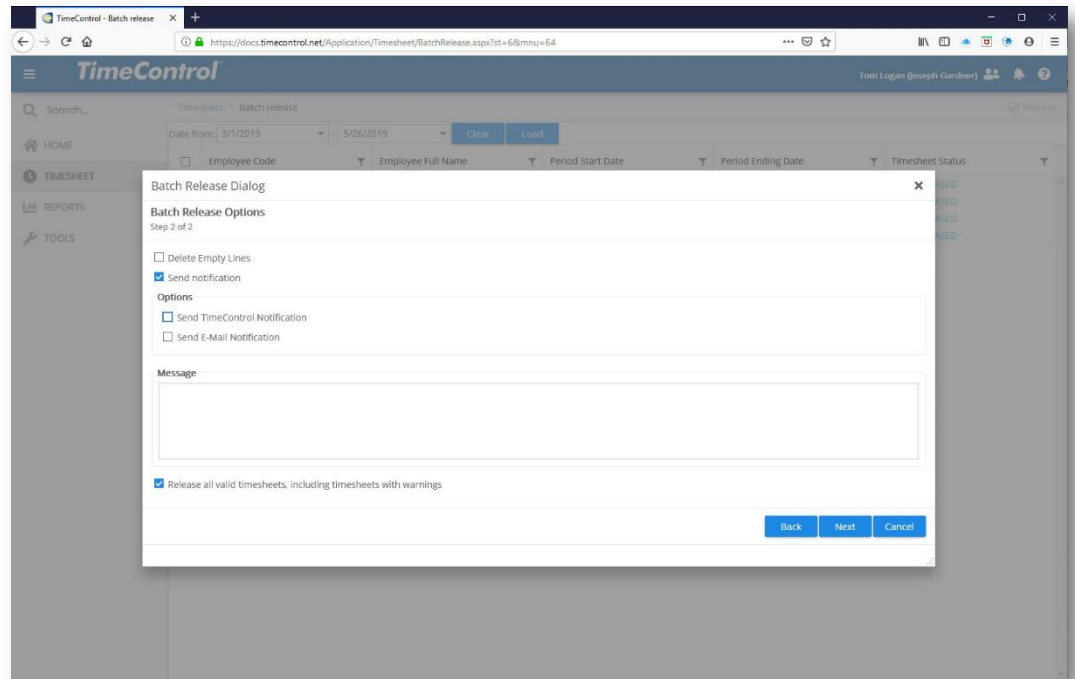
- Click **Next** to Continue

6. This completes the release process and displays a results log listing the timesheets that were released.
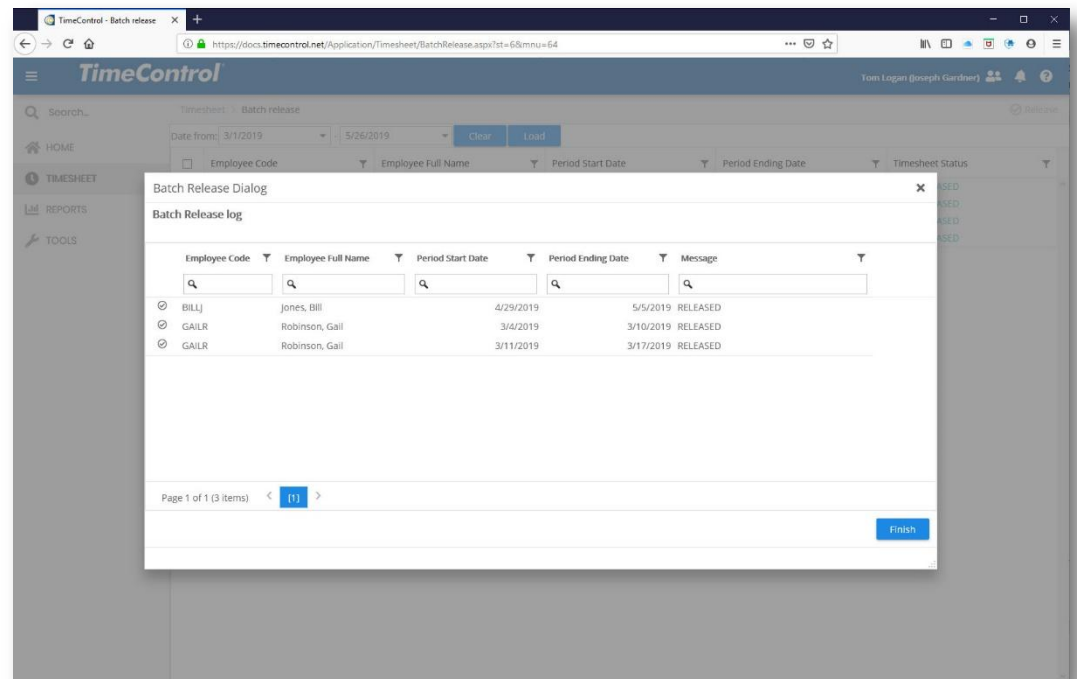
The second method of activating the Batch Release of timesheets is done directly from the Timesheet List.
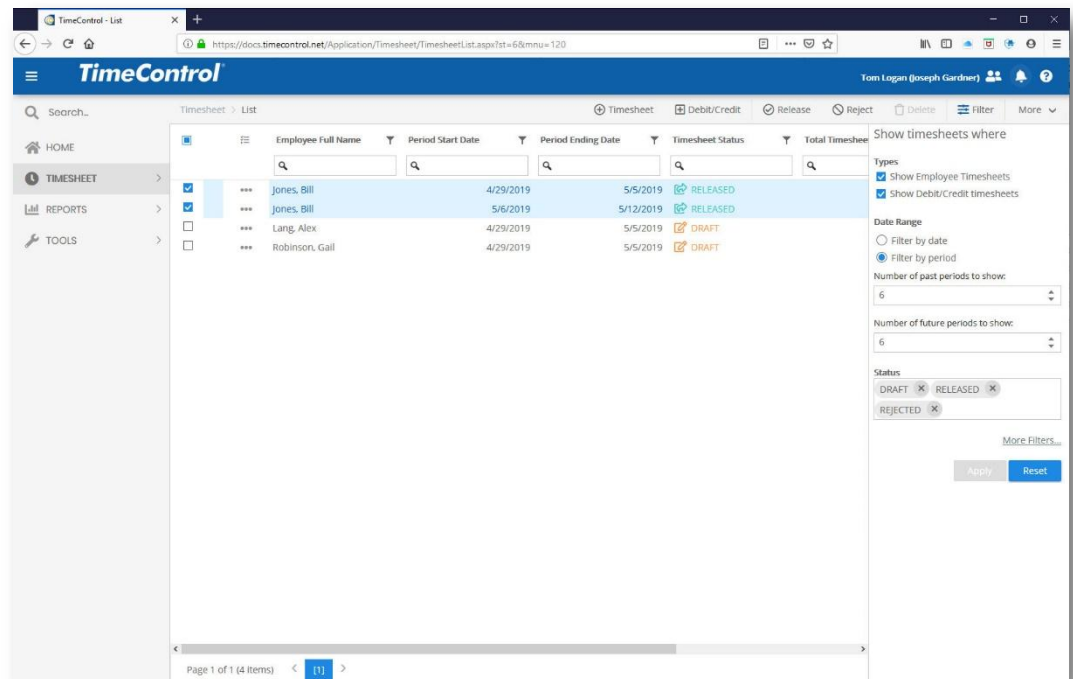
Timesheets under your control are identified by the Owner column. Select any of these timesheets by clicking the select box on the far left. Once you've selected multiple timesheets, simply click on the Release button. TimeControl will ask you to confirm your choice.
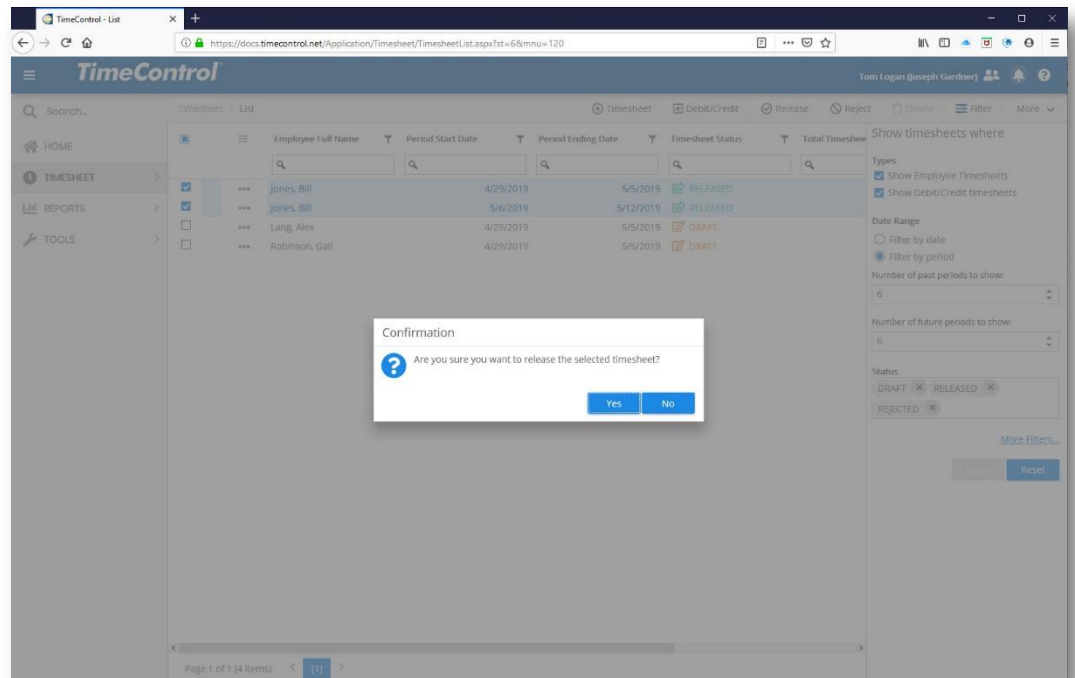
TimeControl will now determine which timesheets you've selected and list them with their intended actions.

Click Ok and all the timesheets you have selected will be part of the Batch Release. TimeControl will show you a preview of where the selected timesheets will be released to.

Click **Next** to continue.

You can now decide whether or not to delete empty lines, where to send a notification to the timesheet recipients and whether or not to release timesheets even if there are Validation Rules warnings. If you're ready to release all the selected timesheets, click **Next**.

TimeControl shows a log of the released timesheets.

TimeRequest™

The TimeRequest function allows a user to request approval for a timesheet entry that will happen in the future. Once approved, the TimeRequest entry will act as a pre-loaded charge complete with the hours per day and will appear when the appropriate week's timesheet is created. For more information on TimeRequests, consult the TimeControl User Guide

Multiple Holidays with the TimeRequest Wizard

The TimeRequest Wizard appears in the Screen Actions area of the TimeRequest module and is activated in the General Security Tab of User Profiles.

The TimeRequest Wizard enables an Administrator to create bulk pre-approved TimeRequests which will appear in the future in the timesheets of the employees affected. This might be used for example to pre-enter a holiday entry for all salaried staff. Once completed, the TimeRequest is entered in each employee's list of approved TimeRequests and the "past-owner" would be the user who is listed as the last approver for that employee's timesheet. A TimeRequest Wizard entry includes employee records and dates.

To create TimeRequests using the TimeRequest Wizard, click on it in the Screen Actions area. The Wizard starts by asking if you wish to add a new TimeRequest Wizard entry or edit an existing one.
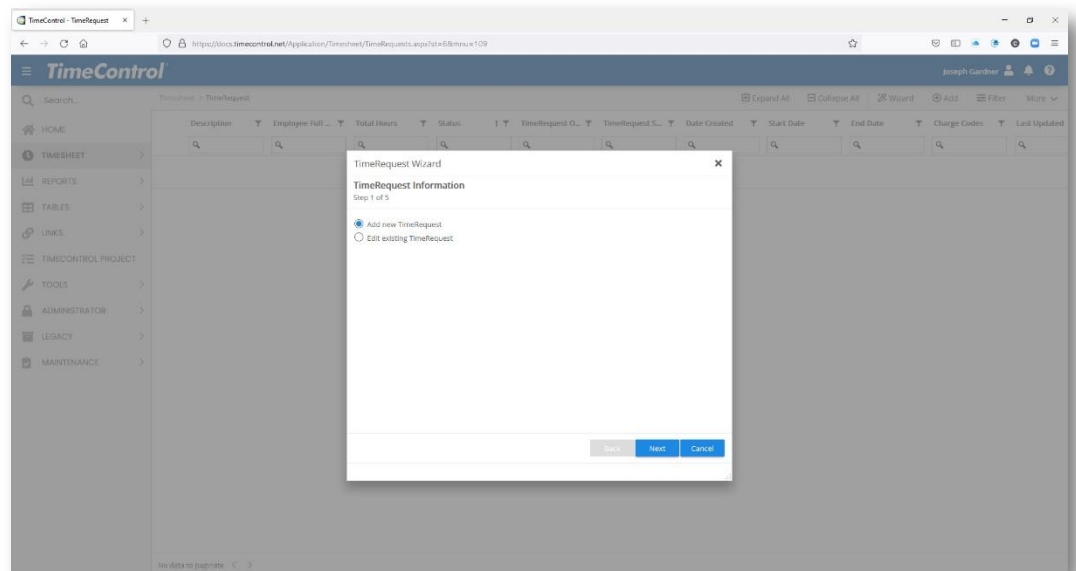
Now enter a description for this TimeRequest Wizard entry, a charge code, the number of hours to add in each day and a rate code. Choose a rate code that will be available to all users. Click Next to continue

Click on a date or hold down the Ctrl-key and to click on multiple dates in one or multiple months if you wish to add numerous dates at the same time.

Next, select an Employee Filter. Leaving this blank will automatically select all employees. All employees who match this filter will have this TimeRequest Wizard entry activated even if they are not employees at the time the TimeRequest Wizard entry is created.

For example, if you create a list of all official holidays for next year for all employees located in the United States and define that filter in the Employee Records based on a field that identifies location, then in the future when the TimeRequest is created for that date, any employee who has that field identifying them as being located in the United States will be included.
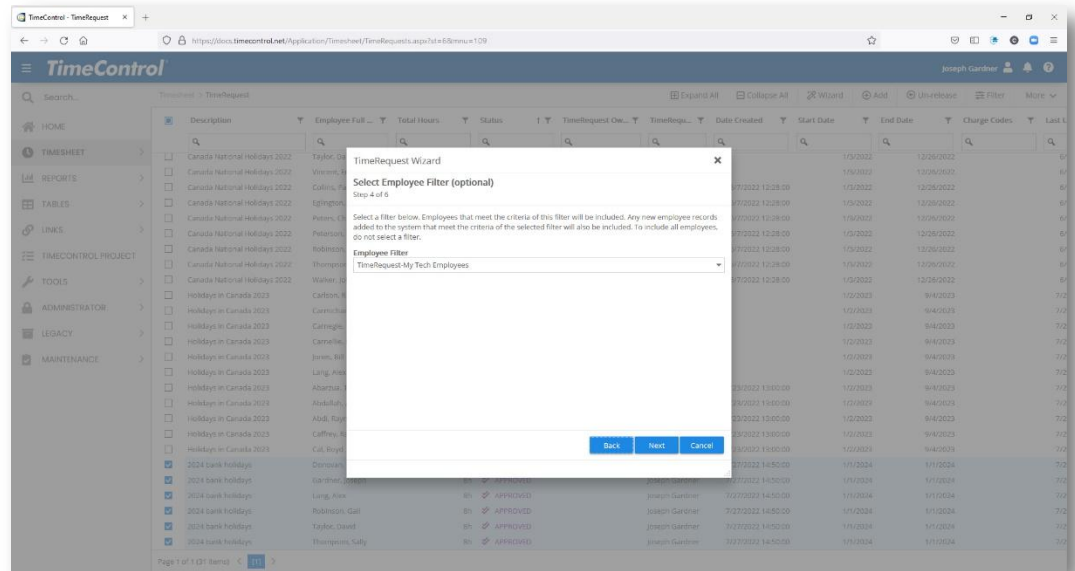
In addition to the employees identified in the filter, you can manually add employees to whom this TimeRequest may also apply. Following our last example, perhaps there are employees who are based in another country but are temporarily located in the United States. This screen will allow them to be added manually.

TimeControl now has you confirm that the selections you've made include what you want in this TimeRequest Wizard Entry.

TimeRequest will create the TimeRequest Wizard entry and present a log of the work completed. Scan the log to ensure that there are no errors and that all the records you expected have been created.

With the TimeRequest Wizard entries now complete, you will be returned to the TimeRequest page where you should see all the new TimeRequests created with a status of Approved.

Many organizations may use the TimeRequest Wizard to create holidays at the beginning of the year for all salaried employees so that these entries are done properly for everyone.

Executing TimeRequests

Once a TimeRequest is approved it will remain in the system waiting for the timesheet period for which it applies. When the timesheet is created in which an approved TimeRequest is pending, it will be added to the timesheet just like a pre-loaded charge would be but including the number of hours. The end user can then accept and release or edit or delete the line as they require.

Edit an existing TimeRequest Wizard entry

TimeControl allows you to edit an existing TimeRequest Wizard Entry. The update can affect all users listed as well as additional users. This can be used when there is a situation such as a holiday date has been changed, when new employees are onboarded or employees are offboarded. The TimeRequest Wizard entry can change dates in the past but it will not change entries in an already-created timesheet even if that timesheet hasn't been posted yet.

To edit a TimeRequest Wizard Entry, start the TimeRequest Wizard.
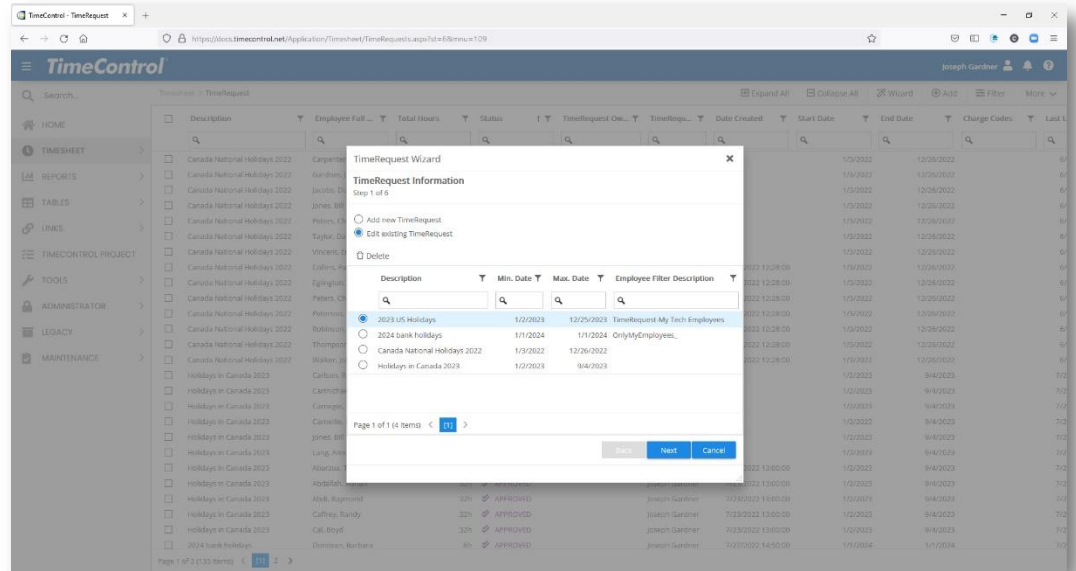
Select Edit an Existing TimeRequest. You will see in the bottom half of the screen any saved TimeRequest Wizard entries. Select one to move forward. If you have many such entries, enter part or all of the description or select a range of dates.
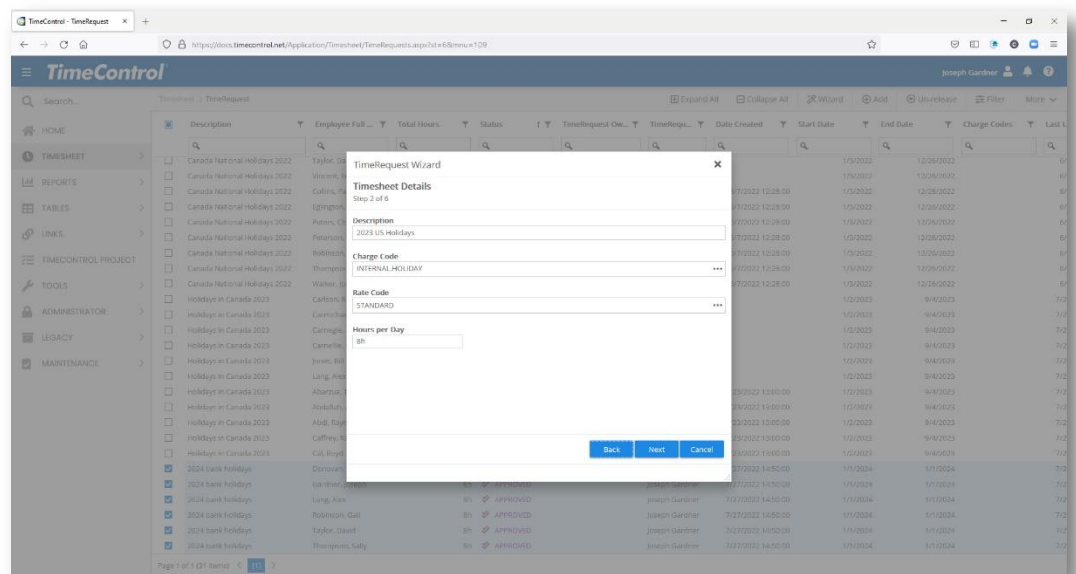
Now if needed, update the Description Charge Code, number of hours and the Rate code.
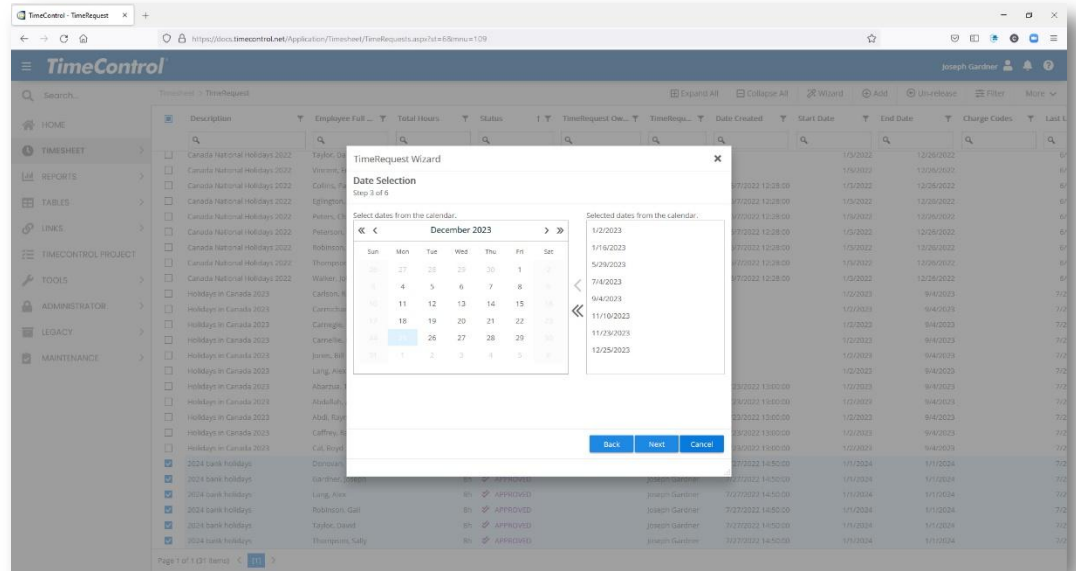
Now, if needed, update the date selection. You can remove a date by clicking on it on the right hand side and click the left arrow. Remember, this will update anyone in the list for this TimeRequest Wizard that was already defined when it was created or last edited.
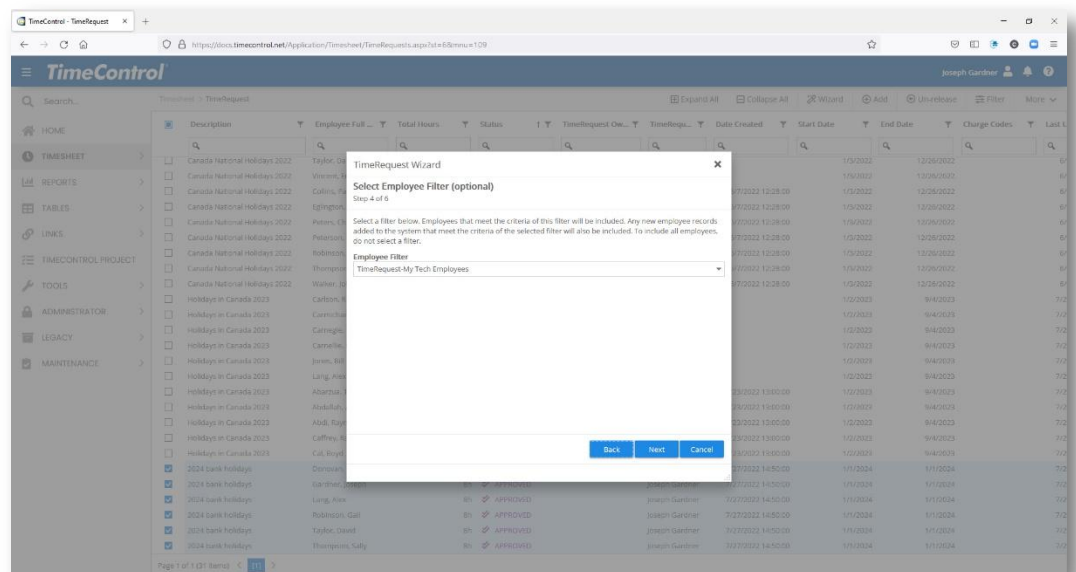
Now, if needed, change or select a filter to highlight only employees with particular characteristics in their employee record to whom this TimeRequest Wizard applies.
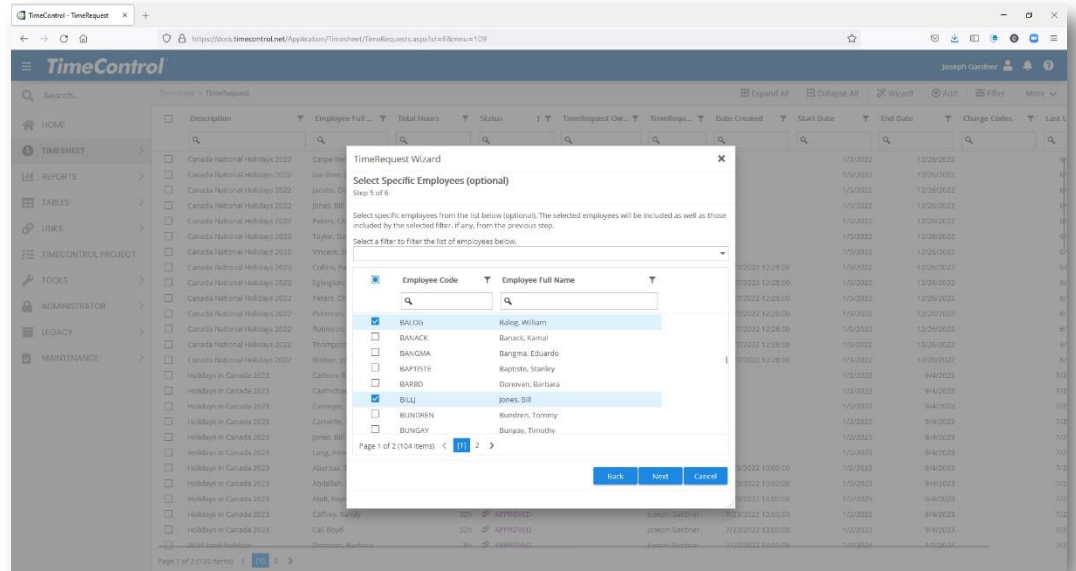
Aside from those selected in the filter, you can add employees manually or remove employees who were previously defined manually from this list. That will have the effect of having those TimeRequest Wizard entries no longer apply to them. Once you're sure you have the right employees highlighted, click Next.
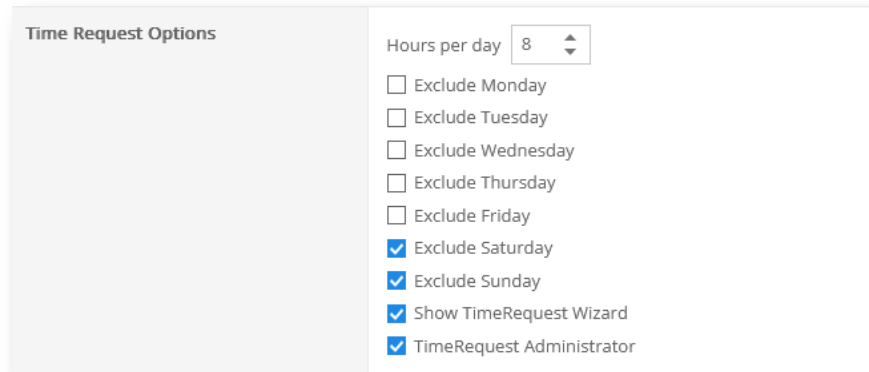
TimeControl will show you the details of what you have selected.
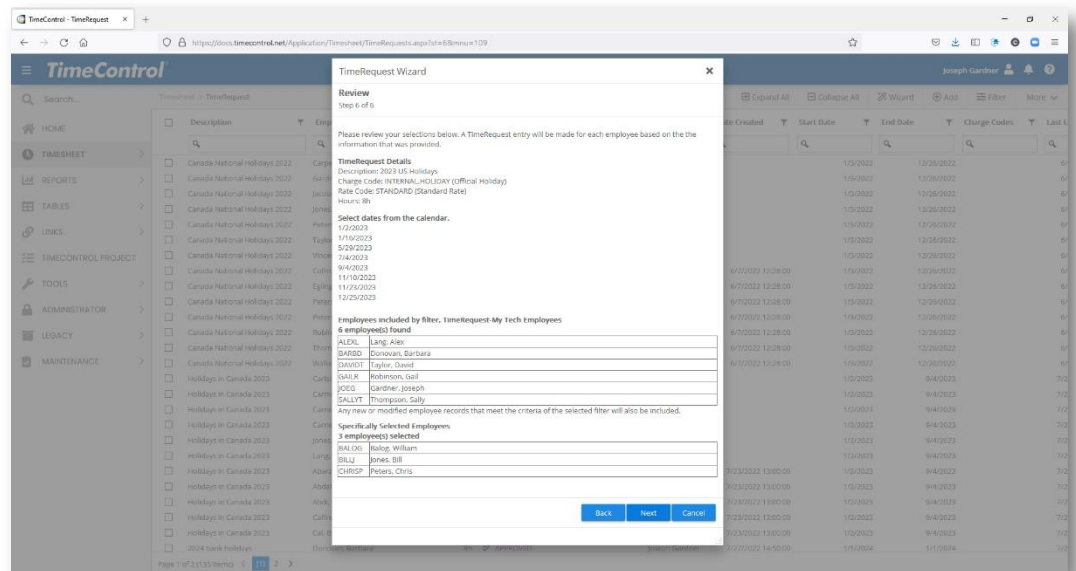
Click Next once you're satisfied with the changes. TimeControl will now update the TimeRequest Wizard entry and then present a log. Scan the log carefully. It will list any errors as well as all entries that have been added as well as any entries that have been removed.

You will now be returned to the TimeRequest entry screen where all changes that have just been made by the TimeRequest Wizard should be visible.

TimeRequest Release Approval Paths

TimeControl allows an administrator to configure multiple release approval paths for a TimeRequest. If no special Release Paths are defined, all TimeRequests will be directed to the same approval path as the user's timesheet. Release Paths can be created for specific data conditions such as the selected Charge Code.

To define a TimeControl TimeRequest Approval Release Path, an administrator must be identified as a TimeRequest Administrator in the User Profile TimeRequest Section.
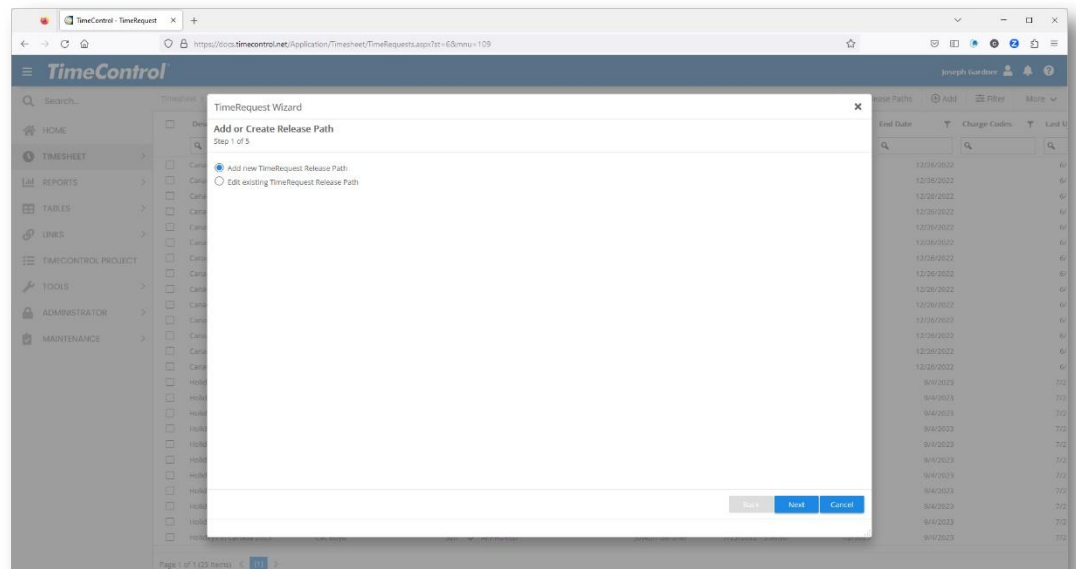
When this option is enabled, the user will see the Release Path option at the top of the screen when selecting TimeRequest.

Selecting Release Paths, will bring the administrator to the Release Path Wizard.

Select from the option to add a new release path or to edit existing release paths. If Add is chosen, the Add a Release Path Wizard is started.
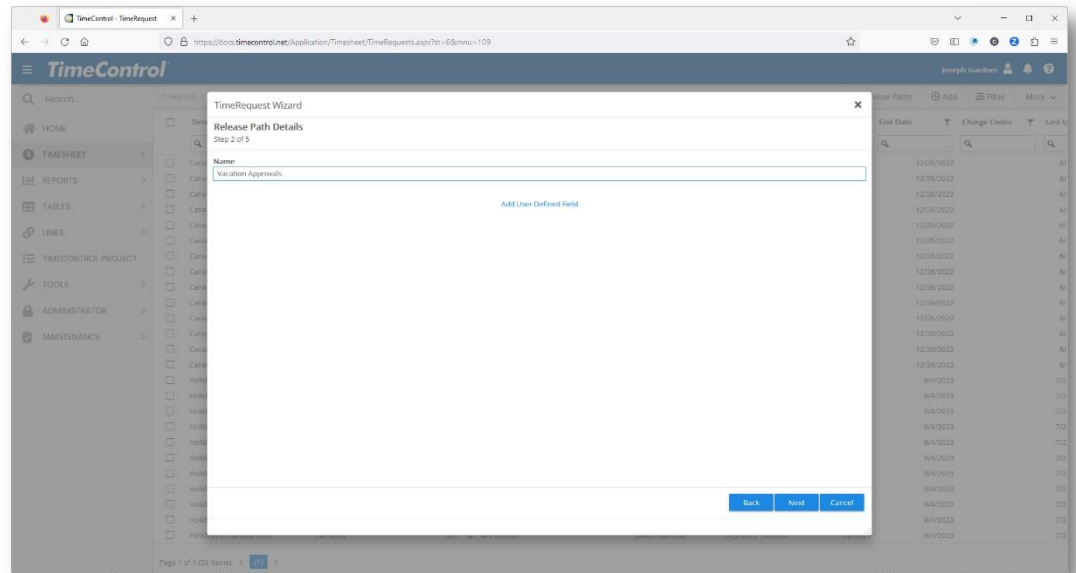
Start by giving a name to the TimeRequest Release Path. Click Next to Continue.
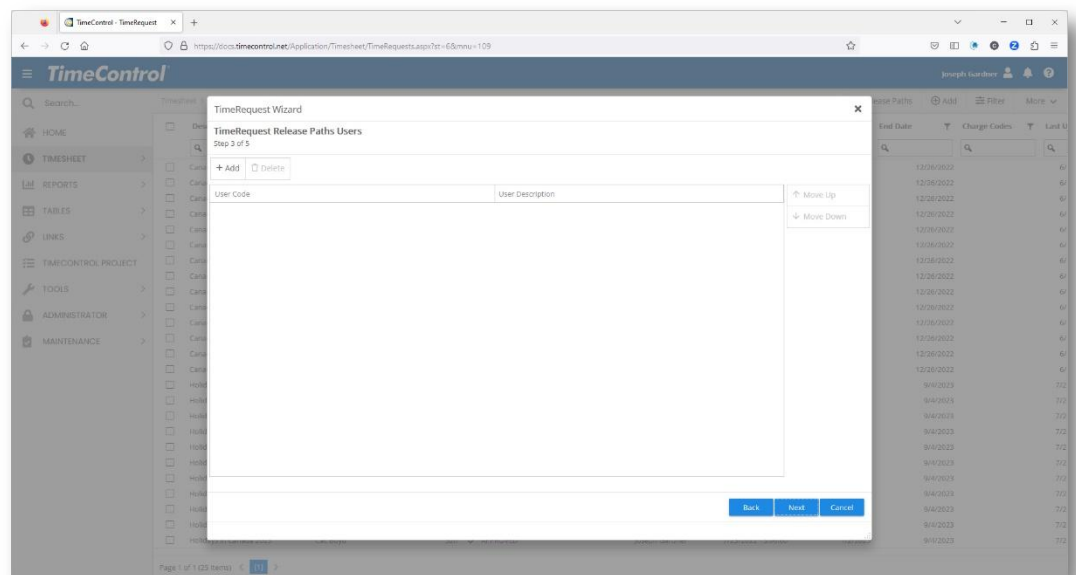
Now create the release path itself. This will look just like a Timesheet or Crew Timesheet Release path.   Select the Users who will receive these TimeRequests for the expected data condition.
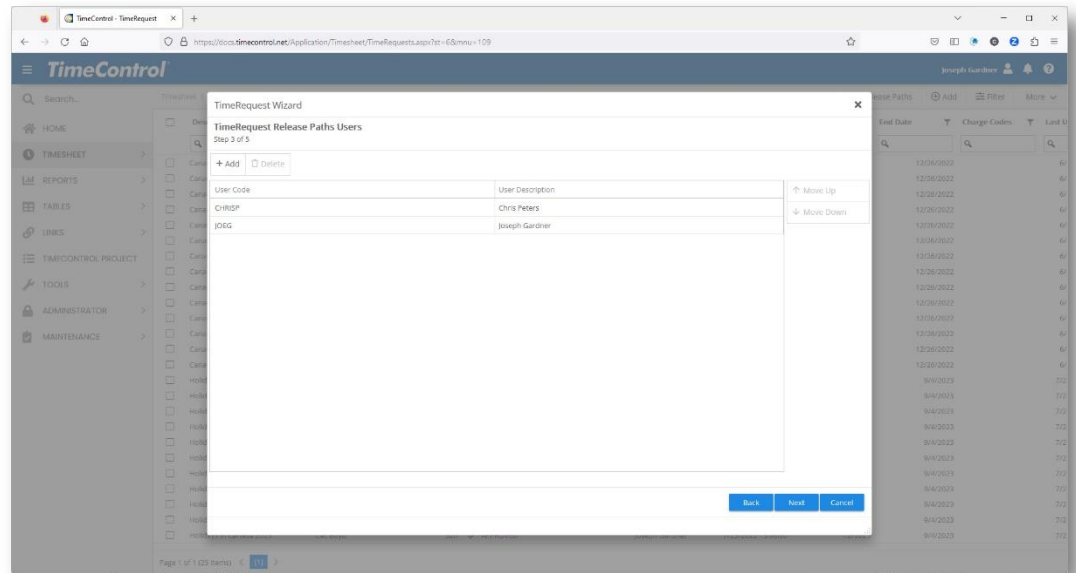
Multiple levels can be created here. Click Next once the sequence of approvals for these release paths has been created.
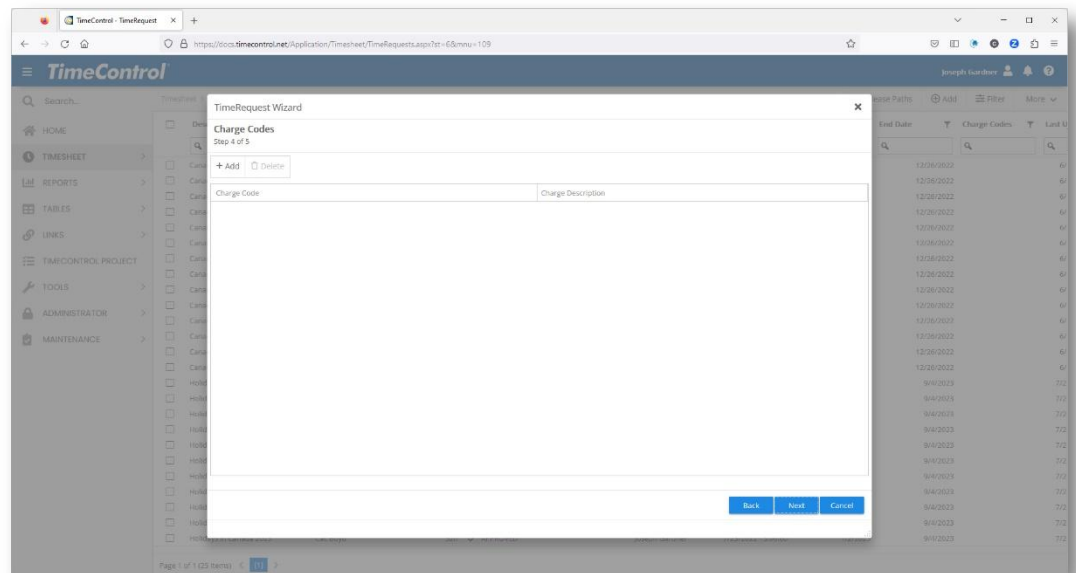
Now TimeControl will ask what the data condition is for these release paths.
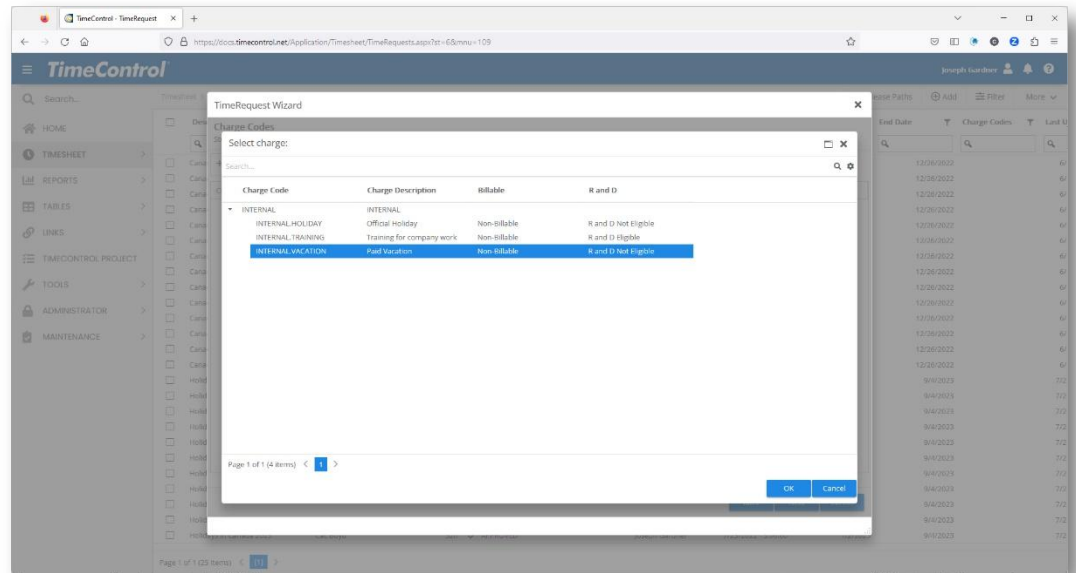
Select the charge code that will apply to this release path. For example, you could select vacation codes for a vacation type of release path.
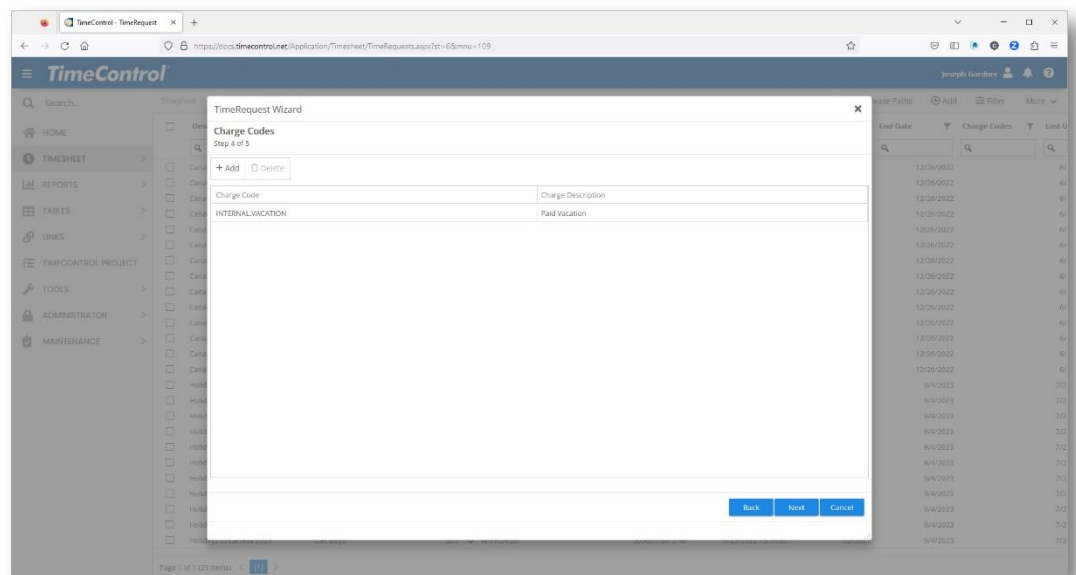
You can add multiple entries of charge codes here. Click Next once all selections are entered.
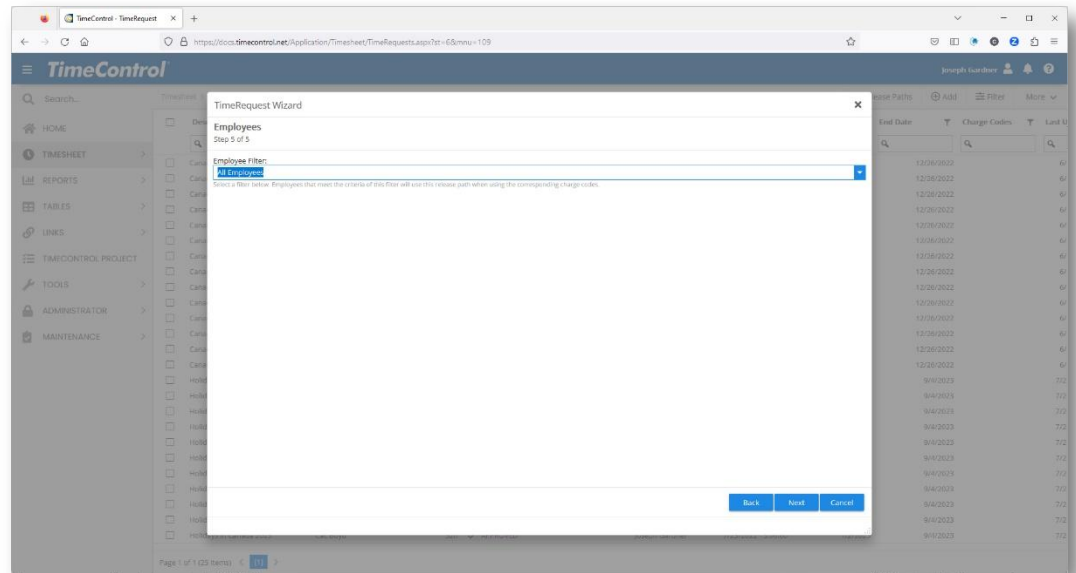
Finally, TimeControl will ask which group of users should this TimeRequest Release path apply to. You can select all Employees or use any existing Employee filter. This will allow different release paths for different data conditions to apply to different employees.
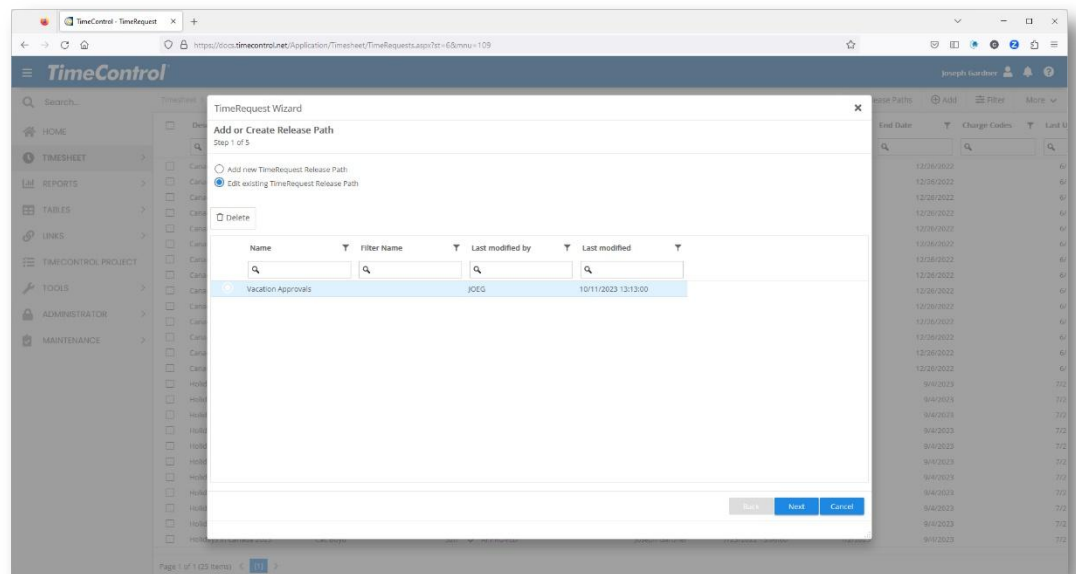
When the Release Path is complete, it will appear in the list of customized TimeRequest Release Paths which become visible when Release Paths | Edit is selected. From this screen an existing release path can be deleted at any time.

TimeRequests Validation Rules

To see more about how to define TimeRequest Validation Rules, consult the Validation Rules section in the Administrator Area of this guide.

Batch Debit / Credit

Some organizations will have a timesheet process that requires a high volume of changes after timesheets are posted. In this situation, instead of using the standard Debit/Credit adjustment functionality, Administrators may wish to give access to the Batch Debit/Credit function.

Batch Debit/Credit displays all posted timesheet lines that fit a selected criteria even if these span multiple weeks or multiple employees.

When the Batch Debit/Credit screen appears, fill in the date range, the project name, the charge and any filter you wish to apply then click the *Refresh* button. TimeControl will list all the charges that fit that criteria. Then select the timesheet lines you wish to include in the Debit/Credit by clicking the checkbox to their left and at the bottom of the screen, enter the project name and destination charge code for where to create the offsetting entries. Click *Transfer* to complete the Debit/Credit transaction.

The TimeControl Mobile App

TimeControl includes a free mobile app for both Android and iOS devices. Instructions on installing the services for the App are available in the Installation Guide. Instructions on using the TimeControl Mobile App are located in the User Guide.

The App can be downloaded at no cost from Google Play for Android devices and the Apple Store for iOS devices. Search for "**TimeControl Mobile**" to locate the App.

Users must have an active TimeControl license to connect the TimeControl App.
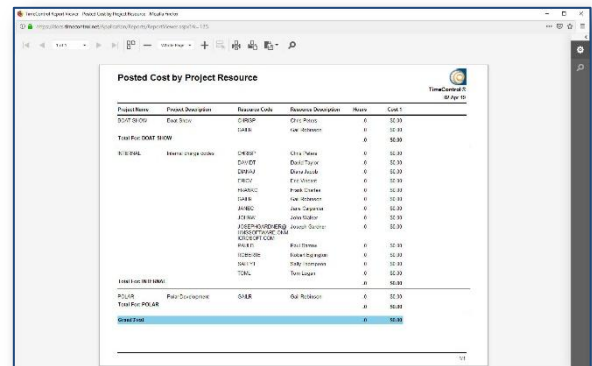
1. The TimeControl Mobile App API must be installed. This is done as a selection during an installation or upgrade for TimeControl on premises. See the TimeControl Installation Guide for more information.

2. The TimeControl Mobile App must be selected in System Preferences to turn on the option for this instance of TimeControl.

3. The TimeControl Mobile App must be selected for the User Profile of the user trying to access TimeControl Mobile. If you are having difficulty logging into your instance of TimeControl, please contact your Administrator.

Reports

TimeControl Reporting Interface Overview

TimeControl includes multiple reporting methods.   The main reporting engine is called the Report Interface which includes a presenter module which is multi-browser compliant and which does not require any installation of any kind. Reports from the new report writer can be viewed on a PC, a Tablet or even a Smartphone.

This Report Designer is used for creating many different report formats. TimeControl includes example reports for the main categories of reporting which can include text, graphics and charts in the same report.

If you need to produce a report for a timesheet image, which is a report that will look just like the timesheet did when it was entered, then you have two options. Inside the timesheet entry interface itself, you are able to click the Print button and get an instant view in HTML which can be sent to the printer. Alternately you run a timesheet image report from the report interface. This might be useful if you need to make a printout of many timesheet images at one time, each on its own page.

For information on the TimeControl report designer and how to create or modify reports, please consult the TimeControl Report Designer Guide.

In addition to the Report Interface, the Drill Down Analyzer, Line Item Approvals and the Bank Views module allow data to be analyzed and then output to numerous printable or viewable formats.

The Report List

Reporting and Report designing in the new Report Interface start in the Report List. Click on Report Interface in the Reports Tab to view reports available to

you.
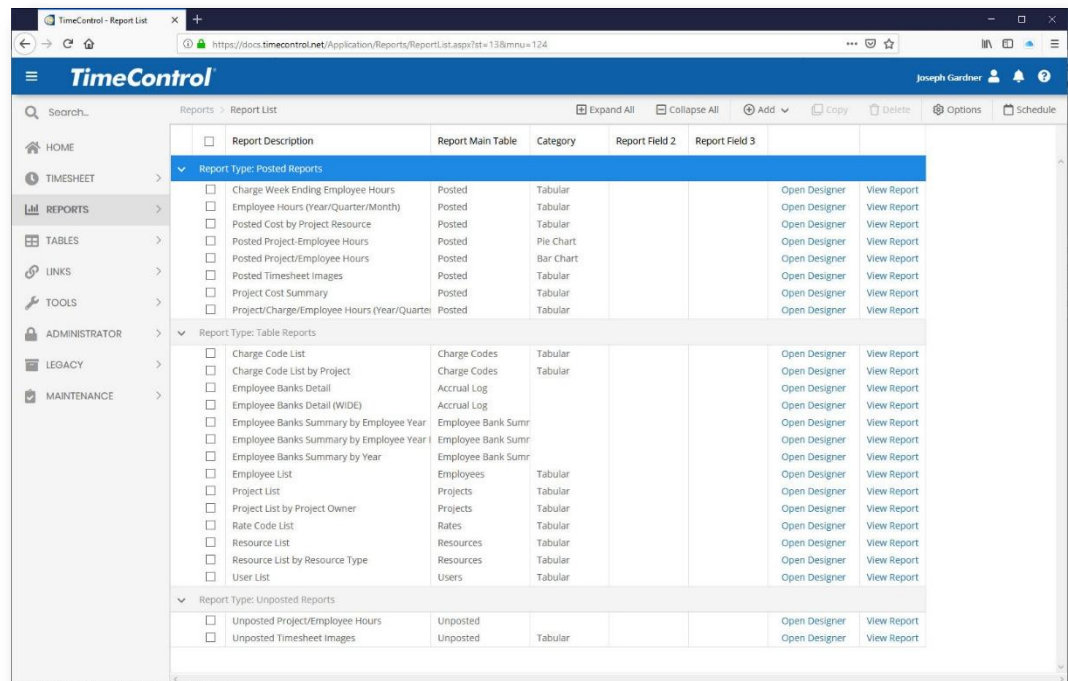
You can view any report for which the "View Report" link is active. You can edit the design and format of a report if the "Open Designer" for that report is visible to you.

You can adjust this view by clicking the Options icon in the Actions Menu.

Using Options, you can select the fields to be displayed in the view
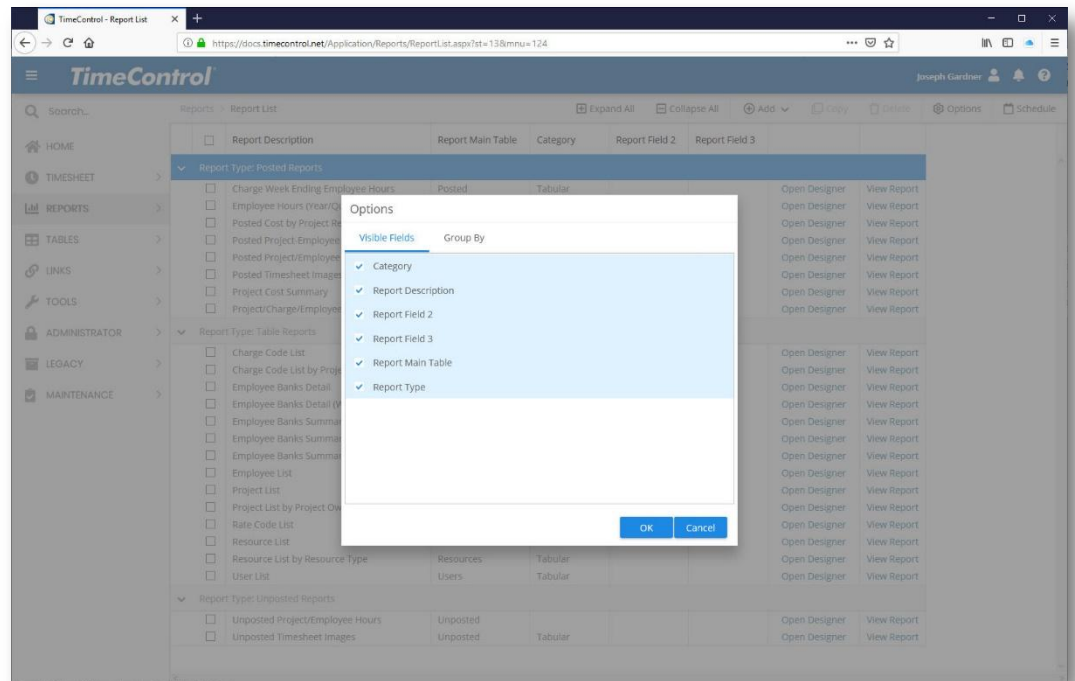
You can also adjust the order in which reports are grouped.
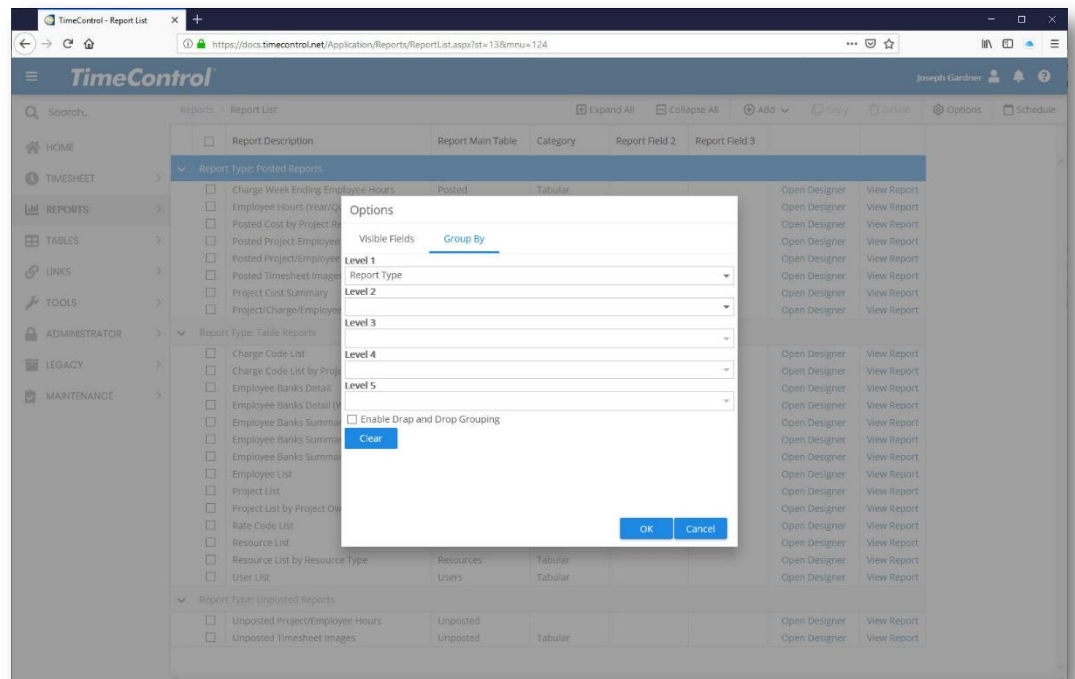
Scheduled Reports

TimeControl supports the concept of reports which are delivered by email. Scheduled Reports can be configured by TimeControl to be attached to an

email or attached by reference for very large files. The reports are created on a schedule in the background by TimeControl and delivered at the time of your choosing to as many users as you wish.

To create a Scheduled Report, go to Report List and click on the Schedule option in the Actions Menu.
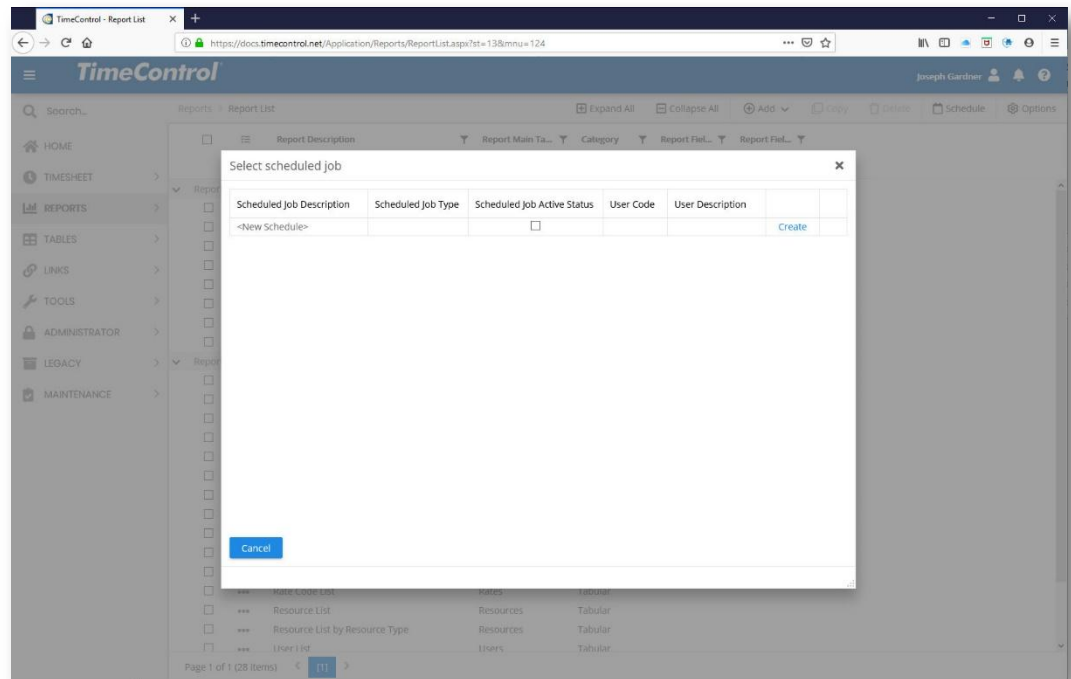
Click on Create on the <New Schedule> line to create a new schedule for a report.

Existing schedules can be removed by clicking Delete or Edited by clicking Edit on the associated line.
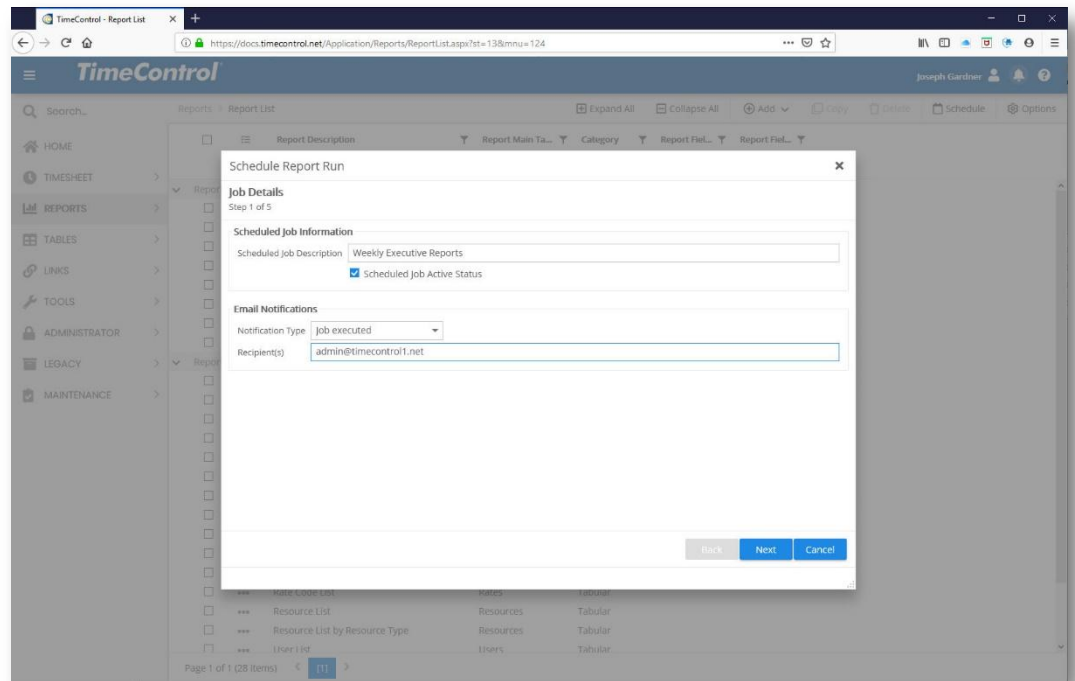
Enter a descriptive name for this schedule, activate it by checking the "Scheduled Job Active" checkbox and if you wish for notifications to go to a technical administrator, enter the email address and type of notification in the bottom have of this dialog.

Click **Next** to continue.
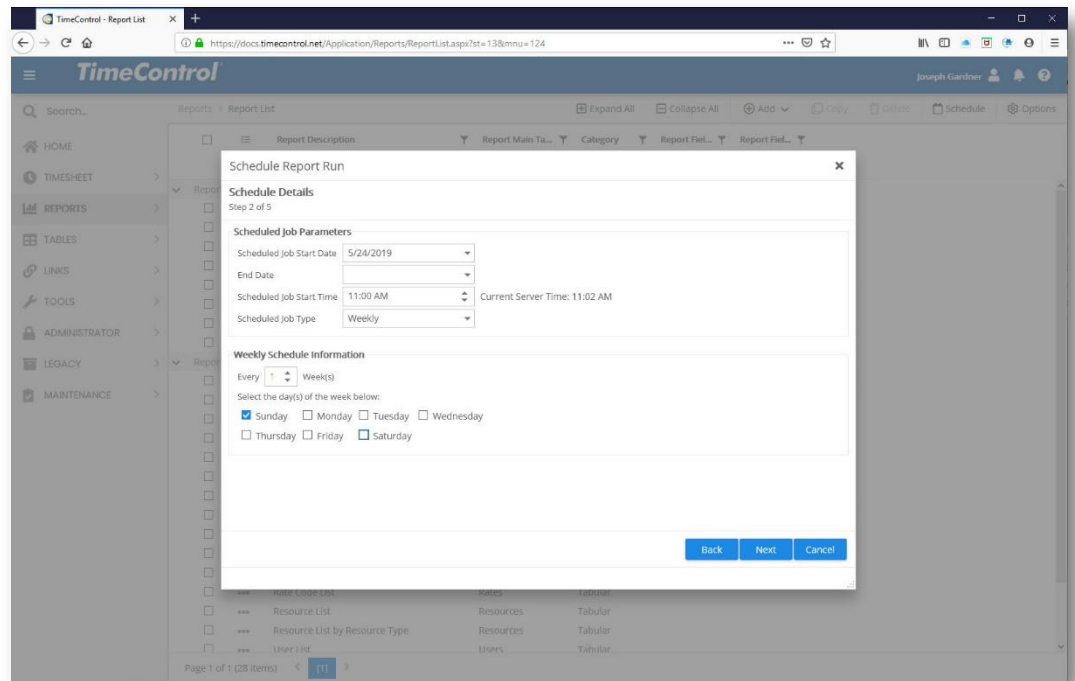
Now enter information about the type of schedule. Choose the start and optionally, the end dates and the time of day and job type. You may select Hourly, Daily, Weekly, Monthly or One-Time-Only.

Additional information will be required depending on the selection to determine the schedule frequency.

Click **Next** to continue.
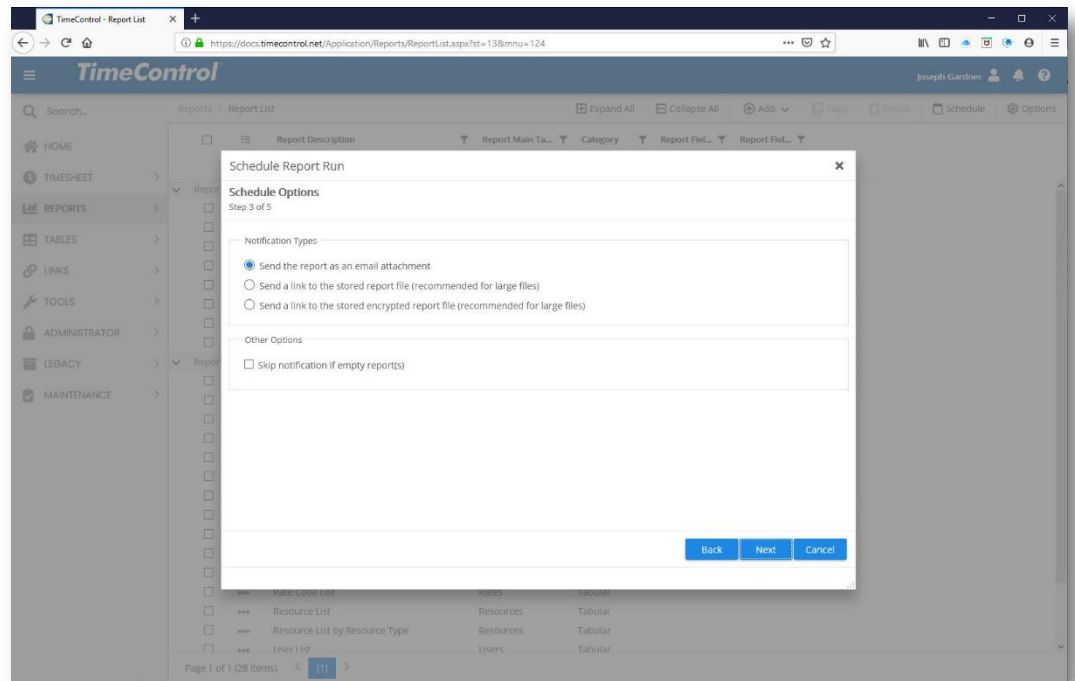
Now determine how the report should be delivered. For small to medium length reports, you can attach them in PDF form. For larger reports, you can email a link to the report file or to an encrypted report file.

Click **Next** to continue.
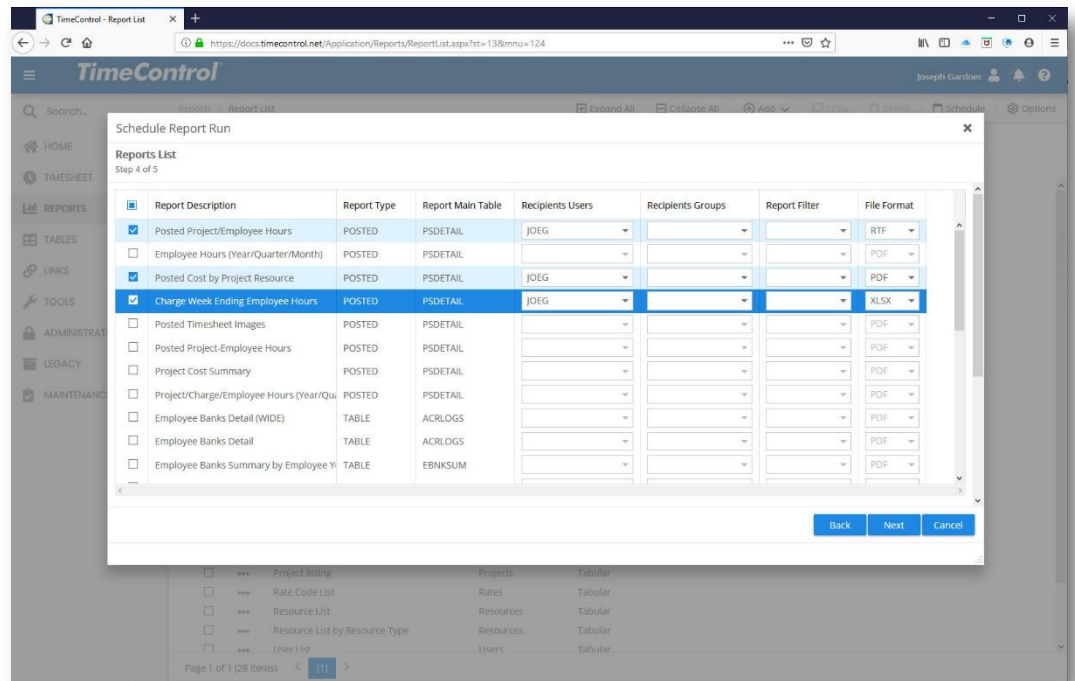
Now select the report(s) you wish to include with this schedule. You can send one or multiple reports with each schedule. On the right-hand side, select the TimeControl Users who should receive these reports. The User Table information for that user must include an email address. You can select one or multiple users for this schedule.

Click **Next** to continue.
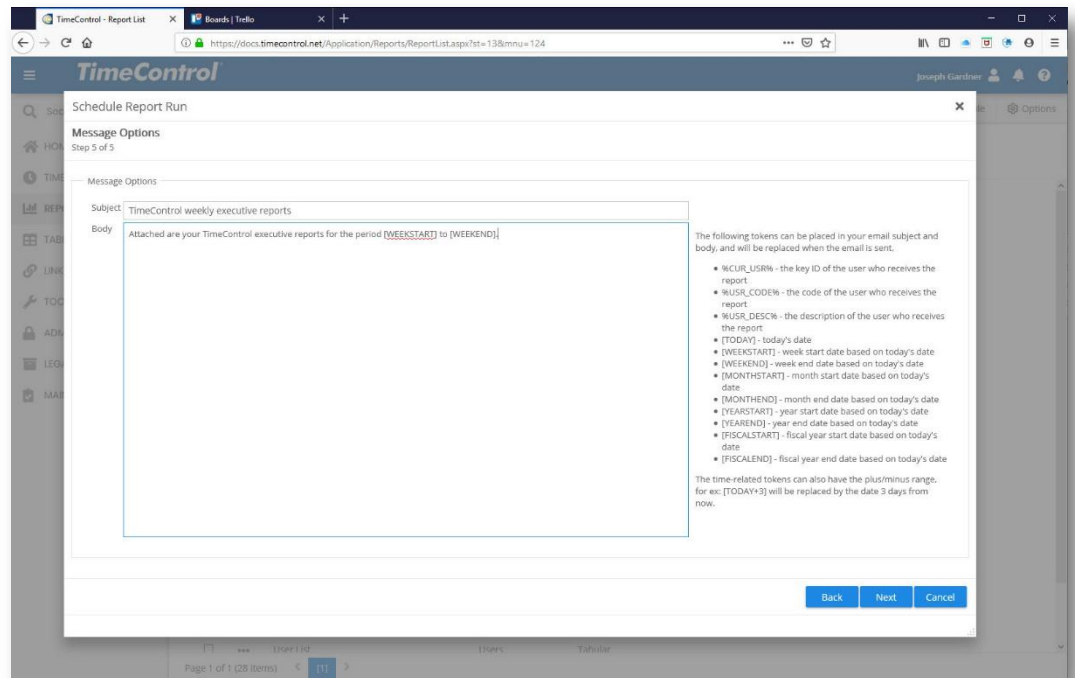
Now create the title and body of text you wish to send along with the scheduled notification. Aside from regular text, you can also use tokens to represent data that will change such as the dates of the report. The following tokens can be placed in your email subject and body, and will be replaced with the proper values when the email is sent:

- %CUR_USR% - the key ID of the user who receives the report
- %USR_CODE% - the code of the user who receives the report
- %USR_DESC% - the description of the user who receives the report
- [TODAY] - today's date
- [WEEKSTART] - week start date based on today's date
- [WEEKEND] - week end date based on today's date
- [MONTHSTART] - month start date based on today's date
- [MONTHEND] - month end date based on today's date
- [YEARSTART] - year start date based on today's date
- [YEAREND] - year end date based on today's date
- [FISCALSTART] - fiscal year start date based on today's date
- [FISCALEND] - fiscal year end date based on today's date

The time-related tokens can also have the plus/minus range, for ex: [TODAY+3] will be replaced by the date 3 days from now.

Click **Next** to continue.

TimeControl will display a log of the scheduled reports success. Click **Finish**.
When you now click on **Schedule**, you will see the new report listed. You can edit the scheduled report from here or remove it.
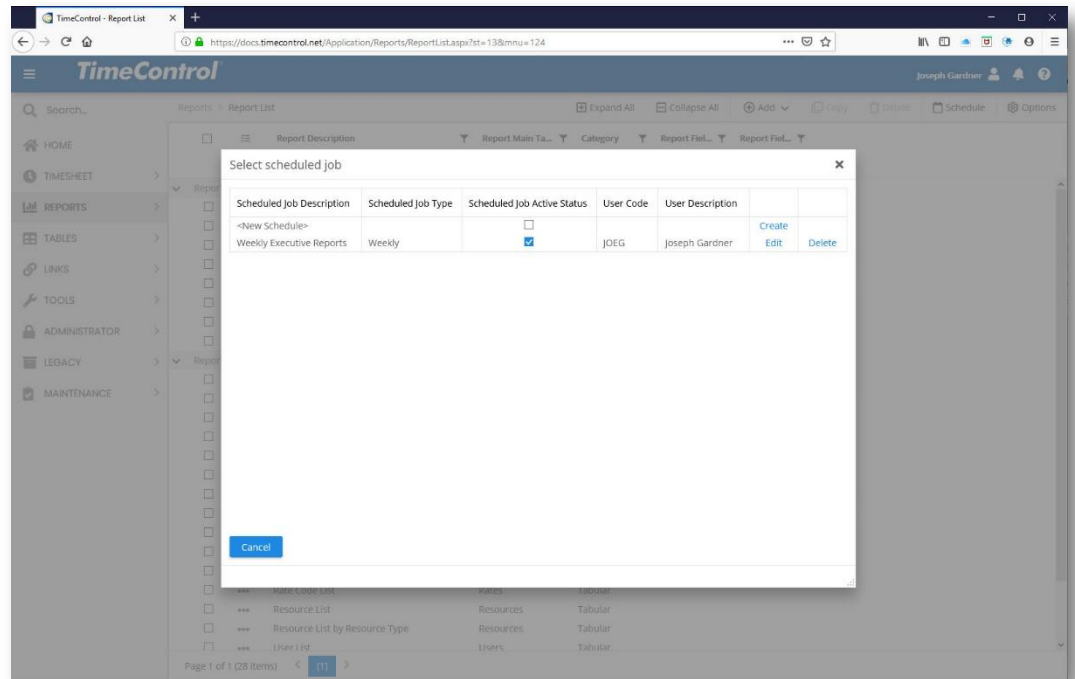
Creating a new Report

If you have rights to create a new report, then you will see the "Add" button at the top of the screen and the "Open Designer" option within each "…" report line menu.
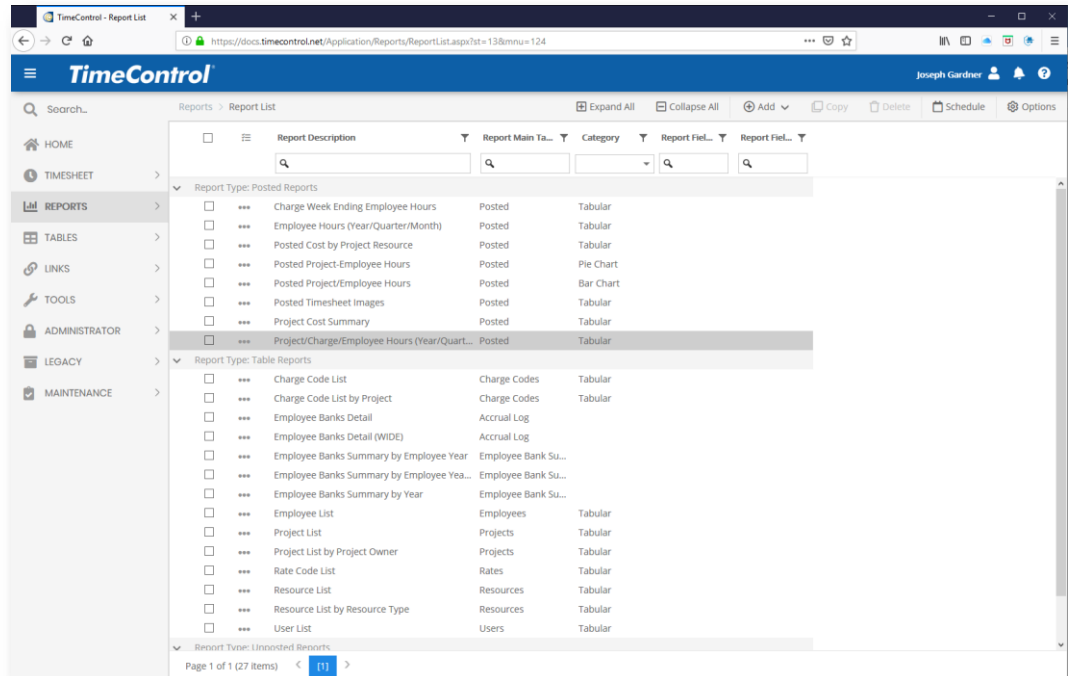
To create a new report, click the "Add" button. The down arrow on the icon indicates that there are multiple options. Some report types are specific only to TimeControl Industrial such as those for Materials.

You can see you have several options of types of reports that can be created. If you select a Table report, you will be presented with a Wizard of options to get your report started.
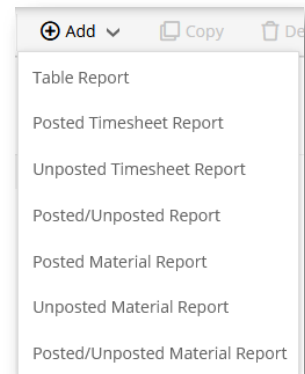
Give the report a name, select one of the many tables. In this case, the Project Table has been selected.
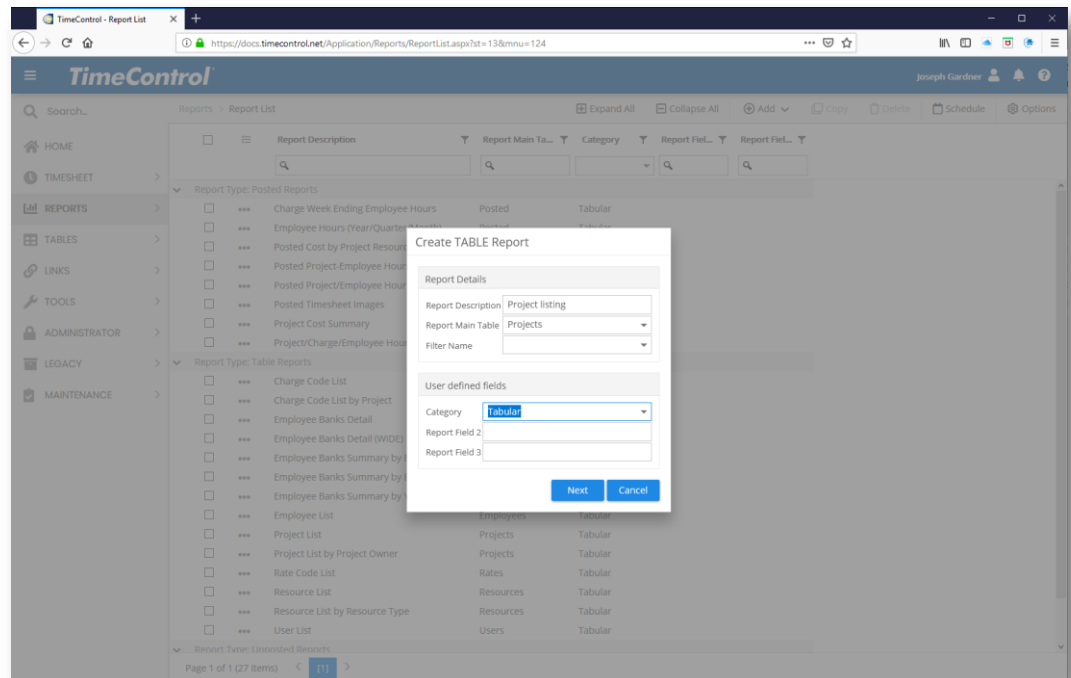
If the table has a default filter, then select that filter from the options available. You can further group reports by using user defined fields in the Reports Table. Once you click Next, you'll be asked if this new report should be available to all User Profiles or restricted. Your own User Profile is always unchecked (you'll certainly want to see the report you just created) but you can elect to make
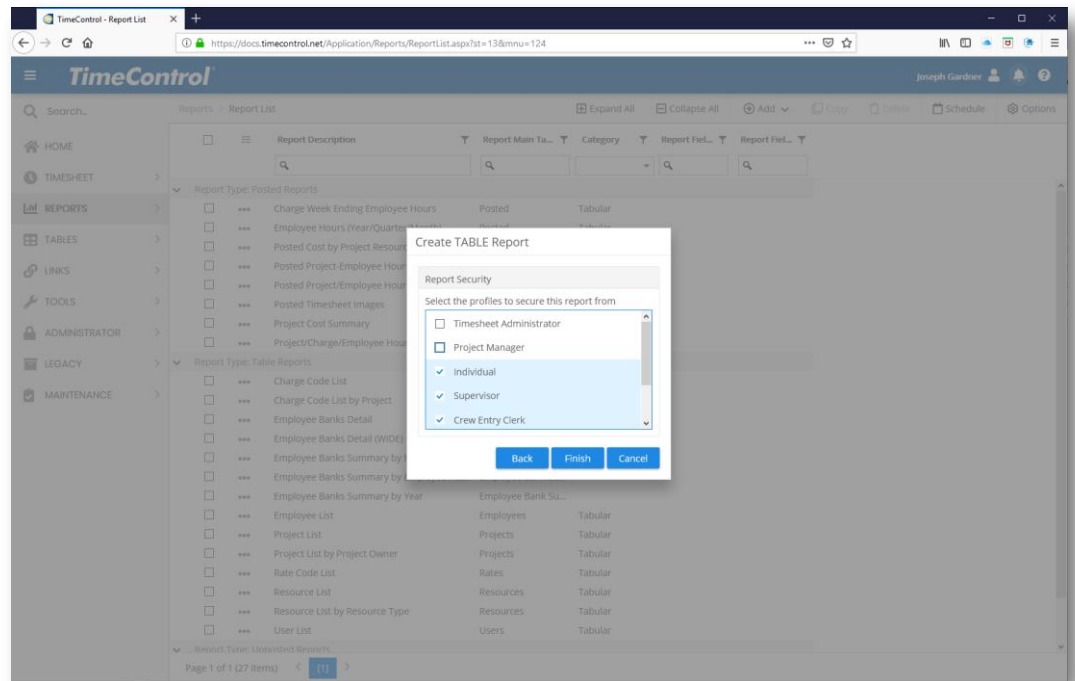
Now you'll be told that your report has been saved and you'll either be directed straight to the Report Designer or you'll be able to click "Open Designer" to open the Designer module. The TimeControl Report Designer is made available using Microsoft's "ClickOnce" technology which allows it to be installed directly through your browser when you need it.

Once the Designer is loaded, it will open to a blank report with the data for the appropriate tables listed on the right-hand side.
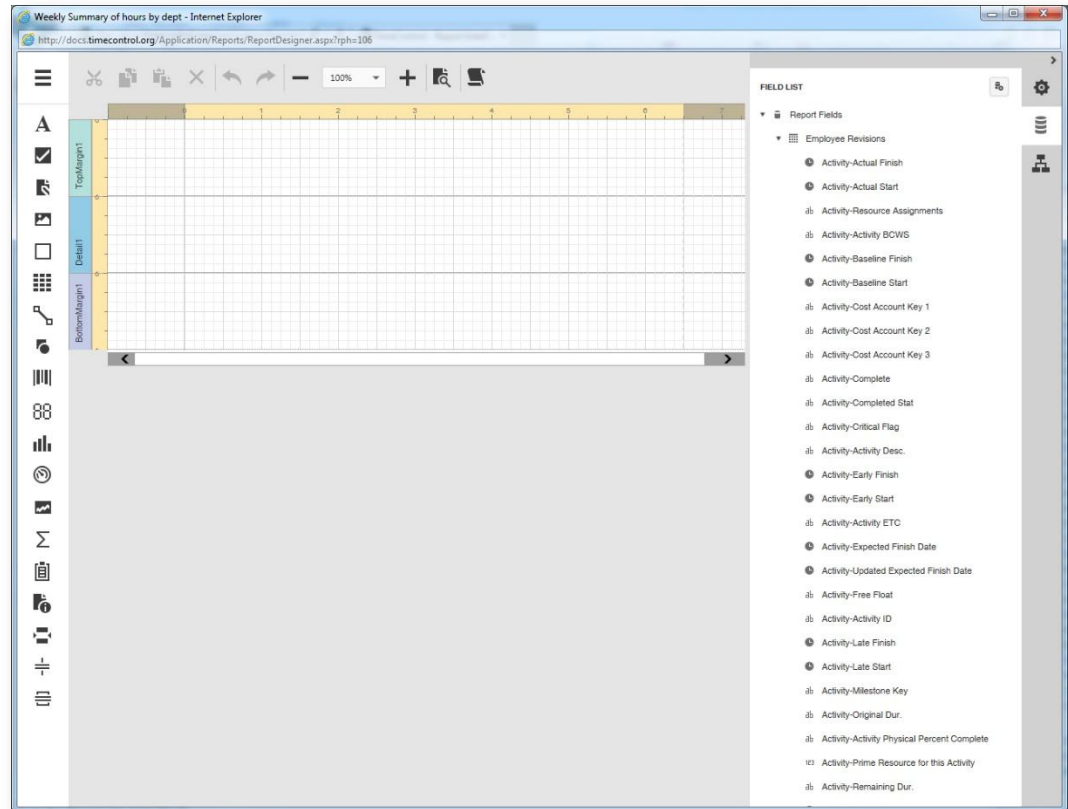
You can now drag fields to the Detailed Line from the Field List on the right. The Field List always shows the list of possible fields for the most detailed level of the table you selected. For Posted Reports, we always start with the Posted Time Detail which is the most granular element of the Posted Timesheet data. If there are tables linked to the most detailed element, they are displayed with Right-Arrows next to them at the top of the list and you can open and drag fields from these more summary levels as well.
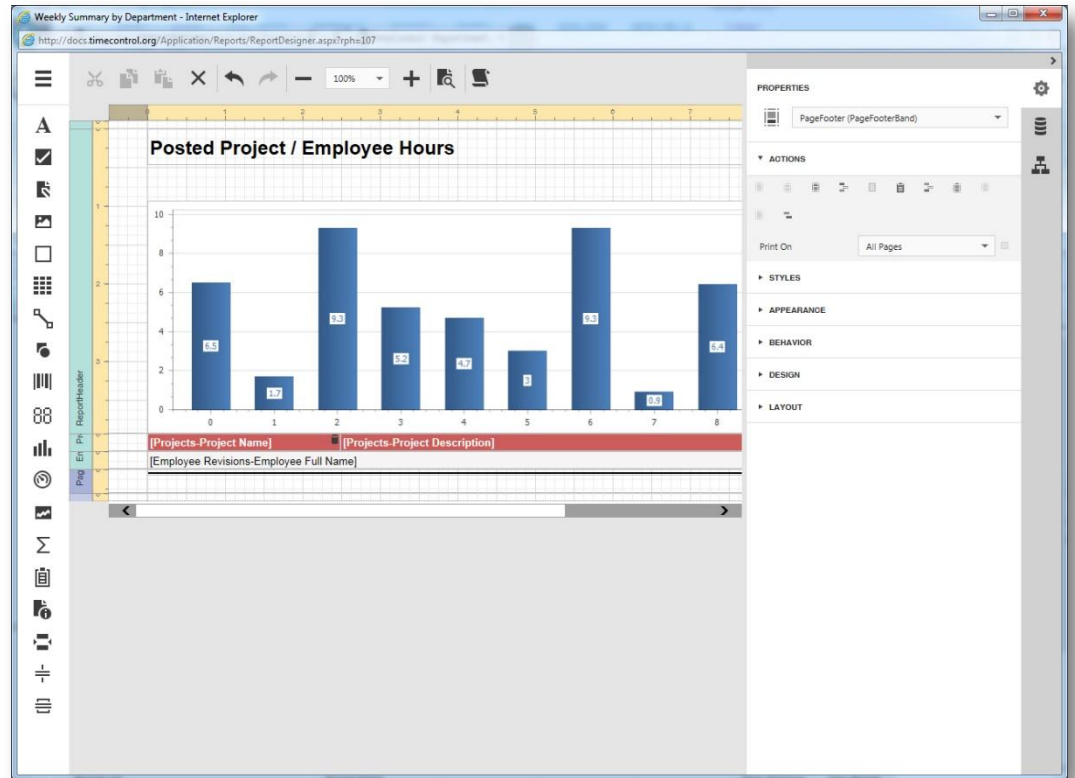
Once you have added the fields, summary bands and other information you wish and adjusted the properties of the report, you can preview the information on it and then save it for future use.

Creating a Graphical Report

Start by creating a Posted Timesheet report in the same manner as in the last section. Open the Report Designer to the blank report template.
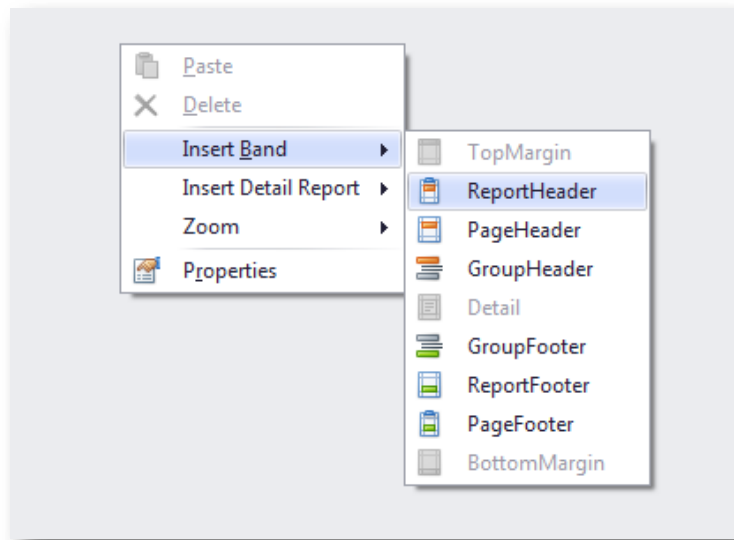
Graphical reports are typically summary data that is aggregated from many posted timesheet detailed records.

To add a chart into a grouping, add a "Report Header" band by right-clicking anywhere on the report designer: Selecting "Insert Band" and then "Report Header".

Now drag a chart control into the Report Header Section.
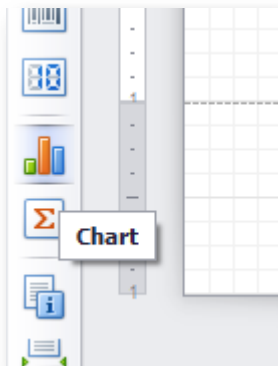
A "Chart Wizard" will appear, select the "Chart Type" (In our example we'll select a Pie Chart) and click "Finish"
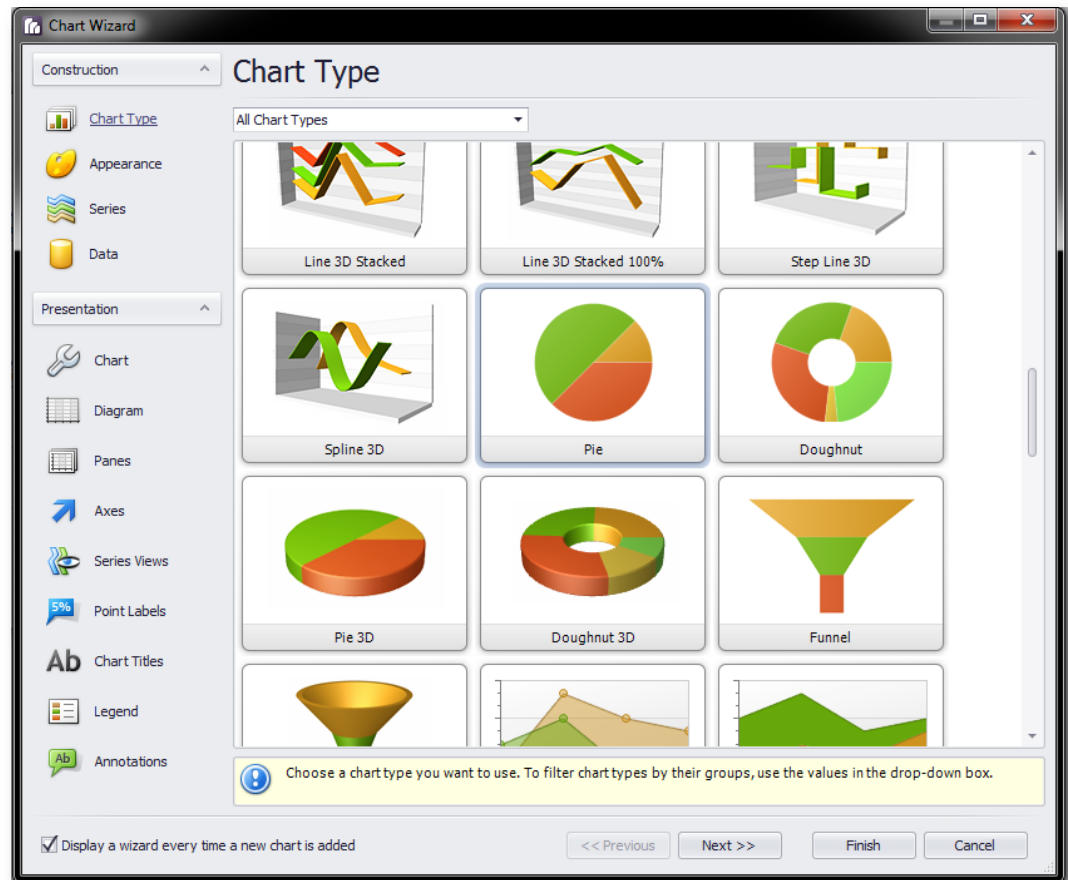
The chart will now appear on the report, click the ">" button next to the report to modify the chart properties:
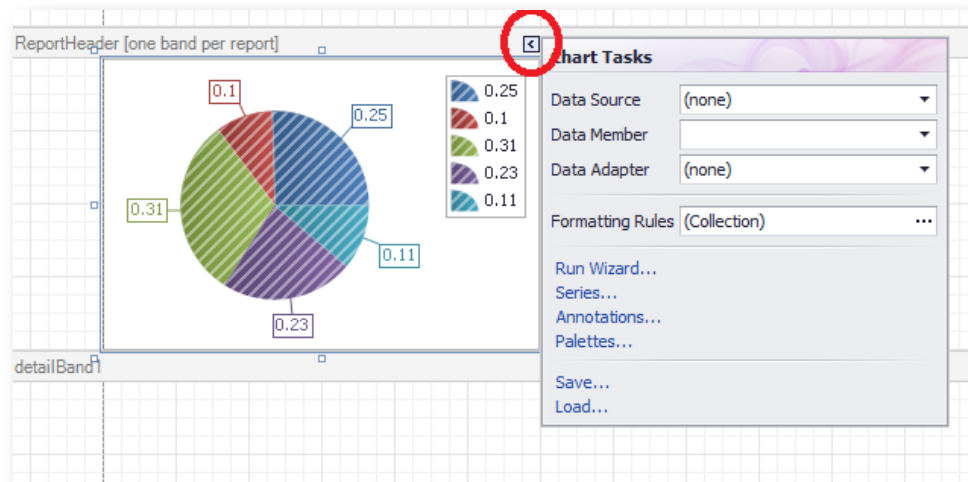
Select the "Data Member":
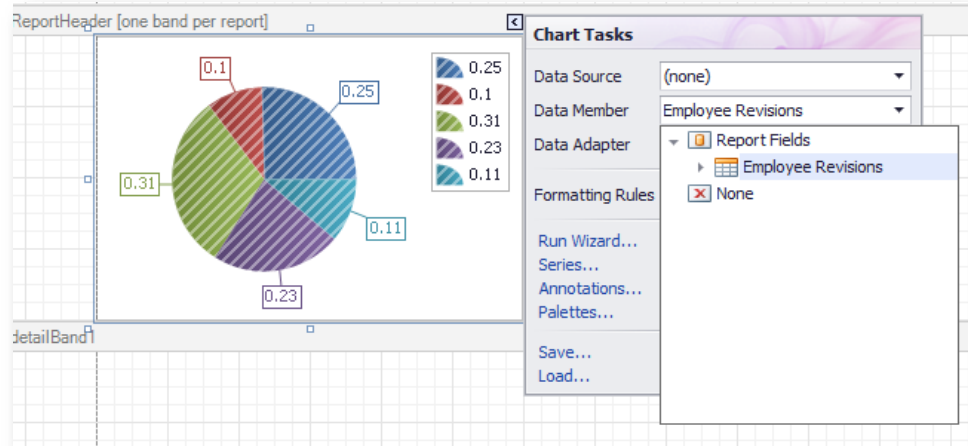
Click the "Series…" link to edit the pie chart series properties:
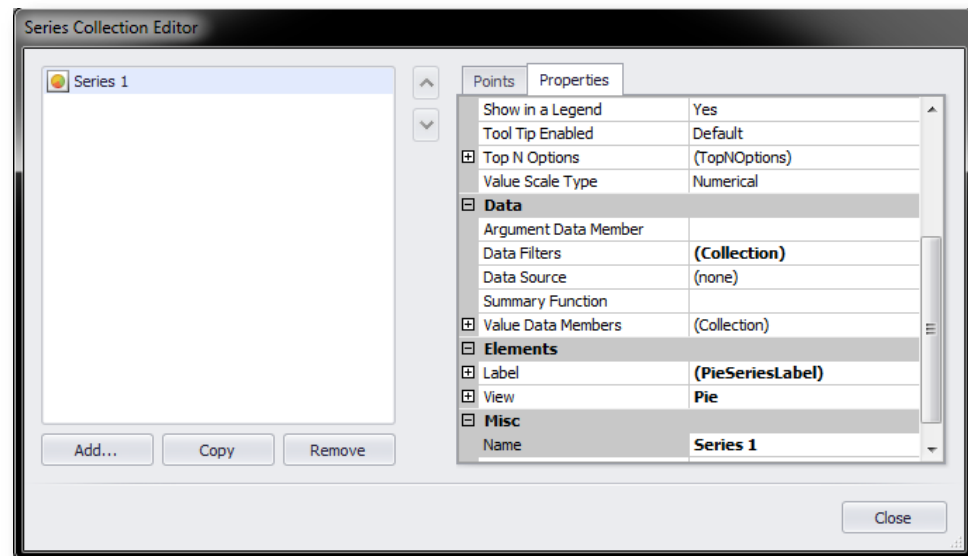
Select the "Argument Data Member" property (in this case the "Employee Full Name")
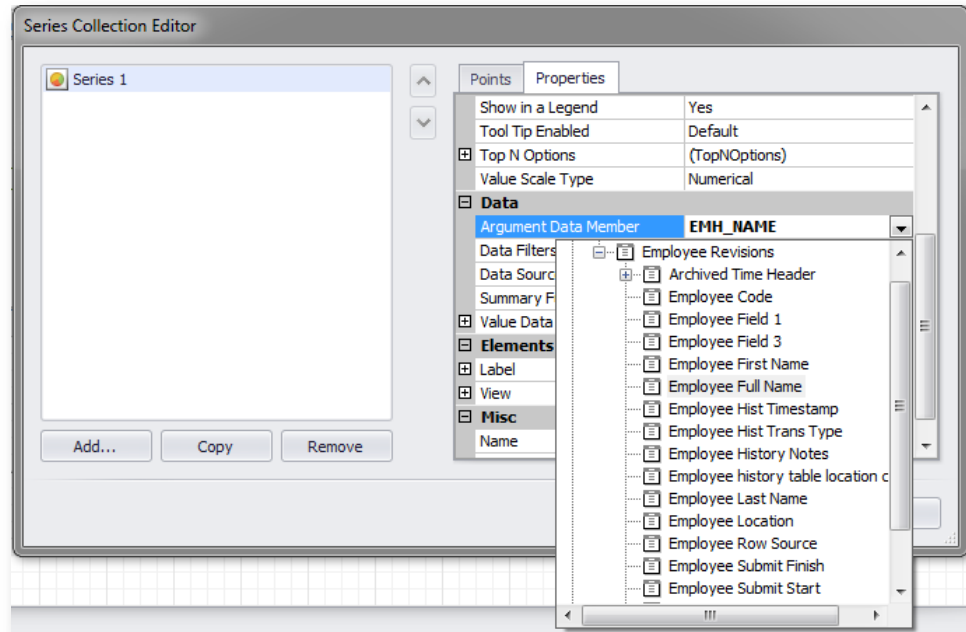
Select the "Summary Function" (in this case the SUM of "Posted Hours"):
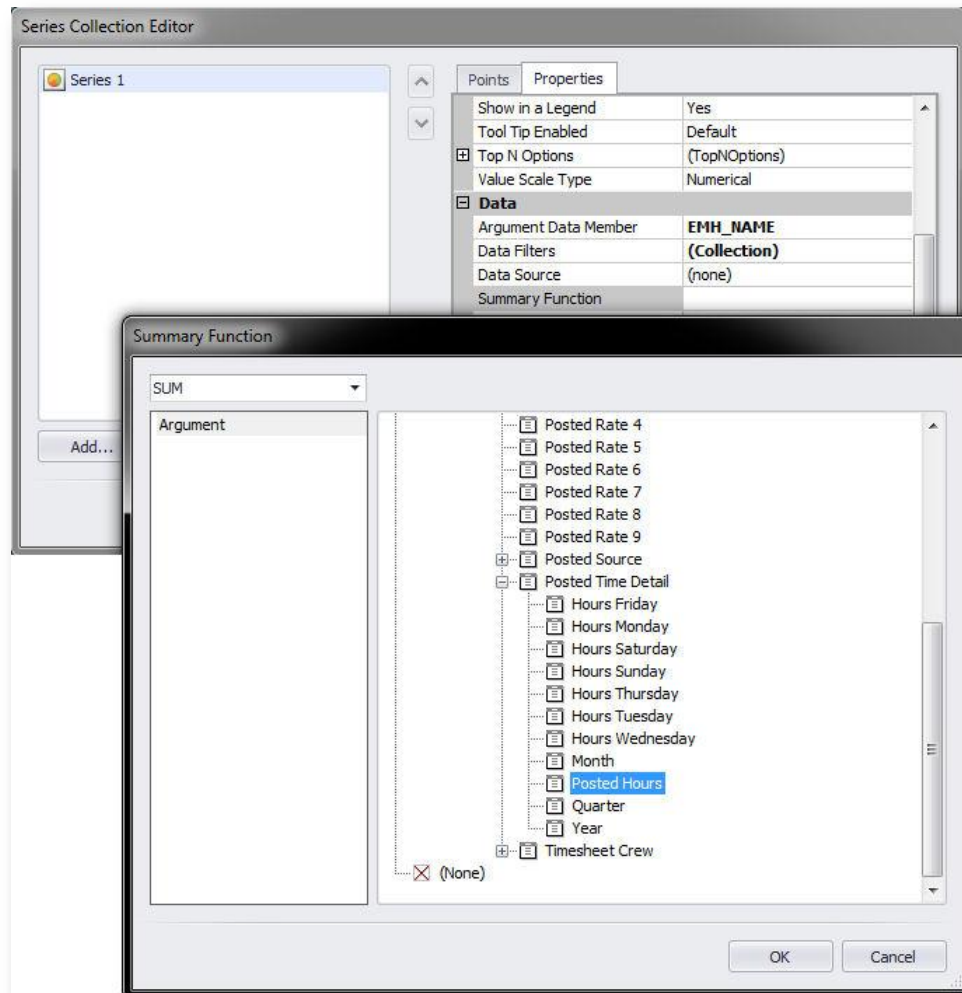
The series should look like the following:
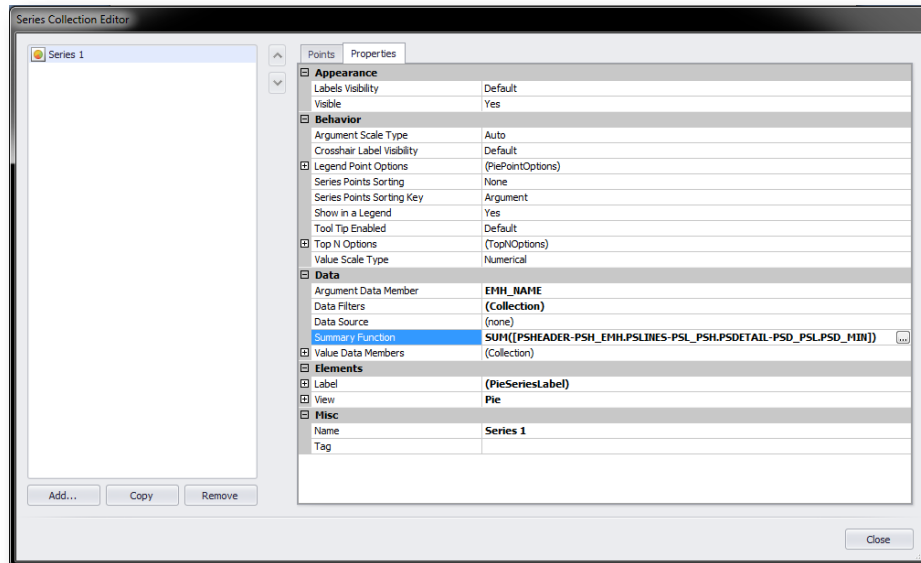
Now you can adjust the "Legend" labels to display the "Employee Name" and a "Percentage". To do this, open the "Legend Point Options" under the "Behavior" group:
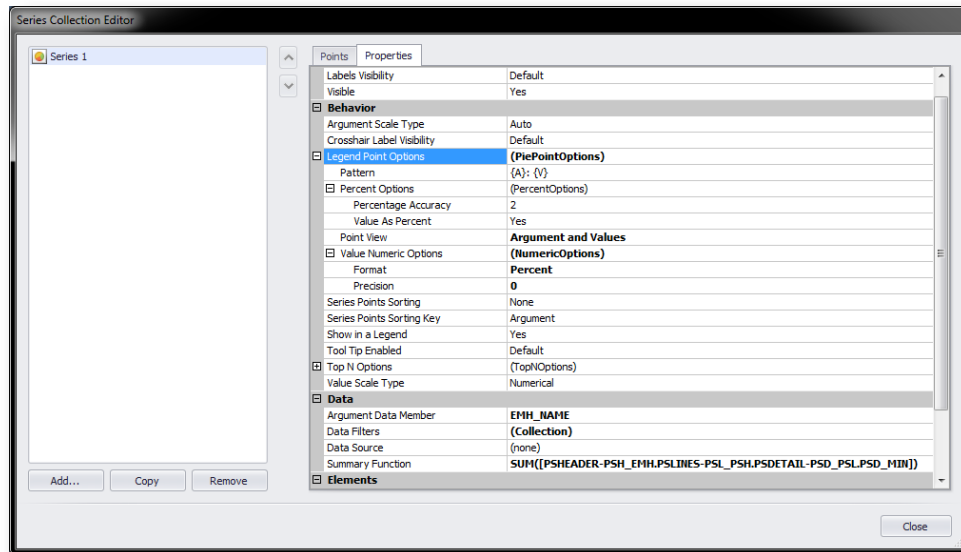
In our example, we have changed "Point View" to "Argument and Values" and are displaying "Value As Percent". Under the "Value Numeric Options" the format is "Percent" and the precision can be controlled as well (in this case we have set a 0).

To modify the "Point Labels" to display the actual sum of hours we open the "Labels" item under the "Elements" group and then open the "Point Options" item:
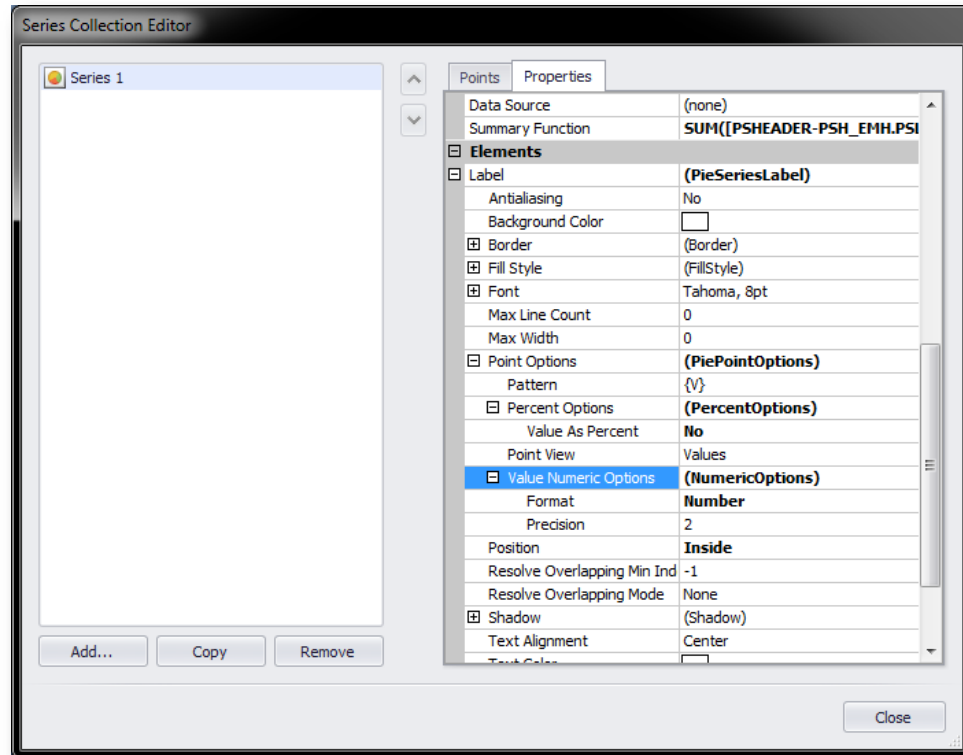
We have changed the "Value as Percent" to "No" since we want to display the actual value with a precision of 2. We have also changed the "Position" from outside to inside.

Now click the preview button to view the report:
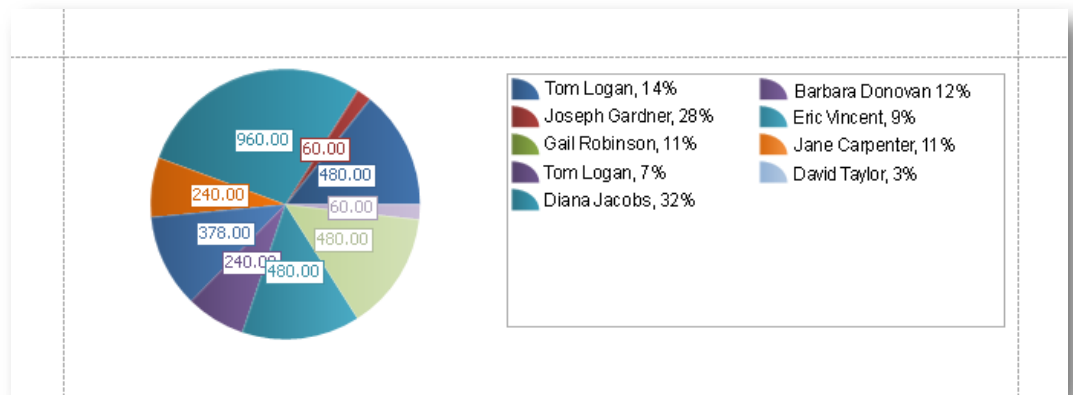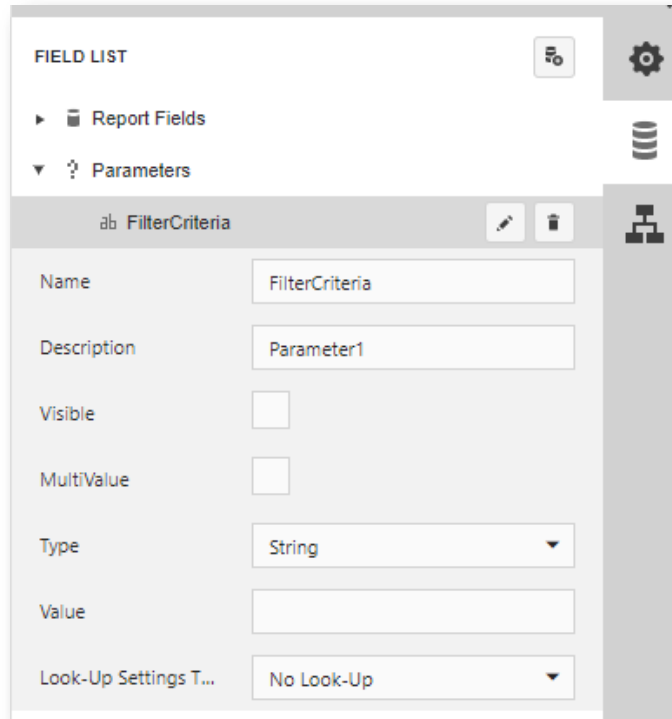
In this case the legend is showing the "Employee Name: %" while the hours appear on the labels "inside" the pie chart slices.

Displaying a Filter in the report

You can display what filters has been selected for the display of this report by following these steps.

1. Open the report in the designer by clicking on "Open Designer"
2. Create a parameter with a name of "FilterCriteria" per the screenshot.
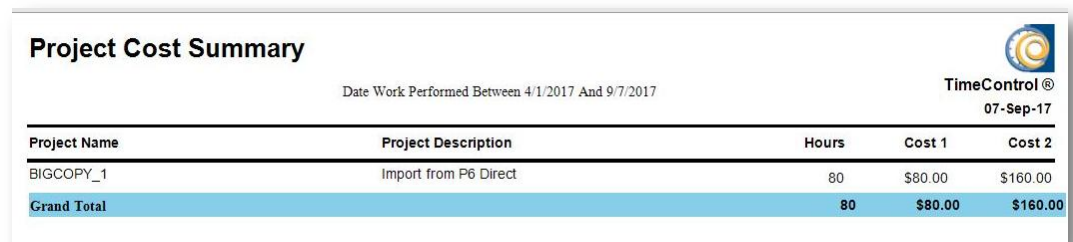
3. Drag the parameter in the area of the report you would like to see the filter. In the screenshot below, it is placed in the Report Header.

4. Save the changes.

Once you've saved the changes, you'll be able to see the chosen filter displayed in the header whenever you view that report.

Missing Timesheet View

TimeControl includes a Missing Timesheet View from which Administrators can quickly sort, group and view any timesheets which are missing for a period.
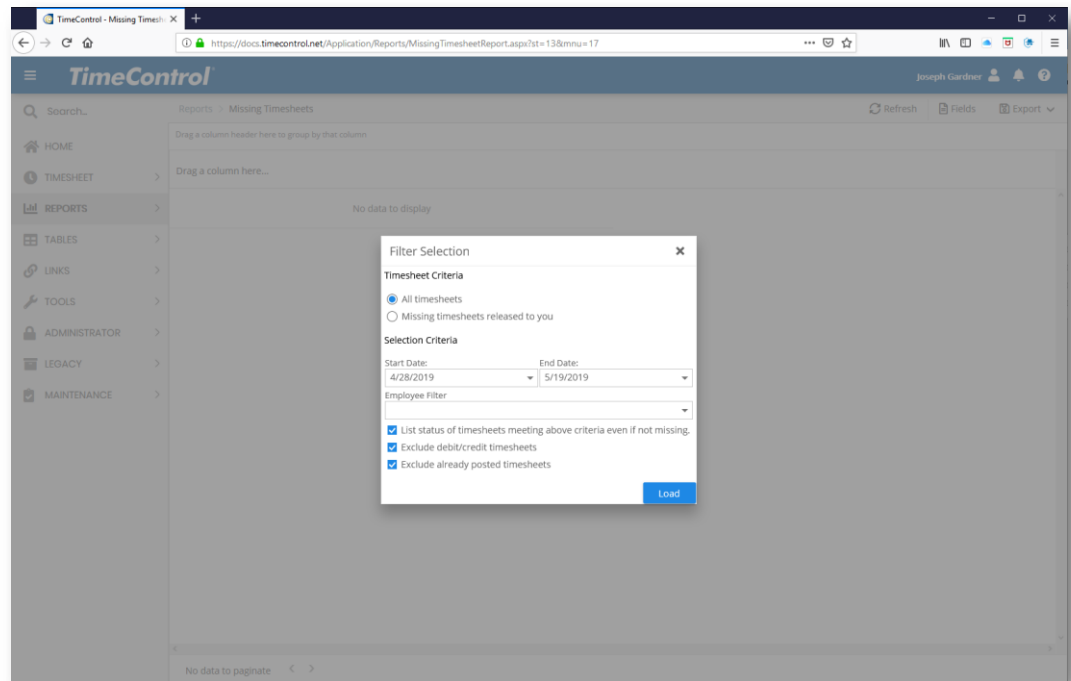
The report will list all timesheets by default.

You can group the list by any displayed field by clicking the Fields option and selecting that field.
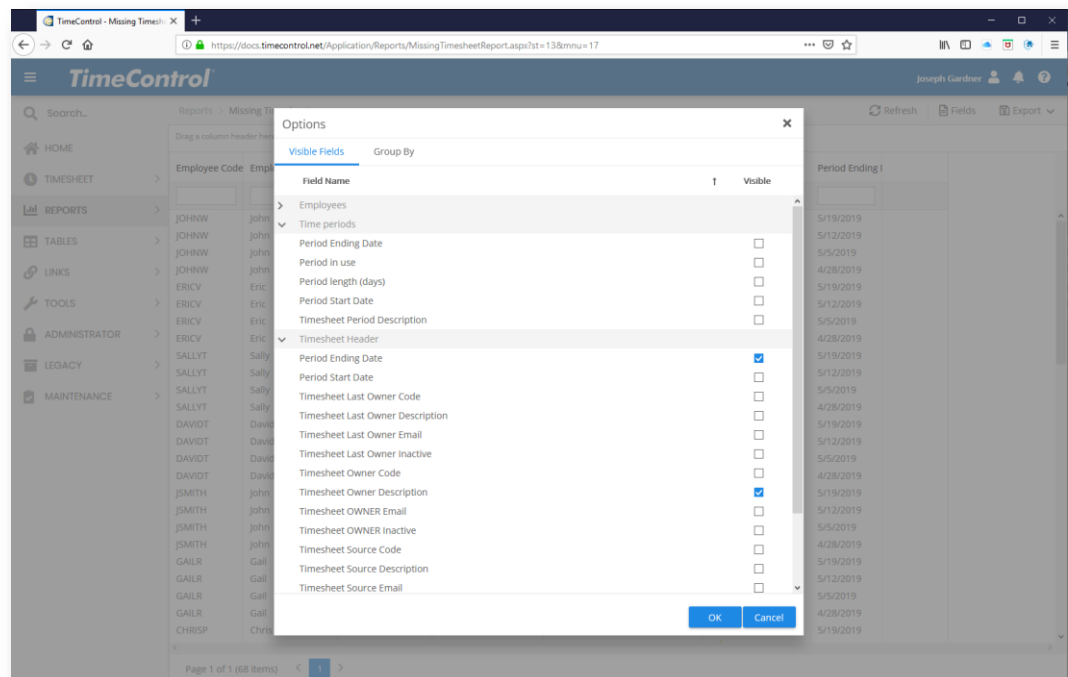
You can change the fields by clicking the Fields icon in the Actions pane. A list of possible fields will appear and you can drag them to the position you

wish. You can reorganize the order of the fields on the screen in the same manner by dragging them where you wish.

Exporting the file into a printable format in Excel, RTF or PDF can be accomplished by clicking on the Export icon in the Actions pane and selecting the format you wish.

Posted/Unposted Reports

TimeControl includes several reports that combine data from both the Posted and Unposted areas.

Most organizations expect to have their office staff use a weekly timesheet and indeed, this is why TimeControl is designed with a weekly timesheet structure. Once data is entered into TimeControl and approved, it is saved in a *Posted* format where the structure of the data is better suited to reporting, linking and exporting.

When the data is posted, it becomes very simple to request a range of dates which exactly match the needs of payroll, billing or Finance for financial reporting. This works well in most cases when the data is accepted into these systems following the close of the business week and the completion of any timesheets which are included in the period.

TimeControl's "Missing Timesheet Report" and "Missing Timesheet Email Notification" functions are important here to ensure that all timesheets have completed the approval process and are represented in the exported or reported data.

There are, however, occasions when data is so time-critical that the client wishes to report on it right up to the end of the day before even if that occurs in the middle of the week. There are organizations whose payroll requirements oblige them to pay for time up to and including yesterday's efforts. There are other organizations that have billing that is so time sensitive that it must be sent immediately and include any hours up to and including the day before. For these organizations, TimeControl has both the Partial Posting function addressed earlier and Posted/Unposted reports. This reporting dataset is specifically designed for those situations where data must be pulled from TimeControl including both the approved data from a previous period and the draft data that is yet to be released, approved or posted.

The report requests a date range and then provides all the hours within that range of both posted timesheet data and unposted timesheet data from the middle of the current week. The data is listed into a single format so that it can be used in either a report or exported into Excel and then sent to other systems. If, for example a data range were to go from the 1st of September

(a Monday) until the 30th of September (a Tuesday) and the requirement was to have reports completed for September billing no later than the end of business on October 1st (a Wednesday) then the Posted/Unposted report would take posted data for the weeks of September 1st, 8th, 15th and 22nd. This data would have already been collected, approved and posted. The report would also add the unposted data from Monday September 28th and Tuesday September 29th.

Since the data may be taken from a current timesheet which has not been released and therefore has not been subjected to any business rules created in the TimeControl Validation Rule module, it is important to set up a process to ensure that the data is used properly.

If your organization has one of the situations where you will require immediate mid-week access to timesheet data, there are several considerations to put into your process:

Completeness

Since the Missing Timesheet report looks at completed timesheets, it will not be useful to determine if all timesheets have data which is entered into them by the middle of the week. In our example above, the timesheets of September 28th will all be in progress. A report should be included in your process which is run by the TimeControl Administrator of "unposted data" for that date range (in our example, it would be for September 28-29) which lists all pertinent users and the time against that week. If there are missing timesheets, those users will have to be contact to ensure they enter data for this partial period.

Data Integrity

Since time is being reported at mid-week, many of the usual TimeControl tests for data integrity such as Validation Rules have not been applied to the timesheet data yet. This means that there may be errors in the partial timesheet data that is reported that may be caught by a business rule at the end of the week and will need to be corrected. Since the purpose of taking the data mid-week is to send it to another system or use it for external purposes such as payroll or billing or financial reporting, it is important to check for any adjustments after the fact. This can be done by keeping a copy of the Posted/Unposted report which is used for the export and comparing it to the same report done following the posting process. When the report is run for the same date range after the end of the week, it will obviously be taking data A simple comparison can be done between the two reports to check for any discrepancies (Typically discrepancies would be quite rare).

Posted/Unposted process

The following would be the typical steps in a process where the Posted/Unposted process would be required:

1. Use Unposted report to check what users have not entered data for the Unposted period this week

2. Contact those users who have not entered data for the partial week and ensure they have completed any timesheet entries which must be included in this report

3. Run the Posted/Unposted report for the complete period required

4. Send the report to the system required (e.g. Payroll, Billing, Finance). Save a copy for reference

5. Following the completion of this week's timesheet approval process, run the Posted/Unposted report again for the same period and compare for any discrepancies between reports

Report any discrepancies to the systems required

Drill Down Analyzer

The Drill Down Analyzer is one of the most powerful analytic tools in TimeControl for ad-hoc queries of the TimeControl data. When you start the Drill Down Analyzer it will be blank, until you select a View of a table category and fields and click Load.
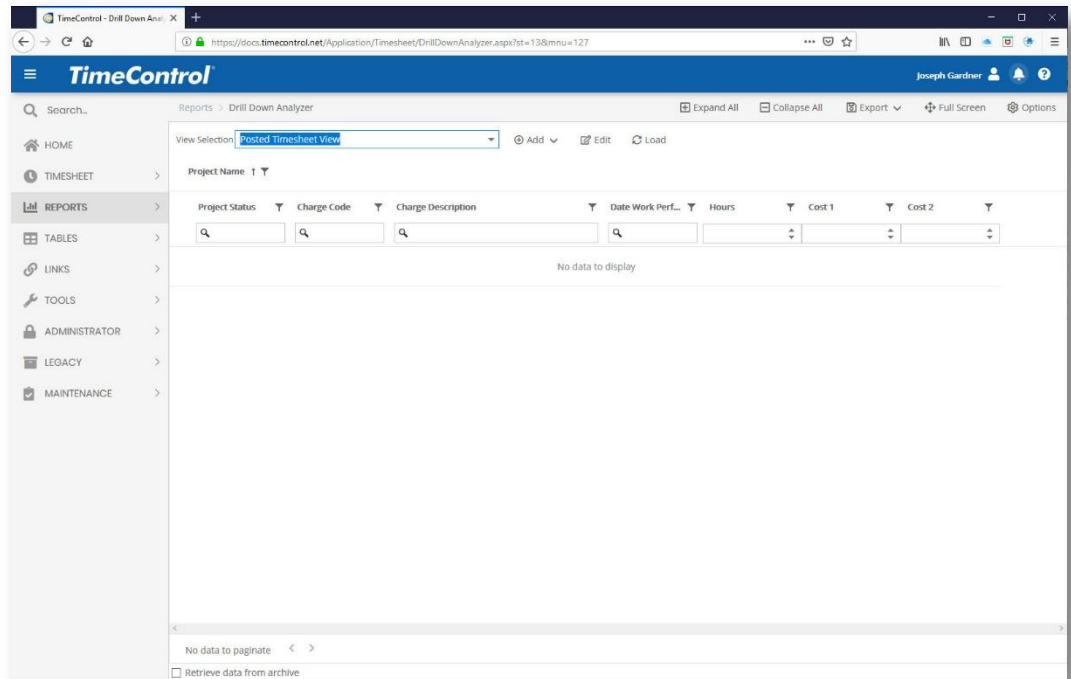
The Drill Down Analyzer allows you to define lists of fields from different categories from which the view is populated and then allows the data to be grouped, subtotaled and inspected at incredible speed.

Once you click Load, you will be able to filter the data based on any filters you've created including Dynamic filters.
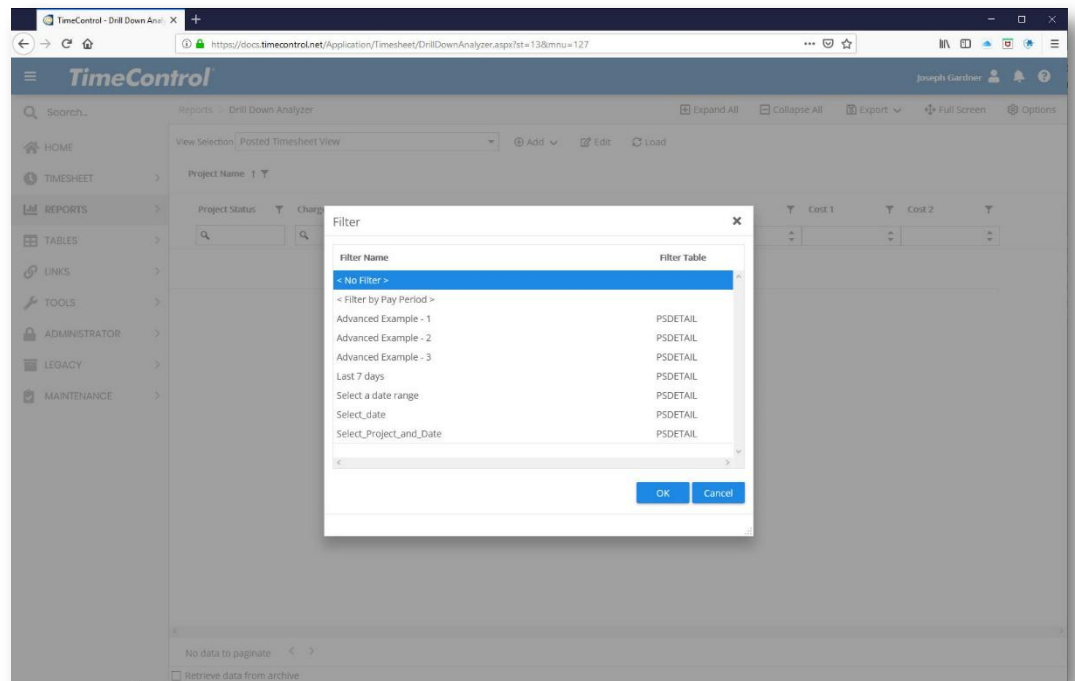
Now the power of the Drill Down Analyzer becomes available as you decide how to group the data. You can group the data in two ways.

Drag and Drop

Using Drag and Drop is the most popular method of grouping for the Drill Down Analyzer because it is so fast and the views within the Drill Down Analyzer are expected to be dynamic. Drag and Drop is enabled in the Options Menu.

Dragging the column header of any column into the grouping area immediately above the headers immediately groups all the data you've selected by that column.

In this example, we have selected Posted timesheet data with a number of fields and have dragged the Project field column header to the grey area immediately above it.
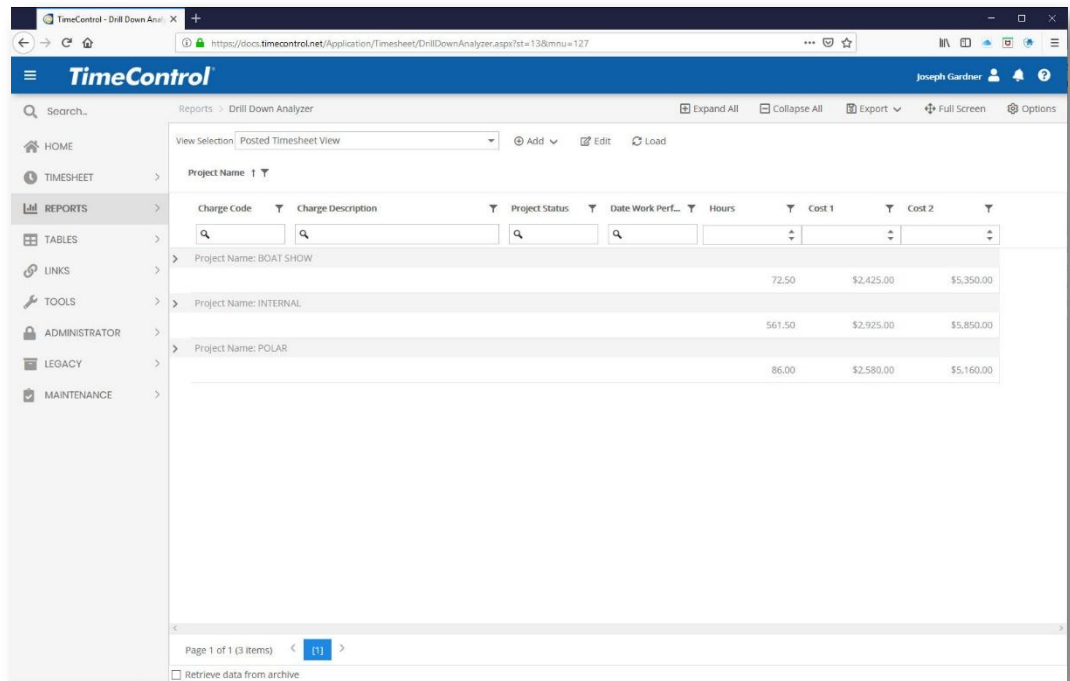
Now all data is grouped by Project. Clicking the ">" next to the project will expand the data of interest to you and you'll see the sub-totals for the hours and any cost fields you've selected.
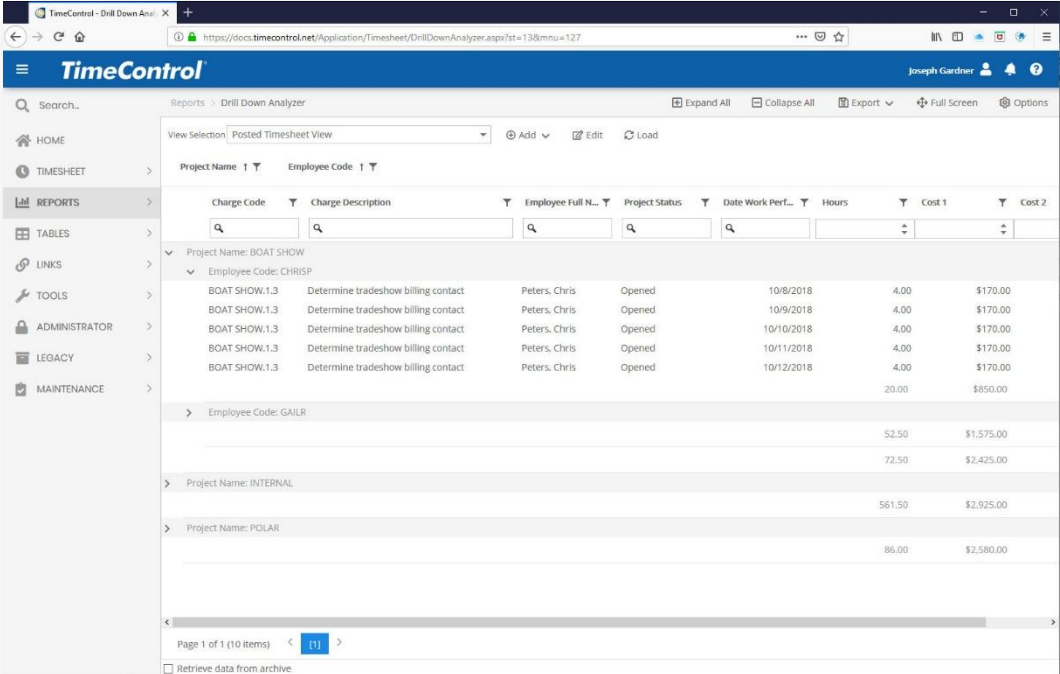
Immediately, the amount of time and money spent on this project within the filtered data becomes visible.

The Drill Down Analyzer allows you to "nest" groupings and sub-groupings to an infinite number of levels.

If, for example, we wish to have a breakdown of how much time each employee spent on the project, we can drag the Employee Code field column

header to the grey area and place it to the right of the Project field that is already there.

The next example shows the results.

Now we can see the sub-total for each employee under each project. Expanding all data so we can see every record can be done at the click of the "Expand All" option at the top right of the screen. Similarly we can show just the top level summary by clicking "Collapse All".

Options Menu

The Drill Down Analyzer can also be grouped from within the Options Menu.
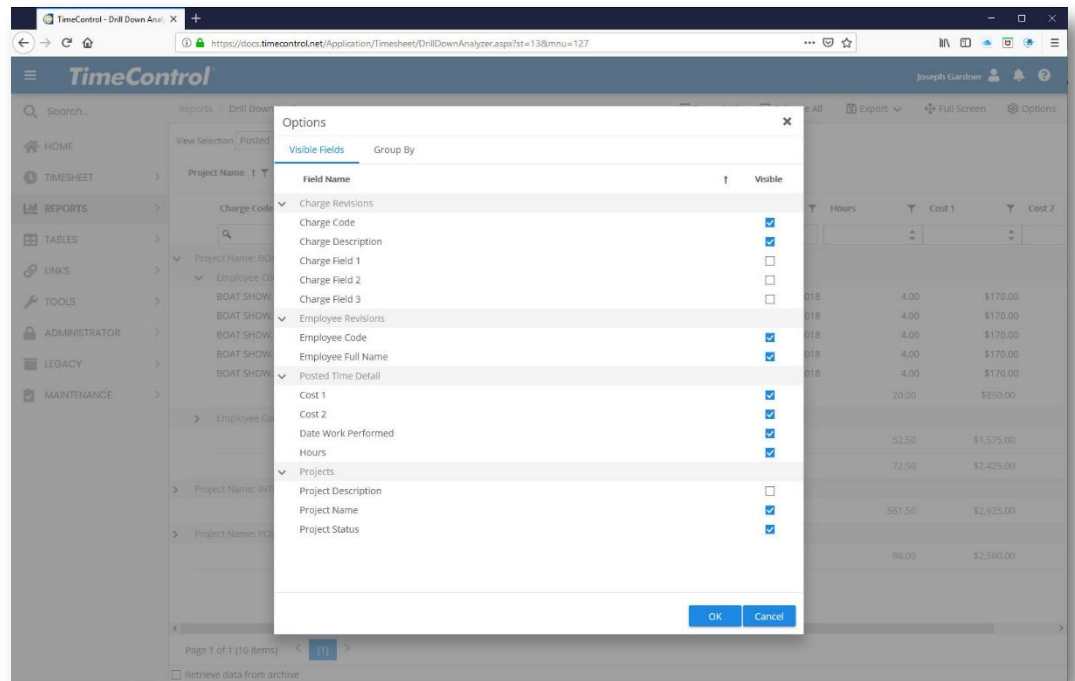
You will be able to select which fields you wish to be visible from the Visible Fields tab.
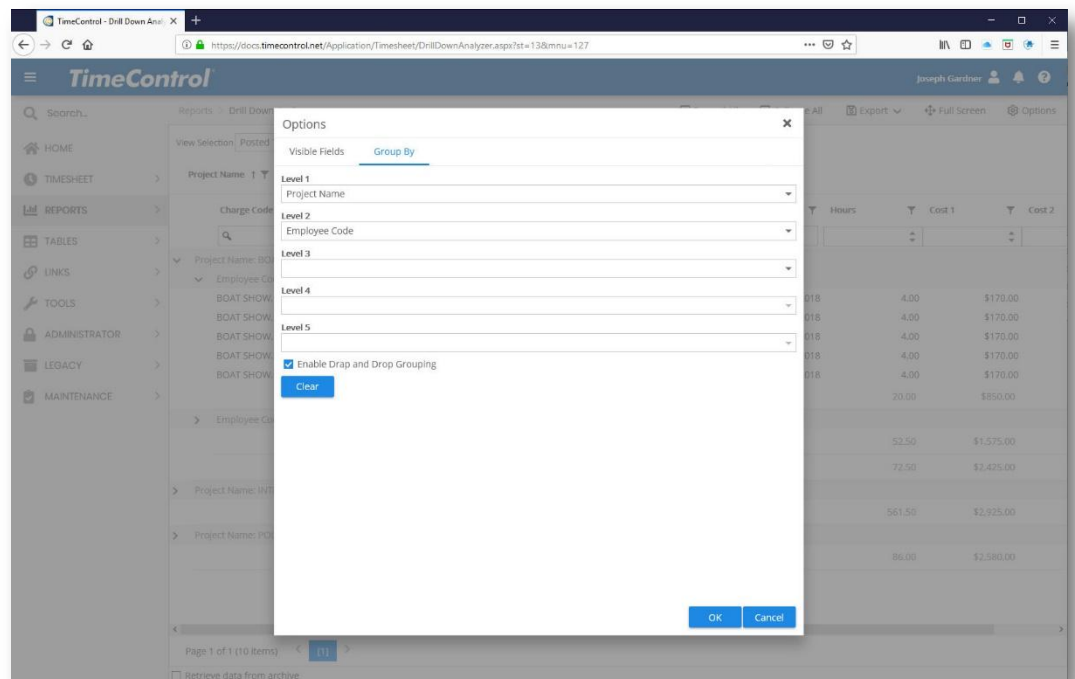
The Group by tab shows up to five levels of grouping or lets you clear all grouping options with a single click. Select the "Enable Drag and Drop Grouping" checkbox to re-enable the Drag and Drop option.

If you would like to save your data selection for further analysis, click on the Export button and you will be given a number of options. The Drill Down Analyzer can save its data in CSV, Excel, Excel(XLSX), PDF and Rich Text Format(RTF) formats

It is common to create new templates of fields to be used for analysis in the future. Security for creating new Drill Down Analyzer templates or editing existing templates is managed in the User Profile Security area.

If you have the right to edit the existing template, you will see the "Fields" button to the right of the Load button.

If you have the right to create a new template, you will see the "Add" button in the Actions menu at the top right of the page.

To create a new template, Hover over the Add button and select whether you'd like to create a view based on Unposted data or Posted data. You'll be presented with the Drill Down Analyzer Report Add Wizard.
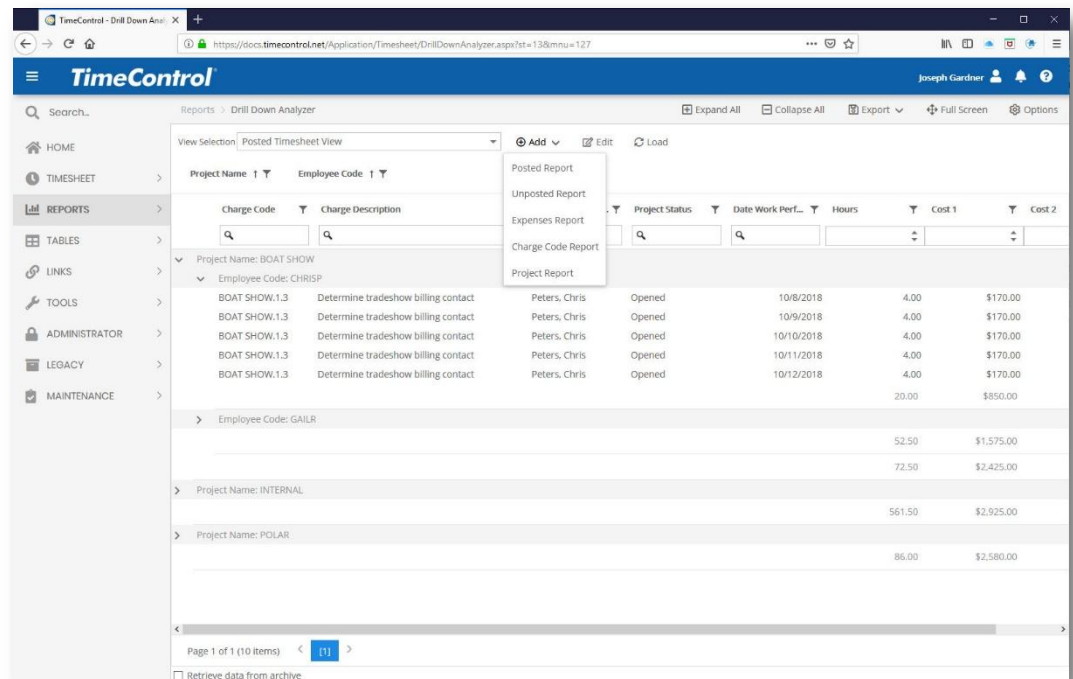
Enter a name for the template view and any filter you wish. You can also select how you would like the Hours field to be displayed.

Click Next to proceed.

Now select the fields you wish in the report. Any related tables to the Posted or Unposted timesheet data will be selectable on the left side. Click the ">" button to move fields to the selection pane on the right. You can change the order of the fields by selecting one or more fields in the right-hand selection pane and clicking the "Up" or "Down" buttons.
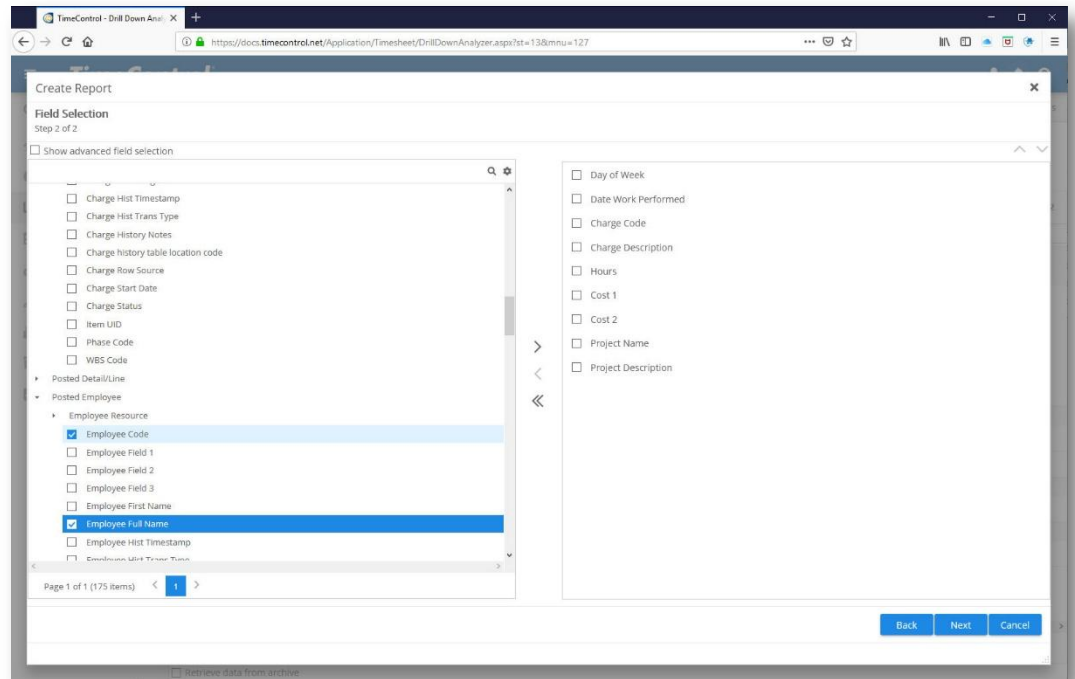
Click Next when you're ready to proceed.
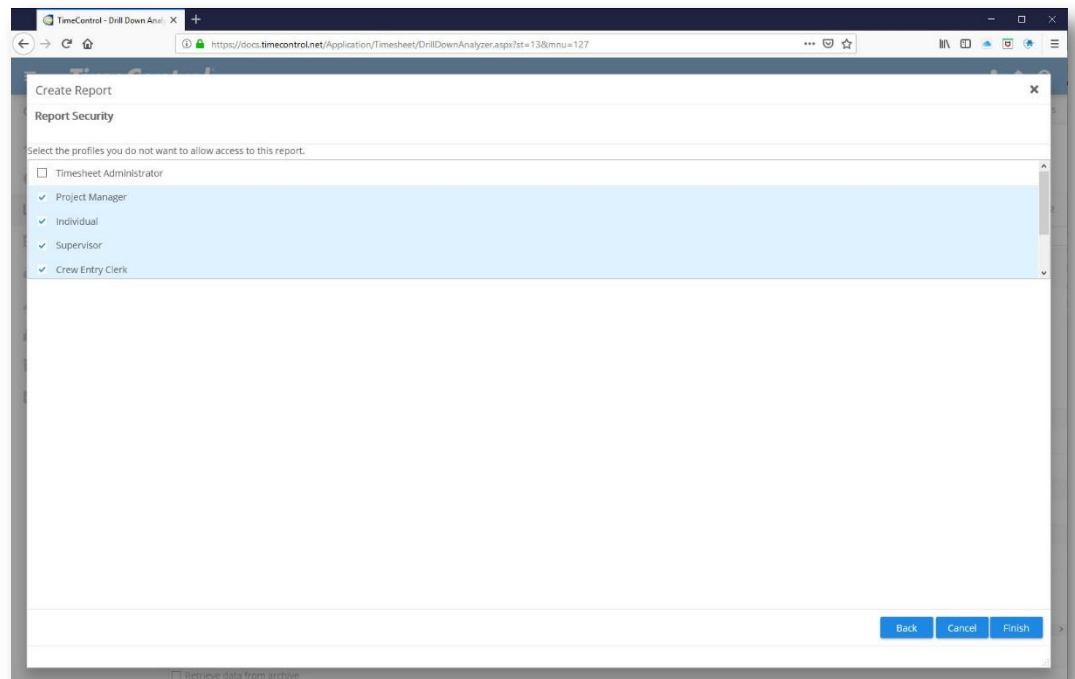
Your final step in creating the template is to determine what User Profiles it should be hidden from. Your own current User Profile is always de-selected (so you can see your own work). Select the Profiles you wish to keep this template from and click Finish.

The template should now be one of your drop-down selections.

Reporting using the Drill Down Analyzer

TimeControl's Drill Down Analyzer can be used as a reporting tool. If you consult the Reports Table, you will see each Drill Down Analyzer View listed as a report type. In this area you can define whether to create a header for the report and whether to display the Filter details in the header.

Migrating a Legacy Report into the Drill Down Analyzer

For clients who have used earlier versions of TimeControl and who created reports in the Legacy report writer in Formula1 spreadsheet format, there is a method to migrate these reports into TimeControl's Drill Down Analyzer.

First, locate one of these reports in the Report Table.
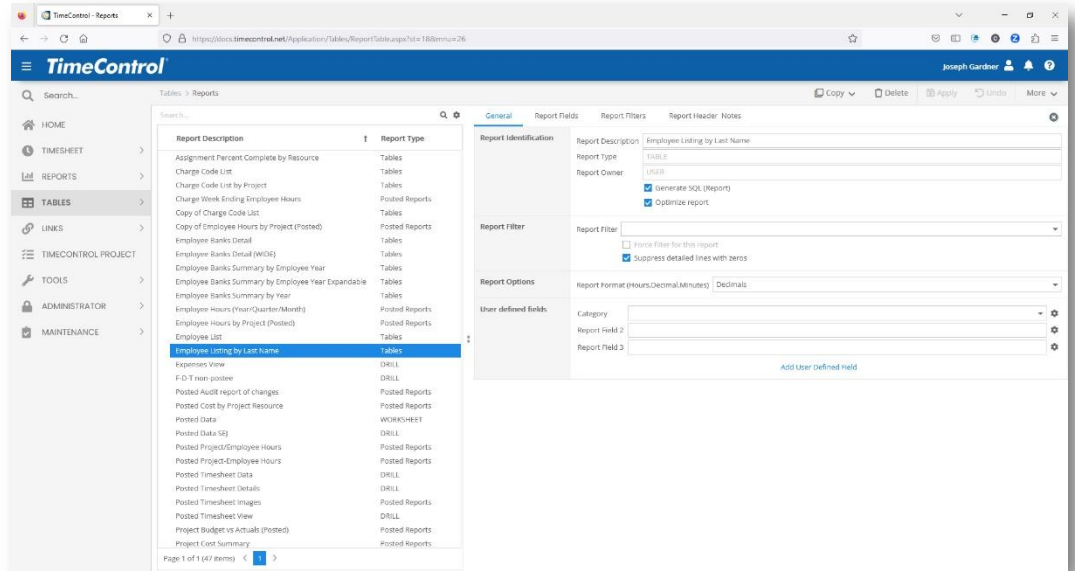
When a legacy report is selected, at the top of the screen, the Copy function will have an arrow appear on it that indicates there are other options besides just copying the report.
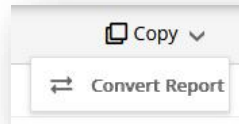
Hover your mouse over the Copy function and an option to Convert the report will appear. Clicking on this will have the report be copied in DRILL format.
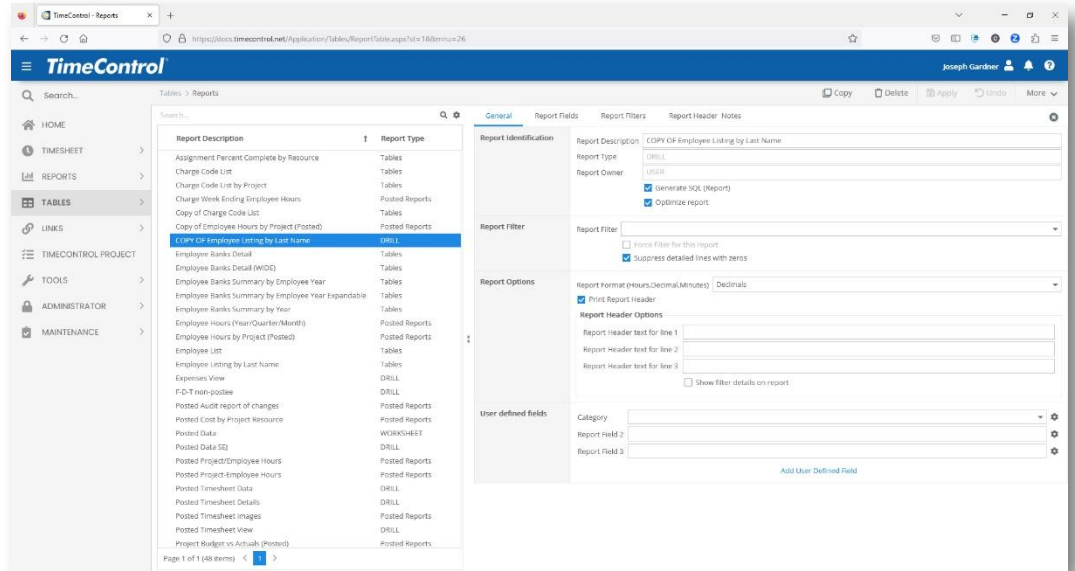
The report is now available in the Drill Down Analyzer as a View. Going to the Drill Down Analyzer, selecting this View and Loading the data will make the legacy report definition's data re-appear.
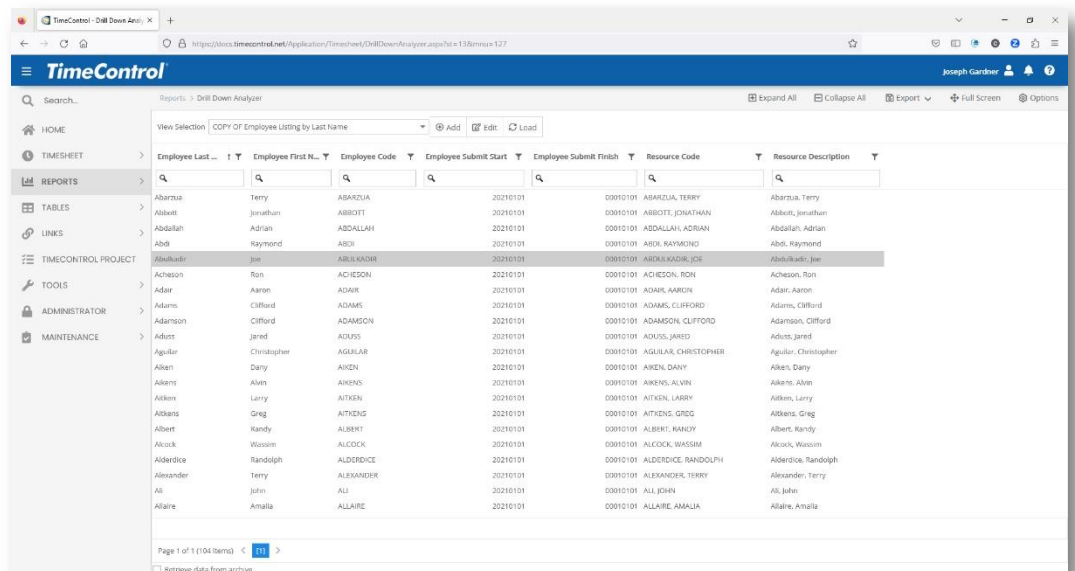
Now all the features of the Drill Down Analyzer are available for this View. You can group data by just grabbing a column header to the summarize area above it, you can filter the data as you load it. You can even export this view directly to Excel or elsewhere using the Export feature. The original report definition is not deleted automatically in case you wish to copy the report more than once for other purposes. In versions 8.4 and later of TimeControl however, the legacy report viewer is no longer included.

Employee Banks Report

The Employee Banks Report carries the functionality of the Drill Down Analyzer to the Employee and related tables. It is designed for those in the Human Resources Department to query the Employee Banks and be able to group, sub-total and analyze the data that has been earned and taken in the various banks defined in TimeControl.

Select the Employee Banks Report and start by selecting a date range and any applicable filter to see the data you need for your analysis.

You'll now see the values for the selection you've made.

You can group data just as in the Drill Down Analyzer by dragging the column header of any field to the group row above the grid. You can continue to sub-group by dragging column headers to that area and even resort the sub-grouping by dragging a field name within the group row from left to right.

If you wish to add more fields to the analysis, click on Fields in the Actions pane.
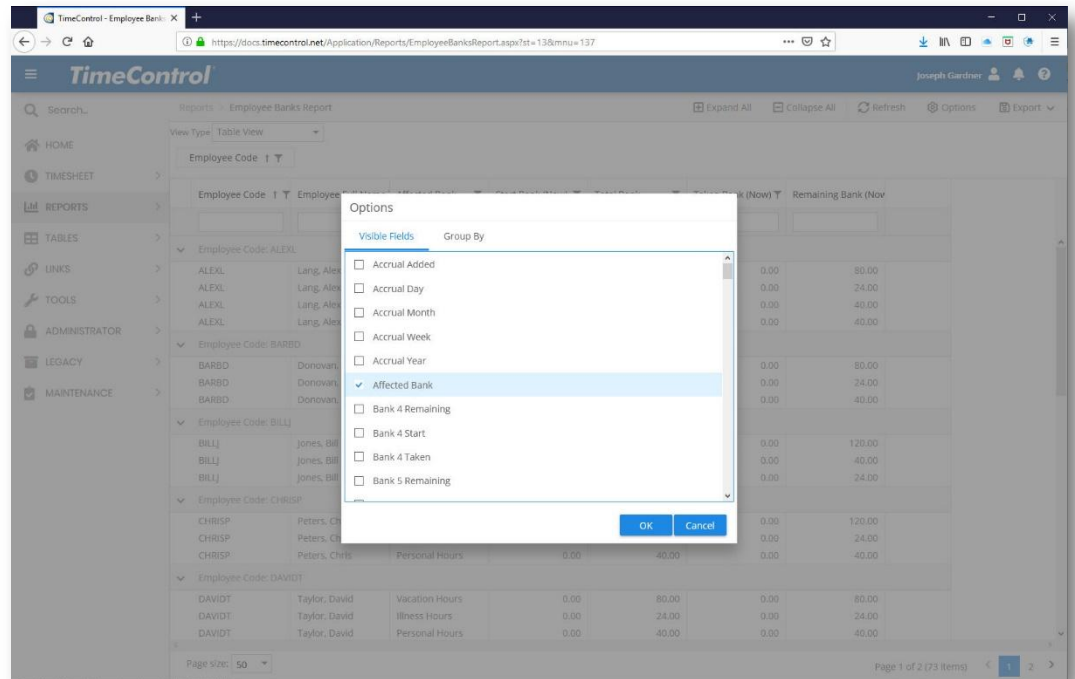
Only fields within tables associated to the Employee table are selectable in this view.

Once you have a query which you find useful, you can export the results to Excel, CSV, PDF, etc. just as you would in the Drill Down Analyzer.

Calendar View

TimeControl includes an interactive Calendar View. Click on the Calendar icon in the navigation area and the calendar list will display.

This view shows all Calendar customizations that have been saved and are available to you.
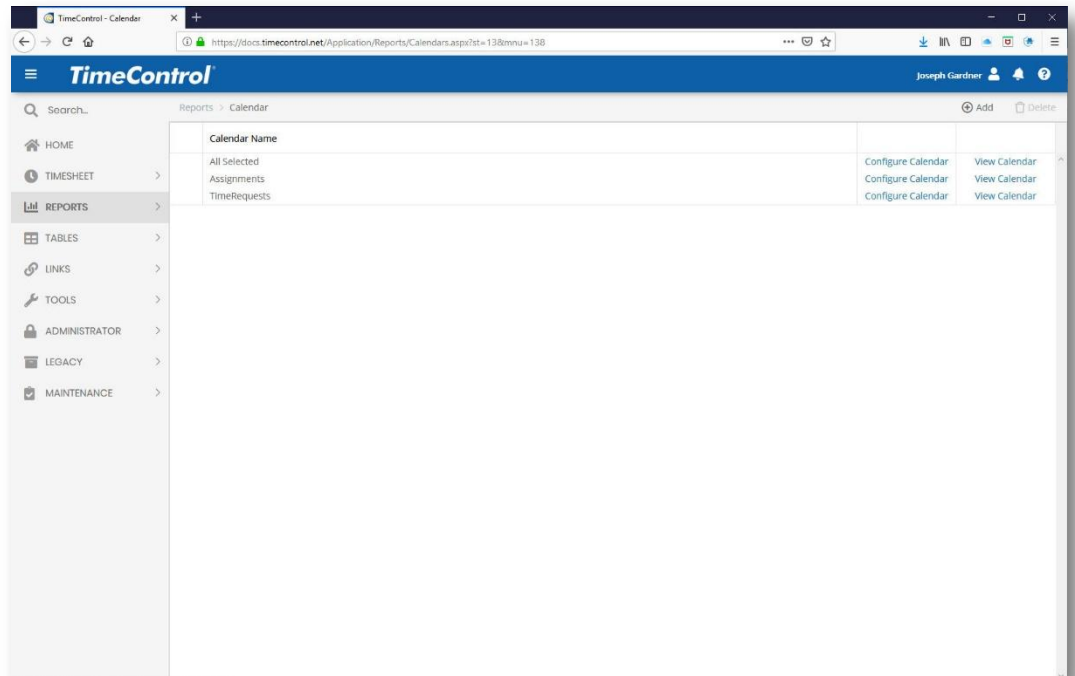
Clicking on View Calendar will display a filter selection. Each Calendar can have filters that are TimeRequest oriented as well as Assignment oriented so you will have two filters to select.
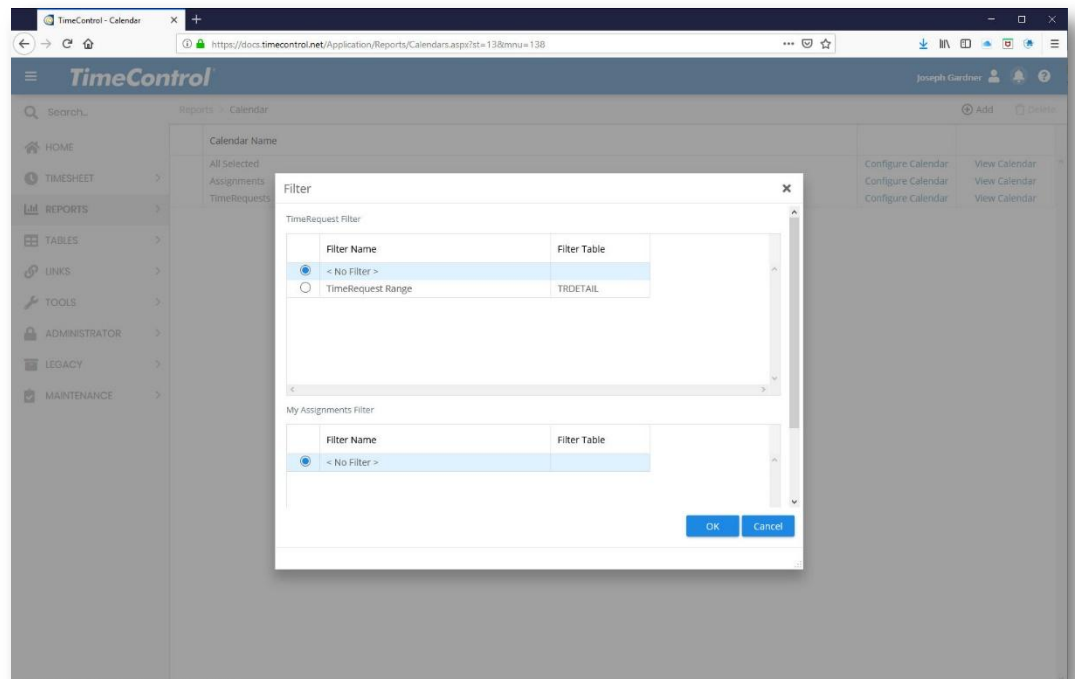
Once the selection is made the filter will appear.
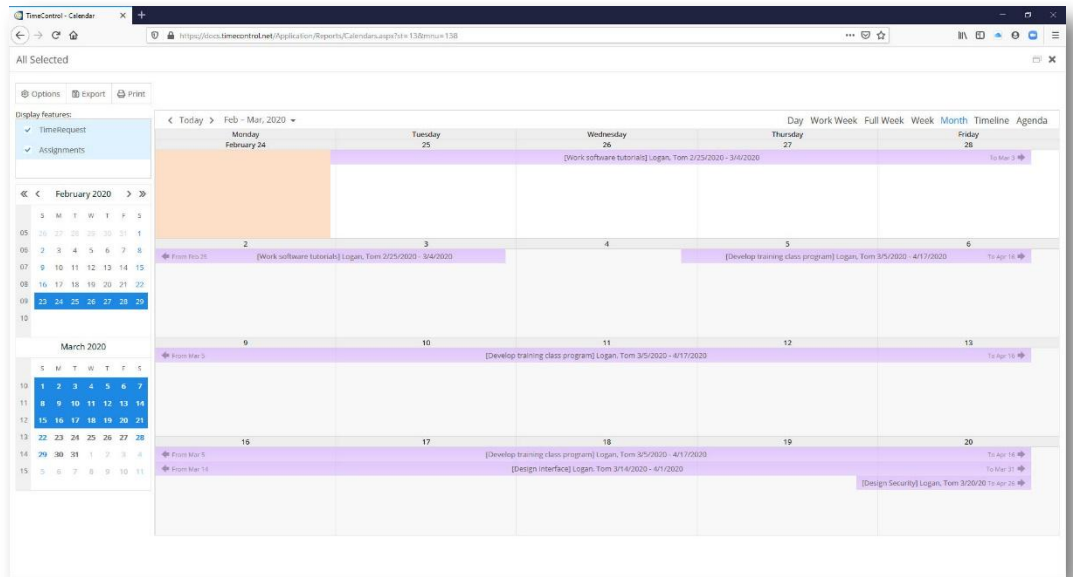
You can display Draft, Released, Approved and Rejected TimeRequests. As well as Assignments for yourself and those who you have access to the data of. Clicking on Options will allow you to configure the display.
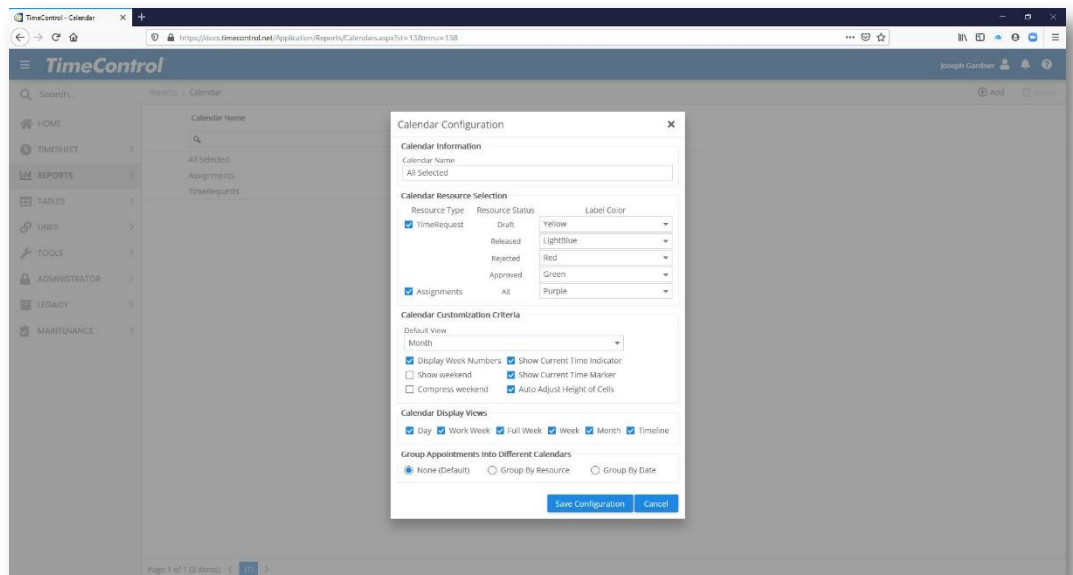
You can determine the colors you wish to use for each TimeRequest category and Assignments as well as how the text is defined on the screen. Selecting **Auto Adjust Height of Cells** will make each row change in height based on the amount of text there is to display.

You can select Daily, Work Week, Full Week, Monthly or Timeline views. Once you have made your selections, you can copy your views into your own library of customized selections.

Once displayed, clicking Export will allow a calendar to be exported as an ICS file which could be read into calendar systems such a Outlook or Google Calendars.

Clicking Print shows the Calendar print options.
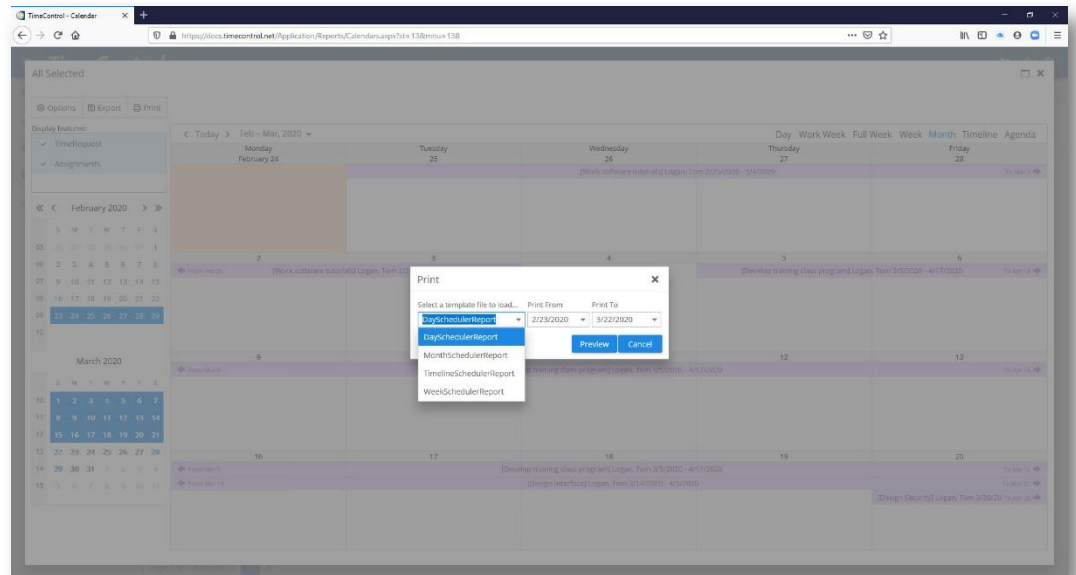
There are four printable views: by Day, Month, Week and Timeline.

GANTT Chart View

Click on the GANTT view to see a bar chart representation of your assignments.
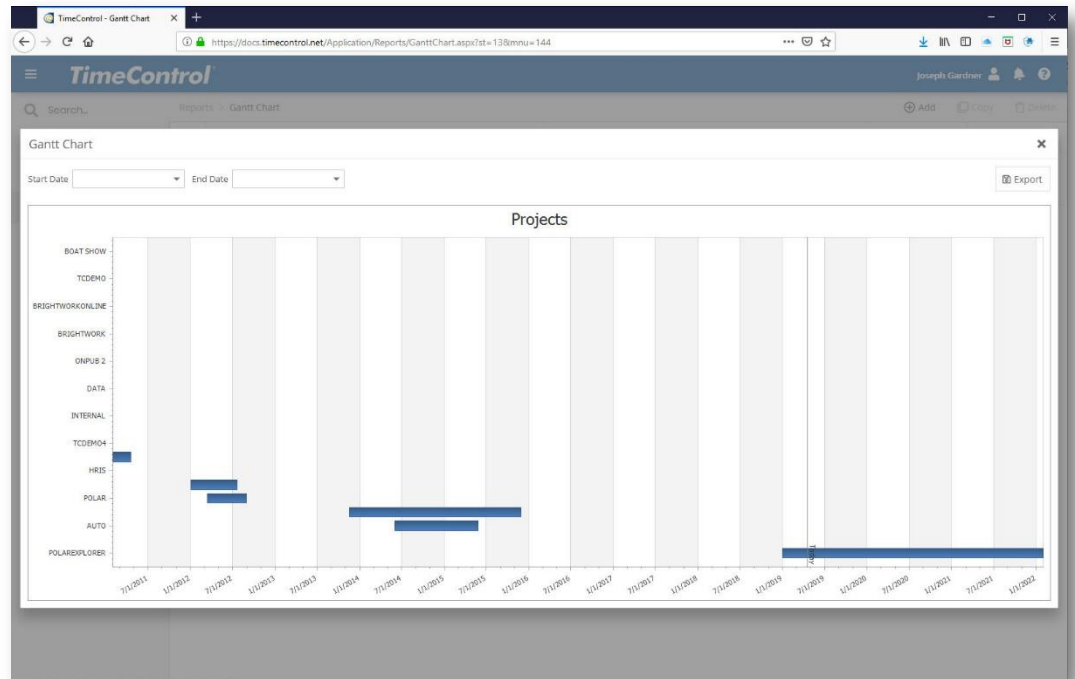
Timesheet Release Audit Log

TimeControl also includes extensive auditing controls. By selecting the TRLSLOG table, you will be able to see the transaction log of all movements of timesheets.

This log shows the type of transaction that the status and time of the transaction and the logged-in user identification of the users involved.

To turn this log on or off, go to the System Preferences Timesheet tab and activate Enable Release Structure Auditing.

You can delete the log prior to a selected date by clicking the Delete icon in the Actions pane.

You can adjust this view by clicking the Options icon in the Actions Menu. Using Options, you can select the fields to be displayed in the view
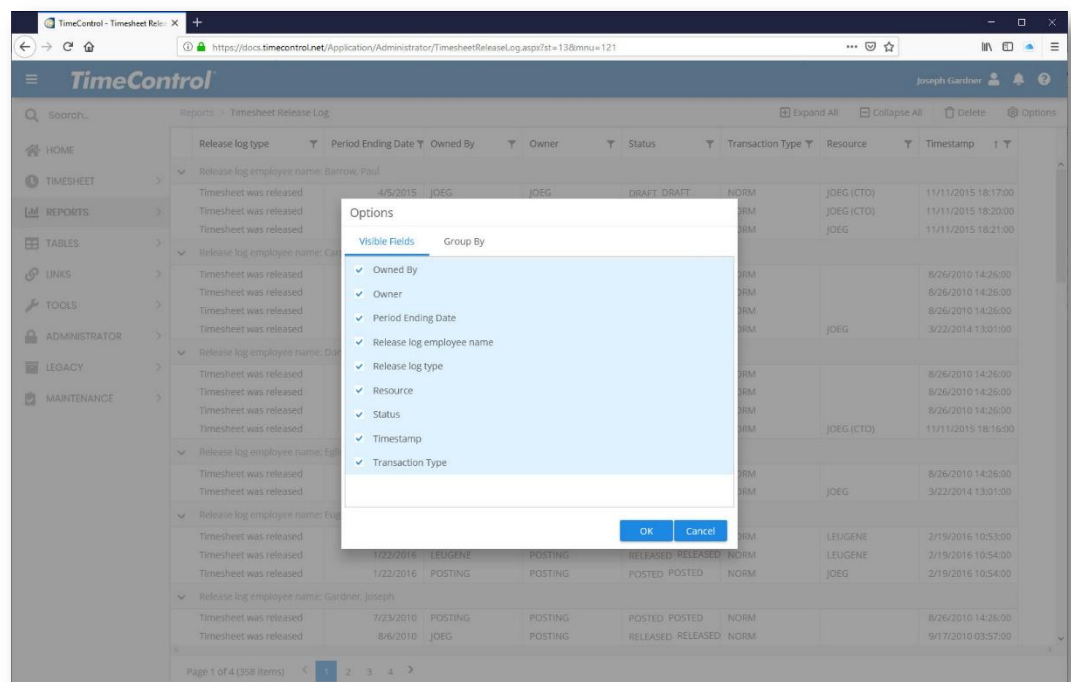
You can also adjust the order in which the log is grouped.
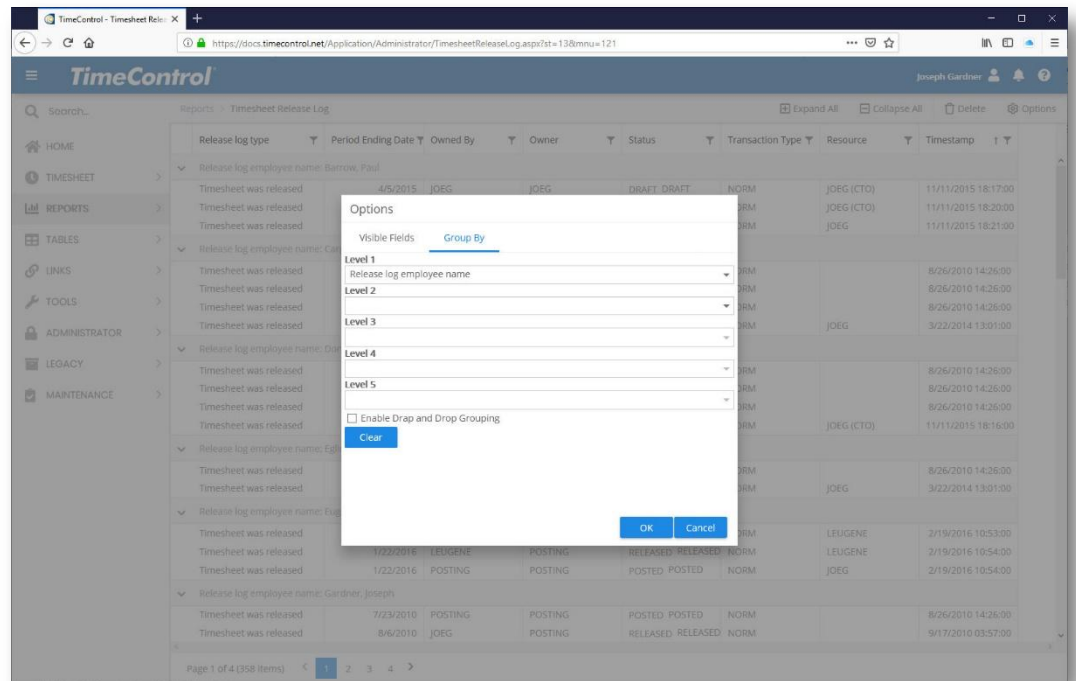
TimeControl BI Overview

The TimeControl BI Module is designed to provide high-end oversight of long term trends in data.
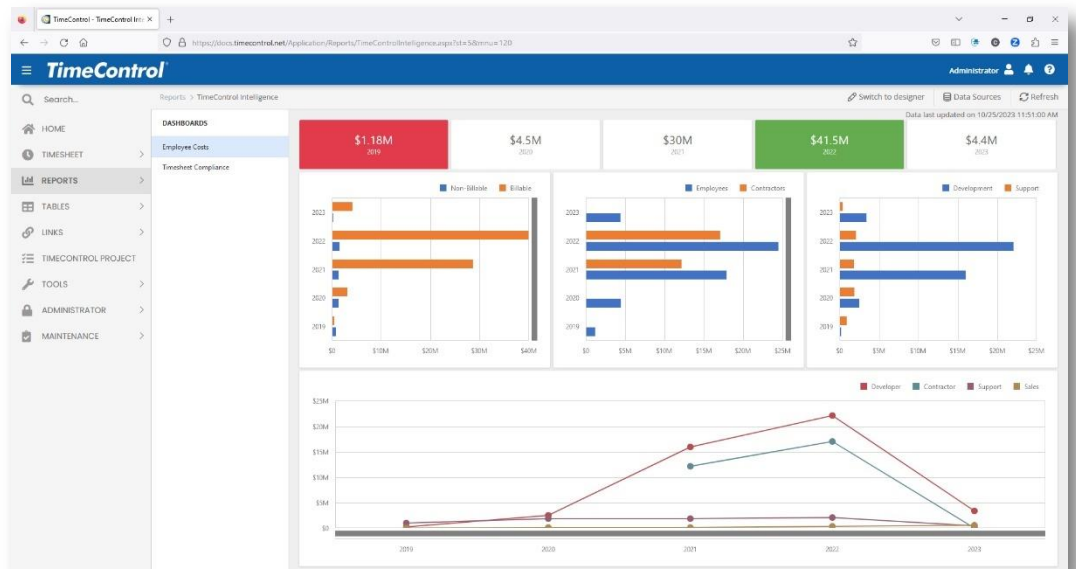
Unlike the TimeControl Dashboard, TimeControl Business Intelligence (BI) does not typically look at short term operational data such as whose timesheet

is still missing or what is today's work announcement. Instead, TimeControl BI looks deep into data that may stretch back for years to look for trends in hours, costs, and how TimeControl is used. A TimeControl BI Dashboard can contain one or many control panels, each with different types of views. There is no limit to the number of Dashboard Views that can be created.

TimeControl BI is fully documented in its own guide, the TimeControl BI Guide which describes both its Viewer Mode and Designer Mode.

Tables

Overview

The TimeControl tables are usually reserved for use by the TimeControl Administrator, but an Administrator can make them available to any user through User Profiles. The management of these tables, though usually insulated from the individual user, greatly affects how TimeControl works.

Tables are organized into three categories:

"Who can charge hours" This category contains the User, Employee, User Profiles, and Resource tables

"What can hours be charged against" This category contains the Project, Charge, and WBS tables.

"System tables" This category contains the tables such as the Validation Rule and Rate tables.

Some tables can be populated through a link with a project control system while others may be entered manually or populated through import procedures. Because some tables have references to others, there is a particular order in which to populate the tables.

Tables should be created in the following order:

#	Table Name	Source
1	Resource	Project control system
2	Employee	Manual or from external import
3	User	Manual or from external import
4	Project	Manual or from external import
5	WBS	Project control system or external import

6	Charge	Project control system or external import
7	Rate	Manual or from external import
8	Filters	Manual or from external import
9	Validation Rules	Manual or from external import

If TimeControl is being implemented without a link to a project control system, any of the tables listed above, with a project control system as a source, can also have data entered into it manually or imported from other external sources.

The following sections describe each of TimeControl's tables beginning with general navigation information that is applicable to all tables.

Table Interface

To view a particular table, select the Tables tab and then select the table by name in the Navigation area of the MenuStrip. Each of TimeControl's tables shares a common interface similar to the following:

The left-hand portion of each table contains a grid displayed either as a list or as a hierarchical tree which lists of all entries in the table. Data is loaded by the last saved Filter in the table. If a particular table has a very high volume of entries, then setting a filter will make loading the screen very fast. Instructions on filtering are found later in this chapter.

Navigating

The following commands make up the navigation bar:

- **Expand All:** If the left-hand list is displayed in a collapsed hierarchical mode, this will expand all levels to display all records in the table.
- **Collapse All:** If the left hand is a hierarchical list, this will collapse all records to their top level..
- **Add:** Click the **Add** button to add a new record. You can alternatively right-click in the grid and select **Add** from the pop-up menu. TimeControl appends a blank record to the database and clears the fields in the dialog box so data can be entered into this record immediately.
- **Copy:** Click the **Copy** button to create a copy of the selected item.

  [Note: When copying an Employee Record, the values of the Banks fields will not be copied]

- **Delete:** Click the **Delete** button to remove the selected record from the table. You can only delete a timesheet that you currently own.
- **Apply:** Once changes are made to the current record, the **Apply** button is enabled. Click **Apply** to save the changes in the current record to the database.
- **Undo:** The **Undo** button is active any time changes have been made to the current record. To undo the changes that have been made, and return the data in the current record to its previous state, click the **Undo** button.
- **Filter:** The filter button will display a dialog to allow you to filter the table by any criteria in the data. If a table is closed while filtered, it will load that way for this user the next time it is accessed. The filter is not being used when it appears with a red "X" superimposed on the filter icon. A green check means a filter is active.

Remember that these commands apply to a table as a whole, and not to the individual tabs.
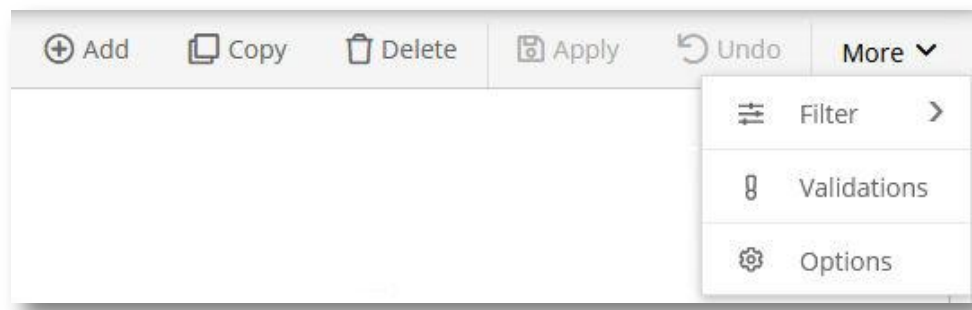
Filtering Table Data

The filter function allows you to determine what data to display in the table.

To set a filter:

1. Click More at the top right of the Table screen.
2. Select Simple Filter to make a field based filter on demand.
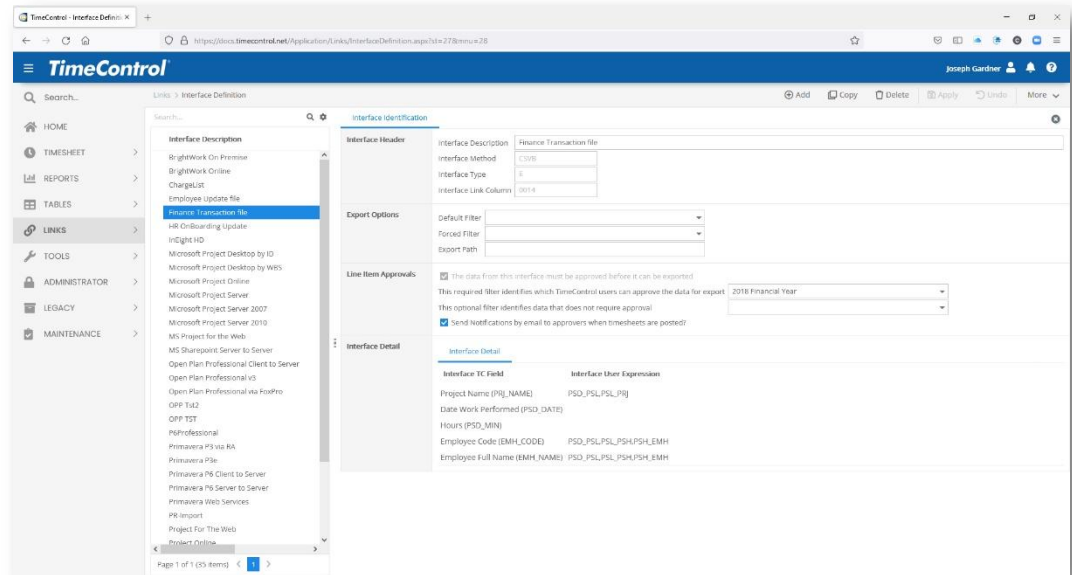
3. Select the field you want to use to filter data, for example Employee Code.
4. Click the down arrow in the **Operator** field to display a list of operators.
5. Select your desired Operator (e.g. Begins With) from the pre-defined list then fill in one or both text fields according to your selected operator, for example, Employee Code begins with 'J'.
6. Selecting the "Use filter on page load" if you wish this filter to be activated when this table is next displayed for you.

Customizing fields in the table interface

Instructions on how to add new fields to each table in TimeControl and how to link those tables to a pop-up list of values is located near the end of this guide in the section *Customizing TimeControl.*

Table Notes

Free form notes are available on every table.
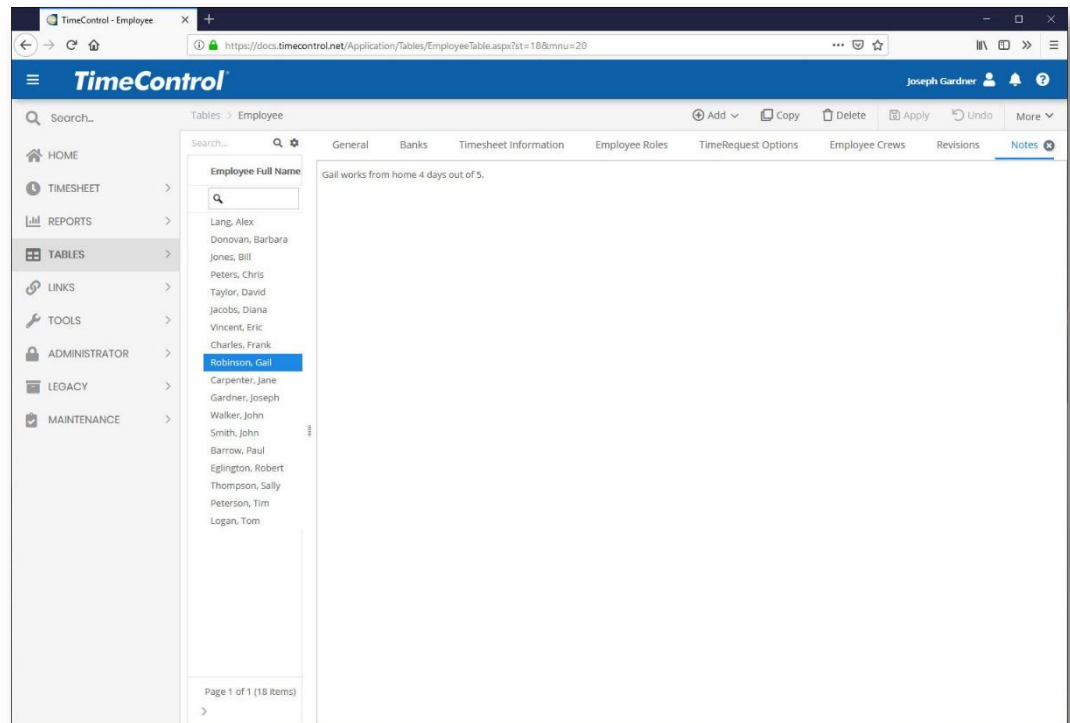
Edit Default Table Entries

TimeControl includes the ability to store default entries for some table values. This can reduce the amount of effort required to add new entries when many of the values in the table will be the same. A Default Template can exist for each of the main tables.

To Edit the Default Template for the current table, click on More and select Edit default template.
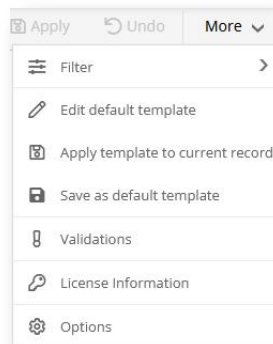
TimeControl will now show a blank entry screen.
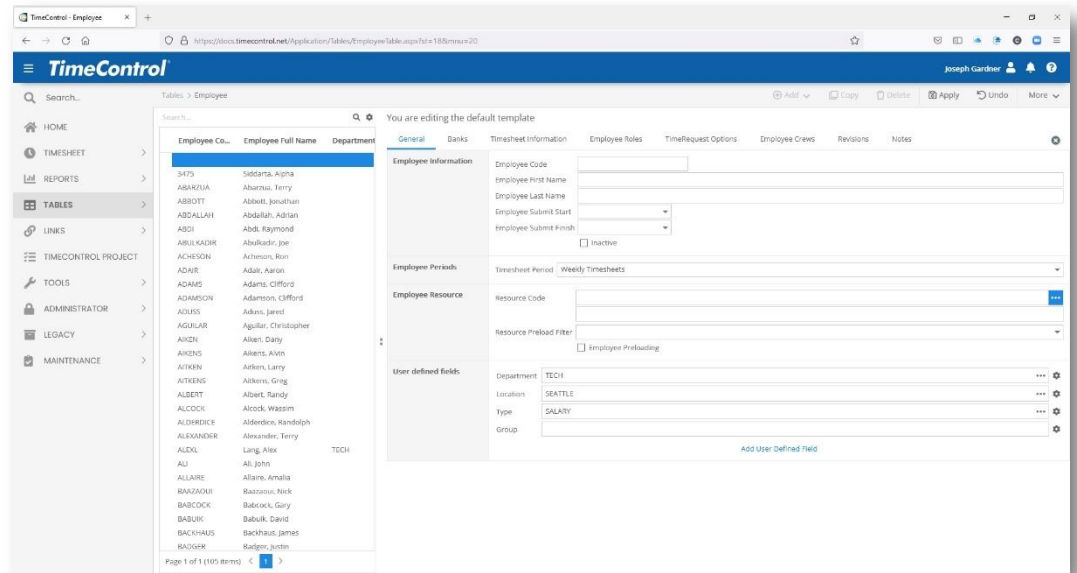
Enter only the values that are repetitive that you wish to appear on each new record. When creating a new record or editing an existing record, you can always change the value.

Once you've made your entries, click Appy go to the More menu and select Save as Default Template.

Now, when you enter a new record in this table, the values you stored should populate automatically.

You can also go to any current record and click on the More menu and select Apply to Current Record to have the values you've saved in the default template apply to the current record. TimeControl will only apply the fields you've filled in on the Default Template.

Resource Table

The **Resource Table** is key to linking TimeControl data back to a project control system. The Resource Table was designed so that the project control system could define resources in one way, and TimeControl would always be able to relate that method to an employee.

> **Note**   The Resource Table should be populated before the Employee Table as it is referenced by the latter as a mandatory field.

To view the Resource Table, select **Tables** | **Resource**. The Resource Table appears similar to the following:
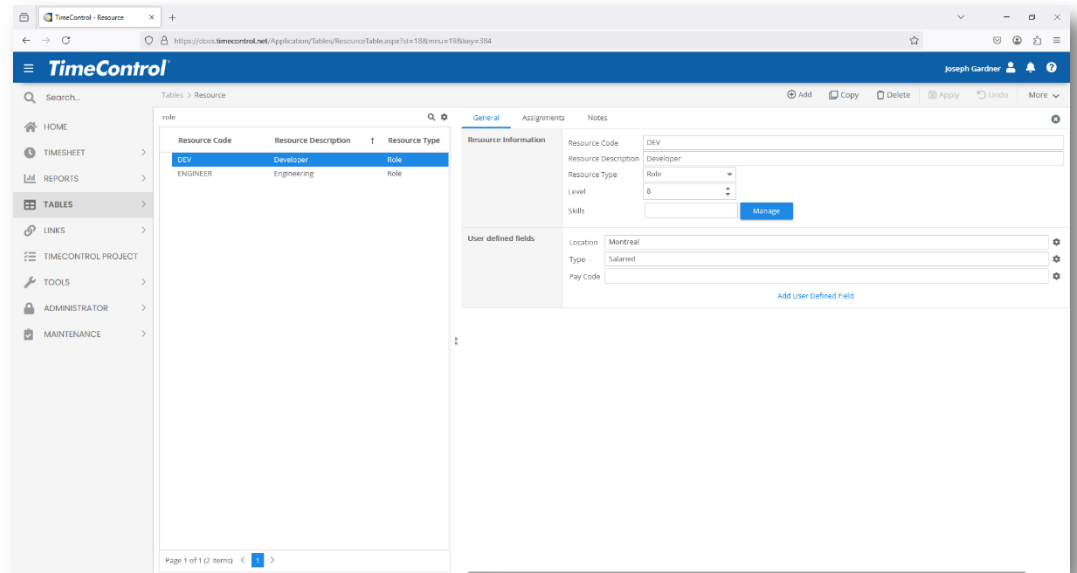
General Tab

On the **General** tab, there are two sections, **Resource information** and **User Defined** fields. In the **Resource information** area there are three fields:

- ▪ **Resource Code:** This code should be identical to the one used in the project control system. The description should be a simple way to identify that code for later use. This allows, for example, resources to be managed at the discipline level in the project management system, and at the employee level, in TimeControl.

- ▪ **Description:** Enter here a description of the resource

- ▪ **Type:** The Type can be **Labor, Role** or **Non Labor**. Only Non Labor resources can be used for entering expenses.

- ▪ **Level:** Enter here the number of units per day available of this resource.

- ▪ **Skills:** Enter here any skills associated to this resource.

This table can be populated directly by importing data from the project management system. If you are linked to such a system, this is the recommended method of populating the Resource Table. For more information on linking to project control systems, see the *Links* section beginning on page 198 of this guide.

If you are not linking TimeControl to a project control system, use the fields to reflect employee data, for example, a department, or group name.

In the User Defined fields area, you will find as many fields as you have defined. TimeControl typically starts with three fields displaying by default.

The user-defined fields, as in all the other tables, are there for your own use. You can assign any value to these, such as branch name, country code, etc. If you want to deactivate or hide these user-defined fields, see *Field-level Security* later in this guide.

Some Administrators prefer not to use the Resource Code at all. In this case, make a single entry called <Default> so it can be referenced in the Employee Table.

Assignments Tab

The **Assignments** tab shows charge codes that are linked to this resource code. This feature is used to determine which tasks can appear automatically on a particular timesheet. If you are using this feature, keep in mind that one resource can represent multiple employees and if so.

When TimeControl loads charges from a project control system, it can optionally load resource assignment information from that application. TimeControl maintains a charge/resource table that lists all charges linked to each resource code. These charges appear on the **Assignments** tab.

➢ To update the preloaded charges for a selected resource:

    1. Select the appropriate resource from the list on the left.

    2. Click the **Add** button. This displays a list of Charge Codes similar to the following:
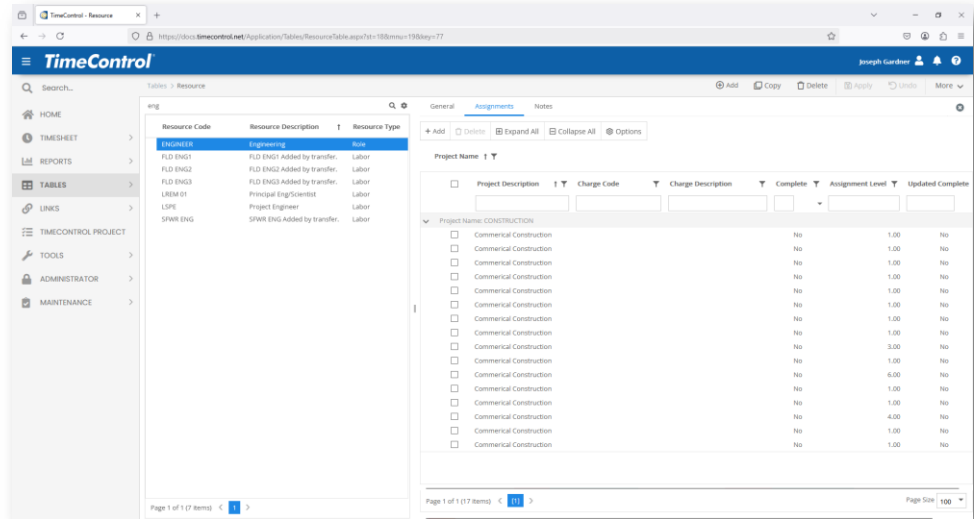
3. Select or remove any of the Charge Codes from the current resource's Preloaded Charge list then click **OK**.

4. Click **Apply** in the Resource Table to save your changes.

Notes Tab

On the Notes tab, you can enter any free form notes associated to this resource entry.

Employee Table

The **Employee Table** is key to using TimeControl. The name of each employee who will have timesheets in the system must be entered here. This is regardless of whether or not employees will actually enter their own timesheet data.

To view the Employee Table, select **Tables | Employee**. The Employee Table appears similar to the following:

General Tab

The **General** tab contains important information about each employee.

The following fields must be populated to create a new employee:

- ▪ **Employee Code:** Enter a unique alphanumeric code for the employee here. The field is not case-sensitive.

- ▪ **First Name:** Enter the first name of the employee here. If the employee has a one-word name, leave this field blank and enter only a last name.

- ▪ **Last Name:** Enter the last name of the employee here. If the employee has a one-word name, leave the first name blank and enter the name here.

Each employee must also have a Start date. The Start and Finish dates are used by the system to produce missing timesheet reports and other analyses.

- ▪ **Submit Start:** Enter the date that TimeControl should use to start tracking this employee's timesheet history. This is, typically, an employee's starting date or the in-service date of TimeControl, whichever came last. To enter a date, click the calendar icon display a calendar selector or manually enter a date using the format appropriate

to your regional configuration, such as dd/mm/yy. The date selected is automatically displayed as the closest week ending date.

- **Submit Finish:** This field should be left blank. For employees who are no longer with the organization, this is typically the date of employment termination.

- **Employee Inactive** (for TimeControl Industrial Only): This field allows you to deactivate an employee which will have them no longer count against the total Non-User Employee (or Crew) count for TimeControl Industrial.

In the Periods Area, there is one selection:

- **Timesheet Period:** Select here the period calendar that applies to this employee's timesheet. There are several implications to using multiple timesheet periods at the same time in TimeControl. This is discussed in more detail in the Maintenance/Period Generator area later in this Guide.

In the Resource Area, there are three fields:

- **Employee Resource:** Select here the resource code that is associated to this employee record. This may be an individual name or a generic/skill/group resource, but it is defined in the TimeControl Resource table and is associated to how this resource will be recognized in the project management system.

- **Employee Pre-load filter**: This selectable filter determines which of the records in the assignment table will be loaded into this employee's timesheet. It is typical to create a dynamic filter which will show only a certain range of dates or statuses. For example, it might be appropriate to create a filter which shows all tasks which are incomplete and have a start date prior to Friday of next week. This could be done easily in the Filter module of TimeControl.

- **Employee Pre-loading**: This flag indicates whether the pre-loaded charges for this resource will be added to this employee's timesheet by default when a new timesheet is created. This is not to be confused with Personal Preloads which are defined with the individual employee in their MyAccount options.

In the **User Defined fields** area, you will find as many fields as you have defined. TimeControl typically starts with three fields displaying by default.

The user-defined fields, as in all the other tables, are there for your own use. You can assign any value to these, such as branch name, country code, etc.

If you want to deactivate or hide these user-defined fields, see *Field-level Security* later in this guide.

Banks Tab

On the **Banks Tab** there is information on up to 20 banks of time that can be associated to each employee.
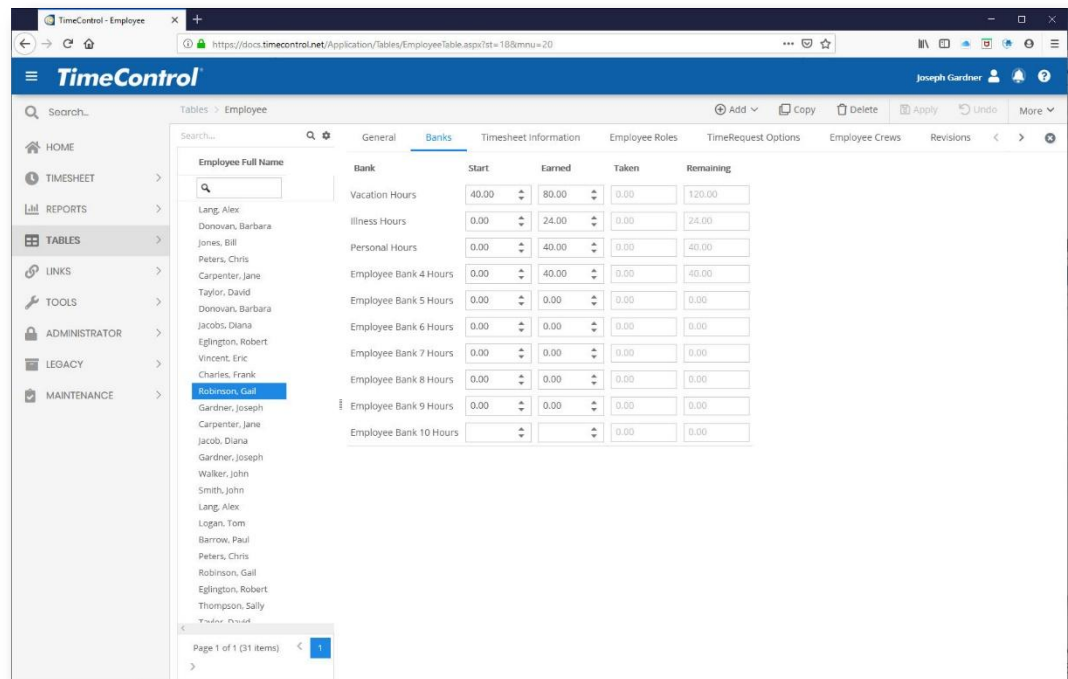
You can enter a starting amount and amount earned here. The amount taken and amount remaining will be calculated by TimeControl. There are 20 banks to choose from. TimeControl typically starts with three banks defined by default: Vacation, Sick Leave and Personal time. The bank functions such as the dashboard or the timesheet worksheet calculator will calculate based on the Fiscal Calendar start in System Preferences. Therefore, the amount entered for each employee should be current as of that date. When time is taken in a timesheet on a charge that is identified as being associated to one of those banks, it will be shown as having been taken from that bank. Validation rules can be created to restrict employees from taking more time in their timesheet from a bank than they are entitled to.

Timesheet Information Tab

On the **Timesheet Information** tab, there are several sections

Timesheet Filters allow the administrator to restrict which projects and charge code will appear to the employee.

- **Project Filter:** If you wish to restrict which projects can be selected from within the timesheet, select a project filter here. It must be created in advance in the Filters section of the Administrator menu. For more on creating filters, see *Creating a Filter* on page 457.

- **Charge Filter:** If you wish to restrict the charge codes that this employee will have access to, select the appropriate filter here. This filter must have been created in advance through the Filter Table.

Timesheet Defaults allow the administrator to define certain fields to be pre-populated when a new line is created. This can greatly simplify timesheet entry for users who have simple timesheet needs.

Simply select from the available Projects, Charge Codes and Rate Codes to create a default entry. Entries are blank by default. If you have selected Employee pre-loads or the user will use personal pre-loads, then it is mandatory to select a default rate code.

In the **Timesheet User Defined Fields** section, you can also define on this screen the default entries for any user defined fields that have been created for the timesheet itself. To add fields from the Timesheet definition onto this screen in order to create default entries for those fields, click on **Administrator** and select **System Preferences** and the **Timesheet** tab.

Creating a Release Structure

The **Release Path section** lists, in order, the people who will approve the timesheets of a particular employee. This list can be as long or as short as desired. Every employee must have a Release Structure routing. At a minimum, an employee's timesheet approvals must be routed to <POSTING> in order to have timesheets without any manual approvals.
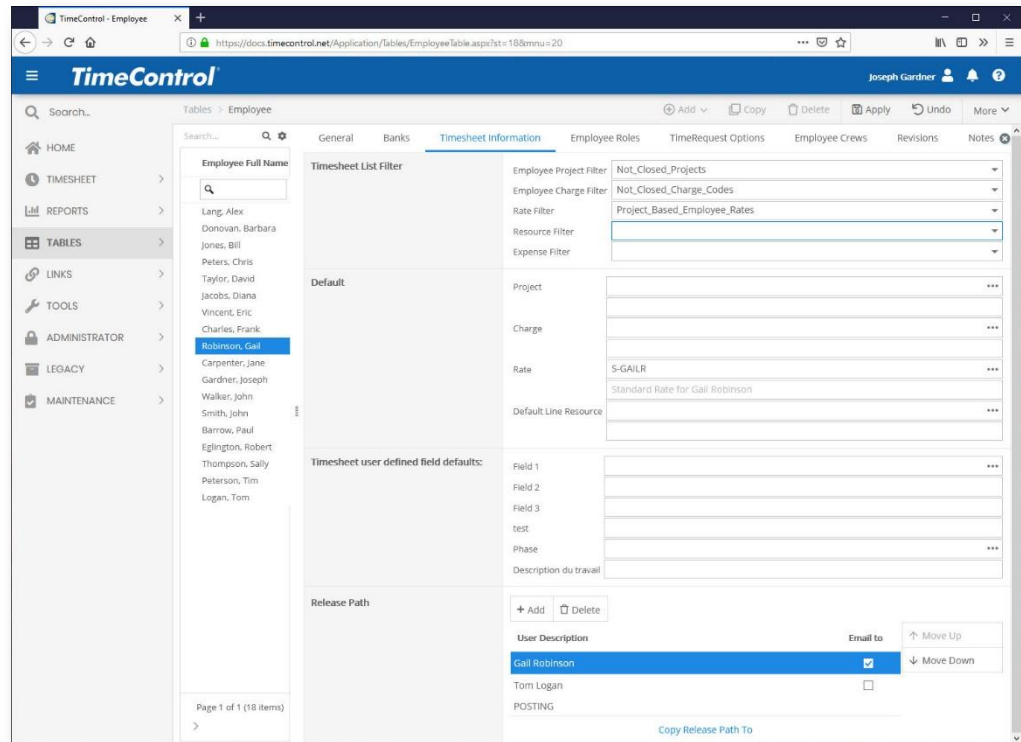
> ➤ To create a release structure for a selected employee:
>
>   1. Select an employee from the list on the left.
>
>   2. Click **Insert**. This displays a list of users that can be added to the release structure.
>
>   3. Select a user from this list then click **OK**.
>
>   4. Click **Apply** to save your changes. The user now appears in the release structure.
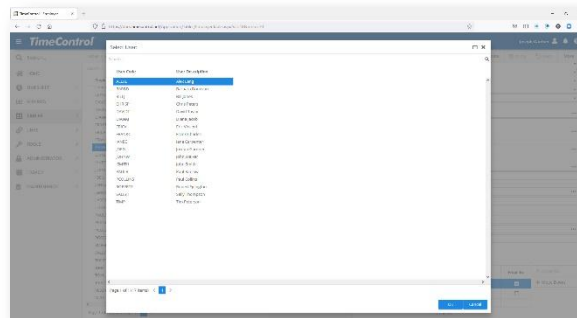
> ➤ Options for editing a release structure:
>
>   ▪ Click **Append** to add a user to the bottom of the list (above POSTING) or click **Insert** to insert a user above a selected name in the list.

- Click **Copy From** to copy the release structure of another employee.

- Click **Copy To** to copy the current release structure to one, or several employees, at once. This is a quick way to create release structures, for example, of all employees in a particular department.

- Click **Move Up** or **Move Down** to change the position of a selected user in the release structure.

- Click **Delete** or **Delete All** to remove one or all users from a release structure.

- If you wish to edit a number of release structures simultaneously, such as in the case where a supervisor is replaced by someone else, then select the Release Structure Global Updates in the Administration Menu.

The Employee Banks Tab shows the allowances and status of banks of time for this employee.

Employee Roles Tab

On the Employee Roles Tab, enter any generic Resource Roles from the Project Management system that apply to this employee.
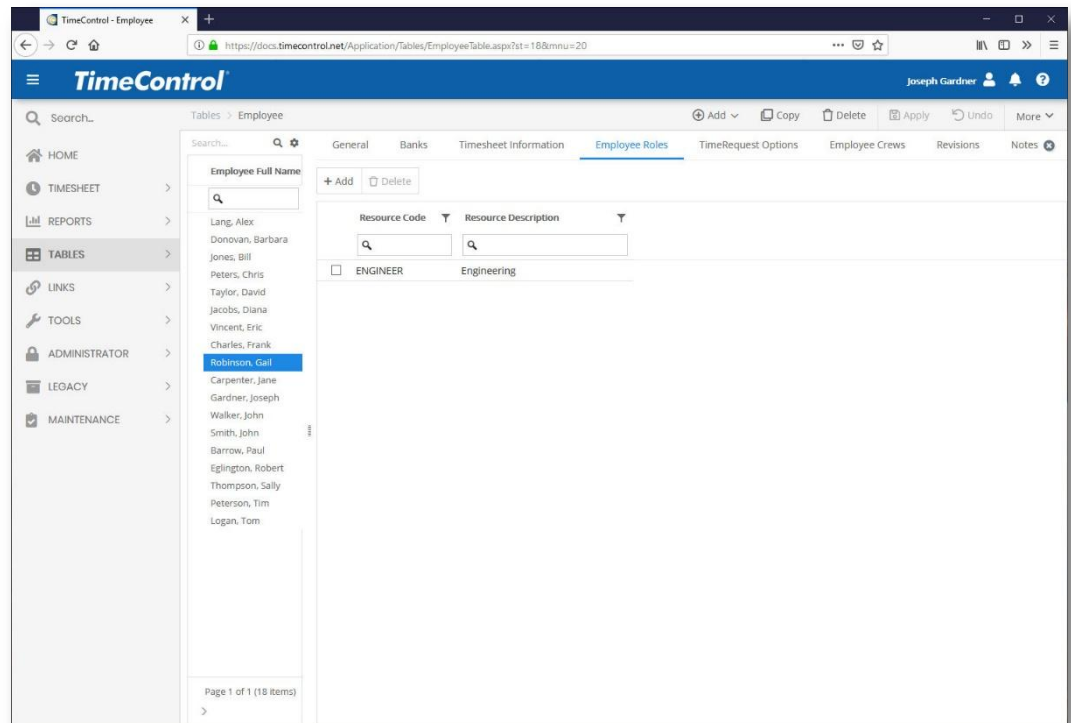
TimeRequest Options Tab

On the TimeRequest Options tab, you can set defaults for this employee when they create a TimeRequest.
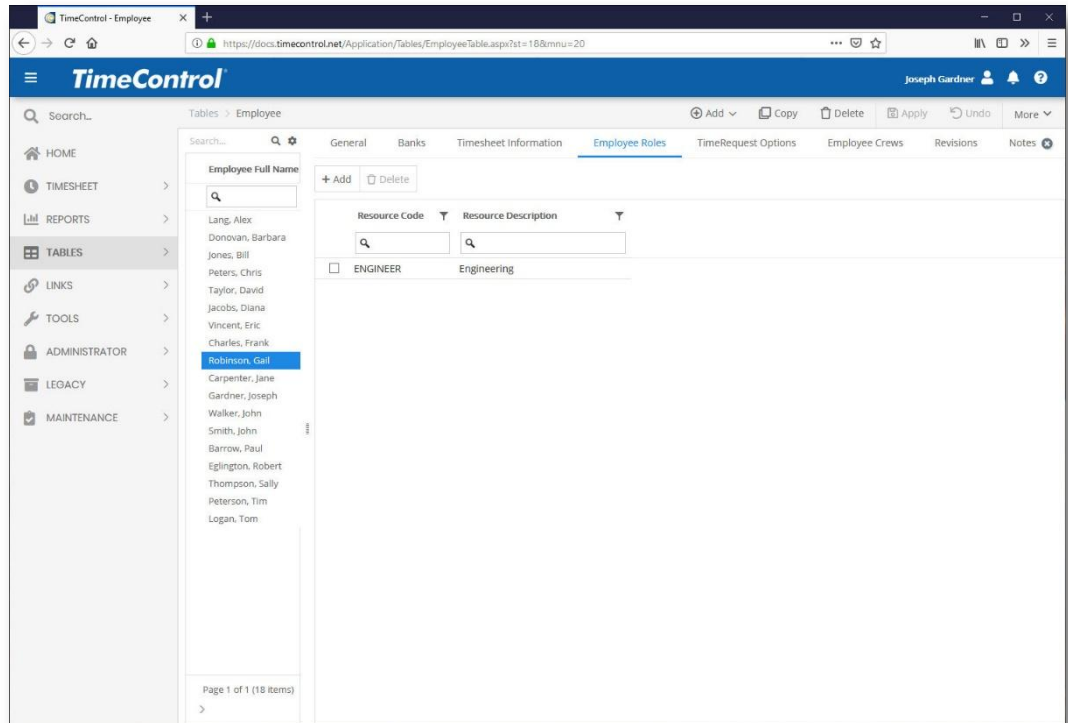
Enter the default charge code and default rate code for making a TimeRequest for this employee.

Employee Crews Tab (TimeControl Industrial only)

On the Employee Crews tab, you can define which crews this employee is a part of. Employees can be part of multiple crews.
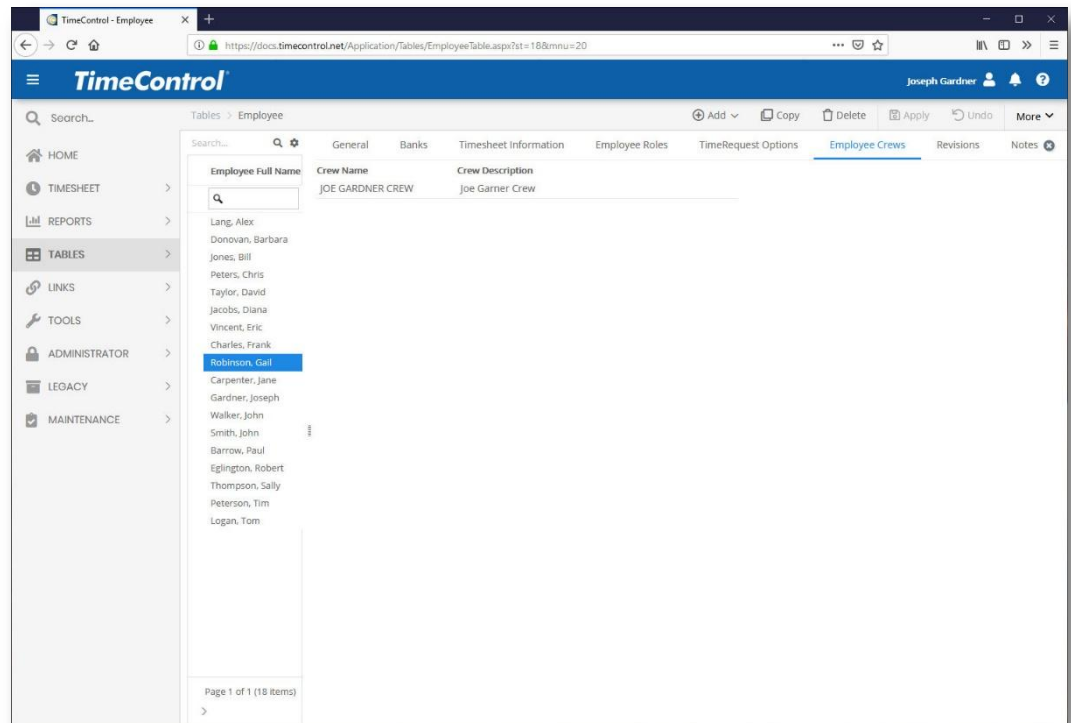
Employee Revisions Tab

On the Employee Revisions tab, you see each time that the this Employee's record has been changed. TimeControl keeps track of all Employee records as they appeared at the time a timesheet is posted in order to retain referential integrity. Typically a revision is only established if the employee record has been changed and it is time to post timesheets. However, in System Preferences, you can elect to have every change in this table made even if a timesheet has not referenced it yet. This is a read-only table.
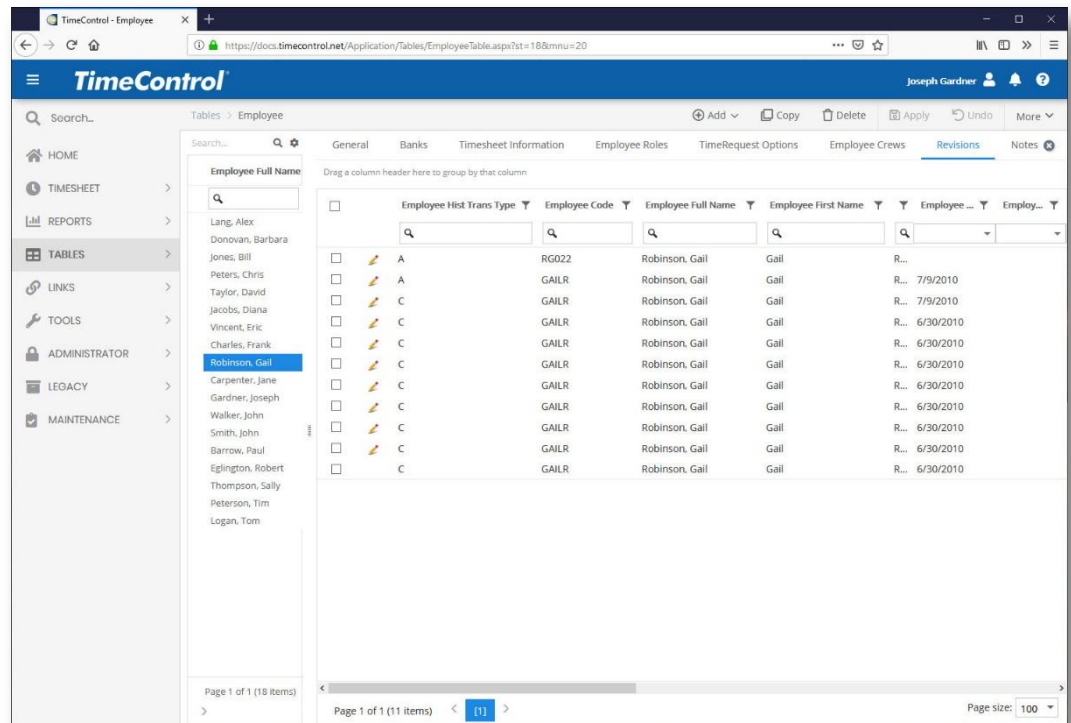
Enter the default charge code and default rate code for making a TimeRequest for this employee.

Single Sign on / Windows Authentication in TimeControl

Once enabled, windows authentication will add an "Automatic login" to TimeControl if the user has been logged in through IIS, and an appropriate account can be matched within TimeControl.

Windows Authentication usually sends us a value in the format DOMAIN\USER (once authenticated). If we see that the user is authenticated, and the value has been passed, we attempt to find a TimeControl user in the following order:

User Login Security Type = "Active Directory Services" and Active Directory User Login Name = DOMAIN\USER

User Login Security Type = "Active Directory Services" and Active Directory User Login Name = USER

User Login Security Type = "Active Directory Services" and User Code = USER

The order here is important as we must verify the domain first for clients that may have more than one domain. The fallback values are used in the case where a domain is not specified.

If the user is found, we will perform a login for the user, and redirect the user to the home page, now authenticated. Should the authentication fail, because the user could not be found, we will redirect back to the login screen with the option to type in a username and password (which will allow the user to login via TimeControl Security account).

Enabling Windows Authentication in TimeControl

In order to enable windows authentication, a few things must be completed.

1. Support must be enabled within TimeControl by editing the TimeControlWeb.ini file located in the web directory of the TimeControl installation. The "WINDOWS_AUTHENTICATION" setting must be added (or modified) and set to T:

```
[LOGIN]
REMOTE_USER=F
WINDOWS_AUTHENTICATION=T
REMOTE_USER_HEADER=
SHOW_BLOB=T
SHOW_RMUN=T
SHOW_KMLI=T
```

2. Windows Authentication must be enabled within IIS.
3. Anonymous Authentication must be turned off.

   As this is always different depending on system configuration, here are some links to get you started.

   Configure Windows Authentication (IIS 7)

   Windows Authentication

   Enable Anonymous Authentication (IIS 7)

   Anonymous Authentication

4. TimeControl users must have their authentication type set to "Active Directory Services", and their "Active Directory User Login Name" must be filled out to either DOMAIN\USERNAME, or USERNAME, or their USR_CODE must match their windows authentication username.

Windows Authentication and TimeControl Upgrades

Depending on how Windows Authentication is enabled, TimeControl upgrades may disable Windows Authentication this due to the way IIS saves its settings. Starting with IIS7, changing IIS settings can update the web.config file in the TimeControl directory. If an upgrade disables windows authentication, simply re-enable the authentication again as required.

User Table

The **User Table** determines who can access TimeControl. To view the User Table, select **Tables** | **User** from the main menu.

Anyone who is going to be a user should also have an employee record.

General Tab

The **General** tab has several sections:

User Information

The User Information section contains the following fields:

- **User Code:** Enter a unique 10-character alphanumeric code to identify this user. This code is used during the login process to ensure that the user has access. It is also used throughout TimeControl for auditing purposes.

- **User Description:** A user name must identify the user. Typically, this name should match the employee's name. If you wish to sort the User list (as opposed to the Employee list) later, you may want to enter the name in the following format: Last name, First name.

- **User Inactive:** This field dictates whether this user will count against the total number of licenses in this instance of TimeControl. Flagging a user as inactive will:
  1. disallow them from logging in
  2. Reduce the number of "active users" counted against the licenses
  3. Have any timesheet approvals sent to this user to be forwarded to the next definition in the approval release path.

- **Email Address:** This is the internet-compliant address that is structured as <emailname>@domain-name.domain, i.e., info@hms.ca.

- **User Profile:** The User Profile determines which menu items, reports, and fields are available to the user. Select a profile from the User Profiles defined. The Profile field is linked to the User Profile Table where you can edit existing or create new user profiles. See User Profiles on page 472 of this guide for more information.

- **User Employee:** Select the Employee that is related to this user. Every user must have a unique employee record assigned to it even if he will not be entering timesheets. The employee link can be selected by either the Employee Code or the Employee Name. As soon as it is selected, both the Employee Code and Name are automatically updated.

User Authentication Method

In the **User Authentication Method** section**:** select an authentication method from the Login Security type. Use TimeControl Security to use the standard internal username and password from TimeControl. Choose Active Directory if you have Active Directory deployed or NT

Authentication for NT Security and other LDAP support. You will be prompted for the LDAP or NT server name and, in the case of Active Directory, also optionally for the user name by which you are known in the Active Directory Catalog. Using these methods still means you have to log into TimeControl but it ensures that the password you use here is also the password that is currently stored in the LDAP, NT Security or Active Directory repository.

Windows Authentication

If you wish to activate Windows Authentication, the WINDOWS_AUTHENTICATION parameter in the TimeControlWeb.ini file must be set to T. Then, once Windows Authentication is enabled, Windows Authentication must be enabled within IIS, and Anonymous Authentication must be turned off. As this is always different depending on system configuration, please verify for your particular version of Windows Server how to configure this.

Then, within the User Table, TimeControl users must have their authentication type set to "Active Directory Services", and their "Active Directory User Login Name" must be filled out to either DOMAIN\USERNAME, or USERNAME, or their USR_CODE must match their windows authentication username.

Depending on how Windows Authentication is enabled, TimeControl upgrades may disable Windows Authentication this due to the way IIS saves it's settings. Changing IIS settings can update the web.config file in the TimeControl directory. If an upgrade disables windows authentication, simply re-enable the authentication again as required.

User Authentication		
	User Login Security Type	Active Directory Services
	Active Directory Services Path	
	Active Directory User Login Name	

User Authentication		
	User Login Security Type	NT Authentication
	Active Directory Domain	

SAML Authentication

If you are using SAML authentication, consult the Maintenance section later in this manual. In the User Table, select SAML v2.0 in User Login Security Type then the Subject ID / Username must correlate to the Subject ID /

identifier in the SAML response. When a SAML request is validated, TimeControl will locate the TimeControl user using this authentication.

- ▪ **Change Password:** Clicking on the change password button brings up the change password dialog. The strength of the password may be defined by the TimeControl Administrator in the INI file settings.

In Mobile Authentication, you can elect to use TimeControl's internal security and password or SAML compliant security.

User Options

In the **User Options** section, there are several fields:

- ▪ **Language:** Choose from a list of available languages including English, French, Portuguese, Dutch, and others. You need to restart TimeControl to view the interface in the selected language.

- ▪ **Dashboard:** Select a template that will be used to determine the format and content of the My TimeControl Home Page dashboard.

- ▪ **Reporting font:** Select the default font to use for this user in any of TimeControl's reports.

- ▪ **Restore Default Settings:** This button will restore any customized settings that the user has made and return the system to the defaults for this user. This includes column widths and selections in the timesheet and a range of other display functions that are personalized by the user. It may be important for an Administrator to exercise this function if, for example, a user switches from one computer to another with a very different screen resolution and can no longer see certain

fields. Users also have access to this function in the MyAccount options.

- **Manage Settings:** This button allows an Administrator to manage and copy the settings of the current user record to others and to set defeault settings. It is describe in its own section below.

- **Timesheet options:** This option allows you to change how the timesheet entry and the Debit/Credit entry will be displayed. You can elect here to sort the charge codes by Charge Descriptions instead of by Charge Code and to show the date instead of the day of week in the data entry portion of the timesheet.

In the User Defined fields area, you will find as many fields as you have defined. TimeControl typically starts with three fields displaying by default.

The user-defined fields, as in all the other tables, are there for your own use. You can assign any value to these, such as branch name, country code, etc. If you want to deactivate or hide these user-defined fields, see *Field-level Security* later in this guide.

Managing Active Users

In the User table, selecting More in the actions menu at the top right lets you select License Information. Selecting this displays the status of the number of Active Users, Active Employees and the total number of users licensed to use TimeControl.   Licenses for TimeControl and TimeControl Online are counted by counting the number of Active Users and the number of Active Employees. User records which have an associated Employee record are counted as one license. In TimeControl Industrial, Active Users and non-User Employees are licensed separately. this display will show the number of Active Users and the number of Crew who are non-user Employees. User licenses in TimeControl Industrial can also be used as Crew licenses.

Administrators should instantly be able to identify the number of users left to allocate to licenses available. If the number of active users and active employees exceeds the number of licenses purchased, <u>all</u> users of TimeControl will be restricted from accessing various elements of the system.

License Information ✕

Max Users Active Users Remaining Users
500   18   482

During login, if the total number of licenses has been exceeded, a message will appear to all users explaining that the number of licenses has been exceeded and that this condition must be corrected prior to proceeding.

The only functions that will be available when this condition occurs will be access to the User Table and the Update License Key option. To correct this condition, you can add licenses by contacting HMS Software at info@hms.ca or you can mark some users or employees as Inactive within the User or Employee Tables.

Manage Settings

This function allows an administrator to define which settings should be copied to existing User accounts and which settings to make as a default for any new records. This is unlike the Table Default functionality as it is not relevant to data inside the table record. This will allow settings such as the order of fields in the timesheet, the column widths and hiding certain fields to be a default setting or to be copied to existing users. Click Manage Settings to see the options.
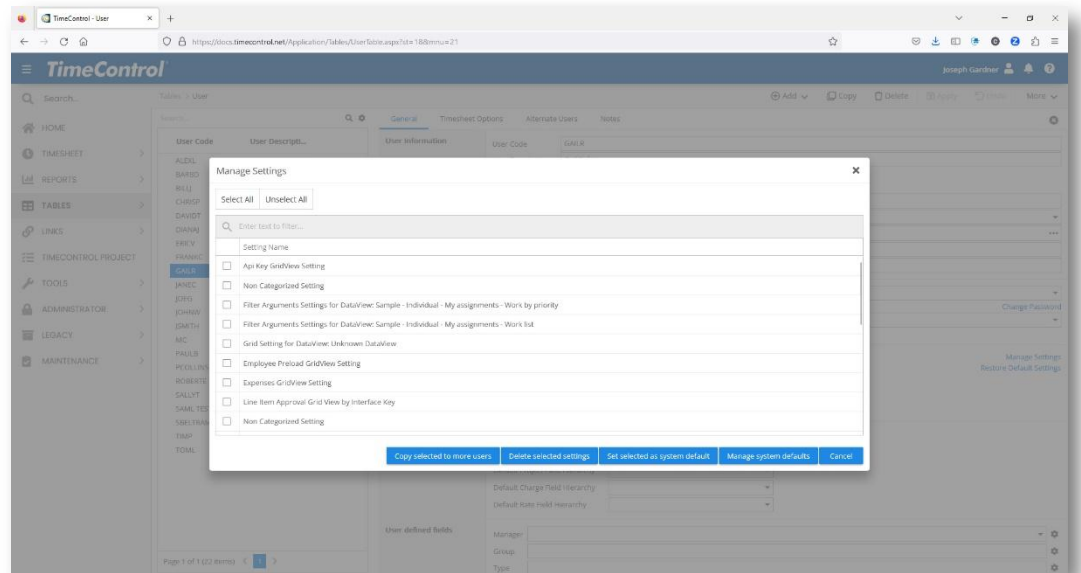
Select which User Settings you'd like to either make into a default or copy to another user. To copy to another click *Copy Selected to more users*.
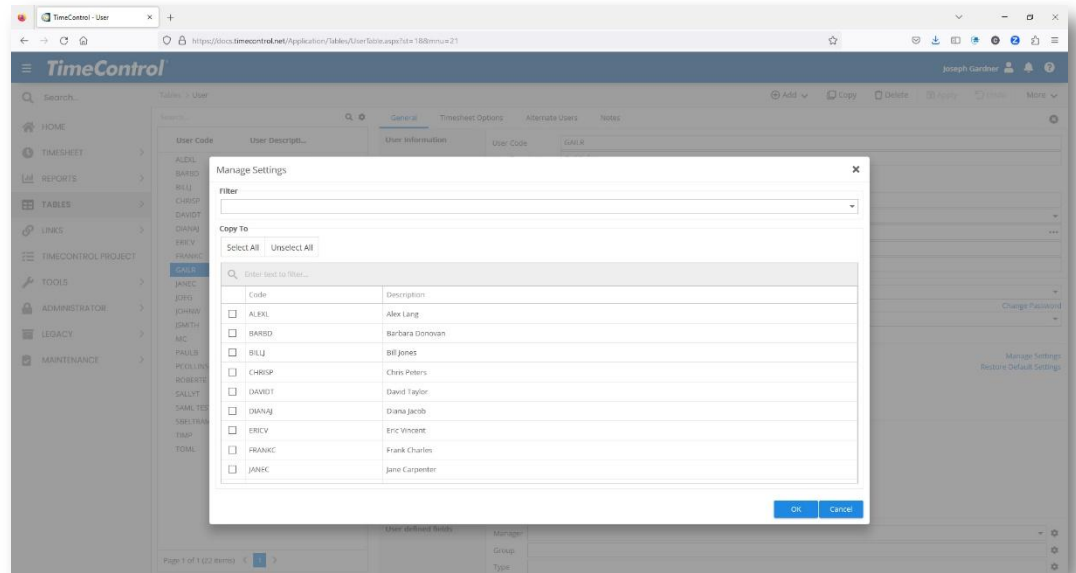
Select one or multiple users and then click Ok to copy these user options to the selected user(s).

To make the selected options a default, click *Set Selected as Default*. If you wish to edit or delete certain options from defaults click *Manage system defaults*.
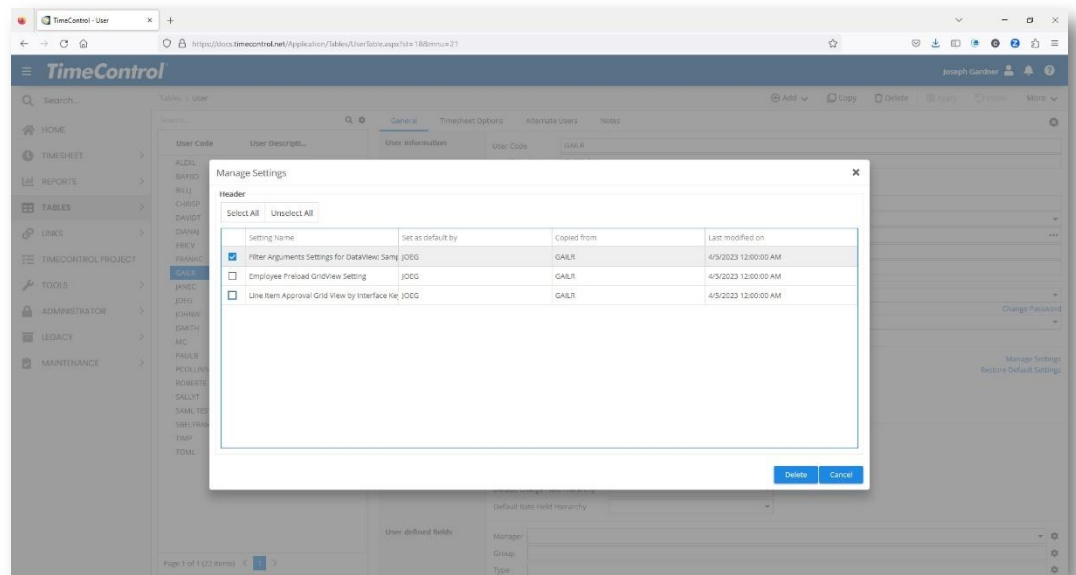
Remember, setting user defaults does not affect security. For example, copying the field selection by copying the Timesheet Detail Gridview settings does not mean the user cannot redisplay those fields in the timesheet options. Hiding fields as a security function should be done in User Profiles where a

field can be made invisible, read-only or value-hidden for anyone with this user profile.

Timesheet Options Tab (TimeControl Industrial only)
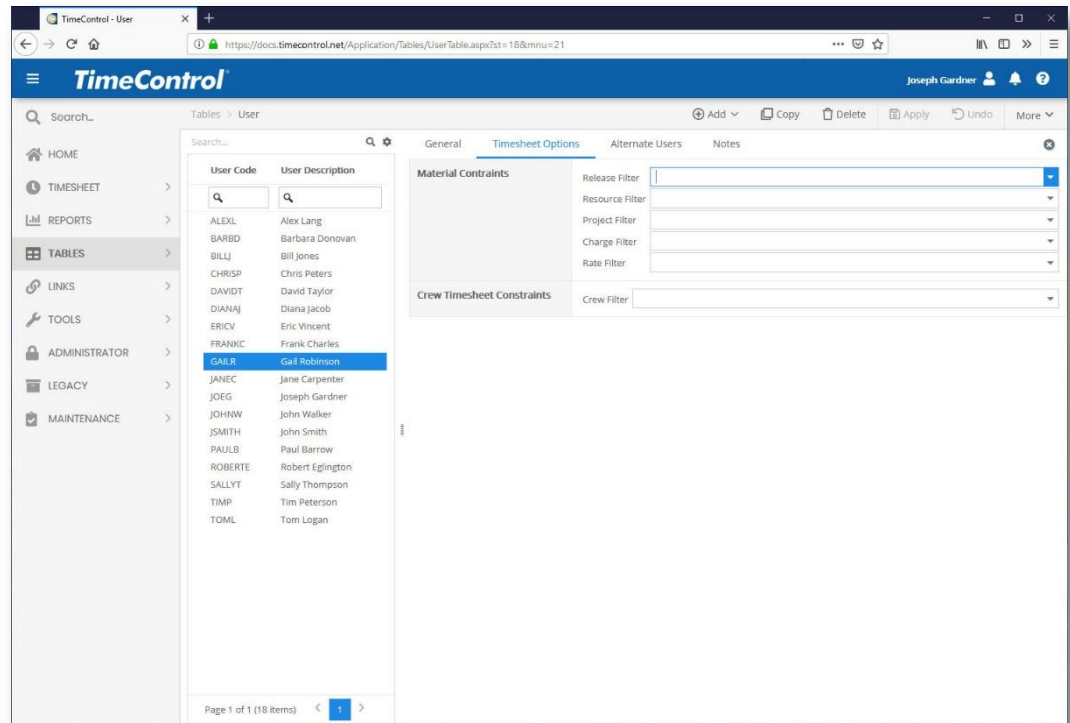
The Timesheet Options tab is for TimeControl Industrial systems only and allows non-labor constraints for material and equipment entry filters and for filters for Crew constraints.

Alternate Users Tab

In the Alternate Users Tab, select a user or multiple users who will be able to temporarily login as this user.
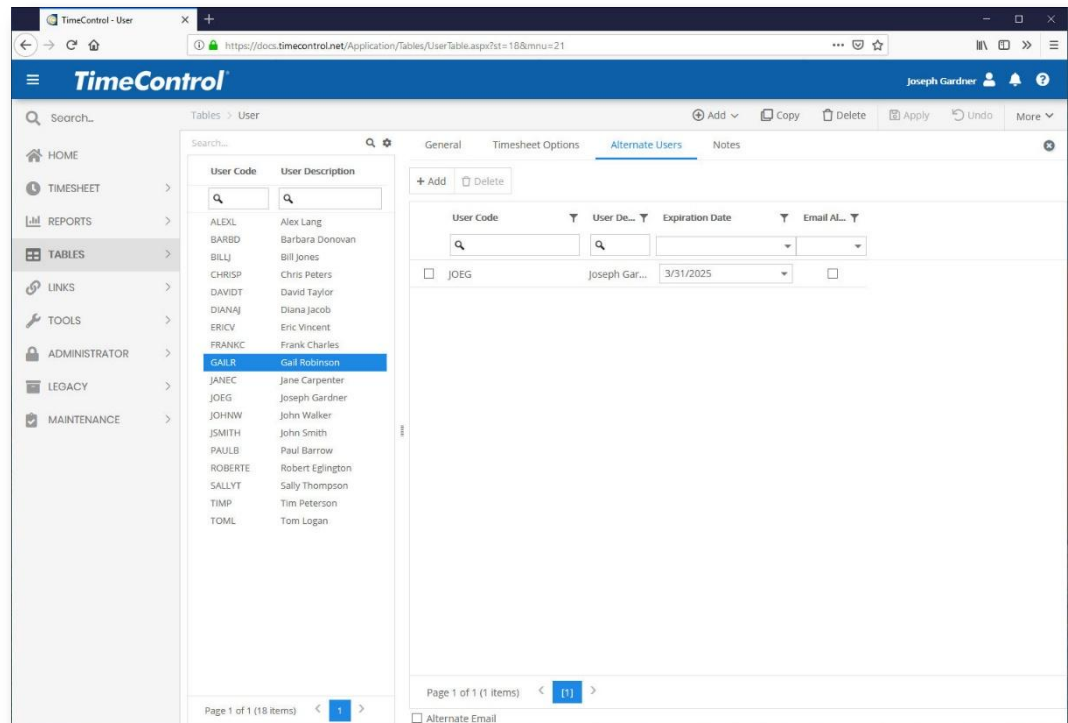
When a user who has Alternate User privileges logs into TimeControl, they are presented with an option on who they will to login as. If they choose to log in as an alternate, TimeControl will appear to be configured for that user including any rights and privileges that that user had defined. However, in the background, TimeControl will be keeping track of who actually made decisions such as approvals in the system.

You can elect to have TimeControl notification emails go to this alternate user by clicking on the Alternate Emails and then selecting which of the alternates should receive the notification.

When an Alternate User has been established, at log in time, the alternate will see a login screen with options to log in as themselves or to log in as an alternate.
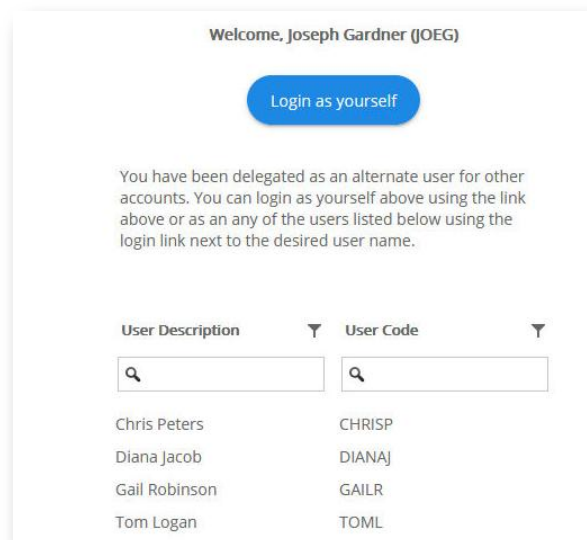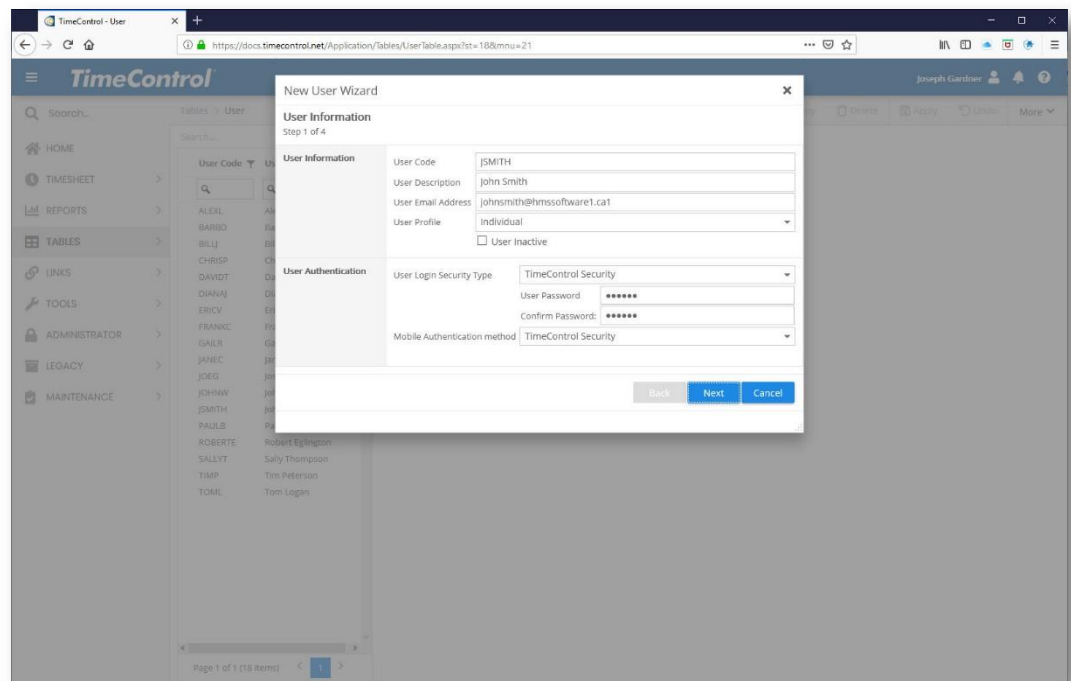
If a user has alternate privileges for other users, then once they have logged in, at the top of the screen they will see a pull-down menu to immediately switch to being that user.

Select the **Alternate User** and when the **Alternate User**'s rights will expire. You can also determine who should receive emails when alternates are enabled. Should it still be the original user, the alternate user or both?

Add New User Wizard

TimeControl includes a Wizard which makes creating a new user entry to the system easier. This wizard will guide you through entering the minimal information required for a new user then will populate the User, Employee and Resource tables appropriately so that user can immediately start using TimeControl. To start the New User Wizard, hover your mouse over the Add button in the Menu and then select *New User Wizard*.

The Wizard will now appear starting with User oriented data

Enter the **User Code** and **User Description**; select a **User Profile** and optionally enter information about the user's email. Select the Authentication type and enter a starting password.

Click **Next** to move to the next page.

Now enter the Language you'd like this User to start TimeControl in, their Dashboard Dashboard, any change in the font for reporting and any User Defined field entries for the User table

Click **Next** to move to the next step.

Now enter the Employee table information for this new user including their Code, First and Last names, the date you wish TimeControl to begin searching for missing timesheets for this employee and a date in the future that TimeControl should no longer search for missing timesheets. Enter the Resource Table entry for this user and information for any banked time such as vacation, sick leave or other types of leave or banks you've defined in your TimeControl setup.

Complete this screen with any entries for the User Defined fields in the Employee table for this employee and click Next to continue.

Now enter information about this employee's timesheet including any filters that apply to what projects and charges this employee may select from, any timesheet default entries (Note: A Rate default is required in order to have PreLoaded timesheet function) and then select the release path for this employee at the bottom before clicking Next.

The New User Wizard will now make the necessary entries in the User, Employee and Resource tables. The **User Password** will be, by default, blank. Once all entries have been successfully entered, the Wizard will confirm the new user and optionally allow additional entries.

WBS Table

Many project control systems use a Work Breakdown Structure (WBS) in order to organize project data. This hierarchical structure allows a project to

be divided into phases and each phase to be divided into sub -phases along work description lines.

TimeControl's WBS Table is linked to the Charge Table. This allows TimeControl's charge codes to be modeled in the same manner as those in the project control system for those users who must match TimeControl cost reports in the same summaries as those in the project control application.

If this Work Breakdown Structure is to be matched against the one in the project control system, the table can be populated automatically through the Links function. For more information on Links, please see the *Links* section on page 198.

Even if TimeControl is not linked to a project control system, the WBS Table is an ideal method for setting up hierarchical reporting of timesheet data.

To view the WBS Table, select **Tables** | **WBS**. The WBS Table appears similar to the following:

When the WBS Table is being populated manually, it should be done "from the top down". Enter the highest-level summary (often a "1"), and proceed to the next level downwards. Should this be a "child" code (i.e., a code which falls under the summary of another code), the "parent" code must be selected. Continue entering codes with levels delimited by periods (e.g. 1.01.02 is a level 3 code with the parent being 1.01). There is no limit to the

number of codes that can be entered and TimeControl will support up to 30 levels of summary.

General Tab

In the **WBS Information** area of the **General** tab you will see:

- **WBS Code:** Enter the code for this work element here. Use periods to separate different levels.

- **Description:** Enter a description of this work element.

- **Parent Code:** If this is a hierarchical code at anything but the top level of the structure, select the "parent" code that represents the summary, one level above this code from those already entered.

In the **User Defined fields** area, you will find as many fields as you have defined. TimeControl typically starts with three fields displaying by default.

The user-defined fields, as in all the other tables, are there for your own use. You can assign any value to these, such as branch name, country code, etc. If you want to deactivate or hide these user-defined fields, see *Field-level Security* later in this guide.

Project Table

The Project Table determines which projects can have time booked against them. The Project Table can be populated manually, or through import links, and must be populated before links to a project control system can be defined. Tabs on the Project Table separate information into **Project Details** and **Import/Export** information.
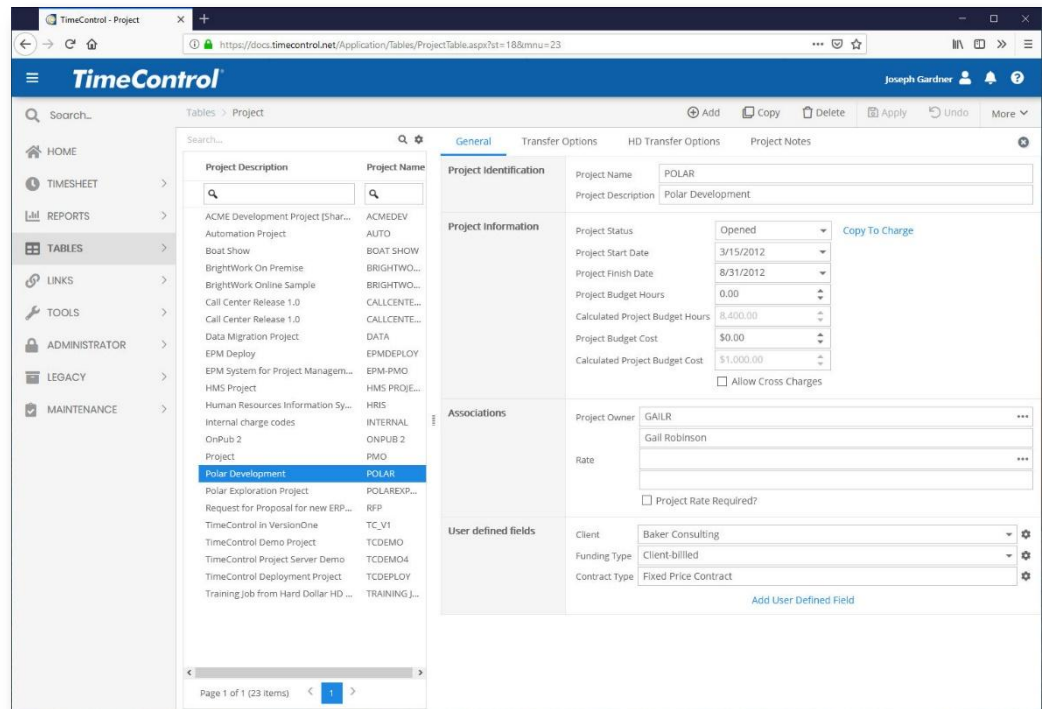
To view the Project Table, select **Tables | Project**. The Project Table appears similar to the following:

General Tab

On the **General** tab there are several sections:

In the Project Identification section there are two fields:

- **Project Name:** Enter the project name here. If this project is to be linked to a project control system, it is best to enter the same name as the short file name of the project (8 characters or less).

- **Project Description:** Enter a description for this project.

In the Project Information section we find the following fields:

- **Project Status:** Select from 'Unopened', 'Open', or 'Closed' to define a status for the project. TimeControl uses this information for creating filters and reports.

- **Start Date:** Enter a start date for this project here. TimeControl can use this field for filtering or validation rule-related purposes.

- **Finish Date:** Enter an end date for this project here. TimeControl can use this field for filtering or validation rule-related purposes.

- **Project Budget Hours:** Enter the total budget hours for this project.

- **Calculated Project Budget Hours:** This is calculated by rolling up the Charge Budget Hours from each Charge code whenever there is a change either through direct entry, import, pm import or API adjust in the Charge Table.

- **Project Budget Cost:** Enter the total value of the budget for this project.

- **Calculated Project Budget Cost:** This is calculated by rolling up the Charge Budget Cost from each Charge code whenever there is a change either through direct entry, import, pm import or API adjust in the Charge Table.

- **Allow cross charges:** Select this option if you want to allow charges inside this project to be available when project-independent charges are available.

- **Copy to Charges:** This button copies the status of the project to <u>all</u> charges associated with that project. This can be a huge time saver for Administrators who might otherwise need to change charges one by one.

In the **Project Associations** section we find two selections:

- **Project Owner**: Enter here the user who is responsible for this project. This field can be used in filters to show only the project information that a particular project manager is responsible for in reports and views.

- **Project Rate**: You can define a default rate code to be displayed on the timesheet whenever this project is entered. This is particularly useful when TimeControl is deployed as a Time and Billing system. Given TimeControl's extensive rate system, rates might be defined with different values for billable time on different projects or for different clients yet maintain a similar internal cost for that same rate code. In addition, the Project Rate code can be defined as being *required* whenever this project is selected. This feature is best used when coupled with a Validation Rule warning or Error for an erroneous Rate selection for a particular project. The rate selected must be a Global rate though using the Rate Hierarchy in TimeControl an identical rate code which is more specific to the employee will be selected within the timesheet.

In the **User Defined** fields section, you will find as many fields as you have defined. TimeControl typically starts with three fields displaying by default.

The user-defined fields, as in all the other tables, are there for your own use. You can assign any value to these, such as branch name, country code, etc. If you want to deactivate or hide these user-defined fields, see Field-level Security later in this guide.

Transfer Options Tab

On the **Transfer Options** tab a link to an external project control system can be defined. This is not a mandatory selection, as many projects do not warrant being tracked in an external application.

For those that do, the link to the external application must be defined here. TimeControl supports multiple external project control systems simultaneously.
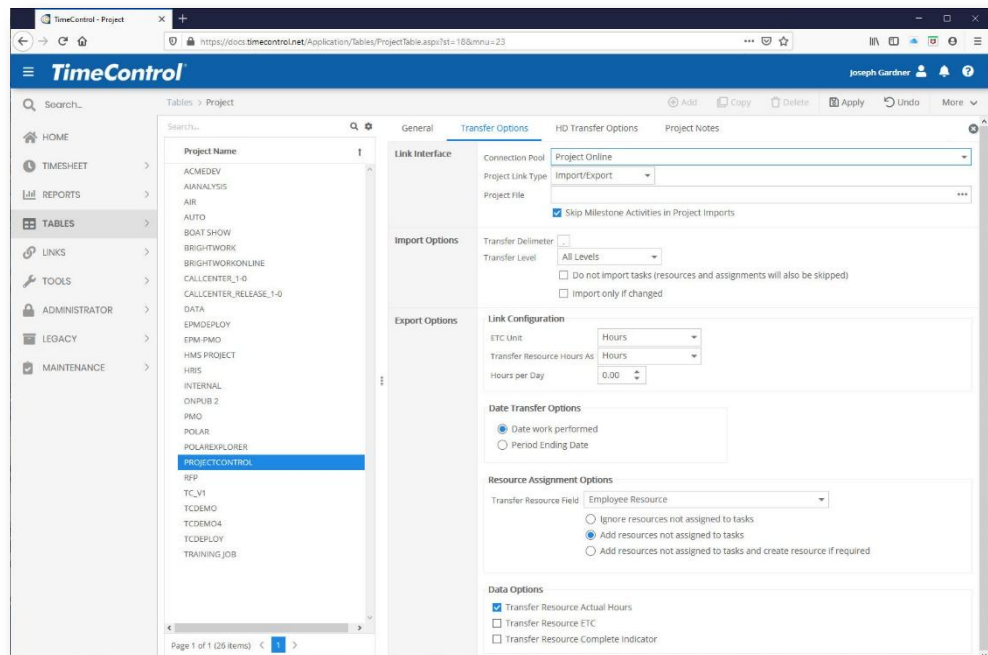
 To define a link to a project control system:

In the **Link Identification** section, select a **Connection Pool** and a **Project Link** type from the drop down list

- **Skip Milestones**: Select this option if you want TimeControl to ignore zero-duration or milestone type activities when importing them from the scheduling system.

- Click the ellipses next to the **Project File** field to select the project location. If the Link type is defined for a project file the user will select locally on their own computer, the entire file's path must be entered. Selecting an entire path of the project will be inhibited with certain browser. In this case, enter

the full path of the project file to which this charge will be linked. Some Project Link Type selections do not require this as they are "server-to-server" links.

In the Import Options section, you can define how TimeControl will interpret the levels of a project file:

- **Transfer Delimiter**: TimeControl can select different identifiers to create a hierarchical charge code list from the project's activities during import (a period is the default).

- **Transfer Level**: TimeControl can also be defined to only transfer in summary activities by selecting a level of the task hierarchy.

- **Import Project Steps**: refers to the steps below the task level definition when the project is from the Oracle-Primavera system. Check this box to bring the Step definition into TimeControl as well as the definition of who the **Key Resource** is. Only this employee will be able to update the steps in TimeControl.

- **Do not import tasks**: refers to a situation where you have enabled automatic scheduled imports with Microsoft Project Online or Primavera EPPM but when you automatically create new projects which are to be transferred, you wish to create the project record only, not transfer all the charges.

- **Import only if changed**: refers to a situation where you have enabled automatic scheduled imports with Microsoft Project Online or Primavera EPPM and where you wish to do an automatic update of that project and charges buy only when there has been a change in the project system. In this case, TimeControl will check the timestamp of the last time the import transfer was performed and will transfer only those charges which have changed in the project management system since that time.

Under **Export Options**, TimeControl allows you to define how data will be sent back to the project management system by default. This is important if you will send TimeControl information back to the project system for numerous projects at one time as the definitions might be different for each project.

- **Date Transfer Options**: select either **Date work performed**, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is less detailed, but might be required on a multi-year project where the number of reporting periods in the project system is enormous.

- **Resource Assignment Options:** This option allows any charges occurring on tasks that do not have an element to be rejected.
- **Add Resource Options:** If based on the previous selection, TimeControl must add a new assignment when there is none found for the actual hours, select whether the assignment option should be zero (where possible) or equal to the actuals.

> **Note**: Some project management systems insist that the assignment value not be zero when actuals are entered.

- **Transfer using rate:** Select the rate value to be used to generate the actual costs. In TimeControl, there are multiple rate values for each rate code. This allows you to use one rate for project management transfers and another to track pricing or internal costs.

In the Project Manager Validation (PMV) Options select from the following option regarding timesheet data which has been identified by the project manager as approved, rejected or is still unapproved:

- **All non-transferred data:** Transfer all outstanding timesheet data to the project management system regardless of whether it has been identified as approved or not.
- **Only approved non-transferred data:** Transfer <u>only</u> the timesheet data which was marked as Approved in the Project Manager Validation module and which has never been transferred to the project management system.

In the Data Options section select from the following information that should be transferred back to the project management system for this project:

- **Transfer Actual Resource Hours:** This determines that the hours from the timesheets that are defined against a resource code will be transferred back to the project system.
- **Transfer Resource Actual Cost:** This determines if the associated cost based on the rate value selection will also be transferred back to the relevant activity in the project system.
- **Transfer Expenses:** This determines if the non-labor expenses from the TimeControl timesheet expenses section will be transferred back to the relevant activity.
- **Transfer Resource ETC:** This determines in the resource-based Estimate to Complete that is defined on the timesheet is transferred back to the Activity's assignment.

> Note: If multiple users enter a timesheet-line item ETC or even one user enters multiple entries for the ETC against a single activity, TimeControl has no way of knowing which of these is accurate. If it finds multiple values for a task, TimeControl will therefore take the _last_ entry it finds to update the project management assignment.

- **Transfer Activity ETC:** This determines if the Activity ETC (editable on the Activity Table and in the Activity Tab of the timesheet entry) will be transferred back to the activity.

- **Transfer Project Steps:** If the project is from Primavera and Steps were imported, this will determine if the updated steps from the Key Resource should be updated in Primavera. Just like in Primavera, many users might see the steps, but only the Key Resource as defined within Primavera can update them.

- **Transfer to Financial Periods:** When linking to Primavera, this option allows data to be transferred not only to the **Actual Work-to-date** field but also to the financial period in Primavera. In this case, these Financial periods must be pre-defined within Primavera

HardDollar Transfer Options

TimeControl includes a distinct link to the Innate Hard Dollar estimating and cost control system. This enables TimeControl to link simultaneously with a project in a project scheduling system such as Primavera or Microsoft Project and to Hard Dollar. When linking to a Hard Dollar Project in the Project Table, select a Hard Dollar Interface Definition in the HD Transfer Options tab. You will have several choices to link specific elements of TimeControl to the matching elements in HD.
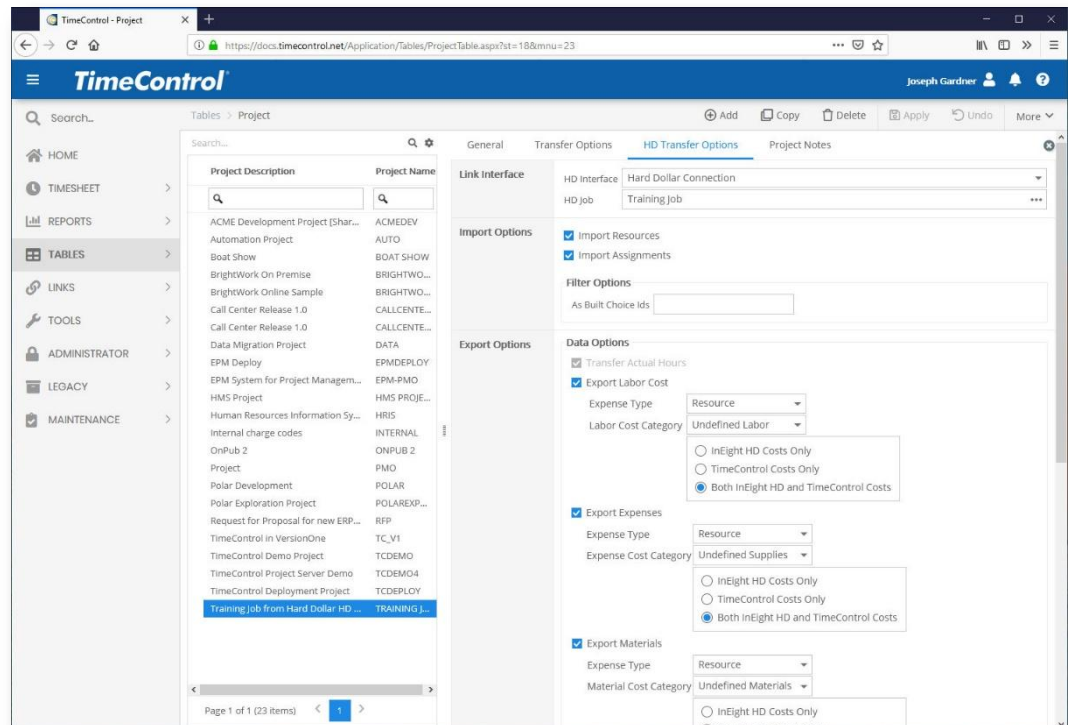
Charge Table

The **Charge Table** is an essential table in TimeControl. Any work that will be charged against in the timesheet is defined in this table. If an item is not in the Charge Table, it cannot be used to charge time against in a timesheet. The Charge Table may be populated automatically by linking it to a project control application. In this case, the activities or work packages become charge codes. For more information on linking, see the *Links* section of this guide.

To view the Charge Table, select **Tables | Charge**. The Charge Table appears similar to the following:
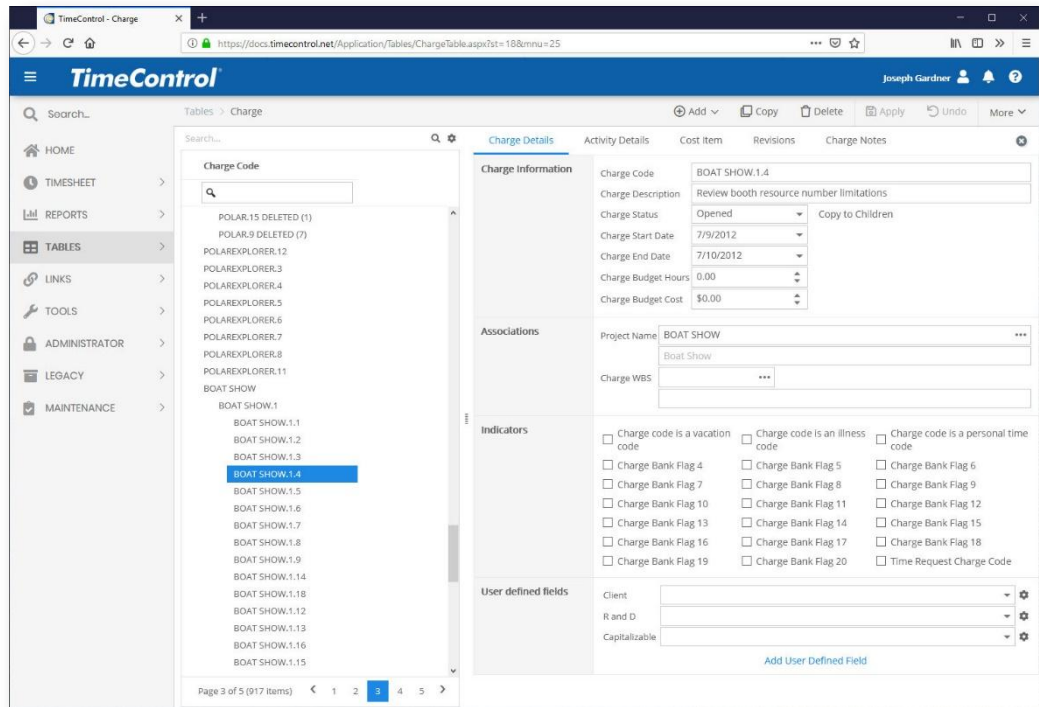
Charges are usually associated with a project, but do not need to be. A Charge Code can be created which can be applied to any project. This is done in a situation where a few activities are repeated in multiple projects.

General Tab

The **General** tab contains basic information about the charge code, such as the name, description, and links with other tables. The charges can be filtered for each employee by applying a charge filter in the Employee Table. This may be useful in a large-scale implementation that uses a high volume of charge codes. Any of the fields in this table can be used to filter the charges. For more information on creating charge filters, see *Filters* section of this guide.

In the **General Tab** we find several sections:

The **Charge Information** section contains these fields:

- **Charge Code:** Enter the charge code here. Sixty characters is the maximum length allowed.

- **Charge Description:** Enter a description for this charge code. It should be easily identified by end users.

- **Charge Status:** Select from 'Unopened', 'Open', or 'Closed'. A common Employee Table charge filter is to only display "Open"

chargers.

- **Copy to Children:** This button allows an Administrator to copy the status of the charges from one high level of a hierarchical charge structure to every record below it. This can be a huge time saver when an Administrator wishes to close a project and all the charges associated to it or a phase of a project and all the charges associated to it and doesn't want to change records one at a time.

- **Start Date:** Enter a start date for this task here. TimeControl can use this field for filters and validation rules.

- **End Date:** Enter an end date for this task here. TimeControl can use this field for filters and validation rules.

- **Charge Budgeted Hours:** Enter the number of hours budgeted for this charge code. This field can optionally be imported from PM Imports or Links. These hours will be rolled up as a sum into parent codes and then into the Project Budgeted Hours.

- **Charge Budgeted Cost:** Enter the cost budgeted for this charge code. This field can optionally be imported from PM Imports or Links. This amount will be rolled up into parent codes and then into the Project Budgeted Cost.

In the **Charge Associations** section we find the following fields:

- **Charge Project:** Select an optional Project to link here by clicking the down-arrow at the right of the field. If this field is blank, the item will appear in the charge code listing regardless of what project has been selected, or if no project has been selected.

- **Charge WBS:** Select an optional WBS entry either here by clicking the down-arrow at the right of the field. The WBS Code is an optional field that allows TimeControl reports to be summarized along Work Breakdown Structure levels.

The other information tab contains additional information about each charge item including any user defined fields that have been created for this table.

In the Charge Flags section we find the following options which can be used to further identify and categorize this charge code:

- **Bank flag 1 – 9.** These flags are used in conjunction with the Employee Table's banked values to charge against banked values. By default, TimeControl identifies the first three of these flags as Vacation, Sick Leave and Personal time. Check these flags if this charge code is to be associated to the relevant bank.

- **This is a TimeRequest charge**: This flag determines if this charge should appears as a possible selection in the TimeControl TimeRequest function. Typically vacation charges are flagged in this way but other charges can be associated to the TimeRequest function by flagging this field.

In the **User Defined** fields section, you will find as many fields as you have defined. TimeControl typically starts with three fields displaying by default.

The user-defined fields, as in all the other tables, are there for your own use. You can assign any value to these, such as branch name, country code, etc. If you want to deactivate or hide these user-defined fields, see Field-level Security later in this guide.

Activity Details Tab

The **Activity Details** Tab shows information that is automatically populated based on the information contained in the project control system. This information is displayed in read-only mode. Two fields may be updated here:

- **ETC**: with the exception of the activity Estimate to Complete (ETC) field. The ETC in the Activity tab differs from the ETC entered in each timesheet line. The ETC in the Activity tab refers to the duration ETC applied at the activity level. The ETC on each timesheet line refers to the resource ETC for that resource on that task.

- **Sum to Task**: Selecting a task here allows numerous charge codes in the timesheet to be summarized to a single task in the project system.
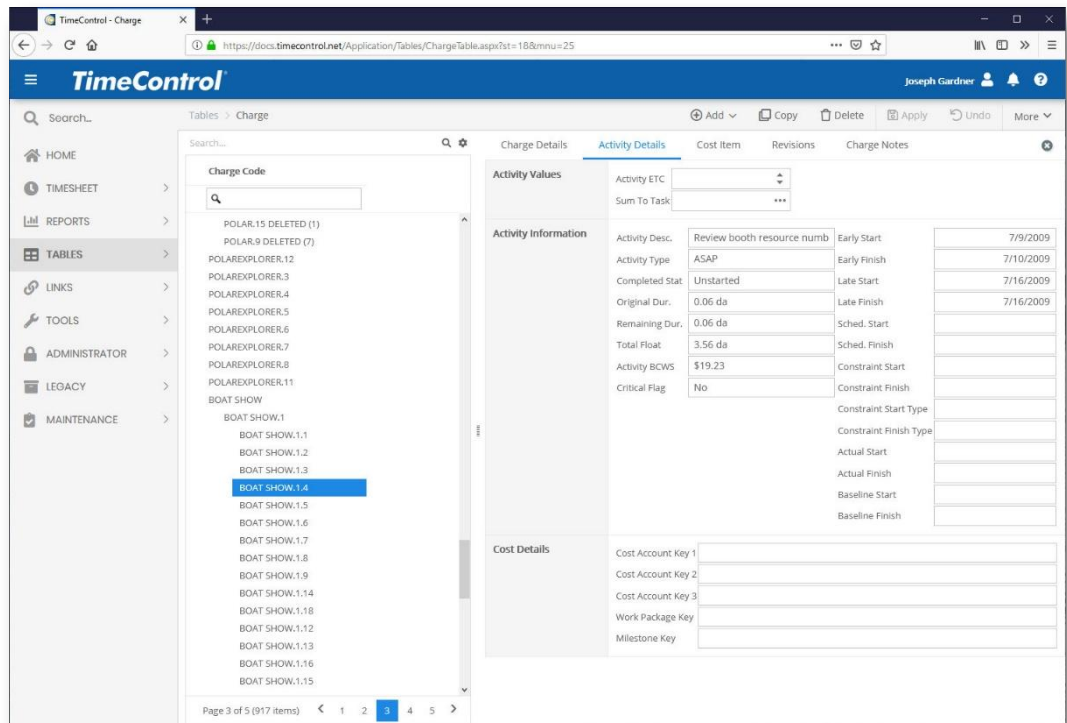
Cost Details Tab

The **Cost Details** tab shows how this charge item links to Cost Control systems such as HD PCM, MPM or Cobra.
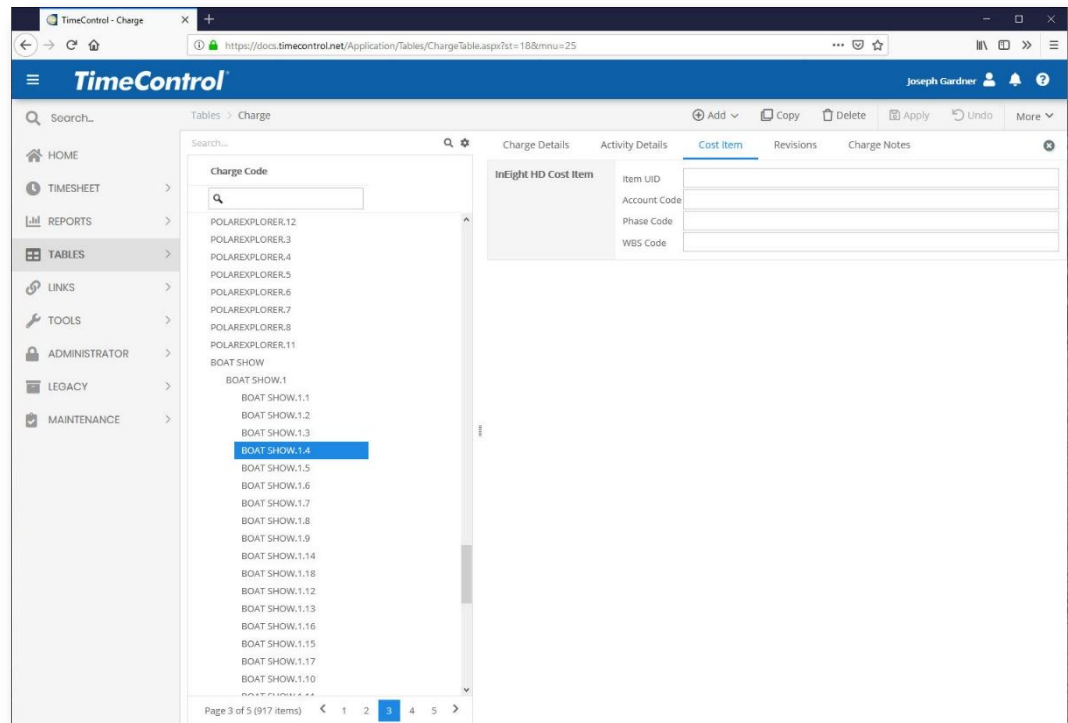
In Earned Value systems, the work is often identified as being within a work package and each work package is grouped into a Cost Account. The Cost Account key can be a simple list or a matrix construct of 2 or 3 codes. The classic Earned Value Cost Account definition would include both a WBS and OBS code. In TimeControl, we support up to 3 different codes to make up the Cost Account.

The definition will have been pre-defined in the Earned Value system and may also have been stored in a linked Project Scheduling system. Enter the code value of the Cost Account in Cost Account key 1, 2 and 3 as required.

In addition, enter the value of the Work Package

In Earned Value systems a task which has a duration greater than zero is sometimes be used as a milestone. If this is the case, the Milestone key can also be added here.

The most common situation is to have these fields populated automatically by TimeControl when importing codes from the project scheduling or cost control application.

Revisions Tab

The **Revisions** Tab shows the history of changes in this table. The Charge and Employee tables each include referential integrity to be able to link to the

exact definition of the table's record at the time a timesheet was posted. Information on the revision tab is read-only.

Restore Charge from History

In the case where a charge might have been deleted inadvertently, it can be re-attached to the audit history of that record by selecting **Restore Charge from History** by hovering over the **Add** function in the Screen Actions Menu.
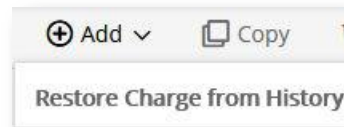
Defining the Charge Code

Defining how your Charge code should be stored and displayed is a subject worth taking a few minutes on before starting with TimeControl.

The Charge Code's structure can be made hierarchical by defining a delimited structure in the System Preferences area of the Administrator tab. Alternately, the Charge codes can be displayed within a cascading selection of user-defined fields. For many organization, using a period (.) to define each level of the Charge Code structure is a common practice. This follows the long standing tradition of Work Breakdown Structures being defined in this manner. However, there are alternatives. In the Administrator System Preferences screen there is a section to define Charge Code Hierarchies.

Alternately, you could use user defined fields to display a charge code hierarchy.

In the Charge Hierarchy type, select Field Hierarchy.

Now there is an option to Edit Field Hierarchies. Clicking on this option will show possible field hierarchies that have already be defined and allow you to add more. TimeControl can support multiple hierarchies simultaneously.

For example, let's say it was easiest to select charges when they would be defined first by whether they were billable, then by their location and their priority of high, medium or low. You could add just such a list by using your user-defined fields.

Select Billable, then Location then Priority and the delimiter is now set.

If you set this as the default, then in the Charge Table, you will see this as the new hierarchical breakdown of the charges records.

This carries through also to the timesheet where you can make a Charge selection when entering or editing a line.

At the top right of the Select Charge dialog, you can see that the user can select any of the defined Field Hierarchies to regroup and resort the list on the fly. This can be particularly key if there is a high volume of possible charge codes to select from.

Labor Rate Table

The **Rate Table** identifies costs associated with each line item of a timesheet. From the timesheet itself, individual users are able to see only the description of the rate code, not the value.

To view the Rate Table, select **Tables | labor Rate**. The Rate Table appears similar to the following:

Rate codes are organized into a three-tier hierarchy. **Global** rates are at the top level. These rate codes are viewable by all employees. At the next level are **Resource** rates. These rate codes are viewable in timesheets by the employees tied to the Resource Code identified. At the lowest level are **Employee** rates. These are specific to a particular Employee Code.

If there are duplicate Rate Codes, the code that is most specific supersedes the more generic. Therefore, a Global rate code of 'S' would be supplanted by a rate code of 'S' which is specific to a particular resource code, which would be supplanted by a rate code of 'S' which is specific to the employee.

This hierarchical code structure allows enormous flexibility of rates for various types of users, yet leaves the system appearing quite simple to the end user. For example, a rate code called 'S - Standard Rates' might be

mandated for all users, yet, internally, the 'S' rate might be completely different for each employee.

There is no limit to the number of rates that can be defined per employee.

> ✓ **Tip** Up to nine cost values can be associated with each rate code. When creating reports, one or both rates can be selected. When exporting information for project management you can use Rate values 1 -9. Rate 1 might be a payroll rate for actuals, while Rate 2 may be a charge-out rate for billing purposes.

General Tab

The **Labor Rate** table has several sections under the **General** tab:

The Rate information section contains the following fields:

- **Rate Code:** Enter a rate code of at most; two characters.

- **Description:** Enter a description for the rate code. This description should be easily identified by end users.

- **Rate Type:** Select one of three possible values: **Global**, **Resource**, or **Employee**.

The **Rate Assignments** section contains the following fields:

- **Rate Employee:** If the rate type is 'Employee', then an employee must be selected from the records already in the system.

- **Rate Resource:** If this is a Resource rate type, a resource must be selected from the Resource codes already in the system.

The Rate Values area contains 9 fields used for defining multiple values for each code. These values are often relabeled such as **Internal Cost** or **Billing price** or **Average Project Price**:

- **Rate 1 - 9:** Enter a value in currency that represents this value for this rate.

In the **User Defined** fields section, you will find as many fields as you have defined. TimeControl typically starts with three fields displaying by default.

The user-defined fields, as in all the other tables, are there for your own use. You can assign any value to these, such as branch name, country code, etc. If you want to deactivate or hide these user-defined fields, see Field-level Security later in this guide.

Sorting and organizing Rate Codes

Some organizations generate a high volume of Rate codes which can be organized to display hierarchically.

➢ To define the hierarchical sort order:

1. Select **Administrator | System Preferences** from the main menu. This displays the System Preferences dialog box.

2. In the **Rate Tree** field, list a number of fields by their actual field name separated by commas, for example RAT_FLD1, RAT_FLD2. If this field is left blank, rate codes are displayed in their default sort order.

3. Click **Apply**. The chosen sort order applies to both the Rate table display and the timesheet drop-down list of rates.

Hierarchy Table

The Hierarchy Table allows information in tables such as the Employee Table to be organized along multiple hierarchies at once. This can be useful when doing reporting or filtering or just to see information grouped by the appropriate hierarchy. You might for example, want to group employees by country, then state, then county, then city and filter all employees for only those in one state and all the counties below them. Or, you might want to group charge codes within the Chart of Accounts and then report for certain hierarchies of accounts from the accounting system.

To create a new Hierarchy, first go to the Hierarchy Table.
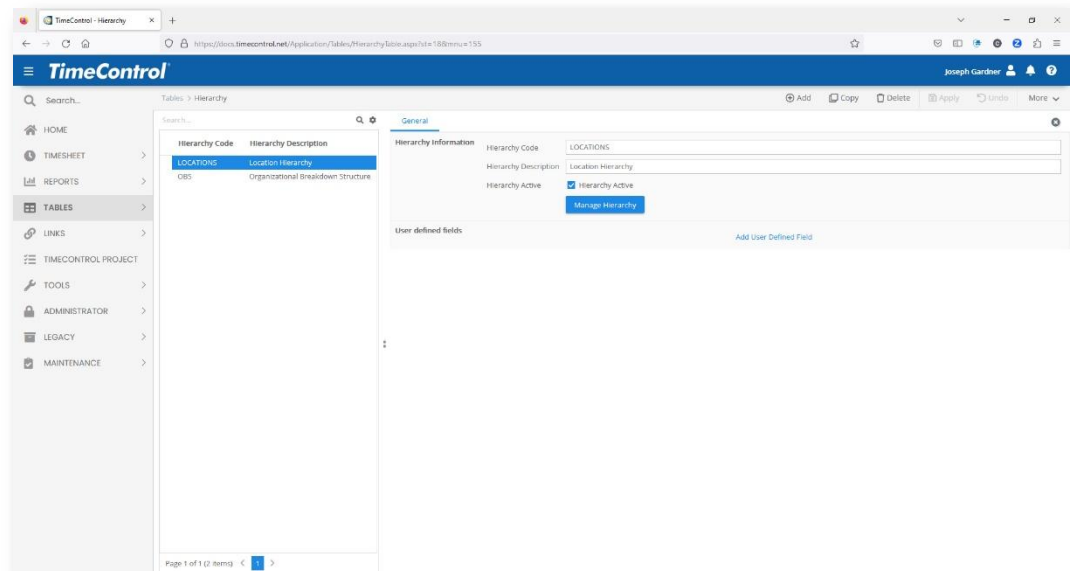
You'll see whatever hierarchies you've already created.

Click Add to create a new Hierarchy. Hint: You might want to keep the hierarchy inactive until it's ready for public consumption.

Now enter a short name and description.
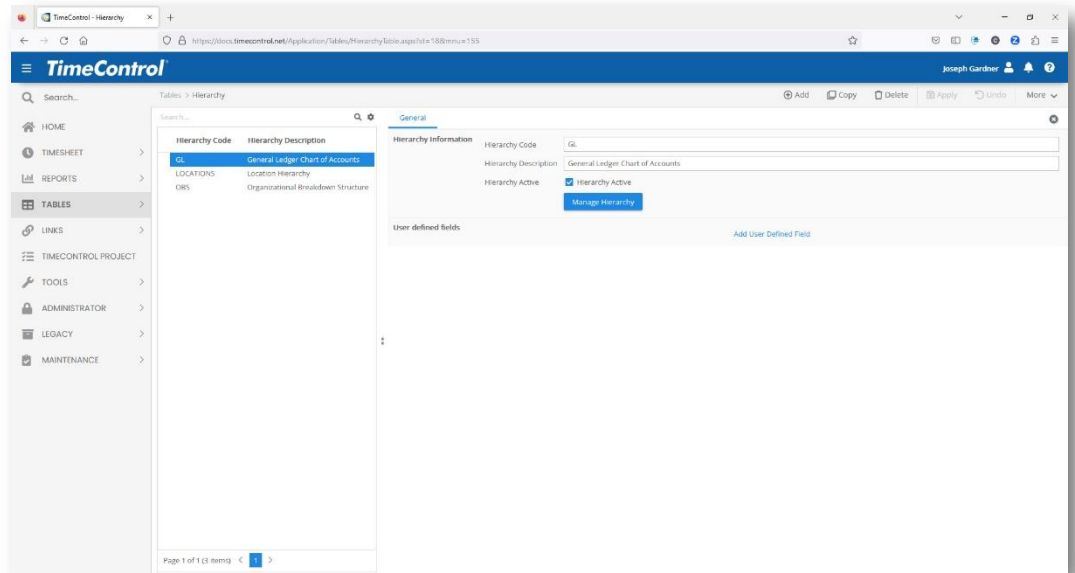
Now click Manage Hierarchy.

You can rename the Root entry then Click New next to the Root entry to add values below it.
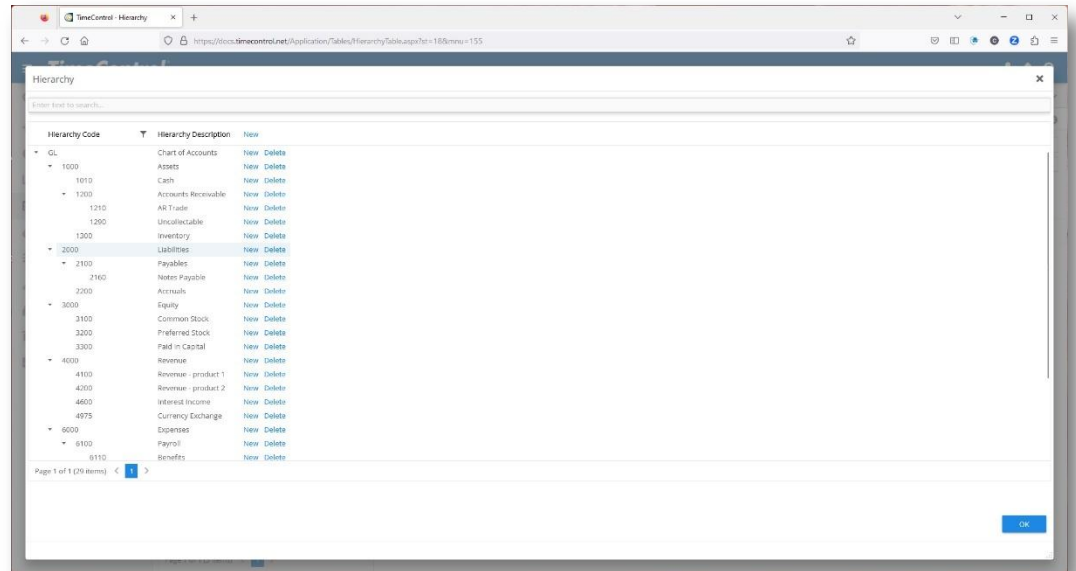
With each new entry, you can click New next to it to create entries underneath it. In this example we've made a simple Chart of Accounts that might be attached to the Charge Code table to help with using TimeControl data for job costing in the Accounting Department.

Once you've created one or more hierarchies, you can attach them to any table in the User Defined Field function. Add a new field and as the field type, select Hierarchy. Then select which hierarchy you want to link here.
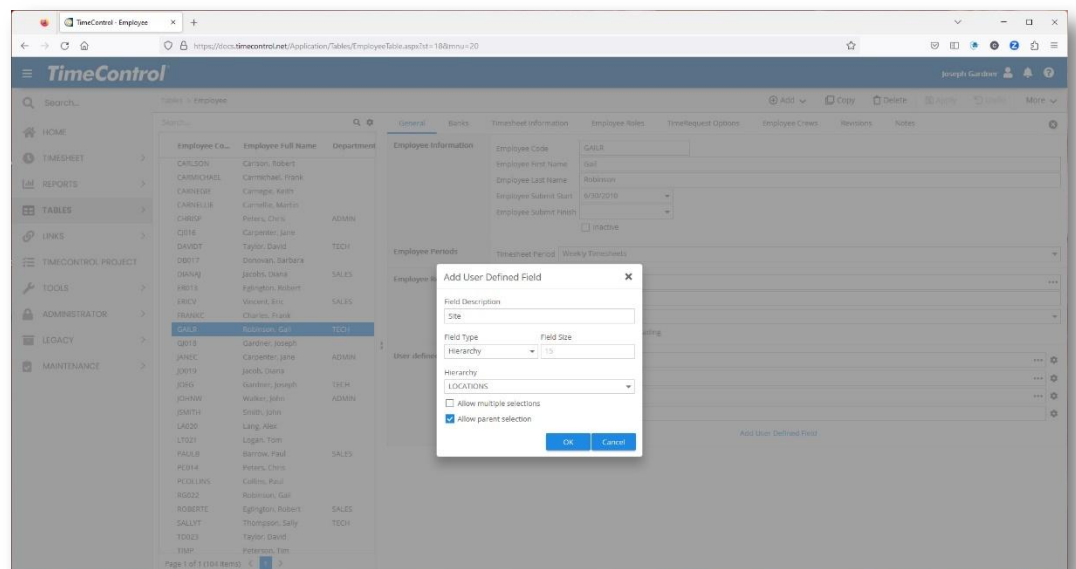
Now you can enter hierarchy selections to any record.
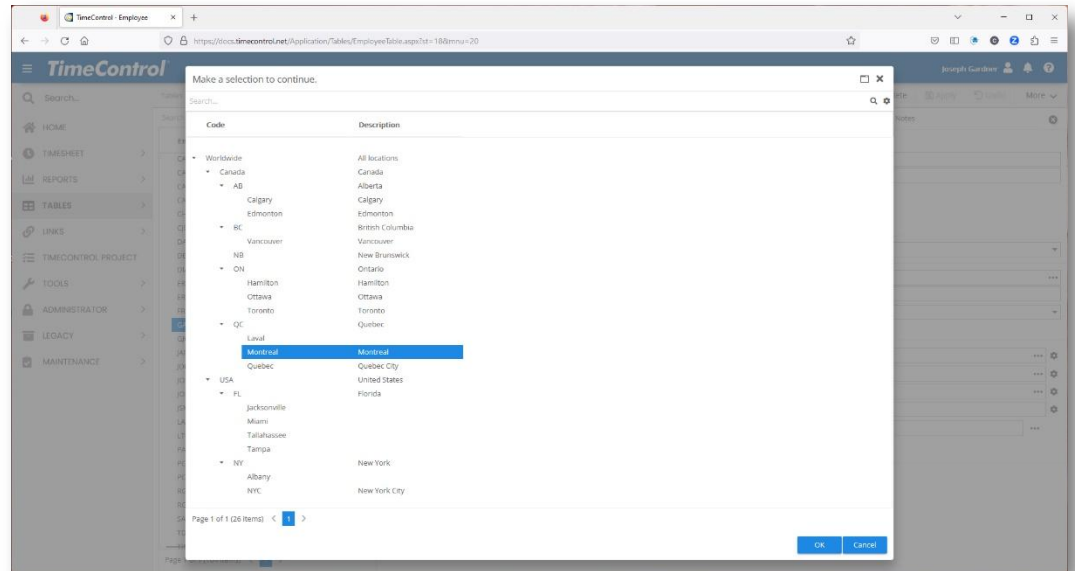
In System Preferences, you can elect to organize the Tree View of the table by the hierarchy and select a default.

If you have more than one hierarchy attached to a table, then a new option will appear on the top-right of the screen when you select More. You will be able to Select Hierarchy and then pick which hierarchy you'd like to sort this table by.
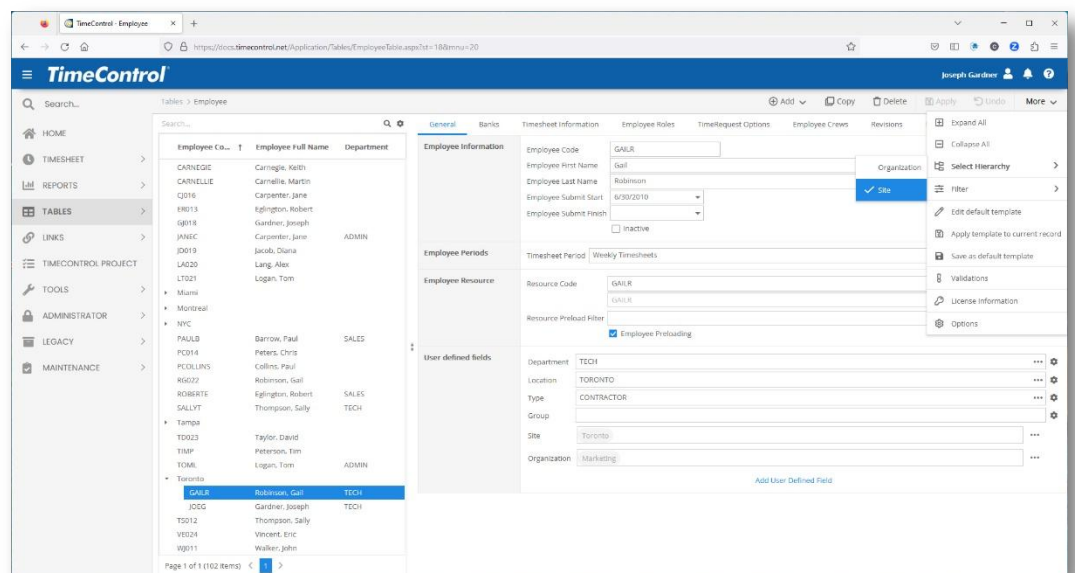
This structure can now be used in Filters, Validation Rules, Reports, Exports and the application's display to group and select data by these groupings.

Assignments Table

The **Assignments Table** displays Charge Codes which are associated to Resource Codes. To view the Assignments Table select Tables | Assignments.

A similar view is available from within the Resource Table in the Preload Tab.

This data is often imported automatically from a project scheduling system but data can be added here manually if there is no project scheduling system associated for a particular project or particular resources.

> **Note**: Assignments entered manually in TimeControl are not transferred back to a project scheduling system. It is important to adopt a single-source-of-entry philosophy when dealing with such enterprise systems. If you are using a project management system with resource assignments, then enter the data there and have TimeControl automatically import it.

Charge View

The Charge View shows a list of all charges which already have Assignments associated to them. The view displays a number of fields in a grid.

The list can be grouped or sorted by any column. Grouping is controlled in Actions/Options.

Clicking the "+" sign to the left of a Grouped line, expands the view to show information at the next level.

Click on View to see the assignments for the selected charge.
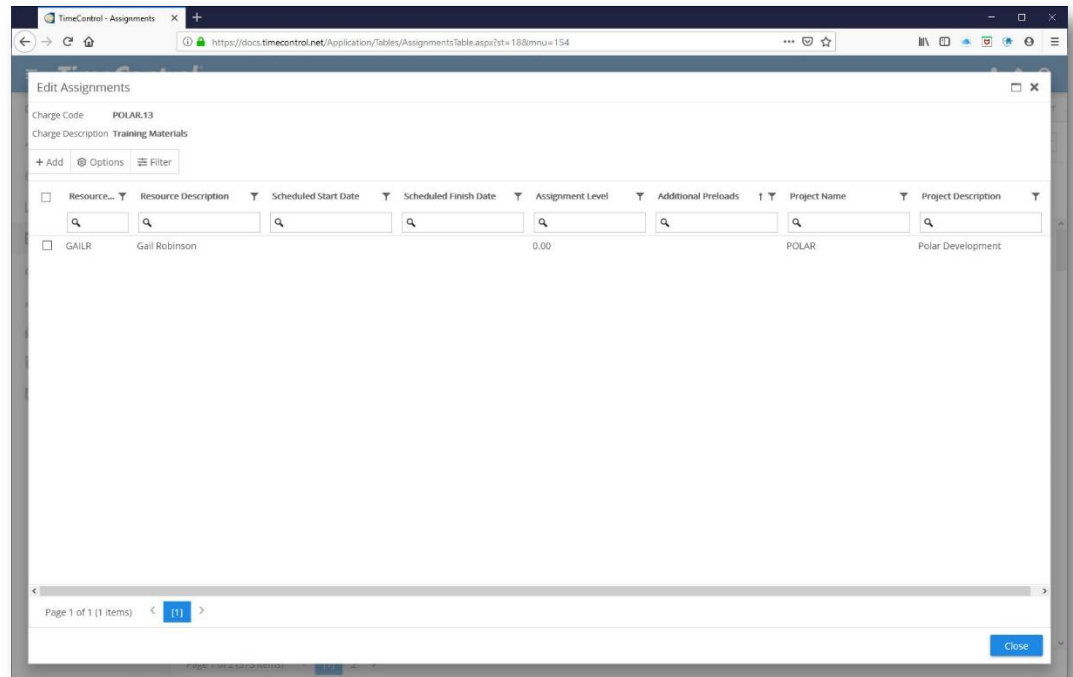
Clicking on the View command on each line will display all assignments for that Charge.

You can customize this View by selecting Options in the **Actions** menu.
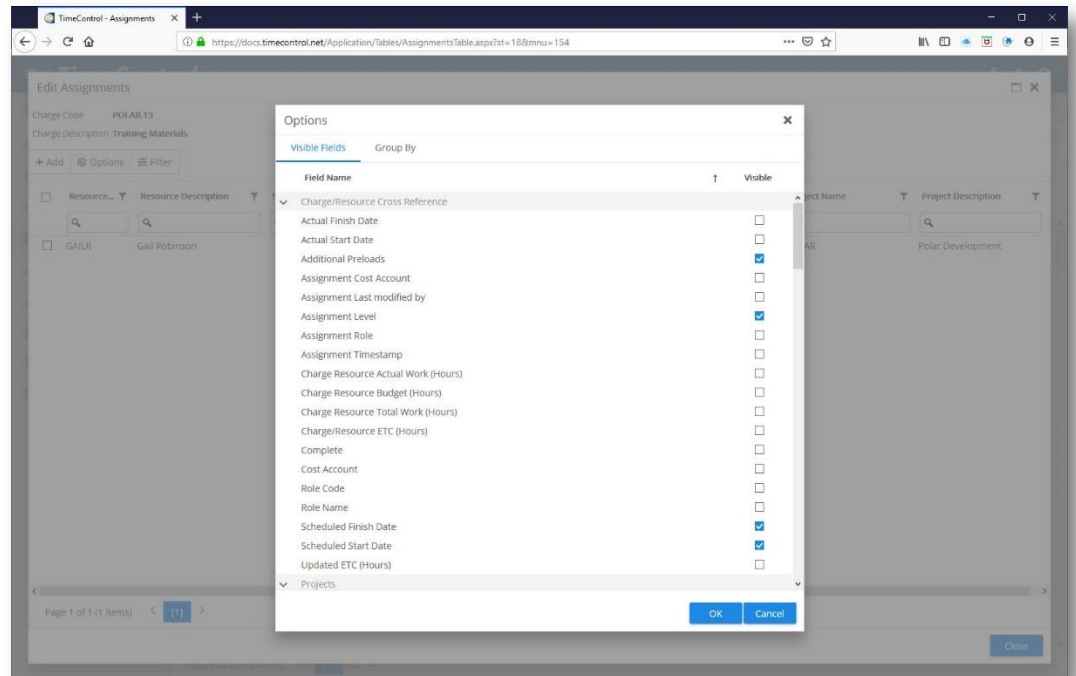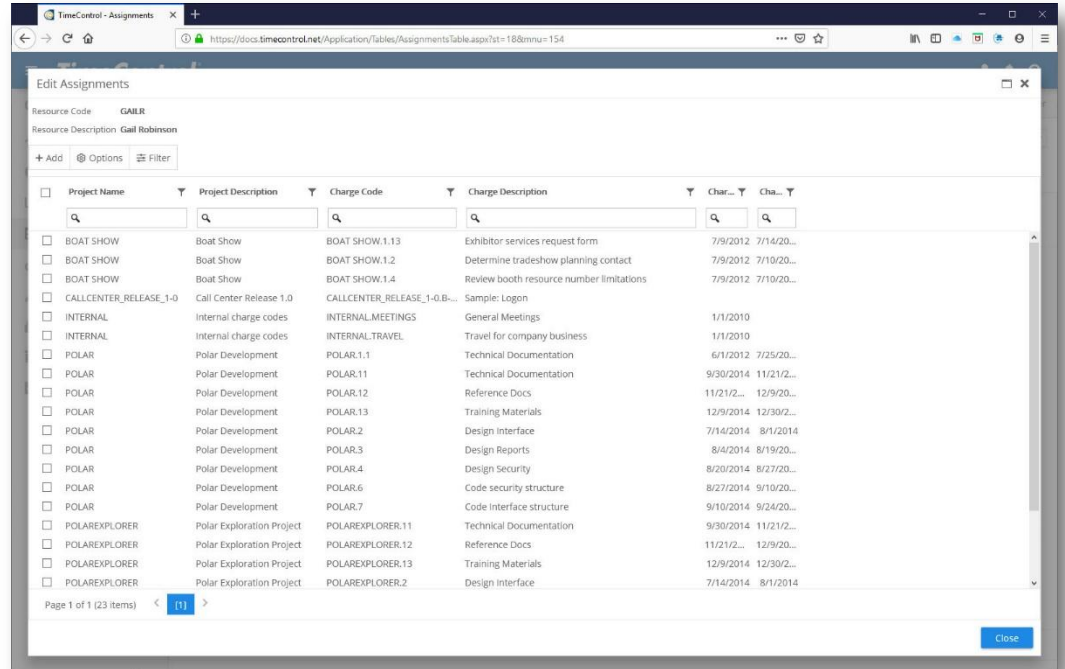
Select or deselect any fields you wish in the Visible Fields tab.
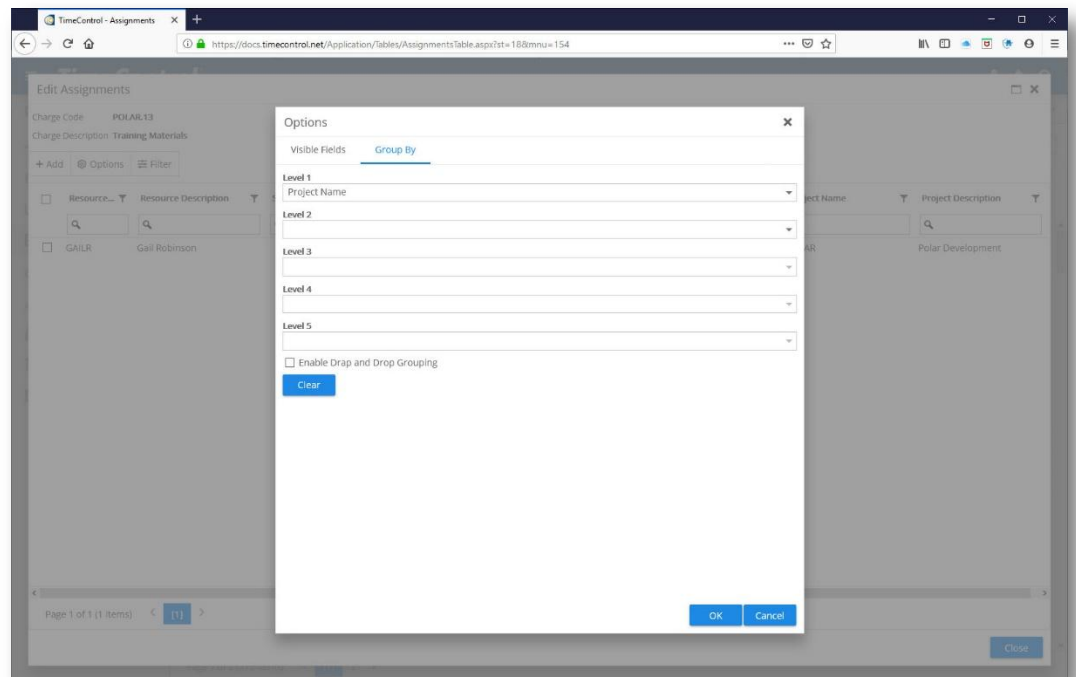
You can group this View with up to 5 levels of hierarchy. When grouped, Expand and Contract buttons will appear in the Actions menu.

Assignments can only be entered at the Charge Code level.

Resource View

The Resource View shows the same Assignment information but grouped by Resource Code rather than Charge Code. All resources for which assignments exist appear. In this case, expanding the Resource line shows all the assignments associated to that resource.

This view can be customized by selecting **Options** in the Actions Menu.

Add Assignments from within a view
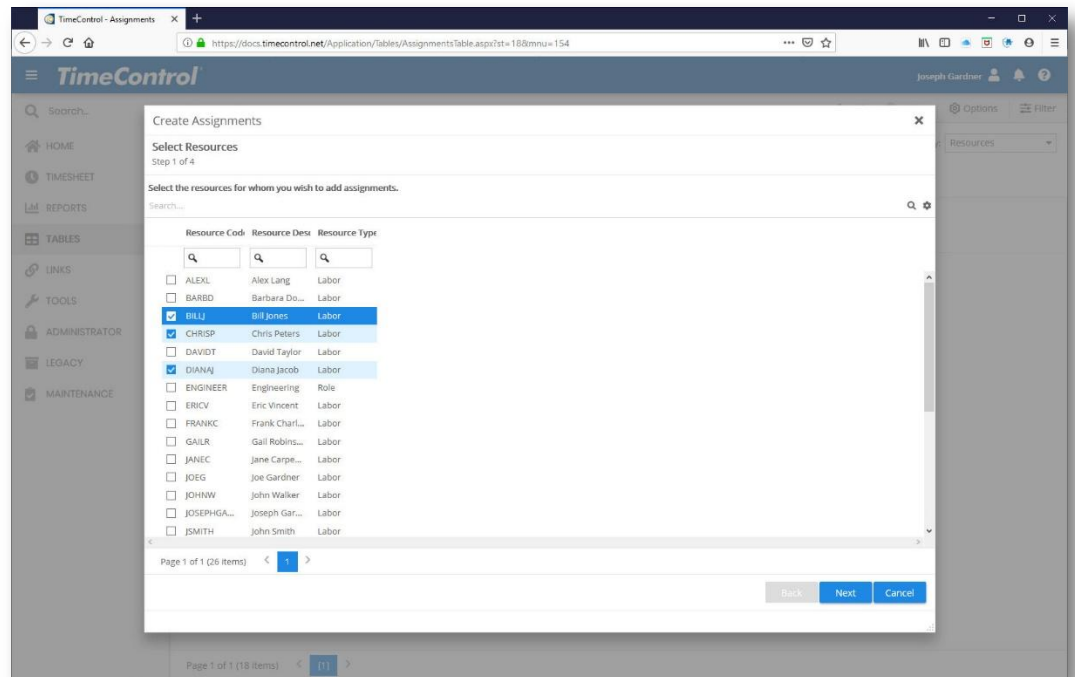
You can enter new assignments for resources in the list by Selecting the "Add" function within the Resource's view. In this case, you would be adding additional assignments for the selected resource.

TimeControl will first present you with the projects that are available for this resource to be added to. Click on the project or projects you wish then click **Next**.
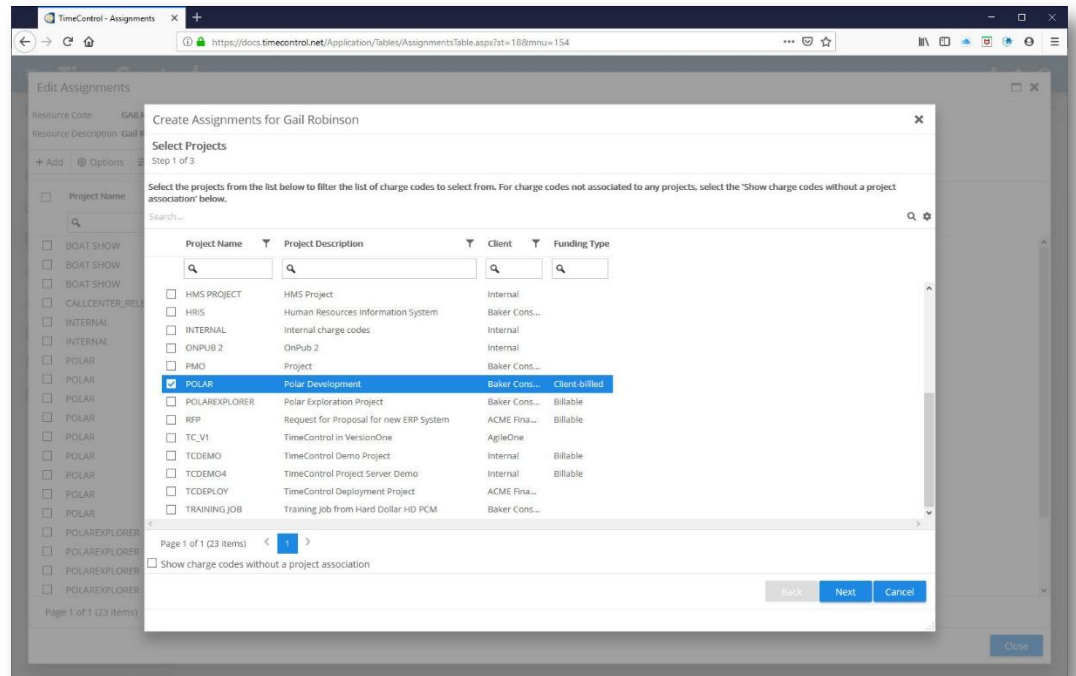
TimeControl now presents you with a list of possible projects to select from. Select one or more projects then click **Next**. Now TimeControl displays all possible charges from within those projects to make into assignments for the selected resource.

Add Assignments from the Actions Menu
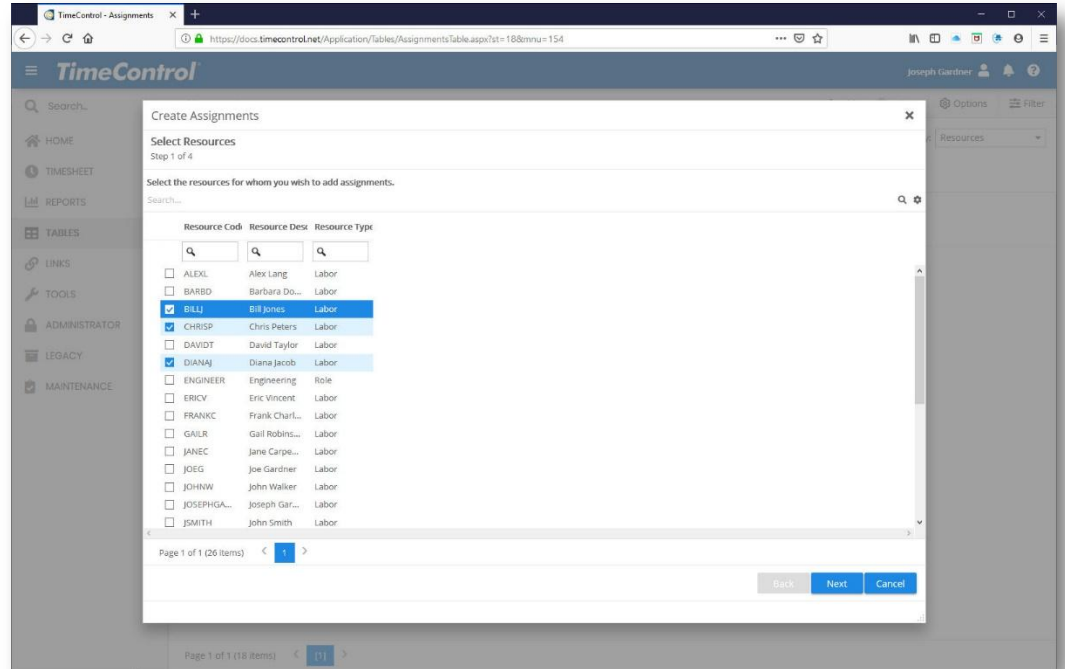
You can also add assignments by selecting Add in the Actions Menu regardless of which View is being shown. This allows projects, charges and resources to be selected which might not already have an assignment present.

Click Add to start the Add Assignments Wizard. Regardless of which View is selected, the Wizard starts by selecting Resources. You can add assignments to multiple resources at once.

Click Next to see all Projects to make assignments within.
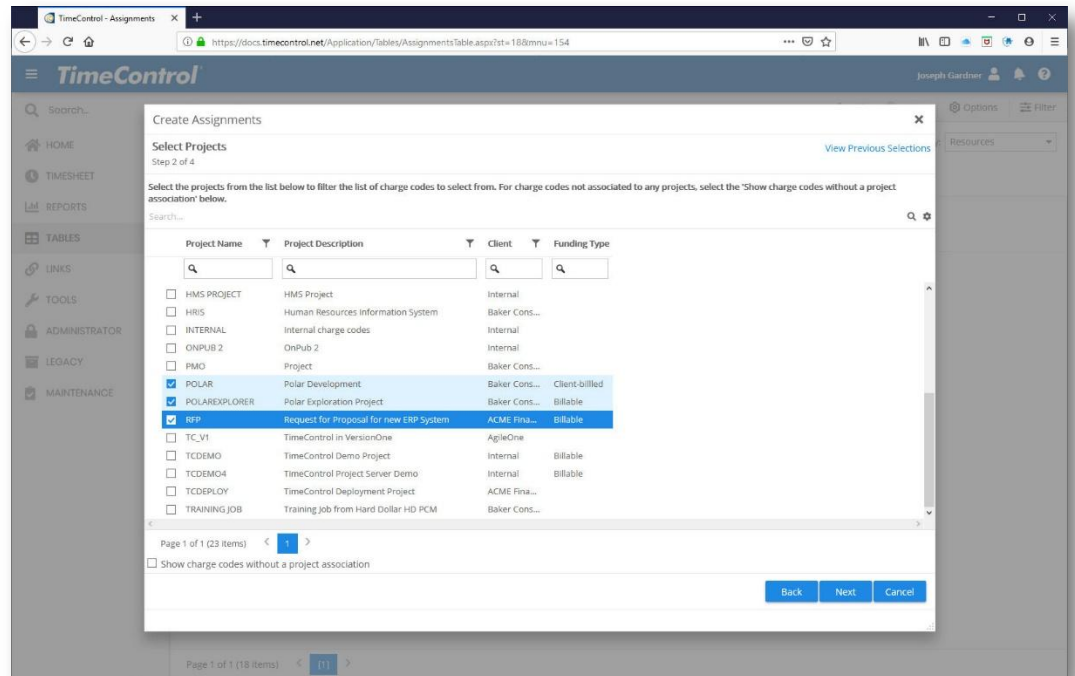
Once you have selected your projects, you can select one or many charges to which you'd like to assign the resources you selected.
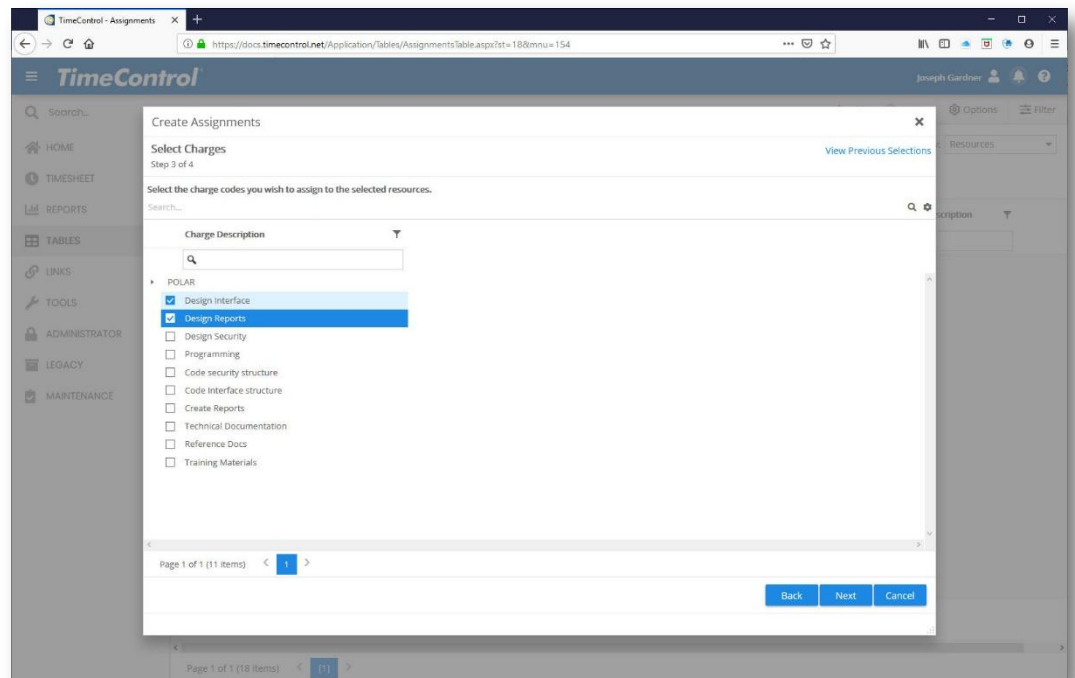
Clicking Next will bring you to the confirmation screen.
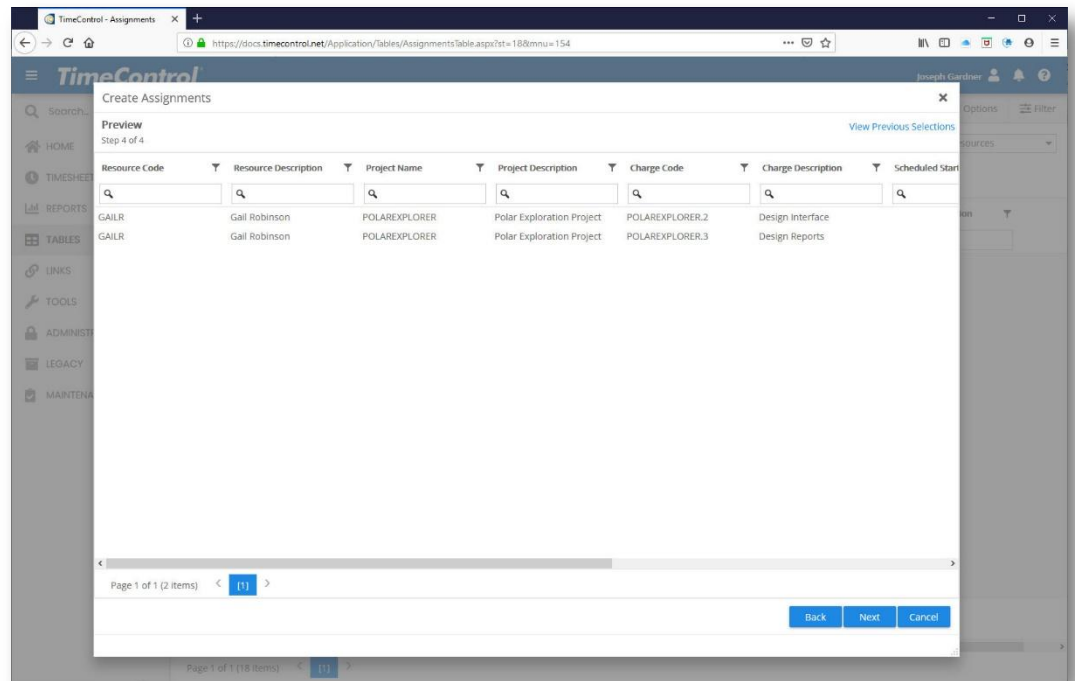
If you accept, TimeControl will create an assignment within each of the selected charges for each of the resources selected.

Resource Planning

TimeControl includes the ability to plan forward expectations of resource load for each resource. This is done in the Resource Planning screen.

You can filter data to see only certain ranges of dates and you will be restricted to only those resource and assignments to which you have rights. The screen is organized by Resource and then project and lists the tasks to which a resource has an assignment. You can enter future expectations for each resource by typing them into the planning grid.

The information from this grid can then be used in comparative reports and analysis with the

actual resource usage entered in a timesheet.

Reports Table

The **Reports Table** contains all the reports which either shipped with TimeControl or which the users have added to the system using the Report Wizard. This table is used by Administrators to remove or update reports that have already been created.

To view the Reports Table, select **Tables | Reports**. The Reports Table appears similar to the following:
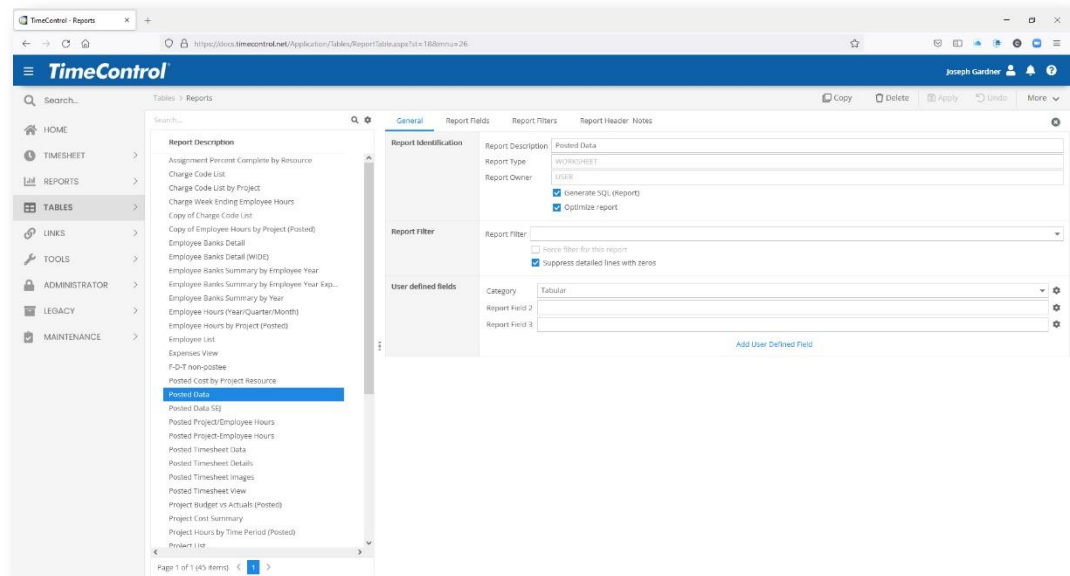
General Tab

The **General Tab** shows basic information on the report including the filter and sort order selected for this report.

Fields

- ▪ **Description:** This shows the description that was entered when the report was created.

- ▪ **Report Type:** This read-only field shows the type of report. Common types include **Table** and **Posted**.

- ▪ **Report Owner:** This read-only field shows the source of the report. If

this report was generated by the Report Wizard, this field will say *Wizard*.

- **Generate SQL:** This function looks for customized SQL saved in the report definition within the Report table and executes that SQL prior to the report running. This use of such functionality allows a virtually limitless selection of data from even outside of the TimeControl structure.

- **Optimize report:** This performance option attempts to restrict the number of field and data selections just prior to the report running. This can be particularly useful when dealing with a high volume of data or in reports running slowly. It is not preferred when using a highly customized report, in particular one using customized SQL.

- **Filter Description:** This selection is based on filters already created in the Filter table. Select the appropriate filter by clicking on the down-arrow at the right of the field.

- **Hours Format:** Select from Hours, Decimal or Minutes.

- **Report Fields 1-3:** These are free-form user-defined text fields.

Report Fields Tab

The Report Fields tab is specific to certain report types and allows fields to be edited, removed or added to outside of the report designer for that report type.
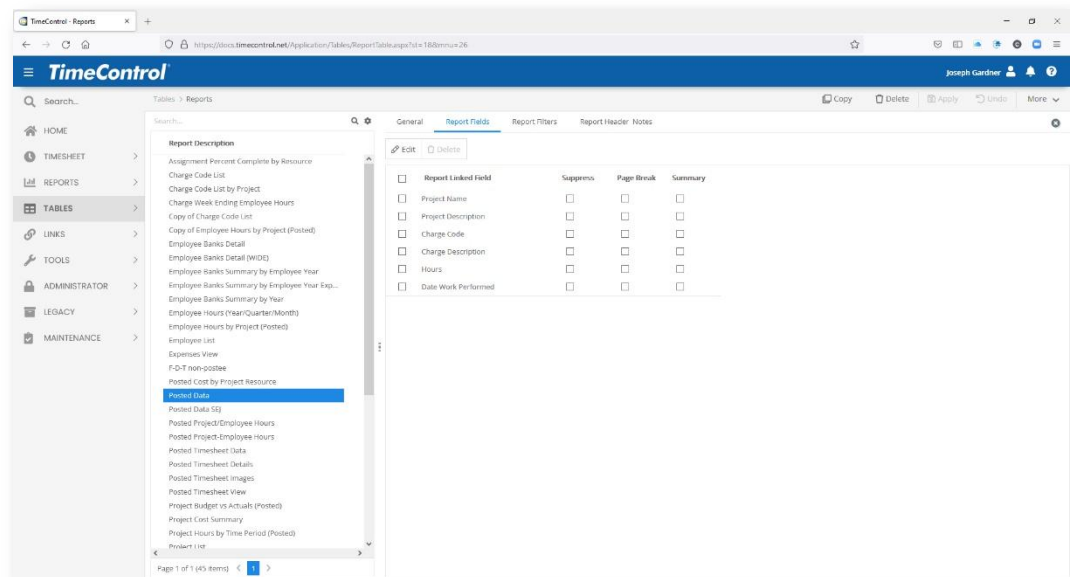
Creating a SQL Report

If you elect not to use the TimeControl fields interface above you can deselect the "Generate SQL option" and instead of the field list, you will be presented with an open area to enter your own SQL.
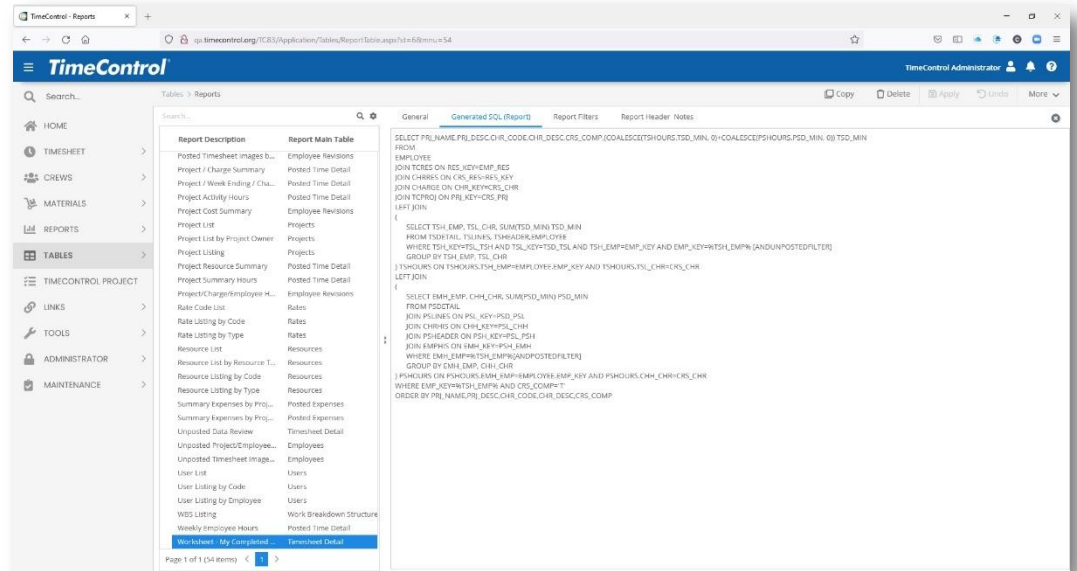
SQL commands must be compatible with the database you have installed in. For TimeControl Online, they must be compatible with MySQL syntax.

When entering SQL for this purpose you can take advantage of TimeControl's SQL Keywords which are:

Tables
[FILTER]
[WHEREFILTER]
[ANDFILTER]
[ORFILTER]

Unposted timesheet
[UNPOSTEDFILTER]
[WHEREUNPOSTEDFILTER]
[ANDUNPOSTEDFILTER]
[ORUNPOSTEDFILTER]

Posted timesheet
[POSTEDFILTER]
[WHEREPOSTEDFILTER]

[ANDPOSTEDFILTER]
[ORPOSTEDFILTER]

Examples

Here are some simple examples

SELECT * FROM CHARGE [WHEREFILTER]
or
SELECT * FROM PSDETAIL [WHEREPOSTEDFILTER]

Report Filters Tab

In the Report Filters tab, you can define what filters are specific to this report definition. This allows a defined number of filters to be displayed. Leaving this blank will allow any filter to be displayed regardless of what that filter was designed for.
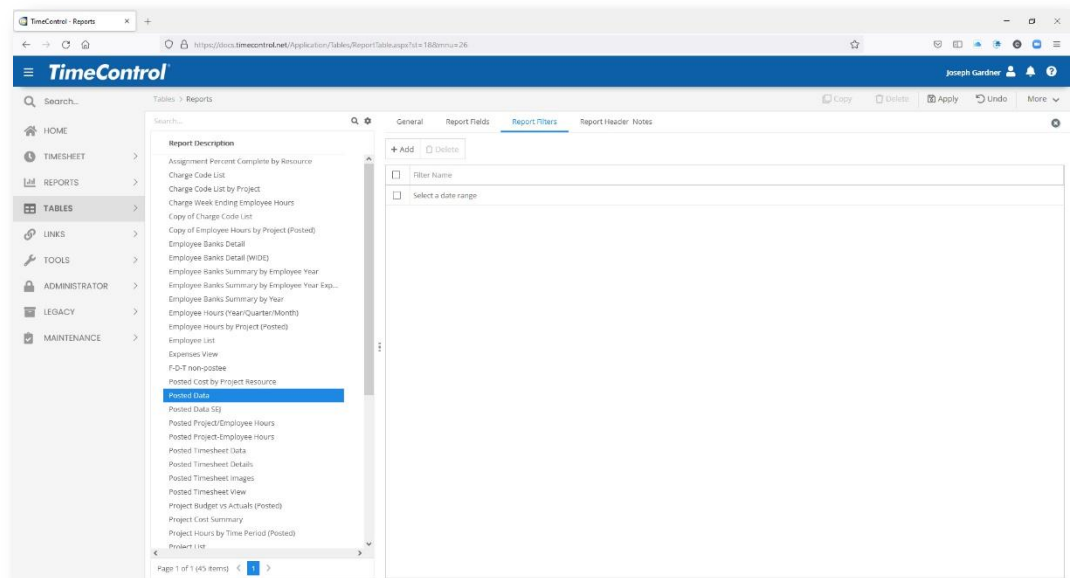
Table Validations

TimeControl supports the ability to verify information which is entered into the TimeControl Tables. Perhaps you would like to enforce always having a Project Owner. You can create a data selection and a warning message to enforce that:
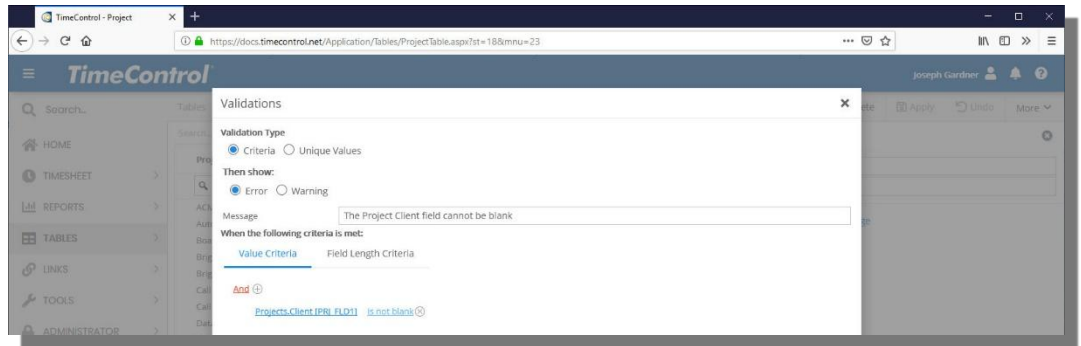
A Validation can be an error, a warning or can trigger a workflow where other validations are tested.

To create a new Validation, simply click Add, select the field on which the validation will be tested, the operand and then other fields can be added in the selection. For example, you might want a field test on Employee type. If the entry is "Contractor" then you might want to force a second field to be filled in with the name of the Contractor.

Access to Table Validations is controlled in the User Profile in Table Security.

Links

Project Links Overview

The TimeControl Links function allows the integration of timesheet data with project control systems and other corporate applications. There are several pre-defined links included in TimeControl. If you require a link that is not listed in this documentation, contact HMS Software's technical department (support@hms.ca). The Table Import and Table Export Links allows an interface via transaction file to almost any system to be created.

The links between TimeControl and project management tools allows for a remarkable degree of flexibility. Since all transfer methods are supported within the system, an organization could support multiple project management tools, multiple servers or multiple versions even of the same project management tool all at the same time. End users no longer need to be concerned with what project management tool is tracking a particular activity or even if it is being tracked by a project management tool. They need only enter their actual time for the work accomplished this week.

Links between TimeControl and project management tools employ several modules to design and then effect the link. This will be described below.

Client to Server vs. Server to Server Links

TimeControl's links to project management software systems are designed to be:

1. Web Services

2. Database Client to Server or;

3. Database Server to Server

Web Services

TimeControl includes links that are built around the API Web Services provided by some project management systems. There may also, in some cases, be direct database links. For example, the link to Oracle's Primavera Pro is a direct database link as there are no Web Services provided for the thick client system. The same database link could be used for Oracle Primavera EPPM or the Oracle Primavera Web Services could link could used. There are advantages and disadvantages of each option.

Using a Web Services link requires that the TimeControl server be able to locate and communicate with the project management server. This may require configuration by network or security personnel. The Web Services for most project management tools are options. The project management web services must be installed and active to create such a link. In addition, the rights of the user of the project management system listed in the TimeControl Link Definition must be sufficient for the transfer.

Database Client to Server

A Client to Server link communicates directly from the computer that the user is working on to the computer that allows access to the project management system. If this system is a desktop type of system such as Microsoft Project, it must run on the same computer. In this case the user that is currently logged into TimeControl must have Microsoft Project Standard or Professional installed on their computer and TimeControl will interact with it directly.

There are other links however, which are Client to Server such as the Primavera direct to database link which communicates with the database server on which the Primavera Database resides.

Client to Server Link
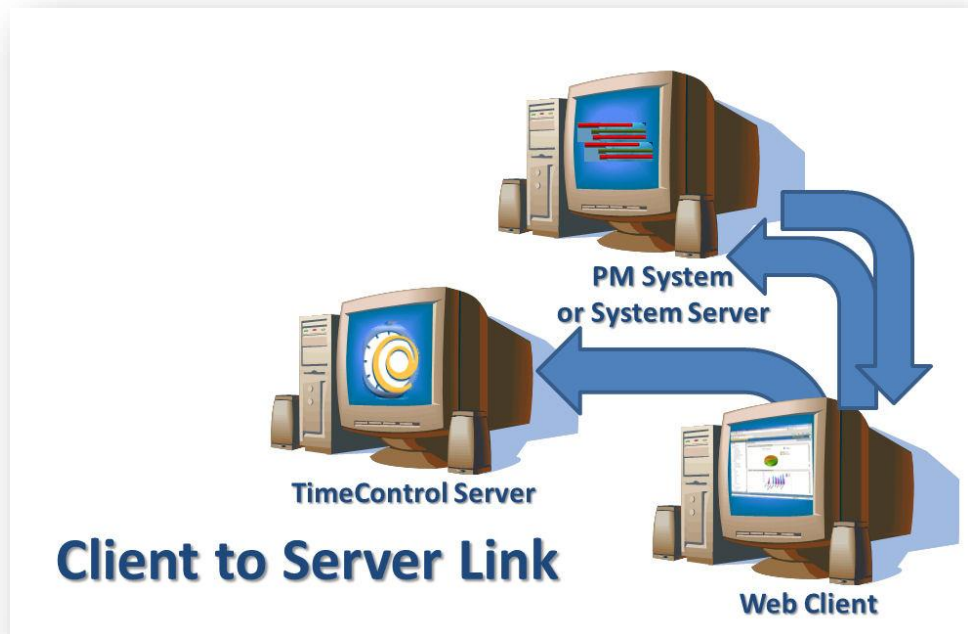
Database Server to Server

A Server to Server link communicates directly from the server computer where TimeControl is installed to the server computer where the project management database is installed. In this case the TimeControl Server must be able to access the appropriate database of the project management system in order to communicate.

Server to Server Link
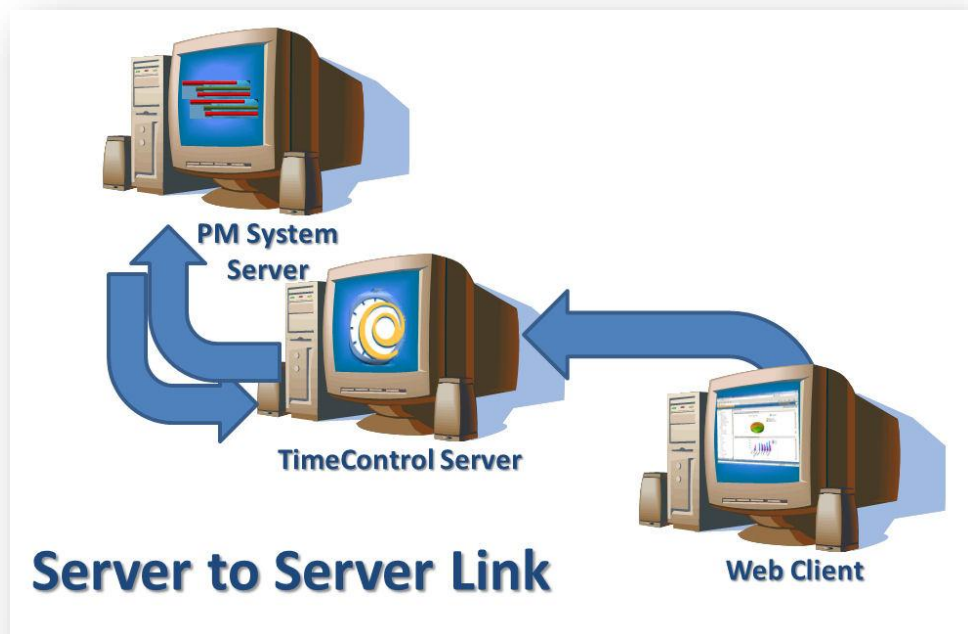
Functional differences

The biggest difference between a Client to Server and Server to Server link is that the Server to Server link can be scheduled to occur at set times and work unattended. Also, no client station is occupied while the transfer of data is underway. Server to Server links can also run on demand just like the Client to Server links.

In a Client to Server link the advantage is to work locally with data to which you have personal access. Because of security across the Internet, Client to Server links are used with TimeControlOnline, our hosted Timesheet as a Service system.

Link Interface Definitions

The Interface Definition determines how to establish a link to an external system. We'll discuss project management systems first though Table Imports and Exports also appear in the Interface Definition List. In the Interface Definition, you will define how to connect to a particular project management tool and what fields in the project management tool will map to which fields in TimeControl. Since each tool is designed differently, these choices are specific to the pm tool in question.

The Interface Definition allows user defined fields in the pm tool to be mapped to as many user-defined fields in TimeControl as is desired. Also,

specific fields in TimeControl such as the start and finish dates can be mapped to start and finish dates in the pm tool.
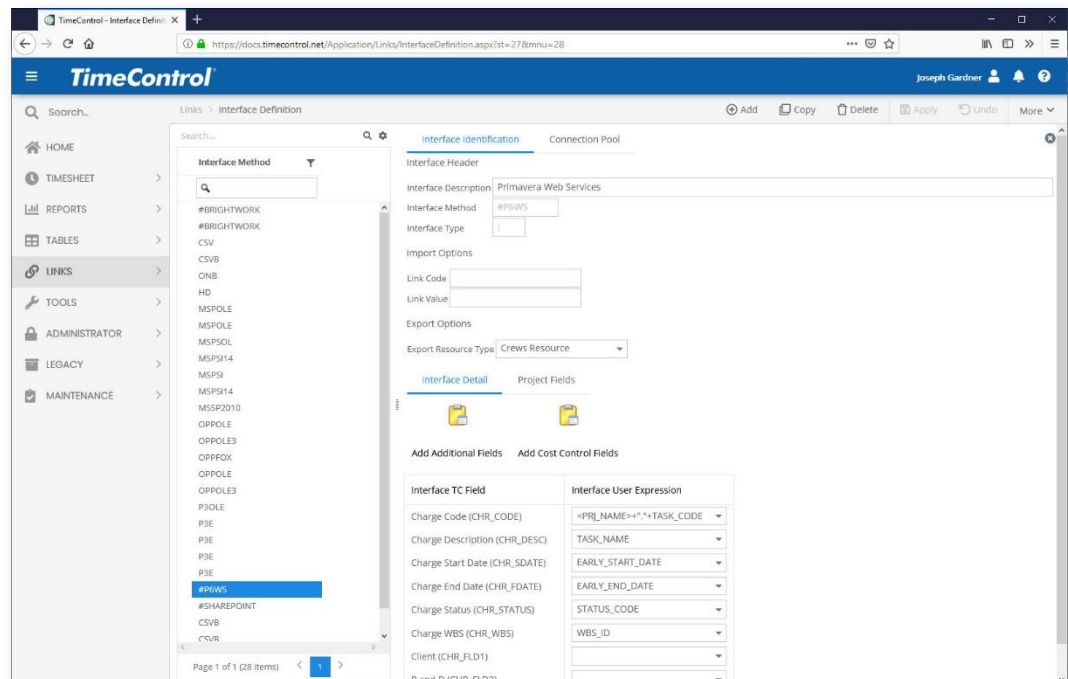
All field mappings are defined here in the Links Interface Definition table. In the Connection Pool Tab, each data connection can use a unique definition, allowing each project to interact with TimeControl differently. This allows different fields in the project management application to be linked to different fields in TimeControl.

Where the data is available at the project level, you can optionally also move information from the Project Management system to TimeControl's Project Table by Adding the Project Fields in the Project tab of the Interface Definition Table.

Connection Pool

If the connection is to a project management tool at the database or server level, a tab for the Connection Pool information will appear. This tab includes information on how TimeControl can connect and authenticate to the project system. Each type of connection may require different information based on the requirements of the project management system and how you have elected to connect to it.
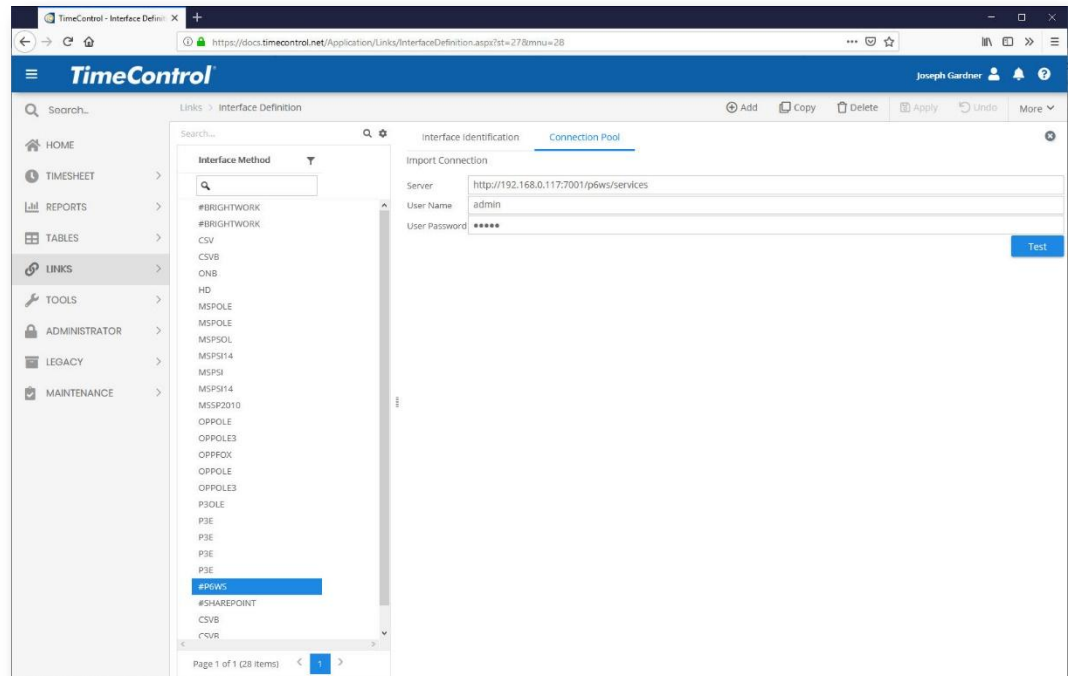
Once a Project Link definition is defined, it can be selected in the Project Table.

There are several methods available for moving data:

Definition	Description
BRIGHTWORK	BrightWork
CSV	Comma Separated Value text file
HD	InEight's Hard Dollar PCM
MSP2019	Microsoft Project Desktop version 2019 and higher
PSOL	Microsoft Project Online
MSPSI	Microsoft Project Server on-premise using the PSI
MSPTO2016	Microsoft Project Desktop versions 2016 and lower
OPP	Deltek's EPM Open Plan
OPPOLE	Deltek's EPM Open Plan using OLE
P6EPPM	Primavera EPPM
P6PRO	Primavera 6 Professional
PSOL	Project Online
SHAREPOINT	SharePoint

VERONE	VersionOne

Project Table Transfer Options

For each type of project link there may be options that you select for a particular project to move data to and from TimeControl.

For each project you can define the Transfer Options as well as a link for the Hard Dollar Estimating HD system.

In each of the definable transfers, we'll discuss possible transfer options that are applicable to that project management system.
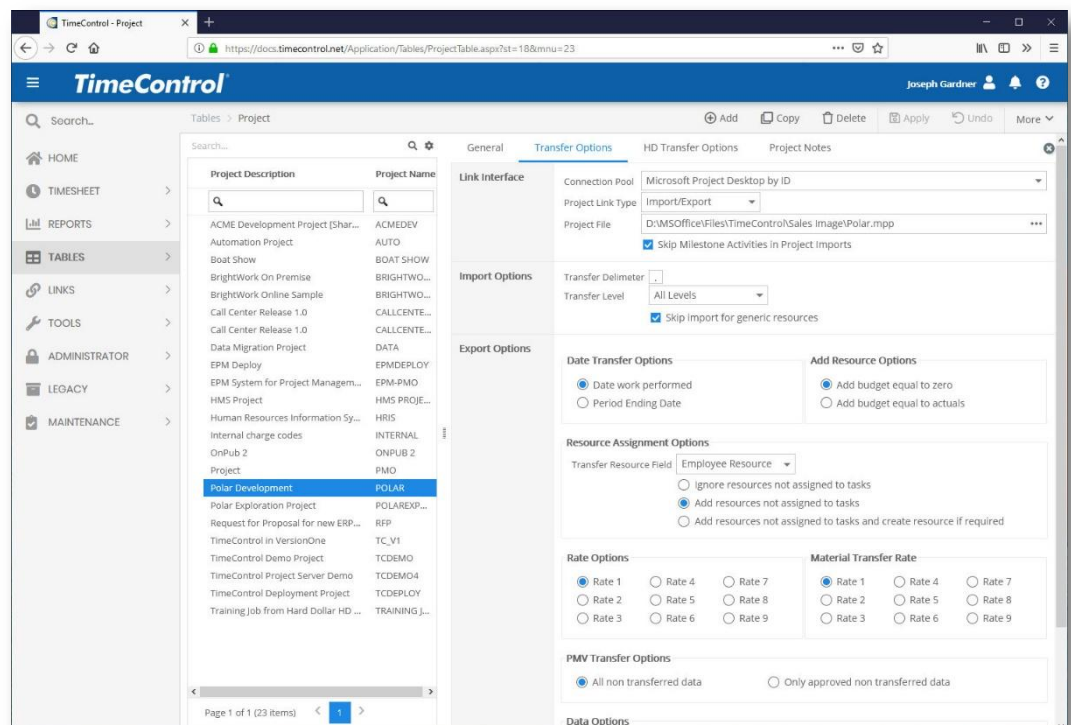
Project Management transfer basics

There are some basic concepts that are important to remember when transferring data between TimeControl and an of the project management systems to which we maintain links.

Activities start in the project management tool

First, if you intend for timesheet data to flow from TimeControl back to tasks in a project management tool, the tasks must <u>first</u> be defined in the project management tool and then transferred into TimeControl. TimeControl identifies and transfers data about project tasks in very specific ways for each

project management tool in order to be able to locate that exact task when data is returned to it. We store that information in the Activity tab of each Charge Code. If there is no data in the Activity Tab of a Charge Code item, that charge did not originate in the project management system. For links to Hard Dollar only, there will be information in the Cost Item tab. If you didn't know this, you might create a charge code item in TimeControl with all the information that makes it look like it was from a task in a project management tool but timesheet data from for that charge code will never be transferred back to the project management tool.

Employees must be linked to resources

TimeControl allows you to link an employee record to any Resource Table record. This provides tremendous flexibility in how you want to manage resource in the project management system and how you want to track actuals in TimeControl but it implies several decisions you may need to make.

First of all, an employee in TimeControl can only be linked to <u>one</u> Resource Table record. That means that if you've not done it already, you'll need to think about naming conventions in your project management tool(s) to ensure that however you want to name resources, it is consistent.

Next, you must decide if a resource in the project management tool will be a named person or a category. TimeControl is happy to work with either. You could have, for example, many employees who are all identified in your project management system as "Analyst" and then you'd do your resource leveling in the project management tool at the generic skill level and your timesheet tracking at the individual level and TimeControl would aggregate all the employees in that category before transferring data back to the system.

To link TimeControl employee records to Resources, the best practice is to make the link to the projects in the project management tool first and select the option to transfer into TimeControl the resource information. This will create a list of properly formatted resource table entries and at the same time bring in all resource assignments. TimeControl will, however, <u>only</u> transfer resources that are listed in assignments on the tasks, not all the resources that may be defined. Once the TimeControl Resource Table is populated in this manner, you can go to the Employee Table and update the Resource selection for each employee. Alternately, you can identify this information in an Employee Table import.

At the moment of timesheet posting, TimeControl locates the resource code for that employee from the Employee Table and saves the information that will be required by the project management system when data is transferred. If

there was no resource code identified at the moment of posting, TimeControl will never transfer that data to the project management system.

TimeControl doesn't transfer data twice

TimeControl keeps careful track of what information it has ever transferred. If you were to lose your project file after a transfer, then moving last week's updates will require the help of HMS Technical Support. So, keep a careful backup for desktop project tool files once data has been moved from TimeControl to the project management system.

Post first

Only posted data is transferred to the project management system. There are numerous reasons for this, not the least of which is that you are certain to want to do approvals before accepting data into your project and cost control system. If you have a need for moving data more urgently than at the end of the week, you can use the Partial Posting functionality or if you are in an industrial situation, you can use the Crew Timesheet for a daily timesheet in TimeControl Industrial and post immediately.

Options count

If you experience difficulty transferring data back to the project management system, start by looking at what transfer options were used in the link. These are stored in the Project Table but can also be selected manually at the time of transfer. Often, a misunderstanding of how some transfer options will affect the data are the cause of difficulties and are easily rectified.

The Link Process

The design of the link process is to use PM Imports to move data into TimeControl from the Project Management system (or systems) and PM Exports to move data back to the project management system

Links in from the PM system(s) can be done on demand, on a schedule (for server-to-server links) or in the case of Microsoft's Project Server or Primavera's P6 in a server-to-server link, triggered on the "publish' function from within those tools.

Links out to the PM system(s) can be done on demand or on schedule (for server-to-server links).

The most common practice is to set up a regular schedule either weekly or overnight to have the TimeControl Scheduler pull the data from the PM system. Then have the project managers send data back weekly on demand.

Link with MS Project Standard & Professional

TimeControl has had links to Microsoft Project desktop starting from version 4. You must have MS Project Standard or Professional installed on the computer which will effect the link.

Defining the link to Microsoft Project Desktop

The link to Microsoft Project is made directly from the TimeControl Links module on the client computer and the Microsoft Project executable using Interop. Creating the link requires only locating the Project MPP file from within the Project Table. TimeControl will handle the communication internally.

Creating a link to Project Desktop requires that you have Microsoft Project installed on the same computer that will be used for the link with TimeControl. Typically this is already the case as the person who activates such a link with Project Desktop is usually the project manager who would naturally have Project Desktop already installed.

Interface Definition with Microsoft Project Desktop

The Connection Pool setting for a link with Microsoft Project Professional Desktop is simply to select a standard MPP file. The actual file will be selected in each Project Table entry.
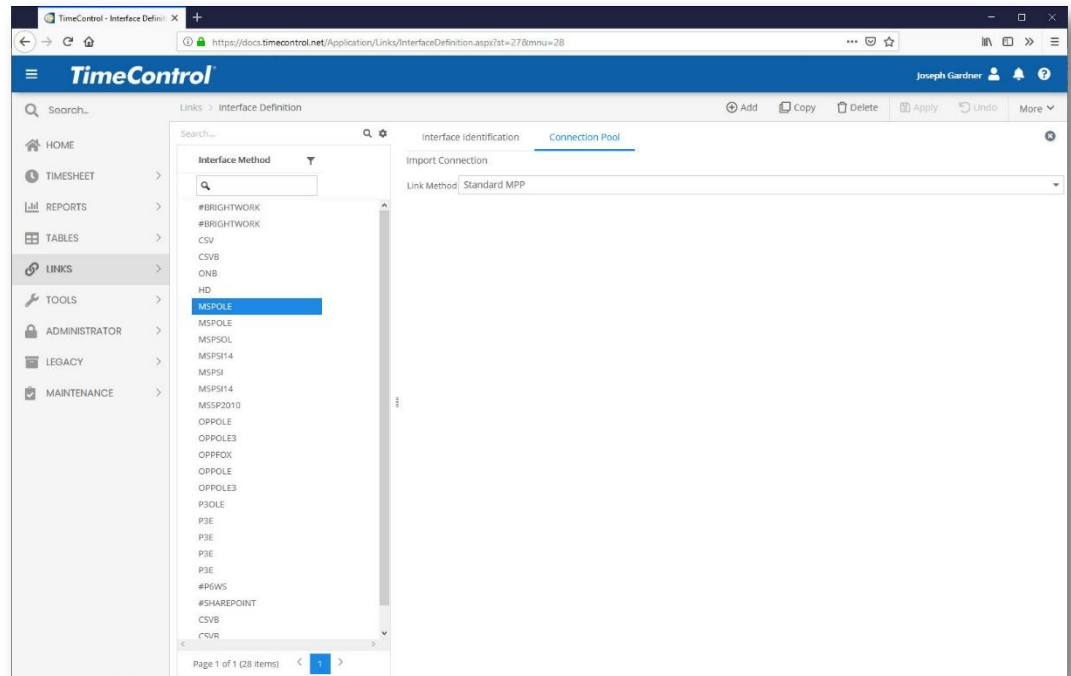
To complete the Interface Definition select the Microsoft Project fields and map them to the appropriate TimeControl fields.
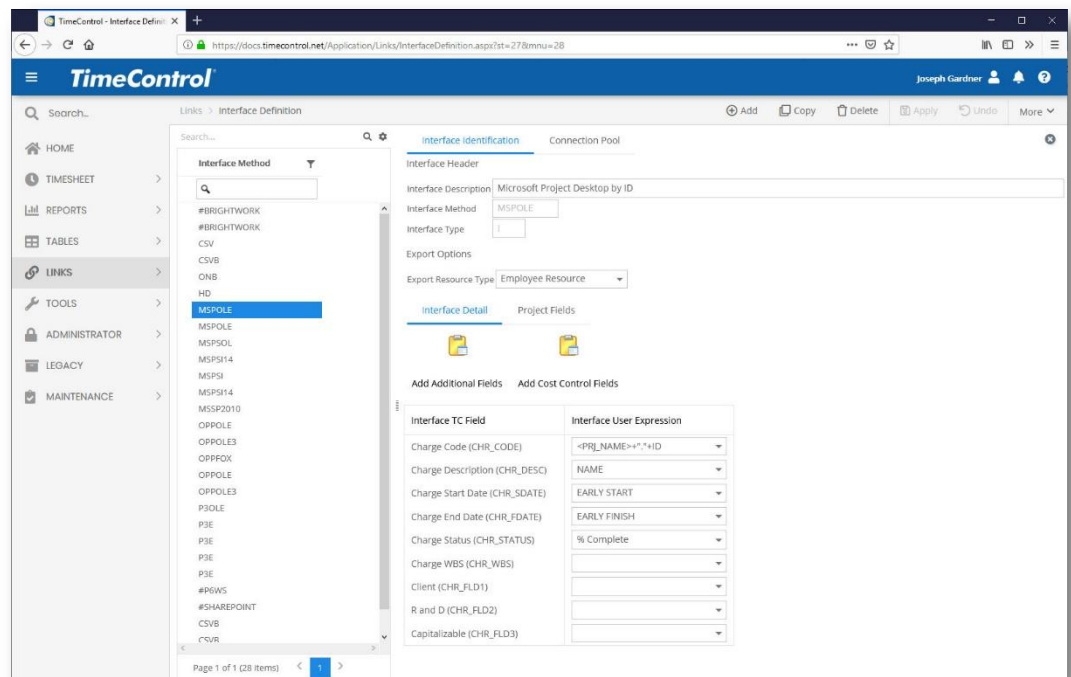
To create a link to Microsoft Project desktop, add a new Interface Definition and choose Microsoft Project as the link type. You will be presented with a screen similar to the list above. The first thing to decide will be how you

want to represent charge code items in TimeControl as they compare to how they are displayed in Microsoft Project. This example shows using the WBS code to make a hierarchical list. You have several options to choose from. You can also align other fields from within Project to fields in the TimeControl Charge Table and, by clicking on the Project tab here, to the TimeControl Project Table.

If you link a percentage field such as "Percent Complete" in Project to the TimeControl Charge Code Status field, TimeControl will enter "Not started" for 0%, "Started" for 1%-99% and "Complete" for 100%.

You can also link user defined files in TimeControl to either user defined fields or other fields in Microsoft Project. This will move this information from Project to TimeControl but will not move any changes in these fields from TimeControl back to the Project file.

Transfer Options to Microsoft Project Desktop

There are several options which can be established in the Project Table's Transfer Options

Not all options will be appropriate for each project management system type. You will need to establish the following options for this transfer type:

Link Interface

Connection Pool: Select the Microsoft Project Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: Select Import/Export or Import only. If you select Import only, the options for transferring data back to the project will disappear.

Project File: Enter the file name with the subdirectory or select a MPP file by clicking browse.

Skip Milestones: TimeControl can be configured to automatically skip tasks with a zero-day duration (i.e. Milestones). Since such tasks typically have no duration they are often not an appropriate selection for timesheet entry

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Date Transfer Options: Select **Date work performed** to have timesheet data transferred into a record in the project management system associated to the day the work in the timesheet was completed, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is more detailed and is the default but if you have a project that is decades long with millions of records, aggregating data into a weekly record may be more appropriate for you.

Add Resource Options: When TimeControl transfers data to a task but does not find a matching resource assignment, it can create

that assignment automatically. In this case TimeControl wants to know if you would like the assignment created with no hours or with the same number of hours that are associated with the actuals we are sending. This option is ignored by Microsoft Project as it will always create a budget equal to the actual amount transferred when a resource assignment is newly created along with actual work accomplished.

Resource Assignment Options: Set this to "**Ignore resources not assigned to tasks** in order to have TimeControl skip over actuals when it finds the appropriate task and the appropriate resource but cannot find a matching resource assignment for this task. Set this to **Add Resources not assigned to tasks** if you wish TimeControl to create a resource assignment if it finds the appropriate task and finds the appropriate resource but cannot find a matching assignment for this task. Set this to **Add Resources not assigned to tasks and create resource if required** to have TimeControl create the resource code and create the resource assignment in order to transfer the actuals. Any records which are rejected due to these options will be identified in the transfer log.

Rate Options: TimeControl can send the cost value from any of the 9 possible values associated to each rate code. You might have defined your rates with one value for internal project costs, one value for external billing price and a third value for average project rate. Select the rate value which is most appropriate for this project.

PMV Transfer Options: Select **All non-transferred data** to send to the project management system all records pending for that project regardless of whether or not they have been marked as approved in the Project Manager Validation module. Select **Only approved non-transferred data** to send to the project management system only the pending records which are marked as **Approved** in the Project Manager Validation module.

Data Options: Select from the following options for data transfer to he project management system:

❑ **Transfer Resource Actual hours**: This is always selected by default. It will transfer the timesheet hours to the project management system.

❑ **Transfer Resource Actual costs**: This option will transfer the costs associated with the Rate Options selection above for the timesheet actual hours.

❑ **Transfer Expenses**: This option will transfer expense costs gathered in the Expense tab of the timesheet.

❑ **Transfer Resource ETC**: This option will transfer the estimate to complete of this resource's assignment and will affect that assignment only.

❑ **Transfer Resource Complete Indicator**: This option will transfer the flag of "Complete" entered on the timesheet line and will change the estimate to complete to 0.

❑ **Transfer Activity ETC**: This option will transfer the activity estimate to complete from within TimeControl's Activity progress in the Activity tab of the charge code. This is distinct from the assignment progress.

❑ **Transfer Activity Complete Indicator**: This option will transfer the flag of "Complete" from within TimeControl's Activity progress in the Activity tab of the charge code and will change the estimate to complete to 0.

❑ **Transfer Primavera Steps**: This option will be ignored by Microsoft Project

❑ **Transfer to Primavera Financial Periods:** This option is ignored by Microsoft Project.

Note:

You must have Microsoft Project installed on the computer you are initiating the link with in order to link to Microsoft Project MPP files.

Note 2:

Manually scheduled tasks are not updated in Microsoft Project 2010+

Starting with Microsoft Project 2010 there is a new task scheduling type called "manual scheduling". Since dates are not determined by definition in such a task, Microsoft Project has no way of knowing whether the actuals TimeControl is sending have acceptable dates attached to them. Project will reject updates to these tasks. Tasks should be set to "Auto-Schedule" in Microsoft Project (2010 and later) before moving actuals from TimeControl.

Note 3: If you plan to transfer Actual Costs from TimeControl to Project or Project Server, you will need to turn off a flag in the project information screen.
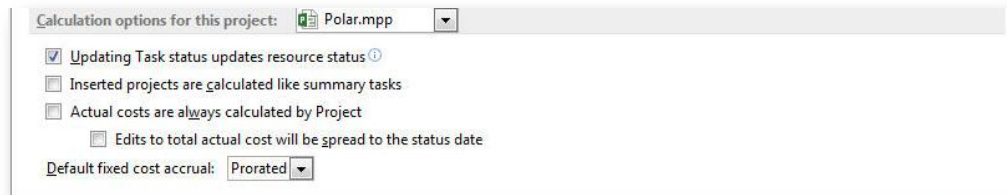
In Project Professional, go to Options/Scheduling and update the Calculation Options to turn off "Actual costs are always calculated by Project".

Link with Microsoft Project Server on Premise 2007- 2019

Microsoft Project has had a Server component to their enterprise project management solution since 2002. Beginning with Microsoft Office Project Server 2007 however, Microsoft has supplied a programmable interface called the Project Server Interface (PSI) that has allowed HMS to extend the capabilities of the link between these two popular products.

Defining the Link to Project Server 2007-2019

Authenticating the TimeControl Server with the Microsoft Project Server is explained in the TimeControl Installation Guide as well as the option for installing the OnPublishedEvent DLL.

In the Interface Definition Connection Pool you will need to enter the URL of Project Server as well as the Server name. This will allow TimeControl to

locate Project Server. You will also need a fully authenticated user and password of a user with full access to rights of the PSI. Clicking on Test Connection will let you know if TimeControl has been able to locate the PSI on the Project Server machine and has been able to communicate with it.

If TimeControl has not been installed on the same server as Project Server, you will also need to ensure that firewalls between the TimeControl will allow communication to and from the PSI.
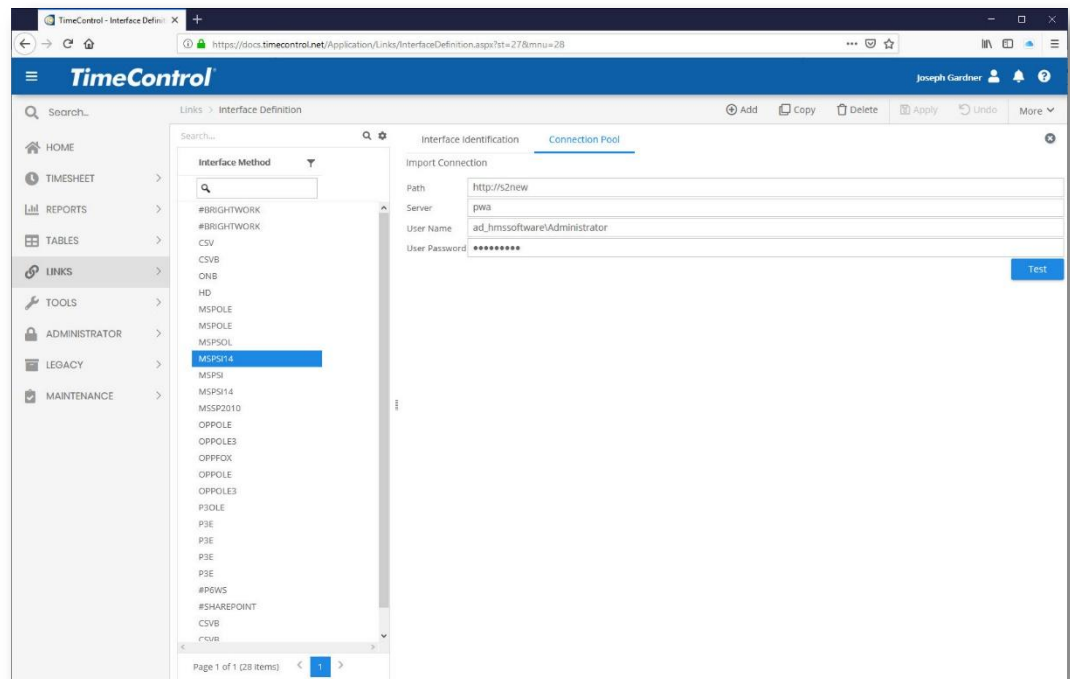
Interface Definition with Project Server 2007-2019
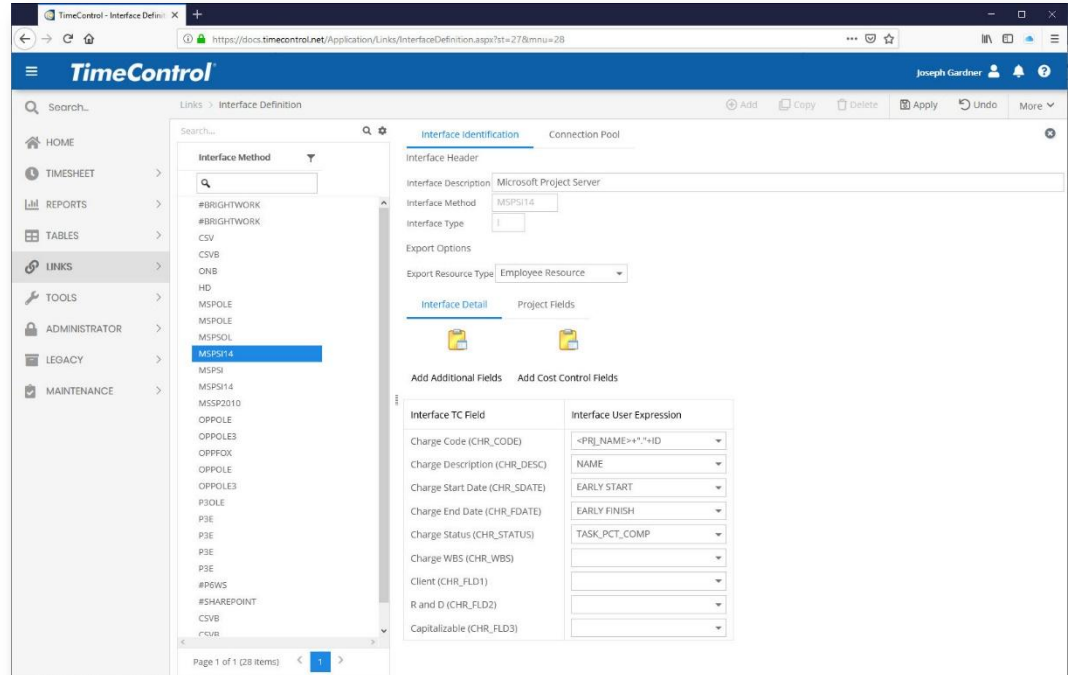
In the Interface Definition, you will first need to define how a TimeControl Charge Code should be defined. There will be several selections. If you prefer a hierarchical display similar to Microsoft Project on the desktop, then using Project Server's WBS field may be of interest. Additional fields can be linked to the Description, Start and Finish Dates and other elements of the TimeControl Charge Table. You can click on **Add Additional Fields** if you wish to add other User Defined fields from the Charge table into the definition. You can also add links to fields at the project level.

Linking a percentage field such as "Percent Complete" or "Physical Percent Complete" to the Status field (CHR_STATUS) will result in status changing to "Not started" if the percent is 0, "Started" if the status is between 1 and 99 and "Completed" if the percent is 100.

> **Note**: Microsoft Project Server maintains several types of projects. So-called "lightweight" projects or "resource plans" that have never been opened by Microsoft Project Desktop may not have the WBS field or some other fields populated automatically. This can cause an issue when these fields are used in the transfer definition. An alternative is to create a unique hierarchical definition field of your own.

> **Note**: Microsoft Project does not keep a WBS field static when associated to a task. Deleting or Inserting tasks can result in Project changing the WBS field

Transfer Options with Project Server 2007-2016

Not all options will be appropriate for each project management system type. You will need to establish the following options for this transfer type:

Link Interface

Connection Pool: Select the Microsoft Project Server Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: Select Import/Export or Import only. If you select Import only, the options for transferring data back to the project will disappear.

Project File: Enter the project name which can be selected from the list of published projects presented by Project Server when you click **Browse**.

Skip Milestones: TimeControl can be configured to automatically skip tasks with a zero-day duration (i.e. Milestones). Since such tasks typically have no duration they are often not an appropriate selection for timesheet entry

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Date Transfer Options: Select **Date work performed** to have timesheet data transferred into a record in the project management system associated to the day the work in the timesheet was completed, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is more detailed and is the default but if you have a project that is decades long with millions of records, aggregating data into a weekly record may be more appropriate for you.

Add Resource Options: When TimeControl transfers data to a task but does not find a matching resource assignment, it can create that assignment automatically. In this case TimeControl wants to know if you would like the assignment created with no hours or with the same number of hours that are associated with the actuals we are sending. This option is ignored by Microsoft Project Server as it will always create a budget equal to the actual amount transferred when a resource assignment is newly created along with actual work accomplished.

Resource Assignment Options: Set this to "**Ignore resources not assigned to tasks** in order to have TimeControl skip

over actuals when it finds the appropriate task and the appropriate resource but cannot find a matching resource assignment for this task. Set this to **Add Resources not assigned to tasks** if you wish TimeControl to create a resource assignment if it finds the appropriate task and finds the appropriate resource but cannot find a matching assignment for this task. Set this to **Add Resources not assigned to tasks and create resource if required** to have TimeControl create the resource code and create the resource assignment in order to transfer the actuals. Any records which are rejected due to these options will be identified in the transfer log.

Rate Options: TimeControl can send the cost value from any of the 9 possible values associated to each rate code. You might have defined your rates with one value for internal project costs, one value for external billing price and a third value for average project rate. Select the rate value which is most appropriate for this project.

PMV Transfer Options: Select **All non-transferred data** to send to the project management system all records pending for that project regardless of whether or not they have been marked as approved in the Project Manager Validation module. Select **Only approved non-transferred data** to send to the project management system only the pending records which are marked as **Approved** in the Project Manager Validation module.

Data Options: Select from the following options for data transfer to he project management system:

❑ **Transfer Resource Actual hours**: This is always selected by default. It will transfer the timesheet hours to the project management system.

❑ **Transfer Resource Actual costs**: This option will transfer the costs associated with the Rate Options selection above for the timesheet actual hours.

❑ **Transfer Expenses**: This option will transfer expense costs gathered in the Expense tab of the timesheet.

❑ **Transfer Resource ETC**: This option will transfer the estimate to complete of this resource's assignment and will affect that assignment only.

❑ **Transfer Resource Complete Indicator**: This option will transfer the flag of "Complete" entered on the timesheet line and will change the estimate to complete to 0.

❑ **Transfer Activity ETC**: This option will transfer the activity estimate to complete from within TimeControl's Activity progress in the Activity tab of the charge code. This is distinct from the assignment progress.

❑ **Transfer Activity Complete Indicator**: This option will transfer the flag of "Complete" from within TimeControl's Activity progress in the Activity tab of the charge code and will change the estimate to complete to 0.

❑ **Transfer Primavera Steps**: This option will be ignored by Microsoft Project Server.

❑ **Transfer to Primavera Financial Periods:** This option is ignored by Microsoft Project Server.

Note: Manually scheduled tasks are not updated in Microsoft Project 2010+

Starting with Microsoft Project 2010 there is a new task scheduling type called "manual scheduling". Since dates are not determined by definition in such a task, Microsoft Project has no way of knowing whether the actuals TimeControl is sending have acceptable dates attached to them. Project will reject updates to these tasks. Tasks should be set to "Auto-Schedule" in Microsoft Project (2010 and later) before moving actuals from TimeControl.

Note: If you plan to transfer Actual Costs from TimeControl to Project or Project Server you will need to turn off a flag in the project information screen.
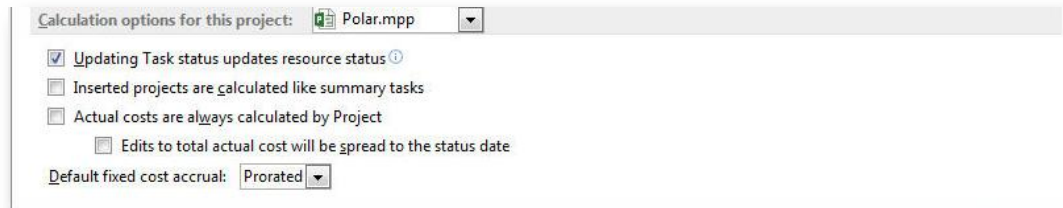
In Project Professional, go to Options/Scheduling and update the Calculation Options to turn off "Actual costs are always calculated by Project".

Note: Resources defined in Microsoft Online with a Booking type of "Proposed" will not be updated by TimeControl into Project Online. Any actuals on this booking type will be refused by Project Server and the refused items logged in the TimeControl transfer log. The information that is refused by Project Online will be sent again by TimeControl on subsequent transfer attempts until they are accepted.

Link with Microsoft Project Online

The Subscription Service of Microsoft Project Server is called Project Online. This service is hosted and supported by Microsoft directly and is not to be confused with 'private-cloud' hosting of Project Server. If you are hosting Project Server outside of the Microsoft Office 365 environment, then you should refer to the Microsoft Project Server Link. If you wish to integrate TimeControl with Project Online, then you're in the right place.

Configuring Project Online and Link Constraints

To integrate TimeControl with Project Online, there are several pre-configuration choices that you will need to use in Project Online and several constraints that are important to know.

- Project Online must use "Project Server Permission" mode. There is an option in Project Online to use SharePoint Permission or Project Server Permission modes. The integration may not function properly if you are using SharePoint permission mode.

- An Approval Rule in Project Online must be created to automatically approval the status updates that arrive from TimeControl. A rule will need to be created for each Status Manager that receives updates to tasks. Failure to create such a rule might result in updates being

inadvertently rejected by a Status Manager and the resulting hours from TimeControl being lost.

- All assignments will be become owned by "TimeControl". We recommend creating a Project Online user called "TimeControl" (the full name would be in the format TimeControl@companyname.onmicrosoft.com). This is the user that defined in the Connection Pool to connect to Project Online. This allows TimeControl to update the status of the tasks with actual hours but has no other affect to Project Online users.

- The account used in the Connection Pool must have full administrative rights including "Status Broker Permission".

Constraints

- Project Online will not accept actual hours for dates past the assignment finish dates. For example, an assignment start is June 1. The assignment finish is June 10. Project Online will not accept any hours from TimeControl beyond June 10. This must be corrected by the project manager in Project Online through extending the expected finish of the task and reinitializing the transfer.

- When assignments are created via TimeControl for a task, TimeControl will set the assignment finish date to the task's finish date in an effort to minimize errors due to the Project Online constraint of not accepting hours past the assignment finish date.

Defining the Link to Project Online

Authenticating the TimeControl Server is done in the TimeControl Interface Definition in the Connection Pool tab.

Unlike Project Server, there is no option for installing the OnPublishedEvent DLL in the Office 365 environment.

In the Interface Definition Connection Pool you will need to enter the URL of Project Online as well as your Office 365 user name and password. . This will allow TimeControl to locate your subscription to Project Online and to authenticate. This user must have access to a Project Online Premium license which includes rights to the Project Online Service. This Service is used by TimeControl to integrate the two products. Clicking on Test Connection will let you know if TimeControl has been able to locate the Online Service on the Project Online subscription and if it has sufficient rights to communicate with it.

> ☞ Note: Resources defined in Microsoft Online with a Booking type
> of "Proposed" will not be updated by TimeControl into Project
> Online. Any actuals on this booking type will be refused by
> Project Server and the refused items logged in the TimeControl
> transfer log. The information that is refused by Project Online
> will be sent again by TimeControl on subsequent transfer
> attempts until they are accepted.

> ☞ Note: Only "Published" Microsoft Online plans can be imported
> into TimeControl. Additionally tasks that are not "Published"
> within a Published project will not have their actuals updated in
> Project Online. Tasks within Microsoft Online are set to
> Published by default but any tasks changed to "Not Published"
> will not have actual updated from TimeControl and attempts to
> update such tasks will be refused and the refused items logged
> in the TimeControl transfer log.

☞ Note: Tasks set to be scheduled manually will not be updated by TimeControl. These tasks should be set to schedule automatically.

Interface Definition with Project Online

In the Interface Definition, you will first need to define how a TimeControl Charge Code should be defined. There will be several selections. If you prefer a hierarchical display similar to Microsoft Project on the desktop, then using Project Online's WBS field may be of interest. Additional fields can be linked to the Description, Start and Finish Dates and other elements of the TimeControl Charge Table. You can click on **Add Additional Fields** if you wish to add other User Defined fields from the Charge table into the definition.

Linking a percentage field such as "Percent Complete" or "Physical Percent Complete" to the Status field (CHR_STATUS) will result in status changing to "Not started" if the percent is 0, "Started" if the status is between 1 and 99 and "Completed" if the percent is 100.

Use the **Link Code** and **Link Value** to identify to TimeControl that a project in Project Online should be transferred to TimeControl immediately The Link Code is a field in Project Online at the project level. It can be a user defined field which is most common or any field that you identify a value in. Enter the field name and the value that will define this project as ready to transfer into TimeControl and to create a TimeControl project in the project table. With this

code structure in place, you can create an automatic schedule at whatever frequency you wish and TimeControl will only make new projects of the projects which have this value set. This allows you to have projects which do not transfer to TimeControl at all if you wish.

> **Note**: Microsoft Project Online maintains several types of projects. So-called "lightweight" projects or "resource plans" that have never been opened by Microsoft Project Desktop may not have the WBS field or some other fields populated automatically. This can cause an issue when these fields are used in the transfer definition. An alternative is to create a unique hierarchical definition field of your own.

> **Note**: Microsoft Project does not keep the WBS field static when associated to a task. Deleting or Inserting tasks can result in Project changing the WBS field value.

Project Fields

In the Project Fields tab, you can also map project level fields in Project Online to TimeControl Project Table fields.

Transfer Options with Project Online

Not all options will be appropriate for each project management system type. You will need to establish the following options for this transfer type:

Link Interface

Connection Pool: Select the Microsoft Project Online Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: Select Import/Export or Import only. If you select Import only, the options for transferring data back to the project will disappear.

Project File: Enter the project name which can be selected from the list of published projects presented by Project Online when you click **Browse**.

Skip Milestones: TimeControl can be configured to automatically skip tasks with a zero-day duration (i.e. Milestones). Since such tasks typically have no duration they are often not an appropriate selection for timesheet entry.

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Date Transfer Options: Select **Date work performed** to have timesheet data transferred into a record in the project management system associated to the day the work in the timesheet was completed, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is more detailed and is the default but if you have a project that is decades long with millions of records, aggregating data into a weekly record may be more appropriate for you.

Add Resource Options: When TimeControl transfers data to a task but does not find a matching resource assignment, it can create that assignment automatically. In this case TimeControl wants to know if you would like the assignment created with no hours or with the same number of hours that are associated with the actuals we are sending. This option is ignored by Microsoft Project Online as it will always create a budget equal to the actual amount transferred when a resource assignment is newly created along with actual work accomplished.

Resource Assignment Options: Set this to "**Ignore resources not assigned to tasks** in order to have TimeControl skip over actuals when it finds the appropriate task and the appropriate resource but cannot find a matching resource assignment for this task. Set this to **Add Resources not assigned to tasks** if you wish

TimeControl to create a resource assignment if it finds the appropriate task and finds the appropriate resource but cannot find a matching assignment for this task. Set this to **Add Resources not assigned to tasks and create resource if required** to have TimeControl create the resource code and create the resource assignment in order to transfer the actuals. Any records which are rejected due to these options will be identified in the transfer log.

Rate Options: TimeControl can send the cost value from any of the 9 possible values associated to each rate code. You might have defined your rates with one value for internal project costs, one value for external billing price and a third value for average project rate. Select the rate value which is most appropriate for this project.

PMV Transfer Options: Select **All non-transferred data** to send to the project management system all records pending for that project regardless of whether or not they have been marked as approved in the Project Manager Validation module. Select **Only approved non-transferred data** to send to the project management system only the pending records which are marked as **Approved** in the Project Manager Validation module.

Data Options: Select from the following options for data transfer to he project management system:

❑ **Transfer Resource Actual hours**: This is always selected by default. It will transfer the timesheet hours to the project management system.

❑ **Transfer Resource Actual costs**: This option is not supported by Microsoft Project Online.

❑ **Transfer Expenses**: This option is not supported by Microsoft Project Online.

❑ **Transfer Resource ETC**: This option is not supported by Microsoft Project Online.

❑ **Transfer Resource Complete Indicator**: This option is not supported by Microsoft Project Online.

❑ **Transfer Activity ETC**: This option is not supported by Microsoft Project Online.

- ❑ **Transfer Activity Complete Indicator**: This option is not supported by Microsoft Project Online.
- ❑ **Transfer Primavera Steps**: This option is not used by Microsoft Project Online.
- ❑ **Transfer to Primavera Financial Periods:** This option is not used by Microsoft Project Online.

> **Note 2: Manually scheduled tasks are not updated in Microsoft Project Online** In Project Online, there is a task scheduling type called "manual scheduling". Since dates are not determined by definition in such a task, Microsoft Project Online has no way of knowing whether the actuals TimeControl is sending have acceptable dates attached to them. Project will reject updates to these tasks. Tasks should be set to "Auto-Schedule" in Microsoft Online before moving actuals from TimeControl.

Link with Microsoft Project for the Web

Microsoft's Project for the Web is sometimes referred to by Microsoft as "The New Microsoft Project" or in licensing terms as "Project Plan 1". This product is available only as a subscription service.

TimeControl includes a one-way link from Project for the Web to TimeControl. Sending actuals back to Project for the Web is not currently supported by Microsoft. If this feature should become available in the future, this section of the documentation will reflect the change and HMS will do its utmost to support the feature.

Defining the Link to Project for the Web

Authenticating the TimeControl Server is done in the TimeControl Interface Definition in the Connection Pool tab.

In the Interface Definition Connection Pool you will need to enter the URL of your Dynamics Organization as well as the application ID and the Client Secret code that is provided by the CRM Dynamics server. You will find more on how to authenticate in the section below called Establishing your Project for the Web authentication.

Clicking on Test Connection will let you know if TimeControl has been able to locate the correct Project for the Web Service
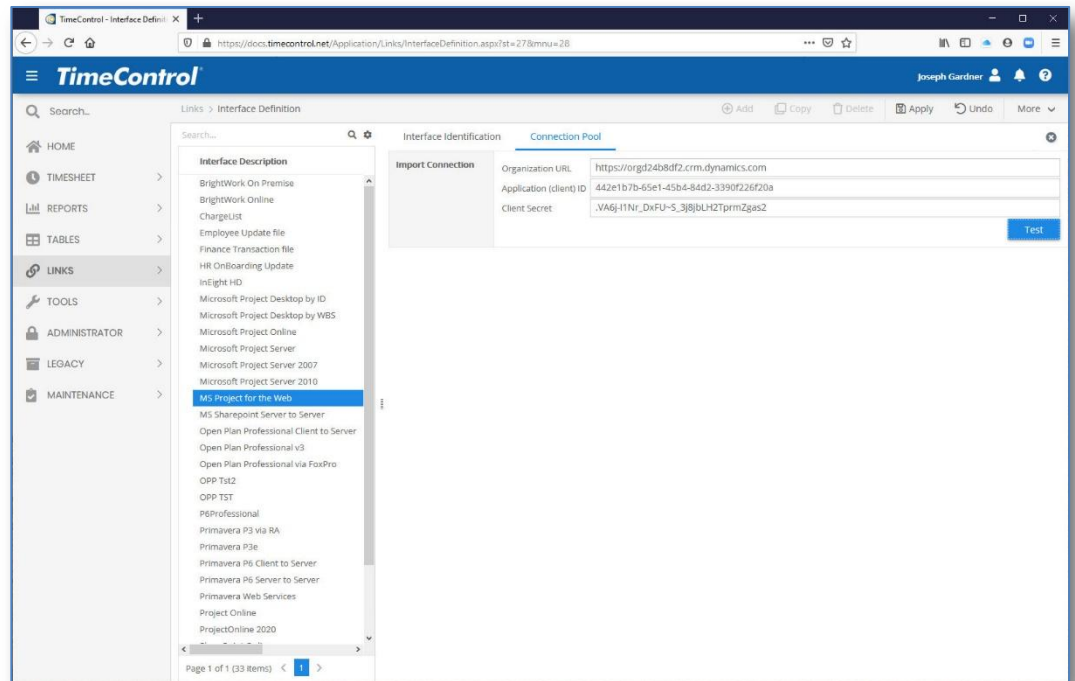
Interface Definition with Project for the Web
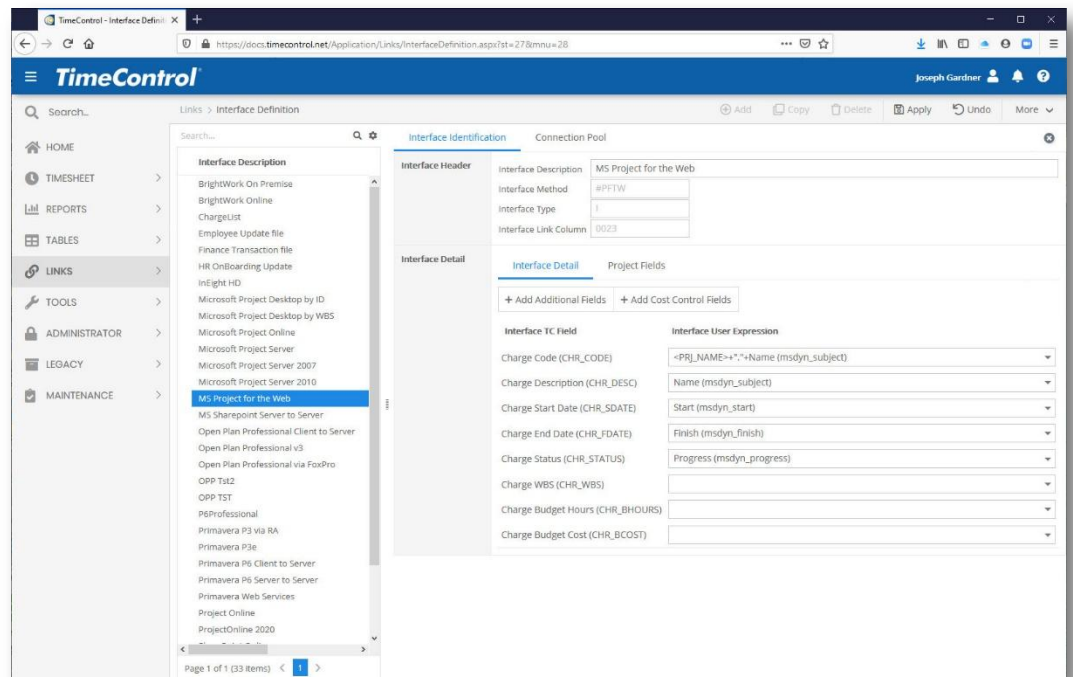
In the Interface Definition, you will first need to define how a TimeControl Charge Code should be defined. There will be several selections. Additional fields can be linked to the Description, Start and Finish Dates and other elements of the TimeControl Charge Table. You can click on **Add Additional Fields** if you wish to add other User Defined fields from the Charge table into the definition.

Linking a percentage field such as "Progress" to the Status field (CHR_STATUS) will result in status changing to "Not started" if the percent is 0, "Started" if the status is between 1 and 99 and "Completed" if the percent is 100.

Transfer Options with Project Online
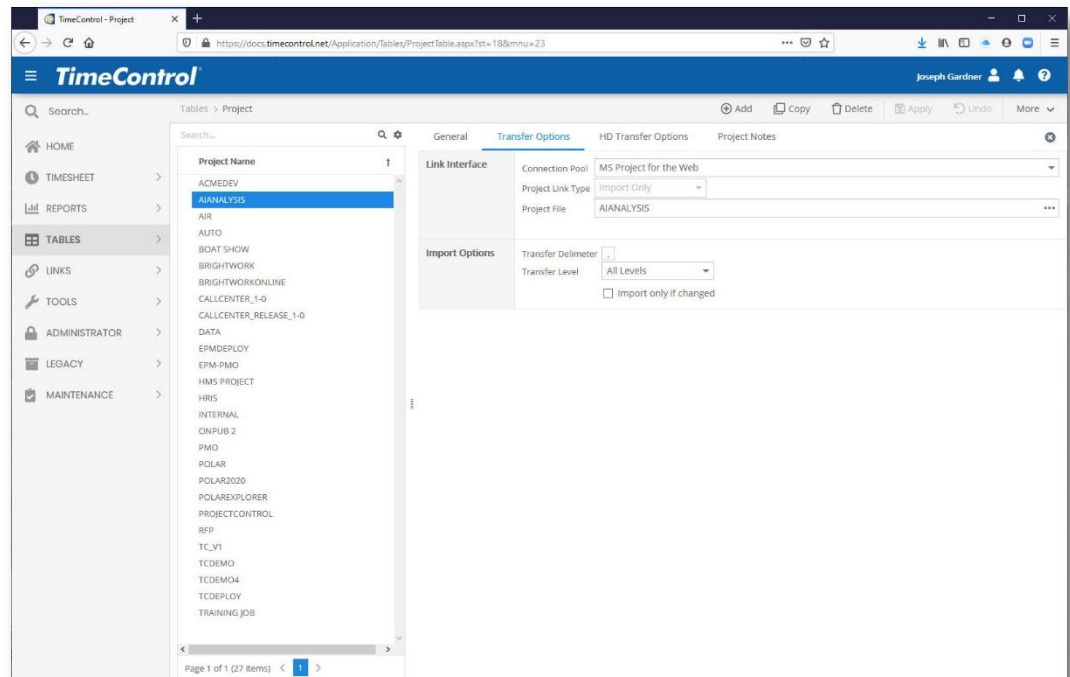
Not all options will be appropriate for each project management system type. You will need to establish the following options for this transfer type:

Link Interface

Connection Pool: Select the Microsoft Project Online Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: This is pre-selected for Import only.

Project File: Enter the project name which can be selected from the list of published projects presented by Project for the Web when you click **Browse**.

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Import only if changed: This option will not attempt to import data which has not been updated in Project for the Web.

Establishing Communication with Project for the Web

Communication with "Project for the Web" is effected with the Common Data Service Web API using OAuth2 for authentication. To establish the communication, TimeControl will require the following pieces of information:

Organization URL

This is the organization/environment URL.

https://docs.microsoft.com/en-us/powerapps/maker/common-data-service/data-platform-powerbi-connector#finding-your-common-data-service-environment-url

Open Power Apps:
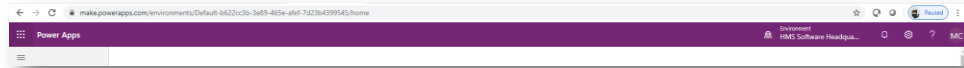
Go to settings (click the cog wheel in the top right corner and click "Advanced Settings":
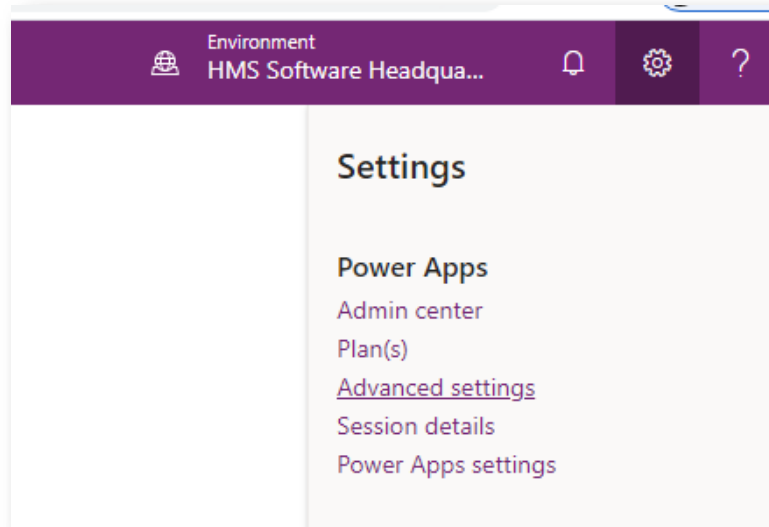
A new window will open and the URL is in the address bar:
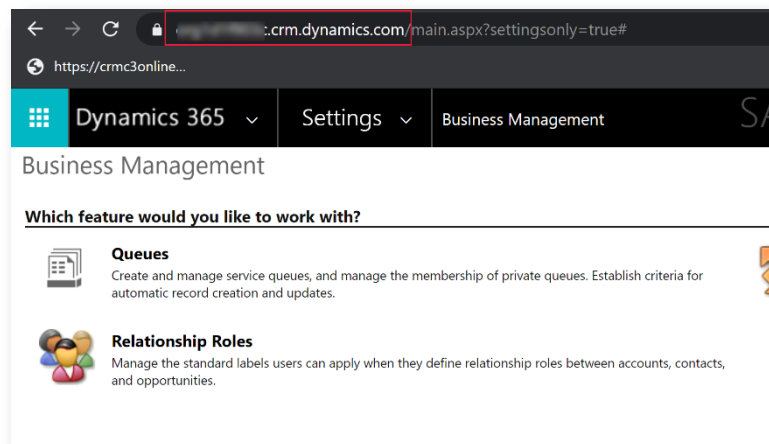
Application (client) ID

To obtain a client ID, register an application in Microsoft Azure (https://docs.microsoft.com/en-us/graph/auth-register-app-v2).
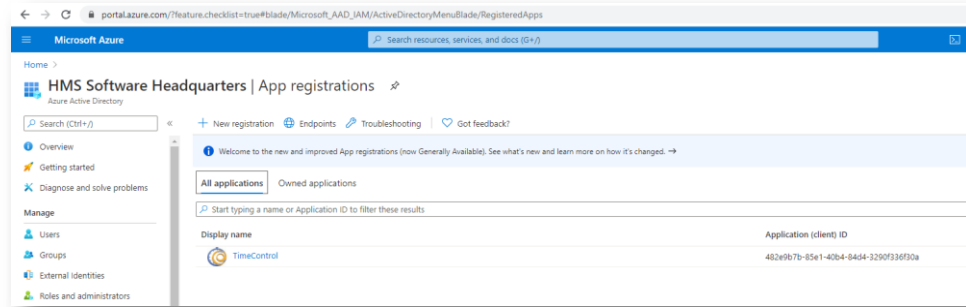
Client Secret

A client secret must be generated in Microsoft Azure for the registered application (see Application ID above).

Dynamic User

For all of this to work, an application user must be created using the Application (client) ID for the registered application in Microsoft Azure. To do this go to the Dynamics administration site:
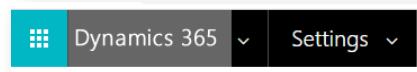
Under "Settings" select "Security"
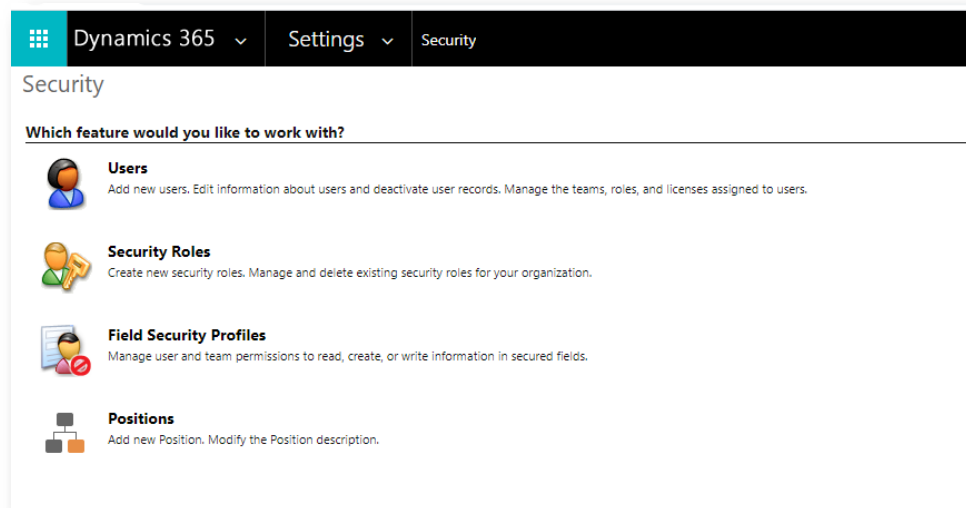
Select "Users", then click "New" to create a user. Fill in the form using the Application (client) ID and click "Save".

Managing Multi-factor authentication on Microsoft 365

If you are using Microsoft Project Online or SharePoint for Microsoft 365, you may have been recommended to use Multi-factor authentication for security purposes. TimeControl supports linking with SharePoint for Microsoft 365 or Microsoft Project Online with Multi-factor authentication enabled or disabled for the connecting user.

TimeControl uses OAuth authentication methods to support Microsoft's Multi-factor authentication. Enabling this is a multi-step process.

Overview

Login Process

This is a one-time process and requires user-interaction
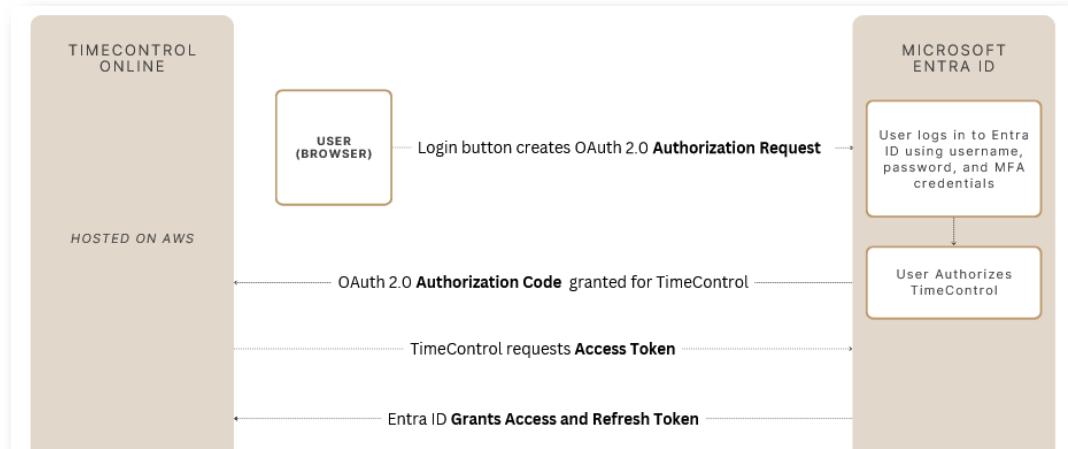
TimeControl PM Import / Export Process

Runs in background and requires no user interaction.
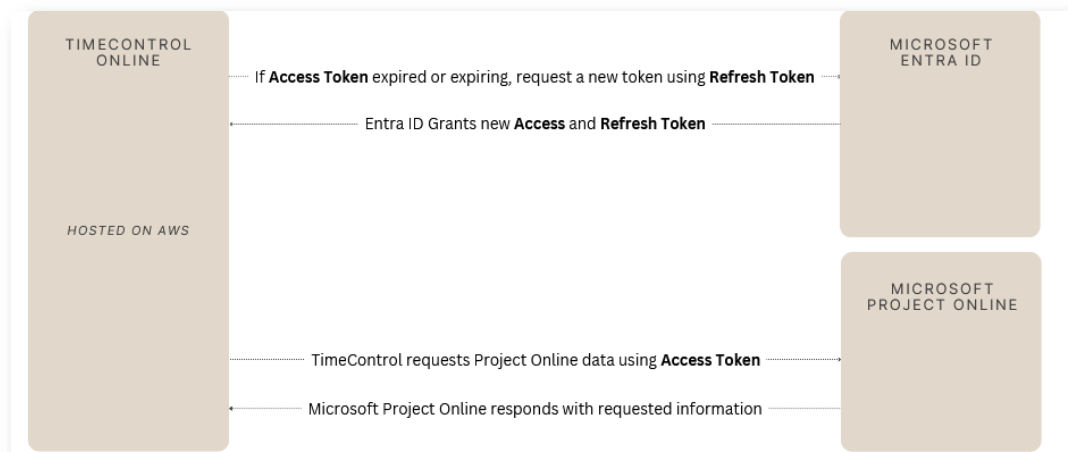
Setting up Azure App Registration

The following steps outline how to set up an Azure App Registration for connecting TimeControl to Project Online through OAuth. This setup is recommended when username/password access is not available, or if you need to support access for users with Multi-Factor Authentication (MFA) enabled. OAuth allows for secure access and a seamless user experience, even with MFA in place.

Setting up an app registration in Azure is the foundational step to authenticate and authorize the TimeControl application. Follow the steps below to create an app registration in Azure and configure the link.

Note that your interface may look a little different depending on the version you are using

1. **Log into the Azure Portal**: Navigate to [Azure Portal](https://portal.azure.com/) (https://portal.azure.com/) and sign in with your Azure credentials.

2. **Create an App Registration**:

   ▪ Go to **Azure Active Directory** (or Entra ID) in the portal.

   ▪ Select **App registrations** from the left sidebar, then click on **New registration**.
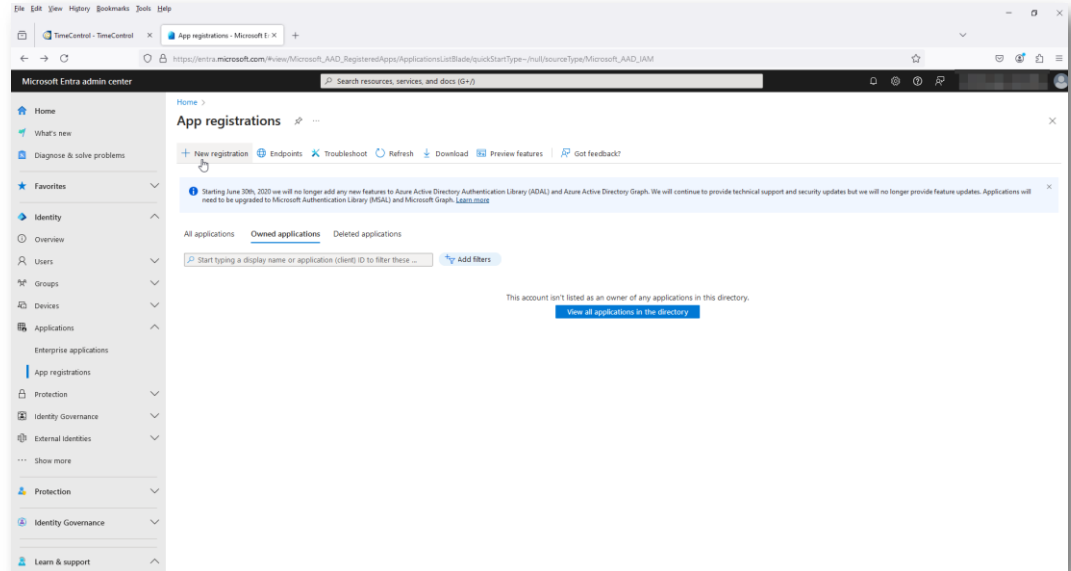
   ▪ Enter a **Name** for your application.
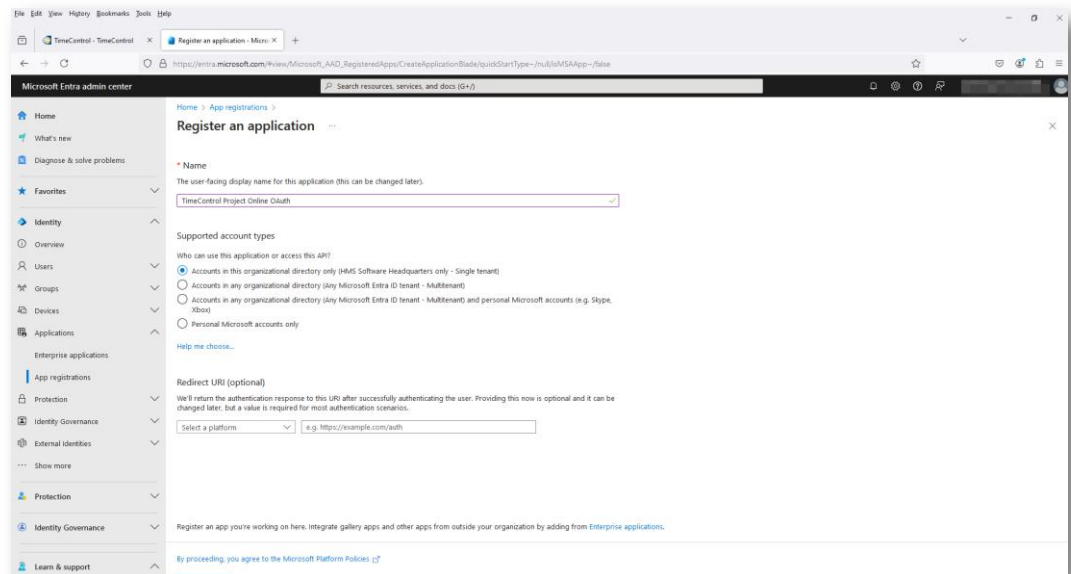
- Set the **Supported account types** based on who will access this app (e.g., single-tenant, multi-tenant).

- Do not add a redirect URI yet. We will add one later.

- Click Register to save

3. **Retrieve Client ID and Tenant ID**:

   - After registration, navigate to the app's **Overview** page.

   - Copy the **Application (client) ID** and **Directory (tenant) ID**. These are required for your application to authenticate with TimeControl.
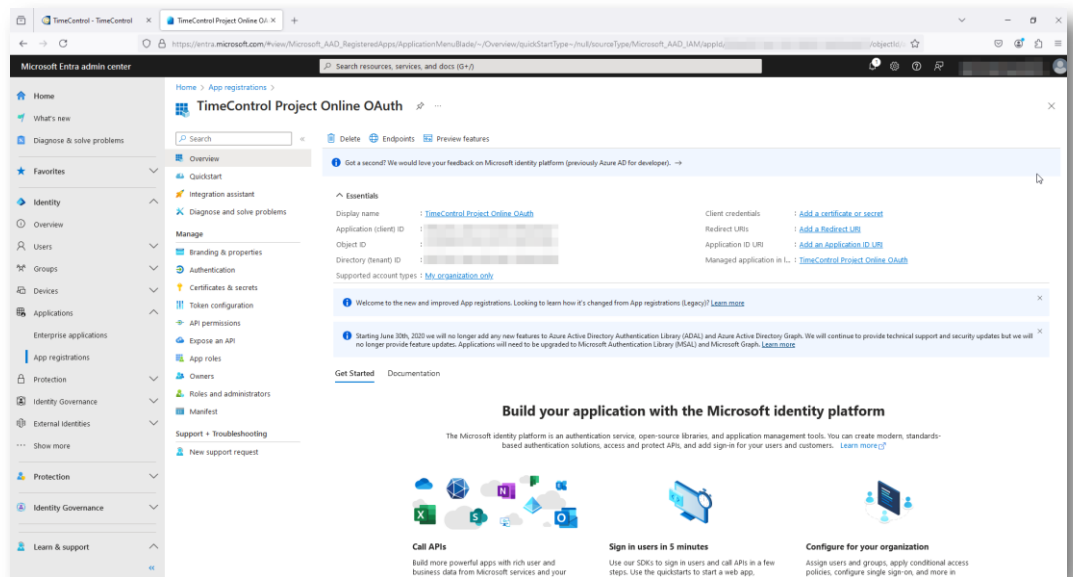
4. **Generate a Client Secret** (optional but commonly needed):

   - Under **Certificates & secrets**, go to **Client secrets**, then select **New client secret**.

   - Provide a description and set the expiration period, then click **Add**.
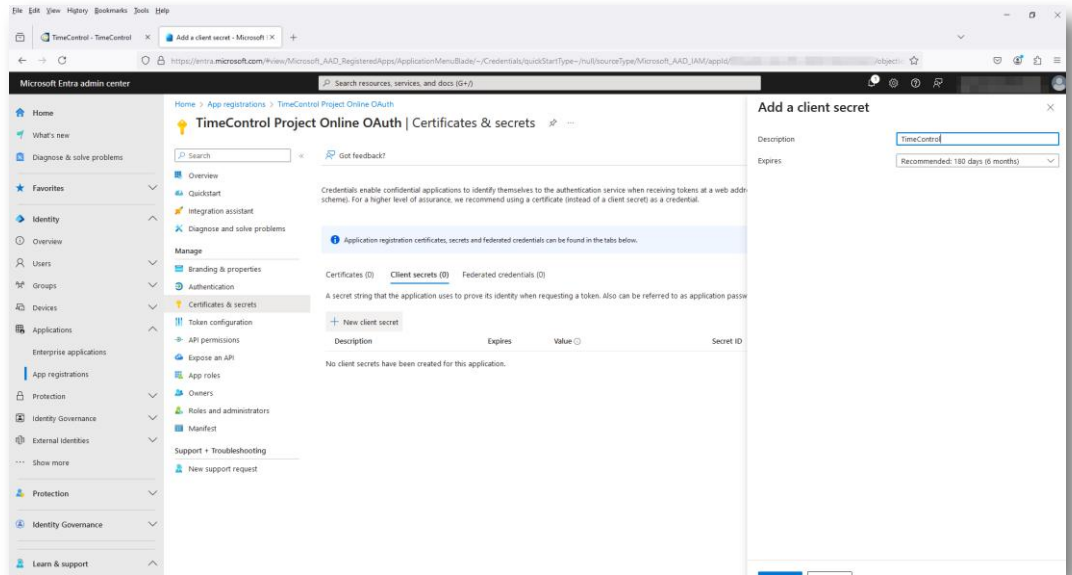
- Copy the **Client Secret Value** once it's generated—this is only shown once and is essential for secure API access.
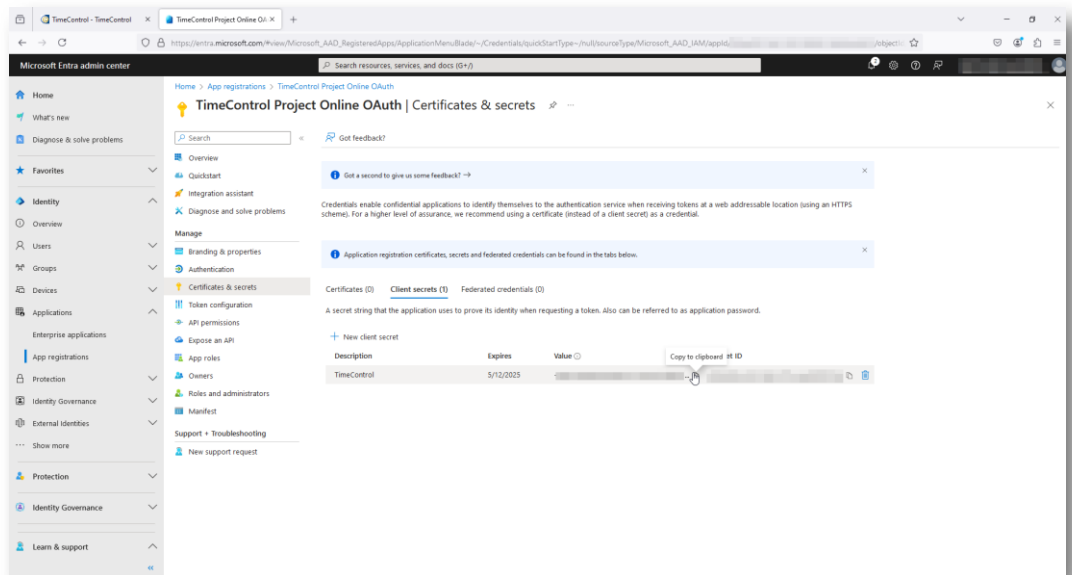
5. **Assign API Permissions**:

    - Go to **API permissions** and select **Add a permission**.

▪ Choose SharePoint
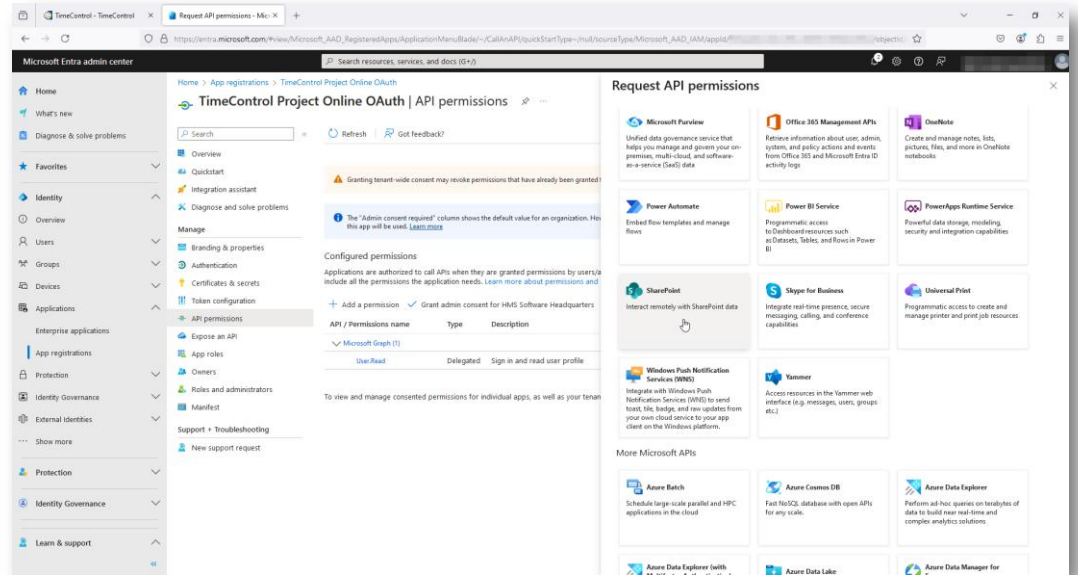
▪ Next select Delegated permissions
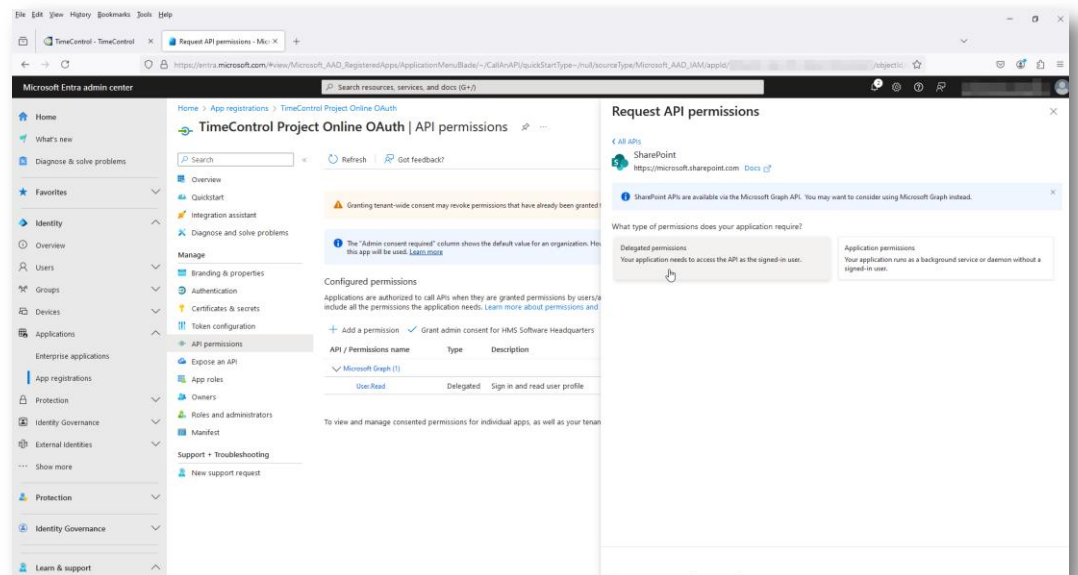
- Add the permissions as shown in the list below
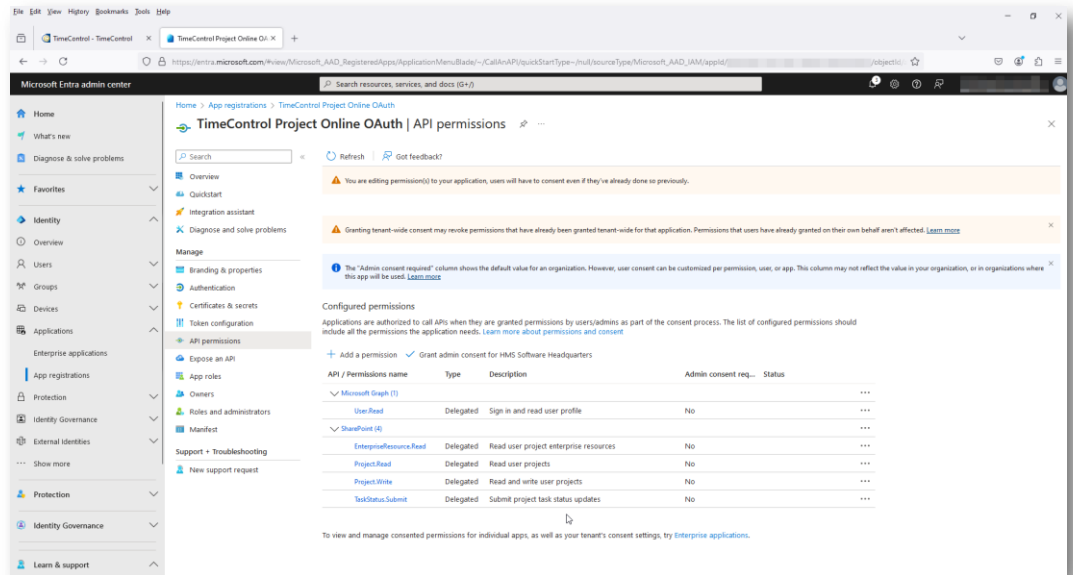
- Grant admin consent if required by your organization.

6. **Create the Interface Link in TimeControl**

- Login to your **TimeControl instance** as an administrator

- Visit **Links**, **Interface Definition**, and create or edit a Project Online link, as shown below. Use the information from your Azure application. Copy the **Redirect URL**, we will use it in the next step.
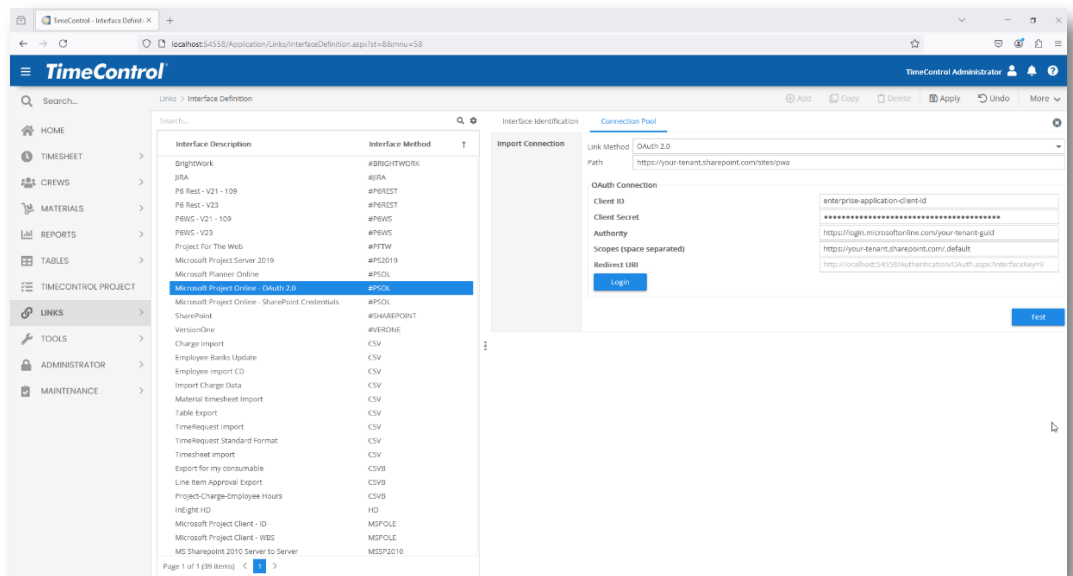
7. **Add a redirect URI**

- In the Entra admin center the overview page, as shown below, and click **Add a redirect URI.**
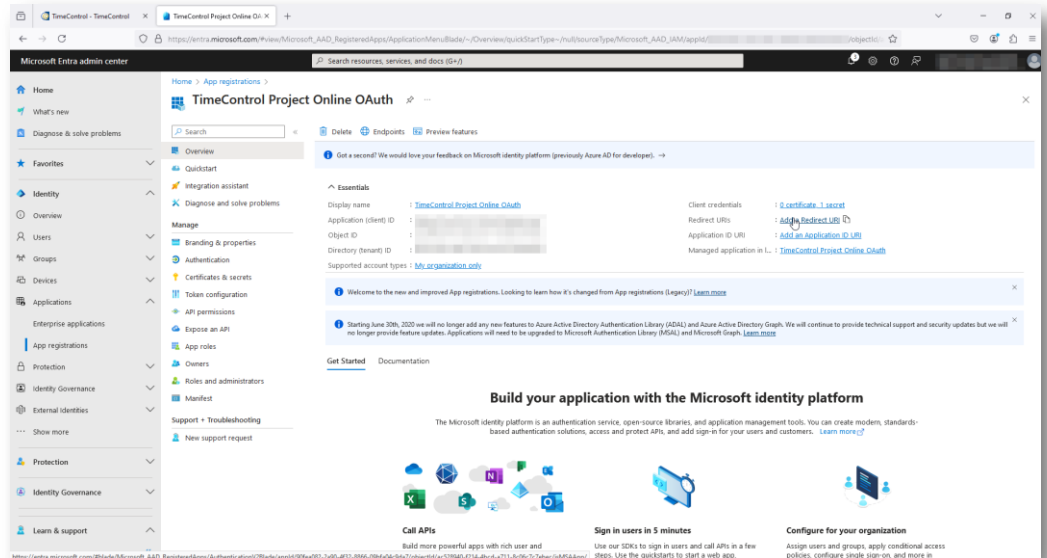
- Choose **Add a platform** and select **Web.** Enter the redirection Uri as shown below, allowing **Access tokens** and **ID tokens**. Click **Configure.**
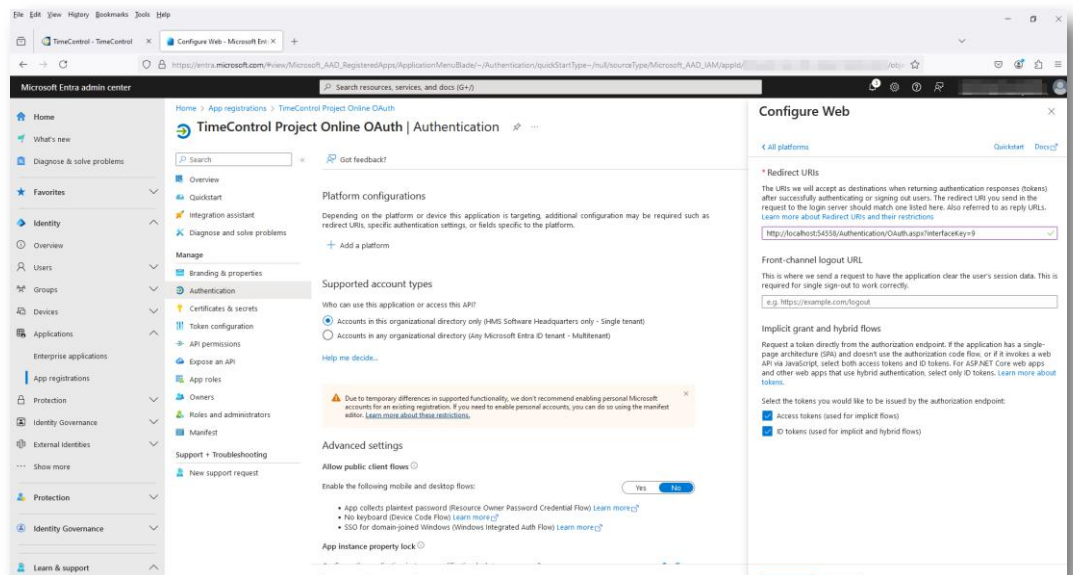
8. **Complete the remaining TimeControl configuration**
   - Visit the **TimeControl** interface again
   - Complete the connection pool information per the screen shot below, with the data that you saved earlier.

- Client ID = Application (client) ID
    - Application (client) ID is found on the Overview page
- Client Secret = Client secret Value
    - Client secret Value is found when creating a client secret
- Authority = https://login.microsoft.com/DirectoryTenantID
    - DirectoryTenantID is found on the Overview page
- Scopes = https://Path/.default
    - The scope is usually the URL of your application UP TO /sites/pwa which should be removed, followed by **.default**
- Next save the record using the **Apply** button at the top right.
- Next click the **Login button** on this page to do a one-time connection to complete the configuration.
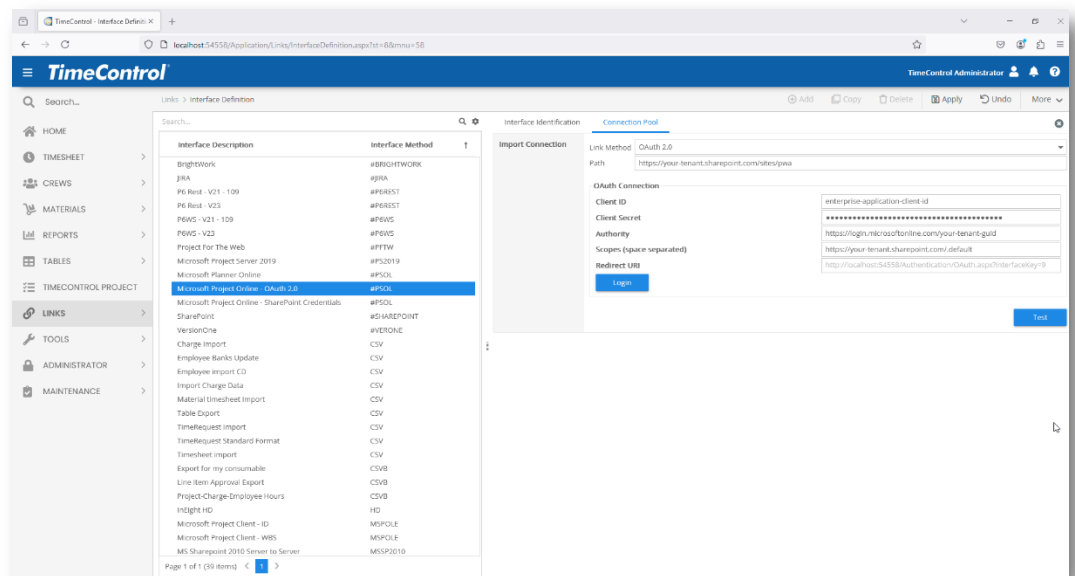
- Login to your azure account, and **authorize** the application:
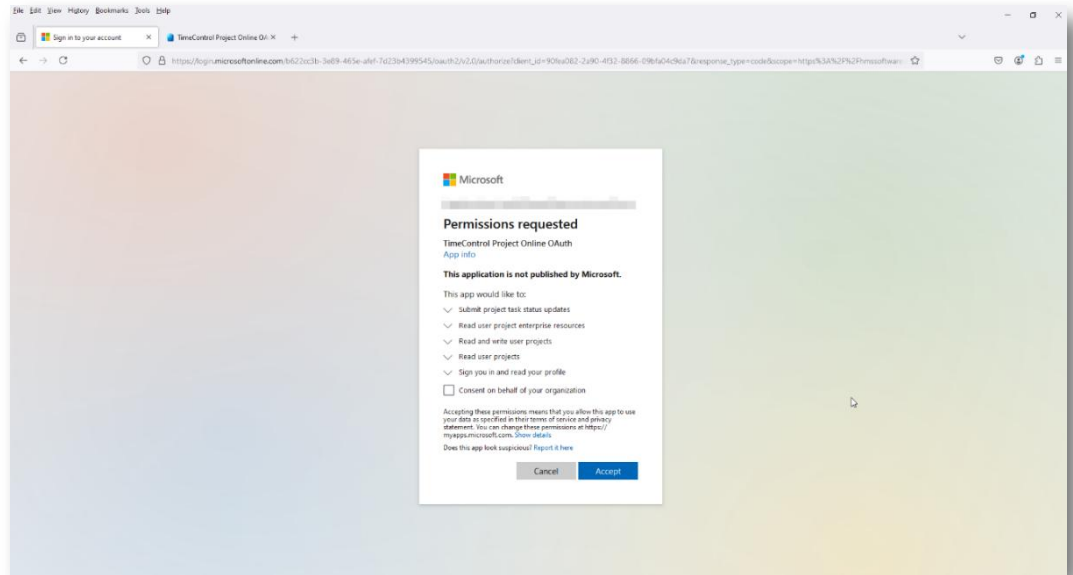
- Ensure the connection is successfully established. PM Import and export functionality should now be ready for use.
- Click on any menu item to continue.
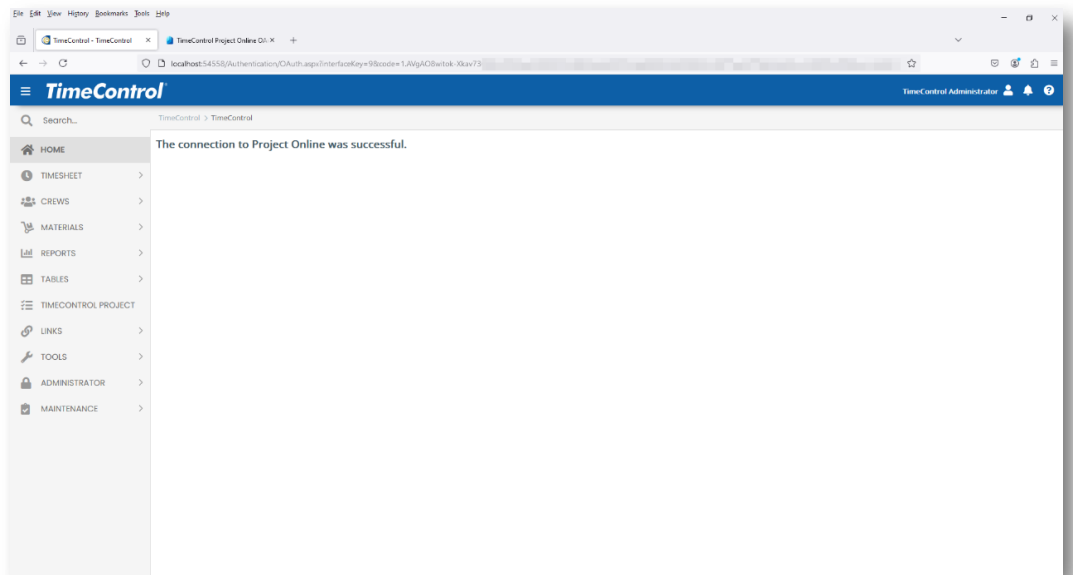
Note: Depending on the frequency of your connections (import/export) to Project Online it is possible that the information above expires. The typical duration of a stored secret in Microsoft Azure is 180 days but may be shorter or longer. If this occurs you would need to repeat the steps to update the connection information.

Link with Open Plan

Open Plan is a project management system from Deltek. TimeControl's Open Plan links are designed to work with either version.

Defining the Link to Open Plan

TimeControl links with Open Plan using either the OLE Automation connection capabilities of Open Plan or via direct database connection.

Interface Definition with Open Plan

In this example, there is no Connection Pool Tab with this Open Plan definition because this definition uses the Open Plan OLE Automation in the client to connect directly to the Open Plan OPP file. This requires that Open Plan be installed on the computer initiating the link.
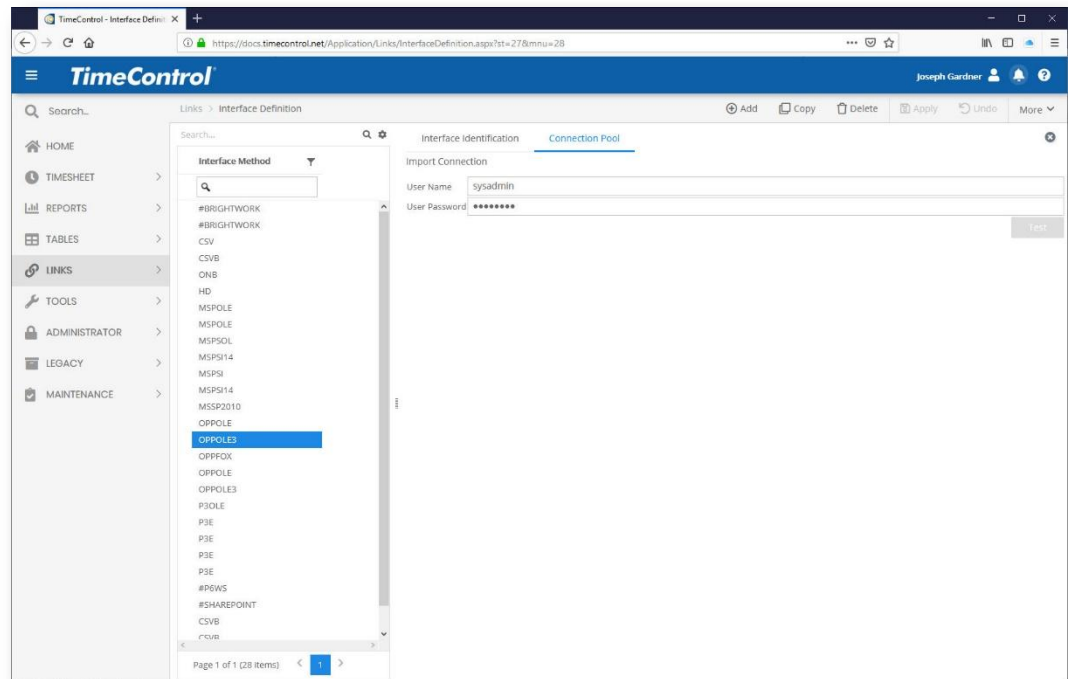
In the Interface Definition, you will first need to define how a TimeControl Charge Code should be defined. If you prefer a hierarchical display similar to Open Plan on the desktop, then using the Project name plus the Open Plan may be best. The Open Plan ID is designed to be hierarchical. Additional fields can be linked to the Description, Start and Finish Dates and other elements of the TimeControl Charge Table. You can click on Add Additional Fields if you wish to add other User Defined fields from the Charge table into the definition.
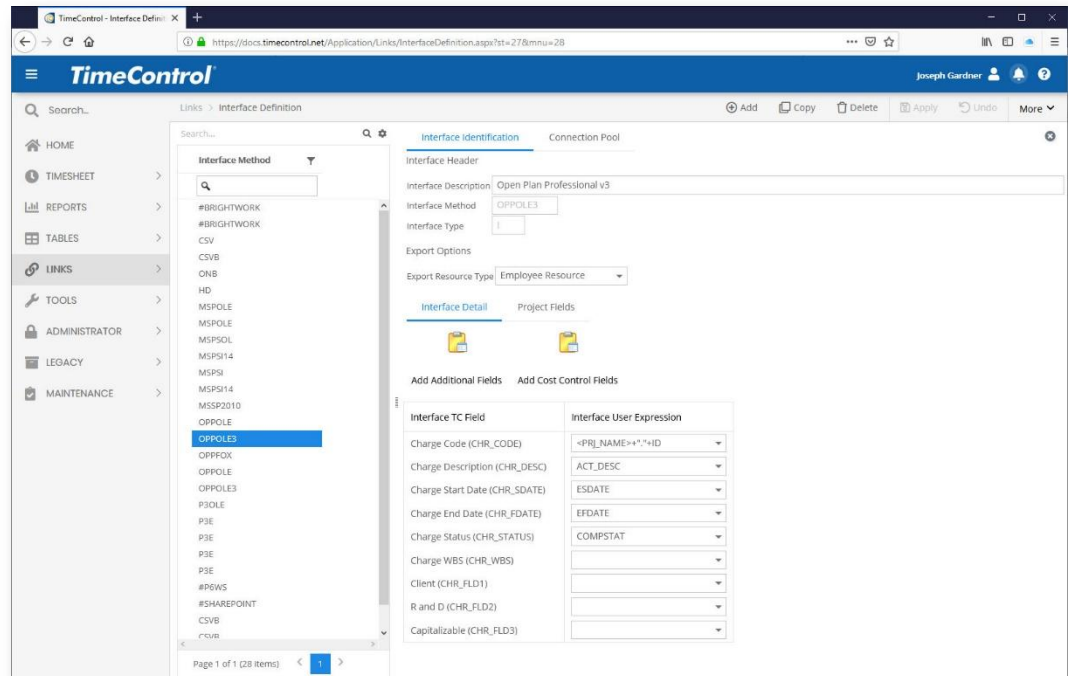
Linking a percentage field such as "Percent Complete" or "Physical Percent Complete" to the Status field (CHR_STATUS) will result in status changing to "Not started" if the percent is 0, "Started" if the status is between 1 and 99 and "Completed" if the percent is 100.

Note

If you are using the OLE method, Open Plan must be installed on the terminal that will be used for transferring data. This is because OLE (Object Linking and Embedding) accesses the data from each application through the application itself as objects.

Note

Because there is no way to tell Open Plan that your resource information is being assigned and measured in person/days or person/hours or any other category, you must tell TimeControl how it should treat that information during the transfer process. This is managed through the 'Default Duration' element of the Open Plan Project Information dialog box. Open your Open Plan project, and choose **Project Information** from the **Edit** menu. Select the **Preferences** tab. By changing the **Default Duration** to 'Hours' TimeControl knows to move simply the hours across to the new

system. To have TimeControl roll-up its data to person/days, set the **Default Duration** to 'Days'. TimeControl translates the number of hours per day based on the conversion factor that is in this dialog box. Therefore, a definition of 8 hours per day = 1 day in Open Plan, will result in 8 actual hours being entered into Open Plan as '1' instead of '8' if the **Default Duration** is days.

Transfer Options with Open Plan

Not all options will be appropriate for each project management system type. You will need to establish the following options for this transfer type:

Link Interface

Connection Pool: Select the Open Plan Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: Select Import/Export or Import only. If you select Import only, the options for transferring data back to the project will disappear.

Project File: Enter the file name with the subdirectory or select a OPP file by clicking browse.

Skip Milestones: TimeControl can be configured to automatically skip tasks with a zero-day duration (i.e. Milestones). Since such tasks typically have no duration they are often not an appropriate selection for timesheet entry

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Date Transfer Options: Select **Date work performed** to have timesheet data transferred into a record in the project management system associated to the day the work in the timesheet was completed, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is more detailed and is the default but if you have a project that is decades long with millions of records, aggregating data into a weekly record may be more appropriate for you.

Add Resource Options: When TimeControl transfers data to a task but does not find a matching resource assignment, it can create that assignment automatically. In this case TimeControl wants to know if you would like the assignment created with no hours or with the same number of hours that are associated with the actuals we are sending.

Resource Assignment Options: Set this to "**Ignore resources not assigned to tasks** in order to have TimeControl skip over actuals when it finds the appropriate task and the appropriate resource but cannot find a matching

resource assignment for this task. Set this to **Add Resources not assigned to tasks** if you wish TimeControl to create a resource assignment if it finds the appropriate task and finds the appropriate resource but cannot find a matching assignment for this task. Set this to **Add Resources not assigned to tasks and create resource if required** to have TimeControl create the resource code and create the resource assignment in order to transfer the actuals. Any records which are rejected due to these options will be identified in the transfer log.

Rate Options: TimeControl can send the cost value from any of the 9 possible values associated to each rate code. You might have defined your rates with one value for internal project costs, one value for external billing price and a third value for average project rate. Select the rate value which is most appropriate for this project.

PMV Transfer Options: Select **All non-transferred data** to send to the project management system all records pending for that project regardless of whether or not they have been marked as approved in the Project Manager Validation module. Select **Only approved non-transferred data** to send to the project management system only the pending records which are marked as **Approved** in the Project Manager Validation module.

Data Options: Select from the following options for data transfer to he project management system:

❑ **Transfer Resource Actual hours**: This is always selected by default. It will transfer the timesheet hours to the project management system.

❑ **Transfer Resource Actual costs**: This option will transfer the costs associated with the Rate Options selection above for the timesheet actual hours.

❑ **Transfer Expenses**: This option will transfer expense costs gathered in the Expense tab of the timesheet.

❑ **Transfer Resource ETC**: This option will transfer the estimate to complete of this resource's assignment and will affect that assignment only.

❑ **Transfer Resource Complete Indicator**: This option will transfer the flag of "Complete" entered on the timesheet line and will change the estimate to complete to 0.

❑ **Transfer Activity ETC**: This option will transfer the activity estimate to complete from within TimeControl's Activity progress in the Activity tab of the charge code. This is distinct from the assignment progress.

❑ **Transfer Activity Complete Indicator**: This option will transfer the flag of "Complete" from within TimeControl's Activity progress in the Activity tab of the charge code and will change the estimate to complete to 0.

❑ **Transfer Primavera Steps**: This option is ignored by Open Plan.

❑ **Transfer to Primavera Financial Periods:** This option is ignored by Open Plan.

Link with Cobra

Cobra is an Earned Value cost control tool from Deltek. Cobra allows data to be stored in ODBC-compliant databases such as Oracle and SQL Server. TimeControl has had a link to Deltek Cobra since its very first version.

The link between TimeControl and Cobra is accomplished through the Export Tables Link. The transaction file to export data must be in the particular format for your implementation of Cobra. Imports from Cobra into TimeControl are usually done through the scheduling system to which Cobra is tied. If Cobra is to be linked to TimeControl on its own, certain data can be exported from Cobra into TimeControl, directly using the Import Tables Link.

Defining the Link to Cobra

In order to determine how the links should be established, the client must make several decisions:

1. Will Cobra be used in conjunction with a scheduling system such as Deltek Open Plan or Microsoft Project?
2. If Cobra will be used with a scheduling system, do all 3 systems need to be kept synchronized?

Cobra allows for Costs be defined at the Cost Account, Work Package or even Milestone levels. Most typically, costs are loaded within Work Packages.

A cost account is most typically defined as the intersection of a OBS And WBS code but Cobra Cost Accounts can be defined as one, two or even three dimensional structures. A 1-dimensional structure is a straight list or hierarchical list of codes contained in the CA1 field. An example of such a structure would be a financial chart of accounts. A 2-dimensional structure would use 2 straight or hierarchical lists such as the classic OBS/WBS and a 3-dimensional list could take into account a 3rd straight or hierarchical list. TimeControl has been created to support all these definitions.

Linking TimeControl only to Cobra

If you are not using any scheduling software or, if you are not intending to keep both Cobra and the scheduling systems synchronized, then the integration from Cobra to TimeControl is very simple. The Cost Account, Work Package and Milestone structures along with their associated descriptions are exported from Cobra and a Table import in TimeControl establishes the list of Charge codes within each project.

Linking TimeControl to Cobra and Project Scheduling

If you intend to keep the scheduling tool, Cobra and TimeControl all synchronized, then we first must discuss the potential synchronization between scheduling and Cobra. This is covered in much more detail within Cobra's documentation, but at its core, what is important is that many scheduling activities may go into a particular work package. The recommendation is to use user-defined codes such as the C1, C2, C3, C4, C5 codes within Open Plan to maintain the Cost Account (by 1, 2 or 3 dimensions) and the Work Package and Milestone IDs. Cobra will use this information to bring the appropriate schedule updates to the appropriate elements within Cobra and to identify the appropriate tasks back in the scheduling tool that are associated to each Cobra element.

In this case, TimeControl can adopt the same structure and bring these codes automatically into chargeable tasks within the timesheet. In this way, the end users would see a list of tasks and update their hours and optionally their progress into each task. The project schedule would be updated by

TimeControl with the tasks progress as well as hours and costs. A transaction file will be created separately for Cobra which would be defined by the extra fields in the Charge Table so that the transaction file can be summarized by Cost Account, Work Package, and Milestone as required.
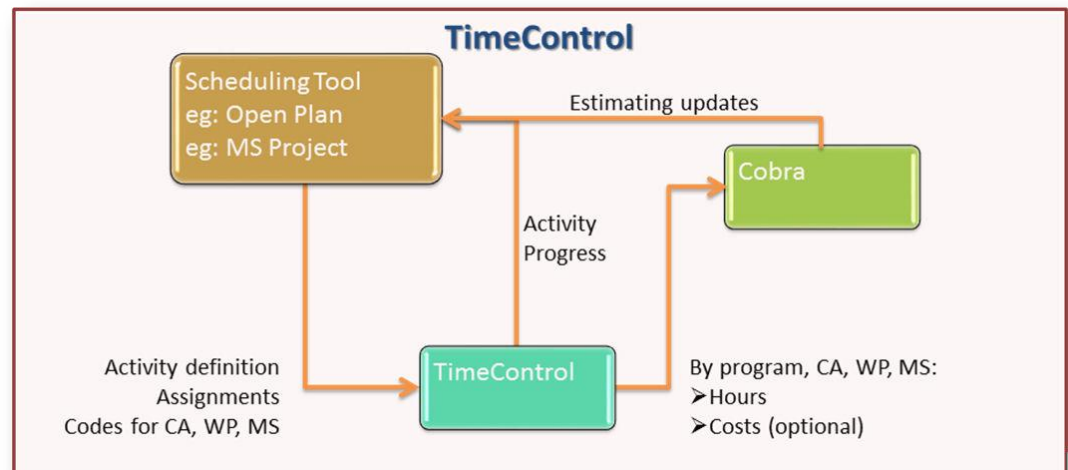
Creating the link in TimeControl is done in the Interface definition

We've shown this example using an Open Plan interface definition but the same thing is possible for any of the other scheduling tool links.

First, click on the Add Cobra Fields
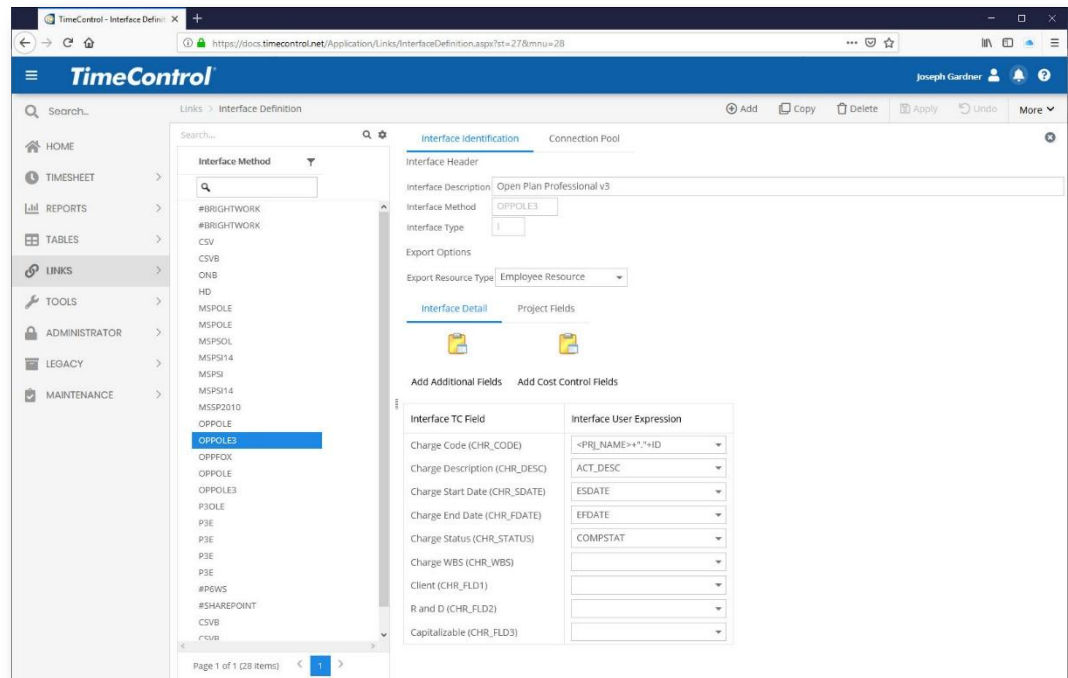
The Cobra fields appear and you can then link them to the appropriate user defined fields from within the scheduling system that you have already defined to use to identify those tasks to fit into the Cost Account, Work Package and Milestone definitions of Cobra.

The resulting definition will import the associated values into codes that are now linked to TimeControl Charge items.

When using the Table Export to create the Transaction file for Cobra actuals, follow these guidelines:

❑ Use the Transaction file definition based on your configuration of Cobra. (There are many possible variations of what data you'll want from TimeControl based on your particular configuration of Cobra.)

❑ Batch Tracking should be enabled

❑ The Table Export should be based on the Posted Detail table

❑ The export must include the CA, WP and MS codes that were defined in the Interface Definition which will be found in the Charge Revision table.

Your resulting Transaction file might look something like this:

CA1	CA2	WP	RESOURCE	Cost Date	HOURS	DIRECT
01	02	1	Engineer	10/15/2012	17	0
01	03	1	Program Manager	10/6/2012	169	0
02	01	1	Project Manager	10/12/2012	86	0
02	01	1	Scheduler	10/6/2012	46	0
02	03	1	Designer Draft	10/31/2012	88	0
03	01	1	Engineer	10/6/2012	21	0
03	04	3	Designer Draft	10/13/2012	160	0
04	02	3	Engineer	10/6/2012	55	0
04	06	6	Engineer	10/21/2012	790	0
04	07	6	Technician	10/6/2012	844	0
05	01	2	Buyer	10/22/2012	120	0

Link with BrightWork

TimeControl is designed with a bi-directional link with the BrightWork collaborative project and portfolio management system. BrightWork is a module on top of SharePoint that enables project management features. Because of the nature of SharePoint, anything can change. BrightWork has created project management templates that can be imported and clients can then change fields and configuration as they require (e.g. list names, column names, what fields are available, creating new lists, etc.). Because of this, the TimeControl link to BrightWork was made to be as configurable as possible. The following diagram explains the standard BrightWork hierarchy at a high level:
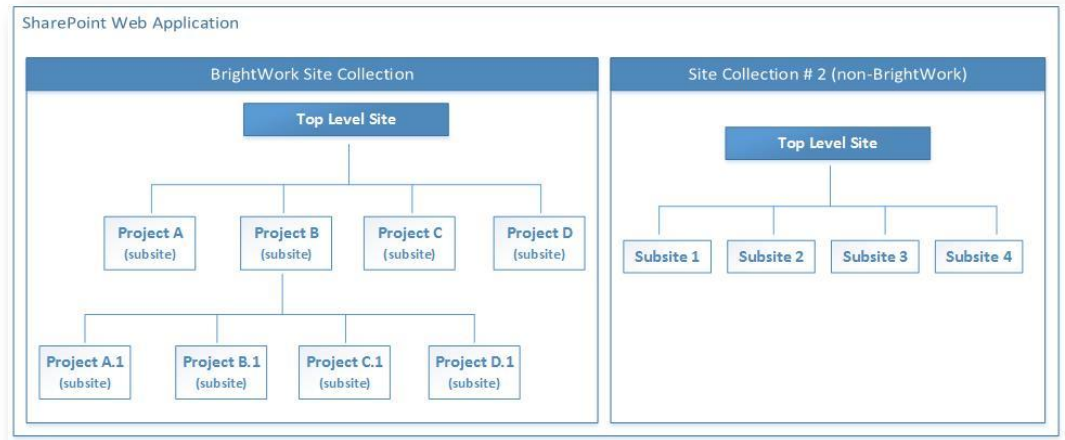
In defining your TimeControl/BrightWork link, everything starts with a BrightWork site collection. The site collection will contain multiple sites with multiple levels. Projects are "Sites" in SharePoint. Hierarchy is created using Sites and Sub-Sites. In the example above, "Project B" is created using a specific "Office library" offered by BrightWork; it is not a project, but simply a subsite that allows you to add projects underneath it.

For TimeControl, a Project is a site that has a list of tasks within it. Project attributes (e.g. Start date, Status, Owner) can be stored in multiple places depending on what fields are made visible in BrightWork. For example, some attributes will be found through the Project Metrics list (which is a list that has 4 or 5 predefined fields such as "Metric Value"). Each item in this list would be considered an attribute to TimeControl (e.g. Start date). Some attributes can also be found through the "Project Statement" list which is a one-item list that contains multiple fields (e.g. Start date).

Pre-requisites

- TimeControl must have access to the Site Collection interface (web-accessible).
- The SharePoint environment must be supported. TimeControl currently supports:
    - SharePoint 2013;
    - SharePoint 2016;
    - SharePoint Online (Office 365).

- TimeControl must connect using an account which is part of the "Site Collection Administrators" group:
- Resources in SharePoint must have email addresses.
    - When resources are imported into TimeControl, the "Resource Code" will be the users email. TimeControl has fallback support if an email address does not exist, but we recommend using email addresses.

Choosing field names

When configuring your TimeControl link to BrightWork, you will need to identify one or more fields in the BrightWork SharePoint environment. SharePoint fields have both a "Display name" and an "Internal Name". When fields are displayed in the user interface, the Internal Name is used. When linking a field to TimeControl, the "Internal Name" must be entered and not the "Display name" as it is not unique. It is possible to see a list of available fields on a list, along with their internal and display names, by following the following steps:

- Under Site Settings, choose "Site Libraries and Lists"
- Choose "Customize …" for the list you want to see the fields for
- Choose "Column visibility settings (BrightWork)"
- A list of fields is displayed. The "Internal Name" is what needs to be selected in the TimeControl interface:

Defining the Link to BrightWork

To define the BrightWork link in TimeControl, go to Links | Interface Definition and add a new entry. Select BrightWork as the type.

Import Options

- The import options area allows you to automatically import projects into TimeControl as they are created. Simply fill out the "Link Code" and "Link Value" fields. When the "Import new projects" option is selected on the PM import screen, TimeControl will bring in new projects that have an attribute of "Link Code" and a value equal to "Link Value".

For example, by putting a Link Code of "Status" and a Link Value of "(2) In progress" TimeControl will import all projects that have value of "(2) In progress" in the SharePoint "Status field"

Note: The field used in "Link Code" must be an Internal column name.

Export Options

- Export Resource Type – Select how you wish TimeControl to determine the Resource Code to use when transferring hours back to BrightWork. Your options are:

    - **Employee Resource** – Use the resource code attached to the Employee Table record

    - **Line Resource** – Use the resource code entered into each timesheet line

    - **Crew resource** – For TimeControl Industrial only, use the resource associated to each Crew.

- Use the **Link Code** and **Link Value** to identify to TimeControl that a project in Project Online should be transferred to TimeControl immediately The Link Code is a field in Project Online at the project level. It can be a user defined field which is most common or any field that you identify a value in. Enter the field name and the value that will define this project as ready to transfer into TimeControl and to create a TimeControl project in the project table. With this code structure in place, you can create an automatic schedule at whatever frequency you wish and TimeControl will only make new projects of the projects which have this value set. This allows you to have projects which do not transfer to TimeControl at all if you wish.

Now click on the Connection Pool tab

In the Connection Pool, enter the URL of your BrightWork instance and the user name and password of a user with Administrator privileges.
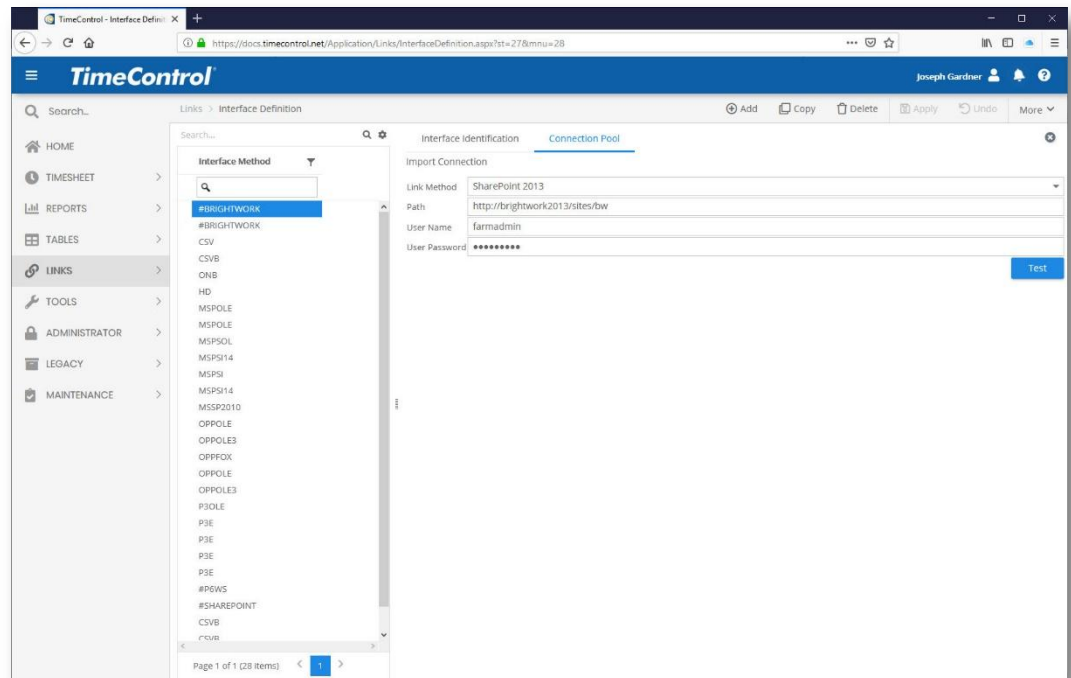
Now click on the Interface Identification Tab and enter your SharePoint information:

Project Information

- **Sample Project name** - TimeControl will show you a dropdown on the next tab with a list of available fields. Type in the name of the project to use; if this is empty, we'll use the first project we find.

- **Re-initialize settings from Template** - If you would like to automatically fill out this form from a BrightWork template, use this option and click Copy.

- **What is a Project?** – Options are:

- A Site / Subsite
- An item in a list
- A list
- **Task list name** - Enter the name of the list in SharePoint that contains tasks
- **Project list name** - Enter the name of the list in SharePoint that contains projects
- **Project name field** - What is the name of the field in the list that contains the name of the project? Most of the time 'Title' suffices.
- **Parent ID field** - What is the name of the field that references the parent project? Most of the time 'ParentId' suffices.
- Project filter - In certain cases, we only want certain projects from a list (e.g. Only items with Project Type equal to 'P'. Enter the filter here. The filter should be in OData filter syntax. E.g. ProjectType eq 'P'. For more information on how to construct an OData filter, visit:

  www.odata.org/documentation/odata-version-3-0/url-conventions/#url5.1.2

Project Attributes

- **Where can TimeControl find Project Attributes?** - Project attributes are details for the project (e.g. start date, status). Options are:
  - Top level item in a list (attribute is a field on the list item)
  - A list of attributes
  - Fields on the current list item
- **Site Id field** - Enter the name of the field in the list that contains the site ID
- **Site Url field** - Enter the name of the field in the list that contains the site URL
- **List Id field** - Enter the name of the field in the list that contains the list ID
- **List Title field** - Enter the name of the field in the list that contains the list title

Import Mappings

- **Open Status** - Enter the status(s) values in SharePoint that map to [Open] in TimeControl. You can enter multiple values by separating values with a comma.

- **Closed Status** - Enter the status(s) values in SharePoint that map to [Closed] in TimeControl. You can enter multiple values by separating values with a comma.

- **Unopened Status** - Enter the status(s) values in SharePoint that map to [Unopened] in TimeControl. You can enter multiple values by separating values with a comma.

Export Mappings

- **Open Status** - Enter the status(s) values in SharePoint that map to [Open] in TimeControl. You can enter multiple values by separating values with a comma.

- **Closed Status** - Enter the status(s) values in SharePoint that map to [Closed] in TimeControl. You can enter multiple values by separating values with a comma.

- **Unopened Status** - Enter the status(s) values in SharePoint that map to [Unopened] in TimeControl. You can enter multiple values by separating values with a comma.

You can map the fields from the BrightWork SharePoint site that you wish to import into specific fields in the TimeControl Project table each time the PMImport function is activated for projects using this Interface Definition.

Interface Detail tab

Project Fields tab

Export Mappings tab

If you wish to send TimeControl actuals back to fields in the BrightWork site, you must identify which fields will hold specific values. Leaving a field blank will ensure that this value is not transferred from TimeControl.

Transfer Options for BrightWork

Link Interface

Connection Pool: Select the BrightWork Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: Select Import/Export or Import only. If you select Import only, the options for transferring data back to the project will disappear.

Project File: Enter the file name or select the project from the project list presented by BrightWork by clicking **Browse**.

Skip Milestones: TimeControl can be configured to automatically skip tasks with a zero-day duration (i.e. Milestones). Since such tasks typically have no duration they are often not an appropriate selection for timesheet entry

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Date Transfer Options: Select **Date work performed** to have timesheet data transferred into a record in the project management system associated to the day the work in the timesheet was completed, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is more detailed and is the default but if you have a project that is decades long with millions of records, aggregating data into a weekly record may be more appropriate for you.

Add Resource Options: These options are not applicable to the VersionOne link.

Rate Options: These options are not applicable to the VersionOne link.

PMV Transfer Options: Select **All non-transferred data** to send to the project management system all records pending for that project regardless of whether or not they have been marked as approved in the Project Manager Validation module. Select **Only approved non-transferred data** to send to the project management system only the pending records which are marked as **Approved** in the Project Manager Validation module.

Data Options: Select from the following options for data transfer to he project management system:

❑ **Transfer Resource Actual hours**: This is always selected by default. It will transfer the timesheet hours to the project management system.

❑ **Transfer Resource Actual costs**: Not applicable to the BrightWork link.

❑ **Transfer Activity ETC**: This option will transfer the activity estimate to complete from within

TimeControl's Activity progress in the Activity tab of the charge code. This is distinct from the assignment progress.

❑ **Transfer Activity Complete Indicator**: This option will transfer the flag of "Complete" from within TimeControl's Activity progress in the Activity tab of the charge code and will change the estimate to complete to 0.

Link with Oracle Primavera P6 Professional and EPPM

Primavera is Oracle's Enterprise Project and Portfolio Management product. TimeControl has had a link with every version of the Primavera scheduling system since 1997 including the most recent. TimeControl can make a direct database-to-database connection to link to Primavera Pro or Primavera EPPM or work through EPPM Web Services. Link can be established from either the TimeControl server or the TimeControl client machines. Linking directly to the database means that the TimeControl Server must be able to reach the same database server used for Primavera and pass SQL statements to that server. Linking through Web Services means that the TimeControl Server must be able to access the EPPM server. If you wish to create an on-demand link using a TimeControl client station, then that station must be able to reach the database server. This gives clients a number of options depending on their situation.
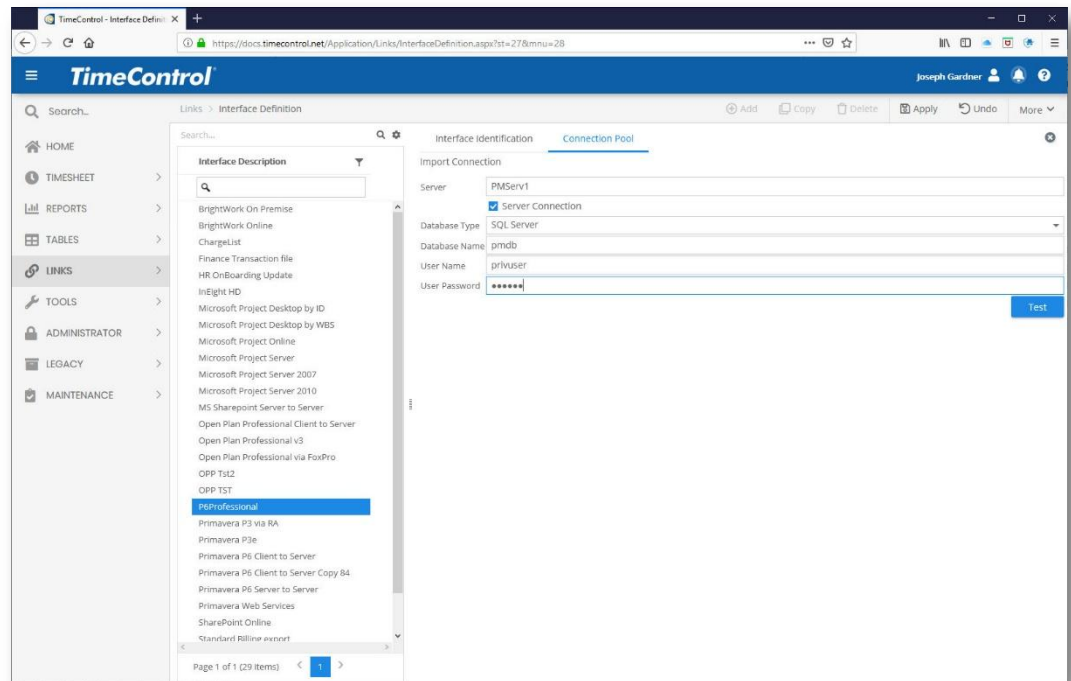
For the database-to-database link, there is no requirement for both TimeControl and Primavera to be using the same database or the same database version. For example, TimeControl could, in theory, be installed using Microsoft SQL Server while Primavera was installed on an Oracle database.

Defining the Link to Oracle-Primavera

TimeControl includes three methods of defining a link to Oracle-Primavera. TimeControl allows a Web Services link using Primavera's original SOAP Web Services, a REST API (RESTful) link using an enhanced web services architecture and a direct database-to-database option. Which option to choose is dependent on several factors.

If you are linking to Primavera Professional, then the database-to-database link is the only appropriate option as there is no Web Services link within the Pro product. If you are linking to Primavera EPPM then you can elect either the database-to-database if you have both products installed on premise or the either of the Web Services options.

Defining a REST Web Services Link to Primavera
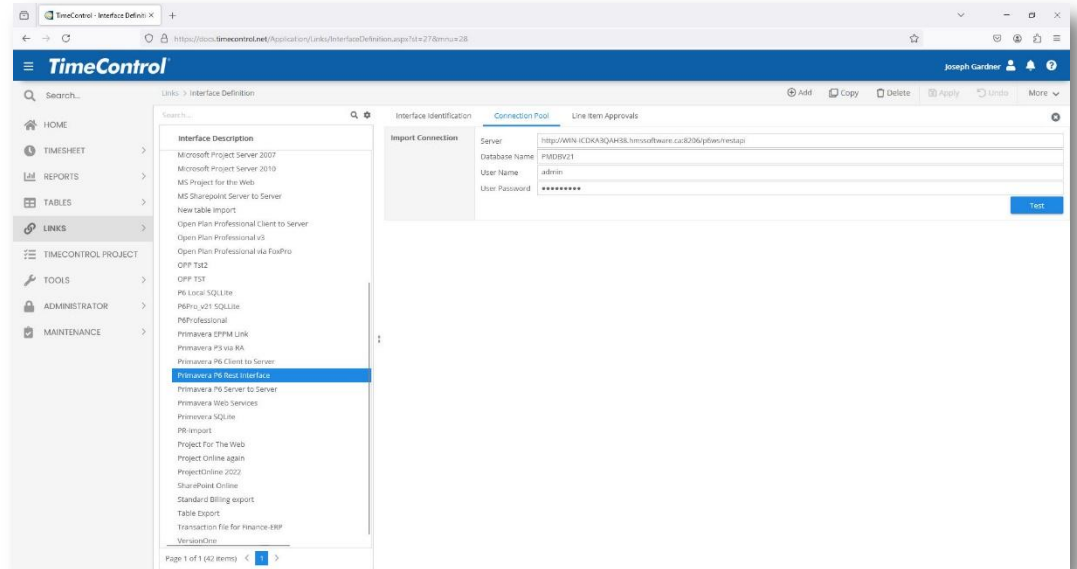
TimeControl supports the Primavera RESTful Web Services (REpresentational State Transfer) link. To create the REST link to Oracle-Primavera's EPPM, using the Primavera RESTful Web Service, first ensure that the EPPM Web Services have been activated. In TimeControl, select Interface Definition Connection from the Links Tab.

In the Connection Pool tab, enter the URL of the Primavera EPPM server and the User name and Password to access the system. We are using the admin user here. The user must have sufficient permissions to both read and write Primavera project and task information.

In the Interface definition area, select the Primavera Activity Fields which should be mapped to the TimeControl fields and, optionally, the Primavera Project fields which should be mapped to the TimeControl Project Table fields.

You will need to define how a TimeControl Charge Code should be defined. If you prefer a hierarchical display similar to P6 on the desktop, then using the Project name plus the TASK_CODE may be best. The TASK_CODE is designed to be hierarchical. Additional fields can be linked to the Description, Start and Finish Dates and other elements of the TimeControl Charge Table. You can click on Add Additional Fields if you wish to add other User Defined fields from the Charge table into the definition.

Linking a percentage field such as "Percent Complete" or "Physical Percent Complete" to the Status field (CHR_STATUS) will result in status changing to "Not started" if the percent is 0, "Started" if the status is between 1 and 99 and "Completed" if the percent is 100.

Link Code

Use the **Link Code** and **Link Value** to identify to TimeControl that a project in Project Online should be transferred to TimeControl immediately The Link Code is a field in Project Online at the project level. It can be a user defined field which is most common or any field that you identify a value in. Enter the field name and the value that will define this project as ready to transfer into TimeControl and to create a TimeControl project in the project table. With this code structure in place, you can create an automatic schedule at whatever frequency you wish and TimeControl will only make new projects of the projects which have this value set. This allows you to have projects which do not transfer to TimeControl at all if you wish.

Defining a SOAP Web Services Link to Primavera
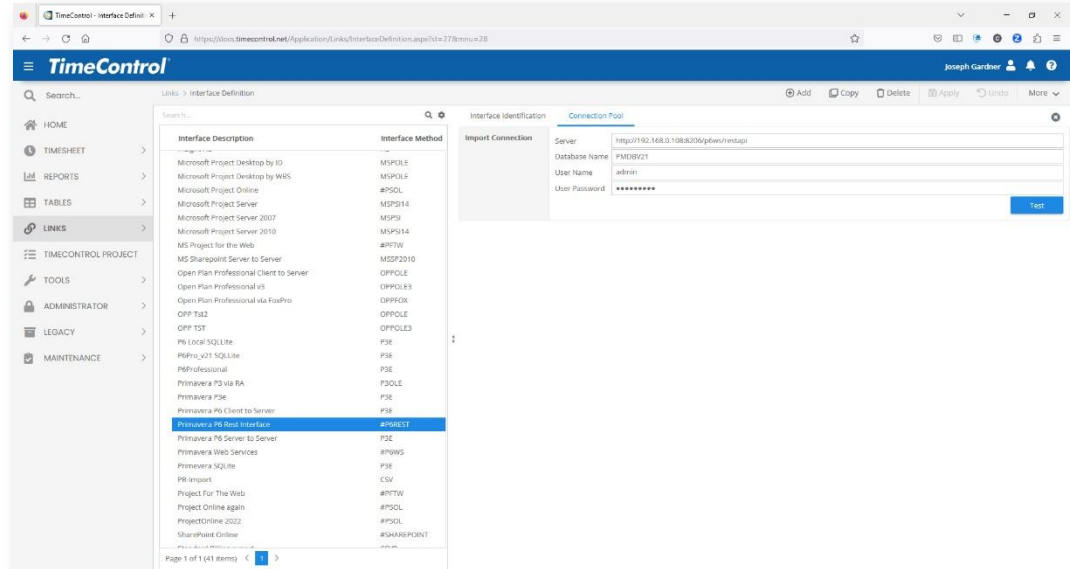
TimeControl supports the Primavera SOAP Web Services (Simple Object Access Protocol) link. To create the Web Services link to Oracle-Primavera's EPPM, using the SOAP Web Service, first ensure that the EPPM Web Services have been activated. In TimeControl, select Interface Definition Connection from the Links Tab.

In the Connection Pool tab, enter the URL of the Primavera EPPM server and the User name and Password to access the system. We are using the admin user here. The user must have sufficient permissions to both read and write Primavera project and task information.

In the Interface definition area, select the Primavera Activity Fields which should be mapped to the TimeControl fields and, optionally, the Primavera Project fields which should be mapped to the TimeControl Project Table fields.

You will need to define how a TimeControl Charge Code should be defined. If you prefer a hierarchical display similar to P6 on the desktop, then using the Project name plus the TASK_CODE may be best. The TASK_CODE is designed to be hierarchical. Additional fields can be linked to the Description, Start and Finish Dates and other elements of the TimeControl Charge Table. You can click on Add Additional Fields if you wish to add other User Defined fields from the Charge table into the definition.

Linking a percentage field such as "Percent Complete" or "Physical Percent Complete" to the Status field (CHR_STATUS) will result in status changing to "Not started" if the percent is 0, "Started" if the status is between 1 and 99 and "Completed" if the percent is 100.

Link Code

Use the **Link Code** and **Link Value** to identify to TimeControl that a project in Project Online should be transferred to TimeControl immediately The Link Code is a field in Project Online at the project level. It can be a user defined field which is most common or any field that you identify a value in. Enter the field name and the value that will define this project as ready to transfer into TimeControl and to create a TimeControl project in the project table. With this code structure in place, you can create an automatic schedule at whatever frequency you wish and TimeControl will only make new projects of the projects which have this value set. This allows you to have projects which do not transfer to TimeControl at all if you wish.

Defining a Database-to-Database Link to Primavera
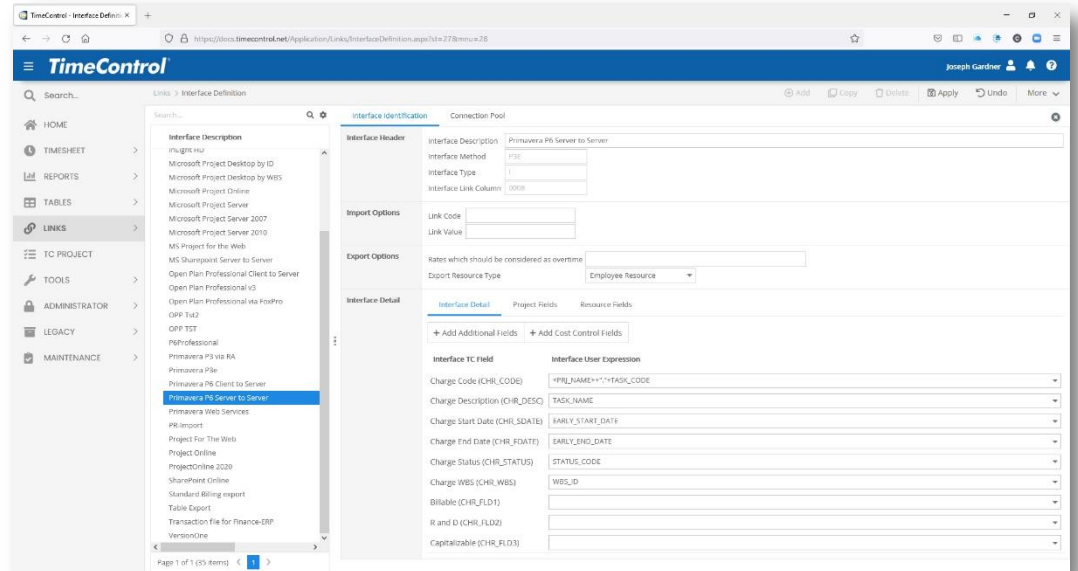
To create the database link to Oracle-Primavera's P6, select Interface Definition Connection from the Links Tab.

In the Connection Pool tab, enter the Server name, Database Type, the name of the Primavera database and a user name and password with appropriate privileges.

In the Interface Definition, you will first need to define how a TimeControl Charge Code should be defined. If you prefer a hierarchical display similar to P6 on the desktop, then using the Project name plus the TASK_CODE may be best. The TASK_CODE is designed to be hierarchical. Additional fields can be linked to the Description, Start and Finish Dates and other elements of the TimeControl Charge Table. You can click on Add Additional Fields if you wish to add other User Defined fields from the Charge table into the definition.

Linking a percentage field such as "Percent Complete" or "Physical Percent Complete" to the Status field (CHR_STATUS) will result in status changing to "Not started" if the percent is 0, "Started" if the status is between 1 and 99 and "Completed" if the percent is 100.

You can also create concatenations where required. For example, if we take the Primavera Project User Defined field "Planner Name" and created the following link to move into a TimeControl User Defined field

PUDF:Planner Name+" - "+TUDF:Site Name"+" – "+TUDF:Safety Level

This might result in an import that looks like this:

"Joseph Gardner – Montreal North – Safe Zone"

Link Code

Use the **Link Code** and **Link Value** to identify to TimeControl that a project in Project Online should be transferred to TimeControl immediately The Link Code is a field in Project Online at the project level. It can be a user defined field which is most common or any field that you identify a value in. Enter the field name and the value that will define this project as ready to transfer into TimeControl and to create a TimeControl project in the project table. With this code structure in place, you can create an automatic schedule at whatever frequency you wish and TimeControl will only make new projects of the projects which have this value set. This allows you to have projects which do not transfer to TimeControl at all if you wish.

Export Options

Overtime: TimeControl has an extensive rich functionality in the area of rates. TimeControl has no limit on the number of rates that can be applied per person or per project or per task. There can be an infinite number of rates that are not considered regular time. This can include "time and a half", "double-time" and more. In Primavera there is a concept of planned overtime and TimeControl can support this also. Enter in the Export options, the rate codes that Primavera should consider as overtime and the overtime costs for those rate codes will be put into Primavera's Overtime actual cost fields.

Resource Code: During transfer back to Primavera, TimeControl can use the Employee's Default Resource Code, the Timesheet Line Item Resource code which can be distinct from the default or the Crew Timesheet Line Item Resource code which can be distinct from the default. Enter the appropriate selection here.

Project Fields

TimeControl allows you to link Project level fields from Primavera to move those values into Project Table fields in TimeControl during imports.
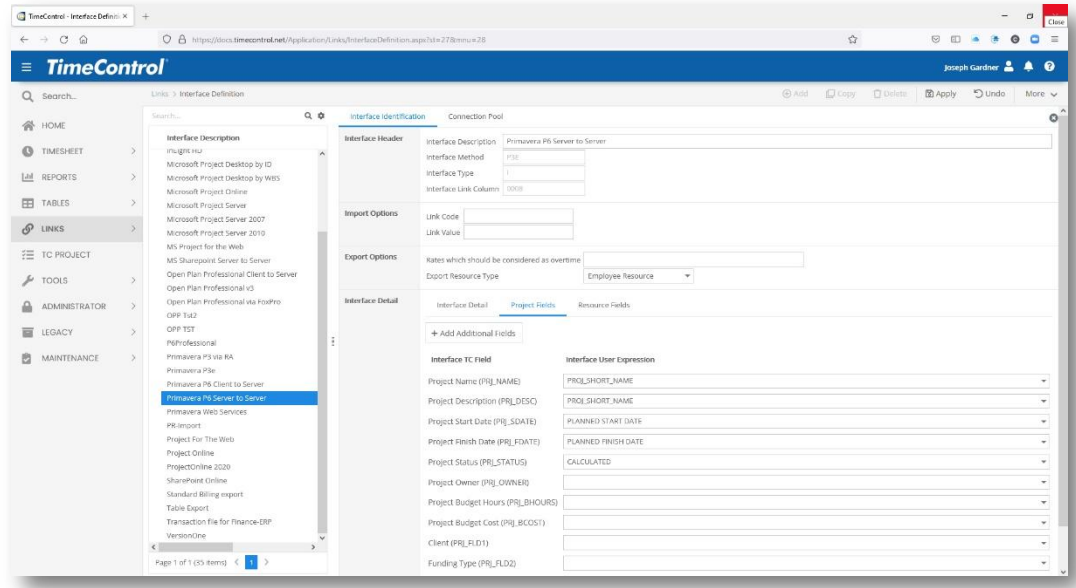
Resource Fields

TimeControl allows you to link Resource level fields in Primavera to move those values into Resource Table fields in TimeControl during import.
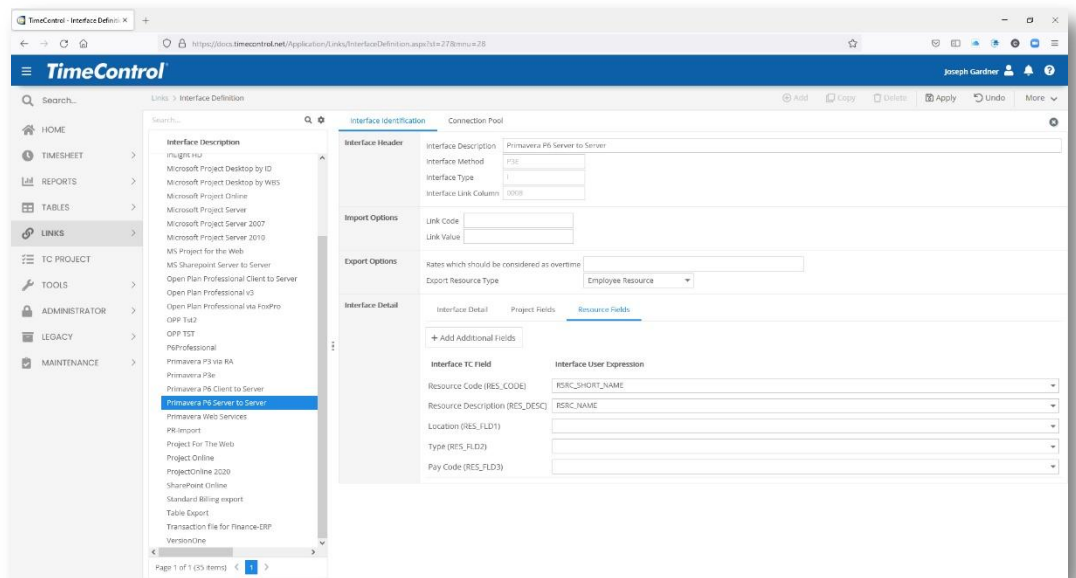
Resource level field values will only be transferred if you have selected to import resource information during a project import.

Configuring Transfer Options for Oracle-Primavera

The transfer options for Primavera projects is the same regardless of whether you have created a database-to-database or a Web Services link. Not all options will be appropriate for each project management system type.

You will need to establish the following options for this transfer type in the Project Table:

Link Interface

Connection Pool: Select the Oracle-Primavera Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: Select Import/Export or Import only. If you select Import only, the options for transferring data back to the project will disappear.

Project File: Enter the file name or select the project from the project list presented by P6 by clicking **Browse**.

Skip Milestones: TimeControl can be configured to automatically skip tasks with a zero-day duration (i.e. Milestones). Since such tasks typically have no duration they are often not an appropriate selection for timesheet entry

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Date Transfer Options: Select **Date work performed** to have timesheet data transferred into a record in the project management system associated to the day the work in the timesheet was completed, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is more detailed and is the default but if you have a project that is decades long with millions of records, aggregating data into a weekly record may be more appropriate for you.

Add Resource Options: When TimeControl transfers data to a task but does not find a matching resource assignment, it can create that assignment automatically. In this case TimeControl wants to know if you would like the assignment created with no hours or with the same number of hours that are associated with the actuals we are sending.

Resource Assignment Options: Set this to "**Ignore resources not assigned to tasks** in order to have TimeControl skip over actuals when it finds the appropriate task and the appropriate resource but cannot find a matching resource assignment for this task. Set this to **Add Resources not assigned to tasks** if you wish TimeControl to create a resource assignment if it finds the appropriate task and finds the appropriate resource but cannot find a matching assignment for this task. Set this to **Add Resources not assigned to tasks and create resource if required** to have TimeControl create the resource code and create the resource assignment in order to transfer the actuals. Any records which are rejected due to these options will be identified in the transfer log.

Rate Options: TimeControl can send the cost value from any of the 9 possible values associated to each rate code. You might have defined your rates with one value for internal project costs, one value for external billing price and a third value for average project rate. Select the rate value which is most appropriate for this project.

PMV Transfer Options: Select **All non-transferred data** to send to the project management system all records pending for that project regardless of whether or not they have been marked as approved in the Project Manager Validation module. Select **Only approved non-transferred data** to send to the project management system only the pending records which are marked as **Approved** in the Project Manager Validation module.

Data Options: Select from the following options for data transfer to he project management system:

❑ **Transfer Resource Actual hours**: This is always selected by default. It will transfer the timesheet hours to the project management system.

❑ **Transfer Resource Actual costs**: This option will transfer the costs associated with the Rate Options selection above for the timesheet actual hours.

❑ **Transfer Expenses**: This option will transfer expense costs gathered in the Expense tab of the timesheet.

❑ **Transfer Resource ETC**: This option will transfer the estimate to complete of this resource's assignment and will affect that assignment only.

❑ **Transfer Resource Complete Indicator**: This option will transfer the flag of "Complete" entered on the timesheet line and will change the estimate to complete to 0.

❑ **Transfer Activity ETC**: This option will transfer the activity estimate to complete from within TimeControl's Activity progress in the Activity tab of the charge code. This is distinct from the assignment progress.

❑ **Transfer Activity Complete Indicator**: This option will transfer the flag of "Complete" when updated in the Project Manager Validation screen.

❑ **Transfer Primavera Steps**: When linking to Primavera's P3 through P6, this option will move any updates to the status of the Primavera Steps found on each task. Only the key resource as defined within the Primavera project will be able to update the appropriate steps. This option will be ignored by Microsoft Project

❑ **Transfer to Primavera Financial Periods**: When linking to Primavera, this option allows data to be transferred not only to the Actual Work to date field but also to the Financial period in Primavera. In this case, these Financial periods must be pre-defined within Primavera. This option is ignored by Microsoft Project.

❑ **Transfer Expected Finish Date**. This can be updated on the timesheet if you make the field visible.

Notes on linking with Primavera's project management products

> ✓ Tip   By default, some Primavera scheduling products display time units in whole integers, for example 1 hour and 30 minutes would be represented as 2h.You can change this setting to display decimals by selecting Configure | User Preferences from the Primavera main menu bar.
> This displays a dialog box similar to the following:
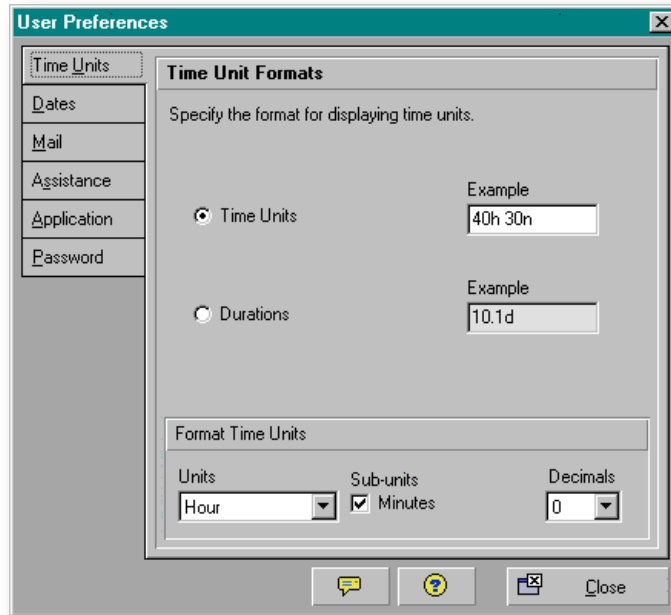
Under Format Time Units, select the Minutes option then click Close. This sub-units selection allows 1 hour and 30 minutes to be displayed as 1h 30m.

Transferring overtime values to Primavera's Overtime fields

TimeControl includes the option of declaring certain rate codes in TimeControl to be understood by Primavera as overtime. Primavera maintains both regular time and overtime placeholders for hours and costs so they can be reported separately. Not all Primavera users use these categories so this is an option in TimeControl. To define TimeControl overtime rate codes for the purposes of transfer into Primavera Professional or EPPM, go to the Interface Definition.
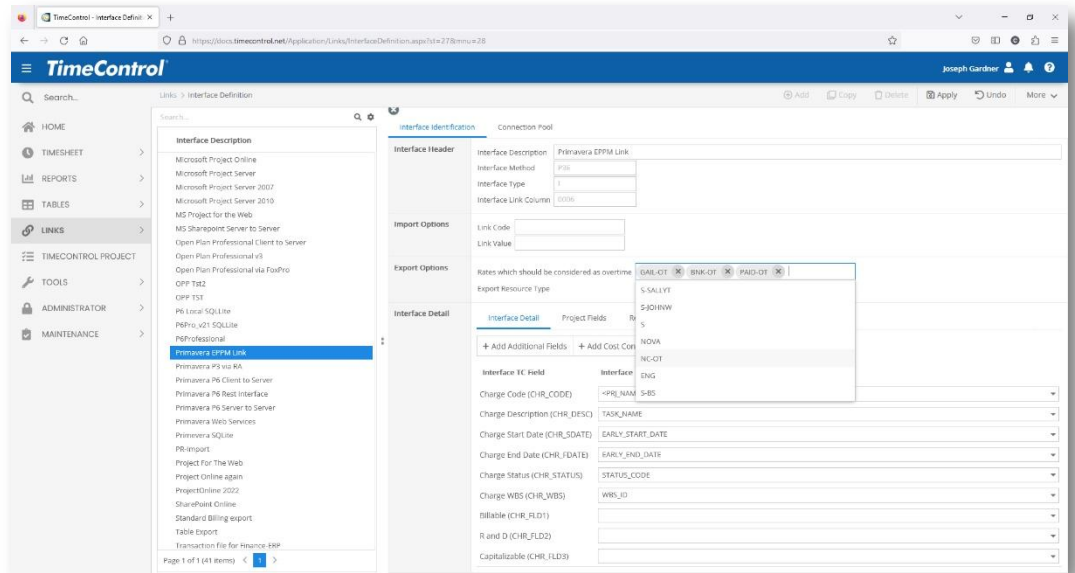
In the Interface Definition tab, in the Export Options section, click on the Rates which should be considered as overtime field. A list of all possible rates will appear. Select one or multiple rates which you would like to be in this category. Click Apply to save the list.

Whenever transfers from TimeControl to Primavera are initiated using this Interface Definition, the values using these rate codes will be sent to the overtime category in Primavera. All line items using other rate codes will be sent to the Standard Time category.

Linking to Primavera Financial Periods

When linking with Primavera, TimeControl can optionally send actuals to be posted directly to Primavera financial period table. This is the same destination supported when "Period to date Actuals" are activated and then posted into a particular financial period.

Using this feature will update both the Actuals which are already updated by previous versions of TimeControl and the period records so that financial and earned value reports in Primavera will report the data in the appropriate financial areas.

In order to activate this function, the Primavera Administrator must first define the Financial periods and ensure that the Financial periods completely cover any period for which actuals might be sent from TimeControl. This is done in the Primavera Administration menu.
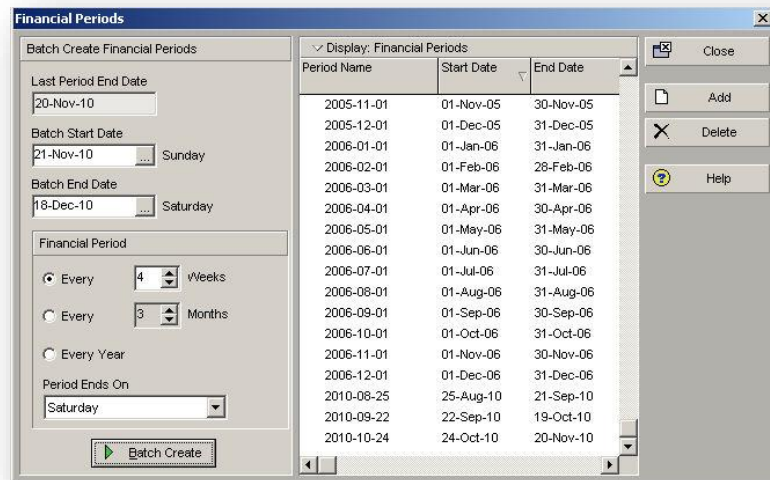
If data from TimeControl is transferred while this option is on and the appropriate financial period for the TimeControl "Date Work Performed is not located, the transferred data will be rejected and this will be reflected in the PM Links log.

In the TimeControl Project Transfer options, the "Transfer to Primavera Periods" option must be selected.

When this option is selected, the Date Transfer Options are no longer selectable as the "Date Work Performed" now becomes the relevant transfer date. This date will be used to determine which Primavera financial period in which to put the posted line data from TimeControl.

Why we don't transfer to Primavera's "Actual this Period"

TimeControl has had a link with Primavera since 1997. Over the years we have updated this link to work with all the versions of Primavera's scheduling tool up to and including the current release. For many years this link sent the "Total to date" hours and costs to the linked activity. In 2011, HMS took the additional step of loading TimeControl hours and costs into Primavera's Financial periods. This allows past TimeControl data to move into the spread financial period fields and tables that Primavera uses for some of its reports.

Some Primavera users have asked why we do not use the method that Primavera has provided for manually entering period information commonly referred to as the "Current Period Actuals" field. To answer this, we'll need to look at how this works:

Primavera allows that when actuals are entered for an activity's progress, they can be entered into the "Current period actuals". The idea is that the hours will be entered in this field and at the end of the fiscal period, the user can use the Close Period function to move all the actuals stored in this field into a user-selected financial period. When we move TimeControl data from TimeControl to the Primavera financial periods we bypass this function and we do so for a very specific reason. Let's take the following example dated for the end of November:

Let's assume the organization has fiscal calendars matching monthly calendars. This is the most common fiscal calendar structure.

We have one task and one person working on it. The person spent 40hours on that task.

We get to the end of the TimeControl week, post the data and migrate the data to the "Actuals this Period" field in Primavera.

Now the Administrator closes the period and selects the month of November to move the data into. But, the last week of November 2010 starts on November 29th. That means that in this week, we've also moved all the hours from December 1, 2 and 3.

The problem gets worse when any TimeControl Debit/Credit is applied. A debit/credit goes back to a previous period. Let's say that we had to make a debit/credit for this employee for a task that happened and was completed back in September. We had to remove 16 hours from Task Two and put 16 hours on Task Three, also completed in September. This too has ended up in our November Fiscal period. Now the costs for Task Two for November are negative 16 and this on a task that was marked as completed in September. Task Three has positive 16 hours in November but it was marked as completed back in September also.

'Why not fill both fields then?' someone might ask. Then we compound the problem. If we fill in both the Financial Period and the Current Period Actuals then if and when a period is closed, we'll double count the hours.

TimeControl is often used for R&D tax credits, for Defense Contract Audit Agency (DCAA) reporting and for Sarbanes Oxley compliance. Audits for all three of these are similar. The plan, payroll and timesheet data are compared to ensure compliance. Audits for all three of these types of government compliance would have a high likelihood of failure with this functionality in place.

What TimeControl does do already is move the hours, associated costs as well as ETC, non- labor costs and Steps progress into the financial periods of Primavera.

Link with SharePoint

TimeControl includes a link with Microsoft SharePoint or SharePoint Online which can synchronize bi-directionally between TimeControl and a SharePoint list of tasks or project tasks. In defining your TimeControl/SharePoint link, everything starts with a SharePoint site collection. The site collection may contain multiple sites with multiple levels. Projects are "Sites" in SharePoint. Hierarchy is created using Sites and Sub-Sites.

For TimeControl, a Project is a site that has a list of tasks within it. Project attributes (e.g. Start date, Status, Owner) can be stored in multiple places depending on what fields are made visible in SharePoint. For example, some attributes will be found through the Project Metrics list (which is a list that has 4 or 5 predefined fields such as "Metric Value"). Each item in this list would be considered an attribute to TimeControl (e.g. Start date). Some attributes can also be found through the "Project Statement" list which is a one-item list that contains multiple fields (e.g. Start date).

Pre-requisites

- TimeControl must have access to the Site Collection interface (web-accessible).
- The SharePoint environment must be supported. TimeControl currently supports:
  - SharePoint 2013;
  - SharePoint 2016;
  - SharePoint Online (Office 365).
- TimeControl must connect using an account which is part of the "Site Collection Administrators" group:
- Resources in SharePoint must have email addresses.
  - When resources are imported into TimeControl, the "Resource Code" will be the users email. TimeControl has fallback support if an email address does not exist, but we recommend using email addresses.

Choosing field names

When configuring your TimeControl link to SharePoint, you will need to identify one or more fields in the SharePoint environment. SharePoint fields

have both a "Display name" and an "Internal Name". When fields are displayed in the user interface, the display name is used. When linking a field to TimeControl, the "Internal Name" must be entered and not the "Display name" as it is not unique. It is possible to see a list of available fields on a list, along with their internal and display names, by following the following steps:

- Under Site Settings, choose "Site Libraries and Lists"
- Choose "Customize …" for the list you want to see the fields for
- Choose "Column visibility settings
- A list of fields is displayed. The "Internal Name" is what needs to be selected in the TimeControl interface:

Defining the Link to SharePoint

To define the SharePoint link in TimeControl, go to Links | Interface Definition and add a new entry. Select SharePoint as the type.

Import Options

- The import options area allows you to automatically import projects into TimeControl as they are created. Simply fill out the "Link Code" and "Link Value" fields. When the "Import new projects" option is selected on the PM import screen, TimeControl will bring in new projects that have an attribute of "Link Code" and a value equal to "Link Value".

For example, by putting a Link Code of "Status" and a Link Value of "(2) In progress" TimeControl will import all projects that have value of "(2) In progress" in the SharePoint "Status field"

Export Options

- Export Resource Type – Select how you wish TimeControl to determine the Resource Code to use when transferring hours back to SharePoint. Your options are:

    - **Employee Resource** – Use the resource code attached to the Employee Table record

    - **Line Resource** – Use the resource code entered into each timesheet line

    - **Crew resource** – For TimeControl Industrial only, use the resource associated to each Crew.

Now click on the Connection Pool tab

In the Connection Pool, enter the URL of your SharePoint instance and the user name and password of a user with Administrator privileges.

Now click on the Interface Identification Tab and enter your SharePoint information:

Project Information

- **What is a Project?** – Options are:
    - A Site / Subsite
    - An item in a list
    - A list

- **Task list name** - Enter the name of the list in SharePoint that contains tasks

- **Project list name** - Enter the name of the list in SharePoint that contains projects

- **Project name field** - What is the name of the field in the list that contains the name of the project? Most of the time 'Title' suffices.

- **Parent ID field** - What is the name of the field that references the parent project? Most of the time 'ParentId' suffices.

- Project filter - In certain cases, we only want certain projects from a list (e.g. Only items with Project Type equal to 'P'. Enter the filter here. The filter should be in OData filter syntax. E.g. ProjectType eq 'P'. For more information on how to construct an OData filter, visit:

  www.odata.org/documentation/odata-version-3-0/url-conventions/#url5.1.2

Project Attributes

- **Where can TimeControl find Project Attributes?** - Project attributes are details for the project (e.g. start date, status). Options are:
    - Top level item in a list (attribute is a field on the list item)
    - A list of attributes
    - Fields on the current list item

- **Site Id field** - Enter the name of the field in the list that contains the site ID

- **Site Url field** - Enter the name of the field in the list that contains the site URL

- **List Id field** - Enter the name of the field in the list that contains the list ID

- **List Title field** - Enter the name of the field in the list that contains the list title

Import Mappings

- **Open Status** - Enter the status(s) values in SharePoint that map to [Open] in TimeControl. You can enter multiple values by separating values with a comma.

- **Closed Status** - Enter the status(s) values in SharePoint that map to [Closed] in TimeControl. You can enter multiple values by separating values with a comma.

- **Unopened Status** - Enter the status(s) values in SharePoint that map to [Unopened] in TimeControl. You can enter multiple values by separating values with a comma.

Export Mappings

- **Open Status** - Enter the status(s) values in SharePoint that map to [Open] in TimeControl. You can enter multiple values by separating values with a comma.

- **Closed Status** - Enter the status(s) values in SharePoint that map to [Closed] in TimeControl. You can enter multiple values by separating values with a comma.

- **Unopened Status** - Enter the status(s) values in SharePoint that map to [Unopened] in TimeControl. You can enter multiple values by separating values with a comma.

Now click on the Interface Detail tab

You can map the fields from the SharePoint site that you wish to import into specific fields in the TimeControl Charge table each time the PMImport function is activated for projects using this Interface Definition.

Now click on the Project fields tab

You can map the fields from the SharePoint site that you wish to import into specific fields in the TimeControl Project table each time the PMImport function is activated for projects using this Interface Definition.

Now click on the Export Mappings tab.

If you wish to send TimeControl actuals back to fields in the SharePoint site, you must identify which fields will hold specific values. Leaving a field blank will ensure that this value is not transferred from TimeControl.

Transfer Options for SharePoint

Link Interface

Connection Pool: Select the SharePoint Interface Definition and Connection Pool entry you have created for this project in the Interface Definition Table.

Project Link Type: Select Import/Export or Import only. If you select Import only, the options for transferring data back to the project will disappear.

Project File: Enter the file name or select the project from the project list presented by SharePoint by clicking **Browse**.

Skip Milestones: TimeControl can be configured to automatically skip tasks with a zero-day duration (i.e. Milestones). Since such tasks typically have no duration they are often not an appropriate selection for timesheet entry

Import Options

Transfer Delimiter: Many projects will use a period (.) to identify a different level of charge. Select the delimiter to use when importing tasks from this project.

Transfer Level: TimeControl can be configured to only load tasks down to a defined level of a Work Breakdown Structure by setting a level in this option. This satisfies the requirement of working in more detail in the project schedule than is desired in the timesheet collection. In this case, TimeControl will determine the levels using the delimiter identified above and will only import tasks down to the level specified. Timesheets would then be entered at this more summary level and would be sent back to the project's summary tasks at that same level.

Date Transfer Options: Select **Date work performed** to have timesheet data transferred into a record in the project management system associated to the day the work in the timesheet was completed, or to aggregate the hours to a single date per week, select **Week ending date**. The first option is more detailed and is the default but if you have a project that is decades long with millions of records, aggregating data into a weekly record may be more appropriate for you.

Add Resource Options: These options are not applicable to the VersionOne link.

Rate Options: These options are not applicable to the VersionOne link.

PMV Transfer Options: Select **All non-transferred data** to send to the project management system all records pending for that project regardless of whether or not they have been marked as approved in the Project Manager Validation module. Select **Only approved non-transferred data** to send to the project management system only the pending records which are marked as **Approved** in the Project Manager Validation module.

**Data Options**: Select from the following options for data transfer to he project management system:

❑ **Transfer Resource Actual hours**: This is always selected by default. It will transfer the timesheet hours to the project management system.

❑ **Transfer Resource Actual costs**: Not applicable to the SharePoint link.

❑ **Transfer Activity ETC**: This option will transfer the activity estimate to complete from within

TimeControl's Activity progress in the Activity tab of the charge code. This is distinct from the assignment progress.

Transfer Activity Complete Indicator: This option will transfer the flag of "Complete" from within TimeControl's Activity progress in the Activity tab of the charge code and will change the estimate to complete to 0.

Note: If you are using SharePoint 365, you may need to use TimeControl's OAuth method of supporting Multi-factor authentication. This is described earlier in this Guide at the end of the section on creating a link with Microsoft Project Online

Link with JIRA

TimeControl includes a link with Atlassian's JIRA® which can synchronize bi-directionally between TimeControl and JIRA time. TimeControl's link to JIRA has two elements. One element imports information from JIRA directly into the timesheet the user is working on. It summarizes the JIRA transaction records for each task into a total number of hours for each day and inserts those records into the TimeControl timesheet. The second element transfers information back to JIRA after all timesheets in TimeControl have been posted and approved. This allows TimeControl to update the JIRA time records with approved data and ensure the two systems are reconciled with any adjustments in TimeControl.

This concept assumes TimeControl as the timesheet of record and JIRA as the originator of data given to TimeControl and as the recipient of any updates from TimeControl.

Configuration Decisions

There are a number of decisions in connecting these two systems that will determine how you configure the TimeControl/JIRA link.

1. Can hours be updated in TimeControl to be transferred back to JIRA?

    a. Yes. Bi-directional link. If time does NOT allow, there may be a way around this, see the JIRA development document for additional details.

2. On Import from JIRA to TimeControl; what happens when:

    a. Project does not exist?

        i. Create it automatically.

    b. Task does not exist?

i. Create it automatically.

c. Timesheet does not exist?

    i. Create it automatically

    ii. What if the timesheet is posted?

        1. Create a DB/CR, modify the hours based on what's coming in from JIRA, and leave it to the source to process further.

    iii. What if the period is closed, or out of range? We will:

        1. Create it, and email someone

d. Timesheet does not contain the project/task?

    i. Create it automatically.

    ii. What if the user does not have permission to that task for reason X?

        1. Create it automatically, and email someone. If the employee has permission in JIRA, he should technically have permission in TimeControl, and if not, the filters are not created correctly IMO, and an administrator should correct the issue.

        2. If we have time, a new system preference will be added called "Validate timesheet filters for all timesheet lines on release". At the moment, the "Release" button on a timesheet does not validate that the timesheet project/charge filters are still valid. We only run validation rules. This option will force the timesheet release to ensure that there were no invalid projects/charges in the timesheet.

e. Timesheet contains multiple lines with the same task?

    i. See "# 6) JIRA has a concept of work logs", below.

f. The user is currently editing the timesheet, and JIRA updates the timesheet?

    i. Since this is a rare occurrence, just save the hours. If the user overwrites them, it's his problem to fix.

    ii. Phase II: We currently have a check upon save that says "Is the timesheet in the same status as when the timesheet is loaded", and "Are you still currently the owner". It prevents users from saving hours if the person is no longer the owner. We should enhance this to verify the last

modified timestamp of the timesheet instead of the status. If the timestamp changed, this means the timesheet was modified by someone else (or something else) in the background, and the end-user must manually re-make changes to the timesheet after reloading.

3. By default, JIRA only supports a single assignee (see https://confluence.atlassian.com/jira/how-do-i-assign-issues-to-multiple-users-207489749.html).

    a. The link will only function for tasks that make use of the standard assignee field in JIRA. It will be documented that any custom implementations of an "assignee" field will not be supported.

4. JIRA has the option of hiding and adding fields to issues, this could cause issues with the link.
   HMS will create a list of pre-conditions in order for the link to work between TimeControl and JIRA. The required fields will be documented, and the link will only function when these conditions are met.

5. What tasks are considered "Active" for TimeControl (during PM import)? JIRA has the concept of Sprints, Multiple boards, releases, etc.

    a. See integration summary. By default TimeControl will only import tasks with a "TimeControl" label.

6. JIRA has a concept of work logs, and there could be multiple work logs per day, each with a start time, and time worked. TimeControl only has a single "Hours" field per task, per day, UNLESS multiple lines are created on the timesheet for each worklog.

    a. During IMPORT to TimeControl, multiple worklogs will be summarized to a single line/day.

    b. During EXPORT to JIRA, we will spread hours across all worklogs for that person, for that task. E.g. if the person has two JIRA log entries (2h + 6h) for a task, this will be imported as 8h in TimeControl. IF the hours are changed in TimeControl, they will be re-exported back to JIRA as 4h + 4h.

7. What if tasks are DELETED from JIRA; using our standard "pull" approach, we will miss these deletions and become out of sync.

    a. The imports will SKIP these deletions. If a task is deleted, which had hours in TimeControl, the hours will still remain in TimeControl and it will be up to the end-user to correct anything on release.

8. How are we going to track what has not been synchronized in the timesheet, since we don't have tracking flags on the timesheet, and it's not possible to use tracking flags because the data is transient?

a. We will use an event-based system; when changes are made to a timesheet, they will be logged to a new table. This table (visible in the PM import and export screens as "Synchronization conflicts"), will contain a list of transactions to synchronize. The table will have a status, date and log column so we can track what has not been synchronized. End-users will see records with errors, and have the ability to resolve conflicts manually, e.g.

    i.   On import, if a resource cannot be found and error will occur and will be logged. The scheduled import will always try to re-process failed records, so once the resource is added to TimeControl, the hours will automatically be transferred and this record will be flagged.

    ii. On export, if a task cannot be found, the sync record will be marked as an error. The next scheduled export will succeed once the task is properly created in TimeControl.

    iii. If a transfer conflict cannot be resolved manually, or if the data does NOT need to be transferred any more, the record can be marked as "Ignored", which will prevent the record from being re-processed.

b. The table used to store these transactions will be large very fast. There will be system job that moves data older than X days old to a duplicate "Archive" table automatically. This archive table could eventually be truncated after several years as required.

Defining the Link to JIRA

To define a JIRA link in TimeControl, go to Links | Interface Definition and add a new entry. Select JIRA as the type.
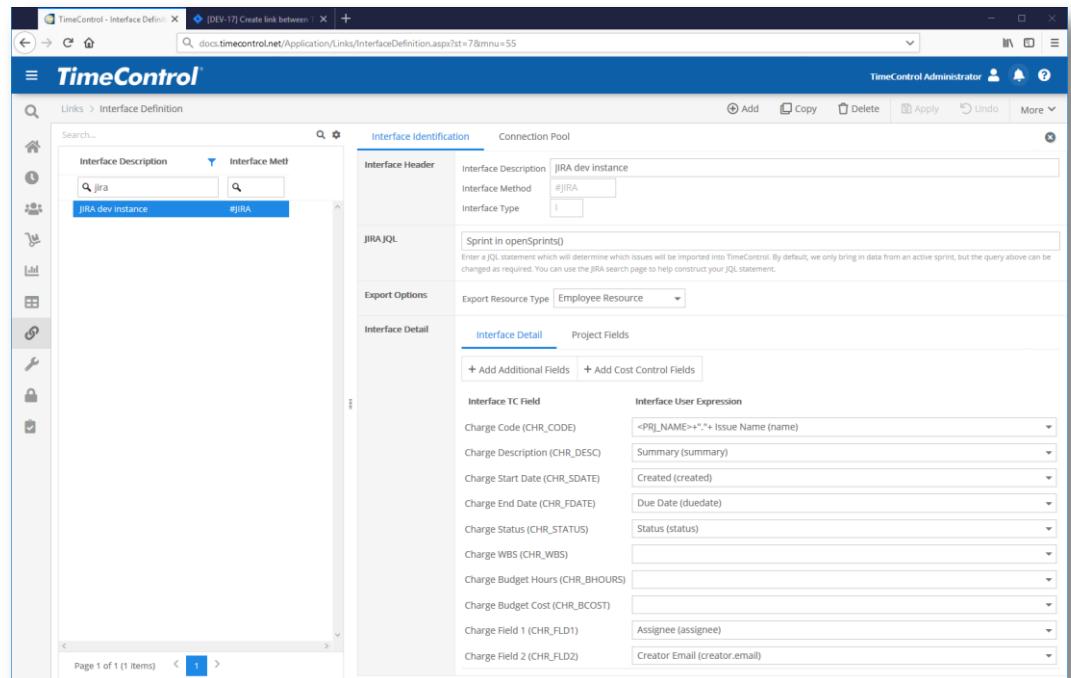
First give a name to the Interface Definition

Then in the JIRA JQL entry enter a JQL command that will identify which issues to be transferred to TimeControl. This allows you to have some issues that are relevant to the timesheet and other issues that are not transferred at all.

In *Export Resource Type*, select whether to use the Employee Resource or the Line Item Resource Entry to move data back to JIRA.

Now click on the Connection Pool tab

In the Connection Pool, enter the URL of JIRA and the user name and password of a user with Administrator privileges.
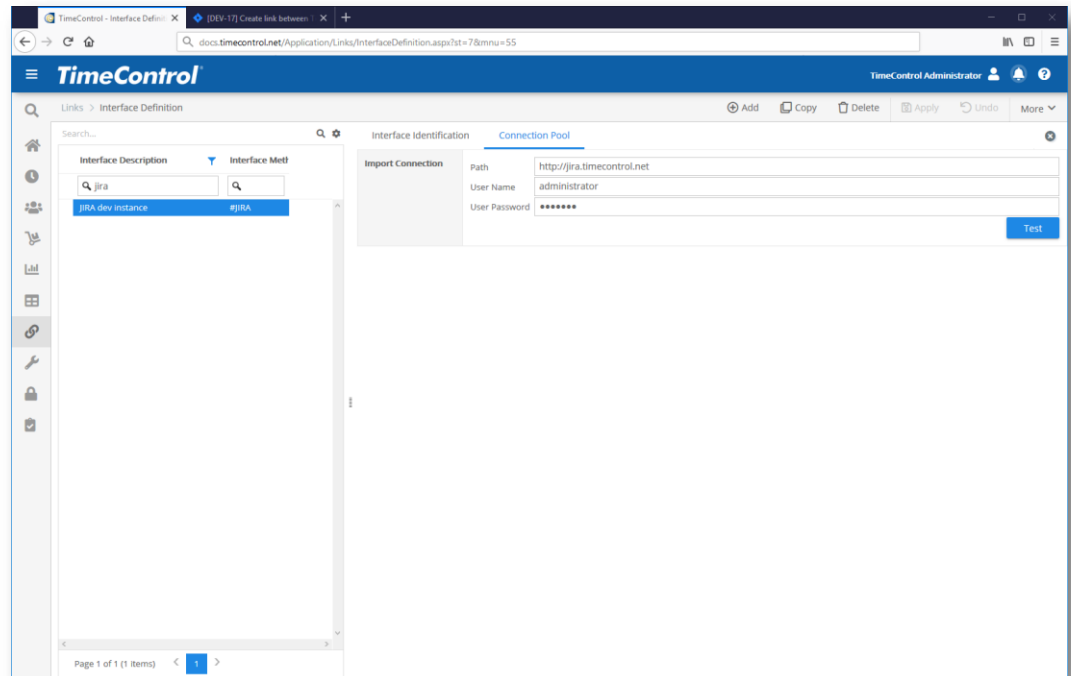
Now click on the Interface Identification Tab and enter your remaining JIRA information to match fields in JIRA with fields in the Charge and Project Tables.
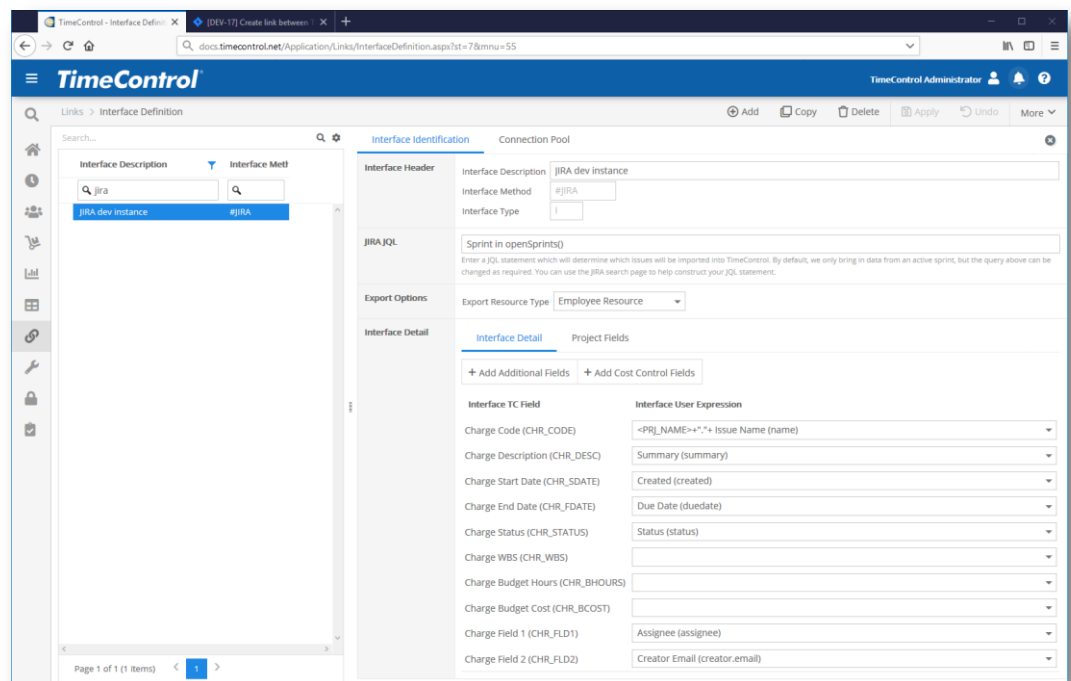
Charge Fields

Enter the Charge Code match ups with fields from JIRA.

You can map the fields from JIRA that you wish to import into specific fields in the TimeControl Charge table each time the PMImport function is activated for projects using this Interface Definition.

You can map the fields from JIRA that you wish to import into specific fields in the TimeControl Project table each time the PMImport function is activated for projects using this Interface Definition.

Import Mappings

- **Open Status** - Enter the status(s) values in JIRA that map to [Open] in TimeControl. You can enter multiple values by separating values with a comma.

- **Closed Status** - Enter the status(s) values in JIRA that map to [Closed] in TimeControl. You can enter multiple values by separating values with a comma.

- **Unopened Status** - Enter the status(s) values in JIRA that map to [Unopened] in TimeControl. You can enter multiple values by separating values with a comma.

Transfer Options for JIRA

In the Project Table, create a project entry for a JIRA project and select the JIRA Interface Definition you created above.

Import Options

- The import options first asks you to select the Connection Pool which you will define below. Then the project file name.

- If you intend to import the actual hours entered into JIRA and have those hours appear in the timesheet, then select Import Actuals.

- In the Actuals Import Start Date, enter the date as of when you wish JIRA actuals to be imported for this project. Since JIRA stores hours in worklog transactions, TimeControl will attempt to update all transactions after the date entered.

> - **Note:** Be careful with the *Actuals Import Start Date* as TimeControl will attempt to import the actuals even if there are actuals in existing and posted TimeControl timesheets. If TimeControl encounters this condition, it will create Debit/Credit entries to try to reconcile the two systems.

Export Options

- **Export Resource Type** – Select how you wish TimeControl to determine the Resource Code to use when transferring hours back to JIRA.

- **Date Transfer Options** – decide if you want to transfer one record per

day or one record per timesheet period back to JIRA.

- **Resource Assignment Options** – Use the resource code attached to the Employee Table record or the Resource entered on the timesheet line. Decide if you want to add assignments in JIRA if they did not exist or reject the record and correct the information in JIRA and/or TimeControl before trying again.

- **PMV Transfer Options** – Decide if you want to transfer all pending data back to JIRA or if you want to transfer only data that has been approved for transfer in the Project Management Validation Screen.

- **Data Options** – There is only one data option for transfer back to JIRA and that is to move the actual hours from TimeControl back to the JIRA worklogs.

JIRA link Frequently Asked Questions

What happens if TimeControl cannot reach JIRA?

If the connection to JIRA should fail during a scheduled import, the data will not be lost. TimeControl will attempt to pick up the data again on the next import/export.

Why didn't my task get imported?

Several reasons may prevent your task from being imported:

JIRA only imports tasks that have worklogs

JIRA only imports worklogs after, or equal to the "project actual import start date". This date can be configured in the project table, under "Transfer options" once a project is linked to JIRA. Ensure that your worklog dates are after the date set on the project table.

Because the JIRA import is a DELTA import, TimeControl only imports data once. For example, if a task is imported, it will only be imported again if it changes in JIRA. If a charge is deleted from TimeControl, and an import is executed, it will not attempt to re-import the charge if the import deems that this task has already been imported in the past.

You may have a JIRA JQL filter in place in the Interface Definition table. The JQL on this screen can be used to limit which tasks are brought into TimeControl.

If the JIRA import contains errors, what happens?

Because the JIRA import only imports deltas, you may wonder, what happens if a portion of my data cannot be imported (e.g. what happens if there are no TimeControl periods for the work log date?).

Rest assured, the JIRA import contains detailed tracking of all data imports. Consider the following scenario: two JIRA worklogs are created in JIRA. Upon import, the first worklog is imported successfully, but the second could not be imported because the date was out of range and the timesheet could not be created.

In this case, the first record will be marked as successful, and the second will be marked with an error. The next time the JIRA import runs, we will not only pick up new changes from JIRA, we will also try to re-process any errors that occurred in previous imports. This will allow you to perform corrections, and eventually get the data in sync.

How do you associate an employee in TimeControl to a user in JIRA?

In the JIRA import, we will bring in JIRA users as TimeControl Resources. In order for TimeControl to create timesheets for this resource, we require that every employee be mapped to a single resource via the "Employee Resource" option on the employee table.

How does data flow from TimeControl back to JIRA?

TimeControl maintains a local history of the hours on the timesheet as they were imported. If any changes are made within TimeControl (via the end user, a debit/credit, or even via a supervisor), we will only send changes back to JIRA. The data is exported via the standard TimeControl PM Export process, which follows Project Manager Validation (if used), and will only occur after the data has been approved and posted.

What if an issue is deleted from JIRA?

TimeControl currently has no way of detecting when issues are deleted from JIRA. A process must be enforced at the client to manage hours in TimeControl after a task is deleted.

What if a worklog is deleted from JIRA?

TimeControl will detect the change and remove the hours from the timesheet.

What issues will be imported into TimeControl?

By default, the Interface definition in TimeControl will ship with a JQL filter that only brings in work logs being worked on in an active sprint. If you'd like to change this, take a look at the JIRA interface definition and write your own JQL that determines what will be pulled in. You can write any JQL query that is supported by JIRA.

How does the JIRA import process work?

The JIRA import was implemented using the standard TimeControl PM import functionality, but with a subtle difference: the import only imports deltas. This means, the import will only look for changes since the last import was executed. If there were no changes since the last PM Import, the process will exit, and nothing will be imported.

This allows the import to be scheduled much more frequently and allows the import to run much faster.

How does JIRA support multiple assignments?

By default, JIRA only supports a single assignee (see https://confluence.atlassian.com/jira/how-do-i-assign-issues-to-multiple-users-207489749.html).

TimeControl currently only supports the standard assignee field in JIRA, and any custom "Assignee" fields are not supported.

What fields are required within JIRA issues for the link to function?

The JIRA integration has been tested with a standard JIRA installation. We use the following out of the box functionality:

- Worklogs
- Issue

What happens if I put more than one work log on a single day, for the same task/user?

During the import to TimeControl, multiple worklogs will be summarized to a single line/day. That means, if there are two hours on a task (separated on two work logs at 1h each for the task), there will be a single line within TimeControl with these hours.

During the export to JIRA, we will spread hours across all worklogs for that person, for that task. E.g. if the person has two JIRA log entries (2h + 6h) for

a task, this will be imported as 8h in TimeControl. IF the hours are changed in TimeControl, they will be re-exported back to JIRA as 4h + 4h.

Does the JIRA import support importing timesheets?

It sure does! The worklogs in JIRA are imported into TimeControl via a timesheet. This allows users from JIRA to enter their time in JIRA and any other project data via TimeControl and allows users to leverage all of TimeControl functionality.

You may ask, that's awesome, but, I can think of a few scenarios where the hours won't be able to make it into a timesheet. What happens in those scenarios?

Good question. We've made a few assumptions and perform certain things automatically, but there are definitely cases where the hours won't be able to be transferred into a timesheet. Let's take a look at those rules below, that occur during a timesheet import:

What if the task does not exist in the charge table?

Create it automatically.

What if the resource does not exist in the resource table?

Create it automatically.

What if the resource exists, but is not associated to any employees?

Throw an error, and email someone

What if the resource exists, but is associated to MANY employees (e.g as a role)?

We'll pick the first employee we find.

What if the timesheet does not exist?

Create it automatically

What if the timesheet is posted?

We'll create a DB/CR, modify the hours based on what's coming in from JIRA, and leave it to the timesheet source to process further. We'll also email someone.

What if the period is closed, or out of range?

We'll create it, and email someone.

What if the timesheet does not contain a line with the project/task?

Create it automatically.

What if the user does not have permission to that task for reason X?

We will create it automatically, but we won't do any validation for performance reasons

Create it automatically, and email someone. If the employee has permission in JIRA, he should technically have permission in TimeControl, and if not, an administrator could correct the issue.

What if the timesheet contains multiple lines with the same task?

We'll find the first line on the timesheet, and update that one. But don't worry, we'll consider how many hours were entered on the entire timesheet, and perform the correction on that first line.

What about the ETC and complete flags in TimeControl?

These are currently not supported. The import will not change these values.

What if the user is currently editing the timesheet, and JIRA updates the timesheet in the background?

When the user tries to save his timesheet, the user will be presented with a message saying that the timesheet was modified in the background and he must reload the page and start over. This will prevent any unintendedly lost data.

What happens if I try to delete a line that was imported from JIRA?

TimeControl will prevent users from deleting lines that were imported from JIRA. If you need to negate the hours, edit the line, and remove the hours if you need to.

What happens if I try to delete a timesheet that has lines that were imported from JIRA?

TimeControl will prevent end-users from deleting timesheets that have lines that were imported from JIRA. Only administrators can delete these timesheets, and it's up to the administrator to maintain the hours in sync between JRA / TimeControl.

Link with Contruent (ARES / PRISM)

ARES PRISM is a leading provider of project cost control systems and provides a bi-directional link between TimeControl, TimeControlOnline or TimeControl Industrial and ARES PRISM. The link was designed with design assistance from HMS Software and moves charge code data into TimeControl to fill the Project, Charge and Assignment tables and pulls from TimeControl posted hours to return to PRISM for cost control reports. The link takes advantage of TimeControl's RESTful API to execute the movement of data.
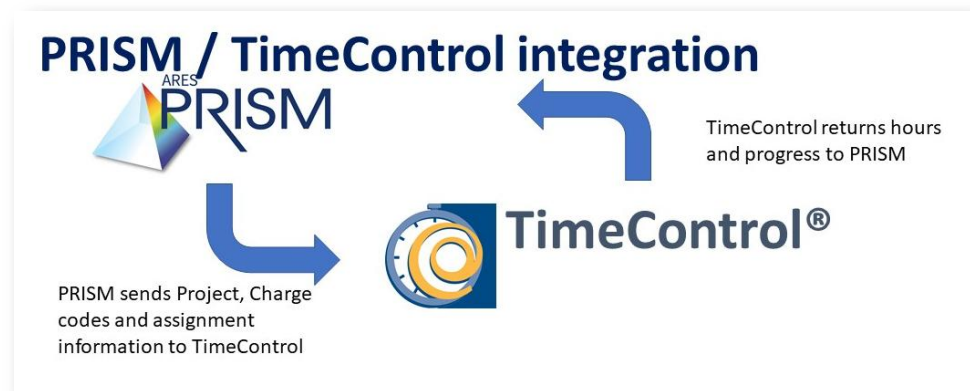
For more information on this link, consult ARES PRISM at: contruent.com.

Link with InEight Estimate (Hard Dollar)

InEight is the publisher of a project estimating and cost control system called InEight Estimate. Earlier versions of this product also used the name Hard Dollar. In TimeControl you may find reference to Hard Dollar and to InEight Estimate because both the earlier versions and current versions are supported. TimeControl, TimeControl Online, TimeControl Industrial and TimeControl Industrial Online can link to InEight Estimate with bidirectional movement of data. Because Estimate also links to scheduling tools like Oracle-Primavera, the link can be attached to a TimeControl project at the same times as a schedule link. In this section we will discuss linking between TimeControl and InEight Estimate only.

The link with Estimate works with two different technologies to move data in and out of TimeControl. To bring data into TimeControl, we use a direct database connection. To send data back to Estimate, we use the Estimate API which must be available and running on the Estimate Server.

To create a link to Estimate, you must start at the Connection Pool/Interface Definition. Click on Interface Definition in the Links Tab. If you are creating a link using the InEight Estimate Data Warehouse, then check the section later in this guide.

You will need to start on the Connection Pool tab.

Server: Enter the name of the Server where the InEight Estimate database is located.

Database Type: Enter the database type (typically SQL Server" of the Estimate database.

Database Name: Enter the name of the Estimate Database

User Name: Enter the user name to access the Estimate Database

User Password: Enter the password to access the Estimate Database

Click on "Test Connection" to ensure that the link has been successfully established.

Export Path: Now enter the URL where the Estimate API is located. If additional authorization is required (based on your Estimate API setup) then enter the User Name and Password to access it.

You're now ready to move back to the Interface Identification Tab:
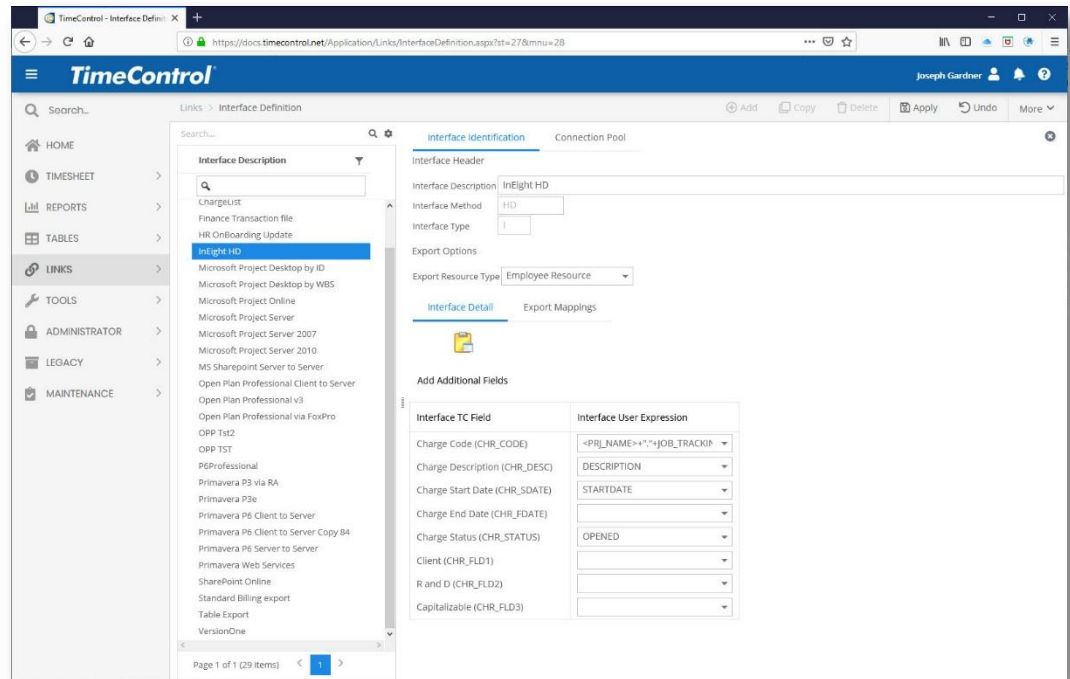
When linking to an InEight Estimate Project in the Project Table, select an InEight Estimate Interface Definition in the Estimate Transfer Options tab. You will have several choices to link specific elements of TimeControl to the matching elements in Estimate.
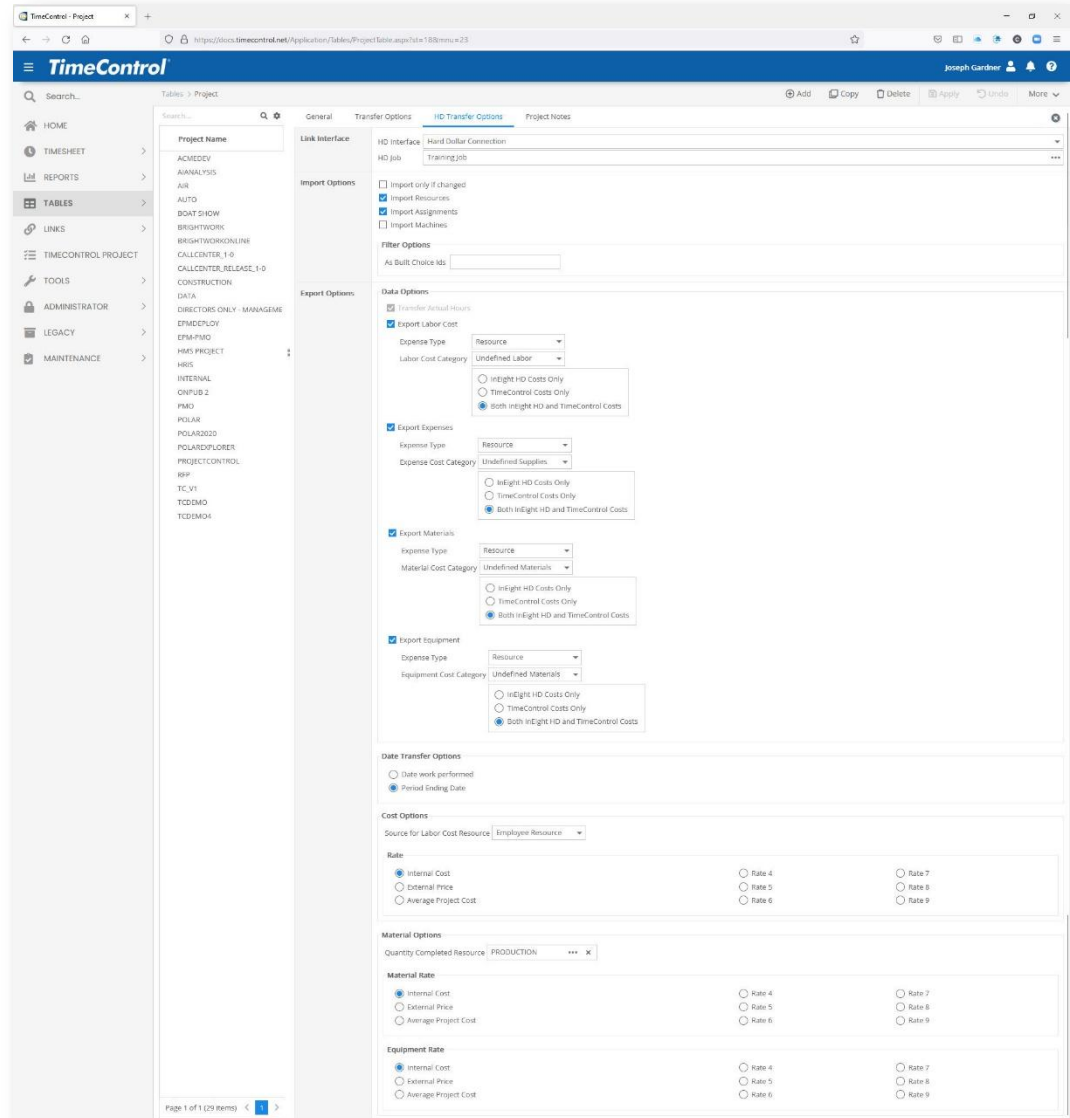
Configuring InEight Estimate (Hard Dollar)

It is typical to have many estimates in an estimation system. Because Estimate's link to TimeControl is done directly from the database, it is important for any estimate that is being linked to TimeControl to have a persistent database connection. InEight will detach databases from the database server and re-attach them as it might require. If this default setting is not changed and you try to initiate a link from TimeControl back to Estimate, you may find that TimeControl is unable to locate the database to effect the link.

InEight has allowed for this through a configuration of the Estimate system.

A file called "Jobstoleaveattached.xml" is located (by default) in the C:\Program Files\BIDBUILD directory where Estimate locates a number of files. This is an XML file which can be configured to leave either all Job databases attached or a list of named databases attached. The format of the file will look like this:

```
<?xml version="1.0" standalone="yes"?>
<JobsToLeaveAttached>
  <Settings>
    <LeaveAllJobsAttached>true</LeaveAllJobsAttached>
  </Settings>
  <JobCodes>
    <JobCode>HDLibrary</JobCode>
  </JobCodes>
</JobsToLeaveAttached>
```

The default for "LeaveAllJobsAttached" is "false". Either change this to false or make a list of jobs which should be kept attached.

Here is an example with just the "Training Job" forced to stay attached:

```
<?xml version="1.0" standalone="yes"?>
<JobsToLeaveAttached>
  <Settings>
    <LeaveAllJobsAttached>false</LeaveAllJobsAttached>
  </Settings>
  <JobCodes>
    <JobCode>HDLibrary</JobCode>
  </JobCodes>
  <JobCodes>
    <JobCode>Training Job</JobCode>
  </JobCodes>
</JobsToLeaveAttached>
```

Link with InEight Estimate using the Data Warehouse

InEight Estimate has the ability to store data locally in a SQL Server database. Linking to InEight Estimate/ Hard Dollar in that fashion was described in the earlier section. InEight also supports the use of a Data Warehouse for large volumes of data. In this case, use the instructions in this section to connect to InEight Estimate / Hard Dollar.

The link with Estimate's Data Warehouse works with two different technologies to move data in and out of TimeControl. To bring data into TimeControl, we use a direct database connection. To send data back to Estimate, we use the Estimate API which must be available and running on the Estimate Server.

To create a link to Estimate, you must start at the Connection Pool/Interface Definition. Click on Interface Definition in the Links Tab. Select the IEE (InEight Estimate) link.

You will need to start on the Connection Pool tab.

Server: Enter the name of the Server where the InEight Estimate database is located.

Database Type: Enter the database type (typically SQL Server" of the Estimate database.

Database Name: Enter the name of the Estimate Database

User Name: Enter the user name to access the Estimate Database

User Password: Enter the password to access the Estimate Database

Click on "Test Connection" to ensure that the link has been successfully established.

Export Path: Now enter the URL where the Estimate API is located. If additional authorization is required (based on your Estimate API setup) then enter the User Name and Password to access it.

TimeControl supports a separate import connection for the HDLibrary database. This facilitates separating the HDLibrary into a separate database instance. The second connects needs to be configured only if the HDLibrary is separate from the HDWarehouse database instance.

You're now ready to move back to the Interface Identification Tab:
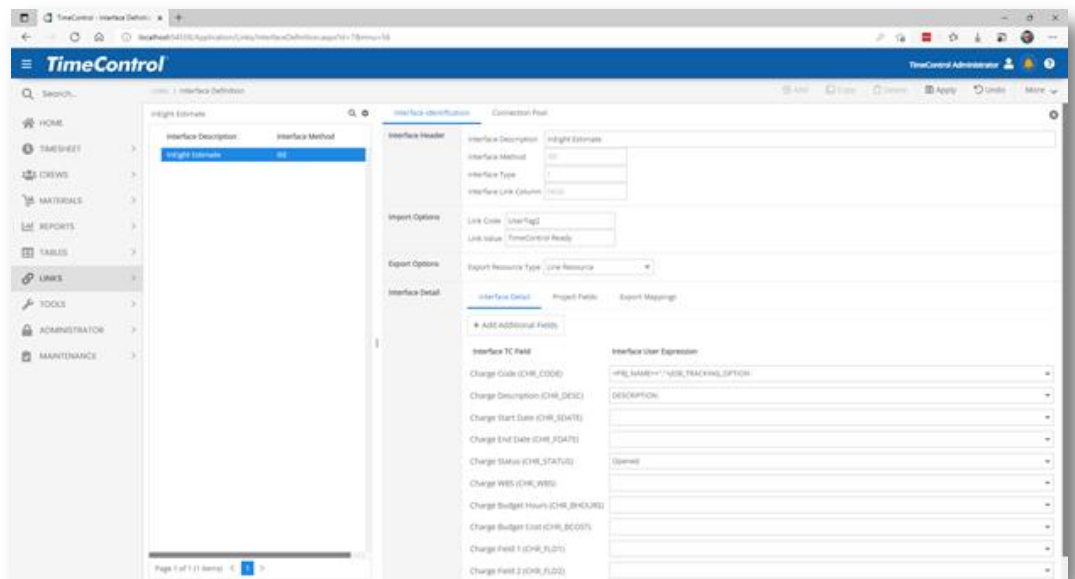
When linking to an InEight Estimate Project in the Project Table, select an InEight Estimate Interface Definition in the Estimate Transfer Options tab. You will have several choices to link specific elements of TimeControl to the matching elements in Estimate.
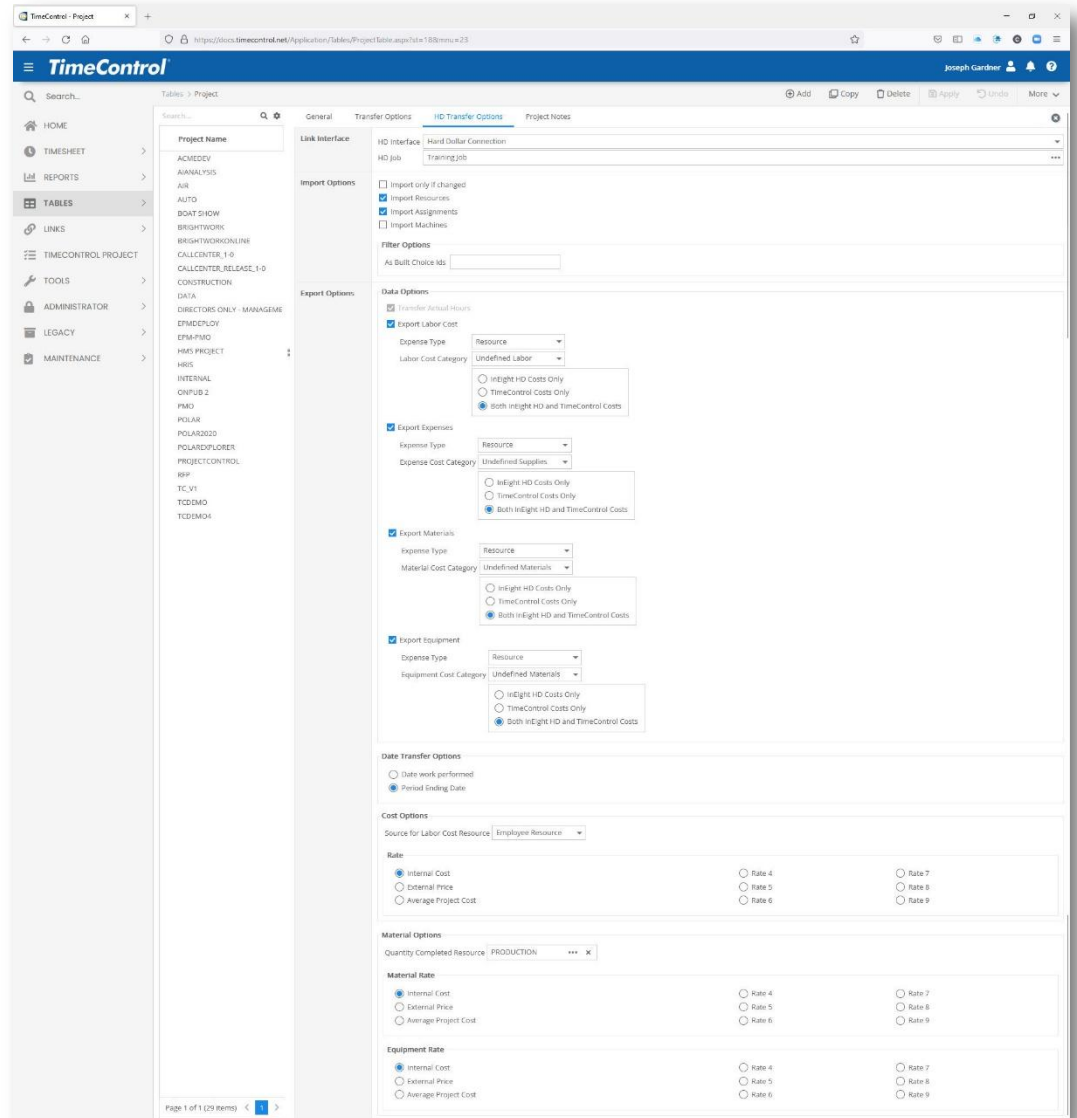
Link with both InEight Estimate and Primavera P6 simultaneously

TimeControl is capable of maintaining a simultaneous link between a TimeControl Project, a Job in InEight Estimate and a project in a scheduling tool such as Oracle-Primavera's P6.
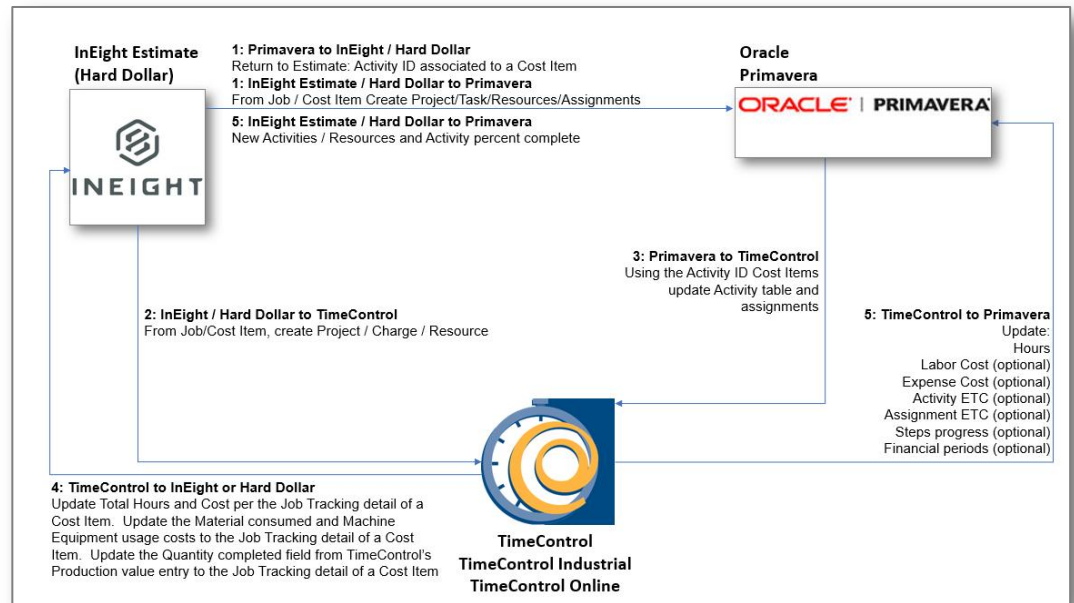
In order to ensure that the project is able to synchronize between all of these tools, a process must be established that recognizes a sequence of work. TimeControl's expectation is that projects would start in InEight Estimate as an estimate. When the project would near activation, the user would create a schedule in Oracle-Primavera's P6 using the function within Estimate to automatically create the Primavera schedule. When this is done, Estimate uses a user-defined field in P6 to store the Estimate Cost Item identification. TimeControl will use this information to be able to have a single charge code in TimeControl align with a cost item in Estimate and an activity in P6. So the expected order of movement of data between the three systems would look something like this:

1	InEight Estimate to Primavera	From Job/Cost Item Create Project/Tasks/Resources/Assignments
2	Estimate to TimeControl	From Job/Cost Item Create Project/Charge/Resource
3	Primavera to TimeControl	Using the Estimate Cost Item GUID located in the user-defined field in Primavera's Activity record, update the TimeControl Activity table, and assignments

4	TimeControl to Estimate	• Update Total Hours and Cost per to the Job Tracking detail of a Cost Item
		• Update the Material consumed and Equipment usage costs to the Job Tracking detail of a Cost Item and;
		• Update the Quantity completed field from TimeControl's Production value entry to the Job Tracking detail of a Cost Item.
5	TimeControl to Primavera	Update:
		• Hours
		• Labor Cost (Optional)
		• Expense Cost (Optional)
		• Activity ETC (Optional)
		• Assignment ETC (Optional)
		• Steps progress (Optional)
		• Financial Periods (Optional)
6	InEight Estimate to Primavera	New Activities/Resources and Activity Percent Complete

Configuring Estimate and P6 when linking both with TimeControl

There are several options which should be configured in HD when you wish to link InEight Estimate and Primavera's P6 with TimeControl at the same time.

First, this three way link, as described in the section above starts with the assumption that the project will first be created in Estimate and then Primavera will have the project created automatically in a transfer from Estimate to P6.
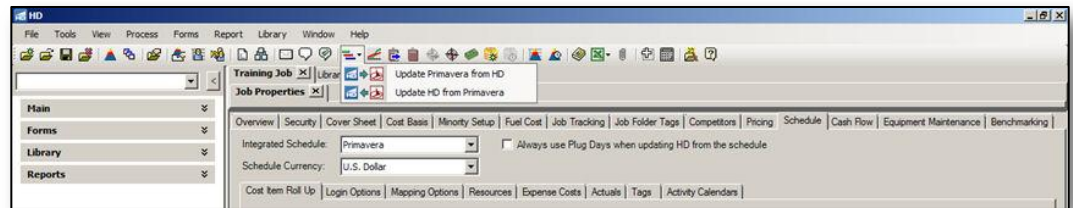
This option is set in the schedule link. Choose "Update Primavera from Estimate/HD" not Update Estimate/HD from Primavera.

Next you will need to choose "Resource" and not "Role" in the Resources tab, under the "Map HD Resource Types to Primavera" section. TimeControl does not support Role transfers to Primavera at this time.
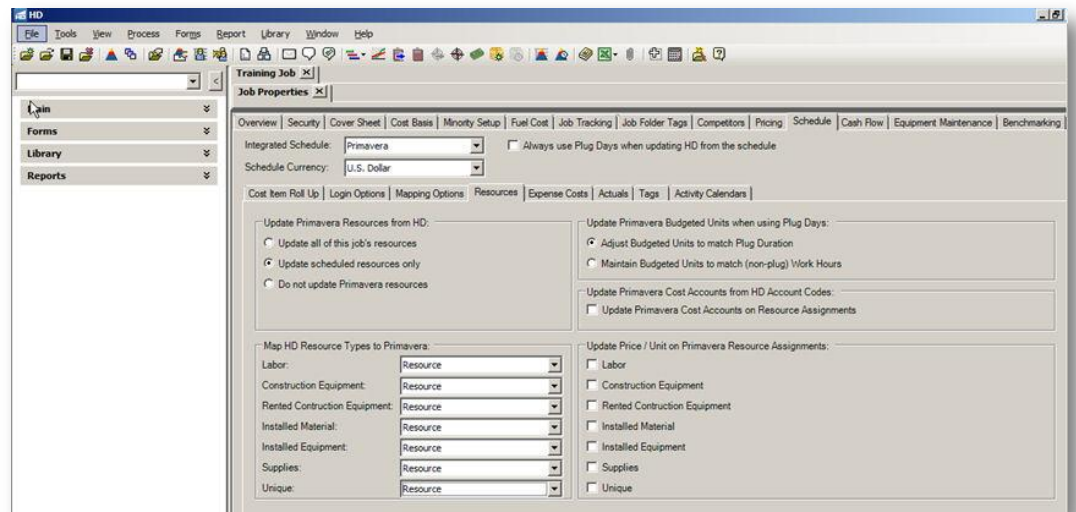
Finally, you will want to take a moment to think about how you will update P6 in the future.
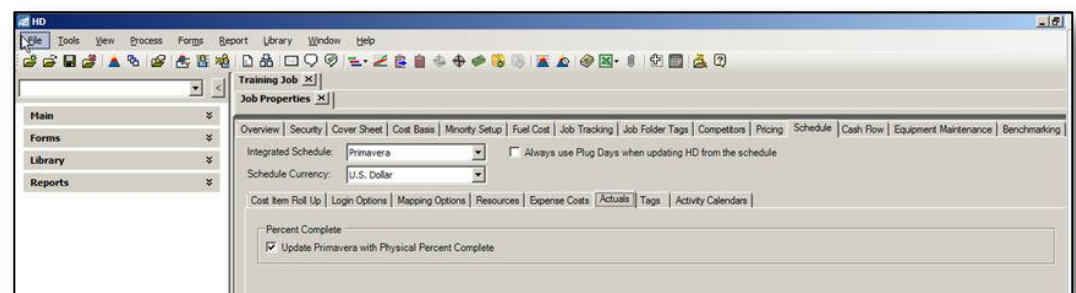
Most clients will have TimeControl send updates that include Assignment and Activity progress as well as progress on Primavera Steps. If you do this, Primavera will calculate a Physical Percent Complete. Estimate also has the option to update the Physical Percent Complete so you will need to decide which system to source that update from. You should never have <u>both</u> TimeControl <u>and</u> HD update this at the same time. In the Schedule/Actuals Tab, clear the option for "Update Primavera Physical Percent Complete" if you intend to have TimeControl update Primavera with this information.

Transferring Data to TimeControl from a Project Management System

When integrated to one or more project management systems, on a regular basis, TimeControl should be updated with information from the projects in the pm system. This will update TimeControl with any new activities, any deleted activities, the status of activities, assignment information as well as information such as start and stop dates. TimeControl may use this information for filters, pre-loading or a variety of other functions.

Transfer into TimeControl from a project management system can be done on a schedule or on demand. If integrated with Microsoft Project Server or in some cases with Primavera's P6, this might also happen on a triggered event such as each time the project is published. For more information on creating on-publish triggered updates from Project Server, consult the TimeControl Installation Guide. For information on creating on-publish triggered updates from P6, consult the HMS Technical Services department.

Let's take a look at how to do an update of TimeControl from a project management system. We'll look both at creating a scheduled update and an update on demand.

Creating a Scheduled Project Management Import

When linking to a project management system, it is common to update TimeControl's database from the project management system on a regular basis. To do this, we create a Scheduled Project Management Import. This is possible <u>only</u> for projects with a server-to-server type of connection.

To create a scheduled PM Import, select **Links | PM Import**. Then click **Add**. TimeControl now asks you to define the link.
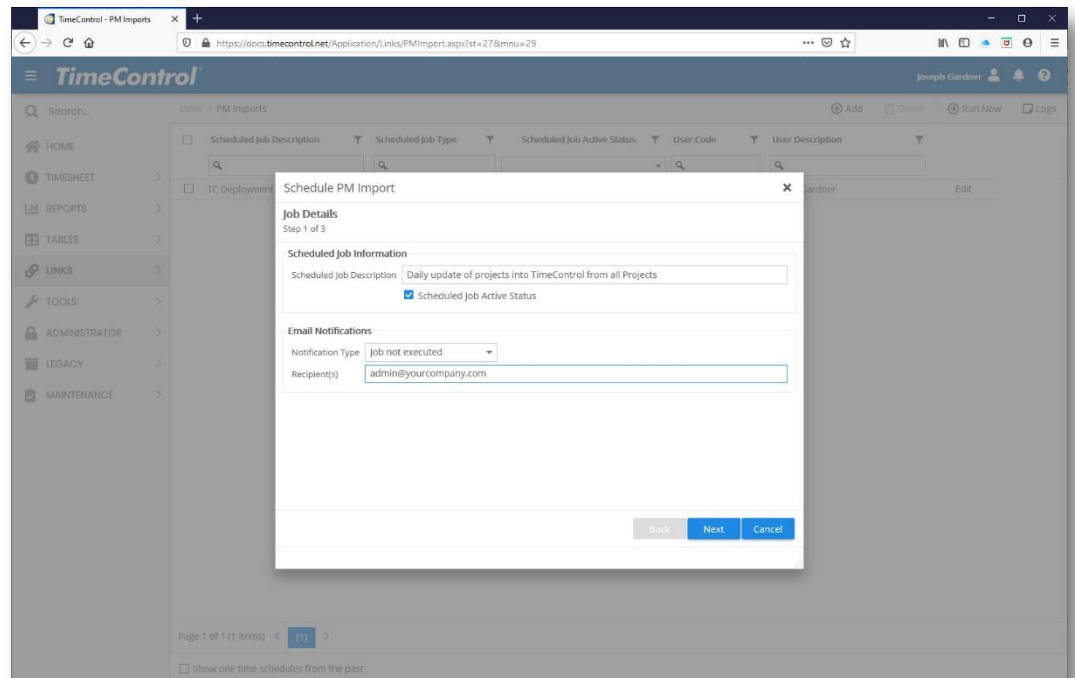
Start by adding the description of the scheduled job. You can flag a scheduled job as active or inactive at any time.

Enter also how you should be informed about the status of the scheduled job. You can receive an email when the job runs or if the job didn't run.

Click **Next** to continue.

Now TimeControl needs some scheduling information. Should this job run daily, weekly, monthly? What time of day should it run? It's common to set up a nightly job to update TimeControl overnight. You can choose to run jobs just on weekdays or just on weekends or every week at a particular time. Remember that there is no limit to the number of jobs you can create. So, you can run one on Tuesdays and another on Wednesdays if you wish.

Pick a time when TimeControl's services will not be interrupted. Some organizations like to refresh web services and server-based services like TimeControl's in order to do regular server maintenance or database maintenance. It's best to pick a time when the system will be operating properly.
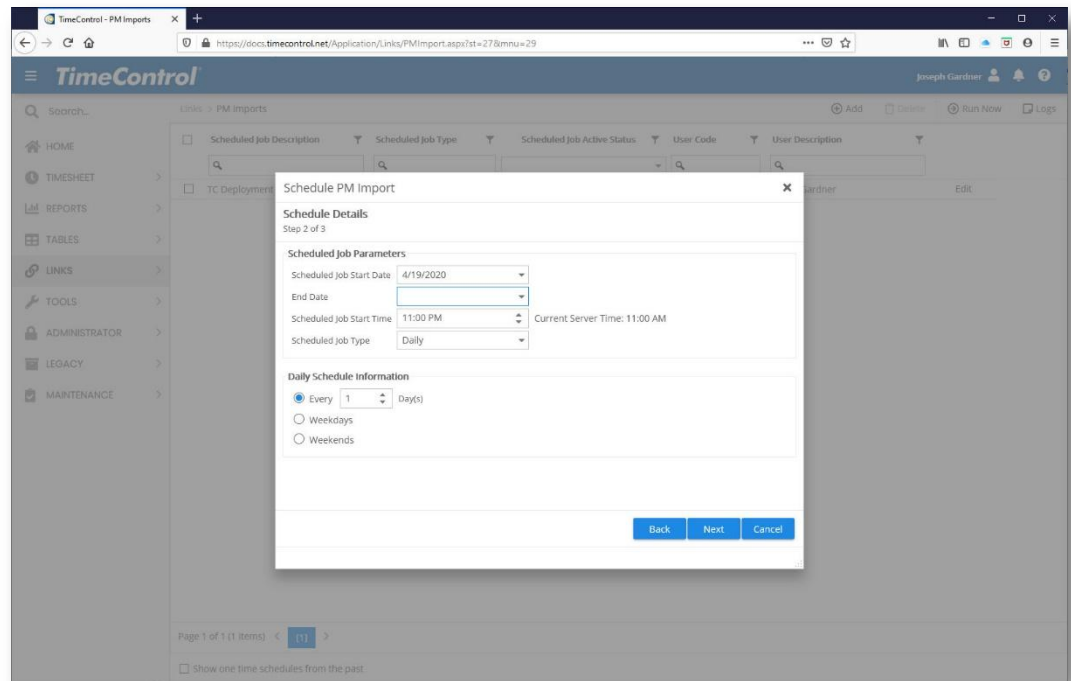
Click **Next** to continue.

TimeControl will now present you with a list of possible projects to import.

TimeControl will only present projects with a server-to-server type of connection as these are the only types of projects that TimeControl knows it can connect with unattended. You can also ask to import new projects and this can be further controlled by the Interface Definition and a flag in certain project systems to define which projects are eligible to transfer.

You can choose to update all open projects. Open Projects are defined by the Project Status field in TimeControl. Or, you can select one or many projects to be part of this regular update. You can sort the list by clicking on the header at the top of each column or search for projects with any of the empty fields at the top of each column.
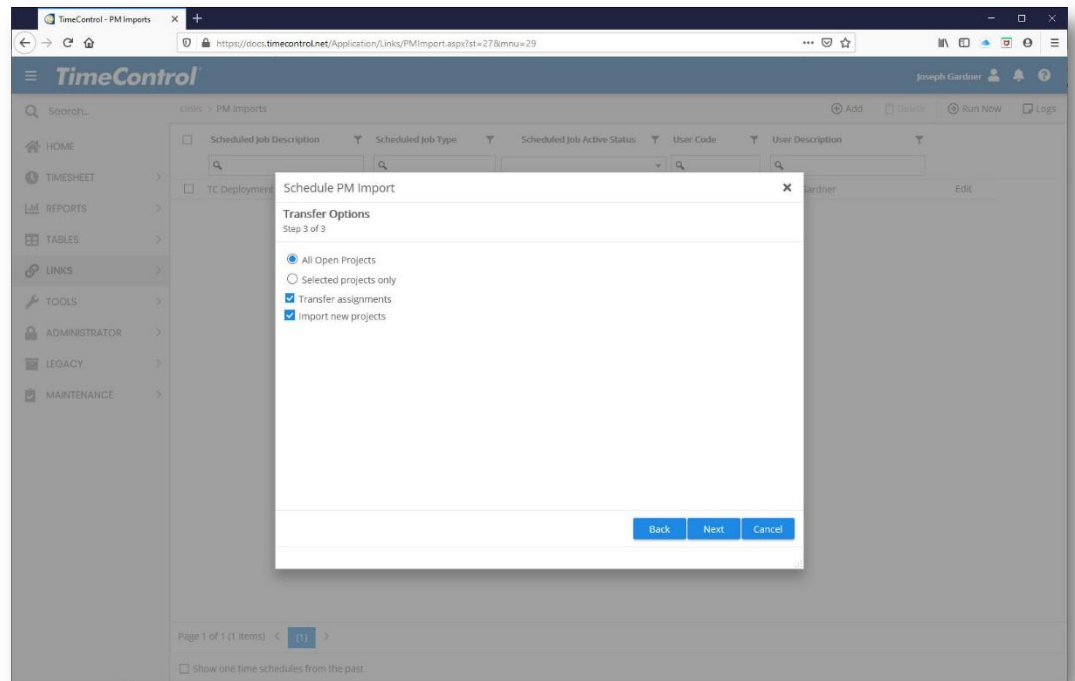
Click **Next** once your project selection is complete.
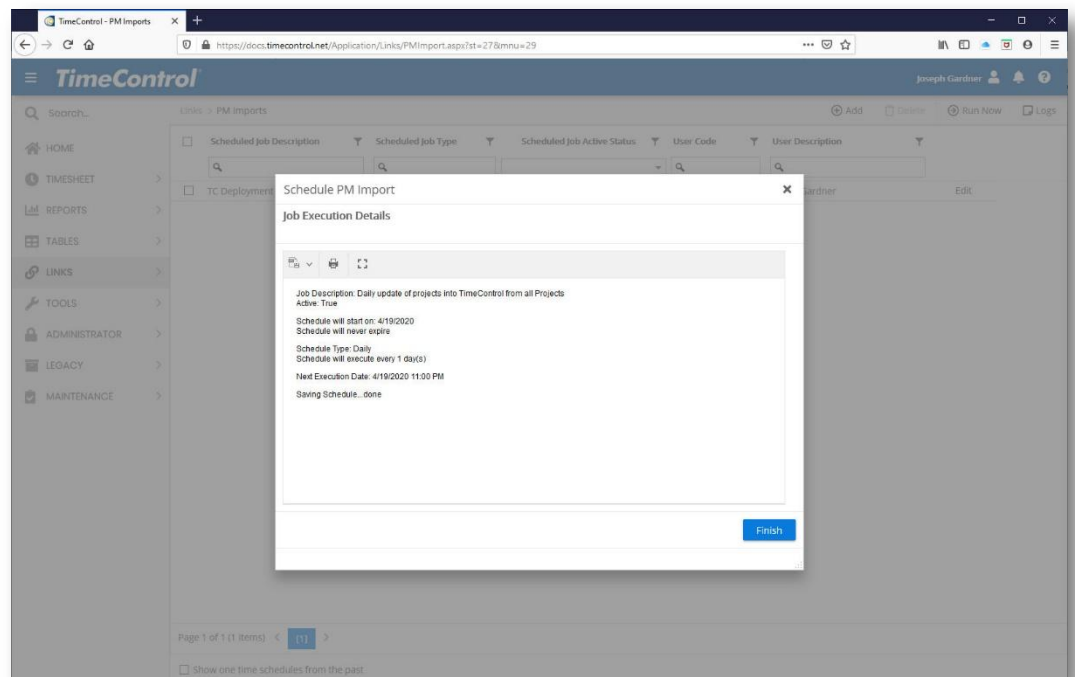
TimeControl now shows you what you've created. Verify that this is the correct information and then Click **Finish**.
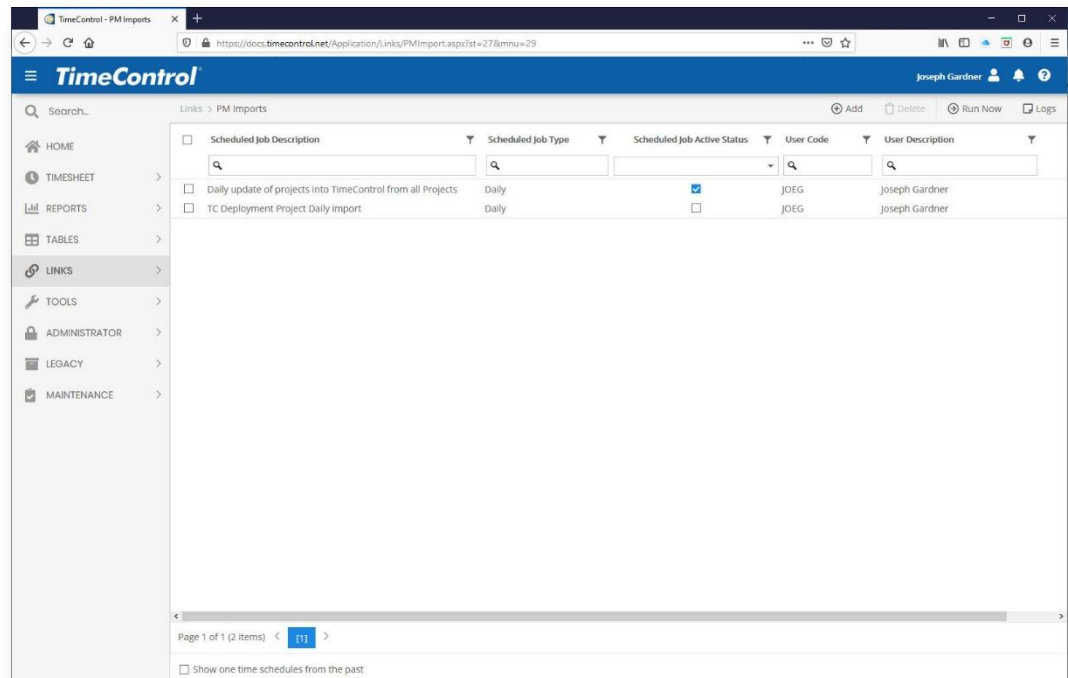
You will be returned to the PM Import screen and your newly scheduled job should be listed. You can edit this scheduled import by clicking the **Edit** link or manage this job in the Manage Scheduled Jobs list under the Maintenance Tab.

Importing from a Project Management System On-Demand

In some circumstances a project manager or administrator may wish to update TimeControl's data from a project management system on demand. This might be appropriate if a project has just had extensive updates or if the project is not a server-to-server type of connection. For example, a link with a Microsoft Project Desktop project would need to be initiated by the user who has access to that project's file.

To initiate an On Demand transfer from a project management system, Go to Links | PM Imports and click **Run Now**.

TimeControl will present you with a list of possible projects to import. You can sort the list by clicking on the header at the top of each column or search for projects with any of the empty fields at the top of each column.
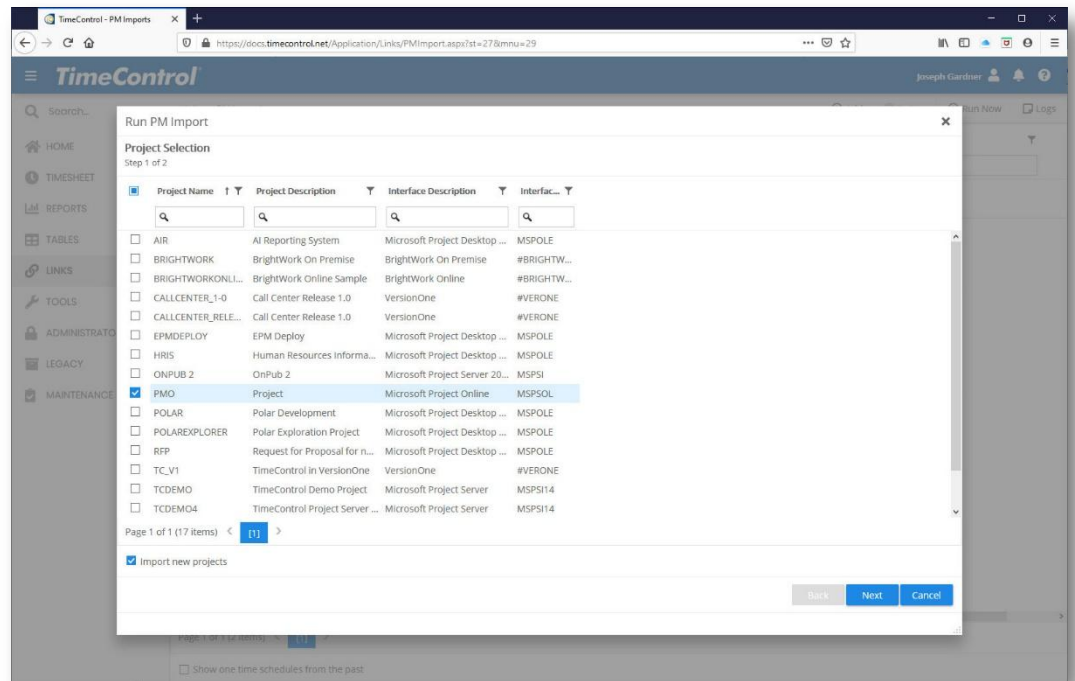
Select the project or projects you wish to import at this time by checking the checkbox on the left hand side. You can select all projects by clicking the checkbox at the top of the project selection column. Click **Next** once your project selection is complete.

TimeControl will present you with any additional Run-time options that are available for these imports. The options for how the information will be brought into TimeControl for each project must already been defined in the Project Table and Interface Definition. You can select projects from different types of project management systems.
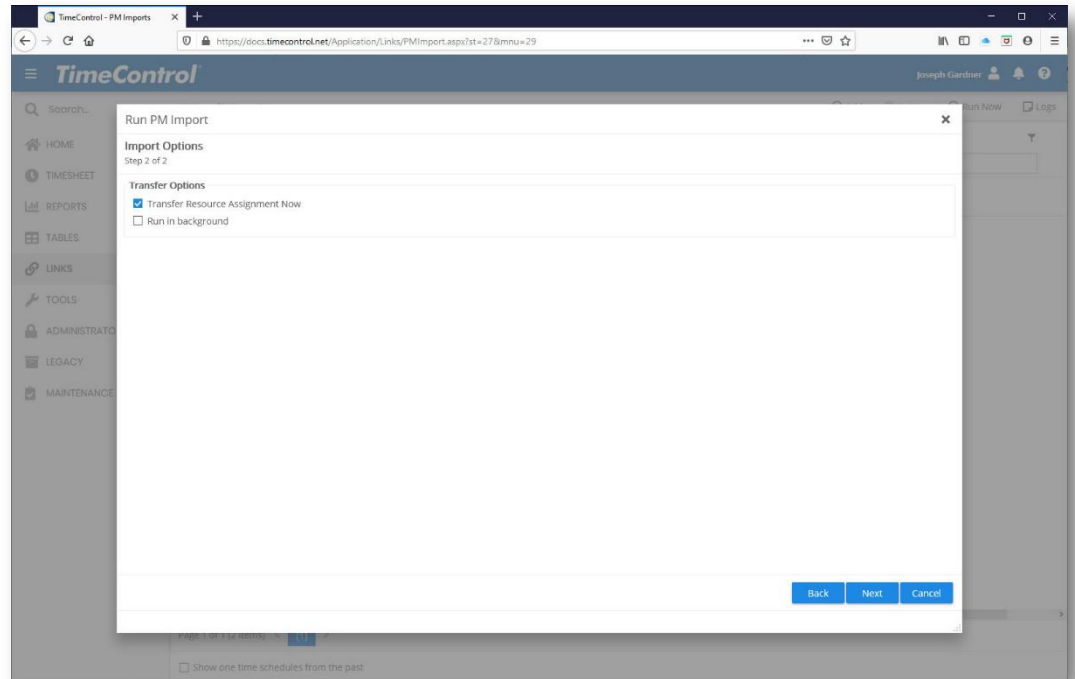
TimeControl asks if you wish to update the Resource Assignments. If this is selected, TimeControl will also create any missing Resource Codes in TimeControl if, as it is doing the updates of assignments, it finds them missing.

This link can also now be run in the background. If this selected, the user won't see the dialog anymore and will be able to return to working within TimeControl. The transfer will continue in the background and the user will see the log file once it is finished.

> **Note**: When using Run in Background it is important to maintain your browser session.

If the session is not run in the background, TimeControl will show a progress bar of the update as it advances and then the results window once it's complete.

The Results window shows the result of the update. You can copy and paste this information if you've had a problem in the link or see the results at any time by clicking the **Log** button in the Actions menu on the top right.

Transfer Logs

Transfer logs can be viewed at any time in the **Links | Logs** module. Clicking on the Logs icon will show a list of logs that TimeControl has saved for completed links.
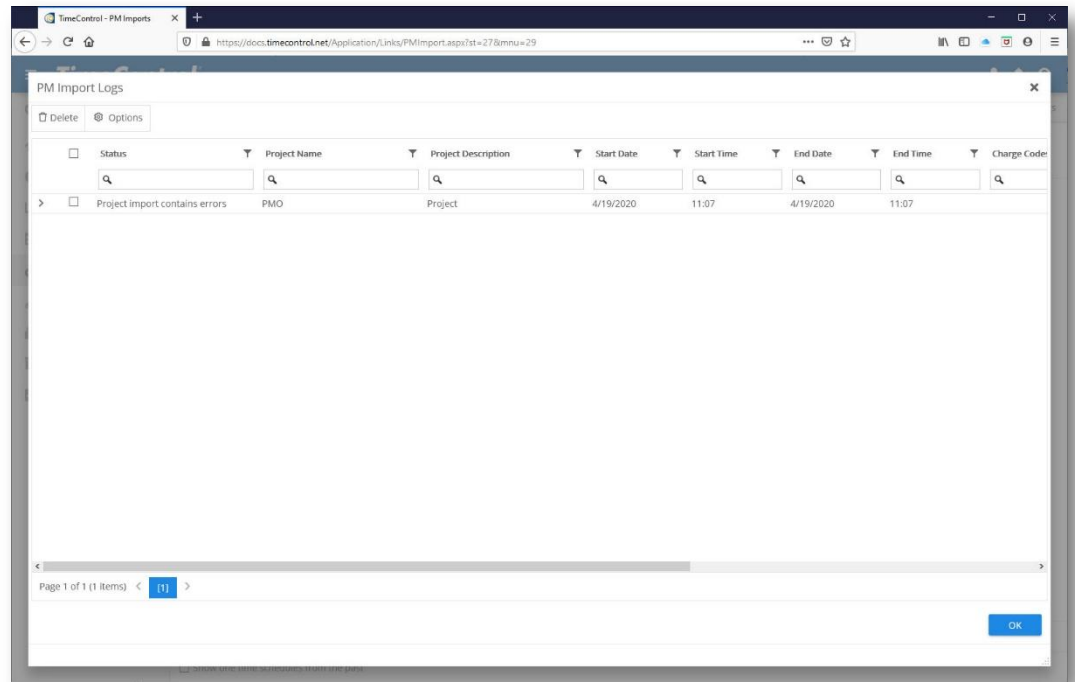
You can sort the list by clicking on the header of any column or group and sub-group the list by dragging any column header into the grey area just above it.

Clicking on the "+" icon on the left of any log will show its details.
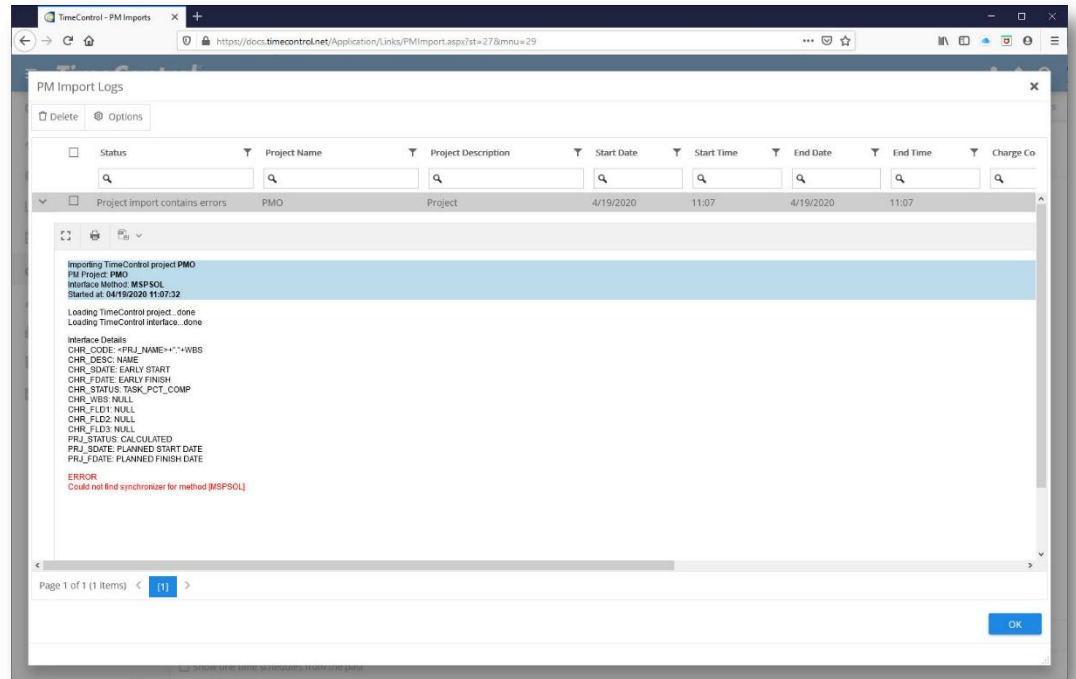
From the log details you can view or copy and paste any log that is available.

Transferring Actuals Back to a Project Management System

Once timesheet data has been entered, approved, and posted, it can be moved back to your project management system.

You can schedule an export to transfer the actuals at a set time. The best practice, however, is to have the project manager transfer actuals on demand.

Creating a Scheduled Project Management Export

Start by selecting PM Exports from the Link menu. Click **Add** to initiate the transfer process.

This is possible only for those server-to-server Project Interface Links that allow scheduled transfers.

Enter the Description of this Scheduled Job and whether you wish to be notified about its status.

Now enter the range of dates when you'd like this scheduled job to run and the frequency and time of day to run the job.
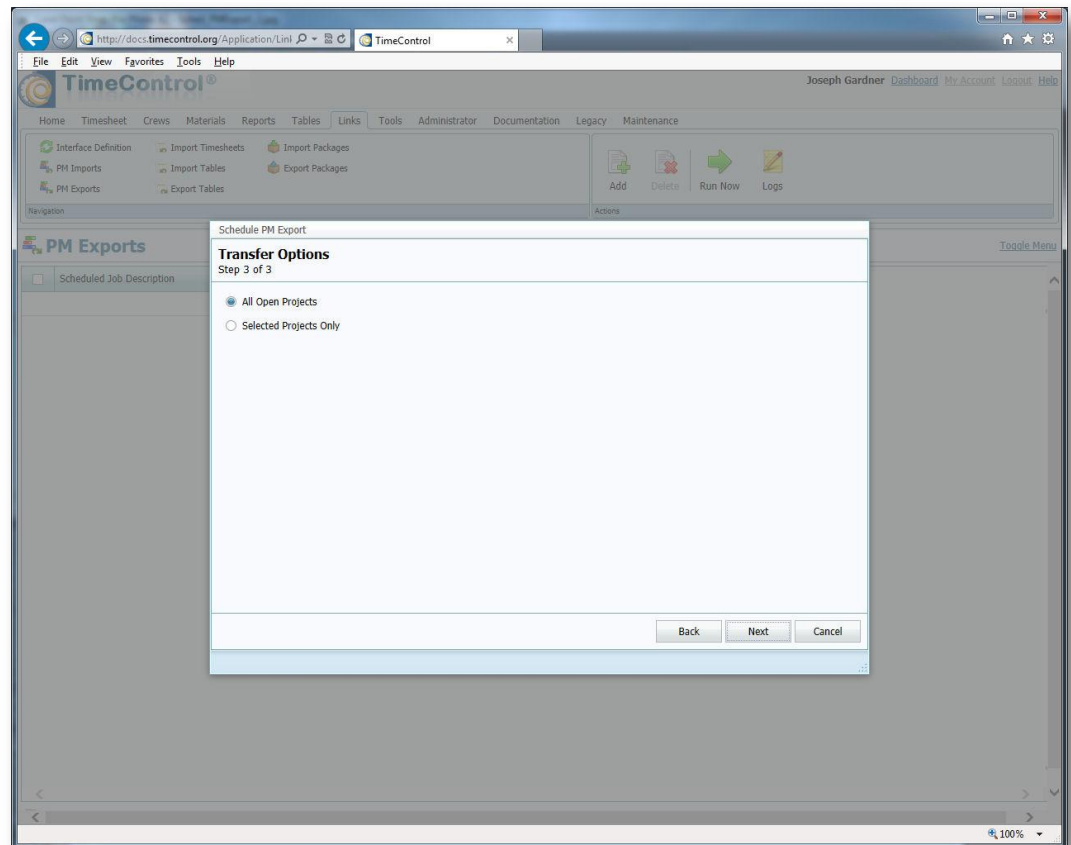
You can elect to transfer the actuals for any open project or only selected projects. It is likely you'll choose Selected Projects. If so, you'll select which projects you wish to transfer in this batch otherwise, click **Next**.
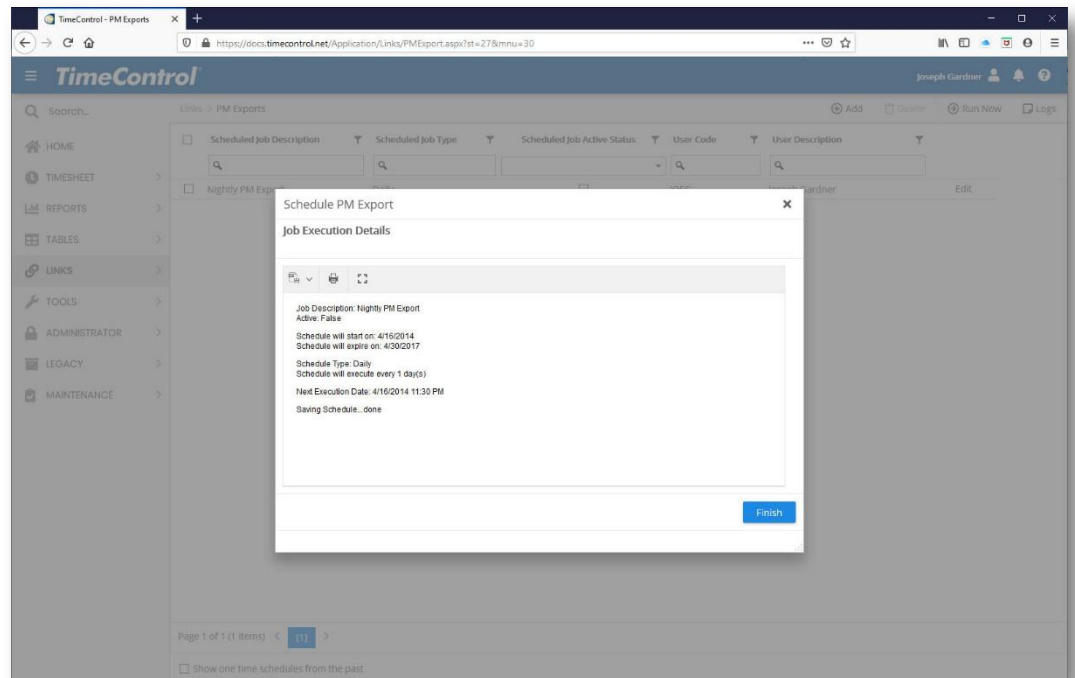
TimeControl reports that your scheduled job is saved and you will see the job in your list of PM Exports or in Managed Schedule Jobs.
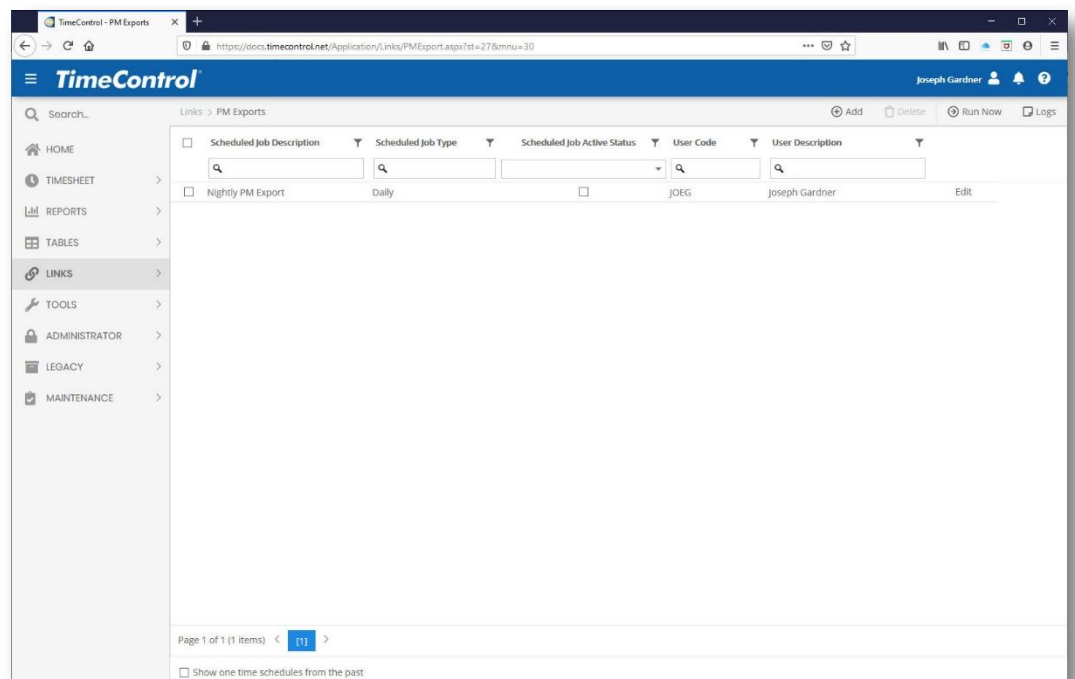
When TimeControl has completed the transfer, it will display a log which can be saved. If this was a scheduled transfer, TimeControl would have activated it at the server without further intervention but a log would still be created. TimeControl can optionally email the log or it will automatically save in the /logs subdirectory on the server. It is important to review the log prior to moving on with work on the project file to determine that all data has transferred properly and that there were no errors in the log. For example, if a task in the project system has been deleted, TimeControl would be unable to transfer data to it and the total actual hours in TimeControl would no longer match the total actual hours in the project management tool for that project.

Transferring to a Project Management System On-Demand

When a project manager is ready to update their project with actual progress and timesheet information from TimeControl, they can initiate a transfer to the project system On Demand by clicking the Run Now command from PM Export.

Exporting data from TimeControl to link to other systems

TimeControl allows links to other systems such as Payroll, Billing, HR Finance and other systems through transaction files creating in the Export Tables module. You can create and maintain an unlimited number of definitions.

TimeControl's batch controlled exports has the capability to ensure that data is never accidentally transferred twice using the same definition and will track the batch of records extracted with a batch control number in case the transaction file must be recreated.

Creating a new Transaction File Definition

➢ To create a new export definition, or to perform a specific export:

You can choose to save this Export under a particular name, or just run it. If you save it, it will appear in the list of exports available to you the next time you start the Wizard.

1. Select **Links** | **Export Tables**. This displays a list of definitions that you have already saved, as well as the Export Wizard.

2. Choose Run Now from the Actions Menu to create a new export then click **Execute**. TimeControl displays a list of tables.
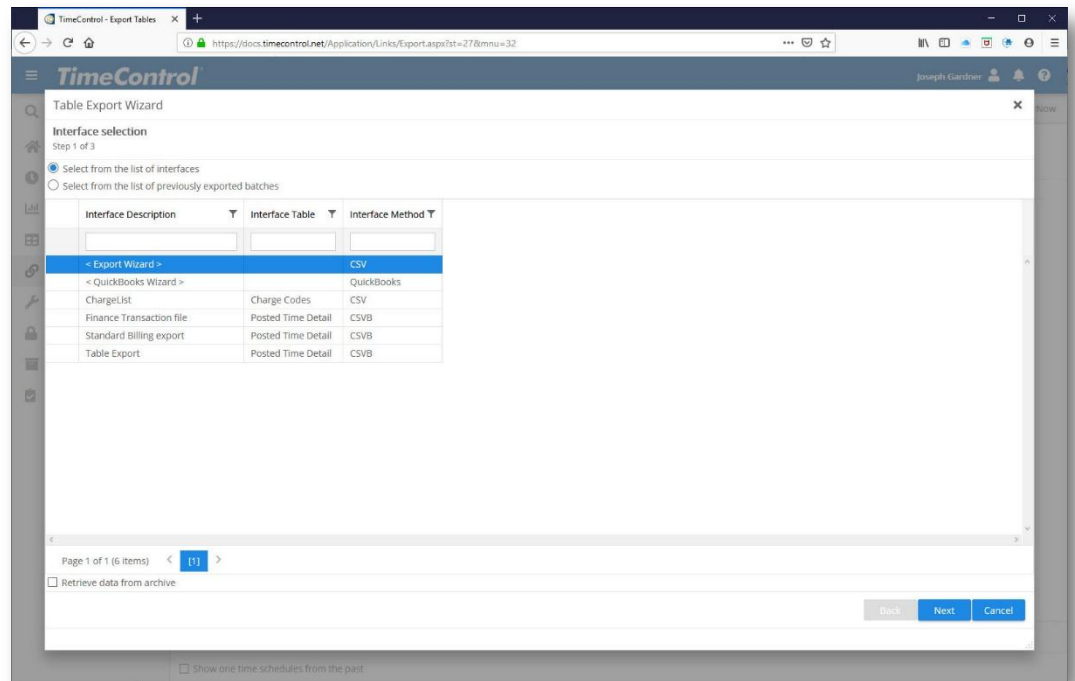
Select the **Export Wizard** to create a new Export Definition.
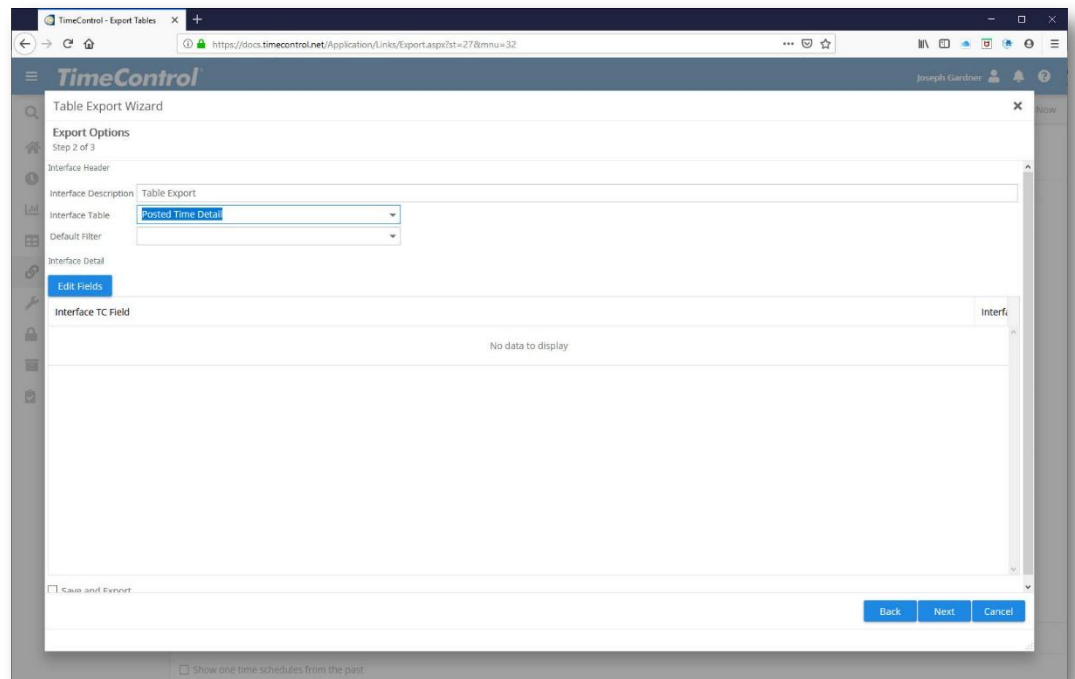
3. Select the table from which you want to export then Click Edit Fields to display the field selection dialog box. Remember, tables also include any tables that are linked to them. Therefore, the Charge Table will automatically include fields from the Project Table, and so

on. To export timesheet actuals, choose the Posted Timesheet Details table, and everything associated with the posted timesheet will also be available to export.

4. To select fields for your export, click **Edit Fields**. This displays a hierarchical list of available fields and tables

5. Select the field from the left hand side to include in your export then click the right arrow. Fields will be put into the transaction file in the order in which you select them. To move all fields, click the double right arrow. You can change the order of the fields which have already been selected by selecting the field on the right hand side of the screen and using the up and down arrows. To remove a field, select it on the right hand side and click the left arrow. You can remove all fields by clicking the double left arrow.

To select fields from related tables, select the table at the top of the left hand side of the screen and the fields associated with that table will appear on the left.
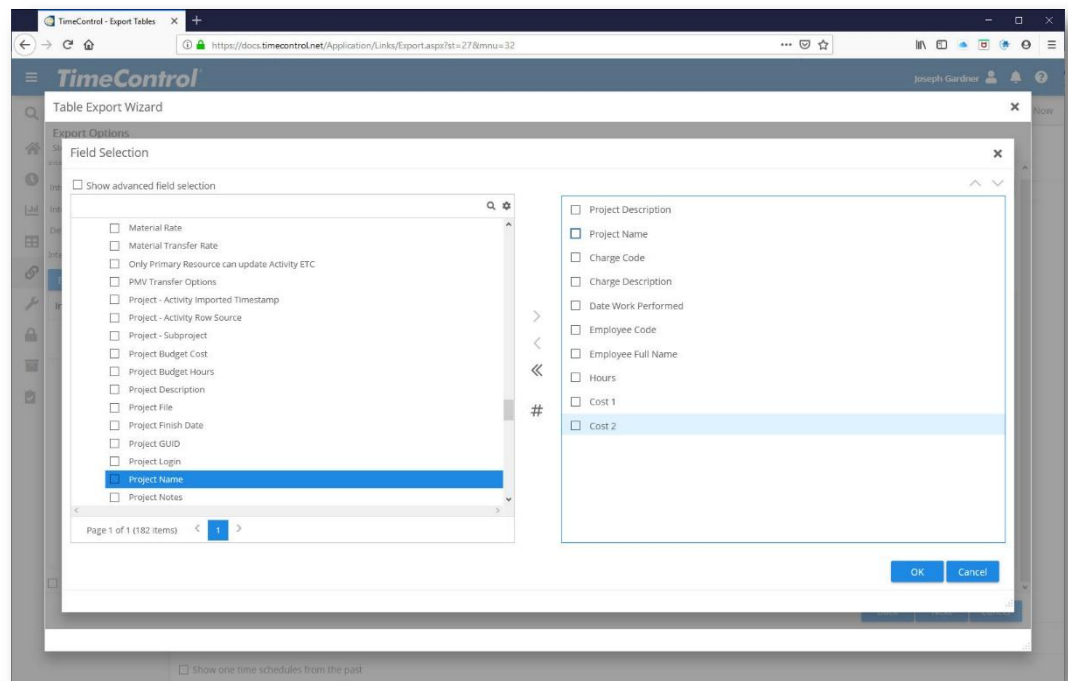
To add a constant, click the **Add Const** button.
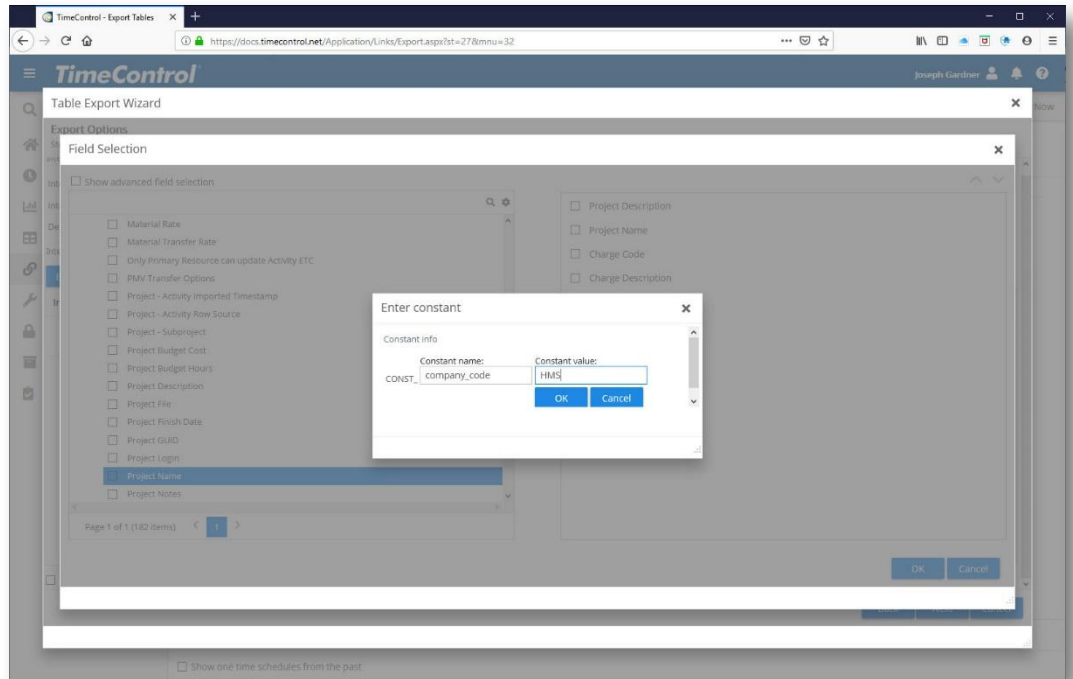
6. Once you have selected the fields that you require, click **OK**.
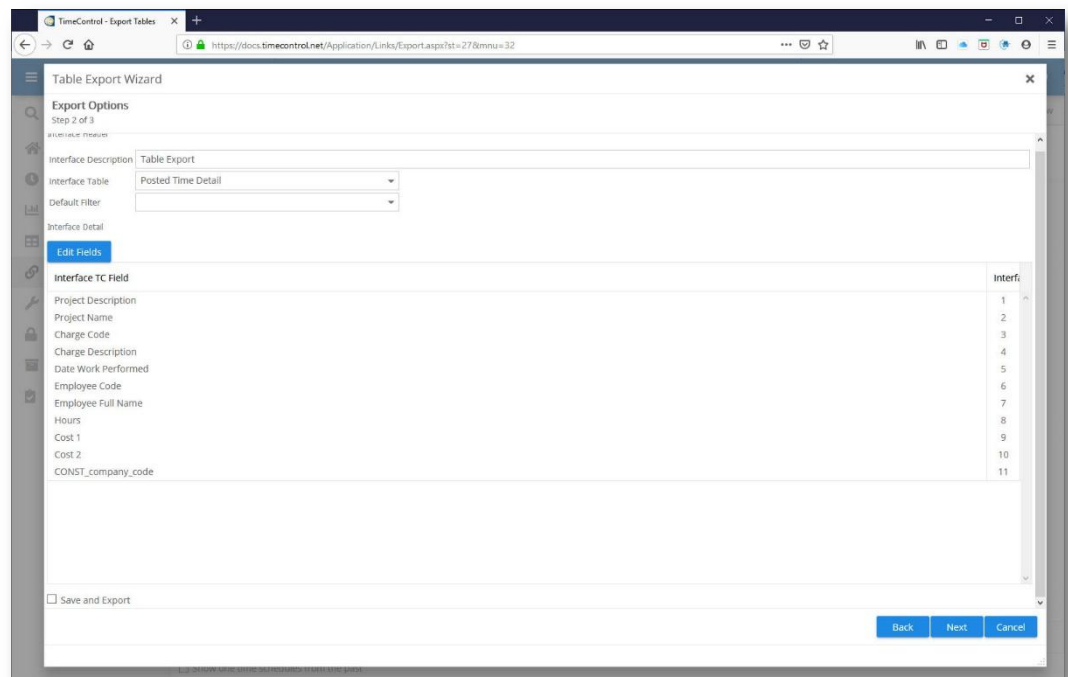
7. Click **Next** if you are satisfied with your field selections.

8. If you wish to save your report, Click **Save and Export** and enter a unique description for your export in the **Export Description** text field. This allows you to identify it for future use.

9. You can choose to save this Export under a particular name, or just run it. If you save it, it will appear in the list of exports available to you the next time you go to Export Tables.

10. Click **Finish**. The export will begin to execute and display a list of any filters that are applicable to the main table your export is based on.
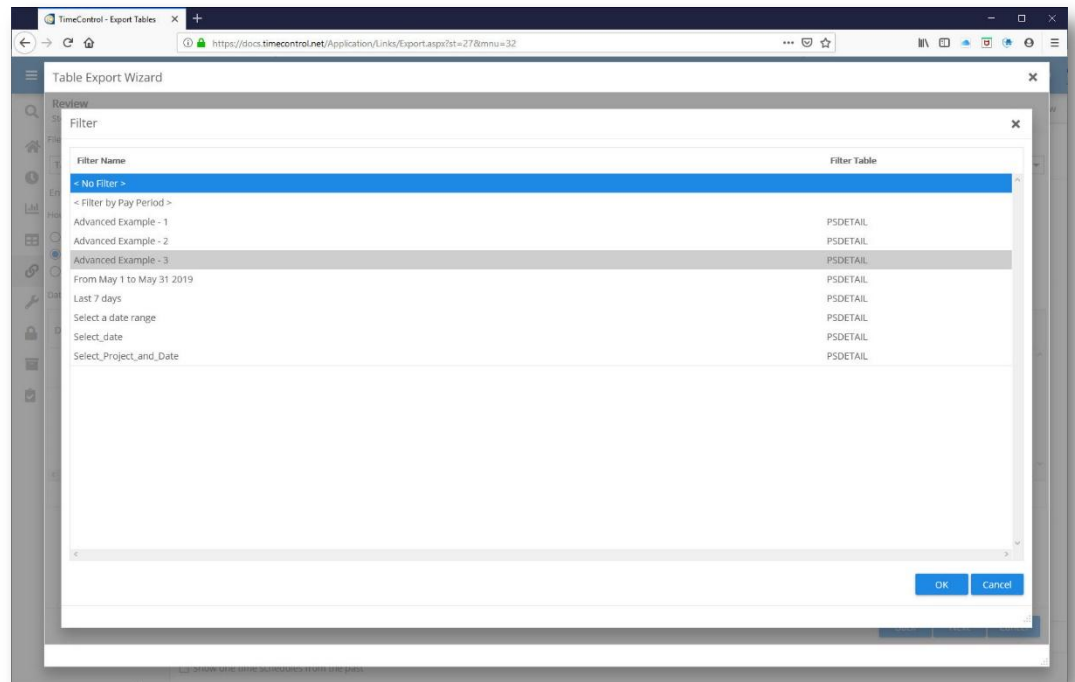
11. Select a filter from the corresponding list of export filters then click **OK**. The selections available are those you have already created in the Filter table. For more information on creating filters, see *Creating Filters* on page 457.

12. TimeControl now shows an example of the export data and you can choose what format you'd like your export to be saved. If you have chosen any hours to be a part of your export, select how you would like them exported then click **Next**. This may be very important if you are planning calculations on the results after exporting them.

13. Finally, choose a location and format for the saved file. There are three formats in which to save data: XML, Txt/TSV (Tabbed-separated values) and Text/CSV (Comma-separated values).

14. If the XML option is selected, you will have the opportunity to declare a formatting file called an XLS stylesheet file whose reference can exist directly in the newly created export. This XLS file can be used to create different display effects if the XML file is viewed through a browser. You can attach a stylesheet which you have designed or allow TimeControl to generate a simple stylesheet for you based on the fields you've chosen. Alternately, you can reference a stylesheet which you have already created and saved in a reference able place which needs not be embedded in the file.

15. The use of the generated stylesheet option allows the XML file to be opened using a compatible browser in a formatted fashion.

16. If the text option is selected, the default extension for the file is *.csv*, and the results will be in ASCII CSV (Comma Separated Values). If you want to export directly to Excel or HTML, use TimeControl's reporting wizard to create a report with the required information then save the report in the desired format.
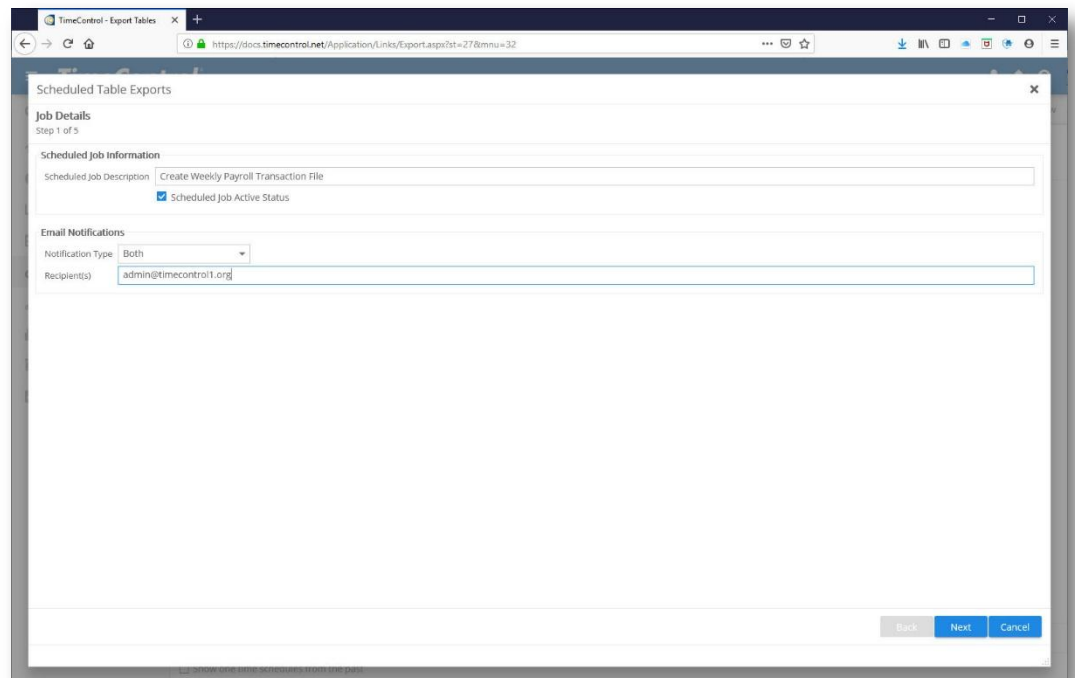
Once your export is complete, the log file will display the results and your file will be available to you.

Creating a Scheduled Table Export

Export Links can be created on a schedule so that TimeControl can automatically create a transaction file at regular intervals.

To create a Scheduled Table Export, first go to Links | Export Tables and select Add from the Actions Menu.

On the first page of the definition, enter the Job Description and select "Scheduled Job Active" if you are ready to activate the Scheduled Export definition right away. You can return to activate or deactivate a Scheduled Export job later. Decide if there should be an email notification either when the scheduled job is executed, if the scheduled job is not executed or both and enter the email addresses of who should be notified about this job.

Click Next to move to the second page of the scheduled job notification.

On page 2 of the definition, enter information about when you would like this scheduled Export Link to occur. You can list a range of dates within which the job should run and the time of day it should be executed. Select from Daily, Weekly or Monthly intervals and then fill in the appropriate data below to select when the job should occur.

Click Next to move to page 3 of the schedule definition

On page 3 start by choosing a valid page on the server or to somewhere the server has access to where the data will be stored. You will need to ensure that TimeControl has the rights to write data to that folder.

Remember, it is the TimeControl server where this scheduled job will occur, not your personal PC or device. If you need to make a local export file, you can do that using the on demand instructions in the previous section of this manual.

You can now select an already existing Export Definition from the list available or select the Export Wizard and create one now. Use the instructions in the previous section of this manual to create a new Export Definition using the Export Wizard.

If you are expecting to save the exported transaction file to a server location accessible to the TimeControl server, then enter the full path in the Network Share field.

If you intend to send this file to a location available to you through FTP or SFTP then click FTP/SFTP.

Now enter the protocol (FTP or SFTP), the location of the server including any sub-directory, the username and password to be used to access the FTP site and the port number. You can test to ensure this link will work by clicking the Test button. In this case, TimeControl will attempt to create a new file and then delete the file in the defined FTP area.

Click Next to move to the next page of the schedule definition.

Click Next to move to the review page.

The Filename can include the date it was created. You can append the date of the export as part of the file name by using a date format string such as (DATE:yyyyMMdd).

Here are some of the formats you can use in your format string:

Format specifier	Description
"d"	The day of the month, from 1 through 31.
"dd"	The day of the month, from 01 through 31.
"ddd"	The abbreviated name of the day of the week.
"dddd"	The full name of the day of the week.
"f"	The tenths of a second in a date and time value.
"h"	The hour, using a 12-hour clock from 1 to 12.
"hh"	The hour, using a 12-hour clock from 01 to 12.
"H"	The hour, using a 24-hour clock from 0 to 23.
"HH"	The hour, using a 24-hour clock from 00 to 23.
"K"	Time zone information.
"m"	The minute, from 0 through 59.
"mm"	The minute, from 00 through 59.
"M"	The month, from 1 through 12.

"MM"	The month, from 01 through 12.
"MMM"	The abbreviated name of the month.
"MMMM"	The full name of the month.
"s"	The second, from 0 through 59.
"ss"	The second, from 00 through 59.
"t"	The first character of the AM/PM designator.
"tt"	The AM/PM designator.
"y"	The year, from 0 to 99.
"yy"	The year, from 00 to 99.
"yyyy"	The year as a four-digit number.
":"	The time separator.
"/"	The date separator.

Now select what format you'd like to have the export created in from the drop-down list of formats available.

Just like in an on-demand export, you can decide how to format TimeControl hour fields.

Finally, look at the example export to be sure this is what you were expecting prior to clicking Next and moving to the confirmation page.

TimeControl now gives you a confirmation screen of what you have defined. When you return to the Export Tables screen, you should see your scheduled export job all ready to be executed when the time comes.
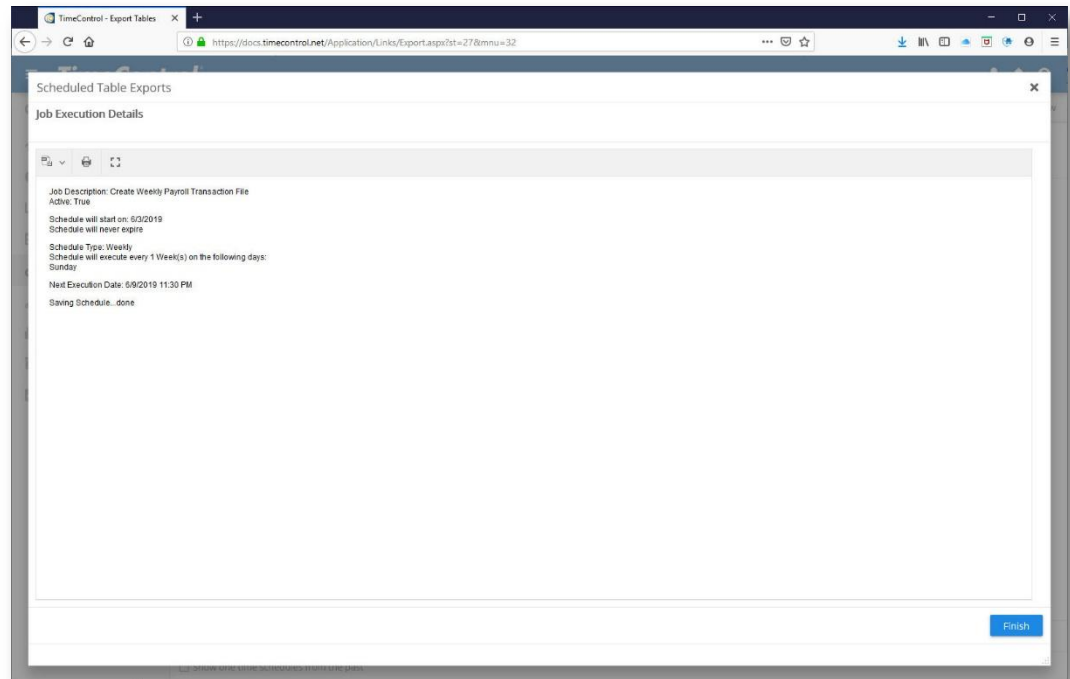
Importing Data into TimeControl from other systems

TimeControl allows you to import data that has been saved in either Excel or CSV (Comma Separated Values) text files.

Importing Data into TimeControl's Tables

TimeControl allows the importing of generic data directly into its tables. In this case, a Link Definition is created by the Link Wizard, which defines how to map files from your importing file to the TimeControl Table definition.

Once the link has been created, it can be called multiple times.

➢ To create a new import Link Definition:

1. Select **Links** | **Import Tables**. This displays the General Imports dialog box.

2. If you have already created a scheduled import link you need, select it from the General Imports list then click **Execute**. If you would like to create a new import link, select **Run Now**.
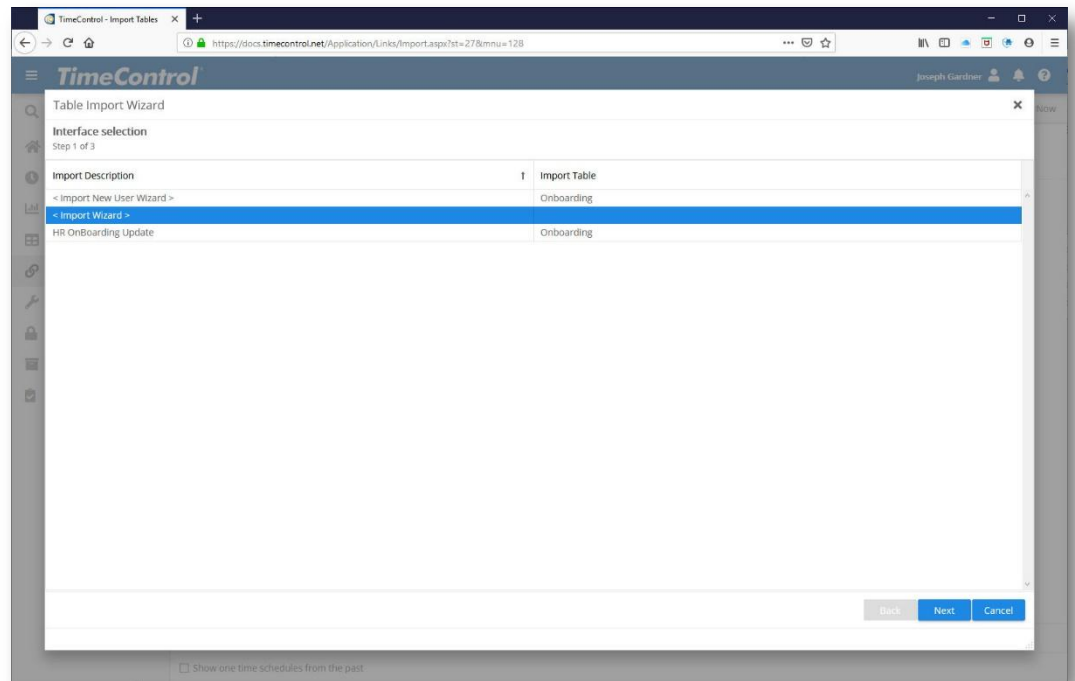
3. Choose the table into which you want to import data then click **Next**. This displays a list of all the fields in that table, and a place to identify which fields should be imported.

> **Note**   If you are importing a table that has links to other tables (for example a Charge Table entry with a project connection), you will have to populate the tables in the same order as we have listed in the *Tables* section of this guide.
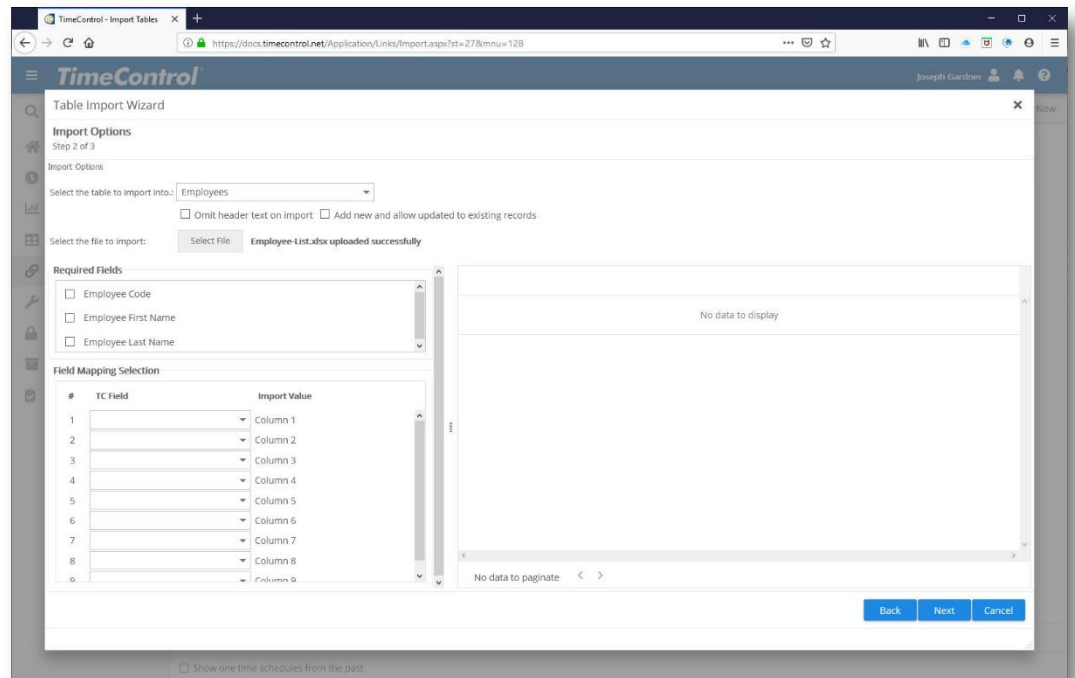
4. Select the field from the external file you are importing from and match it to the TimeControl field from the drop down list on the left where the data for the specified field can be found. Not all fields must be populated, and the sequence does not need to be in order. In fact, you might skip some data elements that are in the CSV file.

5. In the **Required** column, TimeControl indicates whether the field is required or not. You must include a sequence number for all required fields, or the import will not work.
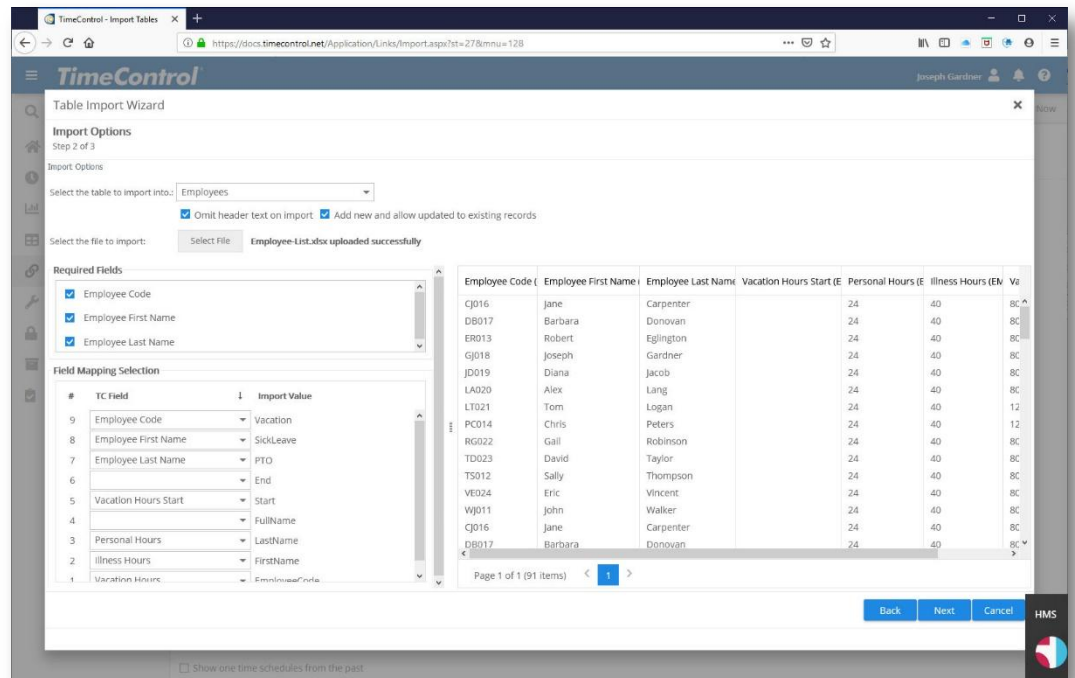
6. Click **Next** to continue.

7. In the **Import Description** text field enter a name for the import.

8. Under **Import Options** choose to simply Import or to Save the import for future use. Click **Finish** to run the import.

9. In the Import Options dialog box, choose to **Add only new records** or to **Add new and update existing records**. Existing records are determined by a match of the unique primary key (e.g. Employee Code in the Employee Table). Click **OK**.
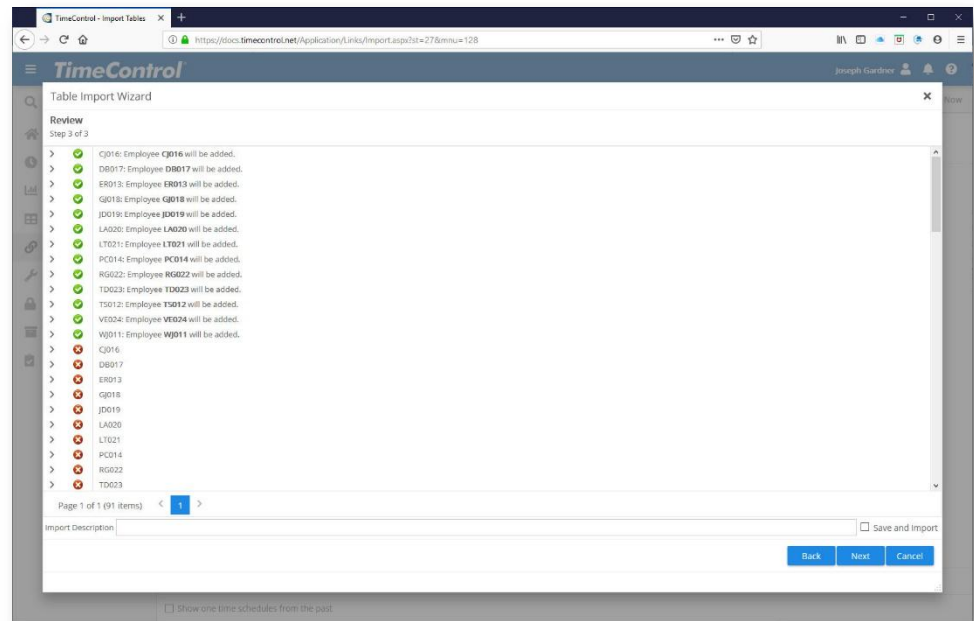
10. Select the location of the Import file in the **Open Import File** dialog box then click **Open**. Imports can be run repeatedly to reduce the amount of human interaction required with TimeControl.

Note   Because our new architecture allows the client and server to be on different machines, the Table import/export function uses its own date format rather than the system localization format. The date format assigned by TimeControl to Table Imports and Exports is yyyy/mm/dd.

Onboarding import with the New User Import Wizard

TimeControl includes a special import for situations where many employees will be added to the system at once. Processing new employees is referred to as "On Boarding" by many HR departments.

The New User Import Wizard differs from the standard Import module in that it loads several tables simultaneously.

The New User Import Wizard allows you to create an Excel or CSV file with information for the User, Employee, Resource, Release Structure and Rate tables in a single line per employee.

There are some restrictions, extensive numbers user defined fields for example might not be supported or release structures with more than 4 levels might only import the first 4 levels but importing in this manner is highly effective compared to loading each table on its own.

To start the New User Import Wizard go to **Links | Import Tables** and select the **New User Import Wizard**.
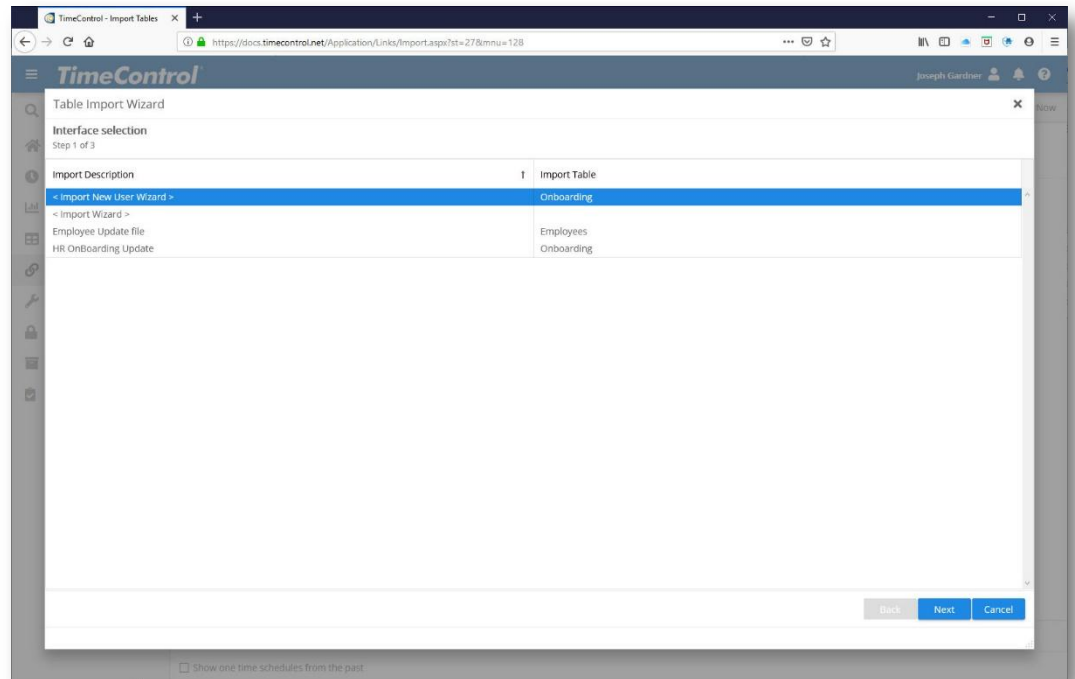
TimeControl will preselect the User Table. You can now enter the file from which you will import just as you would with a regular import. Remember, if you are importing from Excel, you must select the file and type in the Worksheet name.

If you click on "Omit header text on import", TimeControl will assume that the first line of your worksheet is a column header row and will show the names of those headers as column names. If you elect to "Add new and updated existing records" then TimeControl will not only create new entries, it will also update existing entries with new values when it finds them.
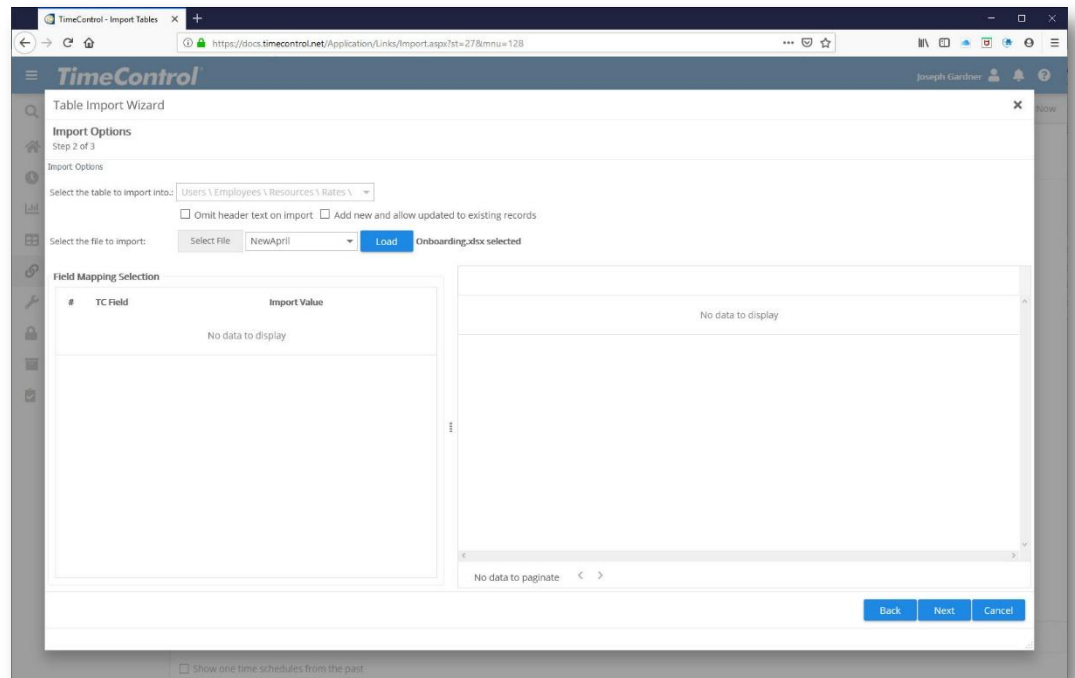
TimeControl loads the file and presents you with a list of the columns available within the file in the left-hand panel. Immediately to left of each of the field names is an area to select the TimeControl table and field to which that information will be imported.
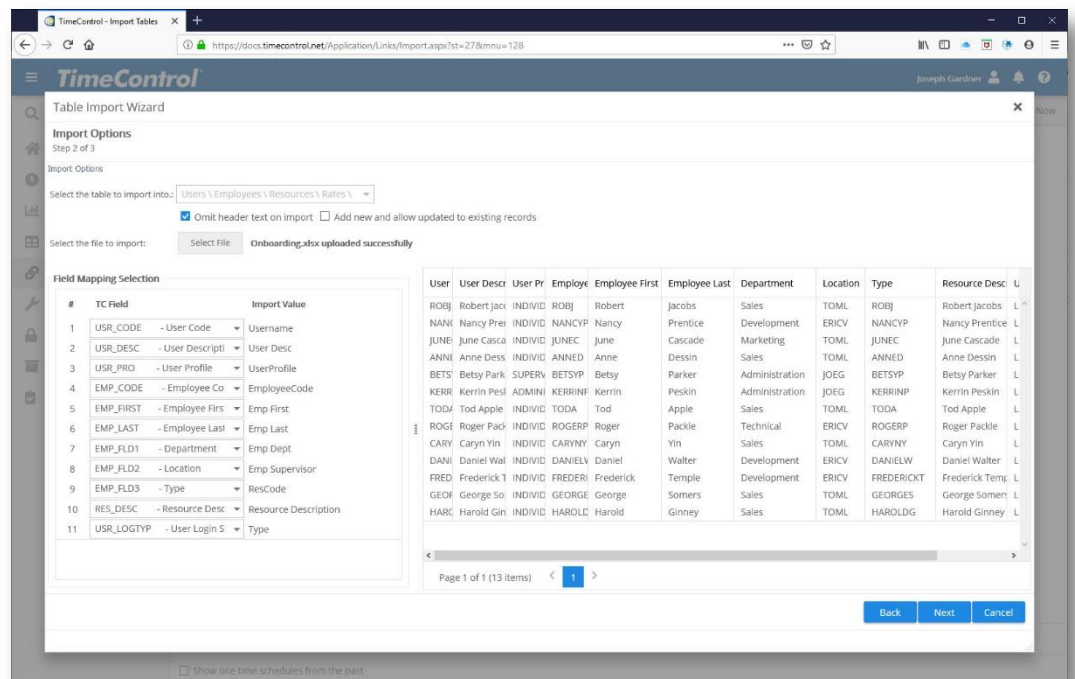
Clicking on the drop-down arrow will show a selected list of the most popular fields from the User, Employee, Resource, Release Structure and Rates tables all together.

The TimeControl field options include the actual field name in TimeControl which is always starts with a three letter identifier of the appropriate table:

- EMP is for the Employee table
- RAT is for the Rate table
- RES is for the Resource Table
- RLS is for the Release Structure Table
- USR is for the User Table

Not all tables or fields are possible. The New User Import includes a selection of the most common fields.

Select the appropriate field and TimeControl will display an example of the data on the right.

Once all the fields have been selected, click Next to see a preview. Ensure that this is how you expected the import to look and if so, you can save the definition by clicking on Save and Import at the bottom of the screen and entering a description of this import.

It is important to note that TimeControl will ensure that you don't break the data integrity when you import to all these tables at once. So, if there is critical information missing, it will advise you of the error and stop the import. You don't need to import for all the tables <u>but</u> if you do, you must import the critical elements for that table. For example. You might elect not to populate the Resource Table. But if you do include anything for the Resource Table, you <u>must</u> include the Resource Code, Resource Description and Resource Type. Here is a list of the critical elements for each of the Onboarding tables:

Resource Table (TCRES)
- ❑ Resource code (RES_CODE)
- ❑ Resource description (RES_DESC)
- ❑ Resource Type (RES_TYPE)

Employee Table (EMPLOYEE)
- ❑ Employee code (EMP_CODE)

❑ Employee first (EMP_FIRST)

❑ Employee last (EMP_LAST)

User Table (TCUSER)

❑ User code (USR_CODE)

❑ User description (USR_DESC)

❑ User profile (USR_PRO)

Rate Table (RATE)

❑ Either Employee code (EMP_CODE) or Resource code (RES_CODE) depending on the Rate Type

❑ Rate code (RAT_CODE___x)

❑ Rate description (RAT_DESC___x)

❑ Rate value (RAT_RATE___x)

❑ Rate type (RAT_TYPE___x)

(Where x = rate number, max 3 rates)

Approval Release Path Table (REDETAIL)

❑ Employee code (EMP_CODE)

❑ User code (USR_CODE)

❑ Release path code(s) (RLS_USR)

(Maximum 7 release entries per line)

Onboarding Crew records for TimeControl Industrial

TimeControl also includes an onboarding wizard to import the records for multiple tables at once to populate Crew records for TimeControl Industrial.

To start the process, click Run Now. To create a scheduled import, see the next section in this guide.
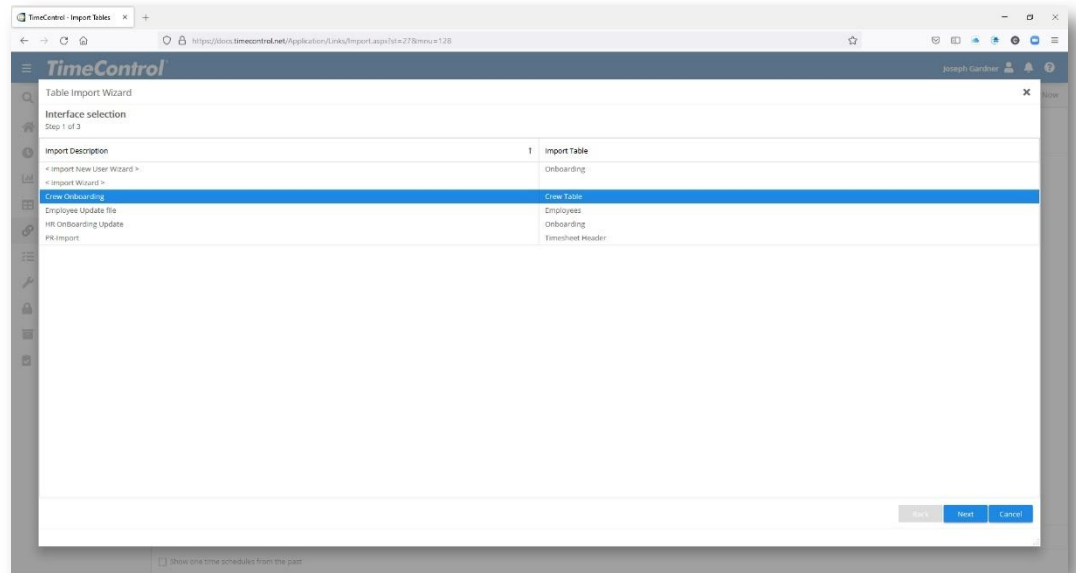
Select Crew Onboarding
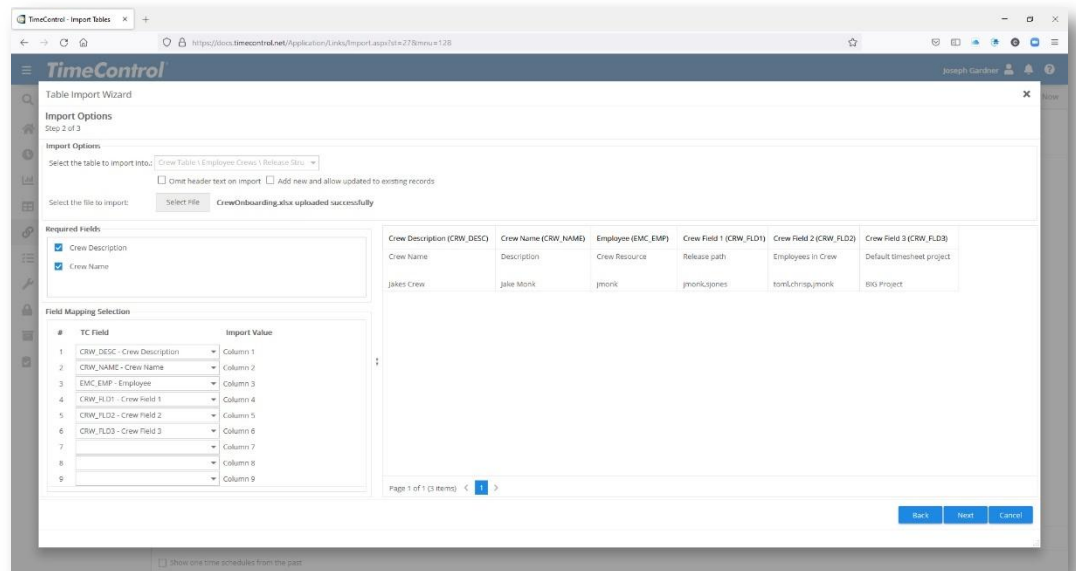
Select the file from which you will be doing the import such as an Excel file and then match the field selections on the left hand side with the columns on the right. If your Excel file includes headers for clarity, click "Omit header line" and the Field names will appear. As you select the appropriate match between TimeControl and your import file, an example of the file contents will appear on the right.
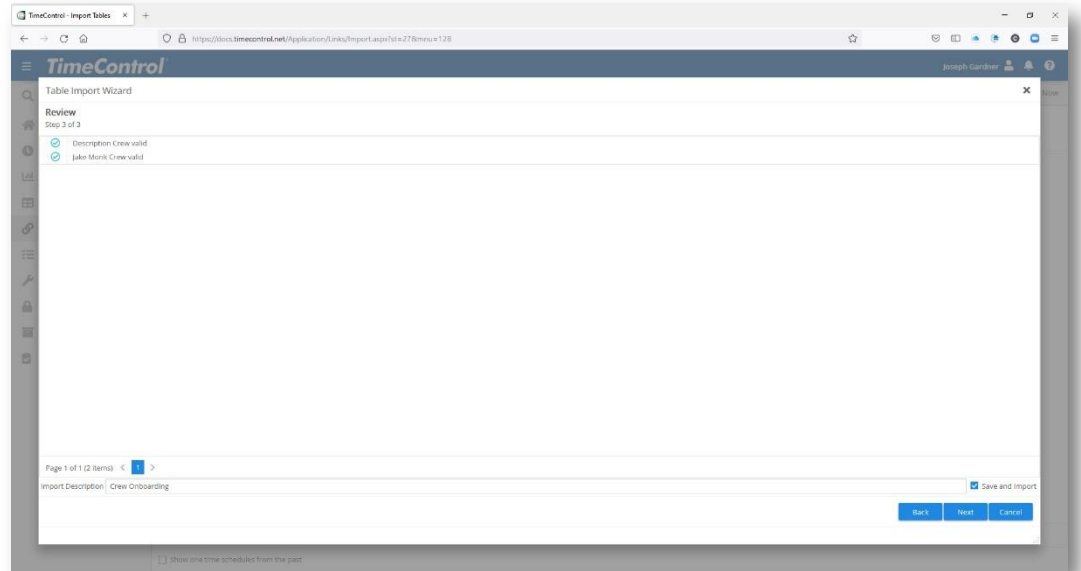
TimeControl will validate that the Crew entry exists or will create it and then run the import.

The following are the Crew Columns in TimeControl Industrial from which you can select

Required Columns

CRW_NAME	Must be unique (key) when adding or would be an update if allowed
CRW_DESC	Description

Default values

CRW_TPE	Timesheet period. If not supplied in the import, then the default timesheet period must be used. Reference the Employee Import for an example.
CRW_RSRC	Logged in user – see other table imports
CRW_TSTMP	Timestamp – see other table imports

REDETAIL Columns if supplied (approval path)

RLS_LNO	Line number and if not supplied, starts at 1 and increments per release path
RLS_REH	Parent record value in REHEADER
RLS_EML	Only 1 record of each release path is allowed to have the value of 'T'. If the value is not supplied then the import must apply the value of 'T' to the line with RLS_LNO=1.

If the value is supplied only the 1st can have 'T' and all others must be made 'F' |

Notes:

- If a crew already exists by name and update is not selected then the entire import line is rejected
- If a crew already exists by name and update is selected, the release path and the crew employees can only be updated if timesheets do not exist for this crew, otherwise they are rejected
- All ancillary data in the import such as project defaults, employees, users, filters, default rate codes etc. must already exist and will not be created during the import.

Creating a Scheduled Import

Import Links can be created on a schedule so that TimeControl can automatically consume a transaction file from an external system at regular intervals.

To create a Scheduled Table Import, first go to Links | Import Tables and select Add from the Actions Menu.

On the first page of the definition, enter the Job Description and select "Scheduled Job Active" if you are ready to activate the Scheduled Import definition right away. You can return to activate or deactivate a Scheduled Import job later. Decide if there should be an email notification either when the scheduled job is executed, if the scheduled job is not executed or both and enter the email addresses of who should be notified about this job.

Click Next to move to the second page of the scheduled job notification.

On page 2 of the definition, enter information about when you would like this scheduled Import Link to occur. You can list a range of dates within which the job should run and the time of day it should be executed. Select from Daily, Weekly or Monthly intervals and then fill in the appropriate data below to select when the job should occur.

Click Next to move to page 3 of the schedule definition

On this page, start by entering the directory and folder name(s) which you wish to import. You can enter a single file name or a pattern (e.g. \\share\uploads*.xlsx) to consume numerous files at once. Remember that this scheduled import will be executed on the TimeControl Server so the server and TimeControl on the server must have access to the directory you are referencing.

If you wish to schedule imports from a source available to TimeControl through FTP or SFTP, click FTP/SFTP server.

Enter either FTP or SFTP as the transfer protocol, the full server path including any subdirectory, the file import name or a mask using wildcards to import multiple files, the username to access the FTP site and the associated password and the port.

Next, decide what you want to do with the file once TimeControl has consumed it. Should it be deleted, or moved. If you want to move the file (most common), then enter a directory name where the file should be placed.

Next, select an existing Import definition or decide that you'll be creating a new definition. If you are creating a new import definition, TimeControl will present you with the same controls you'd use in creating an import definition described in the previous section of this manual.

Click Next when you've reviewed your data and are ready to save the Scheduled Job.

TimeControl will now confirm the scheduled import and when you return to the Links | Table Imports screen, you will see this new scheduled import listed.
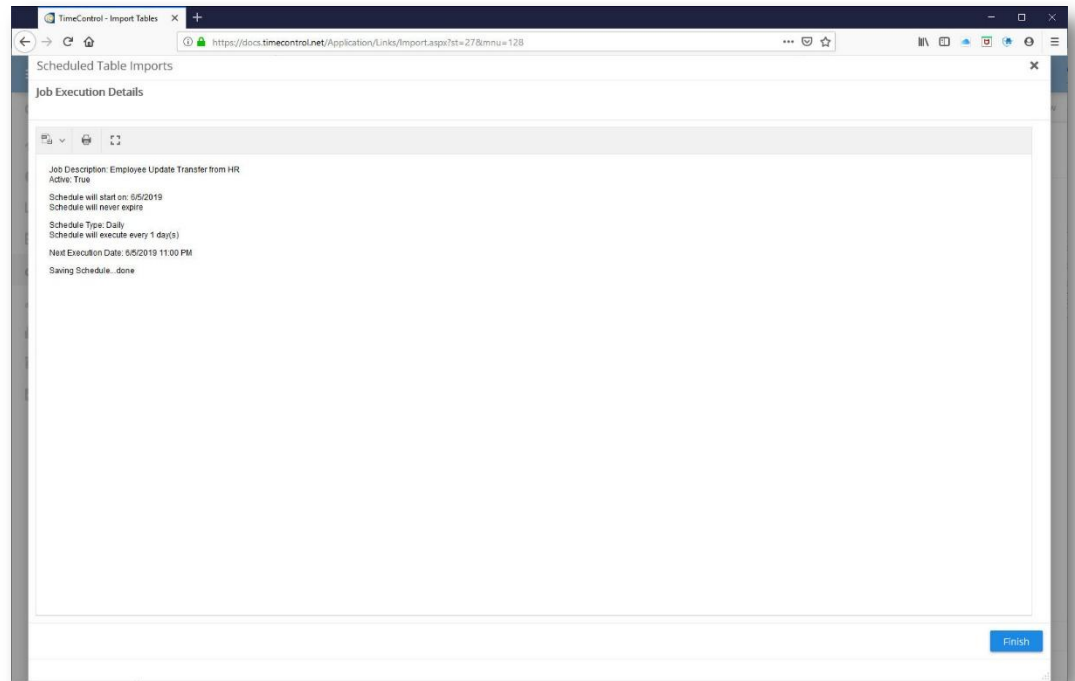
Importing TimeControl Packages

Import a Filter, Report, Validation Rule or Language

TimeControl includes collaborative functionality that allows users to exchange elements of their TimeControl system. This functionality is found in the Links Menu under the Import or Export packages functions. TimeControl currently supports the exchange of Filters, Reports and Validation Rules. Each of these items, once exported, exists in a text file with particular formatting unique to this exchange. TimeControl package files can be identified by their extensions. Filters have the extension .TCF. Reports have the extension .TCR. Validation Rules have the extension .TCV. Language definitions have the extension .TCL.

Import TimeControl packages

TimeControl includes collaborative functionality that allows users to exchange elements of their TimeControl system such as Reports, Filters and Validation Rules. This functionality is found in the Links Menu under the Import or Export packages function. To import a package, select the Import Packages function

from the Links menu. A selection of the package types currently supported will be displayed.
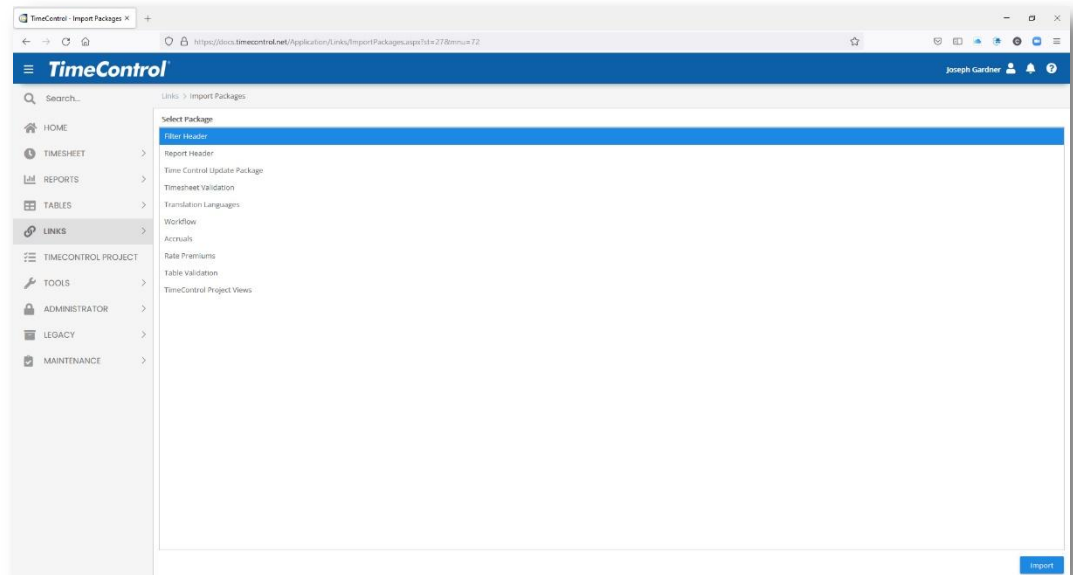
Select the type of package you wish to import and click **Execute**.
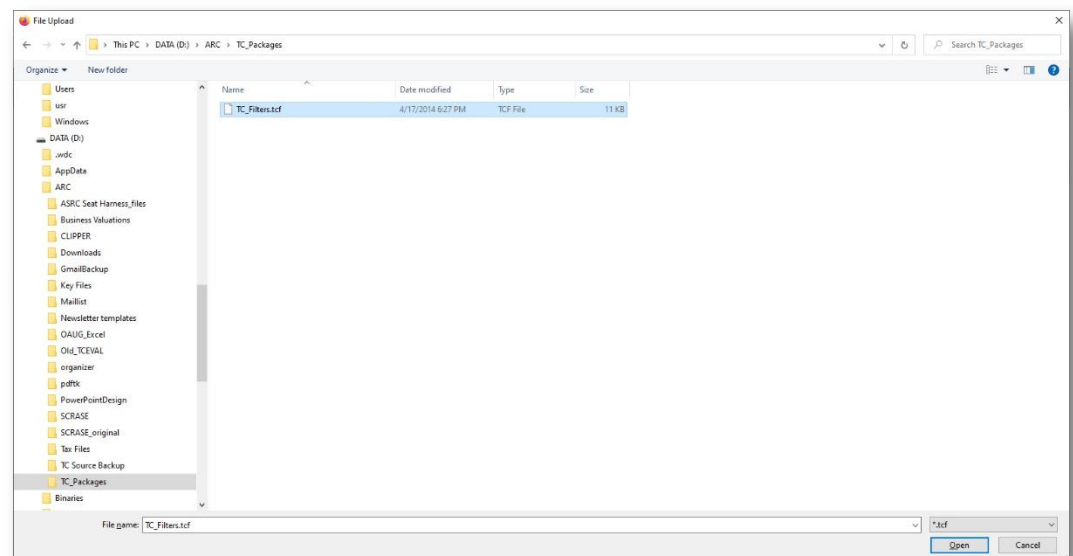
TimeControl will present you with a file selection dialog. Simply identify the file you wish to import and TimeControl will bring this element into your system.

TimeControl Filter packages are identified with a file extension

- .TCF TimeControl Report packages
- .TCV TimeControl Validation Rules packages

- .TCL TimeControl Language definitions
- .TCU TimeControl Update package with field definitions
- .TCW TimeControl Workflow definitions
- .TCA TimeControl Accruals
- .TCP TimeControl Project Views
- .TCT TimeControl Table Validation Rule

If you have selected a package that has the same name as one already existing in your TimeControl, the Import packages function will automatically rename the new package.

If the package is a validation rule, then it may contain definitions to filters from the originating system. In this case, the filter definitions will also be part of the validation rule and will be imported automatically.

Once the import is complete, you will be presented with a log of the activity. TimeControl can identify from the package what database was used to create the original package. When it is imported, if SQL statements are part of the package such as in a filter, TimeControl will recreate the SQL based on the menu definition.

Since filters can be created in TimeControl which are not menu based but include custom-written SQL, it is possible to create a filter using one database which will be incompatible with another. If this situation occurs, TimeControl will not import a SQL-only filter which is not menu driven and comes from another database type.

Export TimeControl packages

Export a Filter, Report or Validation Rule

To export a TimeControl package TimeControl, select Export a Package from the Links menu.
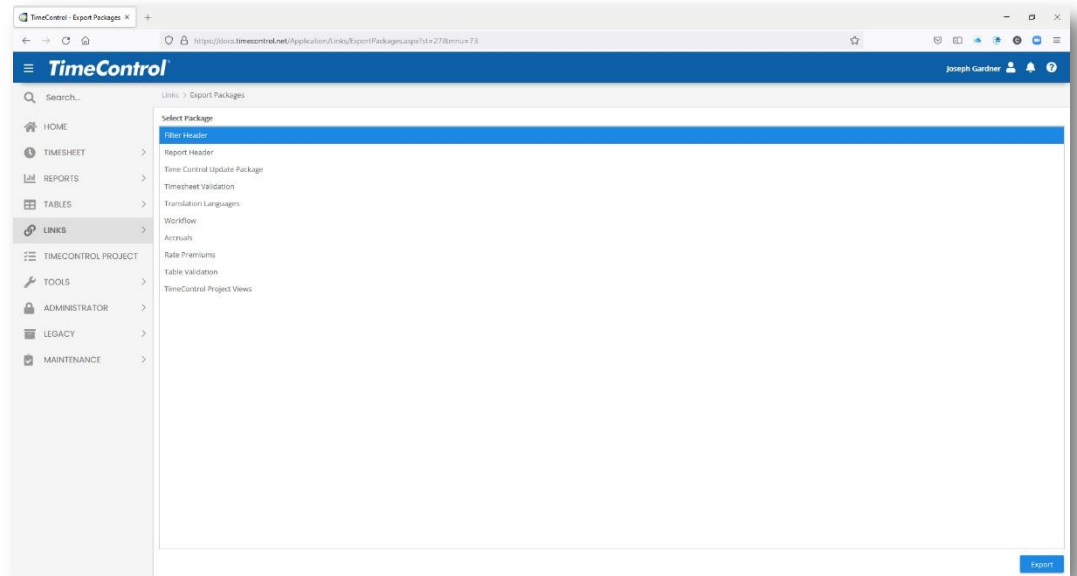
Select the type of package you wish to export then click 'Next'. TimeControl will then present you with a list of that type of package.
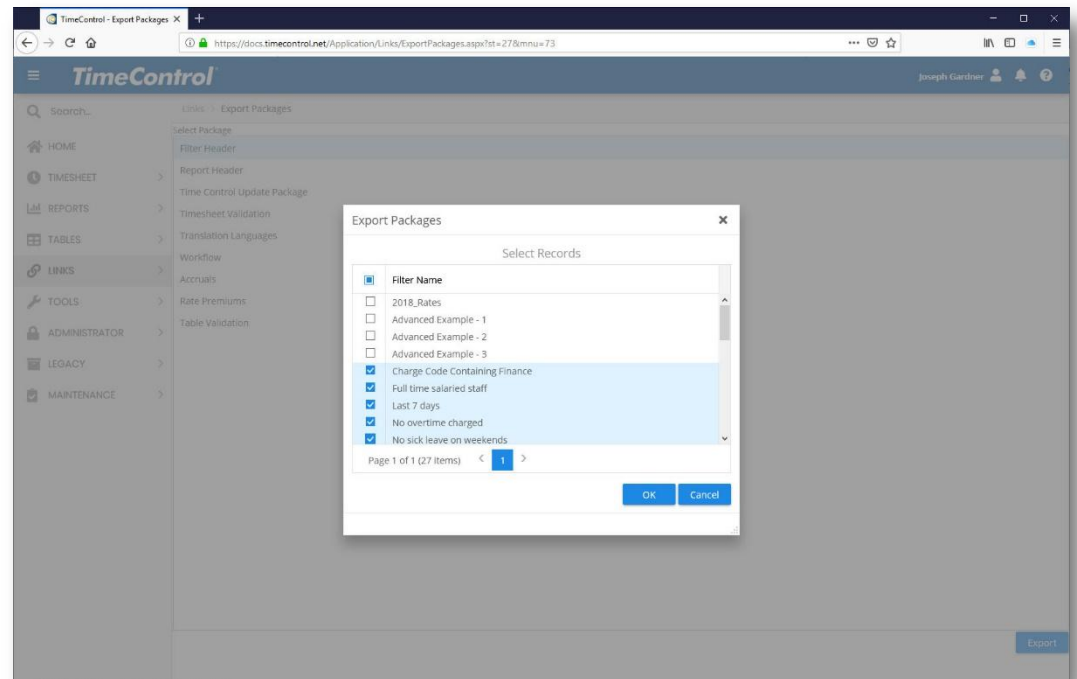
Select any number of elements to include in your package of that particular type.
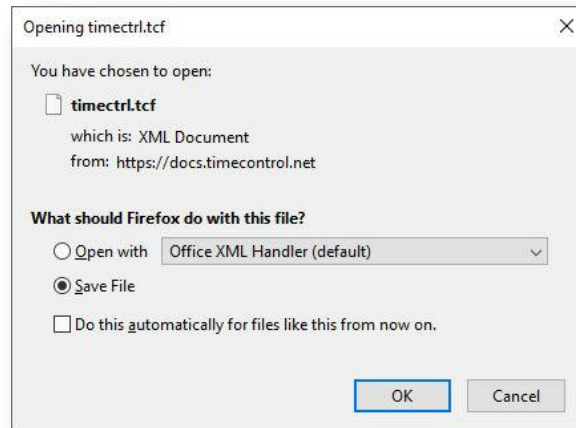
Click on Next and then select a file name and location for your package. The package can then be shared with any other TimeControl user.

The MyTimeControl Community Area

In order to foster the exchange of TimeControl packages between users, HMS Software hosts the My TimeControl Community Area on the timecontrol.com website. Users can find this area by logging in as a user and listing their TimeControl serial number in their profile.

In the My TimeControl Plug-In database, users will find TimeControl packages of all kinds that have been created by other users, TimeControl technical implementers and even the TimeControl development staff. This type of collaboration allows all TimeControl users to benefit from the efforts of entire TimeControl community worldwide.
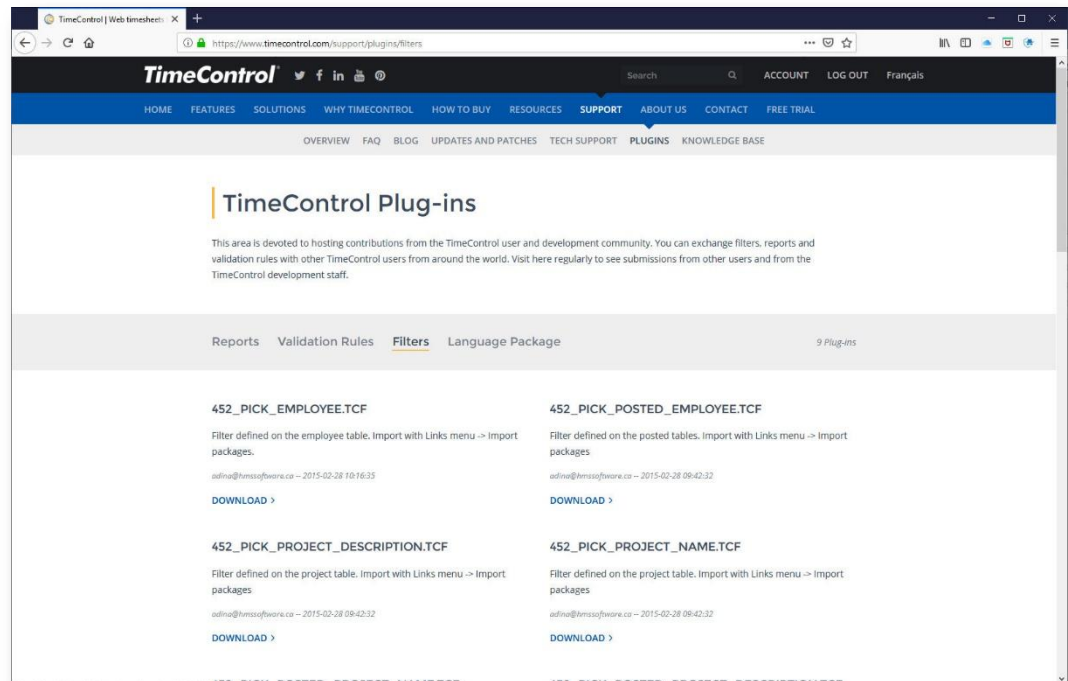
Once in the Plug-in area, users will be able to see grouping by filter, by report and by validation rules. We've made an effort to create package categories to better display all the information available. We encourage users to make frequent use of this area and to contribute something themselves.

The MyTimeControl Community area is located at: http://mytimecontrol.com. Users must login and must identify their TimeControl serial number within their user profile.

Importing Historic Timesheet Data

Importing timesheet data into TimeControl requires creating an import file in a specific format with the fields in a specific order. The file can be Excel or CSV formats. Because of the referential integrity of TimeControl's data, this functionality requires this exact format. To do an import of timesheet data into TimeControl, the required fields must be populated and the fields must exist in the appropriate order. If TimeControl is unable to validate the timesheet data, it will not permit the file to be imported.

There are several constraints to the import:

- First: Each of the values that are being used to create new Timesheet Headers and Timesheet Details must already exist in the system. So, if you are creating a timesheet for an employee, their Employee Code

must already be in the Employee table. This is the same for the User, the Project name and the Charge code and the Rate code.

▪ "NORM" is a normal timesheet. That's distinct from a DBCR (Debit/Credit) entry that TimeControl might store internally.

▪ The ANSI date type is year/month/day in the format 20080321 which is March 21, 2008.

▪ Once the import is complete, you'll need to check the log to make sure everything you were trying to import arrived safely into TimeControl.

▪ The timesheets, once created, will be in draft status and owned by the "Timesheet Header Owner" listed in the import record. In the example below that's user "ADMIN".

Description

Required Fields				
Order	**Field as described in the import tool**	**Database Field name**	**Example Value**	**Notes**
1	Period Start Date	TPE_START	20191012	
2	Period Ending Date	TPE_END	20191012	
3	Timesheet Header Type	TSH_TYPE	NORM	
4	Timesheet Line Type	TSL_TYPE	E	
5	Timesheet Header Employee	EMP_CODE	GJ018	Alphanumeric (Must already exist in the employee table)
6	Timesheet Header Owner	USR_CODE	ADMIN	
7	Timesheet Header Source	USR_CODE	ADMIN	Creator of the timesheet
8	Project Name	TSD_PRJ_NAME	DATA	
9	Charge Code	TSD_CHR_CD	Data.2.3	
10	Rate Code	TSD_RAT_CD	STANDARD	
Optional Fields				
Order	**Field as described in the import tool**	**Database Field name**	**Example Value**	**Notes**
11	Hours Monday	TSD_CMON	8	Several formats are accepted: 1 = 1 hour 1h = 1 hour 1.5 = 1 hour 30 mins

Required Fields				
Order	Field as described in the import tool	Database Field name	Example Value	Notes
				1h30 = 1 hour 30 mins
12	Hours Tuesday	TSD_CTUE	8	Same as above
13	Hours Wednesday	TSD_CWED	8	Same as above
14	Hours Thursday	TSD_CTHU	8	Same as above
15	Hours Friday	TSD_CFRI	8	Same as above
16	Hours Saturday	TSD_CSAT	0	Same as above
17	Hours Sunday	TSD_CSUN	0	Same as above
	Release-to User Code		SMITHJ	Alphanumeric (Must already exist in the user table. If empty, the timesheet will be released and ready for posting)
	Line Estimate to Complete		1= 1 hour	
	Line Source User Code		LANGP	Alphanumeric (Must already exist in the user table and be the same value as Timesheet Header Source Code)

A spreadsheet template is available to use for starting a historic timesheet import. It can be found at: https://www.timecontrol.com/docs/tcimporttimesheets.xlsx.

Tools

MyAccount

The MyAccount function is designed to control display and functionality of the currently logged in employee. Some of these options can also be defined within the Users Table. This function is designed to tailor the TimeControl environment for each user. For a description of the different timesheet options, please refer to the Options section of the User Table in this guide.

➤

Change Timesheet Ownership

The **Change Timesheet Ownership** function is designed to provide access to timesheets that have been created, but currently in the control of a user who is unavailable. Imagine, for example, that a supervisor who usually approves 30 timesheets calls in sick on Friday. All the timesheets this person should have approved are currently owned by him, and thus unavailable to be posted. In this circumstance, the Administrator needs a function that allows him to capture control of the timesheet and move it along. This function can also be used to remove timesheets from <POSTING> and return them to the control of a user (provided the timesheets have not already been posted).

To change the ownership of a timesheet, **Tools | Change Timesheet Ownership**.

Now select a user from whom you wish to change the ownership of timesheets and click Load.   TimeControl presents you with all timesheets currently under that user's ownership. You can select them all or any number of them.
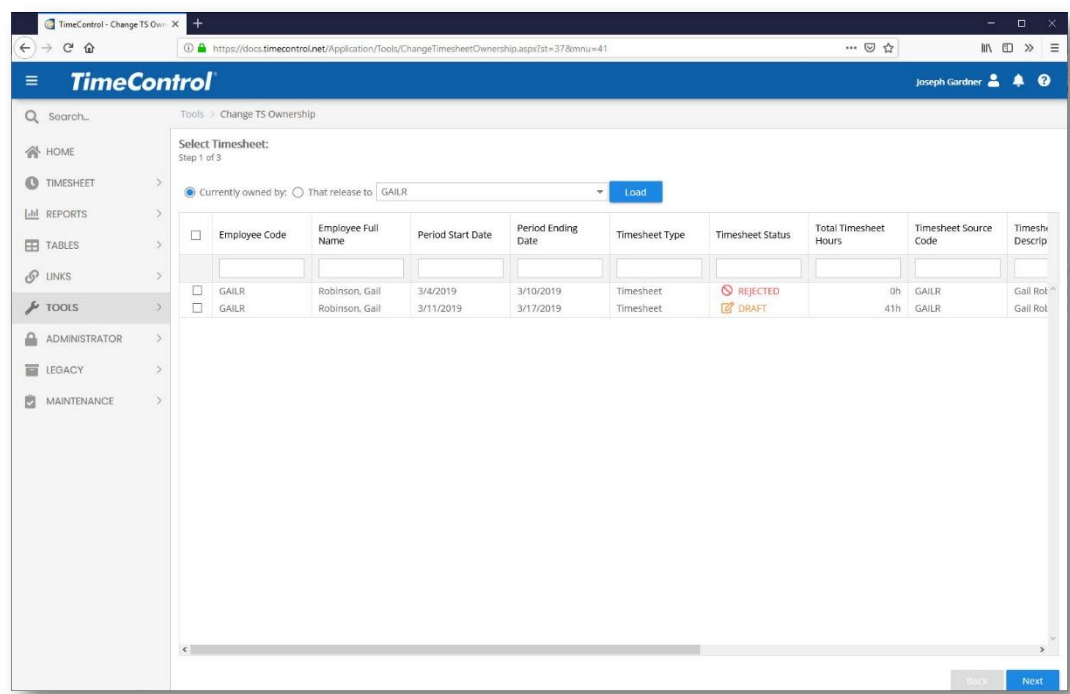
Click Next and TimeControl will show you the list of those timesheets with the possible destination owner for each one.
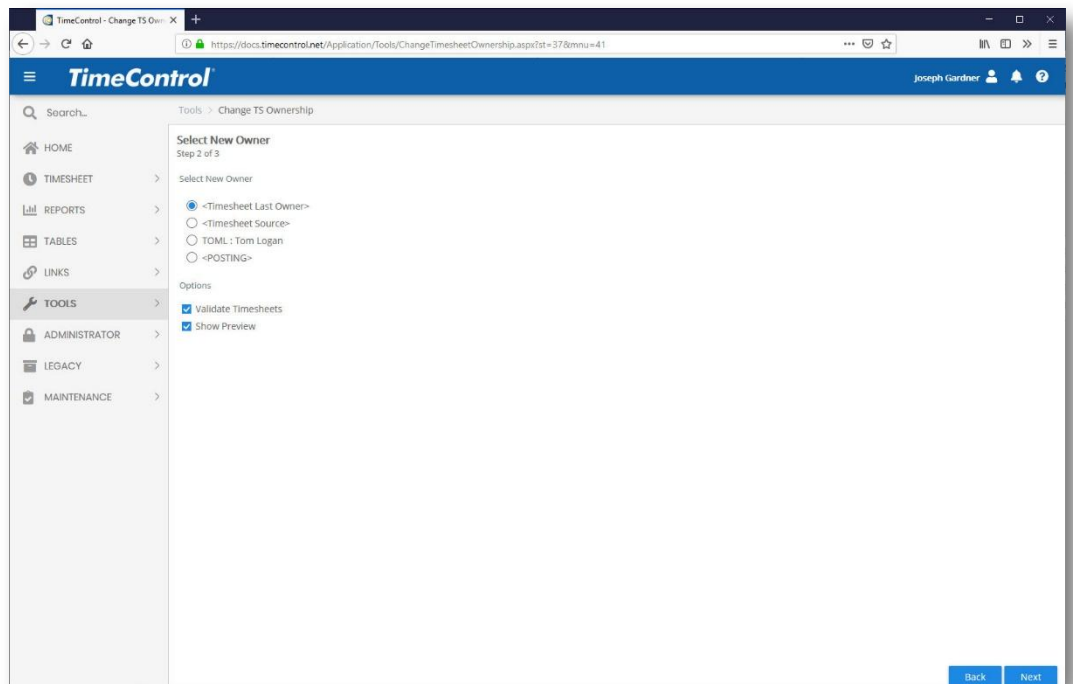
Select the destination option for these timesheets and click Next.
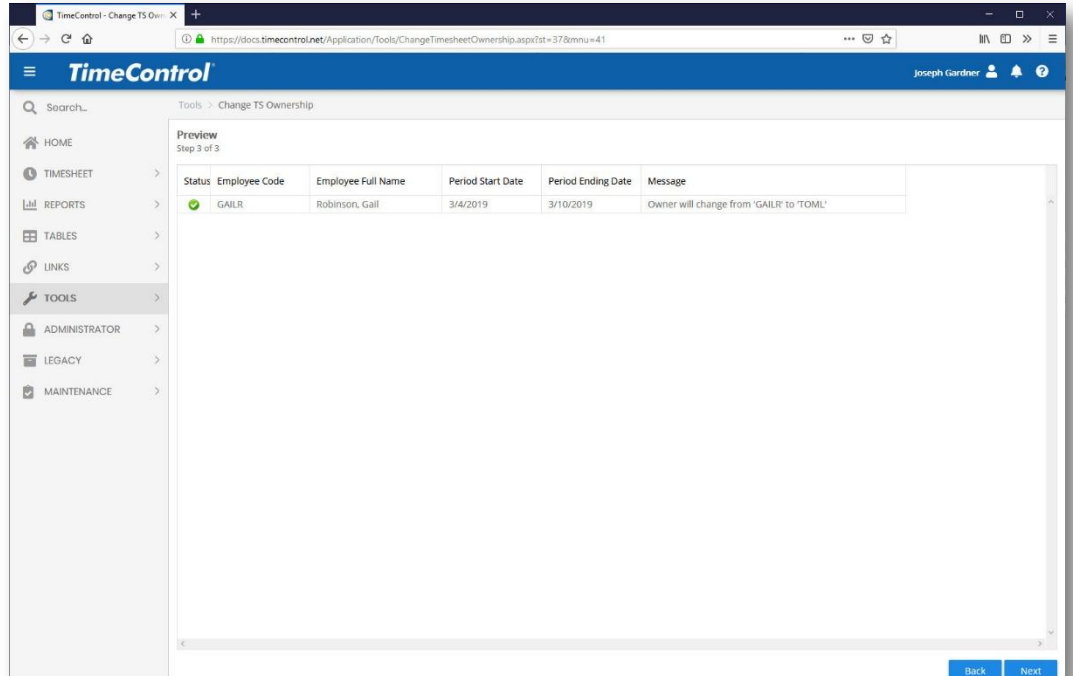
TimeControl will report the result of the change if it is successful.

Missing Timesheet Notification

TimeControl includes a powerful function for ensuring that all timesheets are submitted. At any time, an Administrator can send an automated email notice to any user whose timesheet has not been posted. Notifications can be sent on a schedule or on demand.

Schedule a Missing Timesheet notification

- Select **Tools | Missing Timesheet Notification**. This displays the Missing Timesheet Notification wizard.

- Click **Add** to create a new scheduled notification

- Enter the title of the notification, whether to make it active right away or not and then what kind of notification should be sent either when the job occurs or if it fails to run and who to send that notification to.

- Next we will determine which timesheets will receive this notification
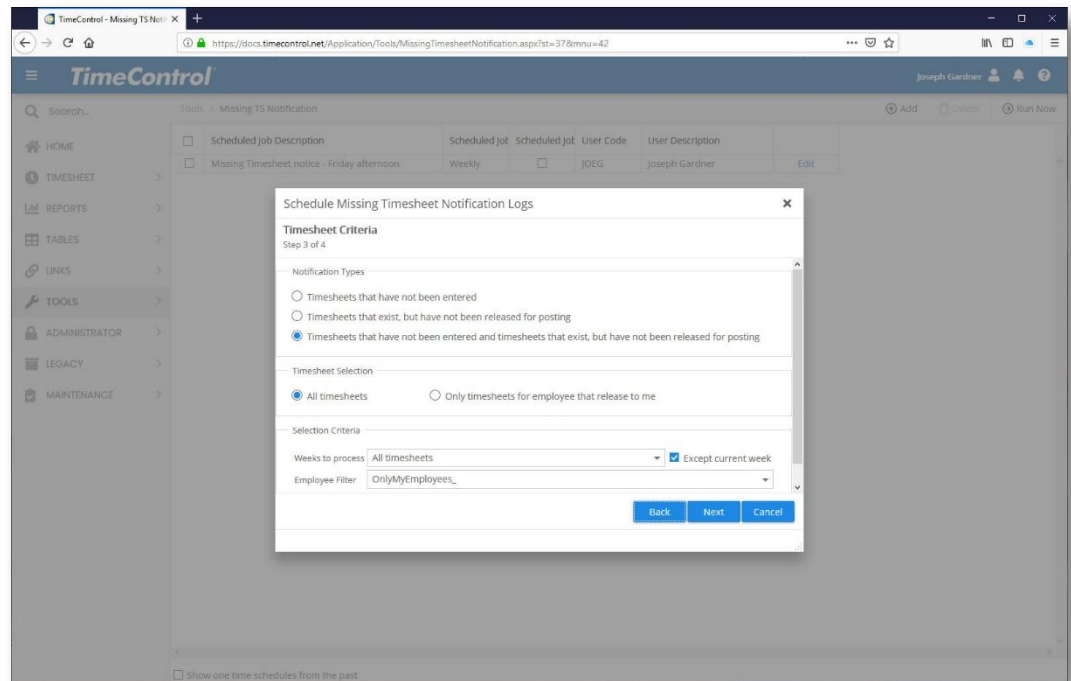
Choose whether to include timesheets that have not been started, timesheets that are started but were not released all the way to posting or a combination.

Then decide if this is for all timesheets in the system or only for those who are within your release path.

- Finally, select the range of timesheets by date and optionally use a filter to select which group of timesheets this notification will apply to.

- Next we determine when this notification will run

Enter the date you wish to start this notification and an end date sometime in the future. You can determine the start time of the job and the frequency. Options include: Hourly, Daily, Weekly, Monthly or One-time Only. Different options will appear depending on the frequency chosen. In this case we have selected weekly so the day or days of the week on which it will occur appear.

- Next make up the actual message.
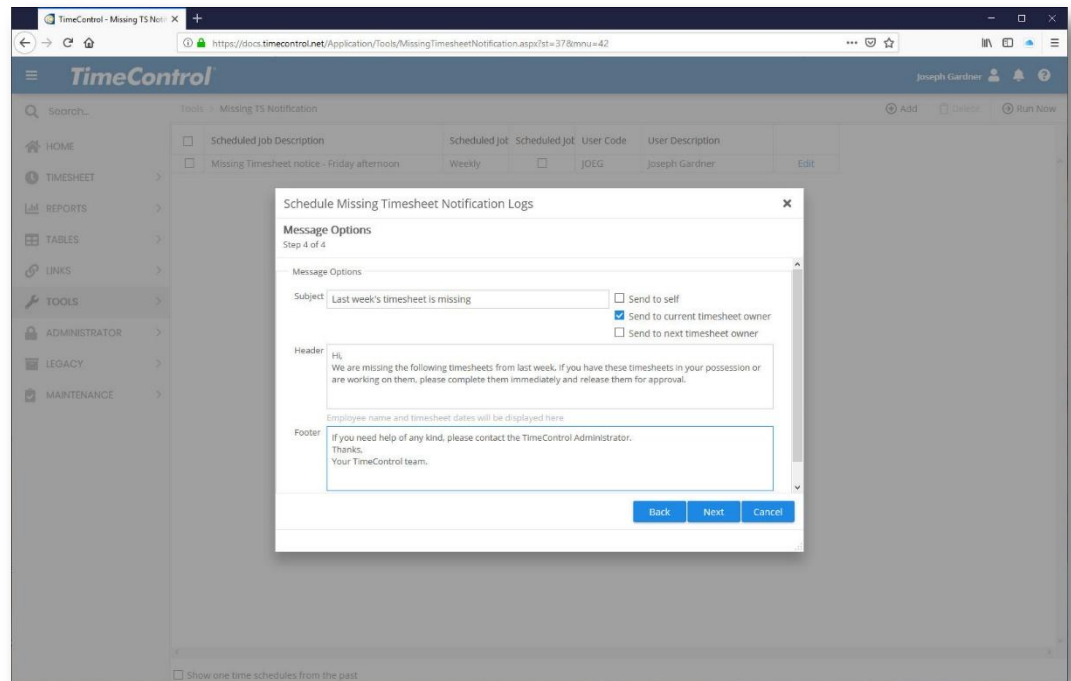
Enter a subject for the email and then the beginning and end of the message. In the middle, TimeControl will automatically insert the timesheet dates for timesheets that are missing.

Also select who should get the notification. You can select to send it to yourself, to the person who is currently holding the timesheet or to the next person in the release path from the current owner. You can select one or many of these options at once.

▪ When you click Next, this scheduled notification will now appear in the list of Missing Timesheet Notifications. If you have made it active, it will run at the next scheduled time.
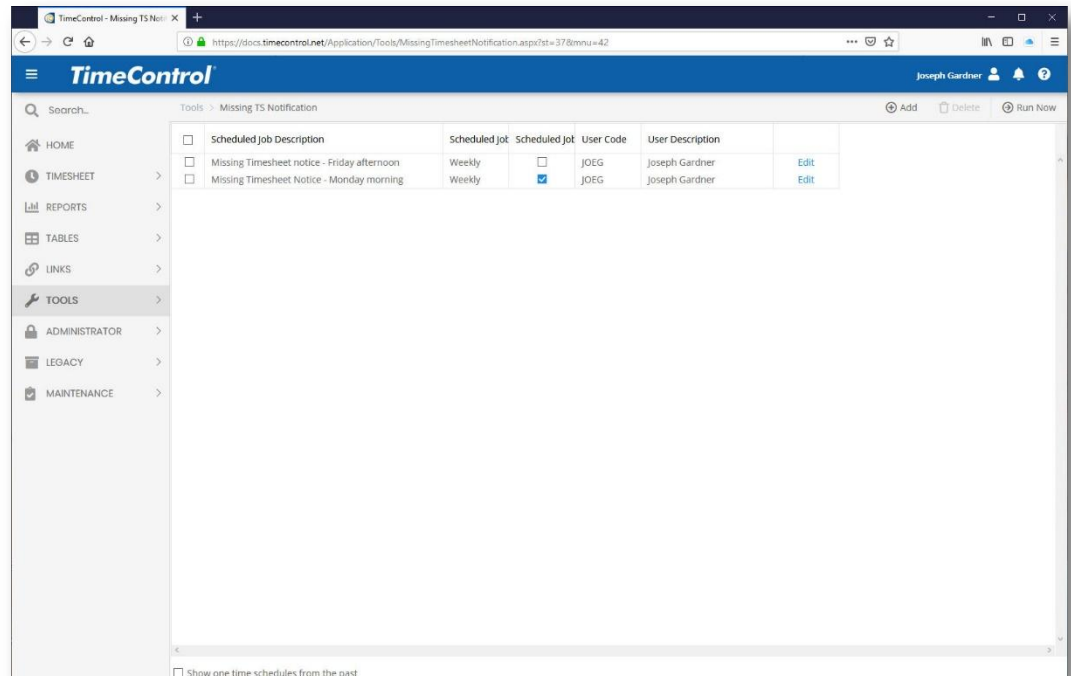
- Remember, scheduled emails will only be activated if the TimeControl Scheduler Service has been installed and running.

Send a Missing Timesheet Notification On Demand

If you wish to create a Missing Timesheet Notification Email to be sent immediately, follow these steps:

- Select **Tools** | **Missing Timesheet Notification**. This displays the Missing Timesheet Notification wizard.

  Select Run Now to start a notification immediately.

- First determine which timesheets will receive this notification.
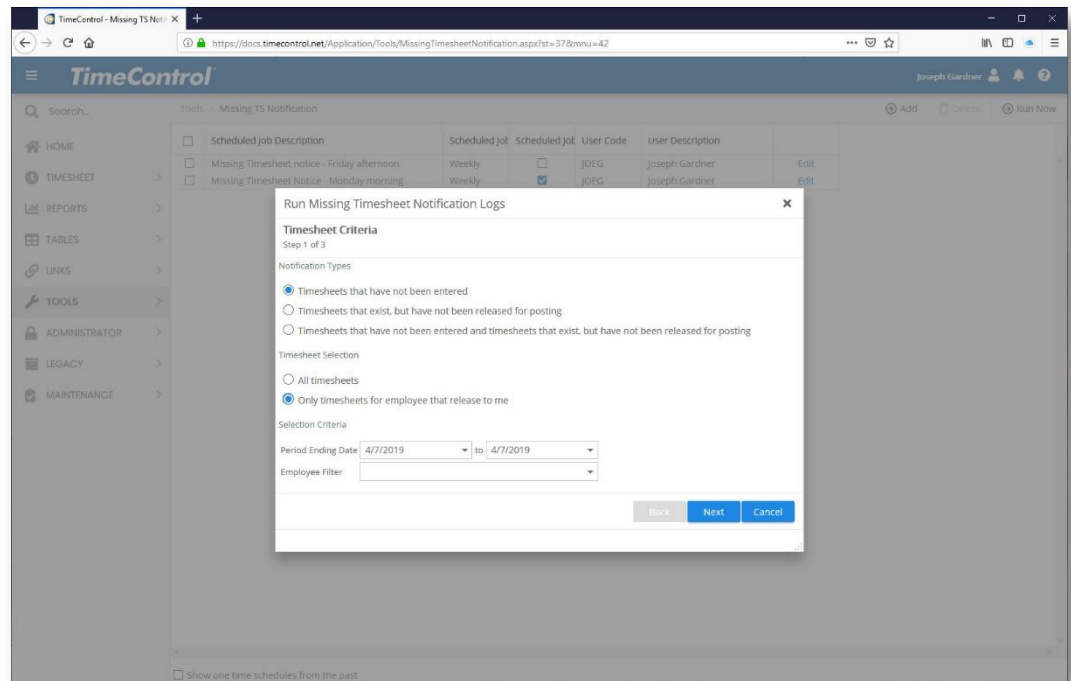
Choose whether to include timesheets that have not been started, timesheets that are started but were not released all the way to posting or a combination.

Then decide if this is for all timesheets in the system or only for those who are within your release path.

Finally, select the range of timesheets by date and optionally use a filter to select which group of timesheets this notification will apply to.

- Next select which timesheets this notification should apply to. You can select all by clicking the top left checkbox.
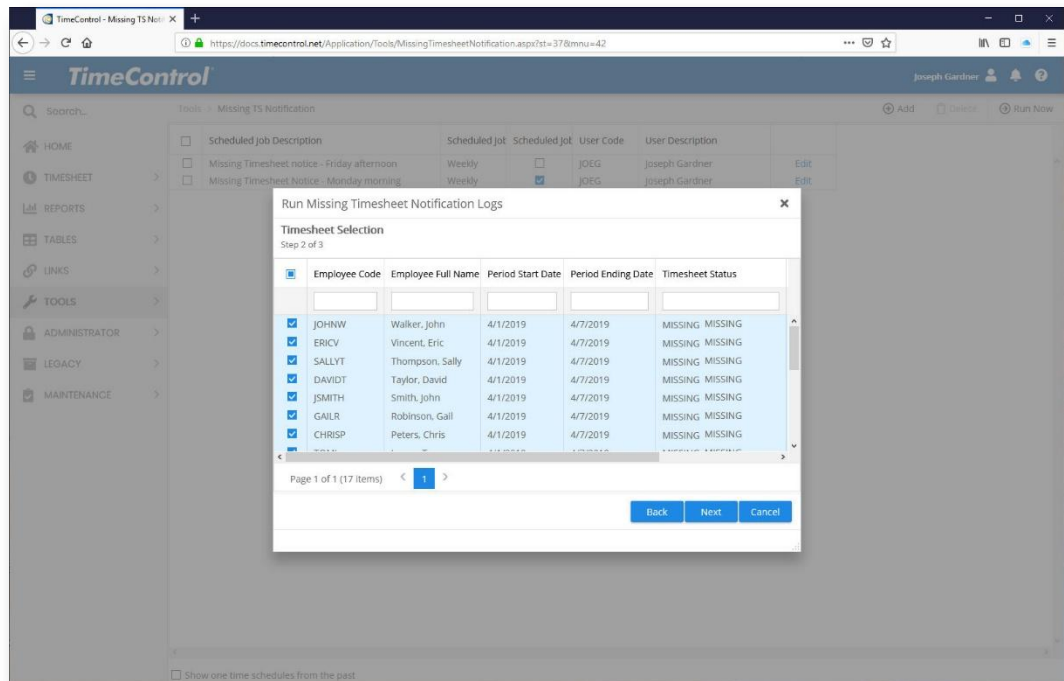
- Next we make up the actual message.
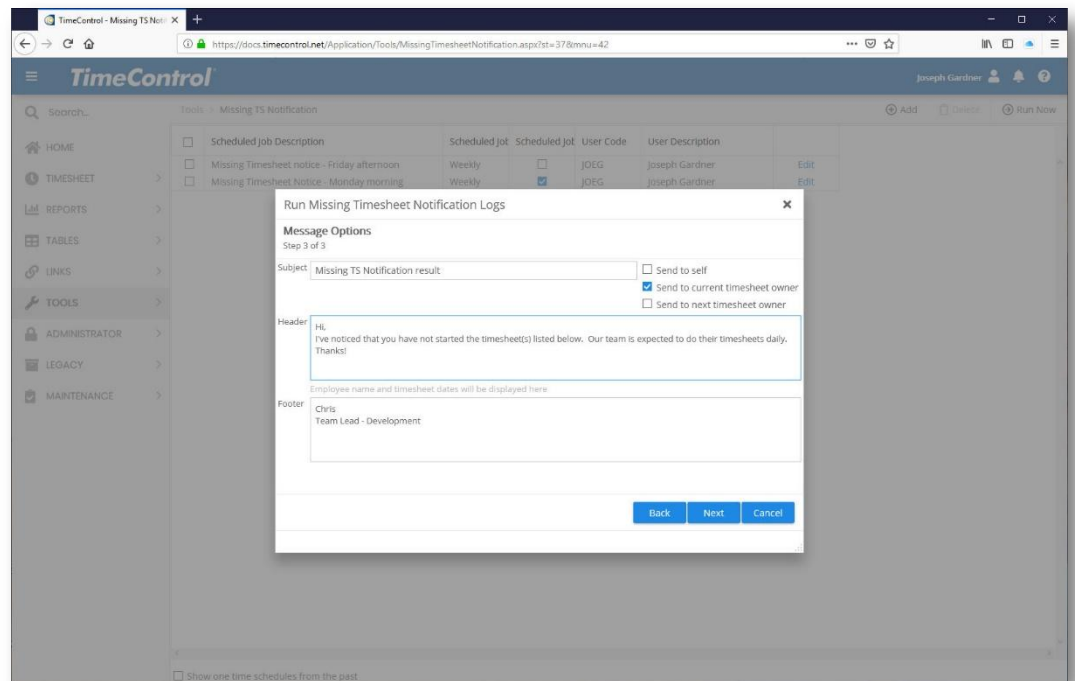
Enter a subject for the email and then the beginning and end of the message. In the middle, TimeControl will automatically insert the timesheet dates for timesheets that are missing.

Also select who should get the notification. You can select to send it to yourself, to the person who is currently holding the timesheet or to the next person in the release path from the current owner. You can select one or many of these options at once.

Once complete, TimeControl will display a log.
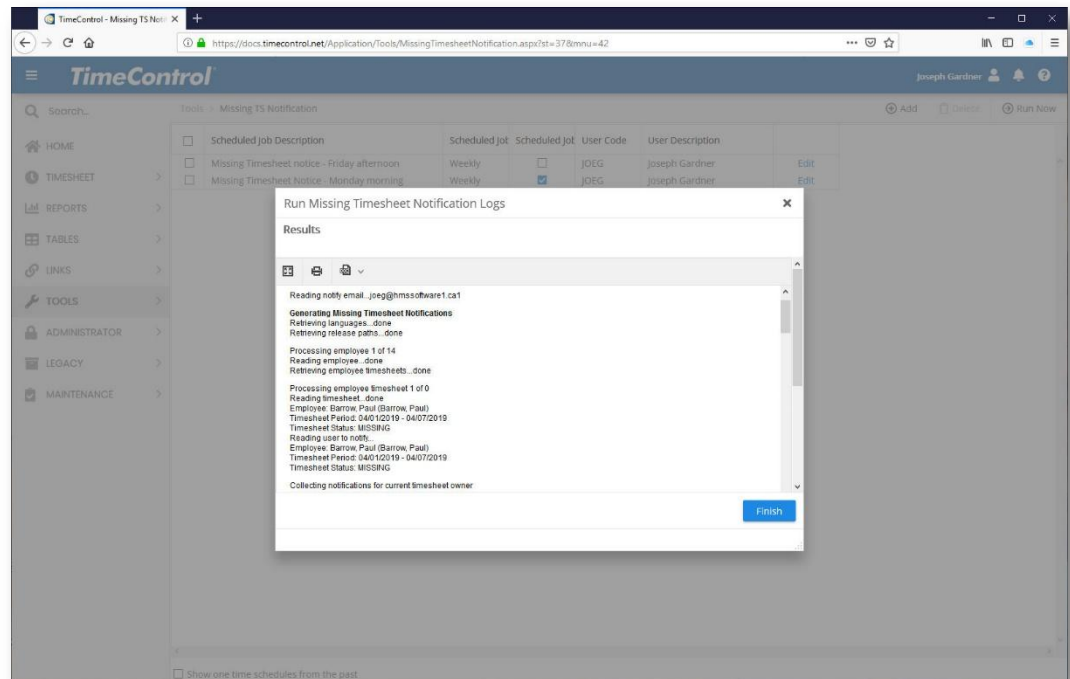
> "**Note:** Email notices from TimeControlOnline default to be from Administrator@TimeControl.net. You cannot email this address as it is used only as a validated reference to send emails. When possible and appropriate, TimeControlOnline will include the email of the sending party so you can email back and forth from your own email addresses.

Dashboards

Dashboard Overview

TimeControl allows users to select or modify the MyTimeControl Home Page content, which is displayed by default upon login or whenever Dashboard is selected in the Navigation pane.

Dashboards (referred to in some earlier versions as Templates) are made up of layouts, which are pre-designed in a variety of formats and their content. There are numerous Dashboard layouts including a full-page, 2 half-pages,

pages where there is 1 half a page in one window pane and 2 more panes each ¼ page in size and a 4-pane layout with each pane taking a quarter of the screen. This is the default view.
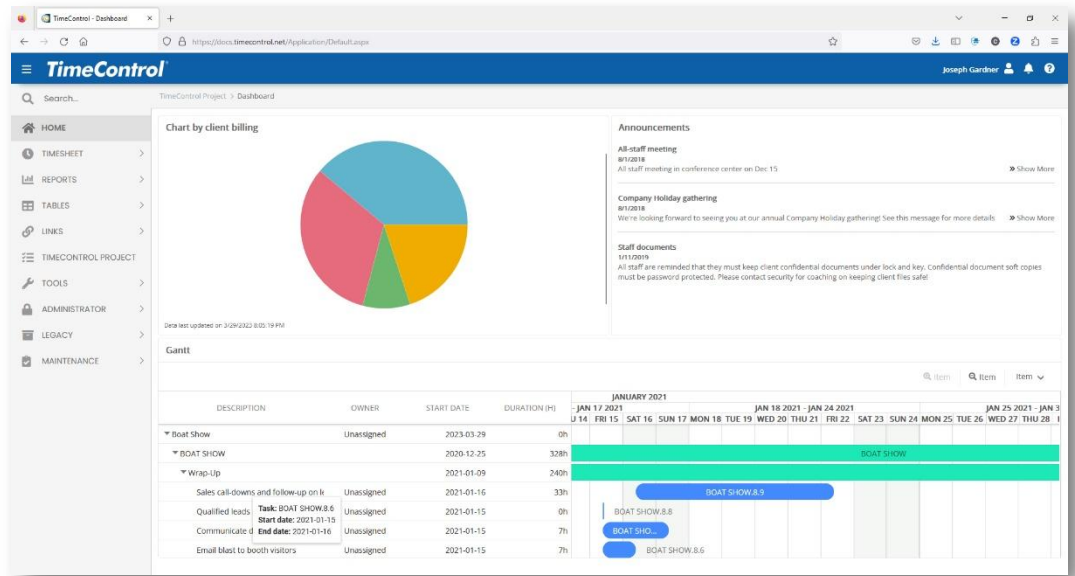
In each section of the layout, content can be inserted. There are several pre-formatted modules, which are included with TimeControl, but pure HTML content can also be selected, providing a virtually unlimited method of extending the TimeControl interface.

There are numerous configuration and security options to allow TimeControl Administrators to ensure users see the content that is required and to give the flexibility users desire to customize their own content.

The My TimeControl Home Page displays content formatted in HTML with each windowpane defined as an I-Frame, which allows content to be scrolled or managed within its own frame. The effect is similar to having multiple individual browser windows displayed on the same screen.

The Home Page Dashboard management occurs in several areas of TimeControl. From an Administrator perspective, TimeControl Administrators are capable of defining a Dashboard, adding content to each defined block in the Dashboard and the creating that Dashboard as a default for all or any users. Administrators can use User Profiles to give certain roles the right to select or modify templates and, using System Preferences can insist that all users use only the template they have defined.

If users have been given the right to select their own templates, they can also create templates, which are part of only their personal view. This is done from

the Tools/Dashboards selection. Simply selecting an active Dashboard can be done in the Tools/Options screen

Administrators can also use User Profiles to allow certain roles the rights to create or modify system templates which would be available to all users.

For a complete understanding of how Dashboards are used, Administrators should complete this section of the documentation and consult with other sections within this document on the Dashboards tab in System Preferences and on the Dashboard tab in User Profiles.

Creating and Modifying Dashboards

To begin creating or modifying a My TimeControl Home Page Dashboard, first select and load the Dashboards selection from the Tools menu. You will see a list of already created templates.
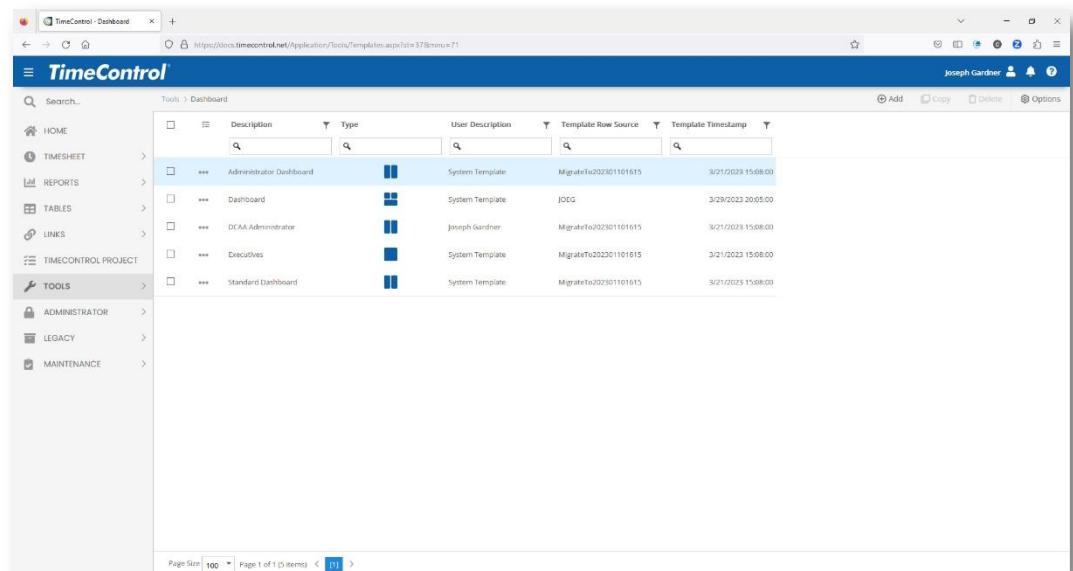
To add a new dashboard, select Add from the action menu.
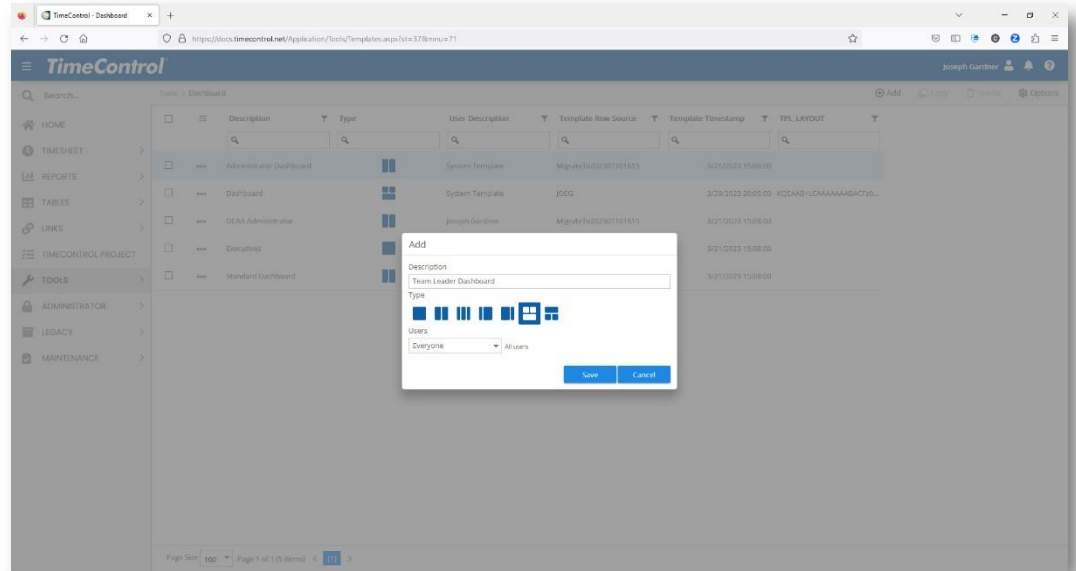
If you have been given permission to create system templates, you will be presented with the choice of creating a Personal Dashboard for your own personal use or a System Dashboard that would be available to all users.

Select the appropriate option and click 'OK'.

TimeControl will display a blank template.

Information can be displayed in each block. Your choice for the best layout can be determined by deciding what information should go onto the home page and then how that information should appear.
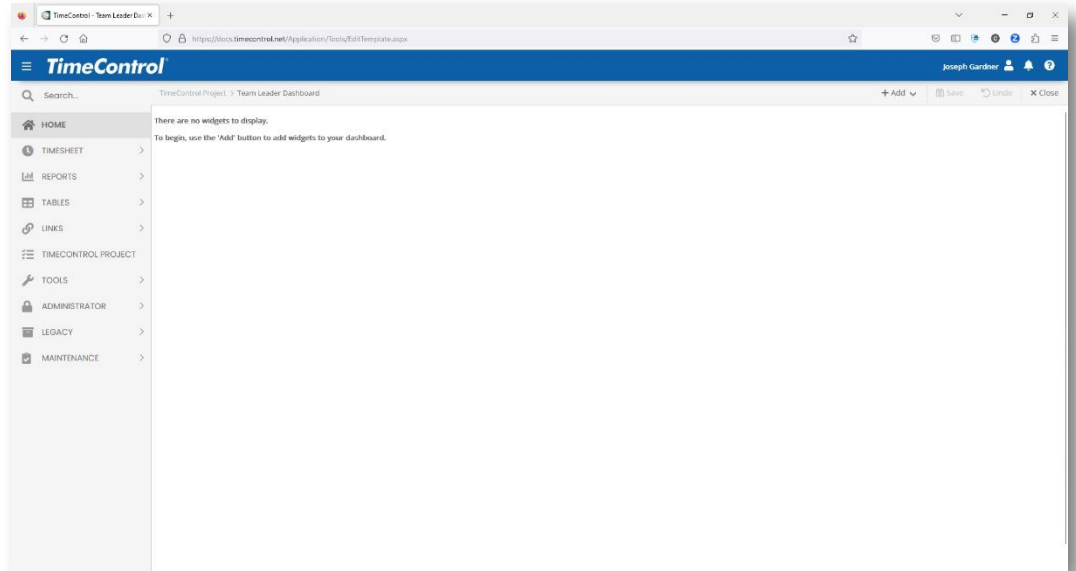
Once the layout has been decided, it's time to fill each of the blocks with information. Click Add to add a widget to this dashboard definition
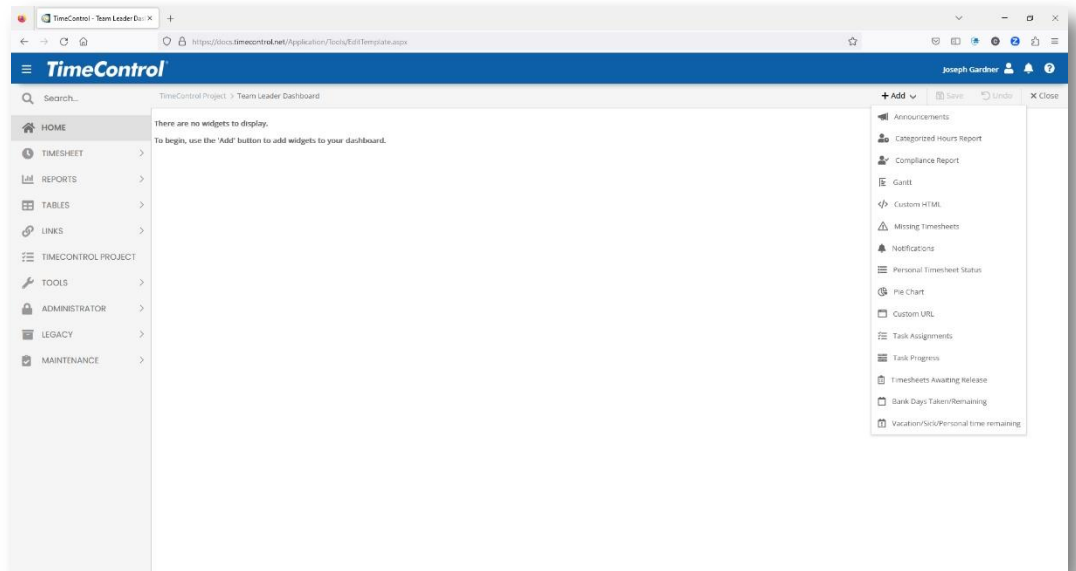
Possible selections include:

- Announcements
- Categorized Hours Report
- Compliance Report
- Gantt
- Custom HTML
- Missing Timesheets

- Notifications
- Personal Timesheet Status
- Pie Chart
- Custom URL
- Task Assignments
- Task Progress
- Timesheets Awaiting Release
- Bank Days Taken/Remaining
- Vacation/Sick/Personal Banked Time

At the bottom of the screen, you are now presented with the Dashboard Block details area which will have as many lines active as there are blocks in your layout. For example, in a 'One on top by One on bottom' layout, only two Detail lines would be active. Click on one of the active lines and click the Edit button or simply double click on any active Detail Line in the Description field.

TimeControl will display the Module Options screen
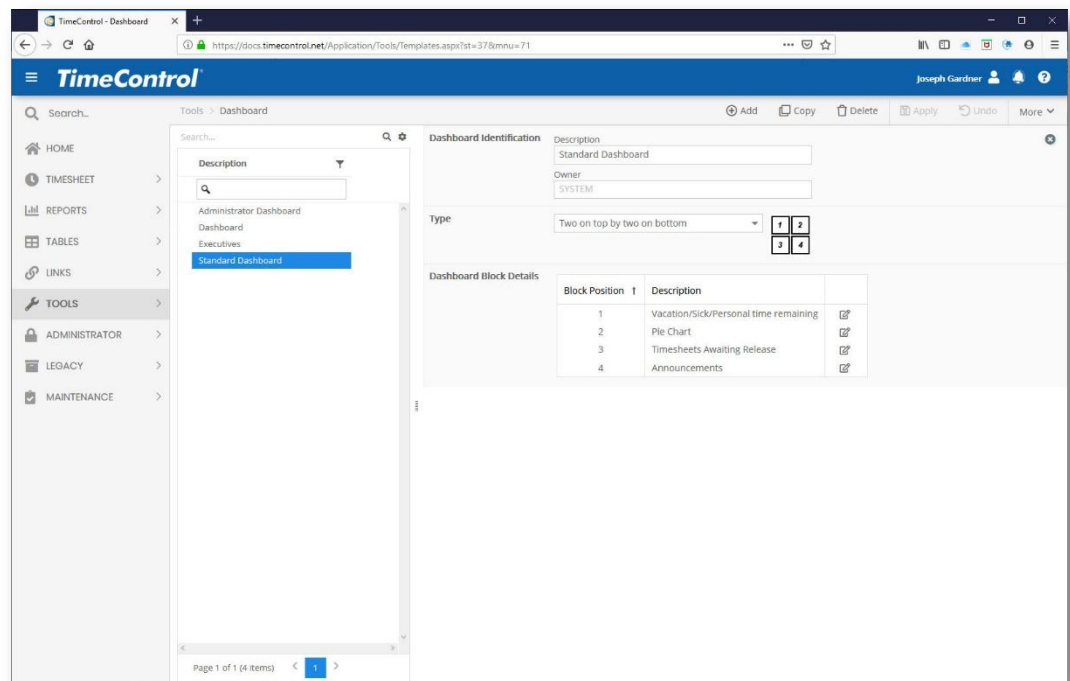
Here we've selected Announcements.
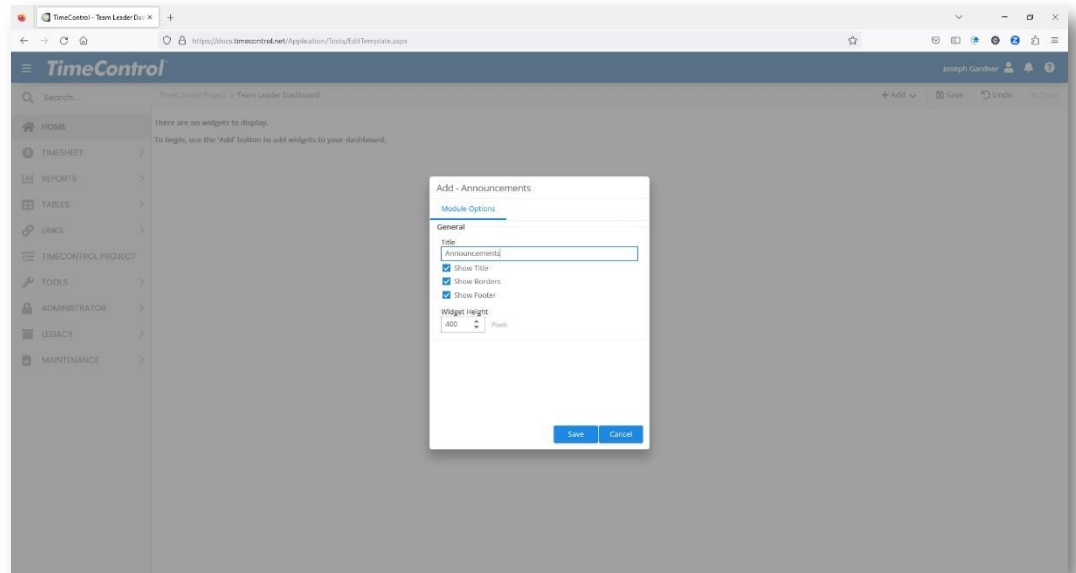
Select the options including the Title and height and click Save.

TimeControl will place the widget in the first available space on the template you defined.
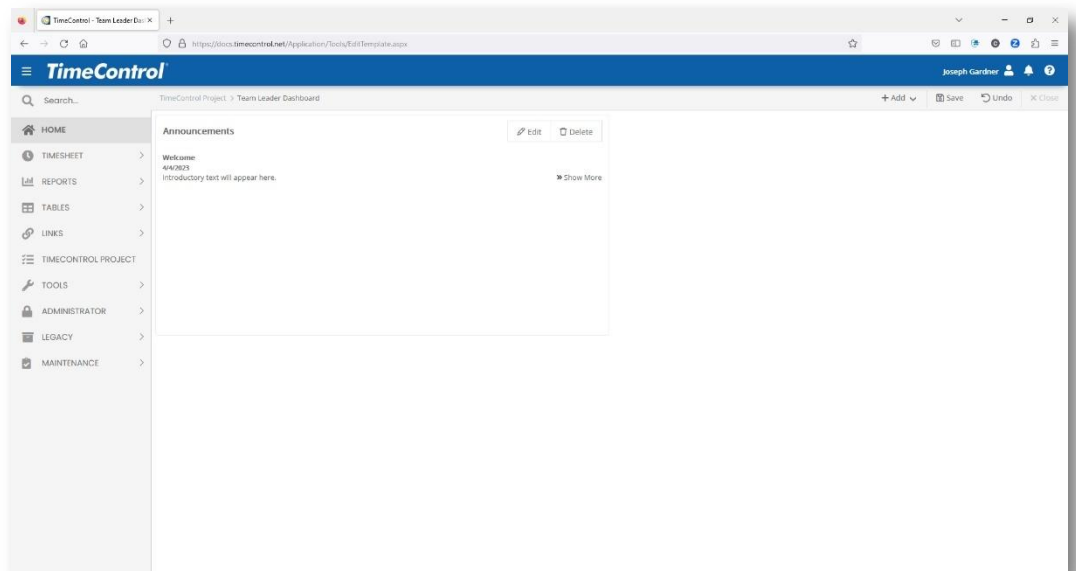
If you'd prefer to move the widget, just grab it with your mouse from the title bar of the widget and drag it to another of the template spaces. To delete a widget from this dashboard, click Delete. To edit the current definition of this widget click Edit.
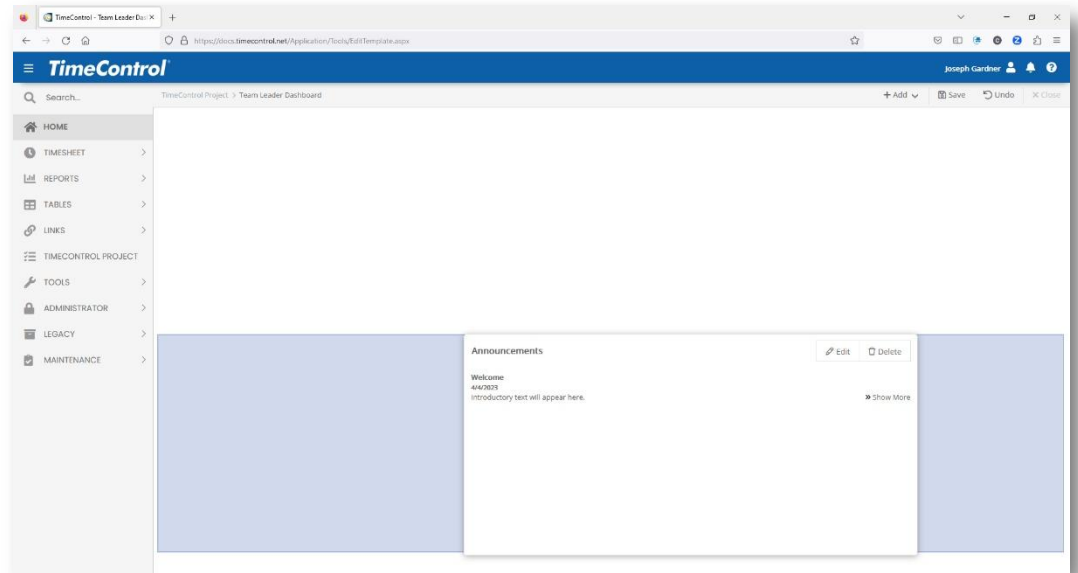
Continue adding widgets until the panels you defined have been filled.

Once you are satisfied with the layout of the dashboard, click Save at the top right to save it for future use.

Vacation/Sick/Personal Time Remaining
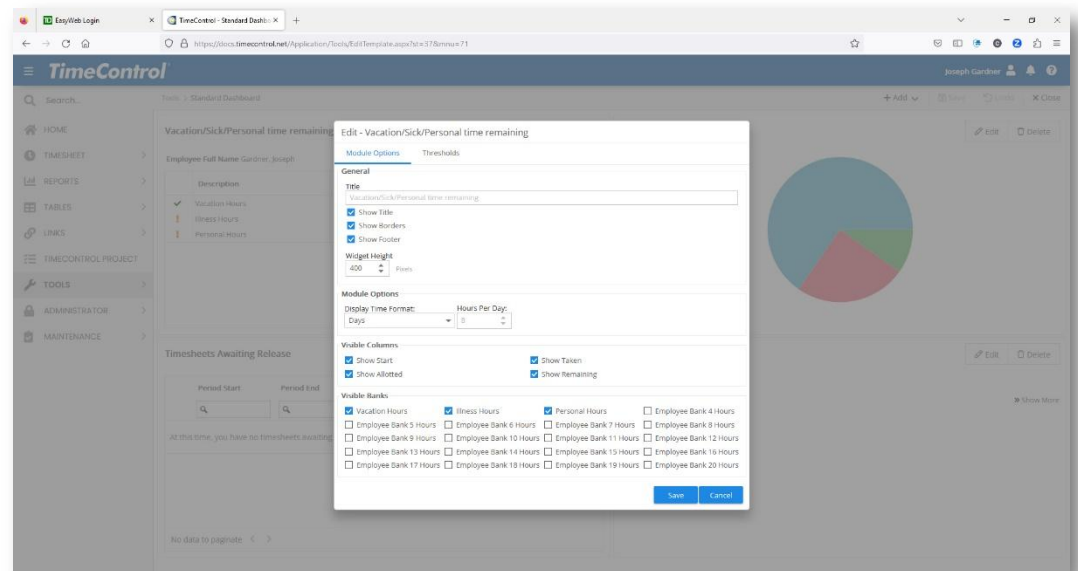
This module shows information on your Vacation time, Sick time and Personal time taken and remaining. Once you have selected this module, you can elect to display the results in either days or hours. Remember, TimeControl is always storing the data internally in minutes. If you select

days, the module will also ask you to define how many hours are in a day so it can calculate the information properly.

Once you have made your selections here, click on the Thresholds tab to further customize the display.

The Thresholds tab allows you to categorize the information for each line based on the amount of time remaining. Enter the percentage number which should determine the color displayed next to the resulting display. You are not restricted to only three colors here. Once you have created a new line with the percentage that will trigger the new display, click on the color field and select the color from the many choices available or make your own using the Red, Green Blue values.

The dates from which these values are calculated start from the Fiscal Calendar date field found in the System Preferences area and go to today's date. This allows an Administrator to ensure that the Vacation, Sick and Personal time allotted to all users is set as of a pre-set date for all employees.

Timesheets awaiting release
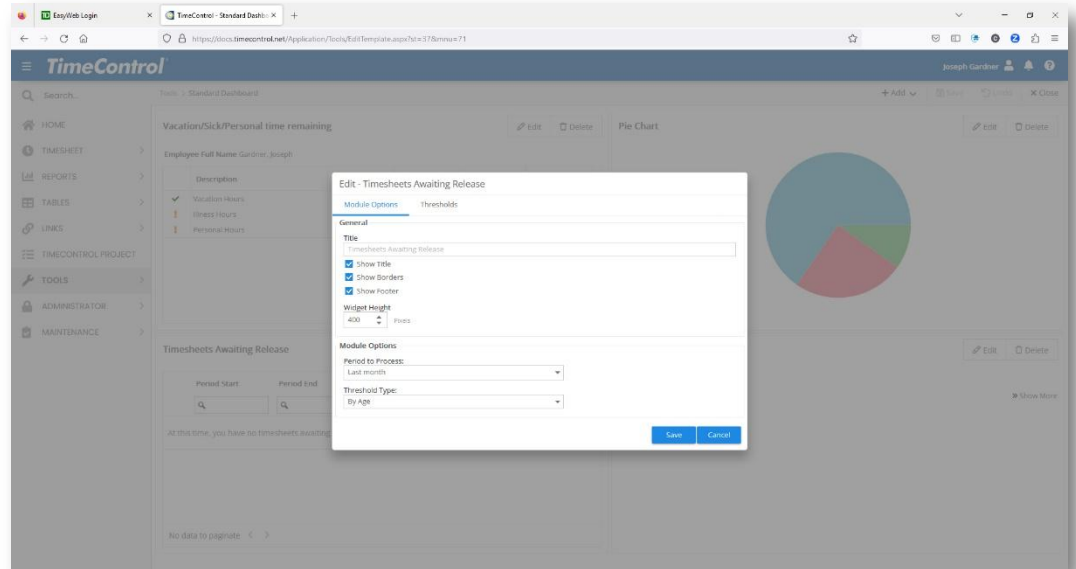
This module allows a display of timesheets awaiting release by this user. The list will show the quantity of timesheets awaiting release for the selected range of periods. Only those timesheets which have been released to this user are counted so the timesheets of this user are not counted.

The module first asks how long a period the module should search for missing timesheets. Possible options are one, two, three weeks or the previous month.

Next, enter the type of threshold to enter for the color display next to each line. The possible entries are By Age and By Quantity. Choose the selection by which you'd like to display different colors. Then move to the Thresholds tab and enter values for the selection you've made.

Remember, you are not restricted to only three colors or only three threshold lines. The number of colors is effectively unlimited and the number of threshold lines is determined by you.

Personal Timesheet Status
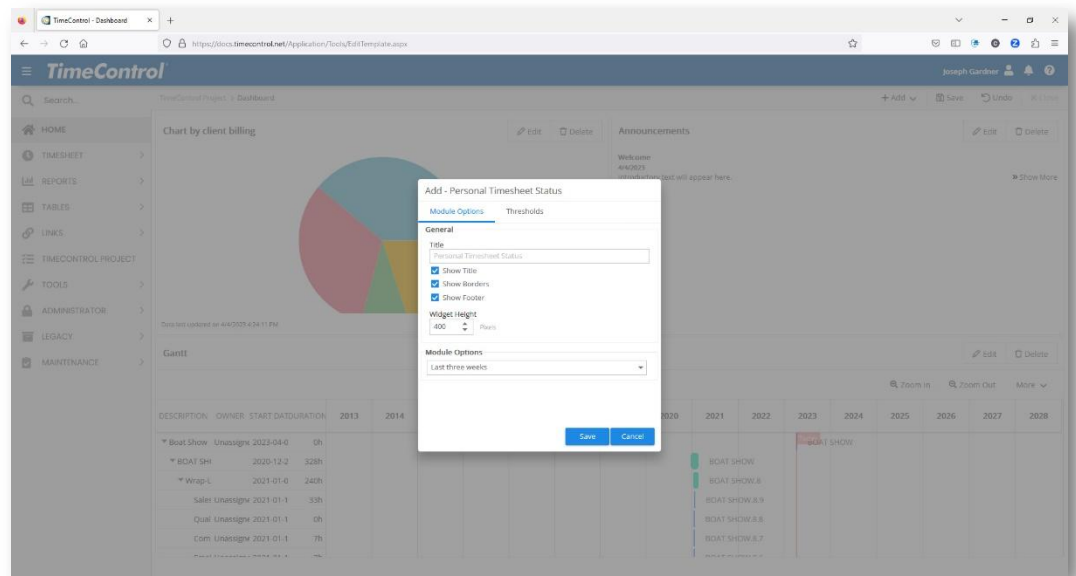
The Personal Timesheet Status module displays a list of timesheets which you were supposed to enter which are still missing from the system. This may include timesheets you have created but have not released. To use this module, simply select the length of time you'd like the module to search for information. Possible options are: Current week, last two, three weeks or the last month. The threshold tab for this module displays different colors based on the age of the timesheets that are missing.

When the dashboard is presented, it will search and display the defined number of weeks. Clicking on the ellipses on the right will allow you to add that timesheet or copy from a previous week.

Vacation Days Taken / Remaining

The Vacation Days Dashboard report shows selections of the number of vacation days taken vs. remaining for selected employees. Simply select the bank to be used to display in this pie chart.
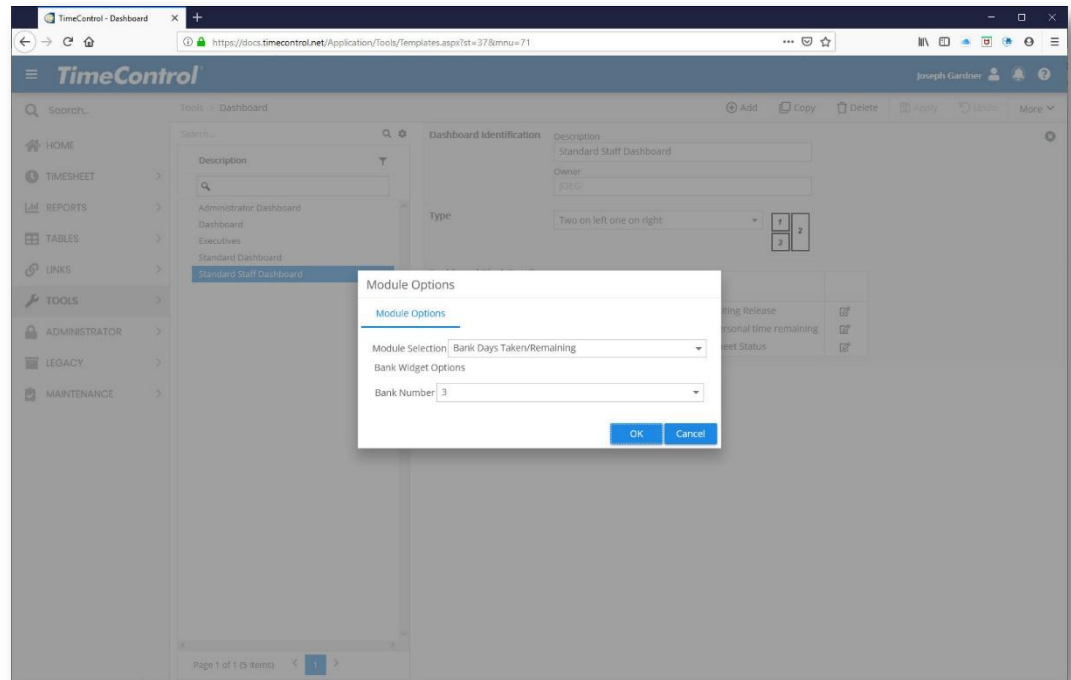
The graphic on the dashboard will then display the number of remaining days and taken days.

Categorized Hours

The Categorized Hours histogram dashboard report allows any selection of data to be grouped and the hours graphed. Select the table to begin.
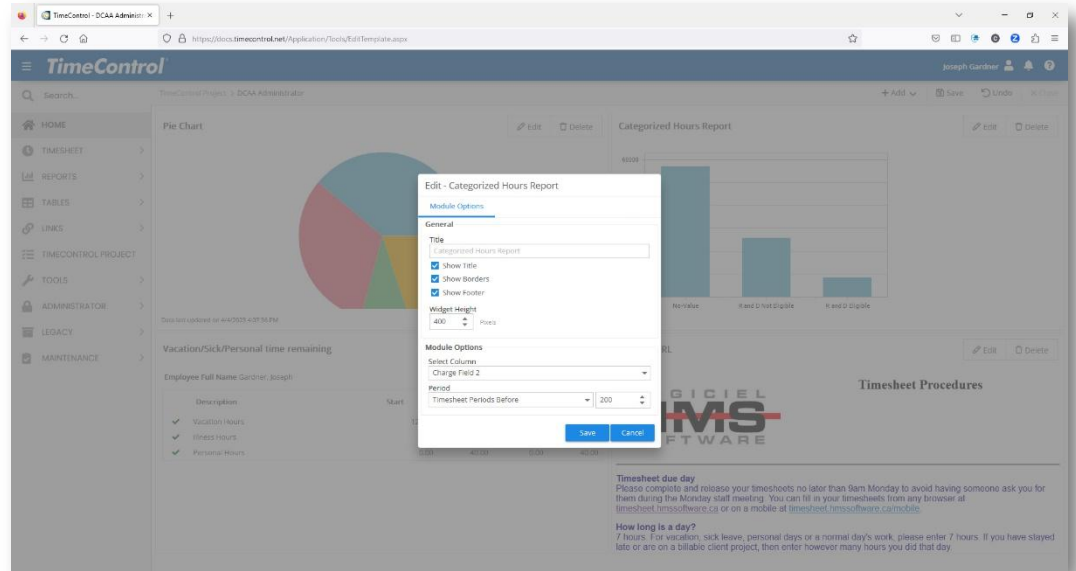
Then select a field from that table to group the data and a date range.

TimeControl now sums the hours for that grouping and displays them as a histogram.
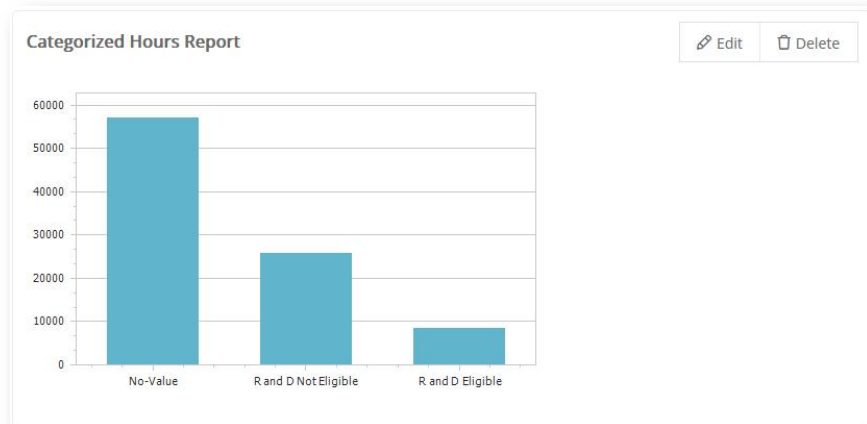
Compliance Report

The Compliance report indicates what percentage of timesheets were submitted on time in a particular period. Simply select the period on which the dashboard report will be based
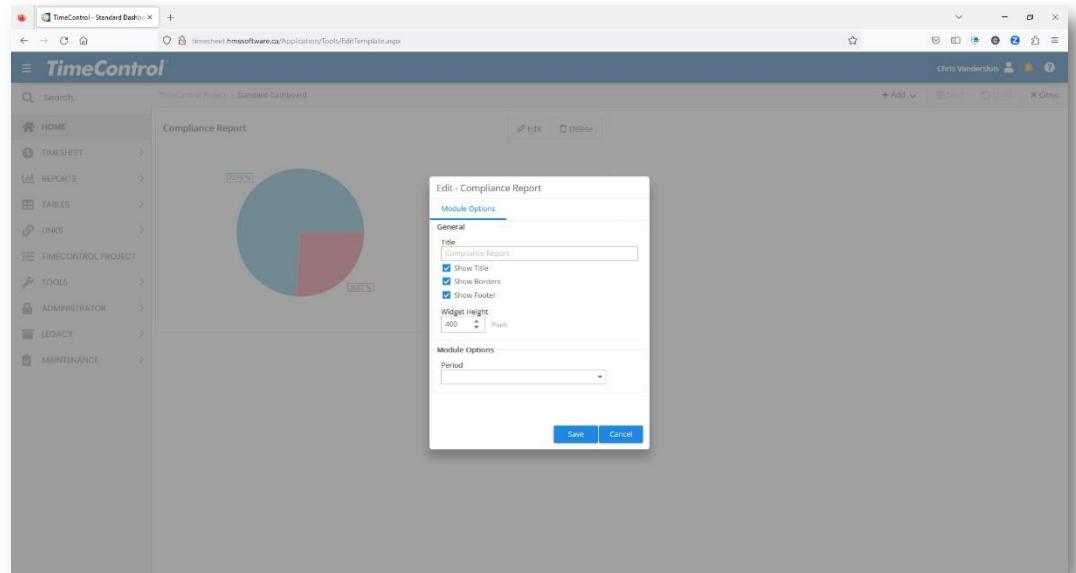
TimeControl will indicate in a pie chart what percentage of timesheets for that period are submitted vs. missing for the employees over which the current user has access.
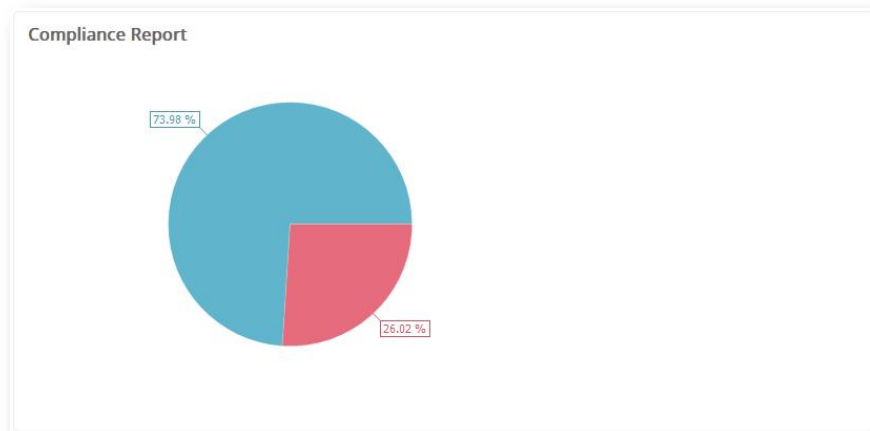
Missing Timesheet

The Missing Timesheet dashboard report shows a list of timesheets for a particular period that are still missing. Only the employees over which the current user has access will be displayed.

To begin, first select the period for the display.
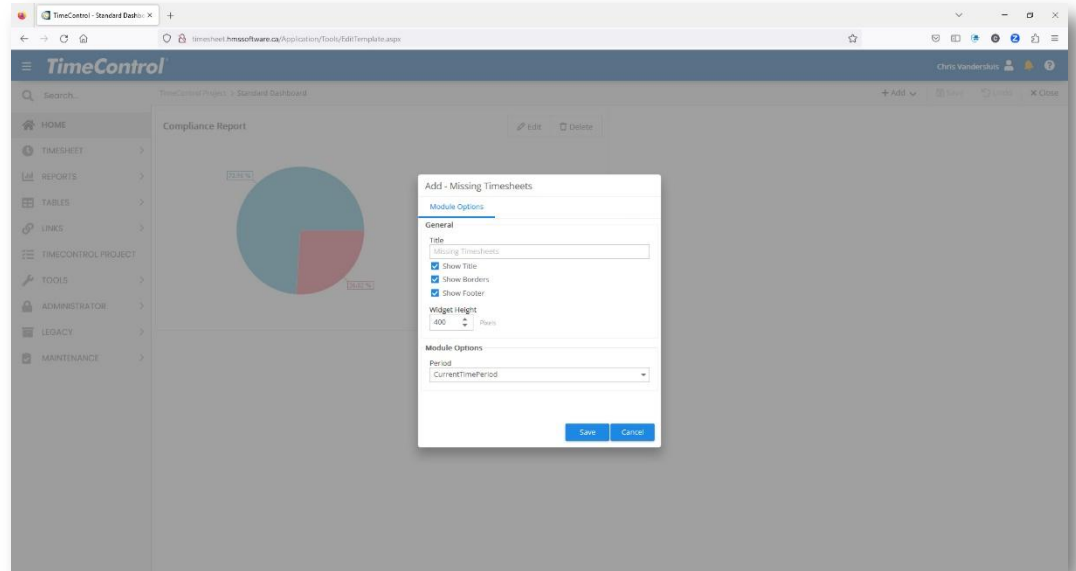
In the dashboard, TimeControl will display the employee's code, name and the period dates for the timesheet along with its status.

Custom URL

The Custom URL option is a powerful element of flexibility to the entire concept of the Home Page structure. Custom HTML elements can be created in a file using any HTML or text editor then referenced by the Home Page Module. This will display virtually anything inside the Block on the Home Page. Because the data is being displayed in a browser, the functionality that can now be embedded in the home page of each TimeControl view is restricted only by imagination. A different URL can be displayed in each block if desired.
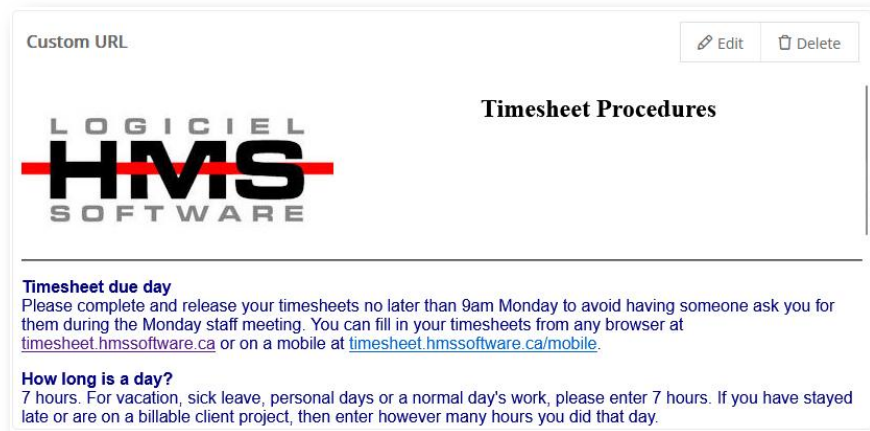
Remember, the URL must point to a file that is accessible to the Web Server used by TimeControl rather than your particular computer. Storing a file on your local drive is not likely accessible by the TimeControl Web Server.

> **Note**: TimeControl cannot validate what HTML code you write in each block. It is possible to create HTM that would render the entire page disabled, particularly if the HTML references other languages such as JavaScript or other objects. If the resulting HTML makes the entire page unmanageable, you may require assistance from HMS to disable this widget so please use this feature with care.

Pie Chart
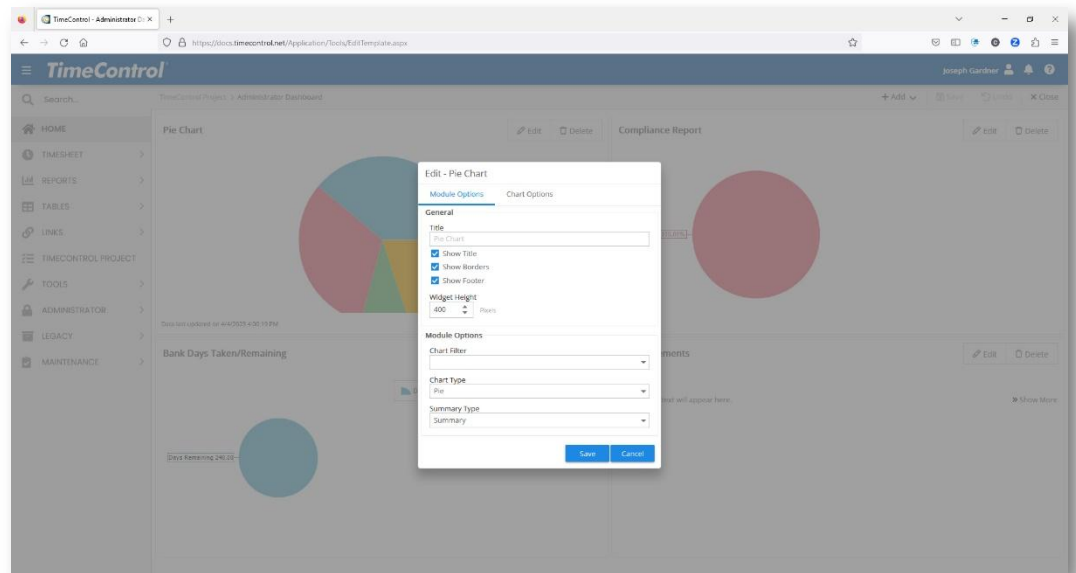
TimeControl can produce a pie chart view in your dashboard based on hours summarized in the posted timesheet area. The pie chart can then be grouped by any number of user defined field in the Charge or Project tables.   On the first tab of the definition, select the chart type and filter.
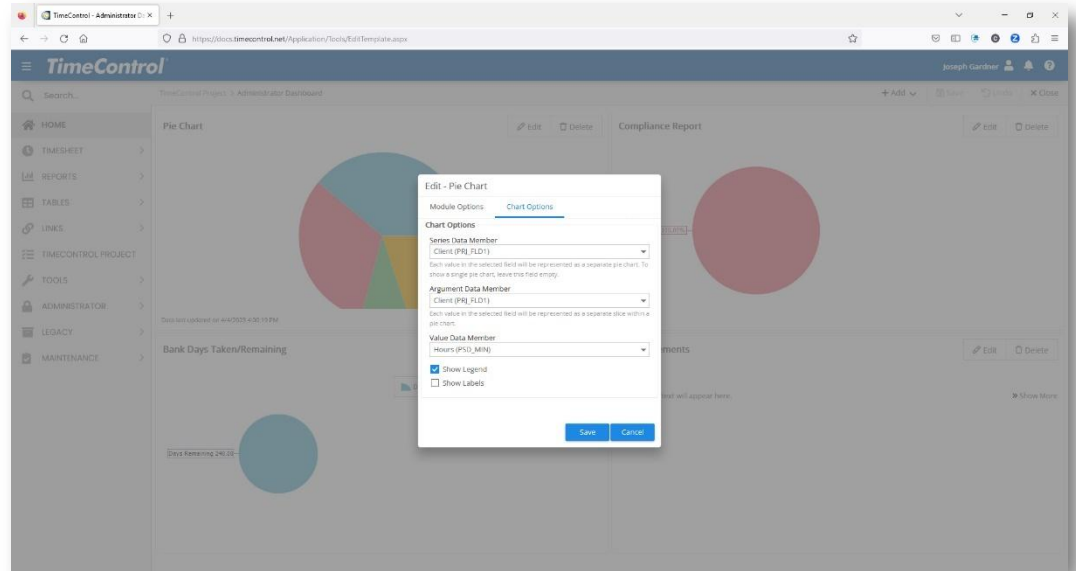
On the Chart Options tab select the data series, whether to print a legend and how to display hours.
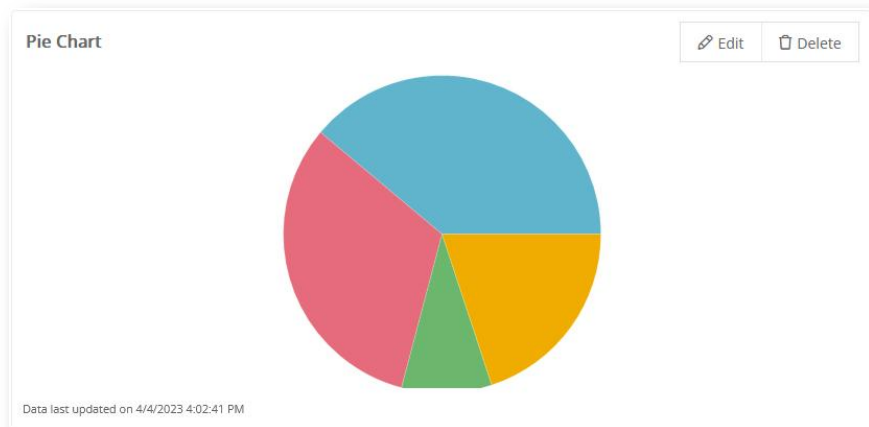
Announcements
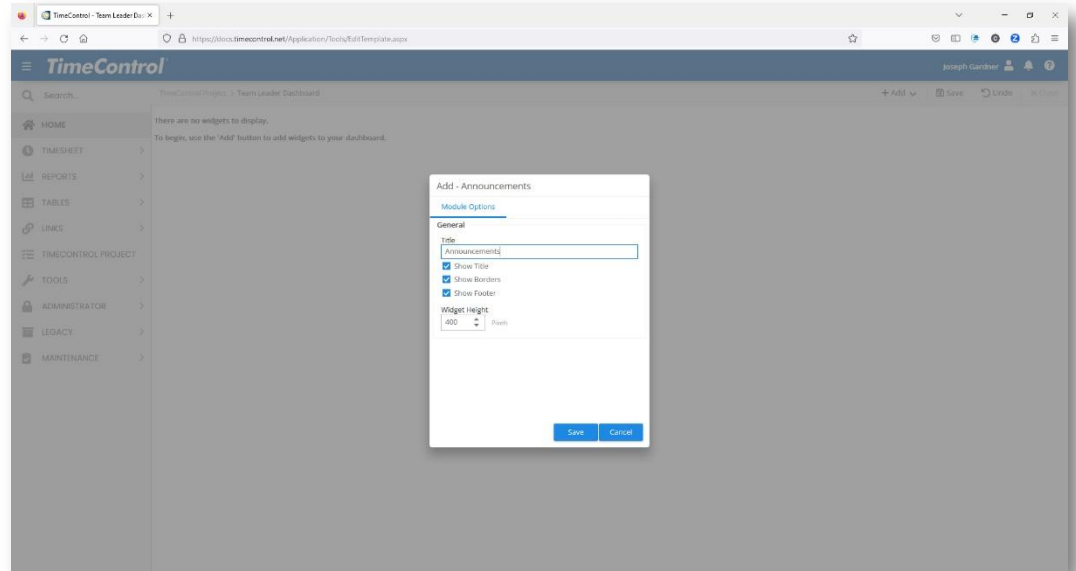
The Announcements module is managed from its own menu selection so selecting it for a Home Page block is very simple. Just select the announcements are for the block you wish to display it in. The Announcements area is designed for an Administrator to display information to all users. The announcements are displayed first with a title and a brief abstract in a scrollable list. By selecting a particular announcement, the reader is then presented with a more detailed presentation. This information can be simple text or can include HTML code including images, hyperlinks to other information and more.
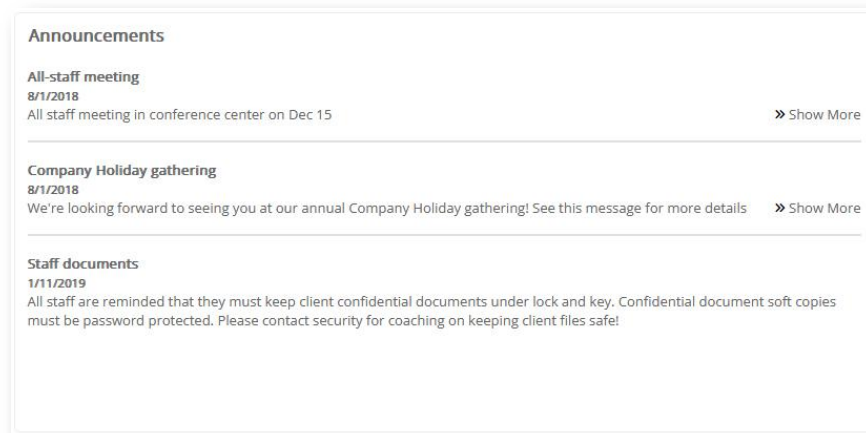
Administrator Announcements are more fully described in the Administrators section later in this manual.

GANTT Chart
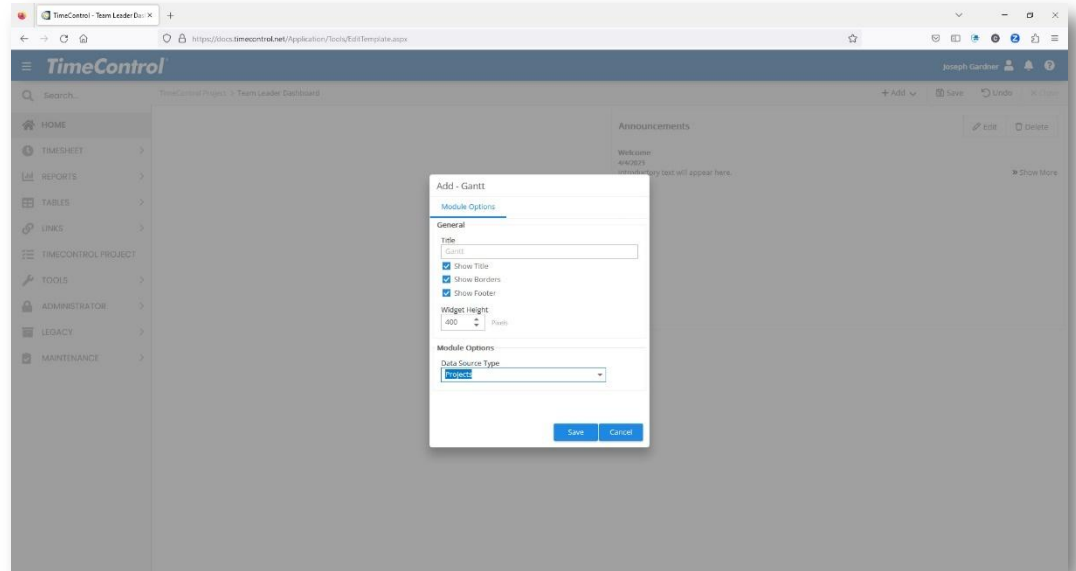
The GANTT chart widget allows you to create a bar chart. You can elect to show the GANTT using the Project Table, the Charge Table or TimeControl Project Tasks.

The GANTT shows several fields that are predefined by TimeControl. You can zoom in or out of the barchart by clicking the Zoom In and Zoom Out buttons. You can move the GANTT left or right by dragging the chart from inside the bar chart area.

Clicking More allows Resource Allocation to also be displayed on this view. Also under the More option is the ability to expand or collapse all which may be particularly useful for a long list of charge codes which are hierarchical.

Custom HTML
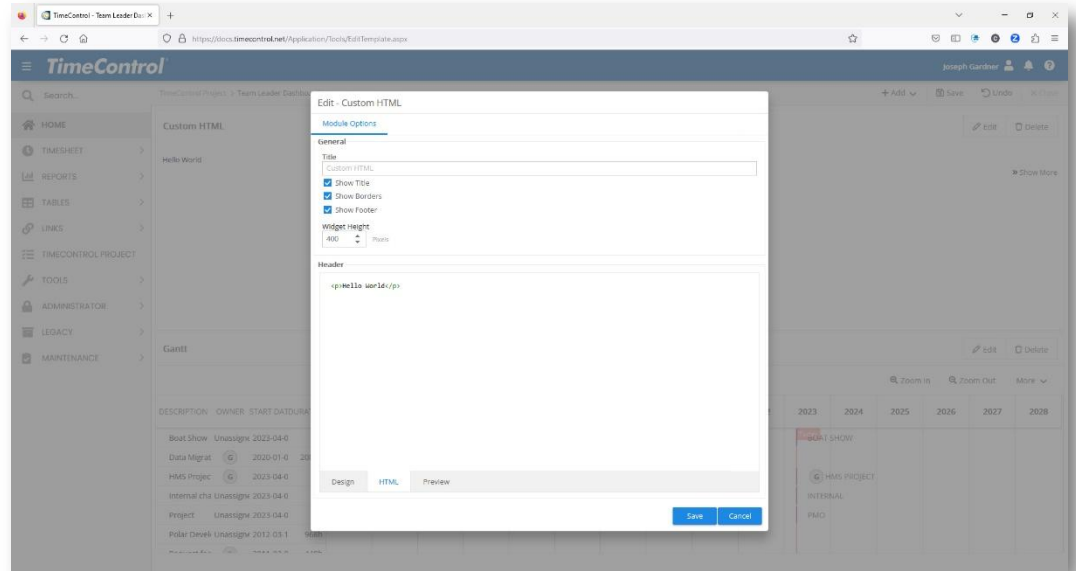
The Custom HTML widget allows you to create your own HTML or Rich Text widget containing anything that's important to display. This could be a list of hyperlinked resources or images or anything else that can be defined in HTML. Use the Design tab at the bottom of the widget definition to write Rich Text, the HTML tab to create pure HTML and the Preview tab to see a preview of how it will look on the dashboard.
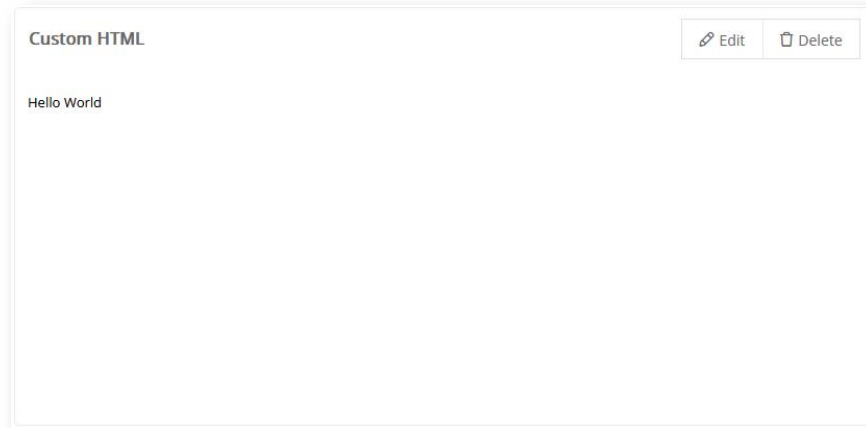
The resulting HTML will display however you have defined it.

Notifications
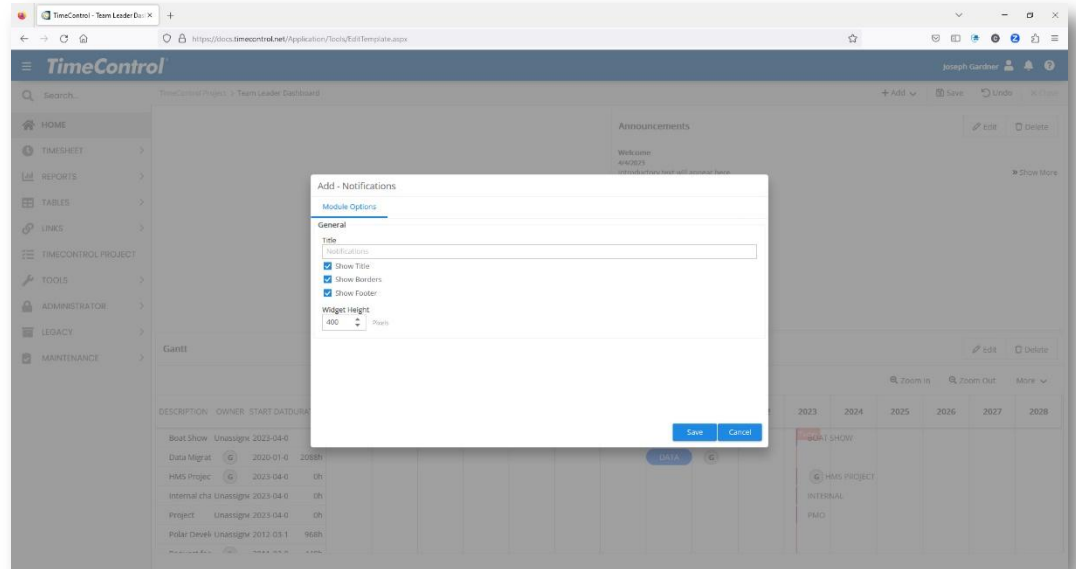
The Notification Widget is a way of opening all your notifications right on your home page without having to click on the Notify icon at the top right of the page.
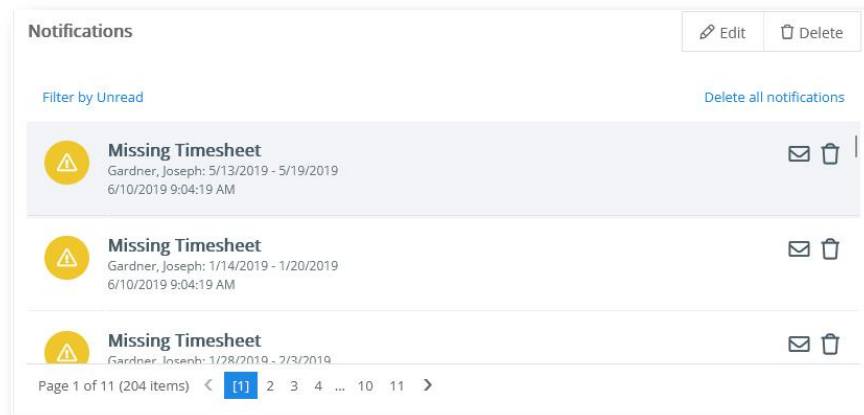
On the dashboard you will have the same functionality you would otherwise have when you click the Notify icon.

Task Assignments
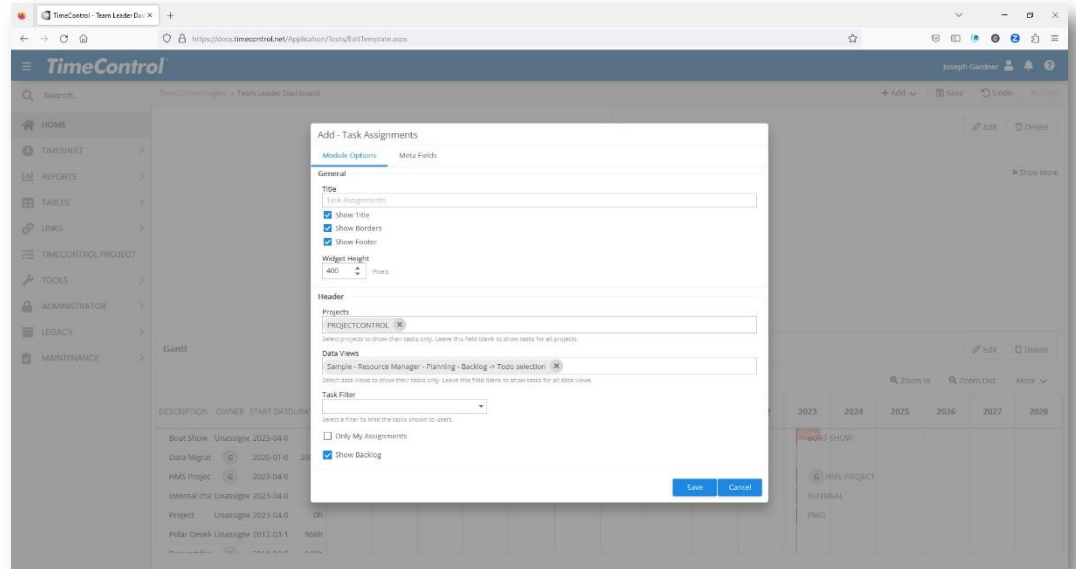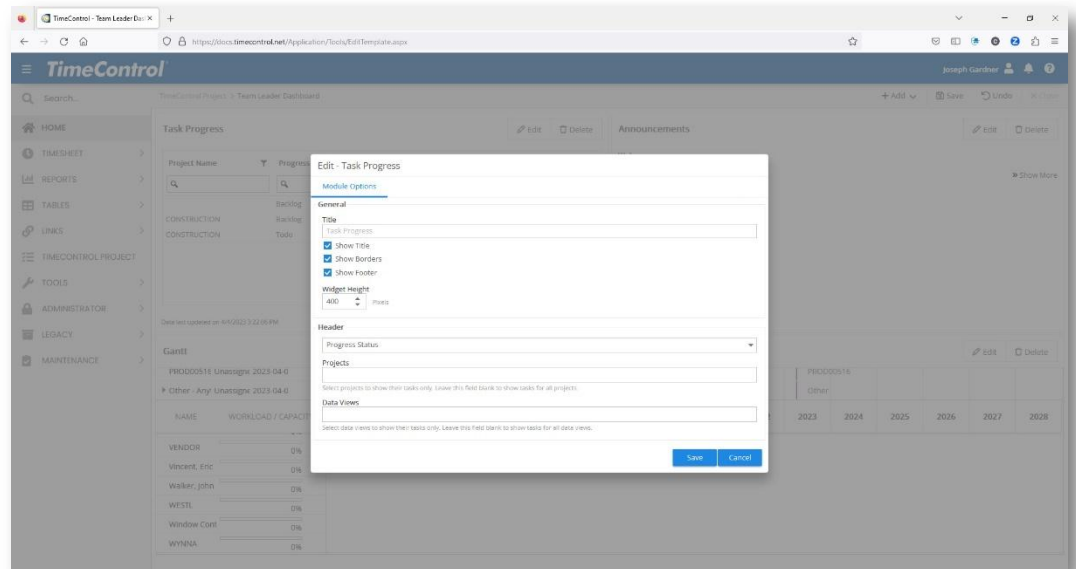
Task Progress

Task Progress shows the tasks to which you might be responsible and their progress.   Select the Project(s) and TimeControl Project View that might apply.

The dashboard view on the home page will show you a list of tasks for the project(s) you selected and the count of how many items are in each category.

Timesheet Autofill

TimeControl includes functionality for those organizations which wish to have some or all users enter timesheets "by exception". This is most common as an HR request for salaried employees who are not project oriented where the only requirement for recording a timesheet is when they are not in attendance. In this situation, users would wish to enter a timesheet only for those hours where they were absent, record the reason of the absence (such as vacation, sick leave, bank holiday etc.) and TimeControl would record that aside from the exceptions recorded, the employee had been in attendance for a full week of time.

The Timesheet Autofill function is designed for this situation. Autofill allows a TimeControl Administrator to identify a group of users and create timesheets for those employees automatically to fill in the expected time over a particular week. If the employee has already created entries for exceptions, then Autofill will fill in the balance.

Autofill is typically run after the collection of timesheets is over at the end of the week but before the posting process is complete. This has given employees an opportunity to enter and have approved any exception entries.

Scheduled Autofill

Autofill can be run on demand or on Schedule.

To create a scheduled Autofill, click Add on the Actions Menu.
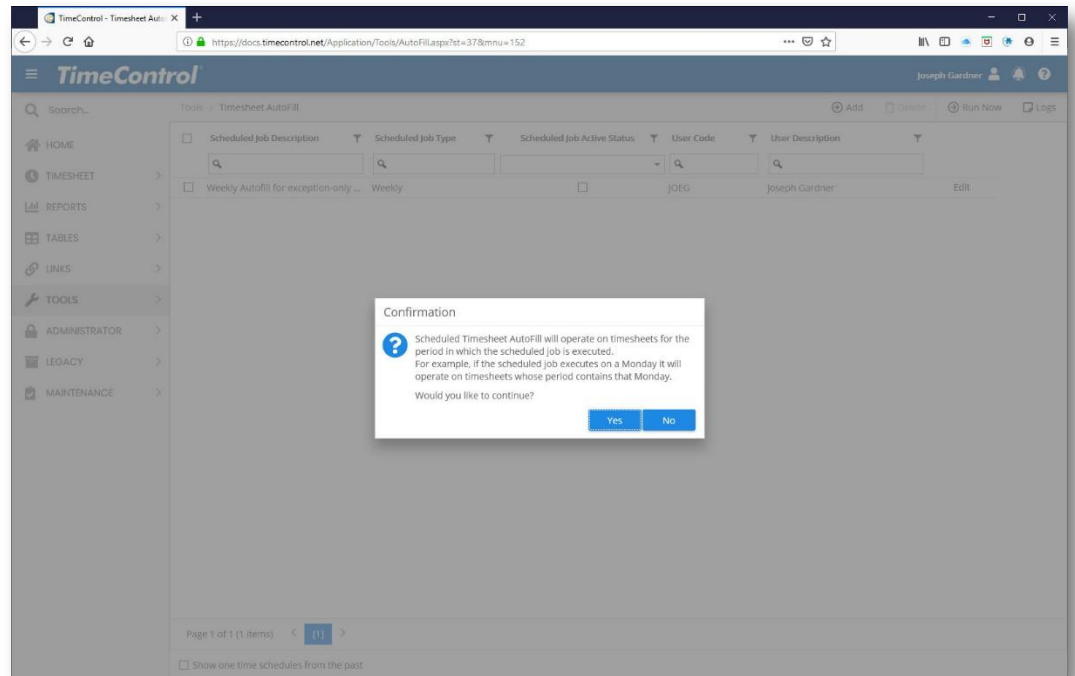
Some timesheet configurations may contain multiple weeks. In this case, it is important to know that the Autofill Wizard will look for timesheet periods that include the date on which the Scheduled Wizard is running.

Click Yes to Continue
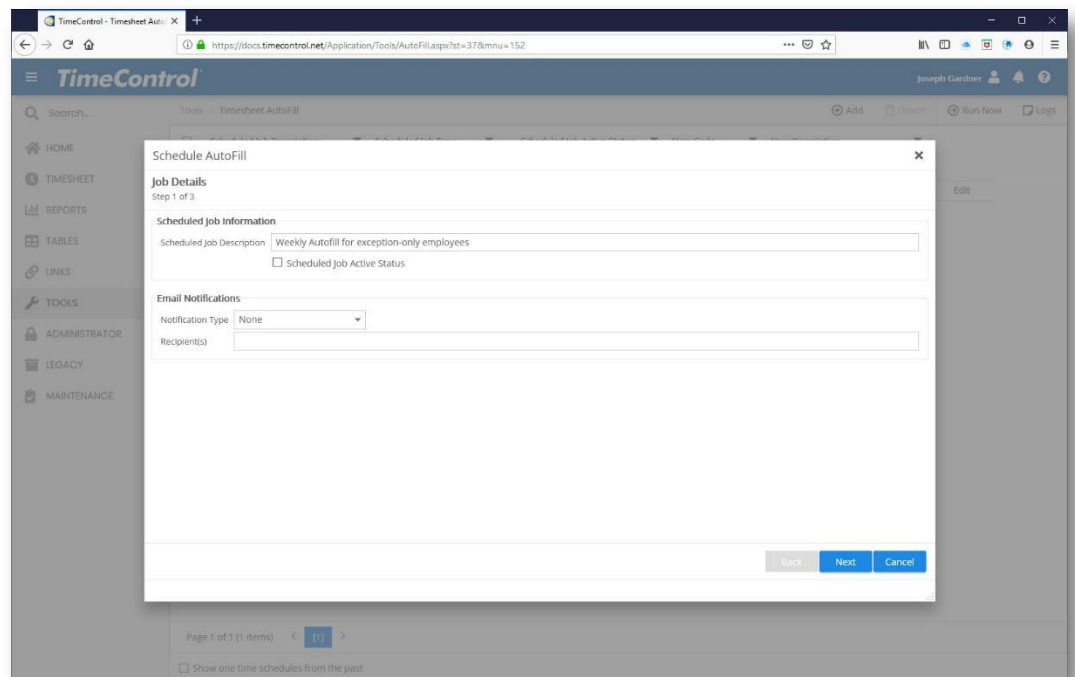
Now give the scheduled job a description and decide if you wish the service to send a notification when it runs and if so, enter the emails of the people to be notified.

Click Next to Continue

Now enter the schedule information including the starting date for this process and optionally, the end date. Enter the time and then Type. Depending on the type, options will change in the Schedule Information window below. Select the appropriate responses for your Type and click Next to continue

First, determine if you want to create timesheets for employees who didn't enter any exceptions – this will create a new timesheet that is only filled with the autofill time (this is the most common). You can run this only or at the same time run the process for timesheets that have exceptions entered but are not full (again the most common selection).

Next determine if once the AutoFill is completed you want the timesheet left in the ownership of the employee themselves, sent to posting or fully Posted after checking the appropriate validation rules.

Now you can decide if you would like to use the default values in each Employee's personal selections or use a standard project/charge code entry for AutoFill (the most common selection).

In Timesheet Criteria, select which employees timesheets you wish to autofill for.

Now enter the hours you wish to fill the timesheet up to for each calendar day and click Next to continue.
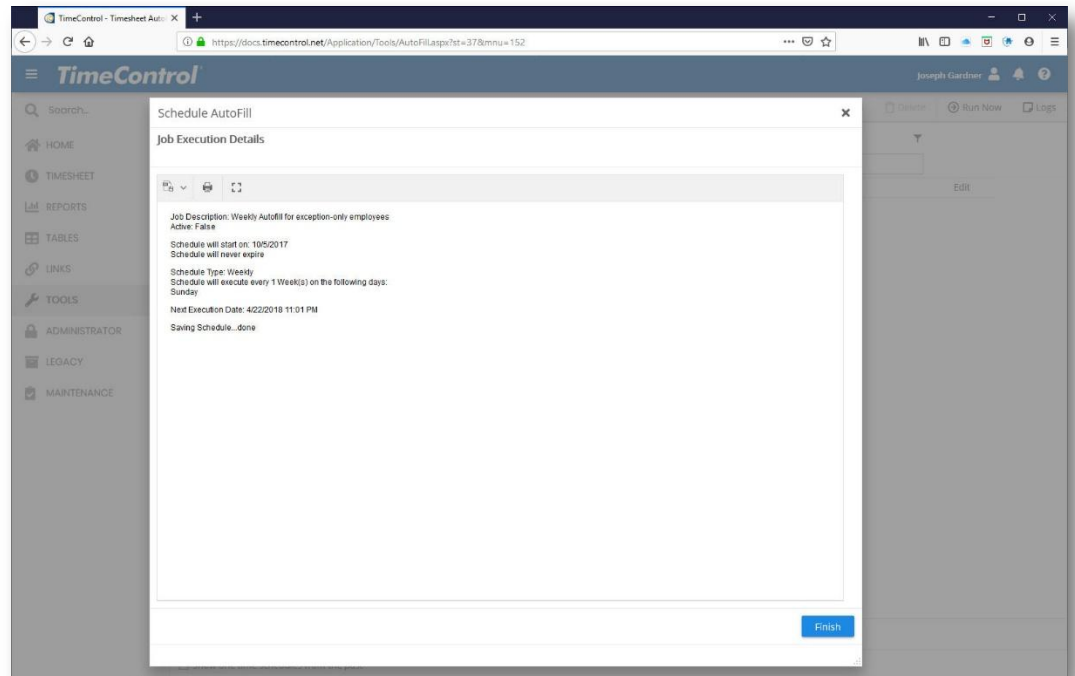
TimeControl will show a log that the scheduled Autofill has been accepted and is ready to run when it is next scheduled.
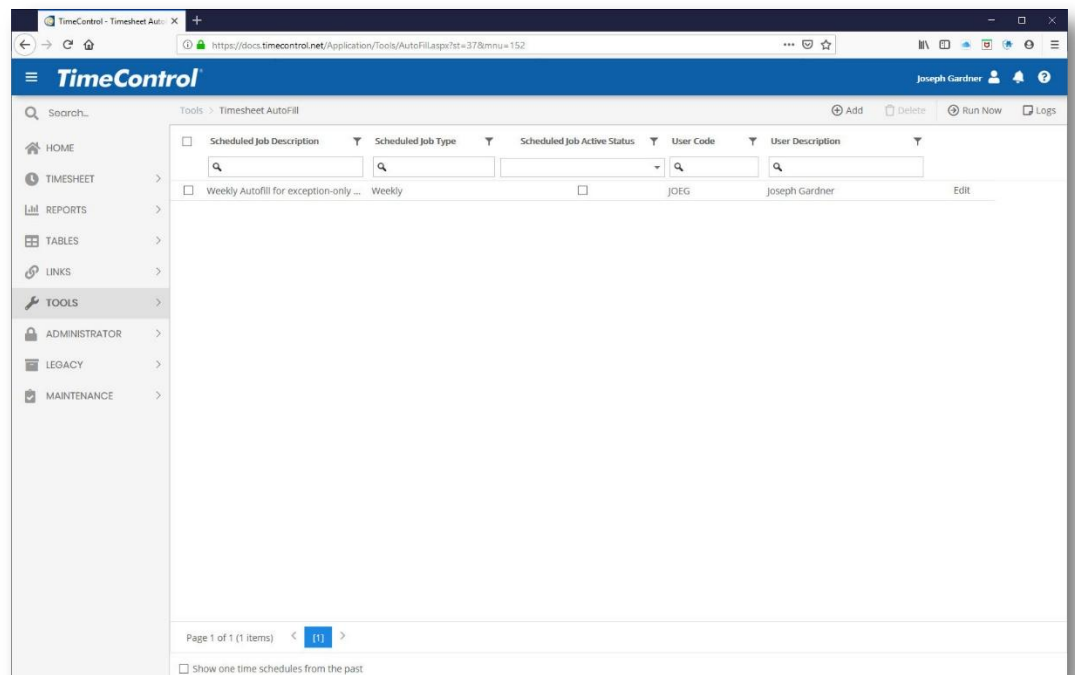
The completed scheduled Autofill job will now appear in the Timesheet Autofill list and in the Scheduled Jobs module.

Autofill on Demand

Autofill can also be run on demand. To start, click Run Now in the Action menu.

First, determine if you want to create timesheets for employees who didn't enter any exceptions – this will create a new timesheet that is only filled with the autofill time (this is the most common). You can run this only or at the same time run the process for timesheets that have exceptions entered but are not full (again the most common selection).

Next determine if once the AutoFill is completed you want the timesheet left in the ownership of the employee themselves, sent to posting or sent to posting after checking the appropriate validation rules.

Now you can decide if you would like to use the default values in each Employee's personal selections or use a standard project/charge code entry for AutoFill (the most common selection).

Click Next to continue
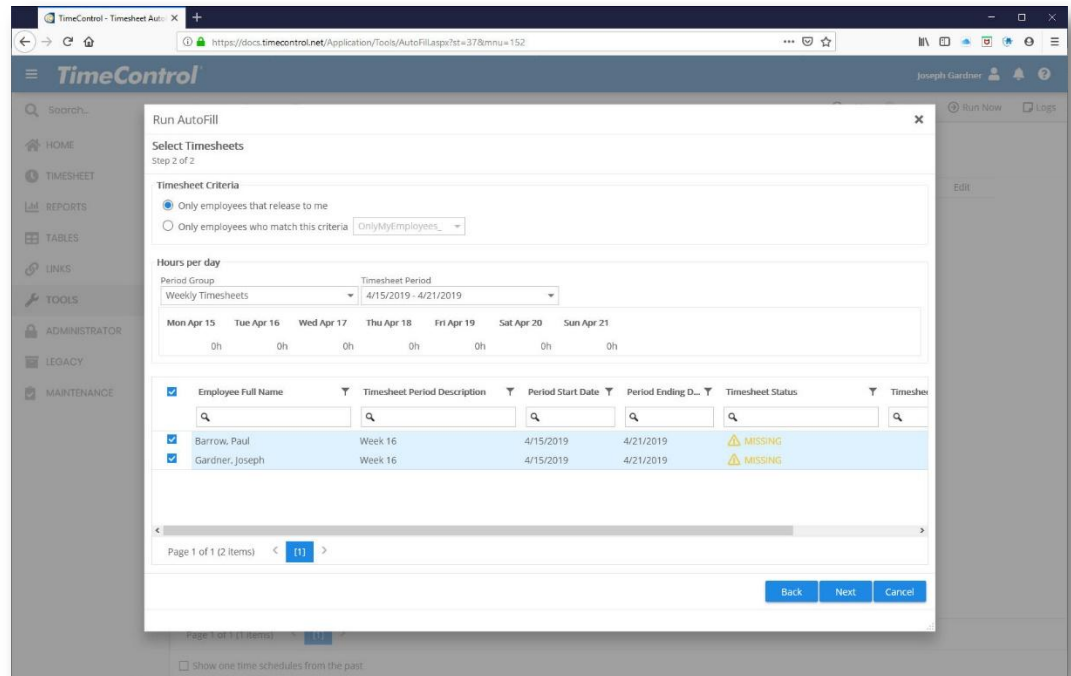
Now select which employees should be affected and select a timesheet period to Autofill.

TimeControl will now display a list of employees affected.

Enter the hours you wish to fill the timesheet up to for each calendar day.

You can then manually select or deselect any employees you wish to be affected by Autofill for the timesheet period displayed.

Click Next to complete the Autofill.

A log will display the results.

Announcements

Administrator Announcements appear in the My TimeControl Home Page and are managed from the Announcements area of the Administrator menu. The results are first displayed on the Home Page in a listing format:
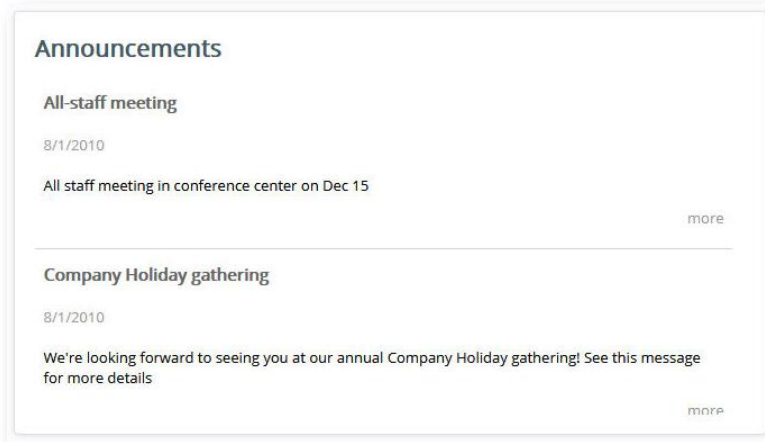
Announcements have two distinct components. The first is the Announcement listing in the Home Page as is displayed here. The listing shows a bold title and a brief description of the announcement itself. For some announcements, this may be sufficient. On each Announcement listing, there is also a ...more link. Clicking on this link will display a lengthier section of the announcement.

Each announcement can be pure text or HTML code. This provides limitless possibilities of creating customized messages including the inclusion of images and other web-based objects.

To manage announcements, select Announcements from the Administrator menu. TimeControl will display the Announcements area. Click Load to load all current announcements.
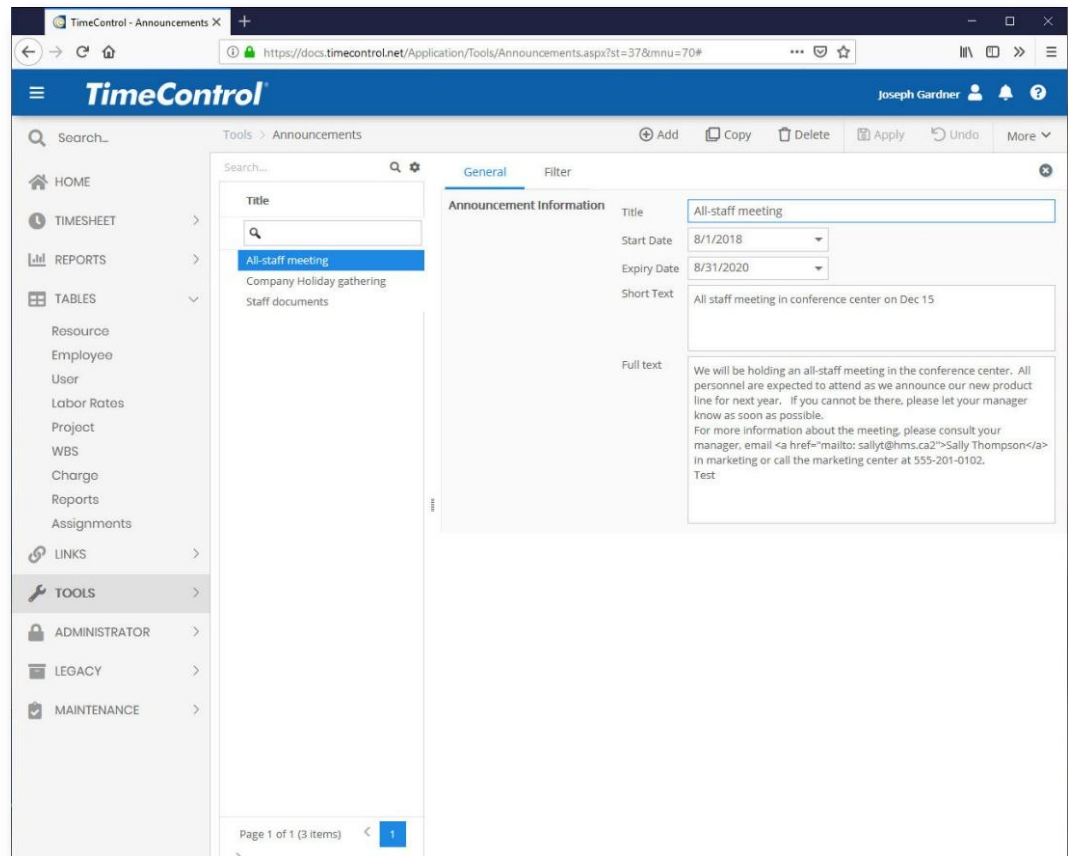
TimeControl will display all the current announcements in its standard format. The fields are used as follows:

Title: This is a mandatory field which is displayed on the Announcement Listing and at the top of an announcement detail screen.

Publish Date: This field is optional. Enter a value here or select from the calendar by clicking on the calendar icon next to the field if you wish this announcement to not appear until a particular date.

Expired Date: This field is optional. Enter a value here when you would like the announcement to automatically stop appearing.

Short Text: This field is mandatory. Enter the short text that you wish to appear in the Announcement listing on the My TimeControl Home Page. Remember, the space available for the short listing is determined by the layout selected. Both plain text and HTML code is acceptable here.

Full Text: This field is optional. Enter here more complete text on the option which will appear when the user clicks the '...more' button. Text can be plain, or you can use HTML code as has

been done in the example above. The page will be rendered in HTML so even image objects can be displayed.

Text in the Short Text and Full Text fields can be very powerful when mixed with simply HTML code. Remember, references in the HTML code must be valid to the Web Server which is rendering the final display.

Here the Administrator has created an announcement for a party. The text may include any valid HTML entry so even images, maps or links to other sites can be included.

When the user clicks on the '...more' button on the Announcement listing, they will see the complete announcement.
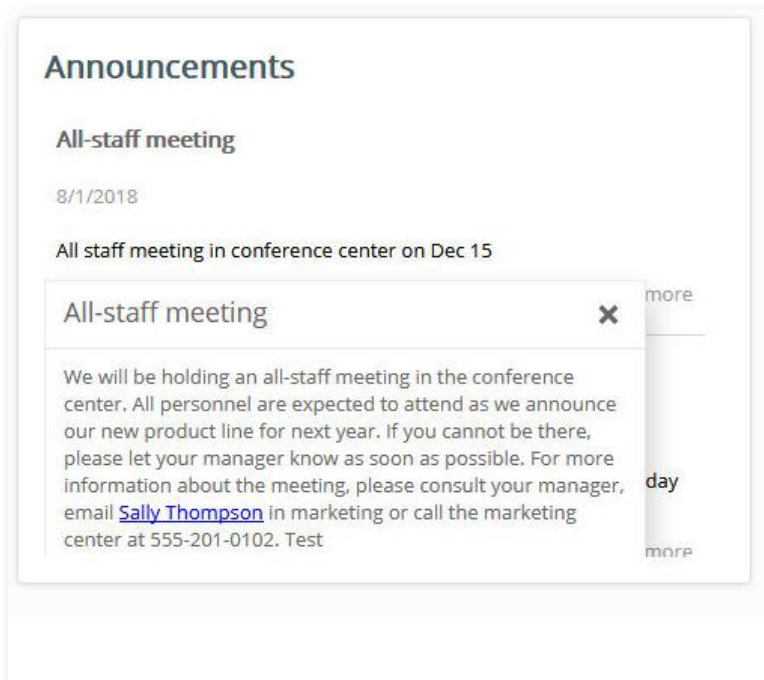
Timesheet Creation

The Timesheet Creation function allows timesheets to be created for users on a scheduled or on-demand basis. Timesheets can be copied from a previous period or can use the standard Pre-Load functionality that any user would experience in creating a new timesheet for the current period.

Scheduled Timesheet Creation

To create timesheets for others on a scheduled basis, select Timesheet Creation and click Add.

Enter a description for the scheduled job and if you wish to be notified, the notification type and emails of those who should receive the notification.

Click Next to continue.

Now enter the start and optionally the end-dates of the scheduled job. Pick the time and the frequency.

The schedule information will vary depending on the frequency that was selected. Decide on this screen on which day(s) to run the event.

Click Next to continue.

Now select which employees should have their timesheets created as part of this scheduled job. This can be restricted to only those employees who release to the current user or to a filtered list of employees. Leave the criteria selection blank to select all employees.

You can select the number of periods to create and optionally whether to simply duplicate from the last timesheet posted.

Click Next to continue.

The job will be saved and will now appear in the scheduled jobs list.
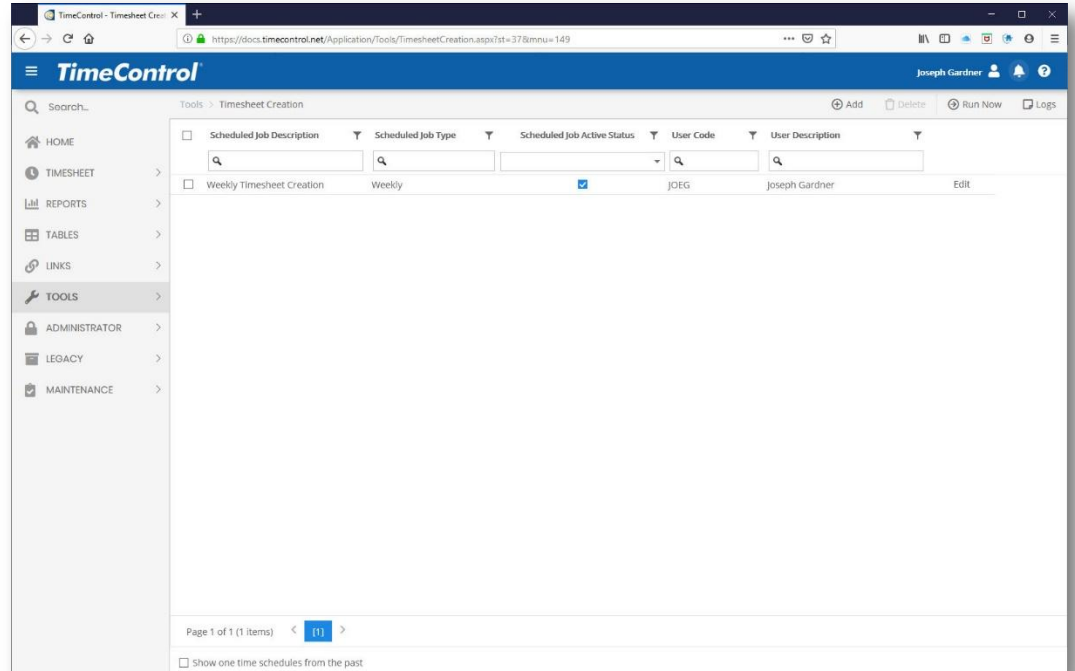
On Demand Timesheet Creation

To run Timesheet Creation on demand, click the Run Now button.

Select which employees should have their timesheets created as part of this scheduled job. This can be restricted to only those employees who release to the current user or to a filtered list of employees. Leave the criteria selection blank to select all employees.
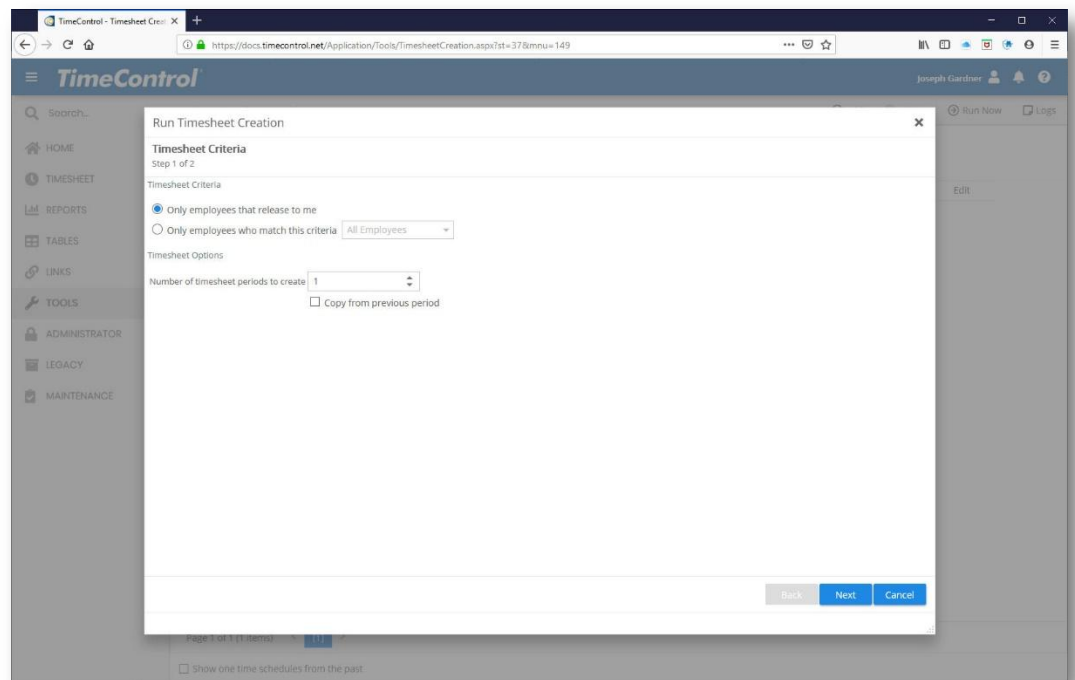
You can select the number of periods to create and optionally whether to simply duplicate from the last timesheet posted.

Click Next to continue.

The timesheets for the selected users will now be created. If "Copy from Previous timesheet" was selected, the timesheets will copy the projects and charges codes of the previously posted timesheet. If not, the standard preloaded list will be populated into the timesheet as though the user had created the timesheet on their own.

Accruals

TimeControl includes the ability to set up scheduled automated accruals. These calculations will occur at a specific time or as timesheets are posted.

All TimeControl Accruals are designed to load an incremental value into a bank field in the Employee Table.

There are four types of TimeControl accruals. Clicking Add in the Action panel will show the possible selections:
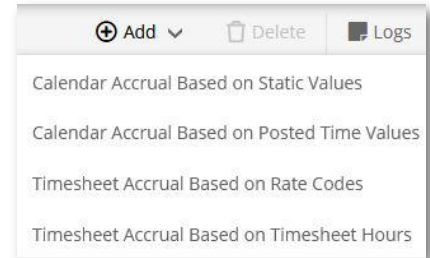
1. Calendar Accrual Based on Static Values

   This type of accrual is designed to load a value in the Employee Table and might typically be used to post the accrued vacation for each employee in their bank of time located in the TimeControl Employee Table. The calculation within this rule is not based on the number of hours worked but rather on values that have been stored already in TimeControl. It might be well suited, for example, to add a set number of hours per salaried employee per month to their personal time off. This rule will be run on a schedule at the frequency and time defined within the rule.

2. Calendar Accrual Based on Posted Time Values

   This type of accrual is designed to load a value into a bank in the Employee table based on the number of hours spent during this period. It is run on a scheduled basis. The calculation within this rule would be well suited, for example, for a situation where the number of hours spent establishes how much personal time off. This might be used for wage staff as opposed to salaried staff.

3. Timesheet Accrual Based on Rate Codes

   This type of accrual loads a value into a bank in the Employee Table based on the number of hours associated to a particular rate code. This might be used to load banked overtime into a banked overtime bank.

4. Timesheet Accrual Based on Timesheet Hours

   This type of accrual loads values into a bank in the Employee Table based on different volumes of hours in the timesheet. For example, a rule could be established to load an Overtime Bank amount at 1.5 x the hours for those hours over 40 but below 50 and 2 x the hours for those hours above 50.

A TimeControl instance may include numerous Accrual rules and it is possible to make rules which negate or duplicate others without any warning so caution in designing the rules and ensuring no overlap is critical.

Each rule type has a number of fields and feature specific to that type.

Calendar Accrual Based on Static Values

Accrual Information

- **Accrual name**: The short title by which this Accrual Rule will be identified.

- **Active**: Check this box to activate this rule. Clear this box to have this rule not run.

- **Description**: The longer description for this Accrual Rule.

- **Accrue to bank**: The name of the bank field in the Employee Table to which the hours calculated by this Accrual Rule will be stored

- **Apply to Employees meeting this criteria**: An Employee filter to define which Employees will be affected by this Accrual Rule.

Schedule Information

- **Schedule Job Start**: The date on which this Accrual Rule should start.
- **End Date**: The date on which this Accrual Rule should end.
- **Schedule Start Time**: The time of day that this Accrual Rule should run
- **Scheduled Job Type**: The schedule type: Daily, Weekly, Monthly, Yearly. The Schedule information in the next pane is dependent on the Schedule Job Type.

Accrual Method

- **Select Value per accrual period exactly equivalent to**: This is a numeric entry.
- **Hours/Percent**: This is a selection of either hours or percent.

Calendar Accrual Based on Posted Time Values

Accrual Information

- **Accrual name**: The short title by which this Accrual Rule will be identified.
- **Active**: Check this box to activate this rule. Clear this box to have this rule not run.

- **Description**: The longer description for this Accrual Rule.

- **Accrue to bank**: The name of the bank field in the Employee Table to which the hours calculated by this Accrual Rule will be stored

- **Apply to Employees meeting this criteria**: An Employee filter to define which Employees will be affected by this Accrual Rule.

Schedule Information

- **Schedule Job Start**: The date on which this Accrual Rule should start.
- **End Date**: The date on which this Accrual Rule should end.
- **Schedule Start Time**: The time of day that this Accrual Rule should run
- **Scheduled Job Type**: The schedule type: Daily, Weekly, Monthly, Yearly. The Schedule information in the next pane is dependent on the Schedule Job Type.

Tracking Column

- **Tracking Column**: Enter the tracking field to which this Accrual Rule should apply. This allows several Accrual Rules to work against the same tracking flag so that if one rule applies, another rule will not run again if the tracking flag has already been set for that posted record.

Set Tracking flag for these records as processed: This allows these records to show as tracked.

Clear Tracking flag for these records as processed: This opens the records for this tracking column to be cleared.

Accrual Method

▪ **Calculated Method Based on Total Hours Multiplied by**: Enter a numeric value which is then determined as a percentage or value to multiply the hours by.

▪ **Exclude these types of posted hours**: Use a filter to exclude certain types of hours from this Accrual Rule.

Timesheet Accrual Based on Rate Codes

Accrual Information

▪ **Accrual name**: The short title by which this Accrual Rule will be identified.

▪ **Active**: Check this box to activate this rule. Clear this box to have this rule not run.

▪ **Description**: The longer description for this Accrual Rule.

▪ **Accrue to bank**: The name of the bank field in the Employee Table to which the hours calculated by this Accrual Rule will be stored

▪ **Apply to Employees meeting this criteria**: An Employee filter to define which Employees will be affected by this Accrual Rule.

Schedule Information

▪ **Schedule Job Start**: The date on which this Accrual Rule should start.

- **End Date**: The date on which this Accrual Rule should end.
- **Schedule Start Time**: The time of day that this Accrual Rule should run
- **Scheduled Job Type**: The schedule type: Daily, Weekly, Monthly, Yearly. The Schedule information in the next pane is dependent on the Schedule Job Type.

Tracking Column

- **Tracking Column**: Enter the tracking field to which this Accrual Rule should apply. This allows several Accrual Rules to work against the same tracking flag so that if one rule applies, another rule will not run again if the tracking flag has already been set for that posted record.

Set Tracking flag for these records as processed: This allows these records to show as tracked.

Clear Tracking flag for these records as processed: This opens the records for this tracking column to be cleared.

Accrual Method

- **Calculated Method Based on Total Hours Multiplied by**: Enter a numeric value which is then determined as a percentage or value to multiply the hours by.
- **Exclude these types of posted hours**: Use a filter to exclude certain types of hours from this Accrual Rule.

Timesheet Accrual Based on Timesheet Hours

Accrual Information

- **Accrual name**: The short title by which this Accrual Rule will be identified.

- **Active**: Check this box to activate this rule. Clear this box to have this rule not run.

- **Description**: The longer description for this Accrual Rule.

- **Accrue to bank**: The name of the bank field in the Employee Table to which the hours calculated by this Accrual Rule will be stored

- **Apply to Employees meeting this criteria**: An Employee filter to define which Employees will be affected by this Accrual Rule.

Tracking Column

- **Tracking Column**: Enter the tracking field to which this Accrual Rule should apply. This allows several Accrual Rules to work against the same tracking flag so that if one rule applies, another rule will not run again if the tracking flag has already been set for that posted record.

Set Tracking flag for these records as processed: This allows these records to show as tracked.

Clear Tracking flag for these records as processed: This opens the records for this tracking column to be cleared.

Accrual Method

This method will be applied during Posting and will apply to the entire timesheet. Add new lines for each range of hours.

- **Number of hours before Accruing**: Enter a numeric value under which hours are not accrued at all for this Accrual Rule.

- **Up to**: Enter a numeric value.

- **Accrue at Percentage Rate**: Enter the percentage to apply to this range of hours.

- **List of Charge Codes to exclude from Accrual**: Enter a list here of Charge codes which should not apply to this rule. This might include charges such as sick leave or vacation time.

Administrator

System Preferences

TimeControl's System Preferences allow Administrators to customize the timekeeping environment to their precise specifications.

To set System Preferences, select **Administrator | System Preferences**.
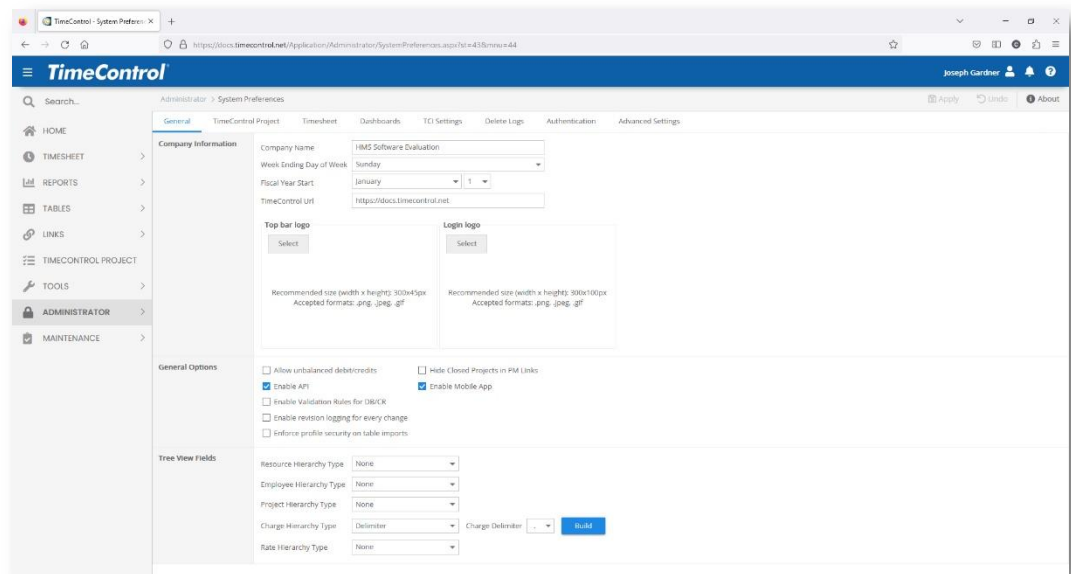
About

The About button will give you specific information about your TimeControl installation as reported by TimeControl installer including your serial number and number of licenses. This information may be requested of you when calling for TimeControl support.
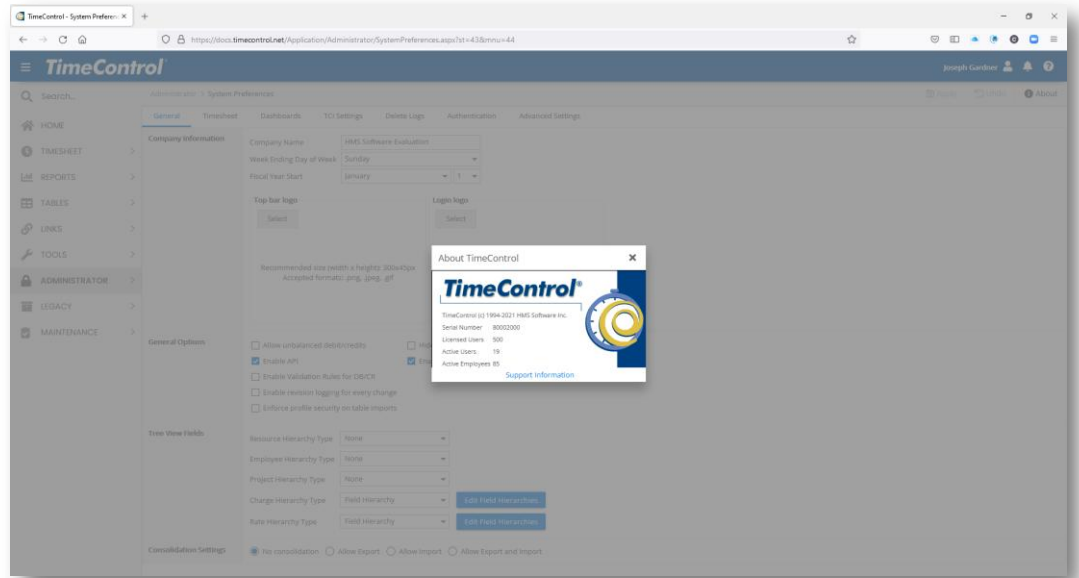
Click on the Support Info button for more technical information about your installation.
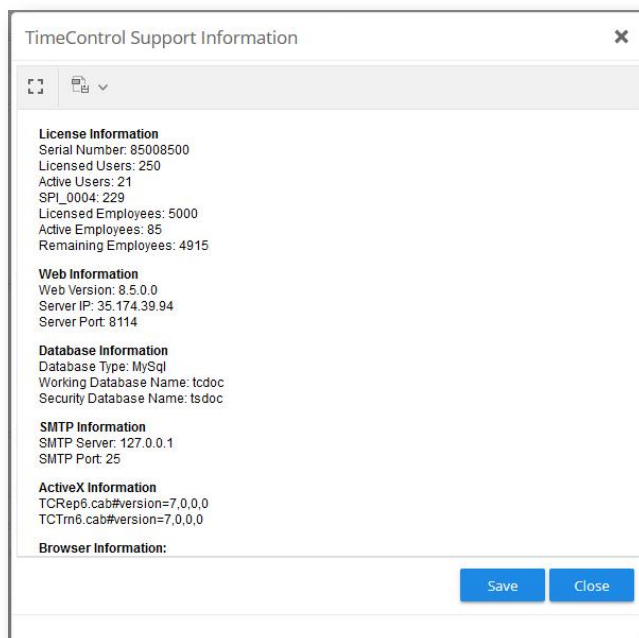
This information may be important if you are calling for a TimeControl technical support call.

The General Tab

The **General** tab stores information, such as **Company Name**, used for reporting purposes, the **Week ending day** and **the Default Rate** to use for exporting. The

Fiscal Year Start is used by the My TimeControl Home page to calculate remaining vacation, sick and personal time.

> Note: The week ending date is selected during the initial implementation of TimeControl and should not be changed thereafter. If you must change your week ending date after data has been posted, contact HMS Software Technical Support for assistance.

Other options on this tab include:

- **Fiscal Year Start**: This date is used by TimeControl and, in particular the MyTimeControl home page modules to calculate sick, personal and vacation time as these modules must have a reference date for these calculations.

- **Allow Unbalanced Debit/Credits:** This options allows you to create debit/credit entries that to not have a zero balance. This will remove the Db/Cr requirement of making a change that only results in a total number of hours equal to the original posted total hours. It will also remove the requirement of crediting only charges that existed in the original timesheet.

- **Enable API:** This must be checked to allow the TimeControl Application Programming Interface to function. The API security is also controlled at a User Profile level in User Profiles. In order to gain access to the API, the setting must be checked here, and the user trying to access the API must have the rights activated in User Profiles.

- **Enable Mobile App:** This must be checked to allow the TimeControl Mobile App to access this instance of TimeControl. The security for the Mobile App is also controlled at a User Profile level in User Profiles. In order to connect the Mobile App to TimeControl, the Mobile App setting must be checked here, and the user trying to access TimeControl from the Mobile App must have the rights activated in User Profiles.

- **Hide Closed Projects in Pop-up lists:** This option prevents closed projects from appearing in the selection lists for PM Imports and Exports.

- **Enable Validation Rules Debit/Credit:** Use this option if you would like to run Validation Rules when you release a Debit/Credit timesheet.

- **Enable revision logging for every change:** Typically TimeControl will create a historic record for the Employee and Charge tables whenever timesheets are posted that reference that record. This allows for

referential integrity. However, there may be some who wish to keep a record of every change to these tables no matter how small the time the change is in effect or whether or not this change is referenced by any other element of TimeControl. In this case, select this option.

- **Resource Hierarchy, Employee Hierarchy, Rate Tree Fields** and **Project Tree Fields:** This option allows you to create a hierarchical structure in the associated tables. For Resources, you can elect to automatically break the list into levels based on a delimiter or to create a list of fields within the table that will create different levels. For each of the tables you can use a list of fields which you select using the Ellipses or by typing them in separated by a comma.

    The breakdown order created here applies to both the table displays and the Timesheet Entry drop-down lists. If this field is left blank, the table values are displayed in their default sort order.
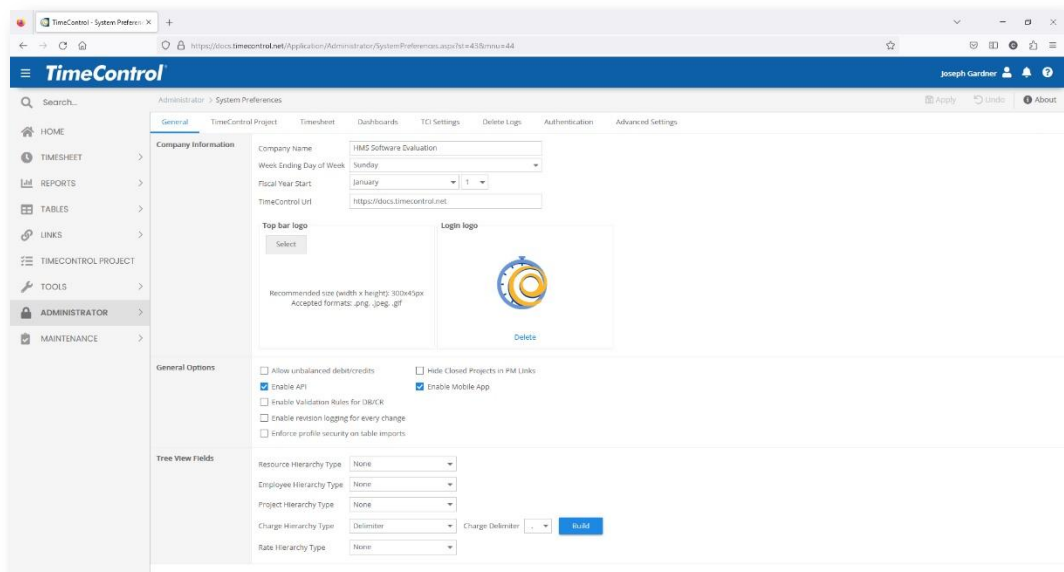
Charge Hierarchy Type

The Charge Code's structure can be made hierarchical by defining a delimited structure in the System Preferences area of the Administrator tab. Alternately, the Charge codes can be displayed within a cascading selection of user-defined fields. For many organizations, using a period (.) to define each level of the Charge Code structure is a common practice. This follows the long-standing tradition of Work Breakdown Structures being defined in this manner. However, there are alternatives. In the Administrator System Preferences screen there is a section to define Charge Code Hierarchies.

Alternately, you could use user defined fields to display a charge code hierarchy. In the Charge Hierarchy type, select Field Hierarchy.

Now there is an option to Edit Field Hierarchies. Clicking on this option will show possible field hierarchies that have already be defined and allow you to add more. TimeControl can support multiple hierarchies simultaneously.

For example, let's say it was easiest to select charges when they would be defined first by whether they were billable, then by their location and their priority of high, medium or low. You could add just such a list by using your user-defined fields.

Select Billable, then Location then Priority and the delimiter is now set.

If you set this as the default, then in the Charge Table, you will see this as the new hierarchical breakdown of the charges records.

This carries through also to the timesheet where you can make a Charge selection when entering or editing a line.

At the top right of the Select Charge dialog, you can see that the user can select any of the defined Field Hierarchies to regroup and resort the list on the fly. This can be particularly key if there is a high volume of possible charge codes to select from.

Changing the Charge Code Delimiter with Build

In some organizations, a decision may be made to reorganize the Charge Code structure from one delimiter to another. TimeControl has a function for this in the System Preferences area. In the Charge Hierarchy Type, select Delimiter and select the delimiter you wish to use to define the differences from one level to the next within the Charge Code. Possible selections including ".", "-" , "_" and "~".
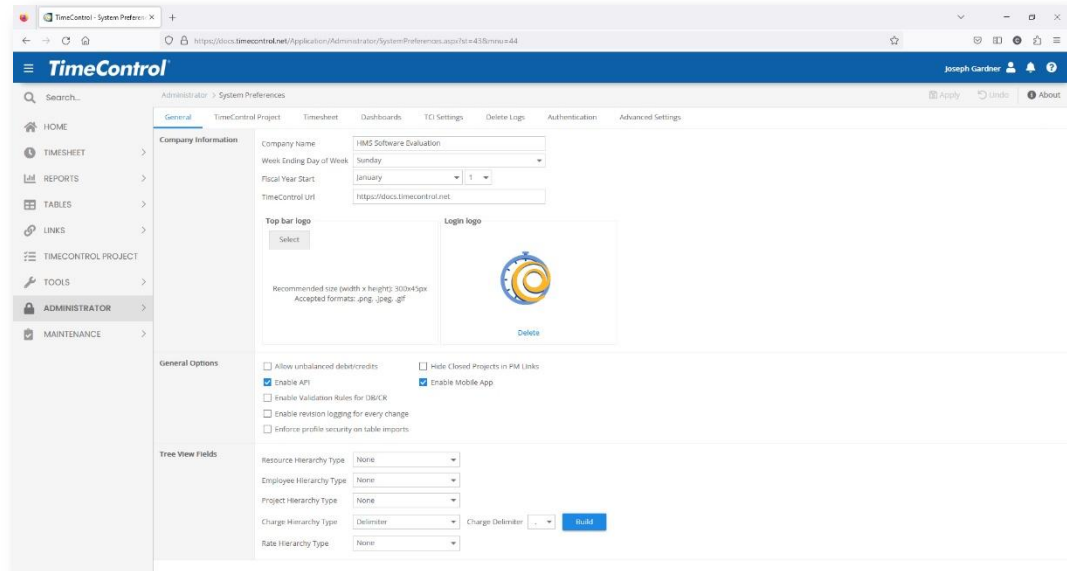
Click Build to begin changing the delimiter.

TimeControl will display a warning to inform you that proceeding will change all the Charge Records in the system. If you have made filters, exports or reports that depended on the delimiter already in use, you should pause and be sure that you wish to proceed.
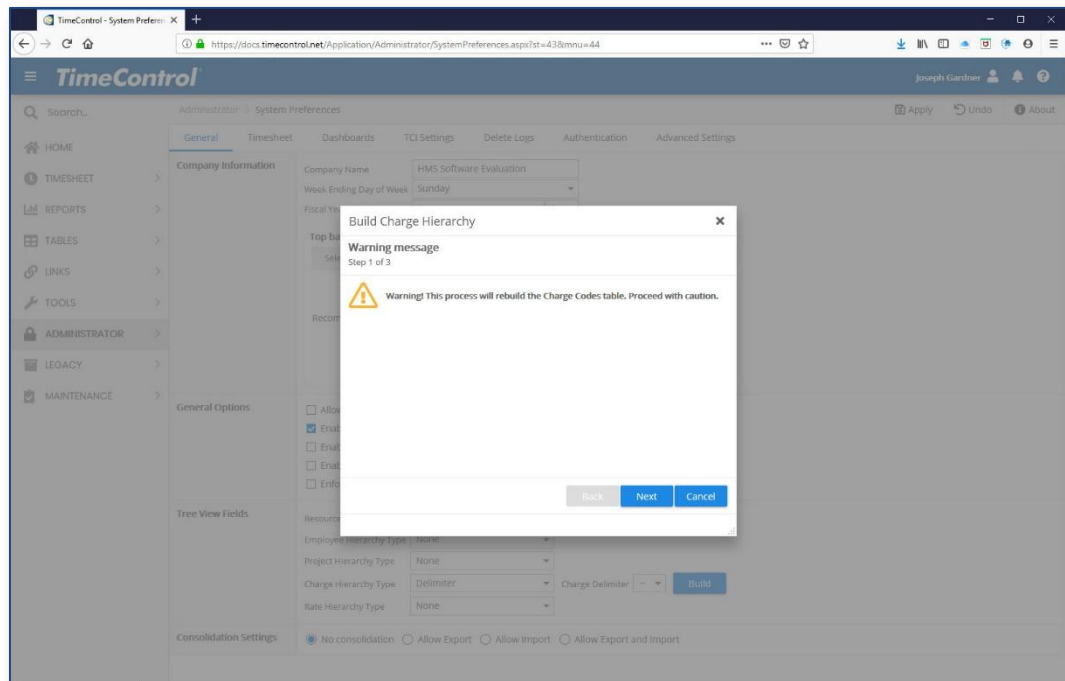
Now TimeControl will ask what delimiter you wish to replace and what you wish to replace it with.
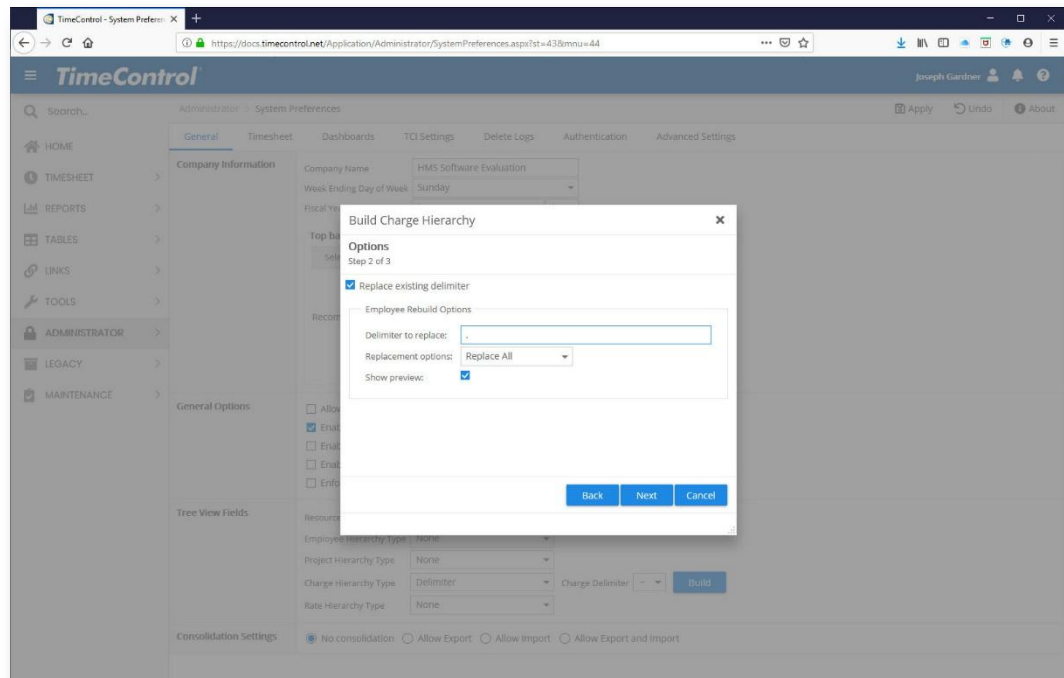
You can elect to replace all delimiters or only the first or only the last delimiter in each Charge Table record.

Proceed to preview the changes and accept the global replacement if you are certain that this is the change you want.

The TimeControl Project Tab
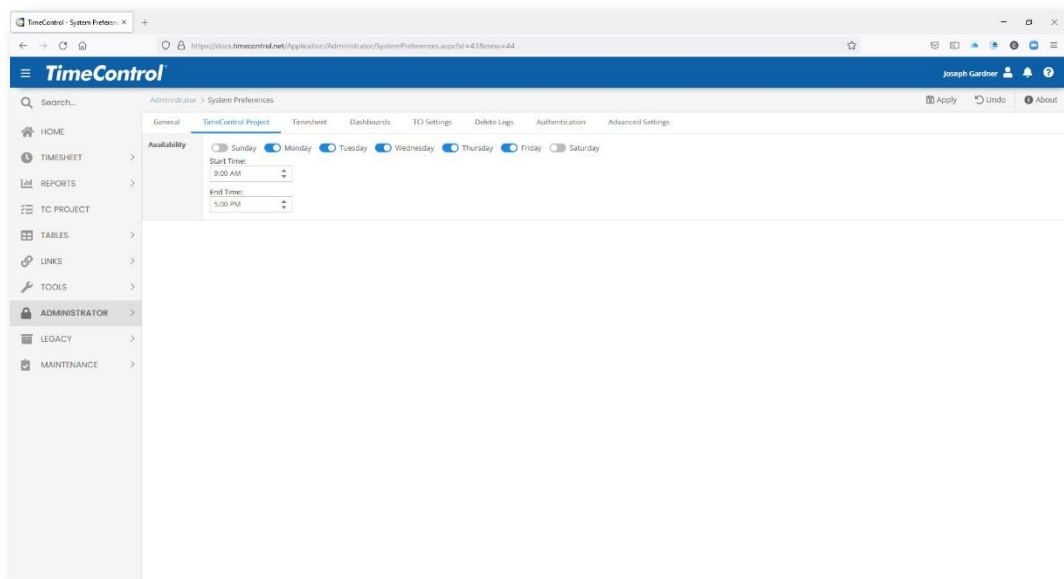
This tab includes information for TimeControl Online systems which have activated a TimeControl Project subscription.

Availability: This includes information on the default, of when a resource is available.

The Timesheet Tab

The **Timesheet** tab determines what data should be entered by all users and sets preferences and rules for doing so.

Add Timesheet Options

Copy Hours: Allow employees referenced by the attached filter to copy hours when copying a timesheet. This option is typically not recommended as the temptation to copy exactly what happened the week before and release it might be enormous. Therefore, this feature is available only when this option is selected.

Copy User Defined Fields: When copying a previous timesheet, typically the values in the user-defined fields are not copied. However, there may be situations where it would be desirable to copy the values in some or all of the timesheet user defined fields. If only some of the user defined field values should be copied, list the fields not to copy to the right of the checkbox.

Timesheet Options

- **Only Source can modify timesheet:** This option is selected by default. If this option is turned off, anyone who owns a timesheet may modify it. TimeControl keeps track of which user made changes, but there is no way of notifying the original source that changes were made. This means that an employee who enters a timesheet with 40 hours, may find that by the time the timesheet arrives at payroll, the total number of hours is reduced to 30 by a supervisor within the employee's release structure. In some business environments, this is completely unacceptable. Most notably in many government contractor scenarios, the alteration of source documents by anyone is not generally accepted.

- **Enable release auditing:** This option determines if TimeControl will place an entry in the transaction log whenever a timesheet changes ownership. This log can be viewed from the Administrator | Manage External Tables function.

- **Add TimeRequest to existing timesheets:** This setting determines whether an approved TimeRequest should be immediately added to any already-created timesheets. Leaving this blank will have an approved TimeRequest added only during the Add-Timesheet function when the timesheet is initially being created by the user.

- **Timesheet List Field Secured:** This will disable users from selecting other possible Timesheet Header or Employee fields in the Timesheet List.

- **Blank Line Treatment:** This tells TimeControl what to do with a line that has entries in the User Defined Field columns but no hours.

- **Allowed file expressions:** Enter the possible file types which could be attached to a timesheet or an expense entry. This prevents certain file types which might be higher risk of infection from entering the system.

- **Force hour format:** Enter how you wish users to enter their time. You can force this format on all users by selecting this option.

Inline Debit/Credit

- Select **Use Inline Debit/Credit** to activate the option for this system. Decide here if you wish Inline Debit / Credit to shift all affected Project

Manager Validation lines and Line Item Approval lines to Unapproved. This will shift those lines back even if they have been approved in the past. Remember, this will not affect lines that have already been exported to external systems.

Now the option has to be activated at the User Profile level in *Administrator | User Profiles | General Tab* in the **These Users may enter debit/credits for**: section.

See the Debit/Credit section of this guide for more information on Inline Debit/Credit.

Additional Fields

These are existing Employee fields that can be shown in the timesheet header portion.

Timesheet Header Fields

Select and define here timesheet header fields (ex: TSH_FLD1, FLD2), that can be shown and edited in the timesheet header area. These can be used to store values for the whole timesheet.

Timesheet Line Fields

Create and define here which timesheet User Defined Fields should be displayed on the timesheet. (ex: TSL_FLD1, TSL_FLD2).

Timesheet Detail Fields

Create and define here User Defined Fields at the timesheet cell level (ex: TSD_FLD1, TSD_FLD2).

Cascading Fields

- Edit this list to have the displayed values of one User Defined field dependent on the selection made in another. For example, if you wished to have a list of cities in which work was accomplished but you had several thousand possible cities to select from, you could make one user defined field called "Country", a second user defined field called "Region" and the third called "City. Then make the field city dependent on Region and Region dependent on Country. This would allow a user to select USA as a country, then see only 50 states, select New York as the region and then have only a dozen possible cities and choose "Buffalo" as one option.

- **Timesheet User defined fields:** These fields appear on the timesheet entry screen as user-defined columns. They must be enabled from this screen by clicking the checkbox.

- **Allow time entry in days option for employees:** This allows an entry as a percent of a day with 1.0 being an entire day and .5 being a half day. For users who prefer Full-time Equivalent entry (FTE), this option will be useful.

Project Options:

- **Project Name Required:** Every charge on a timesheet must have a project name filled in the first column.

- **Project Name Optional:** Every charge may or may not have a project identified for it. If you have overhead charges, for example, where a charge may not refer to a particular project, this is your option.

- **Project Name Disabled:** There is no requirement for a project name in the timesheet entries. This is best suited for environments where all work is to be done on a single project only, or where charges are not linked back to a project management system.

Period Options

- **Past Periods to show:** Enforce how many timesheet periods earlier than today will be selectable by a user when creating a new timesheet.

- **Future Periods to show:** Enforce how many timesheet periods later than today will be selectable by a user when creating a new timesheet.

Posting Options

Allow Partial Posting: Defines if the partial posting function is permitted systemwide.

The Dashboard Tab

The Dashboard Tab allows a default dashboard definition to be selected for all users. This dashboard definition determines the layout and content of the My TimeControl Home page.
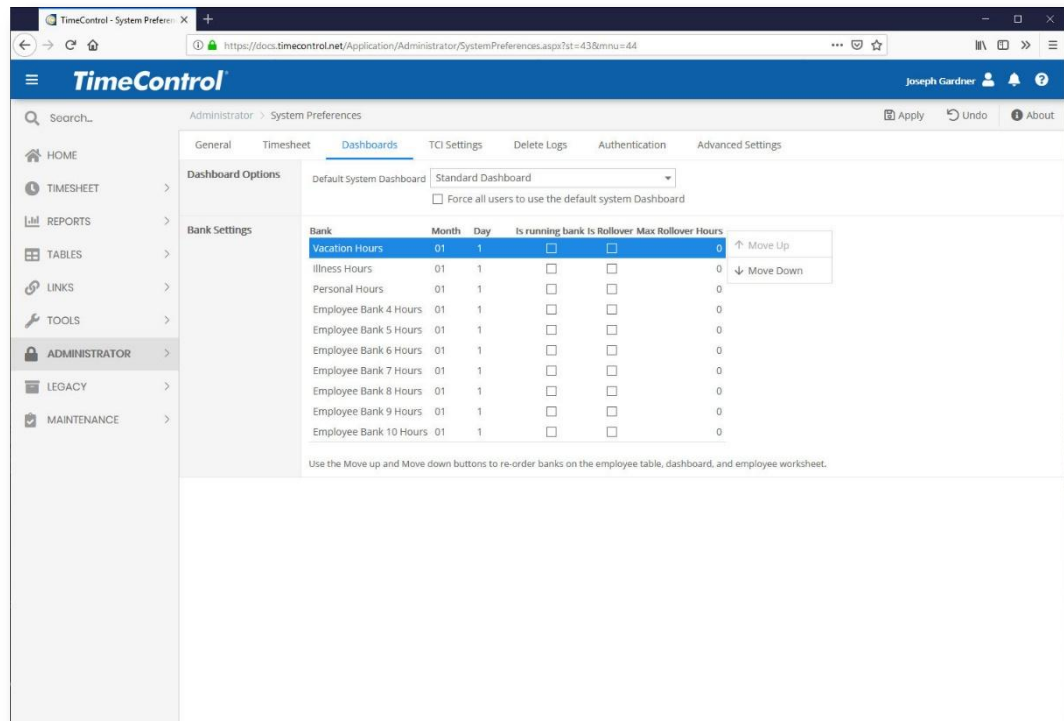
To determine a default My TimeControl Home Page view for all users, select a System Dashboard. Administrators can also select the Force all users to use the default template. Checking this box will restrict Administrators from being able to set a different System Dashboard for each User Profile and end users from being able to set a different System or Personal Dashboard for himself or herself.

For more information on My TimeControl Home Page templates, consult the following sections within this manual:

- The Dashboards section of the Tools Menu

- The Dashboards Tab of the User Profiles in the Administrator Menu

- The Timesheet Options Tab of the User Table in the Tables Menu

- The Options section of the Tools Menu

- The Announcements section of the Administrator Menu

The Dashboard tab also allows you to define how Banks are calculated. Each bank can now be associated to a month and day anniversary. This is to allow Banks to recycle and recalculate at different times. If, for example, Personal Time Off is always recycled at the start of the calendar year but Banked Overtime is calculated at a June 30th fiscal year-end, then this can be accomplished here by setting the anniversary dates to be different.

Some Administrators will wish to have a bank that doesn't recycle at all, but continues without anniversary recalculations. This can be accomplished by flagging the bank as a Running Bank and the running totals will continue to accrue without regard to an anniversary.

TimeControl Industrial (TCi) Tab

This information is specific to TimeControl Industrial and will not appear in non-TimeControl Industrial implementations.
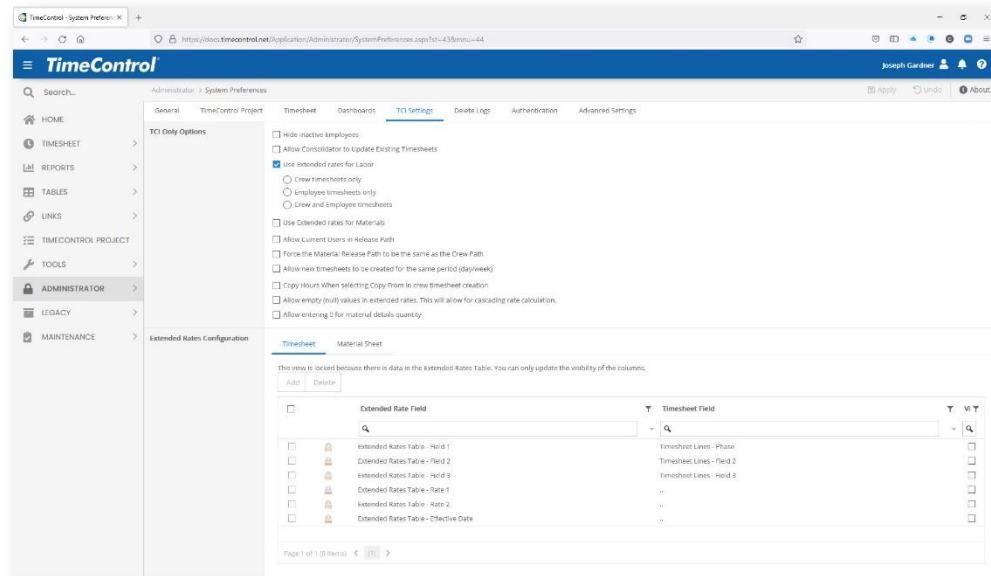
There are a number of options on this tab as well as two tabs to enter configuration information for Extended Rates.

Options include:

- Hide Inactive Employees

  This will hide any employees listed as inactive from the Crew Entry selection screen. This assists in preventing inadvertent entries in Crew Entry from an employee who is not actively working.

- Allow Consolidator to Update Existing Timesheets

  This option is specific to the TimeControl Consolidator and will allow timesheet data collected from a satellite installation of TimeControl to update a timesheet which has already been posted.

- Use Extended rates for Labor

  This option allows rates to be calculated from the Extended Rates Table instead of the standard Labor Rate Table. In this section, choose if Extended Rates will be used for Labor and whether the Extended Rates

should be used only for Crew timesheets, for both Crew timesheets and regular timesheets or only for regular timesheets.

Using Extended Rates has TimeControl match numerous fields on the timesheet line to the same fields in the extended rates screen in order to determine the appropriate rate for that work.

- Use Extended rates for Materials

  This will shift the rate calculation from the basic rates in the Material Rates list to the Extended Rates. Using Extended Rates has TimeControl match numerous fields on the material/equipment line to the same fields in the extended rates screen in order to determine the appropriate rate for that entry.

- Force Crew Timesheets to be Daily Only

  This will change the Crew Timesheet from a weekly timesheet to a daily timesheet.

- Allow Current Users in Release Path

  This will insert the current user into a Crew release path, essentially eliminating the requirement that the Crew Entry clerk's user name be present in each release path for that crew.

- Force the Material Release Path to be the same as the Crew Path

  This will remove Material Release Path options and will instead, present a list of possible Crew Release paths for Material/Equipment/Production entries.   This is appropriate when an organization has the same supervisor approve both the labor and non-labor entries.

- Allow new timesheets to be created for the same period (day/week)

  This will allow multiple timesheets be created for that day. This is appropriate when there are multiple shifts or when a person might be on multiple crews within the same day.

- Allow hours to be copied when selecting Copy From in Crew Timesheet.

Delete Logs Tab

TimeControl can automatically remove log entries after a set number of days to prevent log files and log tables from becoming too large. In this tab, you can set the number of days to keep log entries for numerous internal TimeControl logs:
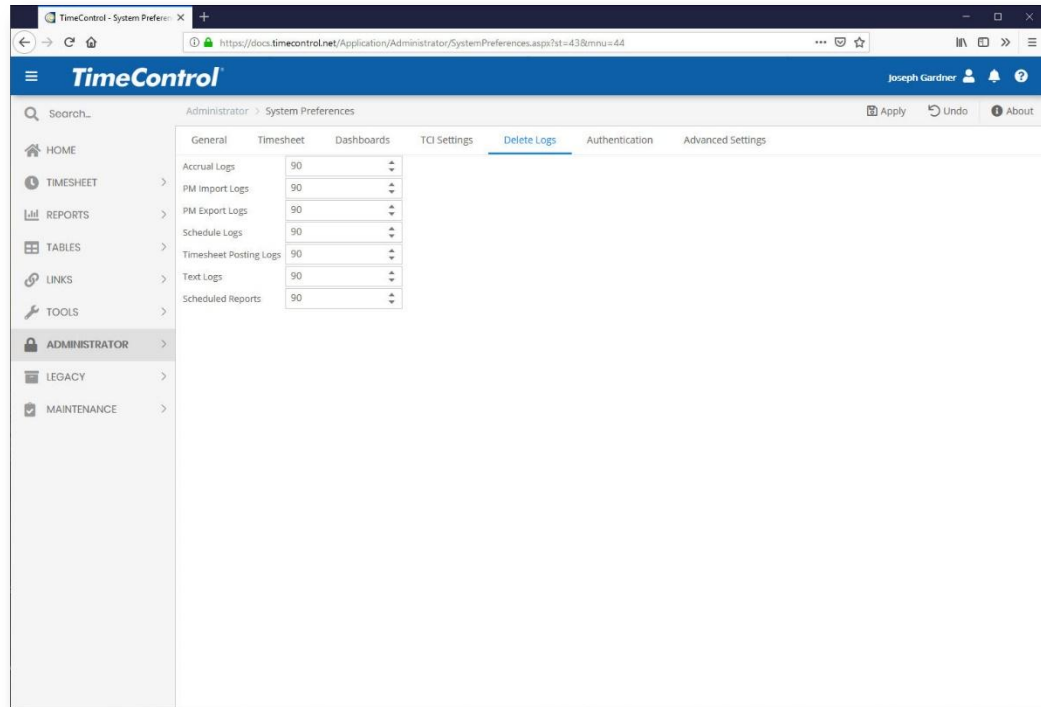
Simply enter the number of days to keep each of the displayed logs and TimeControl will remove older entries automatically.

Authentication Tab

TimeControl Authentication

You can have users authenticate using Single Sign on using several different authentication mechanisms. For each user, the authentication can be separate. Some users could use TimeControl's internal password, others could use Activate Directory or another LDAP.

If you are using TimeControl's internal password authentication, you can define password protocols in the Password Strength Expression.

Defining the password strength.

A password expression starts with the characters "^(" and ends with ")$". In between you can use any of the following expressions with each expression separated by a period ".":

^(?=.*[A-Z].*[A-Z])(?=.*[!@#$&*])(?=.*[0-9].*[0-9])(?=.*[a-z].*[a-z].*[a-z]).{8,}$

Example:
PASSWORD_STRENGTH_EXPRESSION=^(?=.*[A-Z].*[A-Z])$

Ensures password has two uppercase letters.

Example:

PASSWORD_STRENGTH_EXPRESSION=^(?=.*[!@#$&*])$

Ensures password has one special case letter.

Example:

PASSWORD_STRENGTH_EXPRESSION= ^(?=.*[0-9].*[0-9])$

Ensures password has two digits.

Example:

PASSWORD_STRENGTH_EXPRESSION=^(?=.*[a-z].*[a-z].*[a-z])$

Ensures password has three lowercase letters.

Example:

PASSWORD_STRENGTH_EXPRESSION=^.{8,}$

Ensures password is at least 8 characters long

Single Sign-on support

TimeControl supports Active Directory Windows Authentication, SAML 2.0 and Open ID Single Sign On (SSO) authentication. TimeControl supports identity provider initiated SSO, with the added benefit of Single Logout (SLO).

IdP-initiated SAML Support

TimeControl supports both IdP Initiated SAML support when an external SAML service is used and SP-Initiated SAML support when you wish that support to come from TimeControl.

IdP-initiated flow with the POST binding

Service Provider
www.abc.com

Resource

Assertion Consumer Service

Identity Provider
www.xyz.com

Single Sign-On Service

Access check

❼ Supply resource

❺ POST signed <Response>

❹ Signed <Response> in HTML form

Select remote resource ❸

Challenge for credentials

User login ❷

❶

User or UA action

Browser
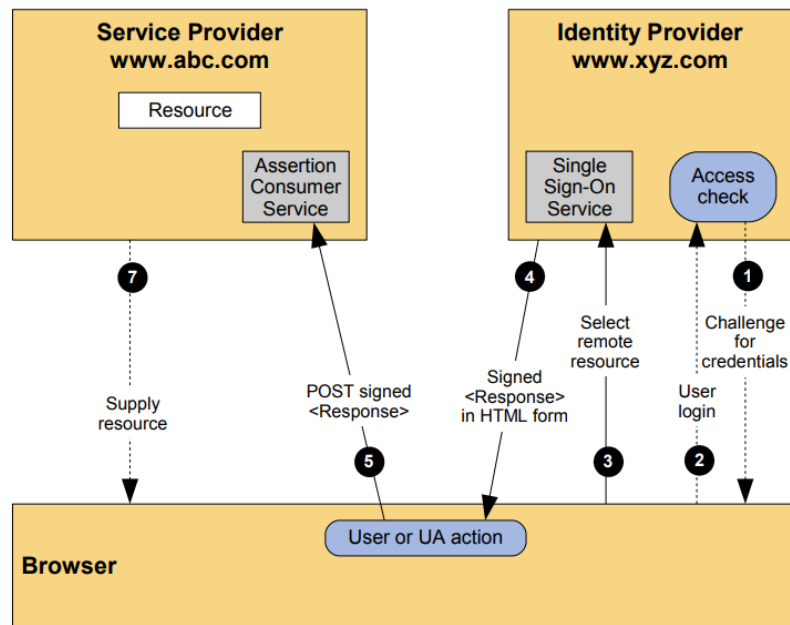
SAML V2.0 Basics – updated 2 October 2006 – Eve Maler (eve.maler@sun.com)   45
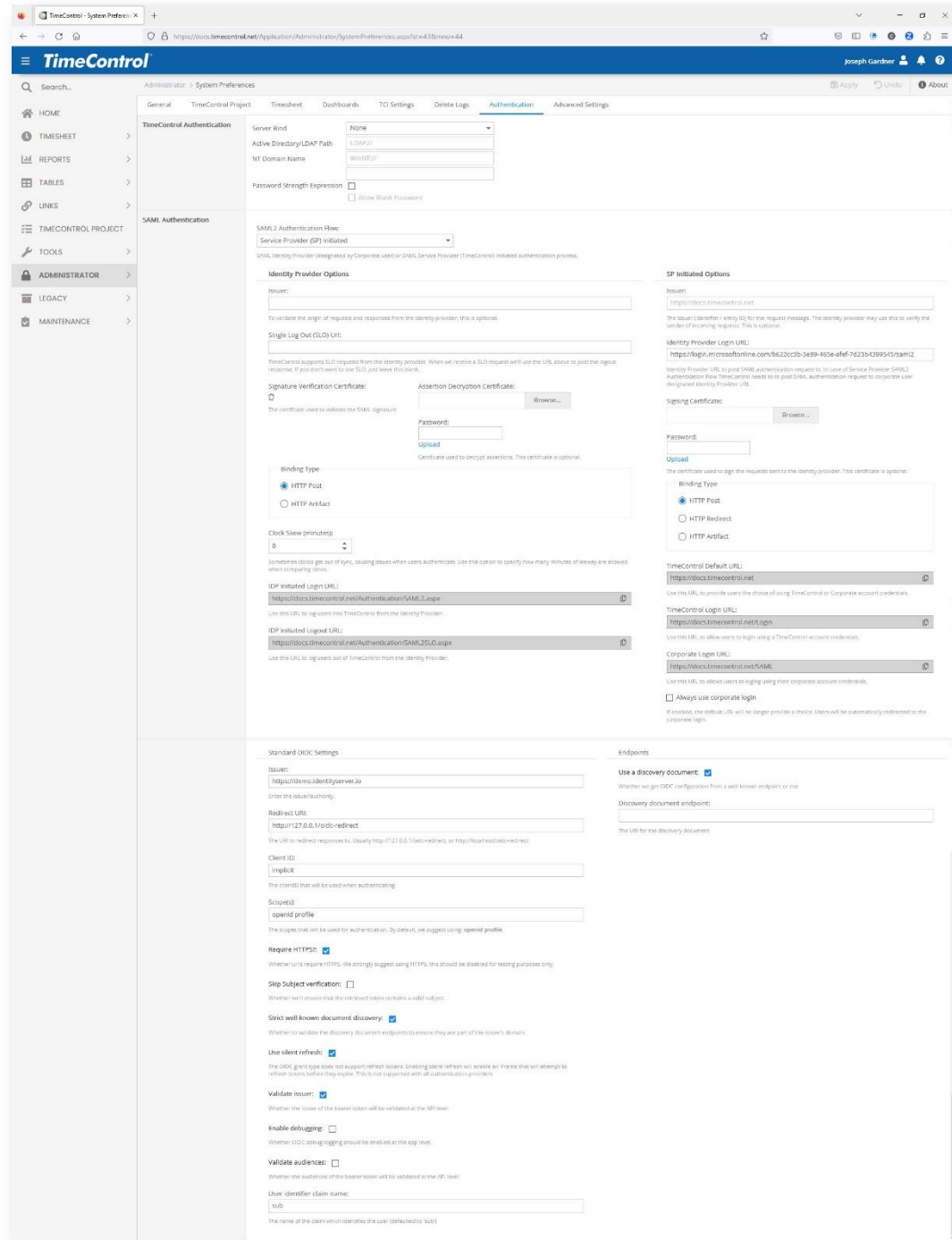
Configuring TimeControl for SAML 2.0

By default, SAML 2.0 is not enabled. To enable SAML 2.0, visit Administrator > System Preferences > Authentication and upload the certificate used to verify SAML responses. You can optionally configure any of the other on-screen options if needed.

IdP initiated SAML Support

TimeControl supports Identity Provider SAML support

Connecting your identity provider to TimeControl

In order for SAML 2.0 SSO to work with TimeControl, you must configure your Identity provider to POST a SAML request to the following URL:

http://**your-timecontrol-instance.com**/Authentication/SAML2.aspx

Configure TimeControl users to use SAML

In order for a user to login via SAML, the user record needs to be configured. This can be done using the User table, and selecting SAML v2.0 as the User Login Security Type field:

The Subject ID / Username must correlate to the Subject ID / identifier in the SAML response. When a SAML request is validated, we'll find the TimeControl user using this field.

Error messages
The following error codes are possible when authenticating.

Error Code	Type	Description
100	UnknownError	Indicates an error that cannot be identified
101	ResponseSignatureInvalid	Indicates that the response signature could not be verified. Check the

		supplied certificates to make sure they are valid / match.
102	ResponseNotSuccess	Indicates a generic error specifying the response is not valid. This is a lower-level error that should occur infrequently.
103	NoAssertionsFound	Indicates that TimeControl cannot find an assertion in the response. Make sure the response being sent is valid and contains an assertion.
104	NoEncryptedAssertionsFound	Indicates that we tried to find an encrypted assertion but there was none found in the response. This occurs when a private certificate is enabled but the response does not contain encrypted assertions.
105	NameIdentifierNotFound	Indicates that the Subject ID name identifier / username was not found in the SAML response. This field is required in order to match up to a user in TimeControl.
106	NotWithinTimePeriod	Indicates that the supplied request was out of range. This could occur if the time on the two servers are out of sync, or if an older SAML response is used.

Specific error details will show up under the "show more details" option:

Additional details about the exception can be found under the TimeControl logs in the event viewer. The request ID will show up as shown below:

```
Request ID: 351e585c-0f5d-484b-a9a7-6bde5aa1a4cf
Type: ResponseSignatureInvalid
Response XML:

<samlp:Response ID="_dabf384c-c1ac-444d-a18a-d7c035f0d2ce" Version="2.0" IssueInsta
```

SP-Initiated SAML Support

TimeControl supports Service Provider SAML authentication.

You will have to provide the following information in order to engage SP initiated SAML2 authentication:

- Public certificate and password (if any). This will be used by the Service Provider (in this case TimeControl) side.

- A Public SAML2 certificate

- A private certificate and password (if any.) This will be used by IDp side. (shown after "upload" clicked). This is optional for IDp initialized authentication but mandatory for an SP initiated one.

- Identity Provider and Identity Provider Artifact Resolution Service URLs. Both should be provided by selected IDp.

- Optional SSO Logout endpoint on IDp side. If provided by IDp, TimeControl will redirect requests for logout to this address. If not provided, logout will be handled by TC itself.

- Clock Skew in minutes can be set to allow for any delay in response from IDp.

Configuring TimeControl for OpenID

TimeControl supports OpenID authentication

Enter the following parameters for OpenID:

- **Issuer** – Enter the full URL of the Issuer

- **Client ID** – Enter the clientID that will be used when authenticating

- **Scope** – Enter the scope that will be used during authentication. We recommend using "openid profile" by default

- **Require HTTPS** – Turn on to use SSL encryption during the passing of data

- **Skip Subject Verification** – Skip if you do not want TimeControl to determine if the retrieved token contains a valid subject.

- **Strict well-known document** – Use this to test that the discovery document endpoints are part of the issuer's domain.

- **Use Silent Refresh** – Turn on to establish an iframe that will attempt to refresh tokens before they expire.

- **Validate User** – Determine if the issuer of the bearer token will be validated at the API level

- **Enable debugging** – Turns on the OIDC debug logging at the API level.

- **Validate Audiences** – Determines if the audiences of the bearer token will be validated at the API level.

- **User a discovery document** – Determines whether TimeControl will get the OIDC configuration from a well-known endpoint

- **Discovery Document Endpoint** – the URI for the discovery document.

Configuring TimeControl Azure 365 Single Sign-on with SAML

To configure TimeControl to use Azure 365 single sign on using SAML, you will need to first set up TimeControl in Azure to be recognized by Active Directory. Go to your Admin | Active Directory menu selection to get things started.

You will first need to add an Enterprise Application.

Select Enterprise Applications from the left side menu and then click Add Application.
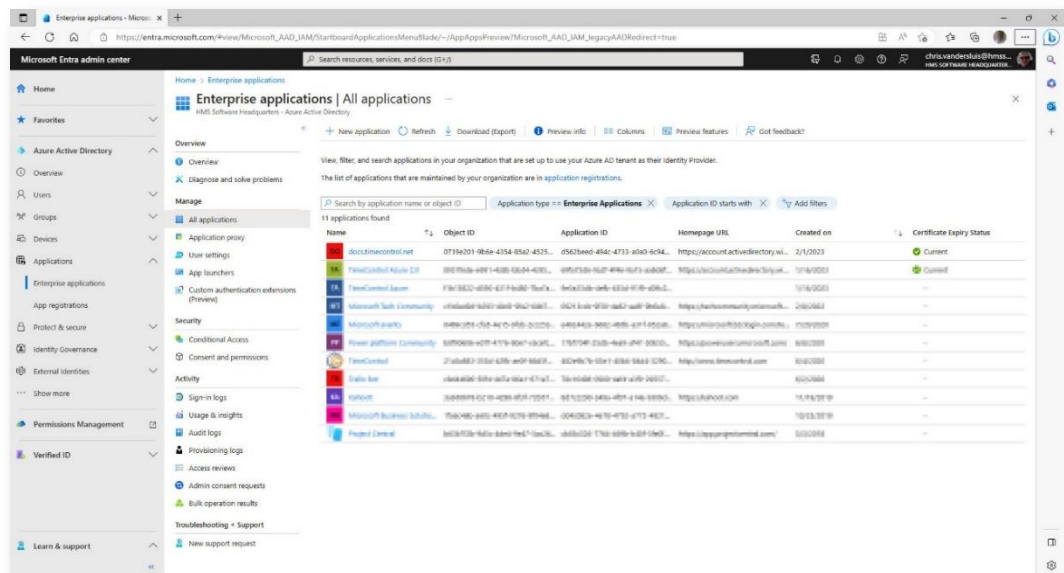
You will need to select Create your own Application and then enter the domain name of your TimeControl. For example: docs.timecontrol.net.

Then select "Integrate any other application you don't find in the gallery (Non-gallery).

Click Create to continue.

Once your entry is created you will have the name, an Application ID and an Object ID.
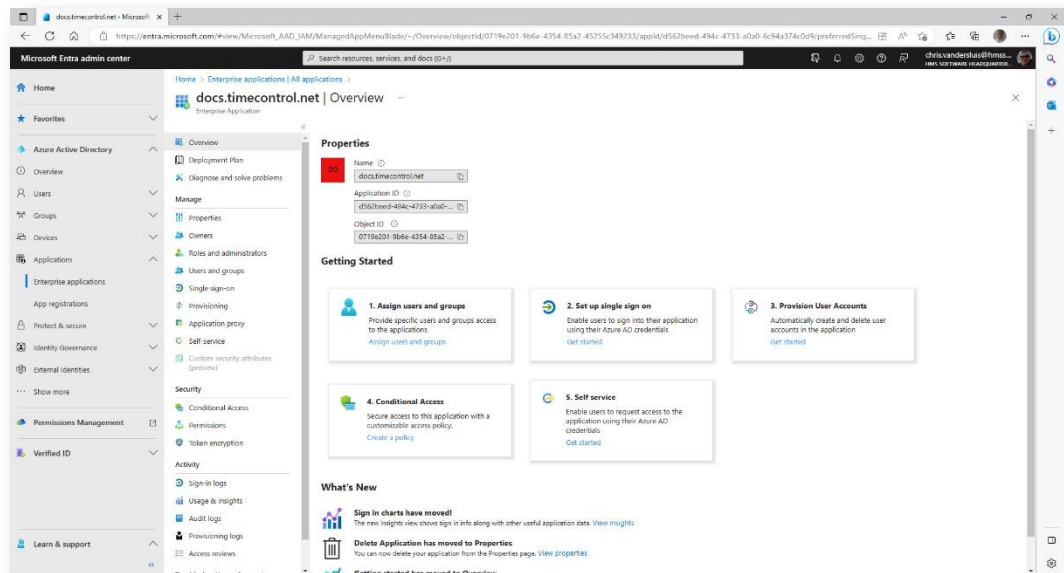
On the left side of the new Application click "Assign Users and Groups" and then "Add" the appropriate user.
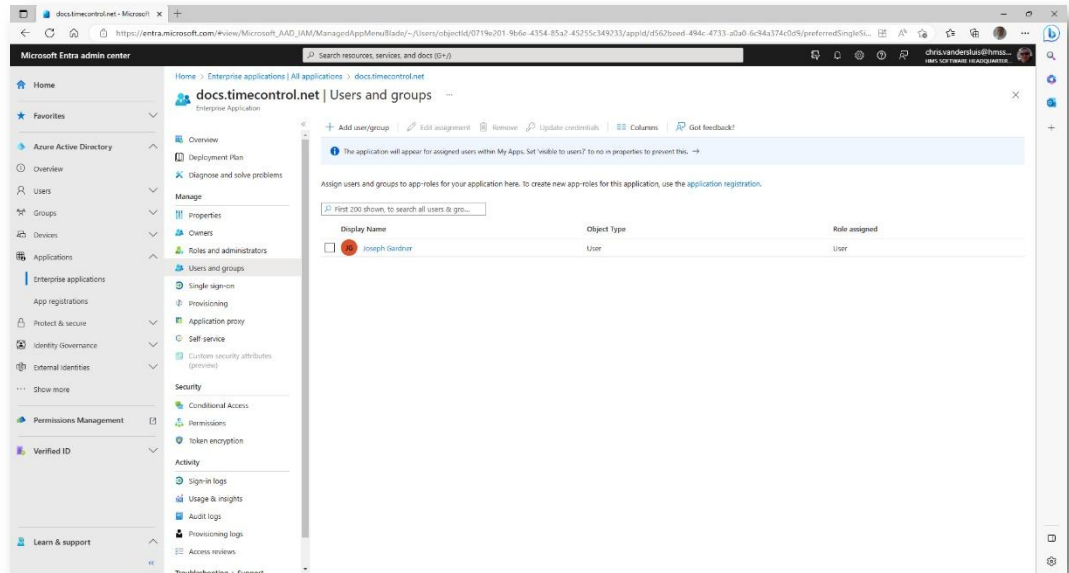
This is a user with credentials in Azure 365 who you will identify in TimeControl in a later step.

Now click on "Single sign-on from the far left menu.
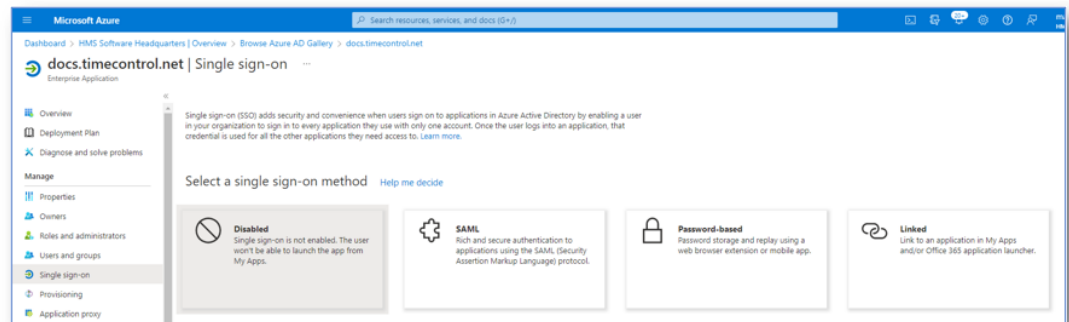
Select SAML as your method for single sign on.

Now we have to configure and create the single sign on certificate that TimeControl will need.
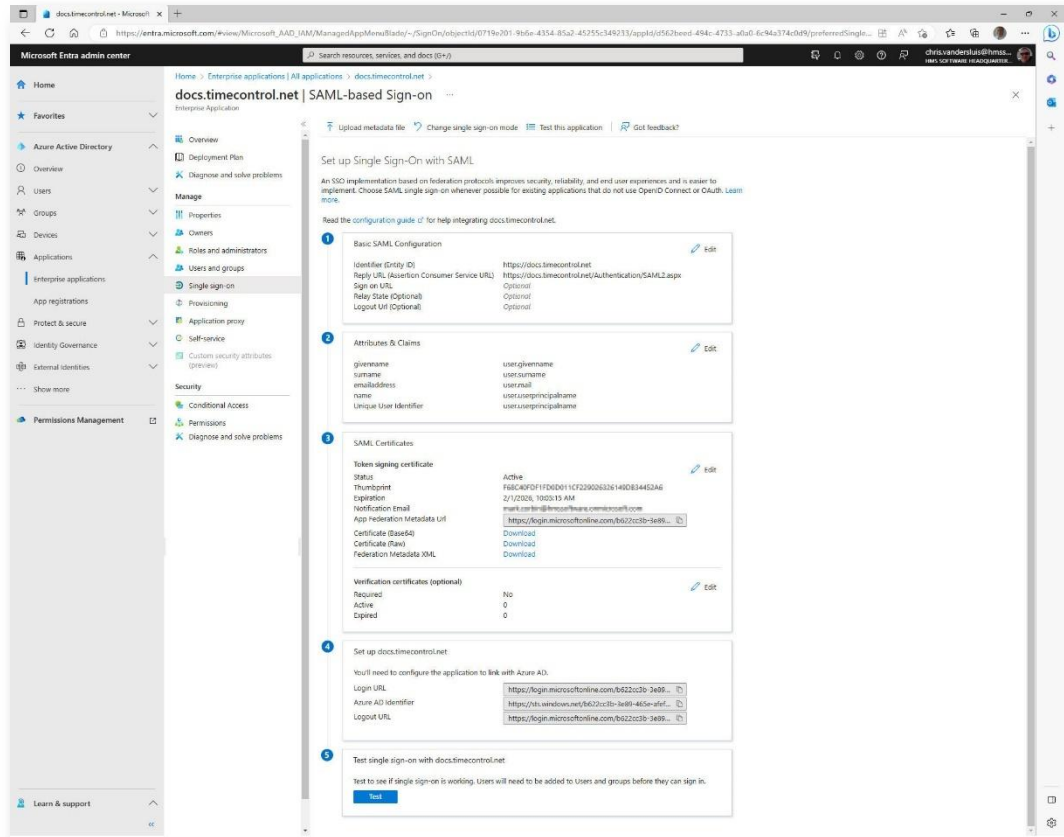
Identifier (Entity ID)

This can be any text value that is desired. This value must be copied into the TimeControl System Preferences for SAML authentication.

Reply URL (Assertion Consumer Service URL)

This value can be copied from the TimeControl System Preferences SAML authentication interface. This value must be the TimeControl URL followed by "/Authentication/SAML2.aspx".

Certificates

Once configured, the "Certificate (Base64)" must be downloaded and then uploaded into your TimeControl System Preferences SAML authentication in the "Signature Verification Certificate" section.

Set up <your TimeControl domain name>

The "Login URL" must be copied into the TimeControl System Preferences "SP Initiated Options" for "Identity Provider Login URL".

Use SP Initiated Options and update the Identity Provider Login URL. You'll need to upload the Certificate (Base64) that you downloaded from Azure 365 into the Signature Verification Certificate on this page.

In the User table, you can now add a user with Azure 365 connection.

You should now be able to log into Azure365 and test the connection.

Advanced Tab

TimeControl has numerous settings which can be changed in the System Preferences Advanced Tab.

Login

Login parameters define TimeControl's behavior when it presents the login screen.

Login Security

Determine the number of unsuccessful login attempts before TimeControl locks the account in order to prevent brute-force attacks. Once locked, a user can have their account unlocked by an Administrator changing their password or by using the Recover Password utility accessible from the Login Page.

Logout

Logout parameters define TimeControl's behavior when logout is selected

Session

Session parameters define how TimeControl manages the session since it was opened including how long to stay open until it times out and automatically closes the session.

SMTP

SMTP parameters define how TimeControl can send email notifications. By Default, TimeControlOnline's SMTP settings are set to its internal SMTP Server.

When using these settings, TimeControl notifications will be sent from administrator@timecontrol.net. This is an unmonitored email address. If you wish, you can use your own external SMTP server in which case you should alter the SMTP settings to your preference.

Logging

Logging parameters define what TimeControl will put in its logs other than error messages. This is particularly important if debugging an issue with TimeControl. There are multiple options here. The logging of fatal errors, and log errors are no optional and are displayed here just for completeness. Administrators should be aware that choosing all the logging options can make massive log files very quickly. TimeControl will try to truncate those files if they become too large but

the creation of them when there are no errors being experienced can slow performance and require more server maintenance.

Scheduler

Check jobs interval determines how many minutes at minimum must pass between each check of scheduled jobs. The Notify Email determines where to send emails for Scheduler jobs. The Scheduled Reports Directory allows you to define the network directory where to save large scheduled reports when scheduled for a delivery via a link. This setting is ignored in TimeControl Online.

InEight

InEight HD and InEight Estimate parameters define how long to keep the session alive with the Link to Hard Dollar. This may need to be lengthened for very large projects.

Events

The selected stored database procedures will be triggered following the events listed.

Export Options

Export Options parameters define the structure and default of export files.

Report Options

Report Options parameters define how currency is displayed in any report.

Miscellaneous

Miscellaneous parameters define subjects such as how security is imposed at the infrastructure level and for performance purposes, how many items should be included on each page of a list such as the timesheet list.

Filters

Overview

Filters in TimeControl are used in a wide variety of areas and form the base of some the system's most flexible features. Filters can be:

- **Static** where they refer to a fixed condition. An example of a fixed filter might be "Where the date of the entry is equal to December 25".

- **Dynamic** where the state of the data will change what is displayed in the filter. An example might be "All projects where the status is equal to 'Closed'". Another aspect of dynamic filters is to use keywords for certain values such as "since the first day of last month".

- **Parameterized** where the user must enter a value at the time the filter is executed. Parameterized filters are recognized only during reporting and exporting. An example might be "Where the project name is equal to [...]". In this case, the user would be prompted for the value of the project name when the filter is run.

Filters can include multiple conditions and filters can even be nested within other filters.

Filters are used to determine what data is displayed in the following areas:

- The Employee Table
    - Project Filter
    - Charge Filter
    - Rates Filter

    These 3 filters can be adjusted for each employee to determine which data that employee will see on their timesheet. They affect the list of projects, charges and rates that are displayed (or enterable),

- User Tables
    - Preloaded Timesheets

    This determines which of the records in the PreLoad list shown in the Resource table is displayed.

- System Preferences

    There are a variety of areas in System Preferences where filters control what data is displayed for certain functions.

- Drill Down Analyzer

Filters can condition what data is populated into the Drill Down Analyzer in order to show certain analysis effects. A common filter here

- Project Manager Validation

Filters can be used here so that the project manager only sees the types of data that is of use to them (such as the current week)

- User Profiles
    - Table Security
    - Drill Down Analyzer Security
    - Project Manager Validation Security

Filters can be used in multiple ways within security to protect or hide aspects of the data from users with that profile.

- Validation Rules

Validation Rules are made up of two filters, one describing which timesheets to verify for this rule and the other with the condition to be tested.

- Reports

When running a report, a list of possible filters will appear asking the user to determine what data they wish to display within this report. This filter then selects data only within the TimeControl data available to that user.

- Links
    - Table Exports

When running an export, a list of possible filters will appear asking the user to determine what data they wish to export. This filter then selects data only within the TimeControl data available to that user.

- Workflow

Workflow events use a filter to determine what data condition is occurring and then associates both an "if true" and "if false" action to that data.

Filters are composed of Logical Operators, Field Names, Mathematical Operators, and Values.

Logical Operators are used when you want to combine multiple conditions. Possible Logic Operators include:

- And
- And Not
- Or

Field Names are how you select what data the filter should contain.

Mathematical Operators act on a particular field based on what field is selected. Possible Operators are:

- Between

- Greater than or Equal to

- Greater than

- Equals

- Is Empty

- Less than or Equals

- Less than

- Not Empty

- Not Equals

This allows an almost unlimited number of combinations to be created.

Filters can be applied to numerous tables. The tables most commonly used when creating filters for reports and validation rules are:

- **Timesheet Detail:** Used to create a validation rule to verify the details of the timesheet.

- **Timesheet Header:** Used with a validation rule to verify summary information in the timesheets. An example could be the amount of hours per week/day.

- **Charge:** Used for specifying lists of charge codes to be presented to each user in the timesheet.

- **Project:** Used for specifying lists of projects to be presented to each user in the timesheet.

- **Posted Time Detail:** Used to limit the information presented on posted timesheet reports.

- **Activity:** Refers to the activities that are imported from any project management application (e.g. P3, Microsoft Project or Open Plan).

- **Batch Detail:** Shows all the details of a batch export.

- **Batch Expense Detail:** Shows all the details of an expense batch export.

- **Batch Expense Header:** Maintains all the information from a timesheet expense batch export.

- **Batch Header:** Maintains all the information from a timesheet batch export.

- **Charge Revisions:** Maintains changes made to the Charge Table.

- **Charge/Resource Cross Reference:** Maintains charge codes that are assigned to a specific resource.

- **Employee:** Maintains the list of employees.

- **Employee Revisions:** Maintains changes made to the Employee Table.

- **Field Security:** Refers to restrictions that are placed on the fields.

- **Filter Details:** Refers to the details of the filter.

- **Filter Header:** Refers to all filter descriptions (names of filters).

- **Menu Security:** Refers to restrictions that are placed on the menus.

- **Posted Expenses:** Refers to all the fields within the expense reports that were posted.

- **Posted Time Header:** Maintains summary information of posted timesheets.

- **Posted Time Line:** Maintains all the details that are posted per timesheet line.

- **Profile:** Contains the details of each user profile.

- **Rate:** Maintains the list of rates.

- **Report Detail:** Maintains all the details of the report.

- **Report Header:** Maintains all report descriptions.

- **Report Security:** Refers to any restrictions placed on reports.

- **Resources:** Maintains the list of resources tracked in TimeControl.

- **Timesheet Expenses:** Maintains summary information on un-posted timesheets.

- **Timesheet Validation:** Refers to all the details of the validation rules.

- **User:** Maintains the list of users in TimeControl.

The Filter module

The filter module is where all filters are created, edited or managed.
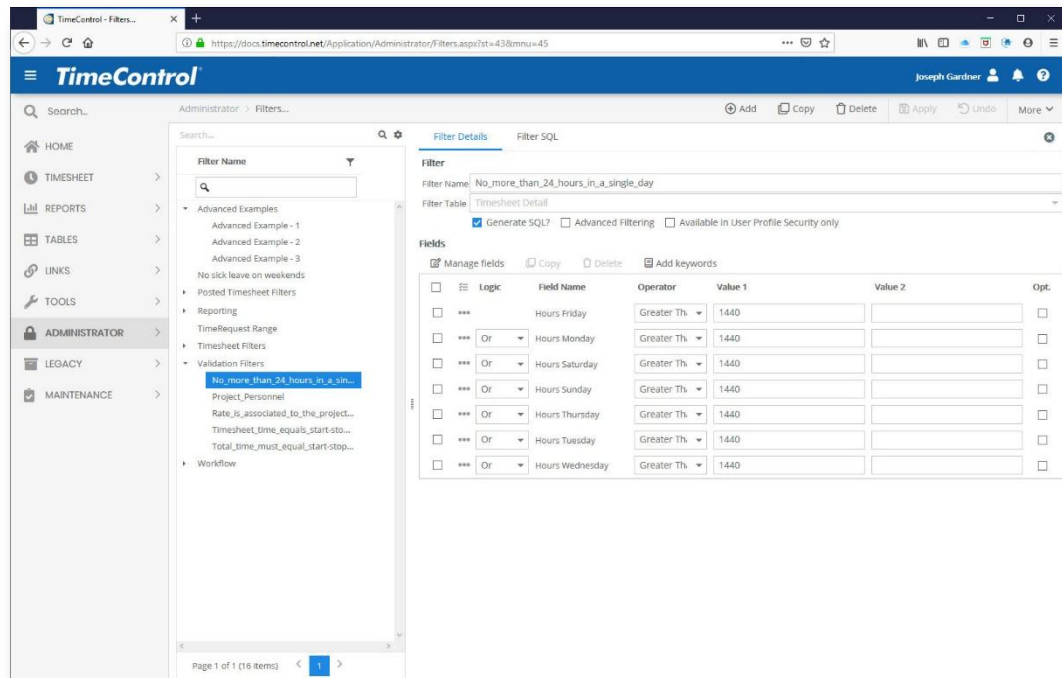
Like all the TimeControl tables, you can Add, Edit, Copy or Delete items within this list. This list is hierarchically displayed. You may wish to organize your filters into categories. Then filters can be dragged and dropped into those categories.

To create a new category, sub-category or to change an existing category, right-click on the list on the left-hand side. Users of some systems might need to click and hold.

You will see a list of possible actions. If, once the new category isn't in the spot you wished, simply drag it and drop it elsewhere. Filters can be dragged into any of the categories or sub-categories
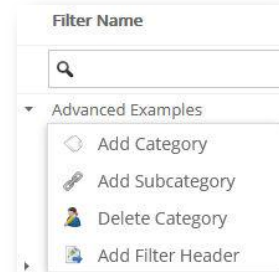
How to Create Filters

Creating a Project filter

In the following example, we create a filter that restricts the projects that an individual can charge time against. 'POLAR' is the only project visible by the user.

To create the filter:

1. Select **Administrator | Filters**. This displays the Filter Table.
2. Click the **Add** button. A blank filter will appear.
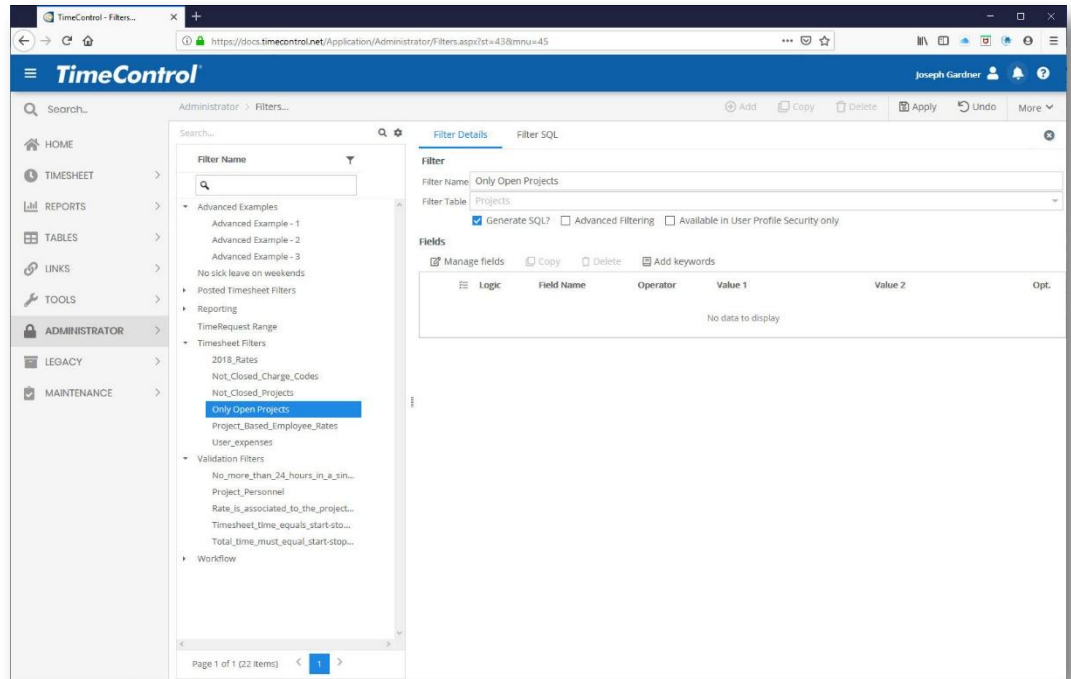
3. Enter a name for the filter in the **Description** text field.

4. From the **Filter Table** list, select the table to which the filter will be applied. In this case enter the Project table.

5. Click **Apply**. The new filter appears in the Filter list.

6. Click on **Edit**. This displays a list of fields from the selected table as well as any associated tables.
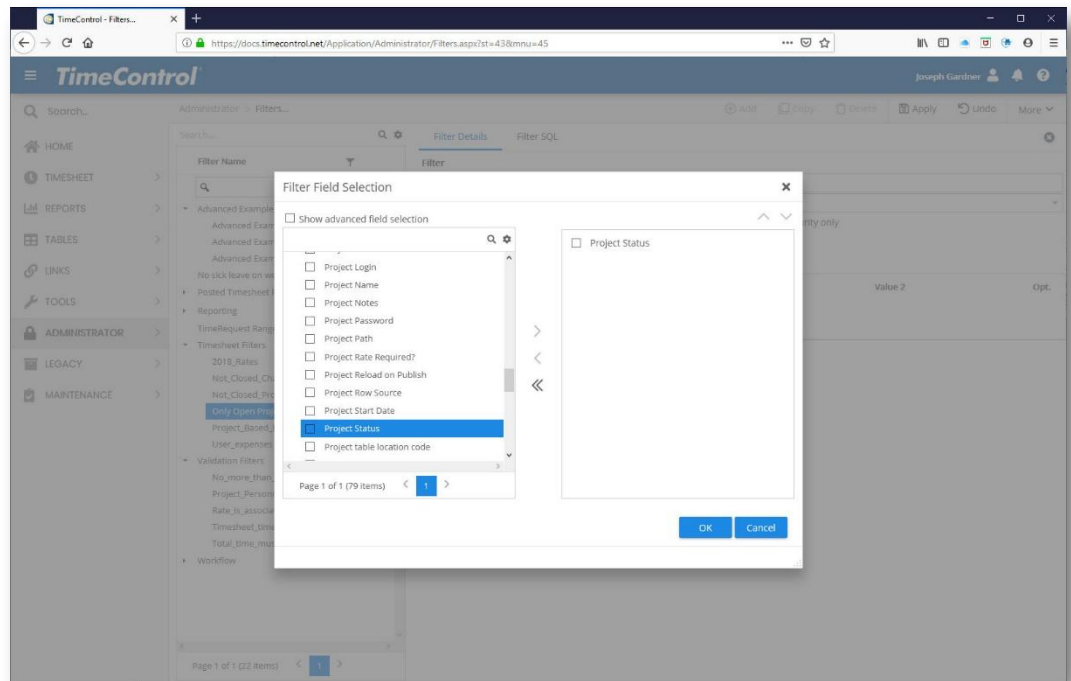
7. Select the desired field name from the list on the left hand side and click the right arrow. To select all fields, click the double-right arrow. Select fields on the right hand side and the left arrow or double left arrow to remove a field or all fields respectively. You can change the order of the fields using the Up and Down arrows. If you wish to select a field from a table that is associated to the table selected, click the down arrow next to the table name, a list of all associated tables that can be joined to this one for your filter will appear.

8. By default, **Equals** appears in the Operator cell once a Field Name is entered. This example uses **Equals**, but you could change the default by clicking the down arrow to display a list of other Operators.

9. Enter a **Value1** for the filter. Here, we will select the Project Status field and then enter the value equal to "Open".
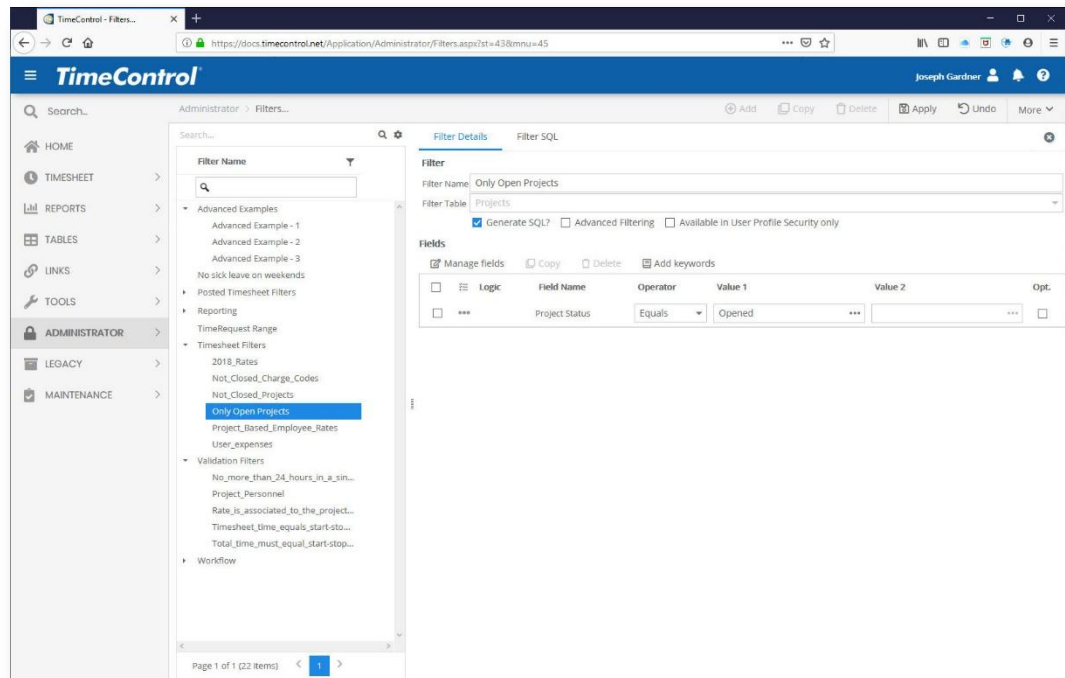
10. Click **Appy** to save the new filter.

To implement the filter for a selected employee:

1. Select **Tables | Employee**. This displays the Employee Table.
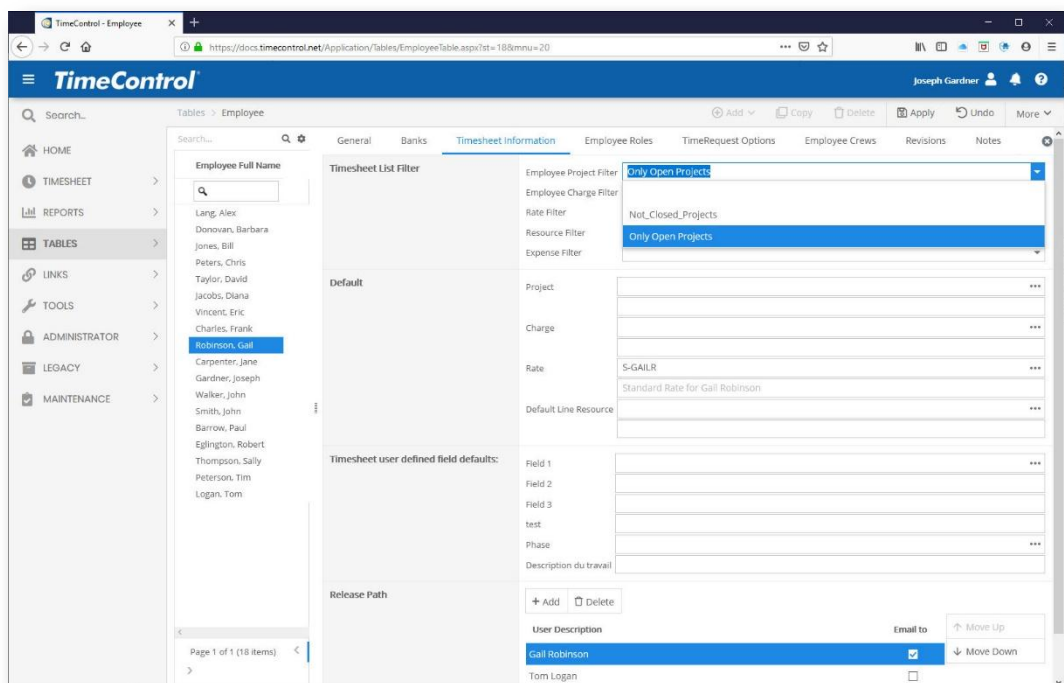
2. Select an **Employee Name** from the list of employees on the left.

3. On the **Employee Details** tab, select the appropriate filter from the drop-down selection of Project Filters.

4. Click **Apply**. The next time this employee enters a timesheet, only those projects which fit the new criteria will be available.

Charge Code

You can also create filters that allow employees to use certain charge codes for a project, or similar charge codes in numerous projects.

In the following example, we create a filter that restricts the charge codes that an individual can apply to a project to only "Finance" charges.

➢ To create a Charge Code filter:

1. Click **Add** in the Filter Table to display a blank filter screen.
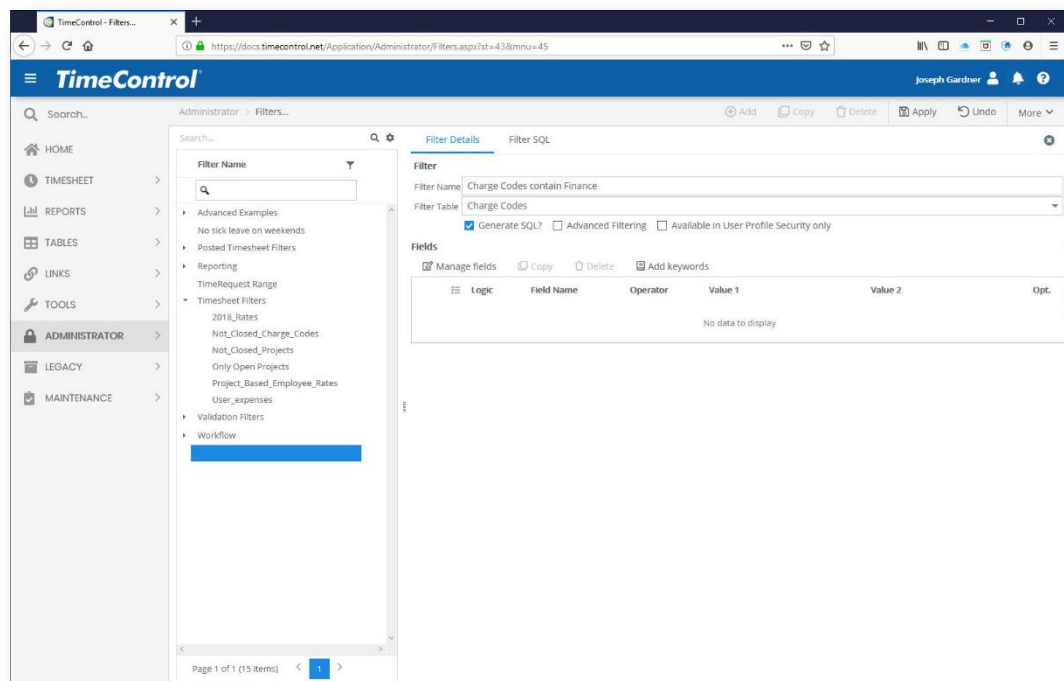
2. Enter a name for the filter in the **Description** text field (*Charge Code Containing Finance*).

3. From the **Applies to Table** drop-down list, select *Charge*.

4. Click **OK**. You are now presented with the Filter Definition screen.

5. Click the **Manage Fields** button. This displays field picker dialog from the selected table as well as any associated tables.

6. Select *Charge Code* then click **OK**.

7. By default, **Equals** is selected in the **Operator** cell once a Field Name is selected. Click the down arrow in the **Operator** cell then select **Contains** from the drop-down list. If you have numerous fields, you can use the Logic column to add "Or" and "And" logical operators.
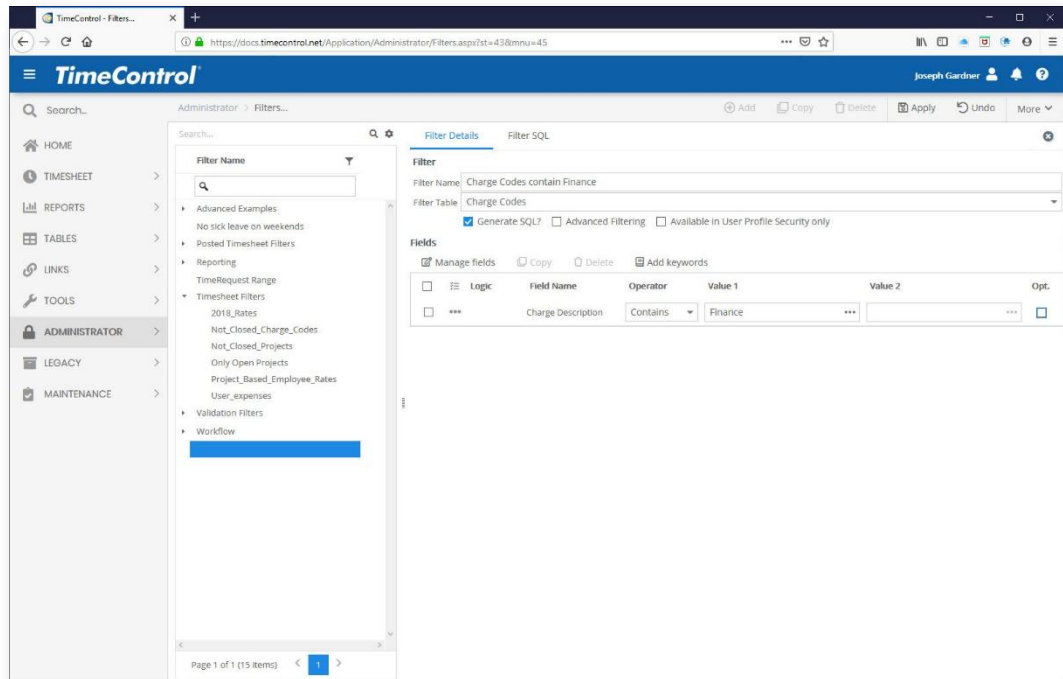
8. Enter a **Value1** for the filter. In this example we will enter the word "Finance". This value is the criterion for the filter.

9. Click **Apply** to save the new filter.

➢ To assign the charge filter to the employees who are allowed to access only these charge codes:

1. Select **Tables** | **Employee**. This displays the Employee Table.

2. Select the Employee Name from the list of employees on the left.

3. On the **Employee Details** tab, select *Charge Code Containing Finance* from the drop-down list of Charge Filters.
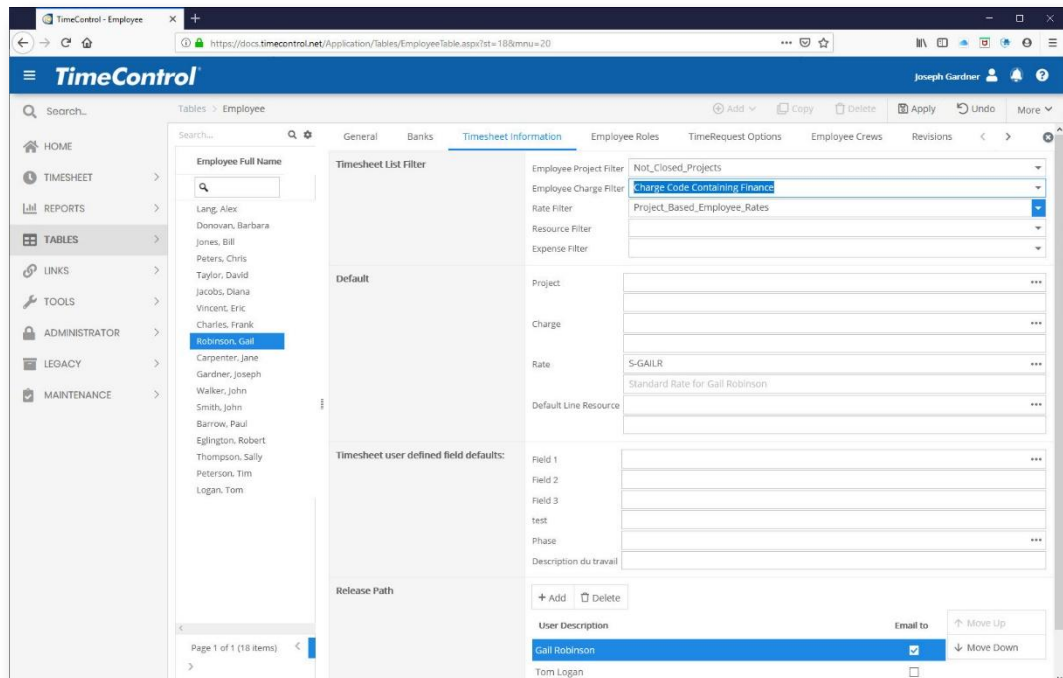
4. Click Apply. The next time this employee enters a timesheet, only the charge codes containing "Finance" will be available

Date Range

Here is an example of a date range filter. Apply this type of filter to a report when you want to view the details between two specific dates for a project that is finished or in progress.

➢ To create a date range filter:

1. Click **Add** in the Filter Table to display the **New Filter** dialog box.
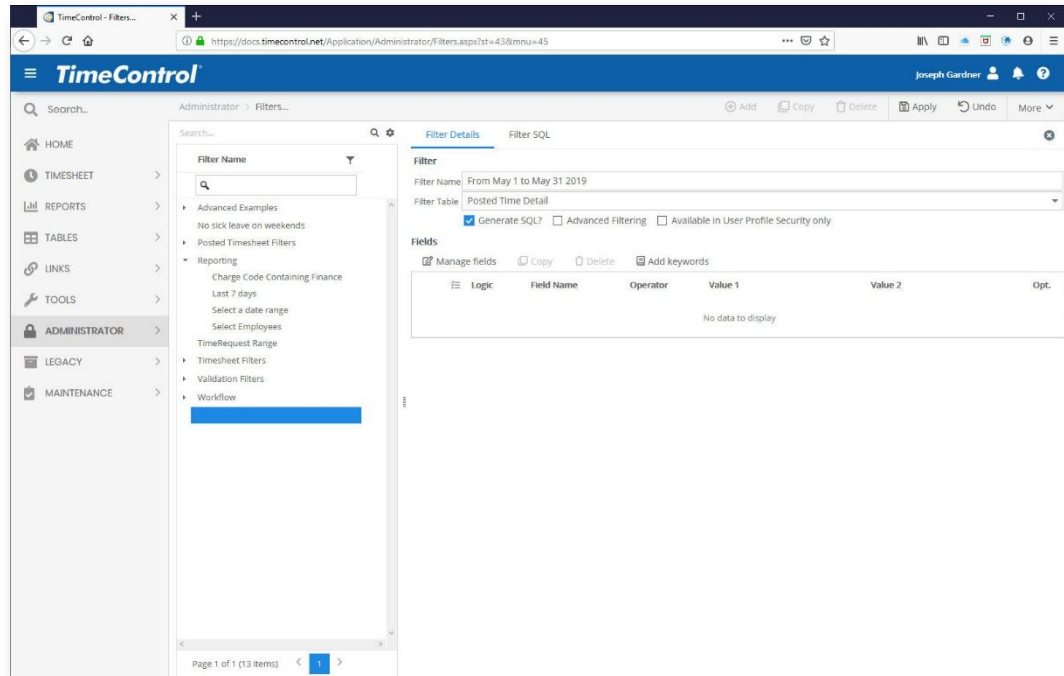
2. Enter a name for the filter in the **Description** text field (*Select a Time Period*).

3. From the **Applies to Table** drop-down list, select *Posted Time Detail*.

4. Click **OK**. The new filter appears in the Filter Table.
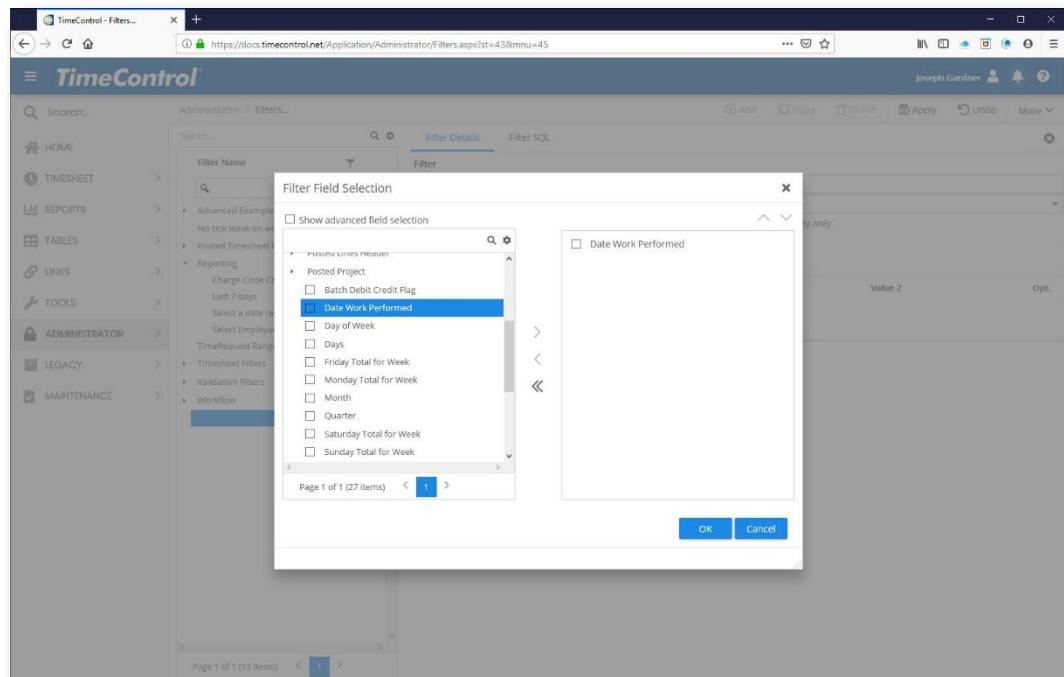
5. Double-click **Manage Fields**. This displays a list of fields from the selected table as well as any associated table.

6. Select *Date Work Performed* then click **OK**.

7. In the Filter Table, click the down-arrow in the Operator cell then select **Between** from the drop-down list.

8. Because the Operator is **Between**, you need to enter both **Value 1** and **Value 2**. Enter the values for the start and end dates of your desired date range. To see a calendar, click the down arrow to the right of the value field.
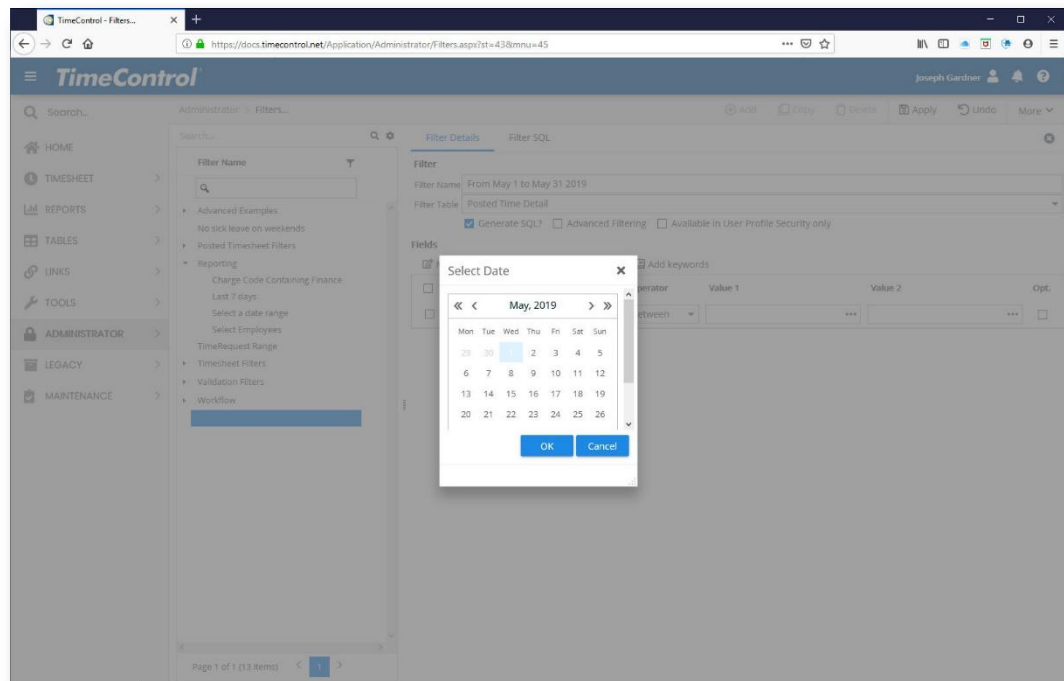
9. Click **Apply** to save the new filter. You can then select this filter, when creating a report. A report created using this filter will contain only the data that was requested in the *Selective_Time_Period* filter.

Advanced Filters

TimeControl supports complex filters. Click on the Advanced Filter Option to access additional more complex commands.

Parentheses

You can organize your logical expressions so that several expressions can be included in one part of the statement and other expressions can be included in another part.

For example, imagine a filter for reporting purposes that would ask for a range of dates and one of three conditions:

1. Project Table user-defined field 1 is equal to "Client-billed"

2. Project Table user-defined field 2 is equal to "Billable" or;

3. Project Table user-defined field 3 is equal to "Fixed Price Contract"

To create such a filter with Advanced Filtering, use parantheses like this:
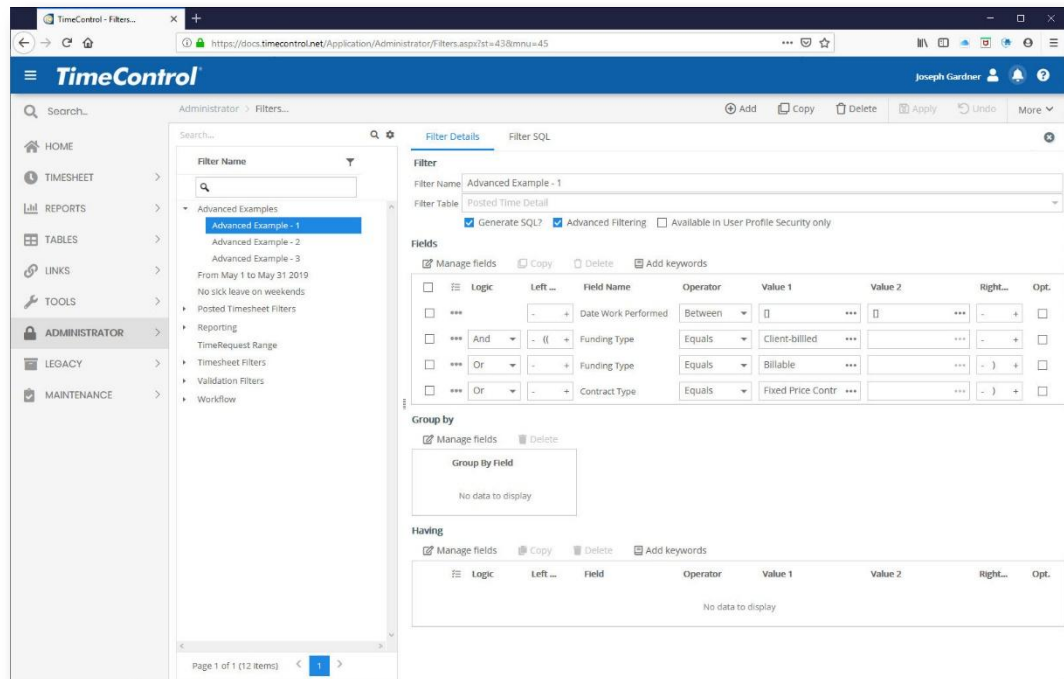
Here is a second example:

(Project name contains "DEMO" or Project Name Begins with "C" or Project Name begins with "P") AND (Project Budget Hours are greater than or equal to 10,000).
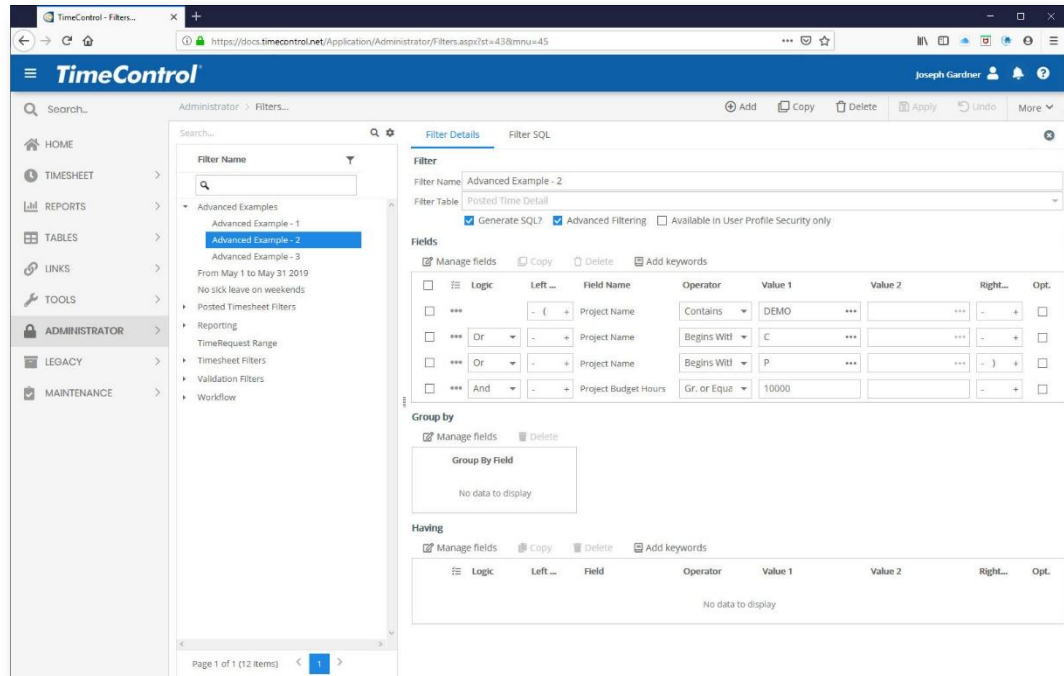
Grouping

Grouping in a filter allows you to group multiple records of data as a single expression before comparing that expression to others.

For example, a filter used for Validation Rules or Workflow purposes might want to select all timesheets where the total timesheet hours is 40 or greater and Employee Field 1 is equal to "ADMIN", "TECH" or "SALES". Grouping allows us to add up all the timesheet lines first and then include that with the other elements of the expression in the following screen:
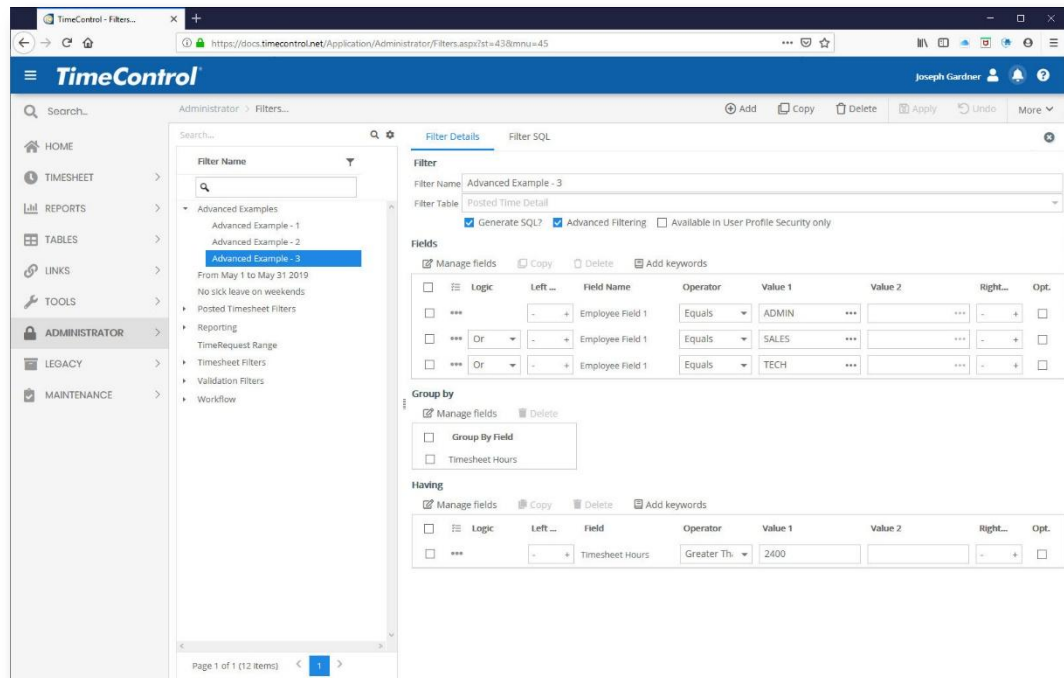
Parameterized Filters

To reduce the number of filters, such as date ranges, parameterized filters can be used. Parameterized filters prompt you for values at the time the filters are invoked.

Rather than enter a specific date for Value1 and Value 2 as in the previous example, *Date Range* filter, enter `[]` for each of these values, as illustrated below.
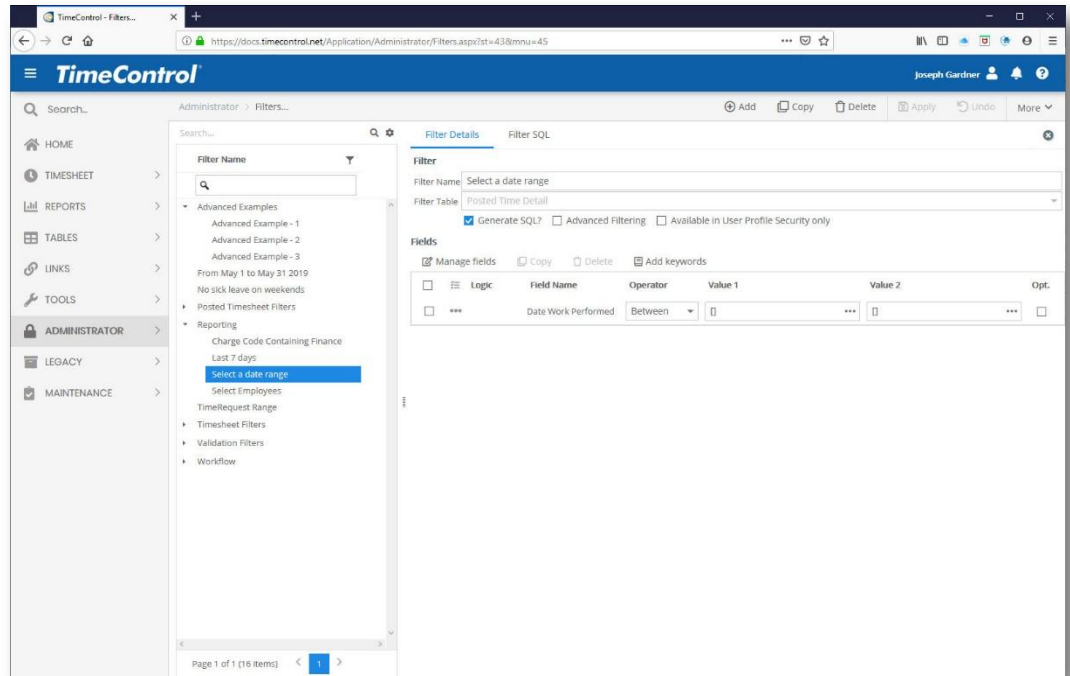
When creating the report, select the filter that you want to use. TimeControl will then prompt you to enter dates.

Enter your dates according to your system localization, such as mm/dd/yy, or click the down arrow or ellipses next to a value cell to display a calendar from which you can select a date.

Options for Creating Date Parameters

You can also use any of the following word parameters when creating your filters. All of these options must be between square brackets […]:

- **[TODAY]**   today's date

- **[WEEKSTART]**   current week's start date

- **[WEEKEND]**   current week's end date

- **[MONTHSTART]**   current month's start date

- **[MONTHEND]**   current month's end date

- **[YEARSTART]**   calculated year begin date

- **[YEAREND]**   calculated year end date

- **[CUR_USR]** The key of the current user

- **[TSL_PRJNAMES] The project name within an employee filter**

You can alter these parameters by adding values such as [TODAY+1] to indicate today's date + 1 day. TimeControl only allows additions or subtractions of <u>days</u>. Multiplication, division, and other time denominations, such as hours, are not valid.

These parameters are useful in charge filters where you might want to show charge codes that have a start date greater than today, and also have a finish date less than a week from today.

Here is an example of a date parameter filter used to show only work done in the last 7 days.
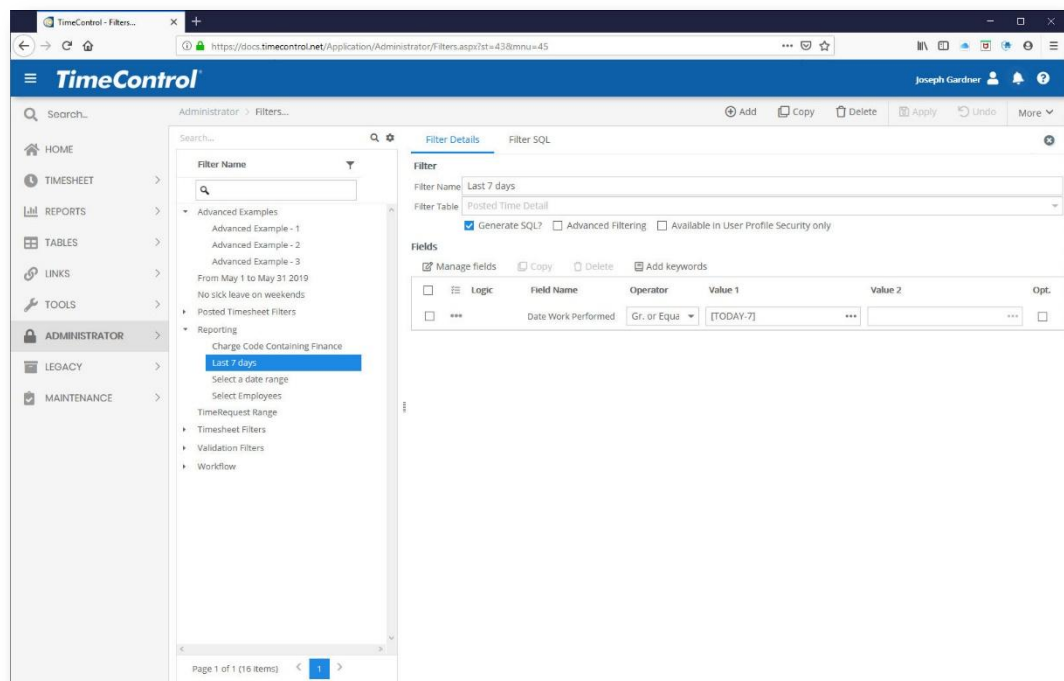
➢ Filters can also be based on the results of other filters:
   1. First, create a filter.
   2. Click **Add** in the Filter Table to create the second filter.
   3. Under **Field Name**, select the first filter that you created and set the operator to "**True**".
   4. Add another field where you can state which charges will be selected.
   5. Apply the Filter to the appropriate employees.

SQL Filters

Finally, TimeControl allows the ultimate in filter creation, the use of actual SQL to define a filter condition. Even when the filter cannot be created within the TimeControl Filter menu, you can still create SQL for the filter.

When you add a filter in which you wish to use SQL, clear the checkbox which says "Generate SQL". This will stop TimeControl from trying to rewrite the SQL from whatever it finds in the filter condition.
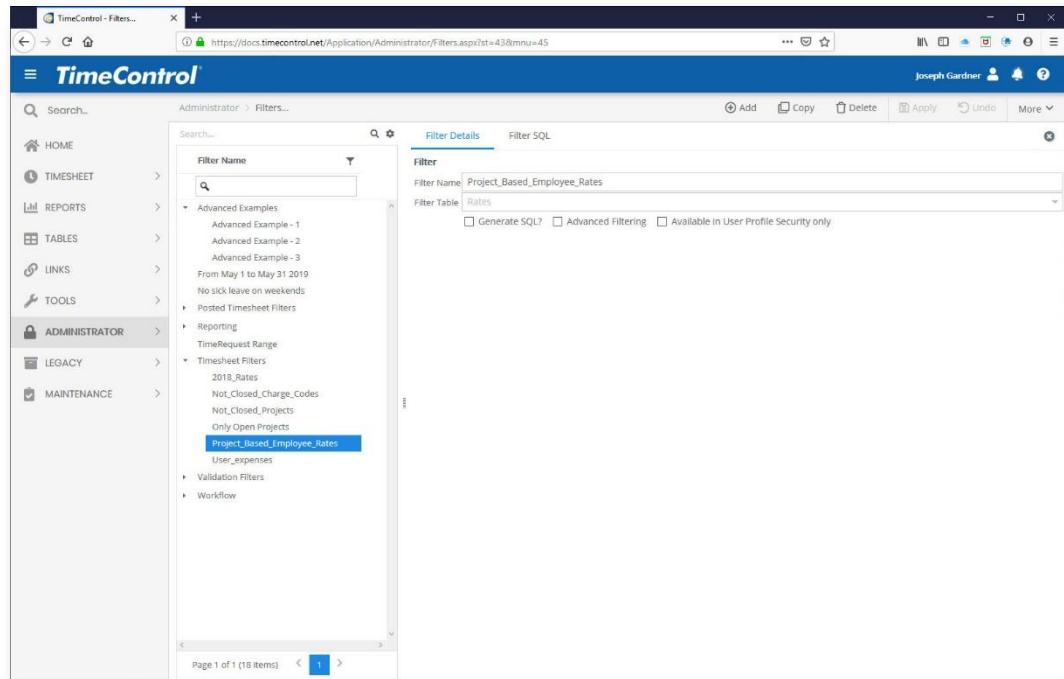
Now click on the Filter SQL tab. You will see a place to enter your SQL code.
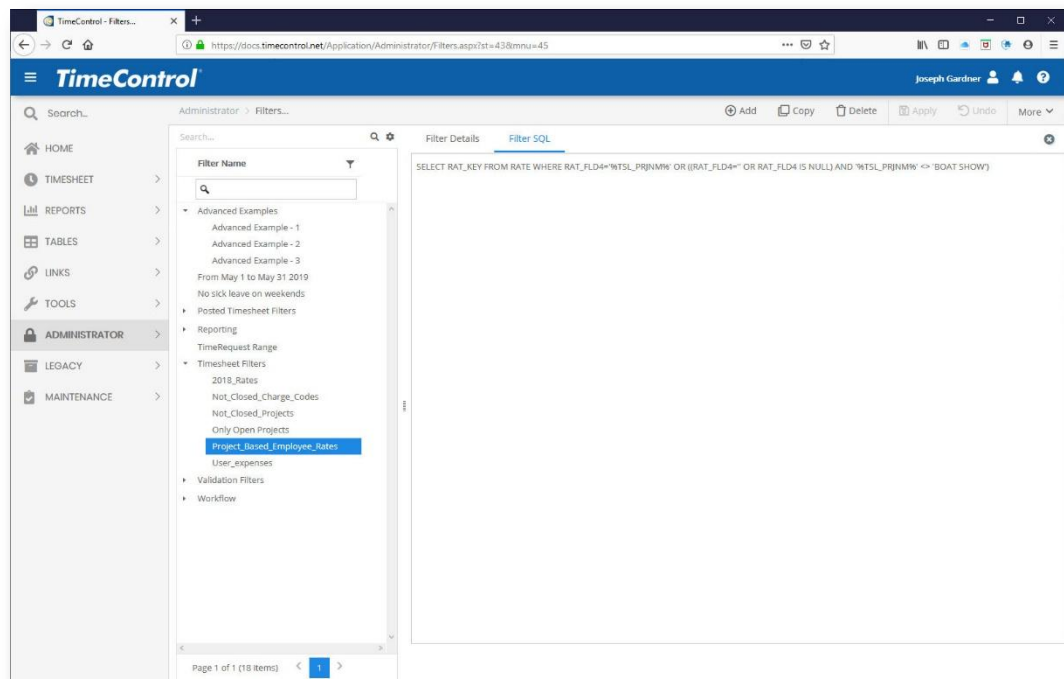
Remember that the SQL you create must be compliant with the particular database version on which you've installed TimeControl.

When making a filter by entering SQL, you can still use the parameter macro/keywords by surrounding them with the "%" sign. So, **% CUR_USR %** will return the user name within an employee filter as it does in this example.

Note: When creating a SQL filters avoid creating a "- -" comment at the end of the last line of your filter as the TimeControl SQL parser may have difficulty interpreting this.

Filter Visibility
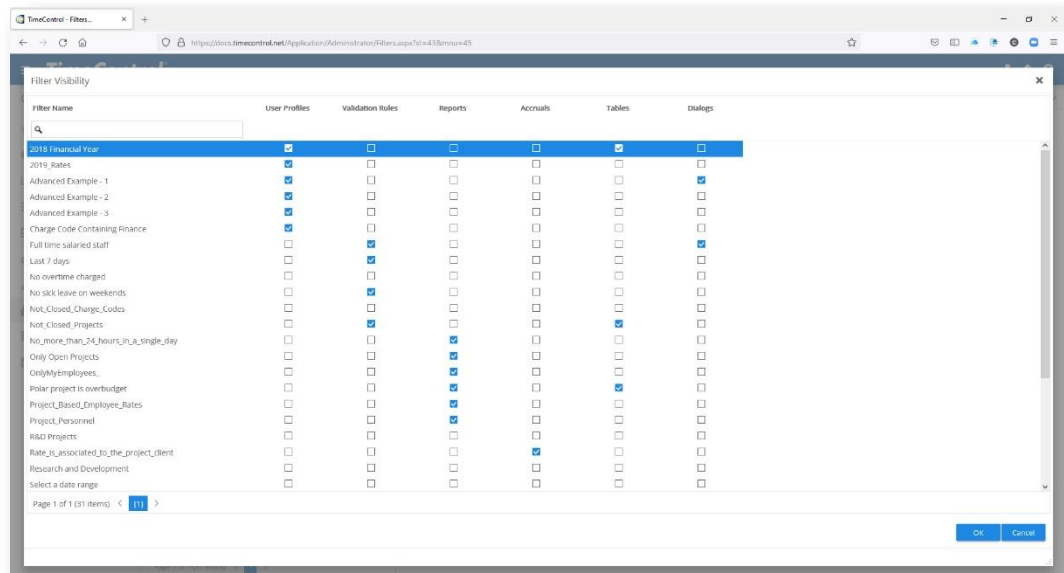
TimeControl's filter capabilities are extensive and filters can be used in multiple areas of the product. This can lead to confusion when some filters appear in filter selections which were designed for another section or function of the product. The Filter Visibility option allows you to define for each filter what parts of TimeControl it is for. Then that filter will only appear in Filter selection lists for those functions selected.

User Profiles

User Profiles are perhaps one of the most important elements of TimeControl. Through the User Profiles, the TimeControl Administrator can determine which aspects of the product are viewed by each level of user, or by each individual. The Administrator can disable or render invisible any menu item, report, or even field. Default User Profiles are provided as guides, but it is expected that

these will evolve depending on the implementation. User Profiles can be assigned to individuals or groups of users through the User Table.

TimeControl comes with four default User Profiles:

- **Individual:** Represents the typical user whose main concern is timesheet entry. The individual profile has limited access to the system and includes the timesheet, some reports, and timesheet options.

- **Project Manager:** Project Managers are given additional access to the Project Table and Links.

- **Supervisor:** Similar to the Individual profile, only the Supervisor can additionally send Missing Timesheet Notification.

- **Timesheet Administrator:** The Administrator has full access to the entire system. It is important that the Administrator <u>always</u> have access to the entire system.

The default User Profiles are good starting points, and serve as examples of what can be done with Profiles to customize the timesheet environment for individuals or groups of users.

➢ To view the User Profiles table, select **Administrator** | **User Profiles**.
   The User Profiles table appears.

The specific User Profiles appear in the **Profile Description** list in the left portion of the page. The levels of security for a selected profile can be seen by clicking the security tabs at lower portion of the table.

Before editing or creating new User Profiles or assigning them to users, you should take a moment to determine what their purposes will be. One of the ironies in deploying an enterprise-wide timesheet system is that the majority of the users require the minority of the functions. In fact, it is likely that over 90% of the users will use only one or two TimeControl functions. Providing all of these users with all the functionality required to make the system enterprise-wide might overwhelm the average user. TimeControl is designed to insulate the users from the functions that they do not require.

User Profiles work by exception, listing the elements of TimeControl that are <u>not</u> accessible to the user with a particular profile. Therefore, items not listed on the security tabs will have no restrictions. Elements that can be restricted are divided into five categories: Menu selections, Report selections, Drill Downs, Tables and Fields.

Important!   There must always be at least one user who has access to the entire system. The default Timesheet Administrator Profile has

no restrictions whatsoever. <u>Do not</u> restrict the Administrator from the User Profiles function.

General Security

The **General Security** tab contains numerous options for determining how TimeControl will appear to the user.

Timesheet List Options

Options in this section determine what timesheets will appear in the Timesheet List.

- **Timesheet List Options: Employees who release to them**. Selecting this option will restrict users with this profile to see in the Timesheet List only the timesheets of themselves and employees who release their timesheets to them.

- **Timesheet List Options: Employees matching this criteria**. Select this option and select a filter here to restrict the timesheets to be displayed in the Timesheet List. Select this option and leave the filter selection blank to allow users with this profile to see all timesheets.

- **Highlight outstanding timesheet option**: This will highlight the timesheets of the current period or the earliest period of missing timesheets when adding a new timesheet.

- **Timesheet List period**: In the Timesheet List, this will display only the number of past and future periods defined.

- **Timesheet Entry Default Timesheet Option**. Default to the current period if logged in both as a User and Employee or to the earliest Draft timesheet if logged in as a User.

- **Timesheet List Periods**. Restrict how many previous periods and future periods can be selected.

Timesheet Options

The General Options include multiple combinations that should be considered carefully before being implemented. Remember, an unlimited number of user profiles can be created in TimeControl. It may be that some users need this section to be altered specifically for them.

- **These users may delete Timesheet for:** This allows a user to be able to delete an unposted timesheet for those employees who report through them or for a list of employees defined by a filter.

- **Timesheet Detail Tab.** This defines areas of the timesheet at a detail level below the line. The options include Timesheet Header Fields, Expenses, Charge Details, Activity Details, Activity Steps, Timesheet Detail Fields and Notes.

- **These users may delete Timesheet for**. Use this selection to determine what timesheets users with this profile are allowed to delete.

- **Timesheet Options: Timesheet Detail Tab.** Use these checkboxes to determine which tabs in the Timesheet Entry sub-grid will appear. These

are the tabs which appear when a user clicks the "+" key to the left of a timesheet line.

- **Timesheet Options: Show start/stop in timesheet entry view.** Selecting this option will display the Start/Stop option on the timesheet entry. The users may then enter the start and stop time of each day.

- **These users may view/report on timesheets for:** This first section controls the viewing/reporting of timesheet data in a timesheet format. Select **All Employees** to allow users with the selected profile to view or report on timesheets from any user in the system. Typically, this function is restricted to Administrative-level users. Select **Employees who release to them** for all other users. This restricts Individual users to viewing only their own timesheets.

  This selection will affect the following functions:

  - Timesheet Entry
  - Historical Timesheets
  - Missing Timesheets
  - Timesheet Image Reports
  - Missing Timesheet Notification via Email

- **Timesheet modify permissions:** There are several options here. Selecting "These users may modify any timesheet will enable anyone with this profile to edit and release any timesheet in the system regardless of whether they are in that user's timesheet release path. If this option is activated, a secondary privilege can be selected that allows users with this profile to edit the existing lines of the timesheet.
  Note! Use of this option may invalidate the auditability of your data and, in particular an ability to comply with Defense Contract Audit Agency requirements. If you have questions about how this function can affect being DCAA compliant, please consult with the HMS Software technical department.
  In this section there are also options to allow the modification of timesheets in a closed pay period or a closed timesheet period.
  These users can reject timesheets for: In some systems, super-user administrators may need to reject timesheets from people who are not specifically in their release path. This options allows the administrator to define who can reject these timesheets. The timesheets will be returned to the source.
  Start/Stop View: This defines if Start/Stop will be visible and, if so, if it will be a single start/stop per day or multiple starts and stops per day.

- **These users may enter debit/credits for:** This section controls the Debit/Credit function. Select **All Employees** to allow users with the selected profile to make Debit/Credit entries for timesheets across organizational lines. Select **Employees who release to them** to restrict the function to allow Debit/Credit entries against timesheets that this user may control at some point. Therefore, individuals who have no timesheets released to them would only be able to make Debit/Credit entries against their own timesheets.

- **When debit/credits are released by these users:** This section determines what happens for users with this profile when they release a Debit/Credit entry. You can choose to have a Debit/Credit timesheet follow the same release path as the original timesheet, or you can release the Debit/Credit directly to Posting. The second option is, perhaps, the most effective. It will not only release the timesheet directly to Posting but will immediately post the timesheet. This will free up the system to add additional DB/CRs immediately.

- **Start/Stop Type.** This defines what functionality is available in the Start/Stop panel of the timesheet. First of all, select View Start/Stop to enable the functionality at all. Next, determine if you would like to activate the Start/Stop Time button. If activated, the button will enter the time of day into today's date as a start time if it is on the timesheet. It will enter the stop time when the stop button is pressed. Additionally, define if users can modify their own start/stop entries. This may be turned off if the start/stop times are coming from an external source. Define if users with this profile can modify the start/stop of other users. Finally, decide whether to show one start/stop per day or allow multiple.

Batch Debit/Credit Options

You can define restrictions of what Project Source/Destination and Charge Source/Destination selections are available.

TimeRequest Options

The TimeRequest Options tab allows the Administrator to choose the default number of hours in a working day and the days of the week that would be normally omitted (such as weekends) for the current User Profile. This allows a user to make a long TimeRequest (such as for maternity or paternity leave or a leave of absence) and have all the weekend days automatically omitted.

- **Show TimeRequest Wizard** determines that users with this User Profile will see the Wizard button in the TimeRequest screen actions area and will be able to enter pre-approved TimeRequests for others.

- **TimeRequest Administrator** determines that users with this User Profile will be able to edit or delete TimeRequests of any employee regardless of whether this user is in the release path of that employee or not. This Super-Administrator right is designed to allow Administrator corrections of Time Requests made through the regular interface or through the TimeRequest Wizard without requiring action of any other user. As such this right should not be granted casually.

Project Manager Validation

These users have the following Project Manager Validation rights in the Project Manager Validation screen from the Timesheet menu:

- View/Edit All the unapproved and non-transferred data

    This will allow project managers to see any data which has yet to be approved or has been rejected and which has not already been transferred to the project management system.

- View/Edit Only unapproved and non-transferred data where I am the Project Manager

    This will allow project managers to see only the data where they have been identified as the Project Owner in the Project table.

- View/Edit All the unapproved and non-transferred data and the filter below. This will allow project managers to see only the data defined by the filter selected.

- Show Project Manager Adjustment. This will control the display of an active link within the Project Manager Validation Screen when a timesheet debit/credit could be created.

Field Hierarchy Options

- This defines what default this user profile will use of the possible Field hierarchy options created in the System Preferences area.

Miscellaneous

- Enable the TimeControl API: This determines if this User Profile can access the TimeControl API. The TimeControl API option must also be activated in the System Preferences.

- Enable Mobile App: This determines if a user with this User Profile can access the TimeControl Mobile App. The Mobile App option must also be activated in the System Preferences.

- Profiles Scheduler Security: Profiles Scheduler Security determines that users with this User Profile can see all scheduled jobs in each manage schedules area. Clearing this box means that users can only see the jobs they have entered themselves

- Hide Scheduled Jobs: Checking this box will hide from all users with this Profile the Add Button and the ability to view the details of a Scheduled Job in the selected module. Users will still be able to run a job in the selected module manually or do a RunNow action to run the module's functionality on demand but the will not be able to create a new scheduled job. This will apply in Import Tables, Export Tables, PM Imports, PM exports, Timesheet Posting, Scheduled Reports, Timesheet Creation and in Accruals where the Calendar-based accruals will not be visible when selecting Add. It is important to note that this option does not hide the Manage Scheduled Jobs menu item. This item should be hidden in Menu Security to have users with Hide Scheduled Jobs turned on from seeing any scheduled jobs.

- Project Management Import and Export filters. This restricts the project names that are displayed during PM Import and PM Export.

Dashboard Options

The Dashboard Options section is used to determine permissions per User Profile of who can create and change My TimeControl Home Page templates.

There are three options in this section:

- **Default Dashboard:** This selection allows the Administrator to select a System Dashboard that will be the default for all users with this User Profile. If the end user does not have the right to change their own template, then this will ensure that the selected template layout and content is always displayed to these end users.

- **Create/Modify system templates:** Checking this box allows users with this User Profile to create or change existing templates that can be seen by all users. This permission should be given on a limited basis. When this box is cleared, users will be allowed to create only personal templates which can be viewed only by themselves.

- **Select their own user template:** Checking this box allows users to select a template in the Tools/Options menu. If this box is cleared, users will be restricted to seeing the default template. There are two places to create a default template. In System Preferences, a default can be declared for the entire system and can optionally be locked for all users. In User Profiles, a default can be declared for each User Profile. In Options that can be access from both the User Table Options tab and the Tools/Options menu, the user can select their own template choice if they have been given permissions from this User Profile area.

Miscellaneous Options

This section contains any other options for this User Profile

- **Enable API** determines if the Programmable Interface is available for users with this profile. Access to the TimeControl API is also controlled globally in System Preferences.

- **Enable Mobile** determines if the TimeControl Mobile App can connect to users with this profile. Access to the Mobile App is also controlled globally in System Preferences.

- **Show All Scheduled Jobs** determines that not only jobs that have been created by this user but any and all scheduled jobs will appear in the Managed Scheduled Jobs module and any screen with scheduled jobs appearing.

- Profiles Scheduler Security determines if users with this profile are restricted to seeing only the scheduled jobs they have created or all scheduled jobs.

- **PM Imports Filter** controls which projects users with this profile can see during PM Imports

- **PM Exports Filter** controls which projects users with this profile can see during PM Exports.

Report Security

Report Security is multi-faceted in TimeControl as it encompasses the standard Report Interface, the Drill Down Analyzer and the Worksheet view within the timesheet. Each of these aspects of reporting has its own tab within Report Security.

The top of this view determines which data can be viewed in two categories. The top "Timesheet" category is for unposted timesheets which are still in progress and have not yet been posted. The "Posted data" category is for all timesheet data that has been posted including adjustments and debit/credits. These two areas also allow a pre-defined filter to be applied so that anyone with this user

profile will only be able to see the data for either users to release their timesheet to them or for all employees with a given filter. This gives enormous flexibility in determining who will be able to see the data in these reports.

Report Security
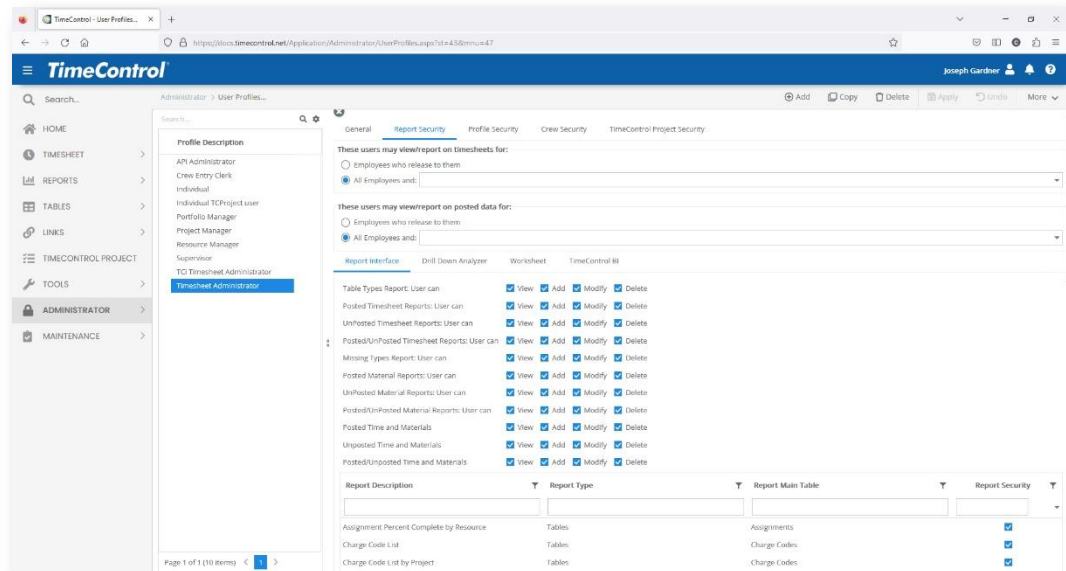
This tab controls the access to report formats made through the standard Report Interface Module.

For each report that has been defined, this definition will control whether users with this User Profile can access the report. Clicking on the checkbox under the "Report Security" header will indicate that users with this profile will be prohibited from seeing this report.

The area above the grid, controls whether users with this profile can view, add, modify or delete the definitions of the reports in each of these categories.

Drill-Down Analyzer Security
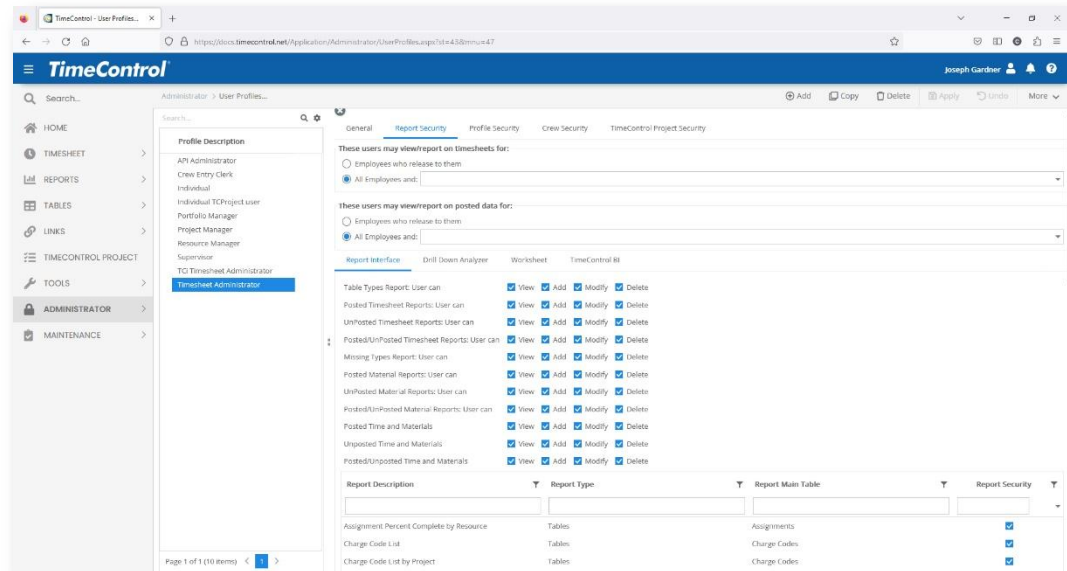
This tab controls which Drill Down Analyzer selections can be seen by users with this User Profile. The first tab already controlled what posted or unposted (timesheet) data is accessible to users with this profile. This tab controls whether users with this profile can create Drill Down Analyzer formats or change those that exist. Each of the definitions already created are listed in the main grid. These definitions are accessed within the Drill Down Analzyer in the drop down selection at the top of the screen. The grid in this tab controls whether users with this profile will be able to access that particular definition. Clicking the checkbox in the Report Security column indicates that this Drill Down Analyzer view is available to users with this profile.

These users can perform the following actions in the DrillDown Analyzer: This section determines the rights of users who have access to the Drill Down Analyzer. There are two options:

- Add a new drill down format: Checking this option allows users to create a new collection of fields which can be selected from within the Drill Down Analyzer section
- Edit an existing drill down format: Checking this option allows users to change the field selection within an existing drill down view.

In addition, this view controls whether users with this profile can add Expense Report formats, Charge Code Formats and Project Report formats

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Timesheet Worksheet Security
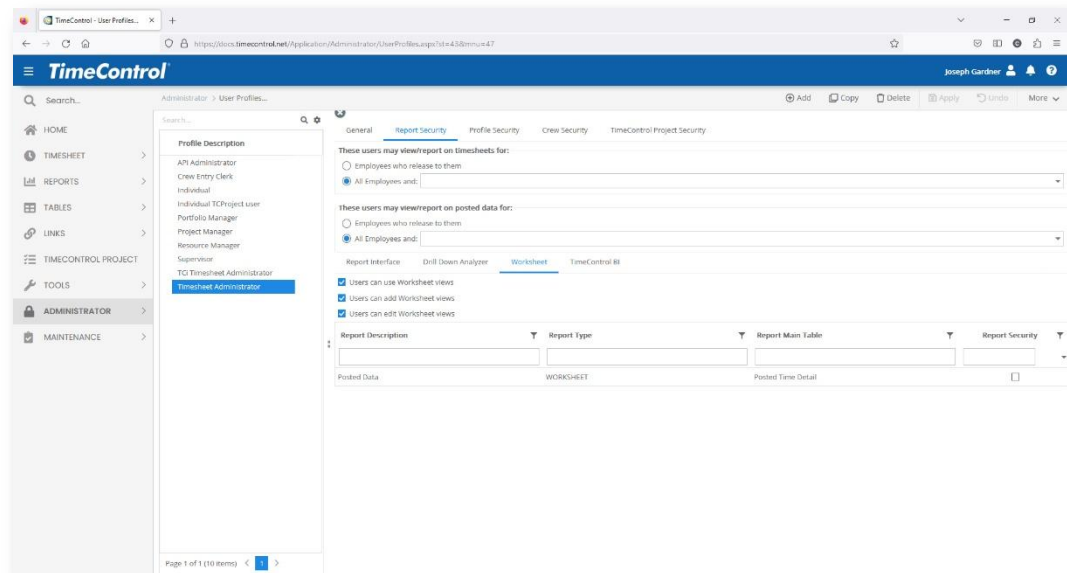
This tab controls a tab within the timesheet interface called "Worksheet". It allows users with high volumes of data in each timesheet to view the data in an interface similar to the Drill Down Analyzer. This may be of particular interest with crew timesheets with hundreds of lines as the interface allows the data to be grouped and sub-grouped instantly just as is done in the Drill Down Analyzer. This tab determines if the worksheet view is available to users with this profile and if users can create or edit worksheet views. If views have been created, then the main grid in this tab controls whether users with this profile can access that view. Clicking the checkbox in the Report Security column indicates that this view is available to users with this profile.

It is important if the Worksheet is made available to end-users that security be defined as the Worksheet may reveal information to end-users that exceeds administration desires.

TimeControl BI Security

TimeControl BI Security controls who can view, access, add, edit and delete TimeControl BI dashboards. On this tab, select These users can add TimeControl BI Views, These users can edit TimeControl BI views and These users can delete TimeControl BI views. In the list below click the Visible checkbox to determine that the named view should be made available to users who have this User Profile.
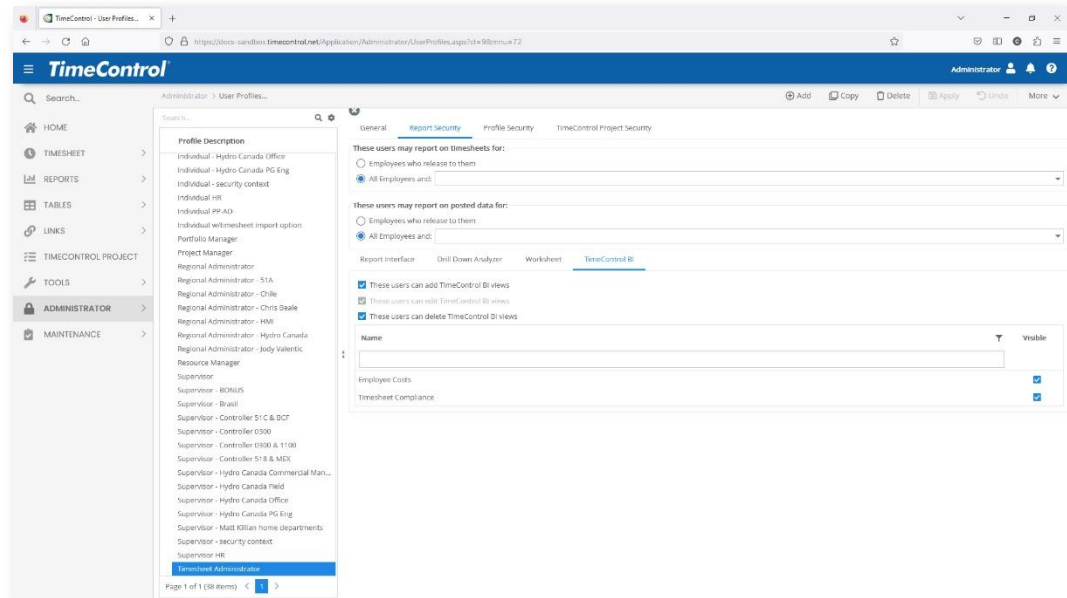
Profile Security

Menu Security

Menu Security is the most commonly used form of security.

To view the Menu Security section of User Profiles, select **Administrator** | **User Profiles** then select the Security Options tab at the top of the User Profiles table.
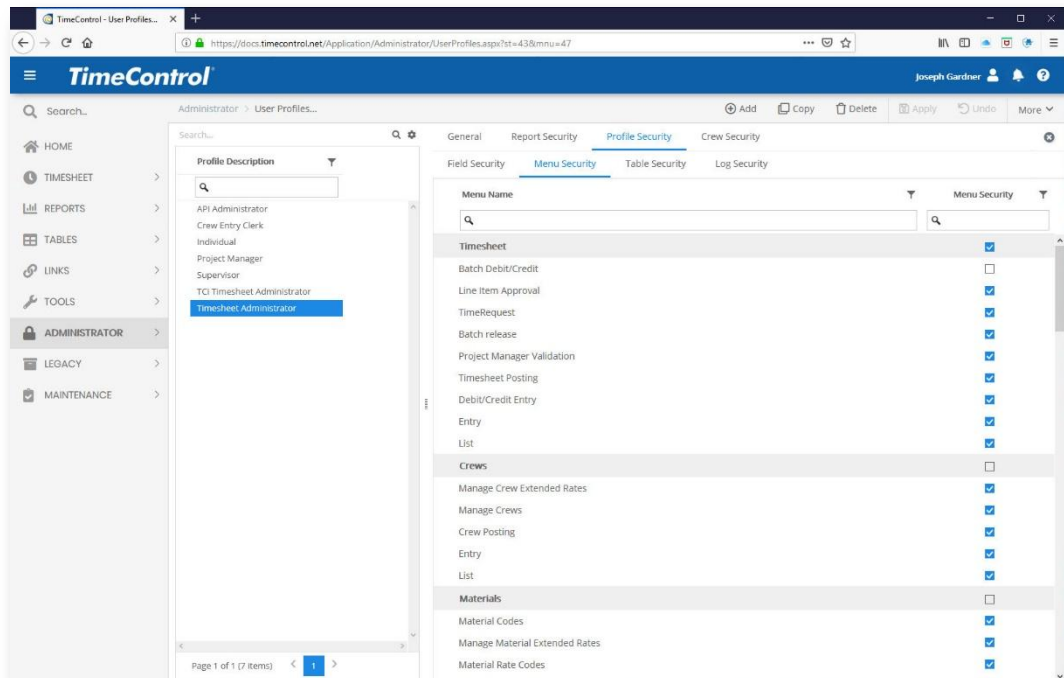
There are two columns on the **Menu Security** tab: one lists the menu items that are restricted, the other indicates the type of restriction.

- When an item is listed on this view, it will be marked as Invisible.

> ✓ **Tip**   As a general rule, start with making less of the system available to most users and add functionality as required.

The menu items are organized hierarchically. If a top-level menu item is restricted, there is no need to restrict the menu items beneath it. If, for example, the Tables folder is made invisible, then its sub-folders cannot be viewed either. If it is disabled, the main **Tables** folder appears low-lighted, but since it cannot be selected, none of its sub-folders can be viewed.

➢ To **add** an item to the default list:

1. Under **Profile Description**, select the User Profile for which you want to restrict the item.

2. Right-click anywhere in the **Field Name** column then select **Append** or **Insert** from the pop-up menu. A new blank entry appears.

3. Click the new entry field then click the down-arrow at the right. This displays a list of all the menu items in TimeControl. Select the desired item from this list.

4. Click the restriction type field and select either **Invisible** or **Disabled** by clicking the down-arrow in that field.

5. Click **Apply** to save your changes.

➢ To **edit** a Menu Security record:

Select a Field Name then change the restriction type selection.

➢ To **delete** a Menu Security record:

Right-click the Field Name you want to remove then select **Delete** from the pop-up menu. Click **Yes** in the corresponding confirmation dialog box.

> **Note** When deleting records, be sure to select a Field Name and not a Profile. Profiles are referenced in the User Table and cannot be deleted.

Field Security

TimeControl provides the ultimate flexibility in customizing User Profiles with field-level security. This allows the Administrator to determine exactly which fields are visible or editable. Click the **Field Security** tab to modify or add field-level restrictions.
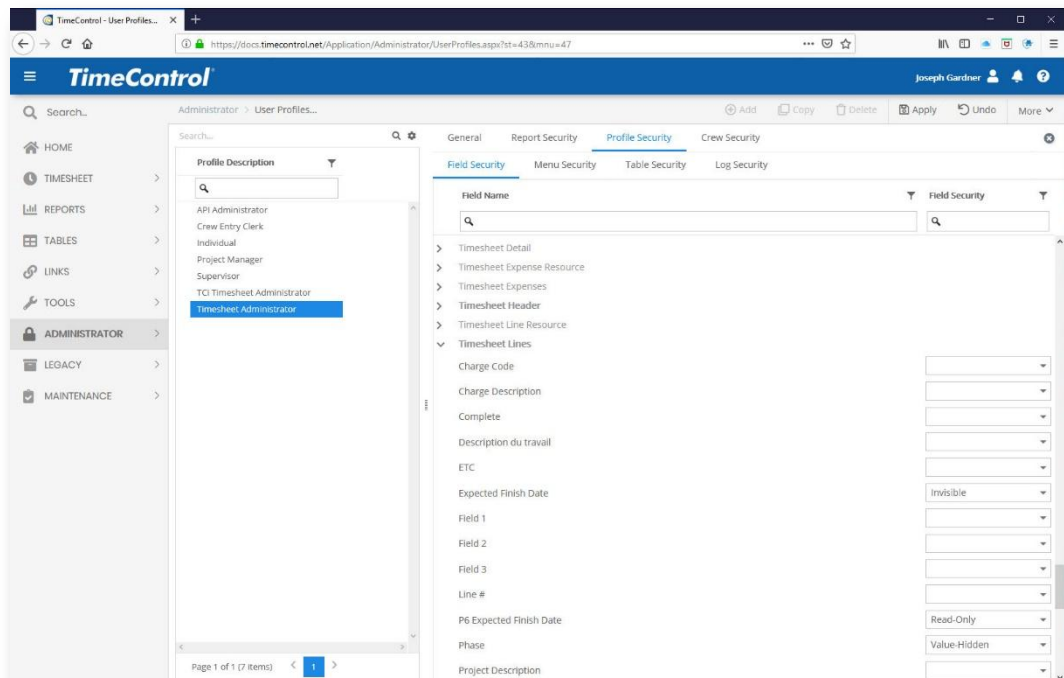
➢ To add a field restriction:

1. Select the Profile Description for which you want to restrict a field.

2. Right-click anywhere in the **Field Name** column then select **Append** or **Insert** from the pop-up menu. A new blank entry appears.

3. Click the new entry field then click the down-arrow at the right. This displays a list of all the field items in TimeControl. Select the desired item from this list.

4. Click the **Security Type** field and select **Invisible**, **Read-only** or **Value-hidden** by clicking the down-arrow in that field.

   ▪ **Invisible:** Field items set to Invisible to not appear in their respective tables.

   ▪ **Read-only:** Items set to Read-only are visible but the values of the fields are low-lighted. These values cannot be modified by the user.

   ▪ **Value-hidden:** Value-hidden items display the field label, but the value itself is invisible.

Combining these different security options can deliver a very different interface to each user or group of users. As a general rule, start with making less of the system available to most users and add functionality, as required.

Field level security can be applied to user-defined fields within the timesheet itself.

These fields are displayed in their own columns in the timesheet entry view.

Adding such a field into the User Profile can make one field visible for one type of user and another field available for another type of user. For example, consulting staff might have to select from a pre-defined drop-down list of clients when doing billed consulting to ensure a correct invoice for each client. Administration staff from within the same organization might have to allocate a "Meeting" task to a drop-down selection of departments. The User Profiles can assign a timesheet client field for one group and a timesheet department list for another.

Table Security
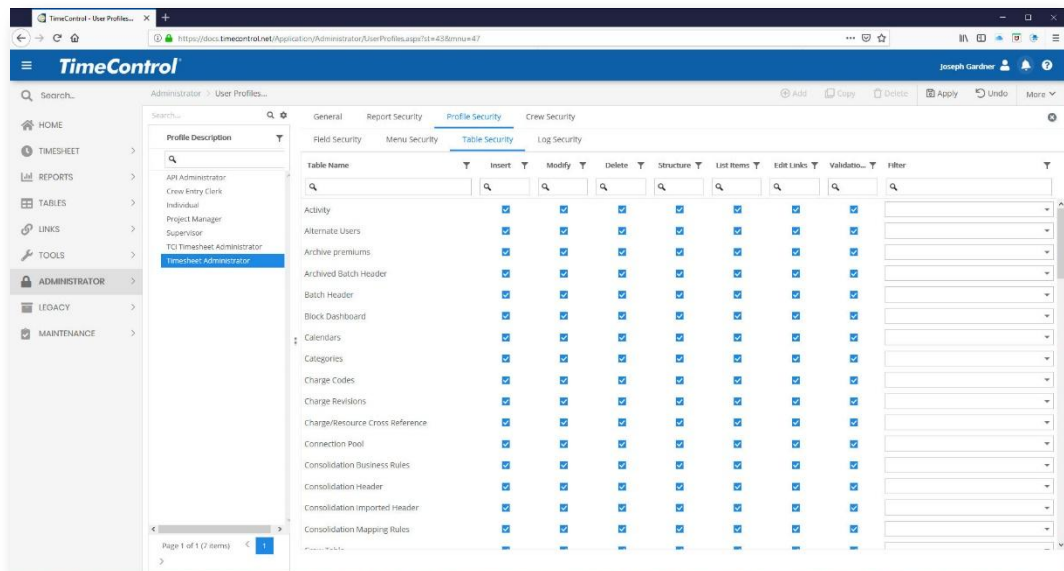
Within each TimeControl table, you may wish to restrict the access some users have to tables. For example, you may allow Project Managers to add records to the Project table but not to delete other records. The Table Security feature provides the following options for each table:

- **Update:** Selecting this option allows those with this user profile to create new entries and alter any entries that are present.

- **Delete:** Selecting this option allows those with this user profile to delete an entry in the associated table.

- **Structure**: Selecting this option allows those with this user profile to add new fields to the data structure of the associate table.

- **Insert**: Selecting this option allows those with this user profile to add new records to the associated table.

- **Linked Fields:** Selecting this option allows those with this user profile to link a user-defined field.

- **Edit Links:** Selecting this option allows those with this user profile to edit the pop up list associated with that field.

- **Validation:** Selecting this option allows those with this user profile to add validations between user-defined fields in the selected tables.

- **Filter:** This option allows the administrator to impose a restriction on those with this user profile. For example, it may be desirable to allow department heads to see the rates but only for their own team. It may be desirable to allow a project manager to see the Project Table but be

restricted to those projects on which he or she is the project manager. To activate this option, select a pre-existing filter from the drop down list that is associated to that table.

Log Security
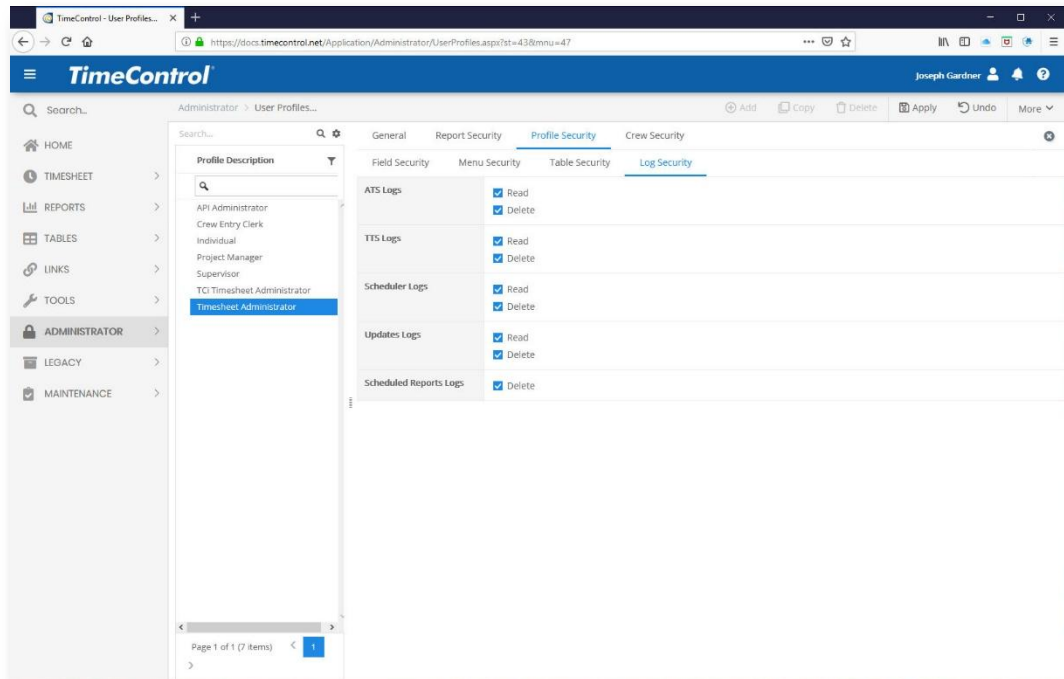
This controls what administrative logs can be seen or purged from within the TimeControl interface.

Hierarchy Security
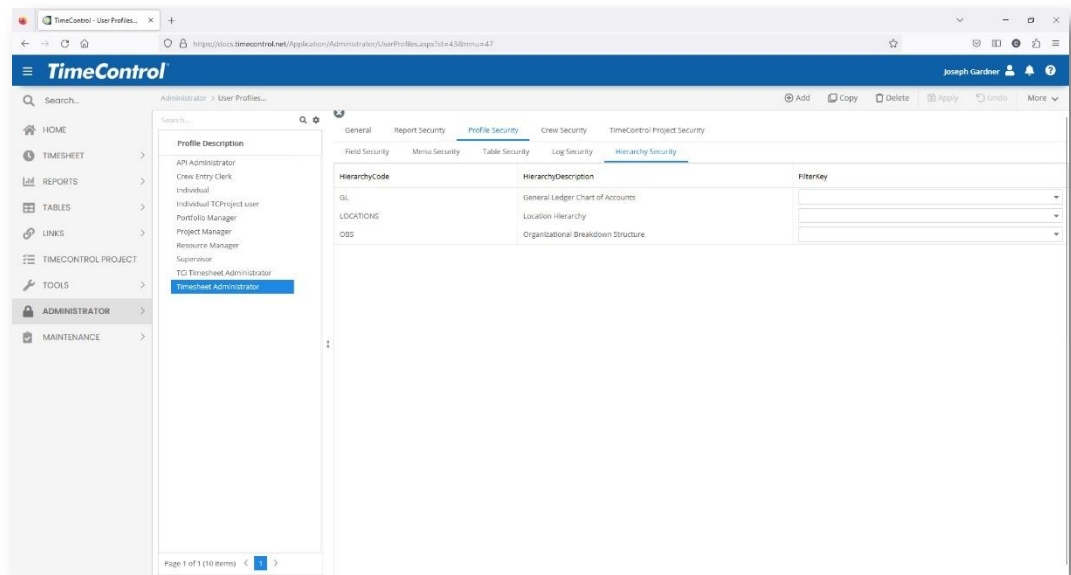
Use this tab to filter any hierarchy definitions that you wish to constrain to users of this User Profile. A list of any hierarchies you have defined will appear here and a place to select a pre-defined filter definition.

Crew Security

(This is for TimeControl Industrial only)
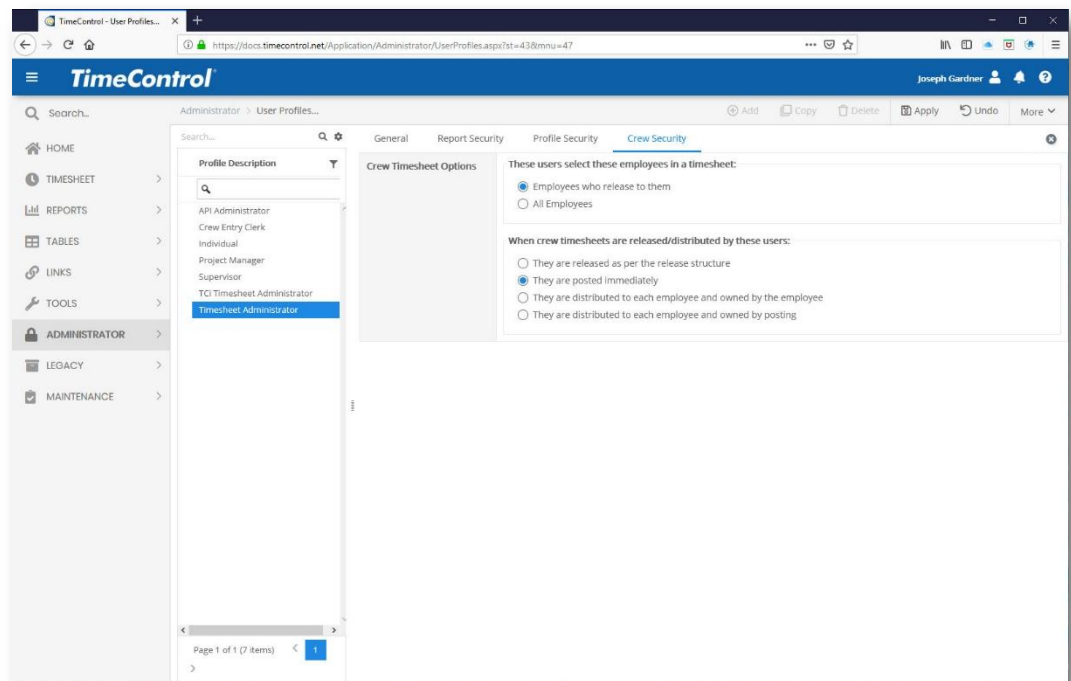
Crew Security determines how certain aspects of Crew Timesheet entry is controlled.

- ▪ **Select employees:** This determines which employees users with this profile can select when working within the Crew Timesheet or Crew List.
- ▪ **Timesheet distribution:** This controls what happens when a user with this profile releases or distributes a Crew Timesheet after it is complete. Crew timesheets can be released through their own release structure or can be posted immediately.

TimeControl Project Security
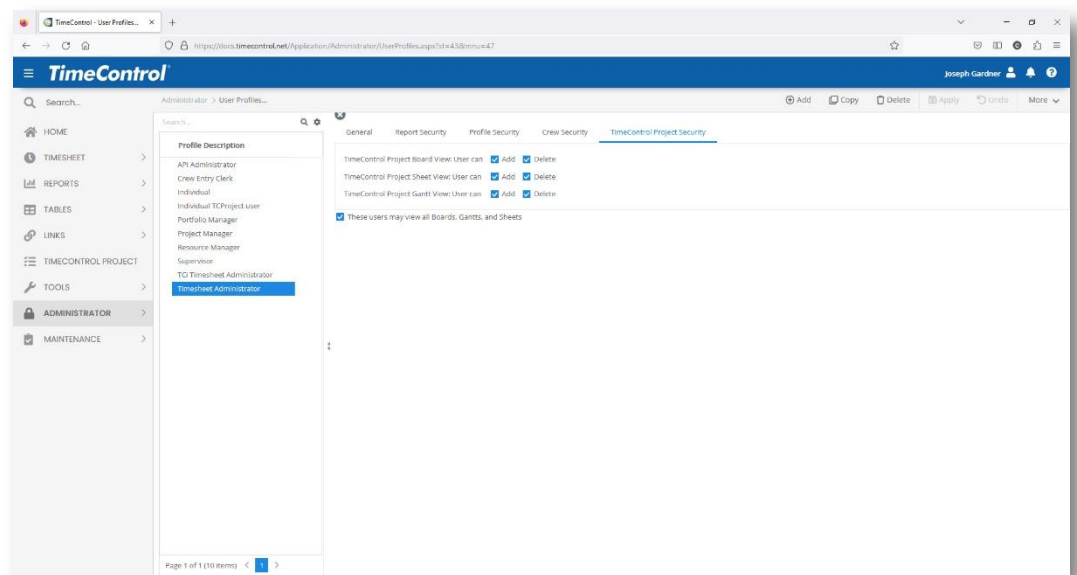
See the TimeControl Project Guide for more on this option.

Validation Rules

From an operational standpoint, validating data is handled, in part, by TimeControl's unique Validation Rules, which can analyze and catch erroneous timesheet data. There are several sample rules included, but each organization should create their own rules to determine what constitutes a valid timesheet.

TimeControl's validation rules allow for 'behind-the-scenes' analysis of timesheet data appearing to users as system messages only when required.

Some care must be exercised in the creation of validation rules. It is certainly possible to create a situation where rules conflict, preventing a user from releasing a timesheet at all (imagine creating a rule which says 'No hours allowed on weekdays', and a second one saying 'Only hours allowed on weekdays').

We recommend that the fewest number of validation rules be implemented at first, and, gradually, as regularly recurring errors show up in timesheets, that validation rules be introduced to capture them at their source.

The advantages of validation rules are many. First of all, the responsibility and effort in ensuring that timesheet data is accurate is distributed among all the employees who use TimeControl. This can result in an enormous savings of time and can greatly increase the timeliness of the approval process.

Validation rules can also be used as warnings to different levels of users of conditions occurring in the data. For example, a rule could be created that warns all Supervisor-level users of any overtime being charged even if this was not warned at the entry-level. This might allow Supervisors to quickly highlight areas of concern in timesheets as they are being approved each week.

Filters must be created in order to build Validation Rules. To learn more about creating filters, please see the filters section elsewhere in this guide.

Create a Timesheet or Crew Validation Rule

➢ To create a validation rule:

1. Select **Administrator | Validation Rules** from the main menu. The Validation Rules table appears.
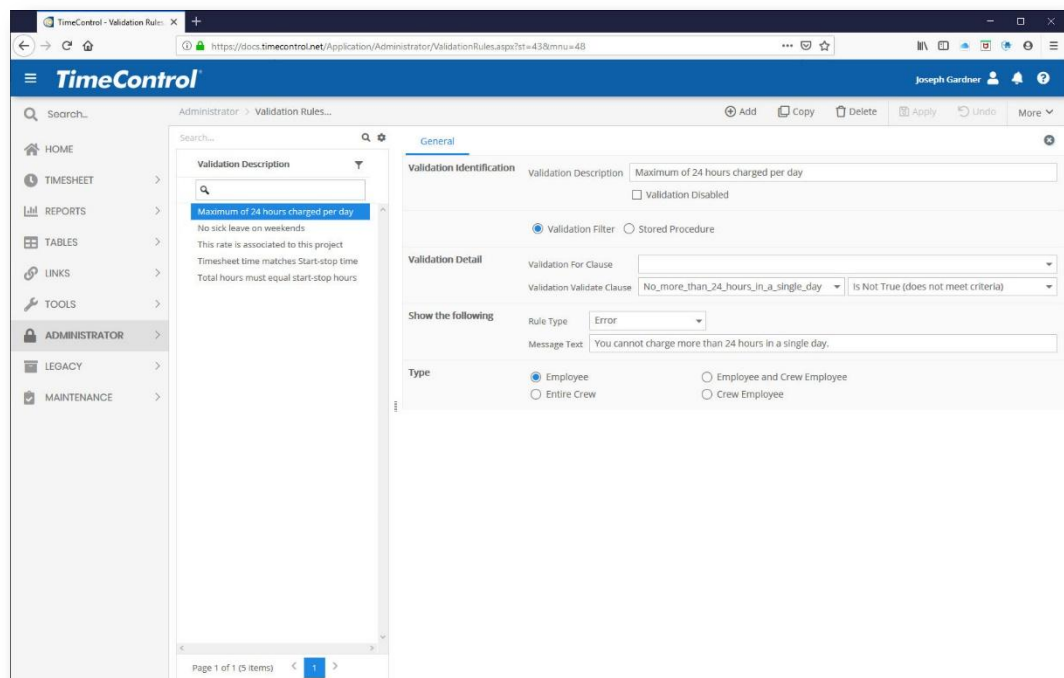
2. Click the **Add** button. A new blank entry appears.

3. In the **Description** field, enter a description for the rule. This description must be unique and easy to recognize.

   ▪ **Disabled:** If this option is selected, the rule will not be applied under any circumstances.

4. **For timesheets meeting the following criteria:** Click the down arrow in this field to select a filter. This filter determines which timesheets should be validated by this rule. You need to have already created these filters in the Filter Table. For more information on creating filters, see the *Filters* section beginning on page 453.

5. **Validate that this criteria:** This is the rule itself. TimeControl verifies this selection.

6. **Display type:** Select either **Warning** or **Error**. If this is an error rule, the timesheet is rejected upon release. The user <u>must</u> correct any errors and re-release the timesheet. If it is a warning rule, an error message appears, but the user can release the timesheet.

7. **Message:** Enter the message to be displayed to a user if the validation rule is violated.

8. Click **Apply** to save your changes.
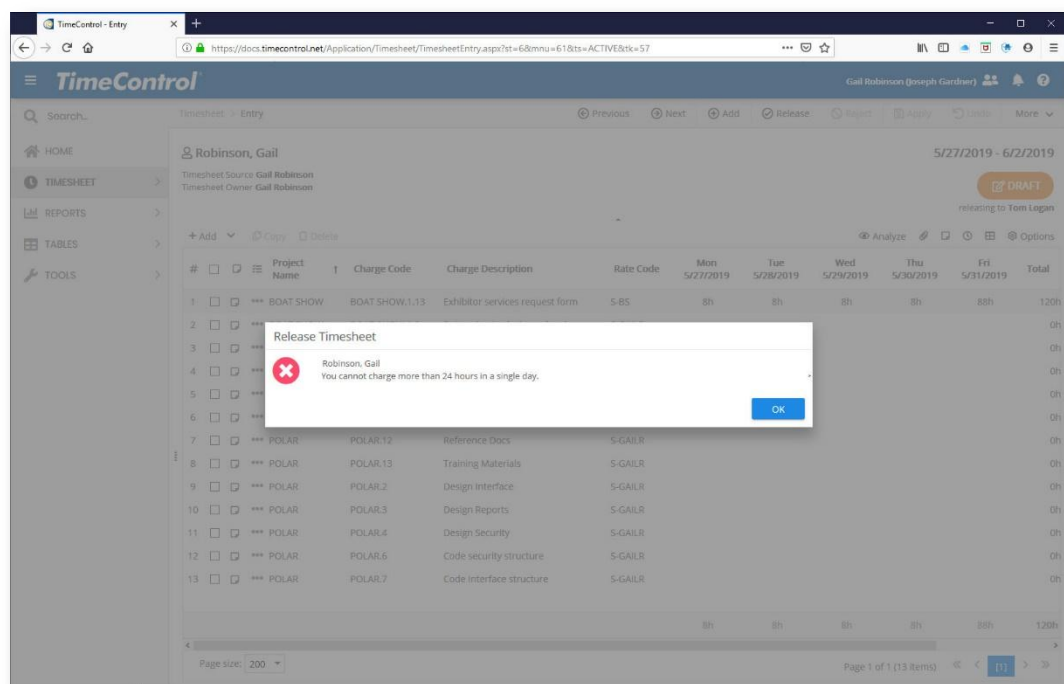
Validation rules are always verified the moment a timesheet is released. When a user clicks **Release** in the timesheet, TimeControl immediately checks to see if

any validation rules should be checked against this employee or this timesheet. For each rule that applies to this employee's timesheet, the error criteria are checked.

TimeControl essentially sends an SQL statement to the database. If the statement returns true, it knows that the timesheet has violated a validation rule. TimeControl then displays the error message associated with that timesheet. If the validation rule is an error rule, the control of the timesheet is immediately returned to the user so that the necessary corrections can be made. If the rule is a warning rule, the error message appears but the timesheet release function is still enabled. It may find a subsequent rule that is violated, in which case control passes to the next rule. If the only errors have been Warnings, the timesheet can then be released normally. TimeControl displays a confirmation dialog giving the user the opportunity to correct any errors that may have displayed during release.

TimeRequest Validation Rules

TimeControl allows validation rules to be created for TimeRequests. These Rules have some different options from Timesheet or Crew Validation Rules.
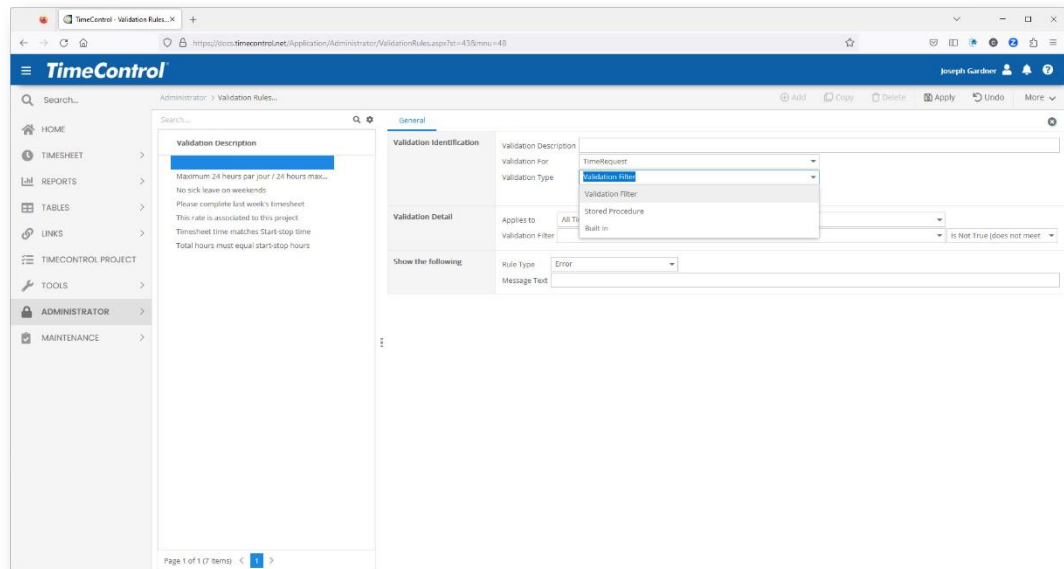
When creating a validation rule that you wish to be used for a TimeRequest, select TimeRequest as the Validation For option.
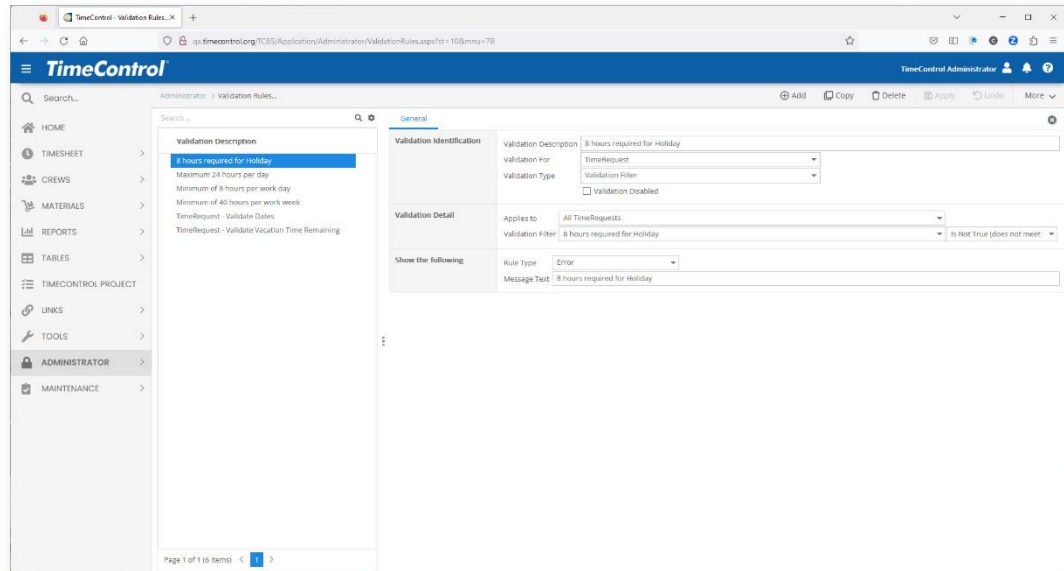
The screen will adjust for this type of Validation Rule. The next option is to select the Validation Type. This differs from other Validation Rules. There is still a Validation Filter which can be selected and a Stored Procedure. Creating Stored Procedures must be done in the database so this is not typically an option used in TimeControl Online but Validation Filter works just as it does in other Validation Rules. The restriction here is that the rule must be definable in the TimeControl Filter module.

The third option is Built-in.
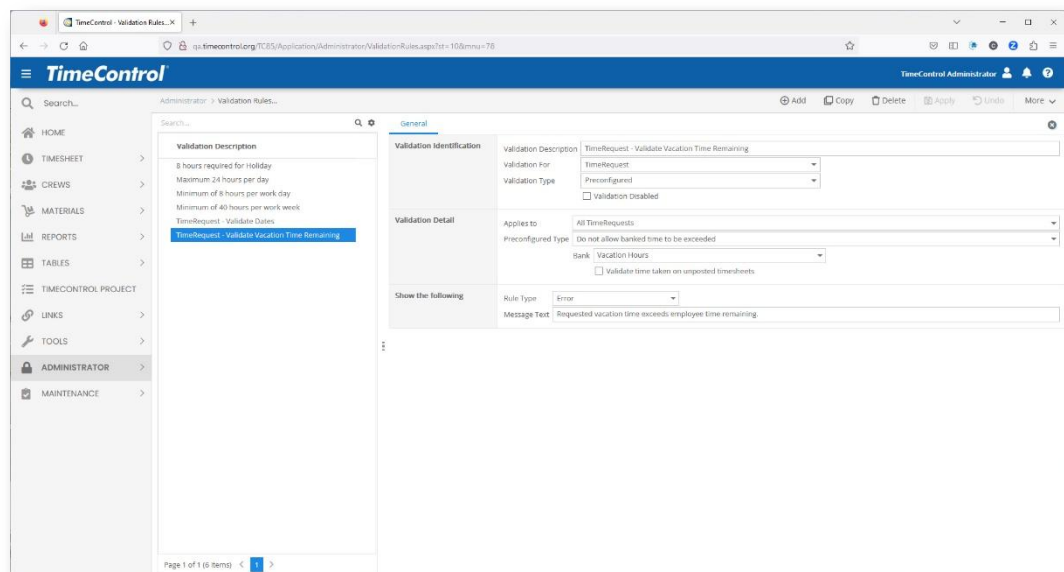
TimeControl comes pre-configured with some TimeRequest Validation Rules already created. If you select Built-in, the screen will give you options in the

Validation Detail section. For example, two of the existing Built-in Validation Rules include Validate Dates which can check existing TimeRequests to ensure that not more than one TimeRequest is created on a particular date. Another Built-in Validation Rule is Do not exceed banked time in which TimeControl can check a user's bank of time to ensure they don't exceed their bank. In this case the name of the bank must be determined and whether you'd like to include not-yet-posted timesheets.

Just like all Validation Rules, TimeRequest Validation Rules can be applied to all TimeRequests or filtered to only apply to sub sections of employees. This is defined in the Validation Detail area.

In the Show the following area, the actual message can be defined along with whether this rule is a warning or an error.

Workflows

Overview

TimeControl includes a feature to generate workflow actions upon the release of a timesheet.

Possible Actions

- Change Timesheet Ownership
  - Release to Next User
  - Skip Next User
  - Release to Posting
  - Post Immediately
  - Post Immediately and approve all line items in PM Validation
- Reject the timesheet and optionally send a message to the source.
- Send an email
  - To the Source
  - To the Owner
  - To the referenced Project Managers
  - To specific recipients
- Execute SQL
- Go to a specific Workflow element

Creating a Workflow

It's important to think of the workflow logically before starting to enter it. Remember that the workflow will be run after all validations are run and will run each time the timesheet is released. If you want a workflow to work only at a certain level of the approval process, you will need to factor that into the conditions you create. The building blocks of the workflow are filters. It's best to draw out the workflow as a logical diagram and then build all the filters with the data conditions you will want to test for.

In this example, let us presume that we wish to create a workflow for salaried staff in which we test first to find out if a project is over budget. If it is over budget, we'd like to send an email to the project manager to inform him or her of the situation. Then we'd like to check to see if the timesheet includes any overtime. If it does not include any overtime, our process has indicated that the supervisor doesn't need to see the timesheet and we can have the timesheet bypass the supervisor. If it does include overtime, the supervisor will need to see it so they can approve the overtime.

Here's what our logic looks like when we draw it out:
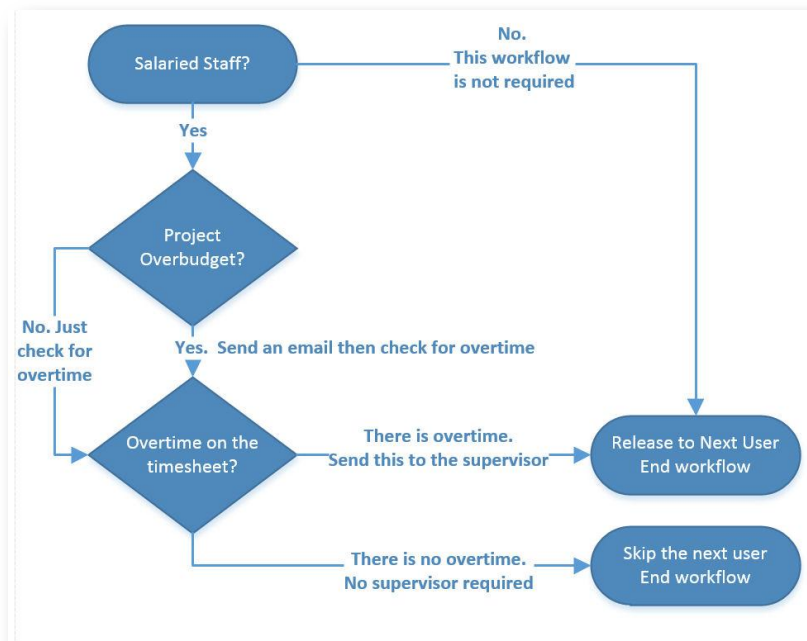
So we are going to need filters for each of these conditions. TimeControl will insist on knowing what the starting point for any workflow is.

There can be only one starting point possible in the system. If you must have many possible workflows and many possible conditions, then you should have a

starting point with a filter that includes all possible data and then organize the logic from there.

In this case, we'll make a starting point of a filter that says "Is this timesheet from a salaried employee?"

We'll check the box that says Starting Workflow.
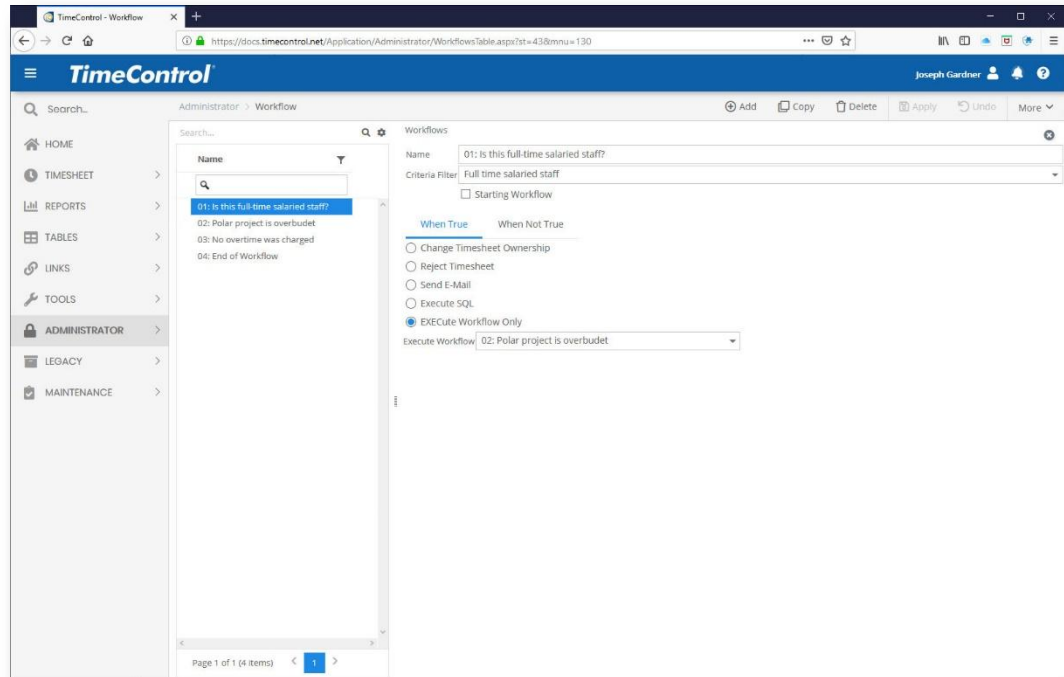
If the condition is true, then the workflow applies and we send the timesheet to the "Polar Project is over-budget" workflow step.

If the condition is not true, then this timesheet doesn't need to go through workflow and we send it to the next logical user in the release path.

For those timesheets which are from salaried staff, we now check the timesheet to see if it has caused the Polar Project to go over-budget. We could be much more complex here, testing each possible project for overtime or doing other data tests but the example is designed to be a simple one.
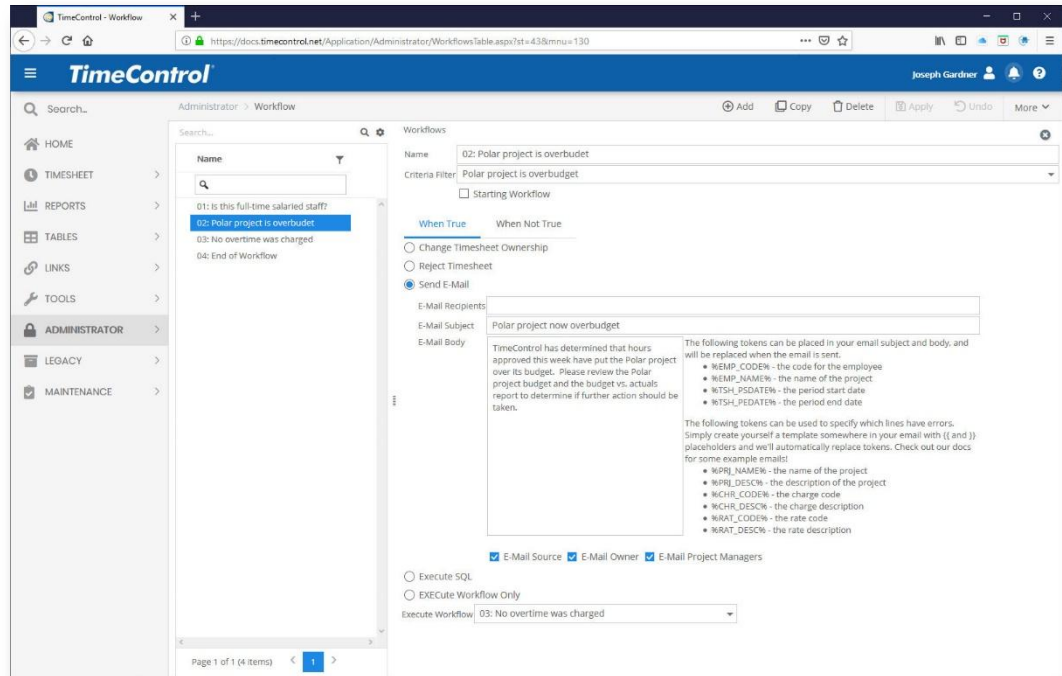
If the Polar project has not been charged on this timesheet or if it has been charged but the comparison of total hours vs. budgeted hours aren't over-budget then we can just send this timesheet to the next step in our workflow process which is testing for overtime.
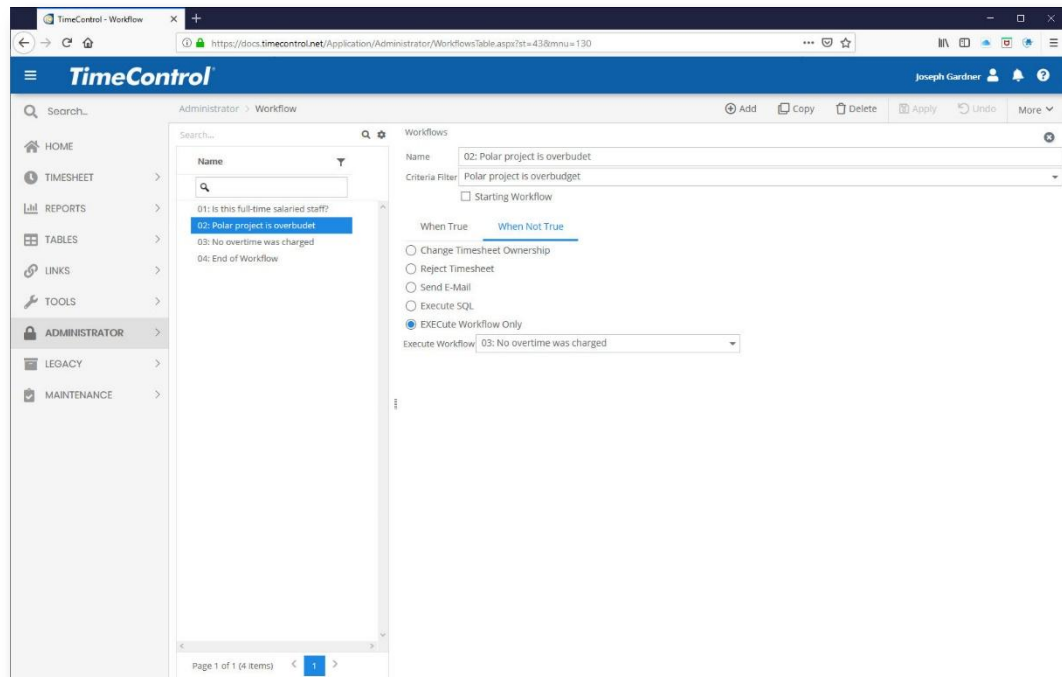
If on the other hand, the condition is true and there were hours charged to the Polar Project and the total actual hours on the Polar Project now exceed the budget, then we send an email to the Project Manager. In this case we're also updating both the owner and the source of the timesheet with an email that says that the Polar Project is over-budget.

When we're done with that action, we send the timesheet to the overtime test.
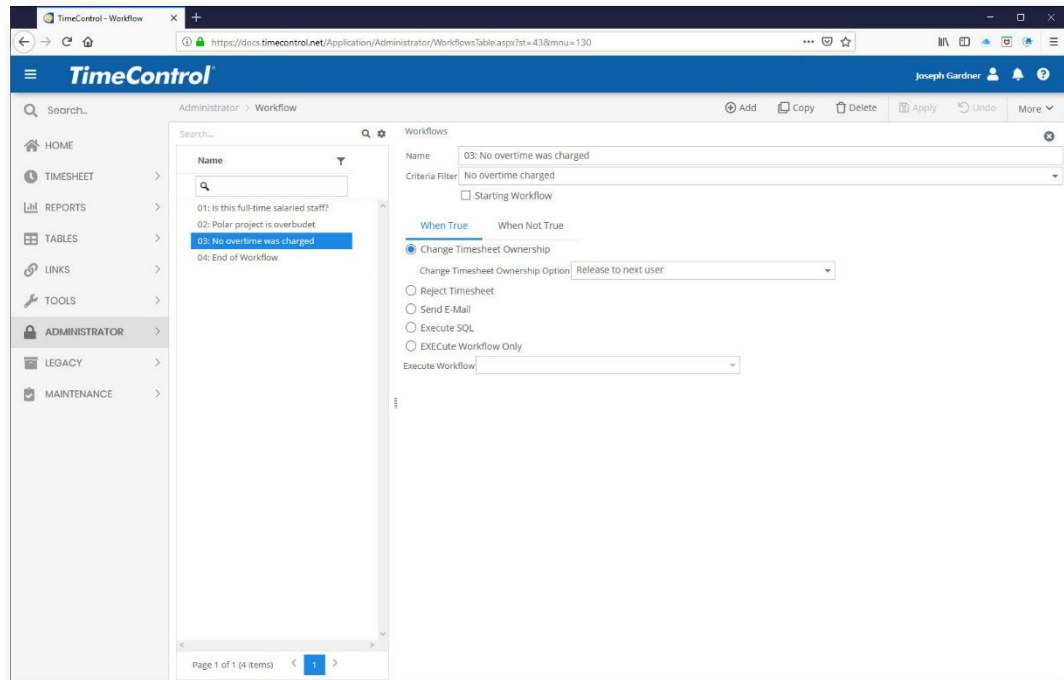
Now we check to see if there is any overtime on this timesheet. If there is no overtime, we don't need to ask the supervisor to manually review the timesheet so we can "Skip" the next user in the approval process.
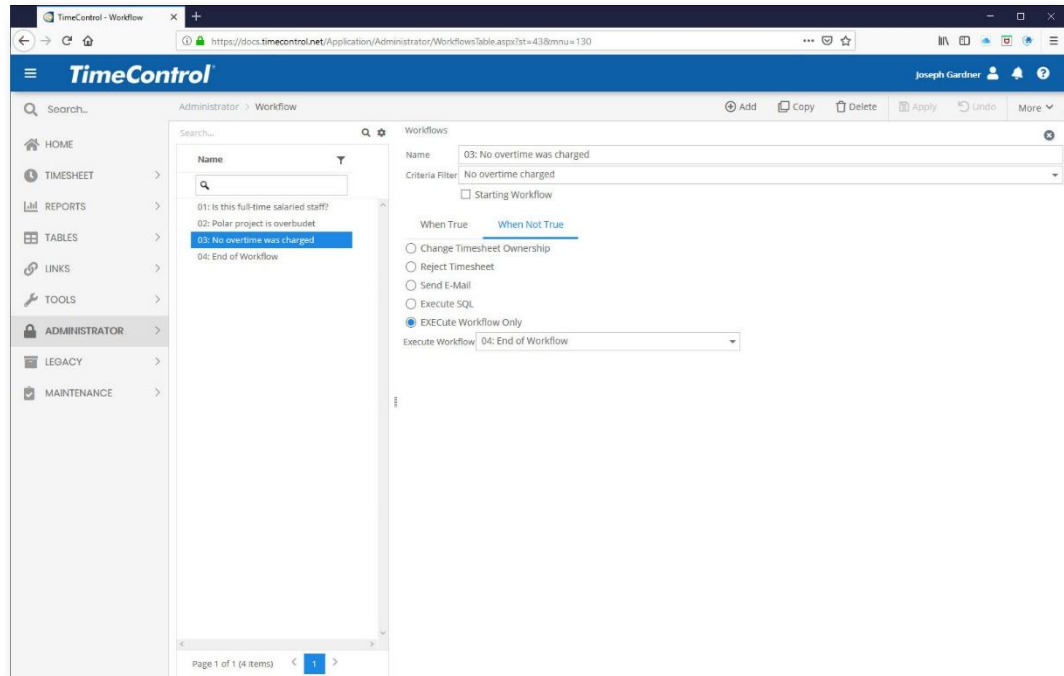
If there is overtime in this timesheet, we will inform the HR manager so they know there are overtime charges to come and once we've sent the email, we'll then send the timesheet to the end of the workflow which essentially means send timesheet to the next user. This means that the supervisor will have to manually review the timesheet. This will not be one of those which is skipped.
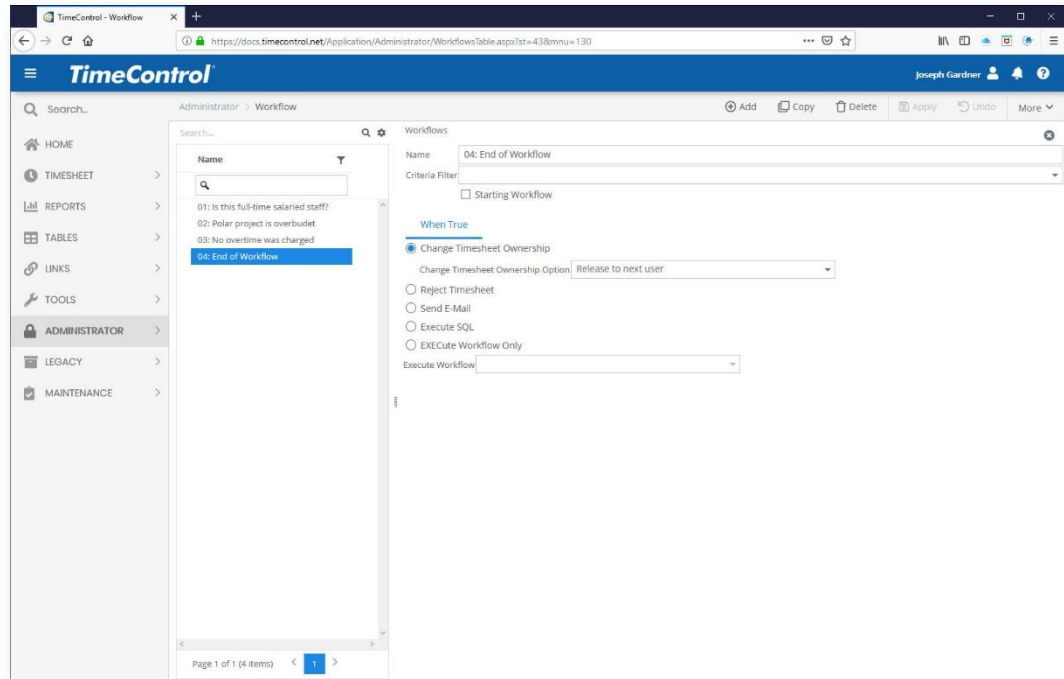
It's important to make sure that there's always an end to each possible trail of the workflow. An ending event is one in which the timesheet is released to someone else along the approval path. Once it's ownership has changed hands, the workflow is over.

Release Structure Global Updates

TimeControl includes functionality for modifying numerous release structures at once. This command is typically used when a supervisor or someone who does timesheet authorizations is being replaced by someone else.

To start the Global Update command, select the *Release Structure Global Updates* from the Administrator Menu. You will be presented with a dialog asking for the original user and the replacement user information.
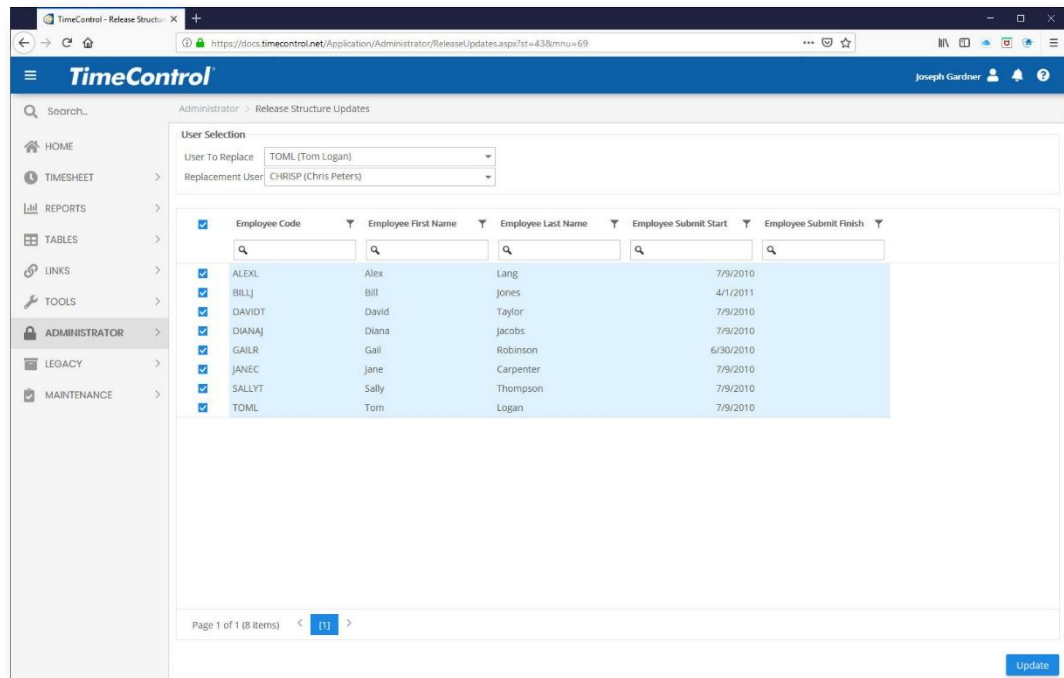
The User being replaced and the User who will take their place are then selected from the drop-down options.

TimeControl then presents the user with a list of the users who will be affected by this command. Please note, this operation, once confirmed functions on the database directly. Select the users whose release structure you wish to change.

Clicking on Update commits the change to the system. This function does not change ownership of current timesheets. That must be done by the Change Ownership function.

Posting Procedures

In some systems, you may wish to execute manipulations of data either in the TimeControl system or in connected systems just prior to or just following the Posting Procedure. TimeControl allows this through managed **Posting Procedures**. These managed events can take the form of SQL statements. There are limitless effects that can be created using these procedures. For example, an Administrator might elect to update employee billable rates from the Finance System's Invoicing module just prior to posting the timesheet data or; an Administrator might elect to automatically trigger a transfer of data for time off to the Human Resources system just after posting is completed.

Posting Procedures can apply to either Timesheet Posting or Material Posting. The only difference are the tables that are affected in the SQL statements. If

Material / Equipment sheets are referenced in the SQL statements, they will be executed during the Material Posting process.

To create a Posting Procedure:

1. Select **Posting Procedures** from the Administrator menu.
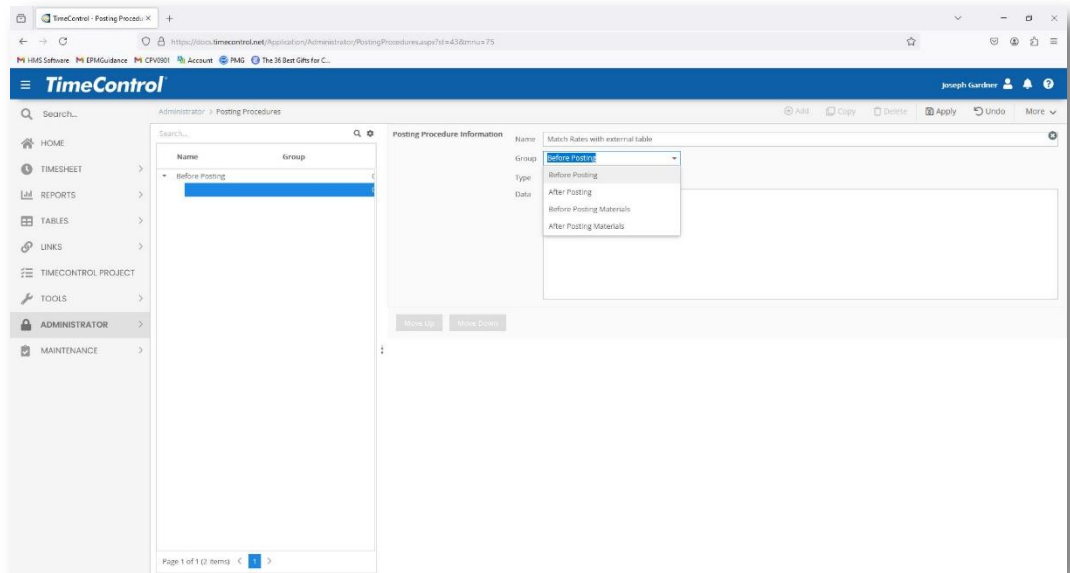
2. Click Add to add a new procedure.

3. In the Group selection, select Before Posting, After Posting, Before Posting Materials or After Posting Materials to define whether this procedure should be exercised prior to or following the posting process and whether this is a timesheet or materials procedure.

4. Enter a name to identify this procedure

5. Enter your SQL Statement in MySQL format.

> **Note**:These statements must conform to MySQL 5.5+ syntax

> **Note:** If you are using TimeControl Online, you will need the assistance of HMS Software to create a SQL Procedure as you will not have direct access to the database. Speak to an HMS Software technical representative if this is something you will require.

If there are multiple stored procedures, you can prioritize the order in which they are executed by using the **Up** and **Down** buttons at the bottom of the screen.

Note: It is possible to create SQL statements which may destabilize TimeControl or even ancillary systems to which it is connected. Use of this feature should be exercised with extreme caution and only with the authority of those technical personnel responsible for the systems which may be affected. You should always create a Backup of your system **prior** to testing these features.

Under no circumstances does HMS Software accept responsibility for any statements or stored procedures executed by this feature of TimeControl.

Manage Menu Items

Some organizations may wish to reorganize menu items under different tabs or even to add their own. Manage Menu Items allows you to do this.
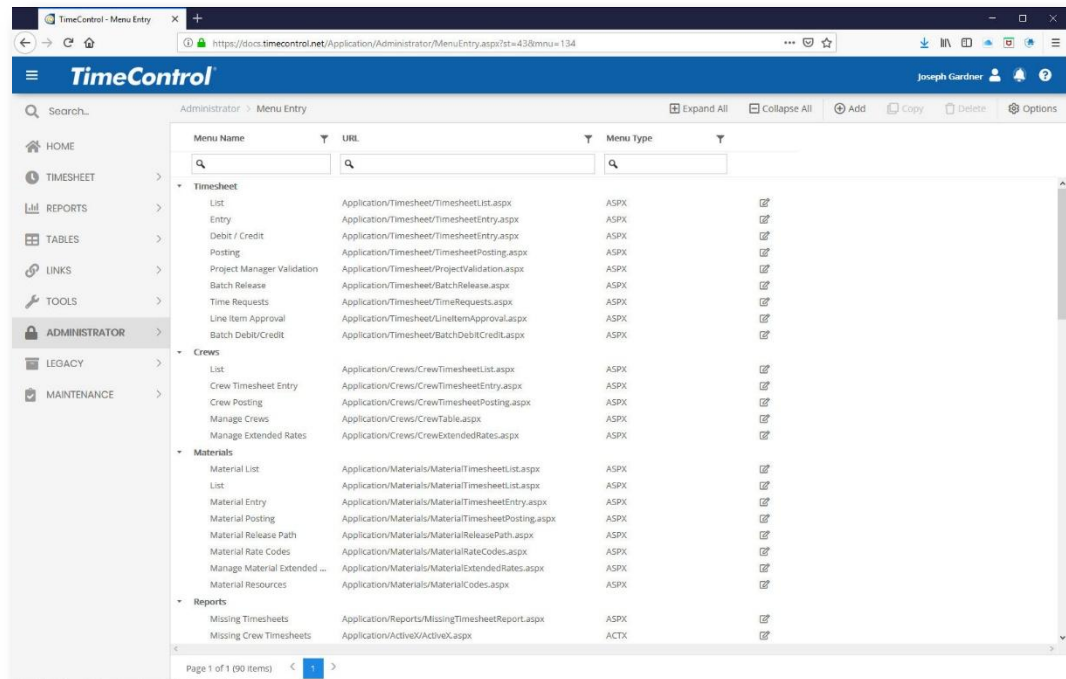
You can edit basic TimeControl menu selections and place them in different tabs or you can add a brand new selection such as company-specific documentation.
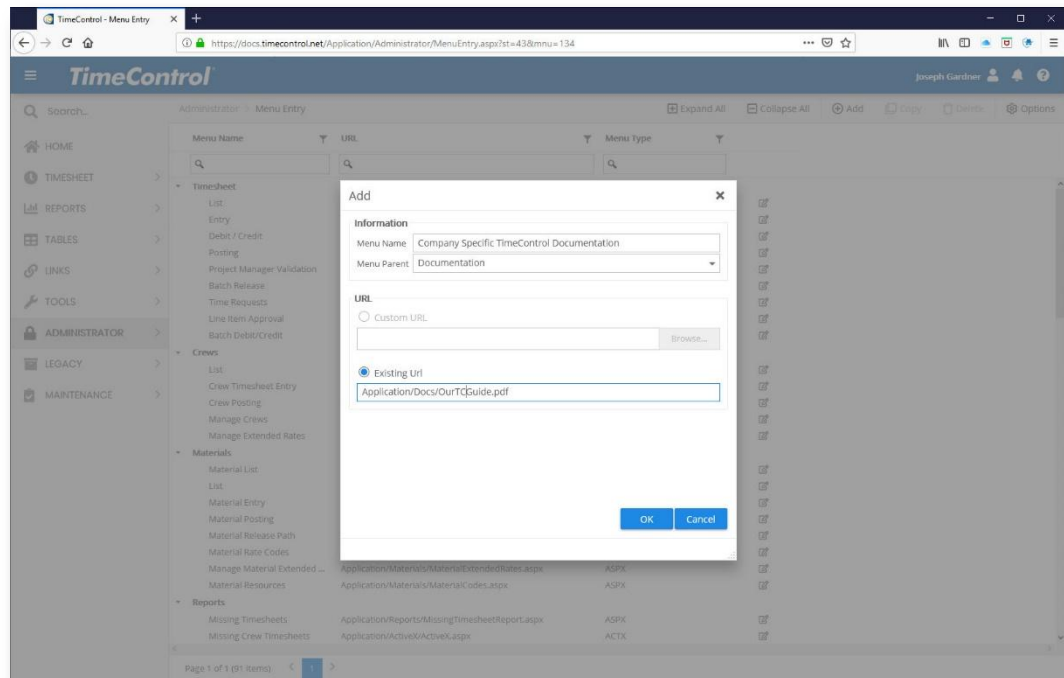
The Add a new Icon function allows you to add a description which will become part of the standard Manage Languages function in case you need to support multiple languages for this function. Then select the area to place this menu selection in.

The URL can be an internal URL if it is located within the TimeControl WebFiles area or it can be an external source if it is, for example, a PDF file located elsewhere.

Click Ok to save the menu selection. The function will now become available within User Profiles for security and within Manage Languages for the description. Please check the User Profiles security for all profiles to ensure the new function is appearing properly.

Maintenance

The maintenance tab contains functionality of use to System Administrators.

System

System functions are typically not required by regular users.
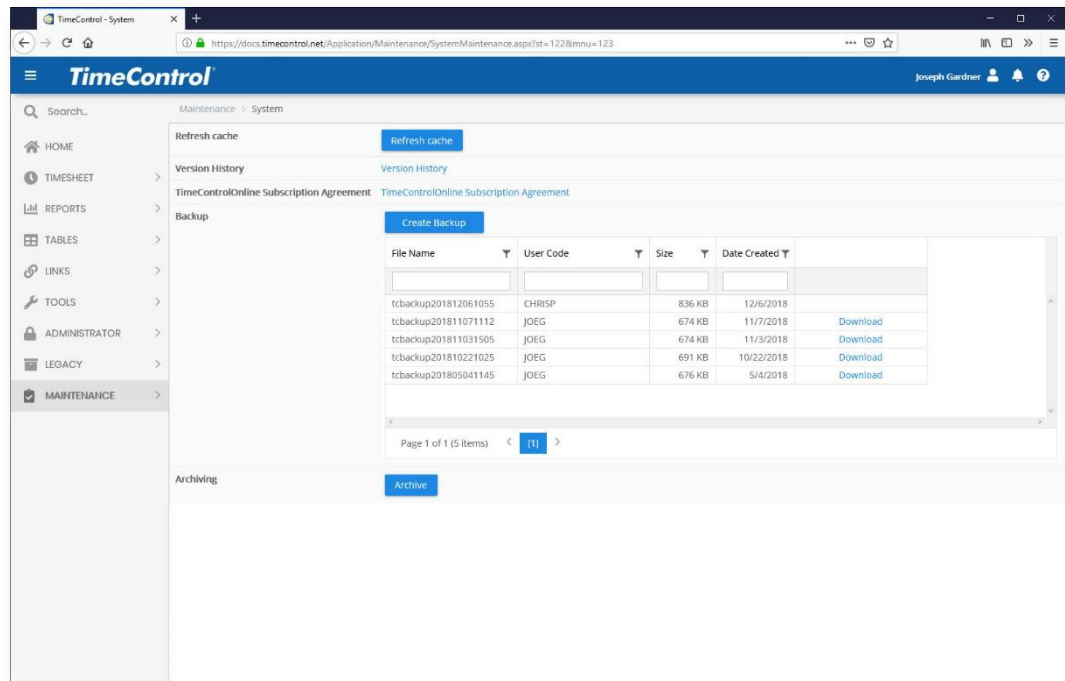
Refresh Cache

The Refresh Cache function updates the cache of data that TimeControl loads when the TTS Server is initiated. Clicking on the option will reload elements like current language settings and other system settings into memory.

Archiving old timesheet data

The Archive function allows you to move timesheet data from older closed periods to archived tables where it will be available for reporting only when specifically requested. As a general rule, HMS recommends keeping the current fiscal year and the entire previous fiscal year in the current tables but, if you have many years of TimeControl data, the Archiving function will allow you to reduce the amount of data that reporting and non-filtered views will have to sift through in order to function. This may improve performance for reporting or exporting functions, particularly on very large systems.

Archiving is located in the Maintenance Tab in the System function.
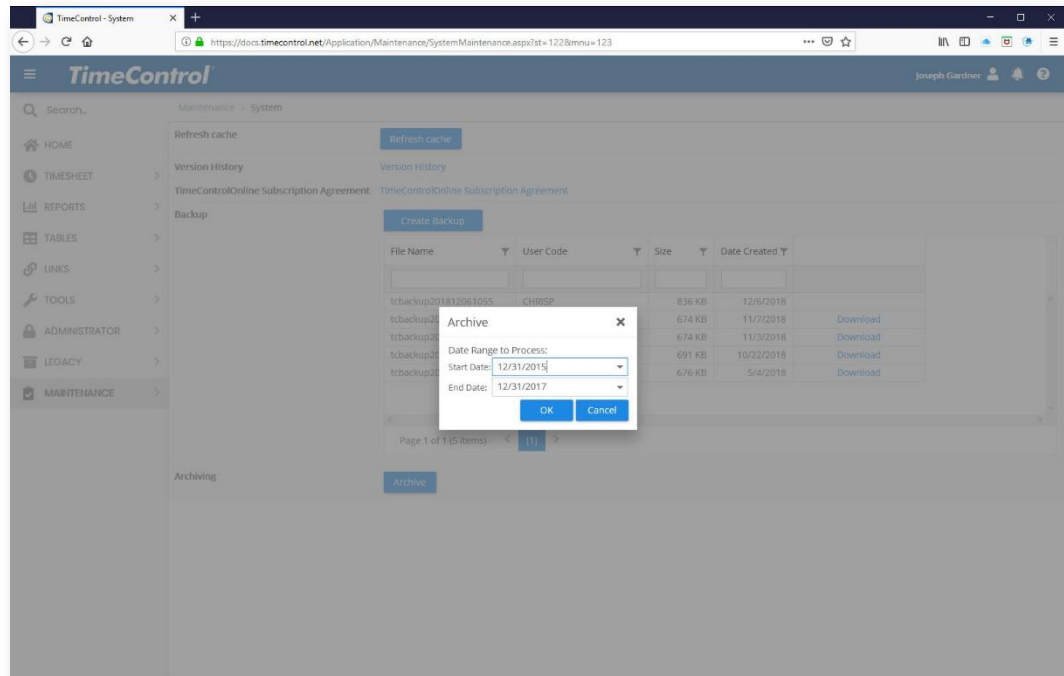
Select Archive then enter the start and end date range of the data you wish to archive. TimeControl will ask you to confirm that this is the data you wish to archive.

It will then move the data specified into archive tables. This data is never deleted. It can always be retrieved in reports by asking to include Archived Data.

Charge Code Deletion

TimeControl includes a powerful function for removing multiple charge codes simultaneously. This function should be used only by administrators as it has the capacity to remove all charge codes from TimeControl!

To remove multiple charge codes simultaneously, select the Charge Deletion function from the Administrator Menu.
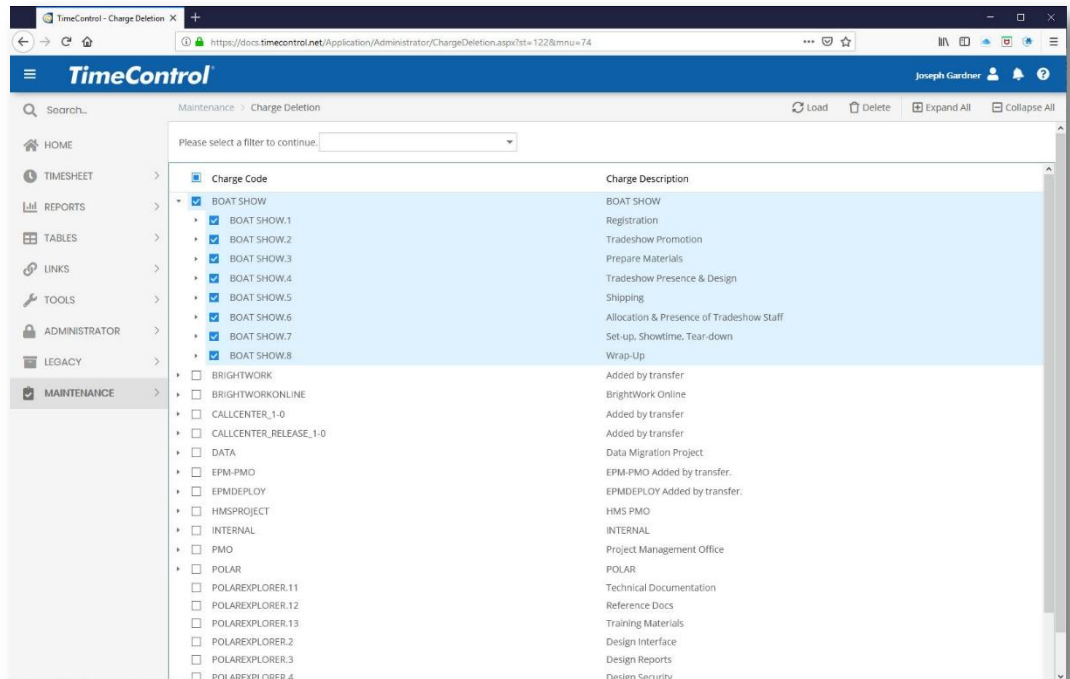
You will be presented with a list of filters which are related to the charge code table which you can first select prior to deleting charge codes that match this filter.

Now select the charges you wish to remove from the hierarchical display. Selecting the top of a tree of charges will automatically select those below it but you can select or deselect any combination of charges. If there are some charges cleared below a summary charge, it cannot be deleted.

Once you are certain you have only selected the charges you wish to delete, click on the Finish button. TimeControl will ask you to confirm your decision.

Remember, once you have confirmed the deletion of these charges, the action cannot be undone. Click on the Yes button and TimeControl will present you with a log showing the charges which have been deleted.

Charges will be deleted from the active Charge Table. The charges in the Charge History table will not be affected as they are maintained to always be able to report data as it existed at the time it was created.

> **Note**: The charge deletion function is a powerful method of removing large amounts of active data from TimeControl very quickly. Once charges have been deleted, the action cannot be undone.

Manage External Tables

TimeControl allows you to create a link from one of our fields to a table that was never part of TimeControl originally. If you have created a new table in TimeControl and added it to the TCTABLES table, this function will allow you to edit values in that table. Managing Linked Fields allows you to link to tables other than the standard list of pop-ups.
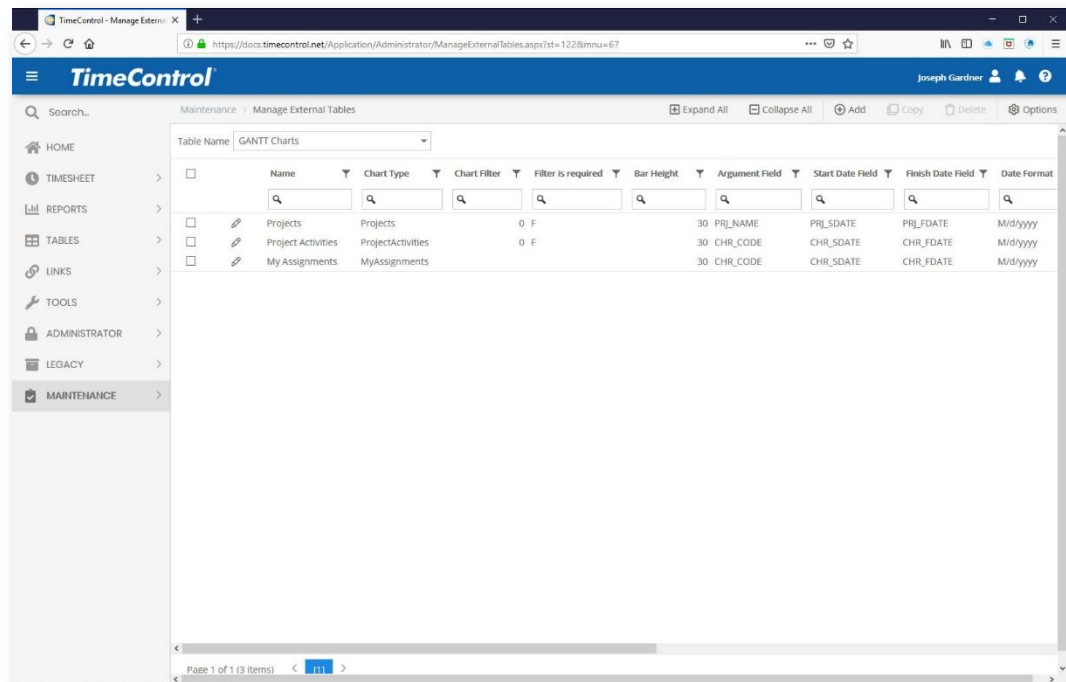
Here's an example where this function may be of interest:

Let's imagine that you are using a list of departments but you would like to use that list of departments in numerous places in TimeControl. Perhaps you have a user defined field in the Users Table, the Employee Table and the Resource Table. You can certainly make a drop-d0wn list of values right in those tables but if a department name changes or there is a new department name, you will need to add or change those values in all three places.

Using Manage External Tables, you would be able to create a new table and add it to the TCTABLES list using SQL and then in this module, update those values here in only one place. Linking the drop-down values in "Manage External Links" to this new table would make managing that data much easier.

Manage Scheduled Jobs

If you are using the TimeControl Schedule Service, you can use the Manage Scheduled Jobs function to control scheduled jobs which have already been created. If you wish to create a timed event to occur, you will not do this here.

Timed events must be created in the function that supports them such as Email Notification or Posting as TimeControl requires information from those functions in order to schedule the work.

Once a scheduled job is created however, it can be edited or deleted from this function.

To edit or delete a scheduled job:

Select Manage Scheduled Jobs from the Administrator menu.
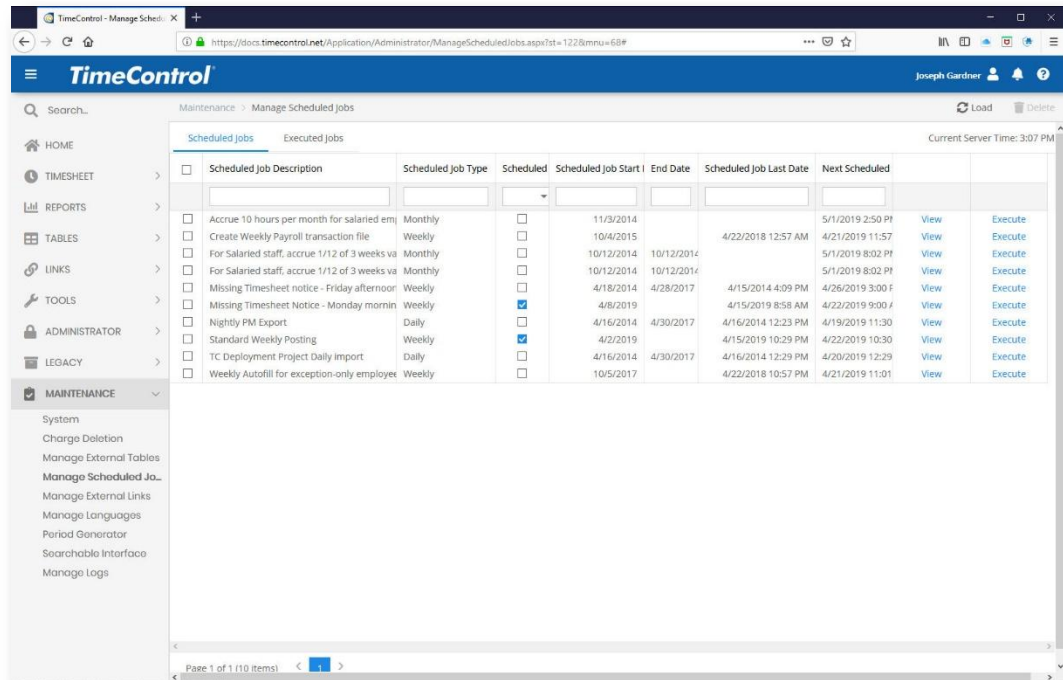
You will be presented with a list of various scheduled jobs which you can delete or manipulate. Select a job and click on Delete to remove it or right-click on the job to edit or change the job.

If you wish to edit a scheduled job, select the appropriate line and click on the View button or right-click on the line and select View.
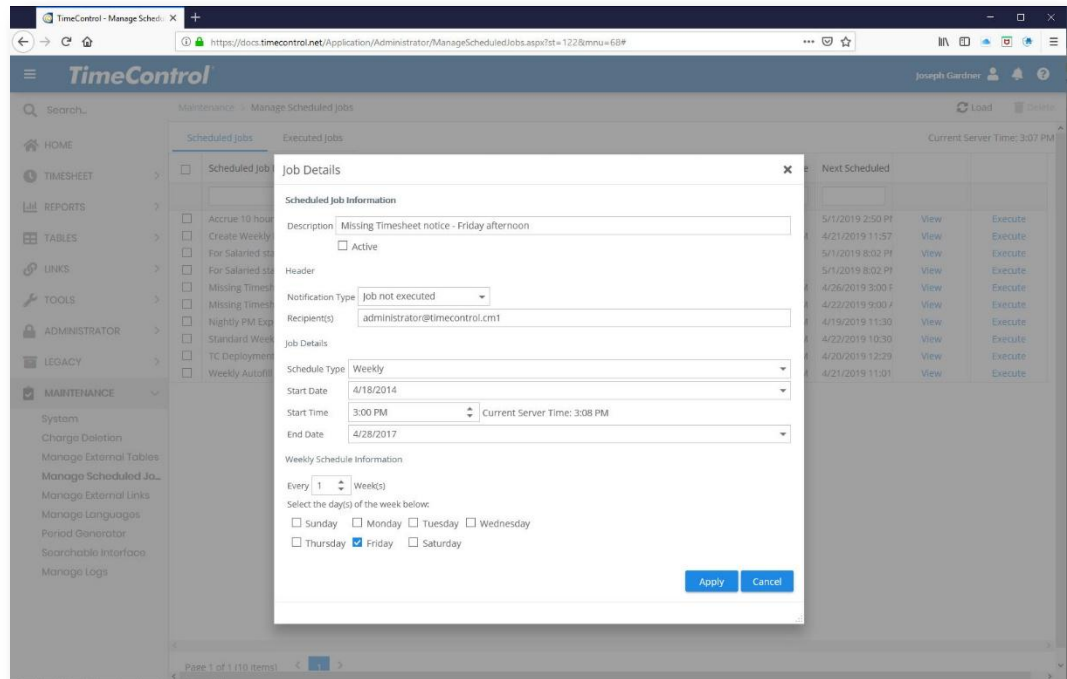
You can now edit any of the basic fields which you entered when the scheduled job was created. Make the changes you require then click Apply to save the changes or Cancel to abandon them.

Manage External Links

This module allows an Administrator to manage pop-up values for certain fields in TimeControl and to display the audit trail log of timesheet approval activity.

Manage Links

You can use this view to identify where a field gets its pop-up values from. The Linked Fields table (TCPOPUPS) is a generic use list which lets you create your own selection values in a field. However, you are not restricted to just that list. For example, you might wish to redirect a User Defined field to present from the list in the Project Table or the User Table. You can make this redirection here. In this example, Employee Field 3 is redirected to show a list of Users from the Users Table.
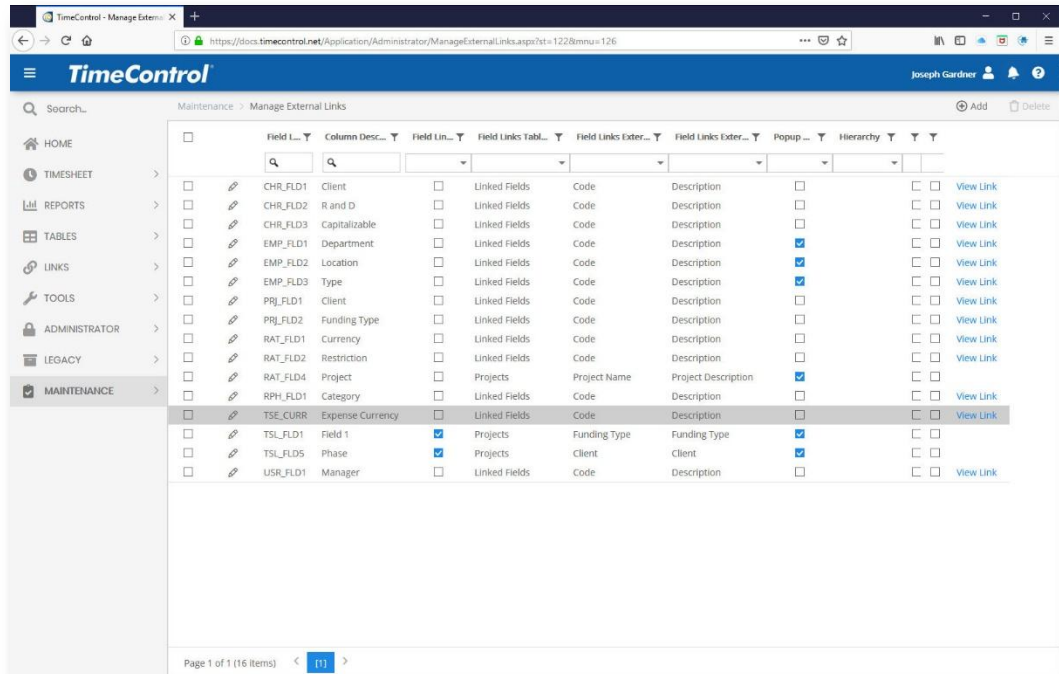
You can add a new user defined field link here by clicking on Add.

Validating User Defined Fields
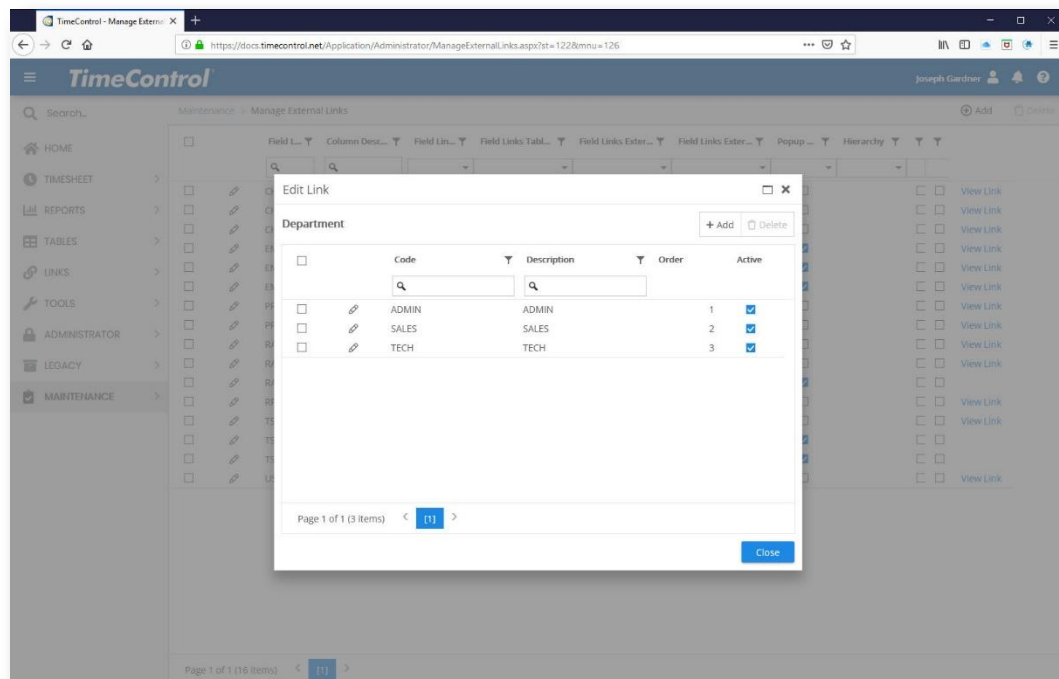
Select the View Links tab to view the values available for each pop-up field in TimeControl. You can delete an item from here by clicking on the select box to

its left and then clicking delete. Edit a value by clicking the edit icon on the left. To add an item, click the Add icon on the far right.

You can change the order in which pop up items are displayed by changing the order here. If the order is blank or "0" then it is typically displayed in alphabetical order. You can also make a pop value inactive by clearing the Active flag on the right hand side.

For fields which have many possible values, you'll need to make multiple entries here.

Manage Languages

Administrators can change the names of virtually every label, button and message within TimeControl. This feature can be used to add new languages to TimeControl, to adjust the languages the system ships by default or simply to change the names of user defined fields for clarity. In order to change a field name or add a language, launch the Manage Languages module by selecting **Administrator | Manage Languages** from the main menu.
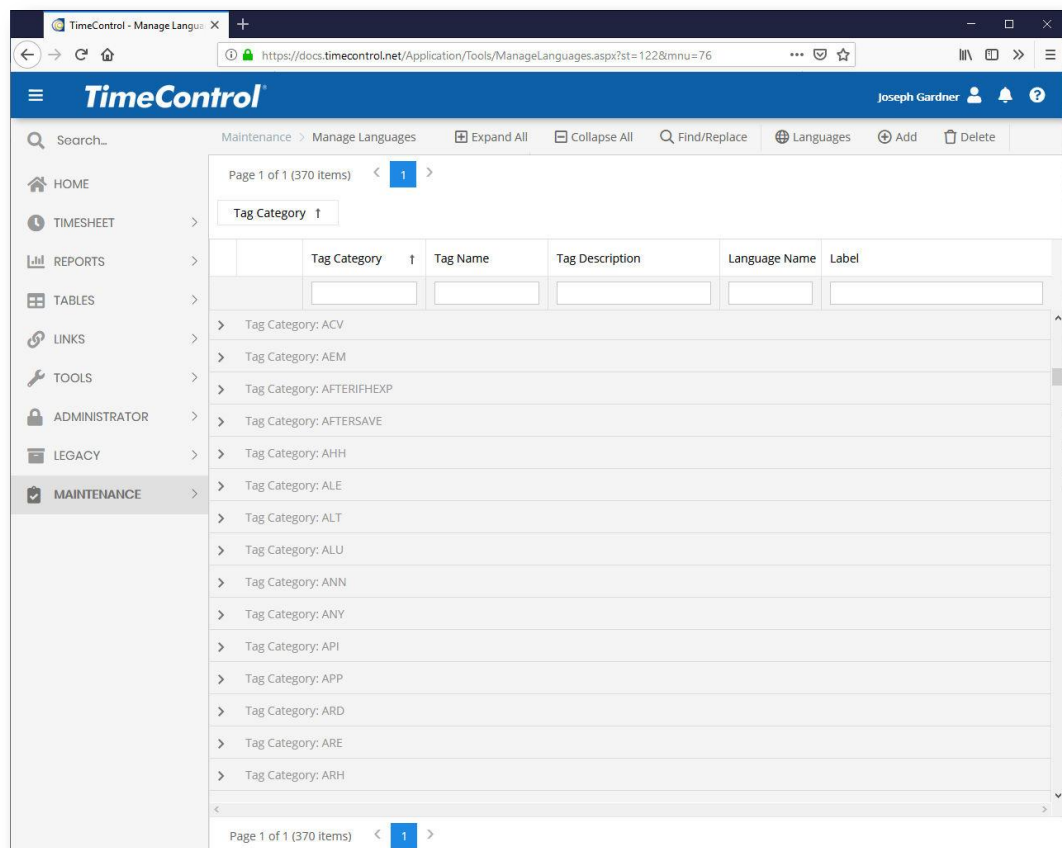
You can group the translated items together by category and table by dragging a column header to the grey zone just above the column headers. The long list of possible field names, message etc. are organized by default by language and

by category.   The three-letter categories are often self-explanatory (ERR for Error, MSG for messages, EMP for Employee table etc.)

Selecting the category of your choice and then expanding that category should show all the entries for that section. For example, selecting the EMP category will show all entries for the Employee Table:

Edit any translation by editing the "Label" column
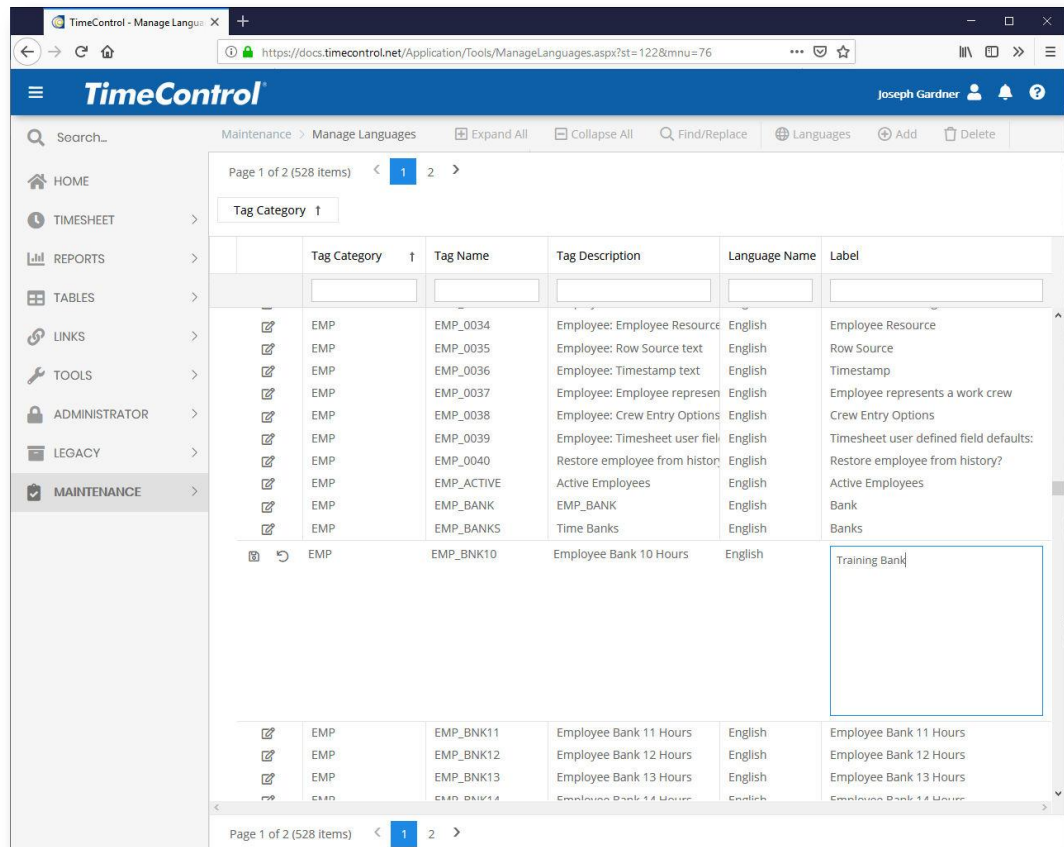
You can also use Find/Replace to do global changes of a term. This utility will find all occurrences of a particular string of text and replace it with the text you desire. This is very useful when you have a change in definition of a term that is used all over the system such as the words Activity and Task, which are shown here. Be aware however, that the utility is wide ranging and it is better to select the **Replace** option multiple times and be sure you are changing what you want rather than Replace All and be upset later.
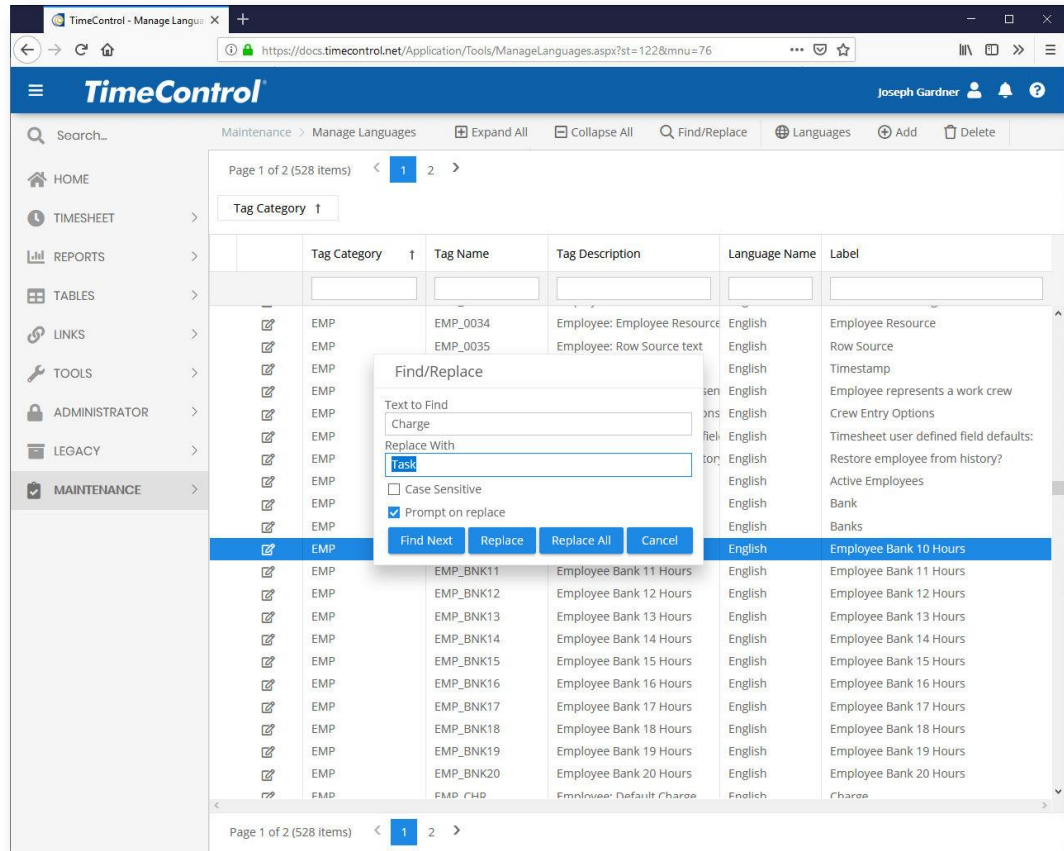
You can select which language(s) you wish to keep in the active view by clicking Languages.
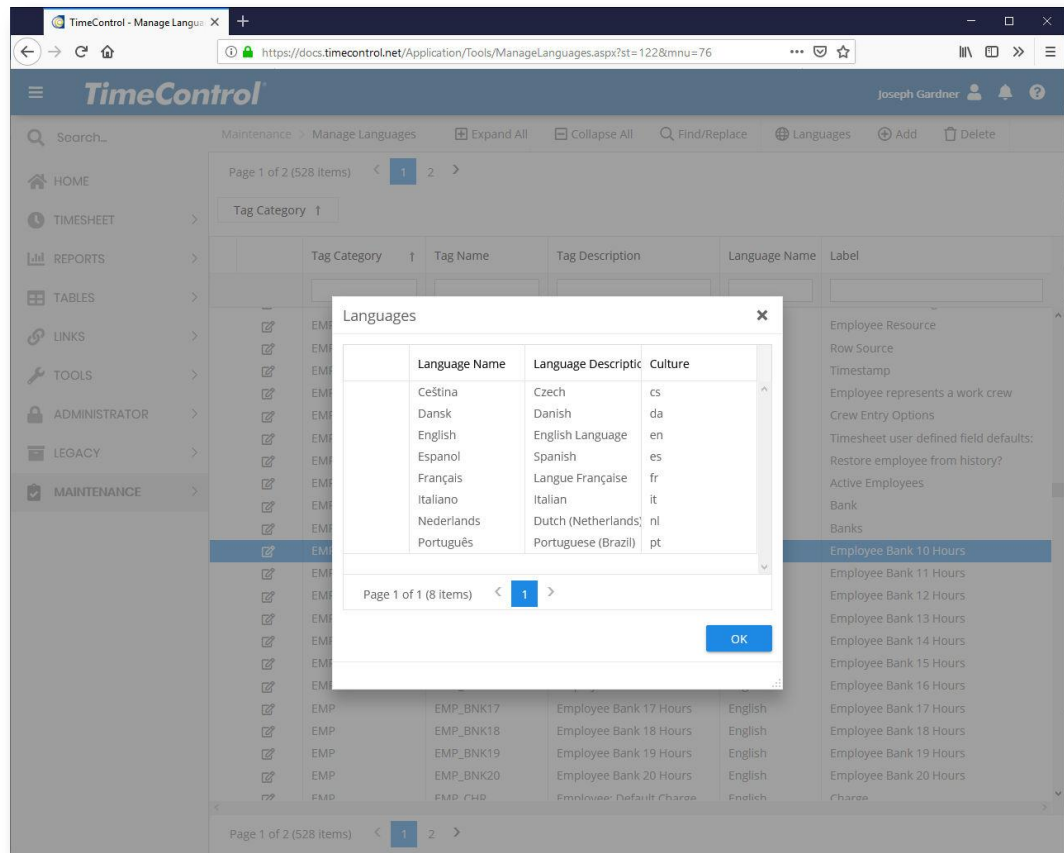
Finally, TimeControl allows you to create your own language definitions by clicking **Add**.
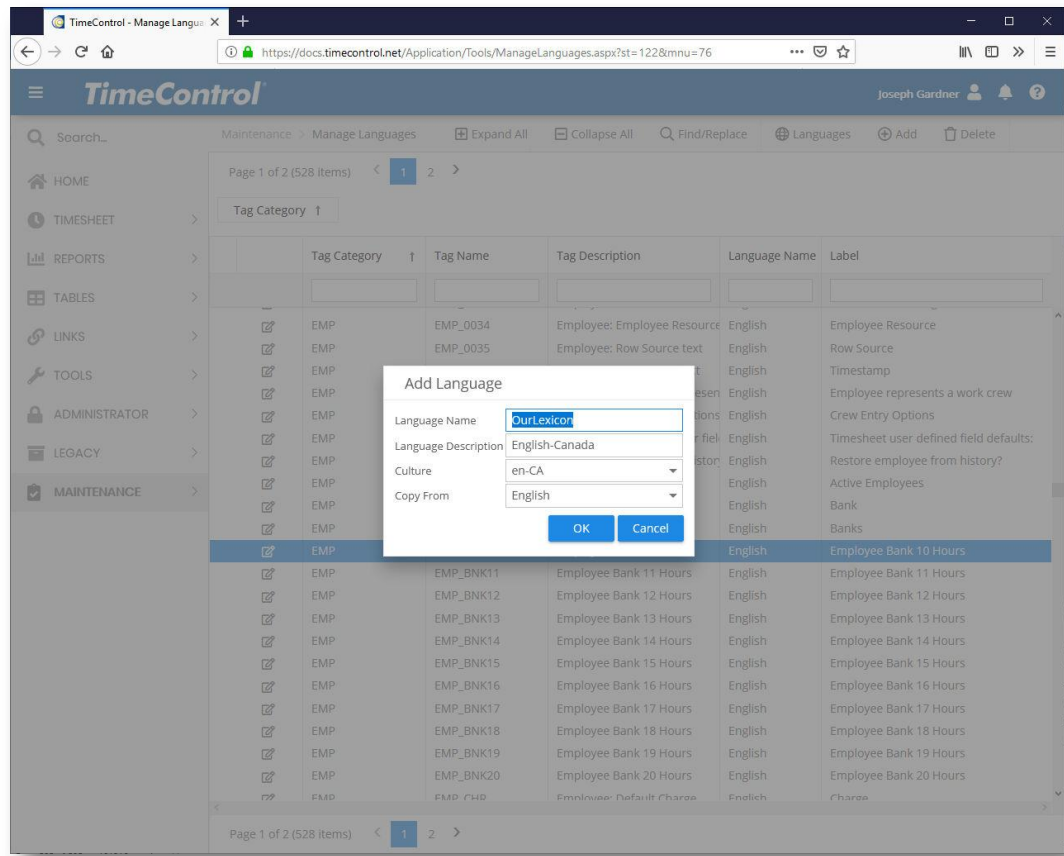
To create a language definition, select from an existing definition list to copy from and then you can adjust definitions as you wish. This would allow US vs. UK English for example or different terminology to be used in one location than another. The "Culture" of the language is the term used by web browsers to identify what language and other settings to apply to a page. This can be different than the regional setting of your operating system. TimeControl understands both a 4-character culture (such as "en-US" for US English) or a two character culture (such as "fr" for French).

Period Generator

TimeControl can be configured with a range of different timesheet lengths. Choosing the correct timesheet length for your system may require some internal discussion. In the appendices of this guide, we have included a tutorial where we identify some of the key issues that must be considered when selecting the appropriate length. The choice will be applied to all TimeControl users. Possible selections include:

Daily – A single calendar day

Weekly - 7 days long

Bi-weekly – 14 days long

Bi-monthly – From the 1st of the month until the 15th and then from the 16th of the month until the last day of that month

Monthly – From the 1st day of the month until the last day of the month.

Custom – Any length per period which is manually entered.

TimeControl can support one length of timesheet for one period of time and then a different length after that. The only constraint is that timesheet periods cannot overlap.

Periods <u>must</u> be created before a timesheet can be entered for those calendar dates.

To create your timesheet periods, go to Maintenance | Period Generator

Click Add to create a list of timesheet periods.
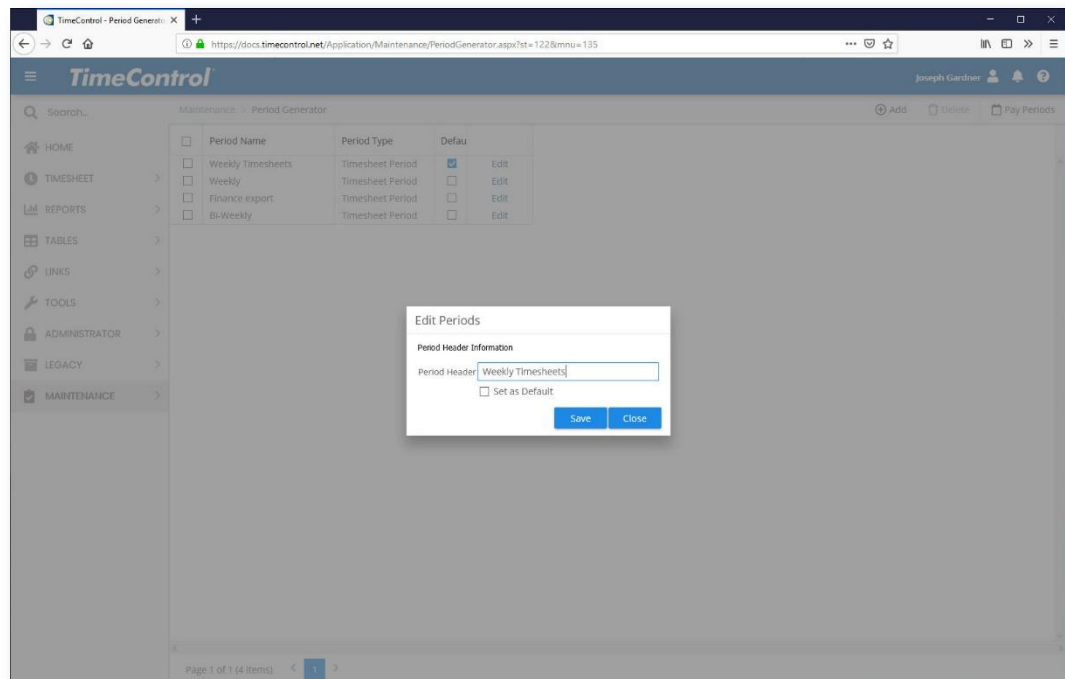
Enter a name for this list of periods and whether to use this as your default period selection for the Employee Table.

Click Save and you will be presented with the Period Generation screen
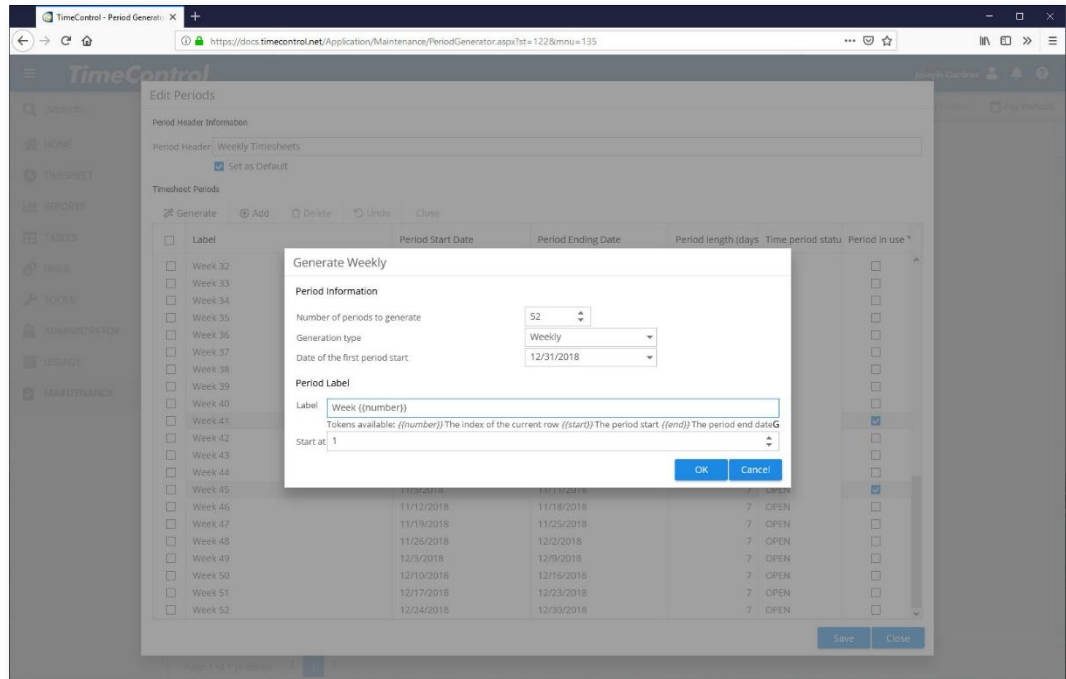
You have several parameters that must be entered:

- **Number of periods to generate** – Enter here how many sequential periods you wish to generate at this time.

- **Date of the first period start** – The starting date of this sequence of periods.

- **Generation type** – The type of automatic period. The choices are: Weekly, Bi-Weekly, Bi-Monthly, Monthly and Custom.

- **Start at** – The starting number of the period for this sequence

- **Label** – You can decide what to enter as a descriptive label for this period. There are 3 macro entries. Entering {{number}} will create a number at this spot in the label. Entering {{start}} will create the date of the start of the period for this label. Entering {{end}} will create the date of the end of the period for this label. As an example, if we are entering new periods starting with week 8 which will start on Monday March 30th, 2015, the Label Entry "Week {{number}} Starting {{start}} Ending {{end}}" will result in the text "Week 9 Starting 3/30/2015 Ending 4/5/2015" for the first period of this sequence.

Restricting Periods to select from

You may wish to restrict how many periods are available for users to select from. You can create a restriction of how many periods before today and after today to display by going to the Timesheet Tab of the System Preferences area of the Administrator module:

Closing Periods

An Administrator can close periods from any accidental entry in the Period Generator once they have been created.

Simply select the period you wish to close, select "Closed" and click "Apply" in the Actions menu.

Daily Timesheets

For many TimeControl Industrial users, a daily entry of time will be attractive. This can easily be accomplished in TimeControl by creating daily periods. Choose Daily as the period type and TimeControl will create a single column

timesheet for Crew or regular timesheet entry. Your exports for payroll, billing or project management can still take any filtered collection of data you choose.

If you intend to have multiple shifts per day, you must check the option in System Preferences entitled "Allow new timesheets to be created for the same period (day/week).

Multiple Timesheet Periods

TimeControl supports the use of multiple periods per timesheet. A single TimeControl instance can have some employees doing timesheets with one duration and other employees completing timesheets with a second duration. There are a number of implications of how TimeControl functions in this environment.
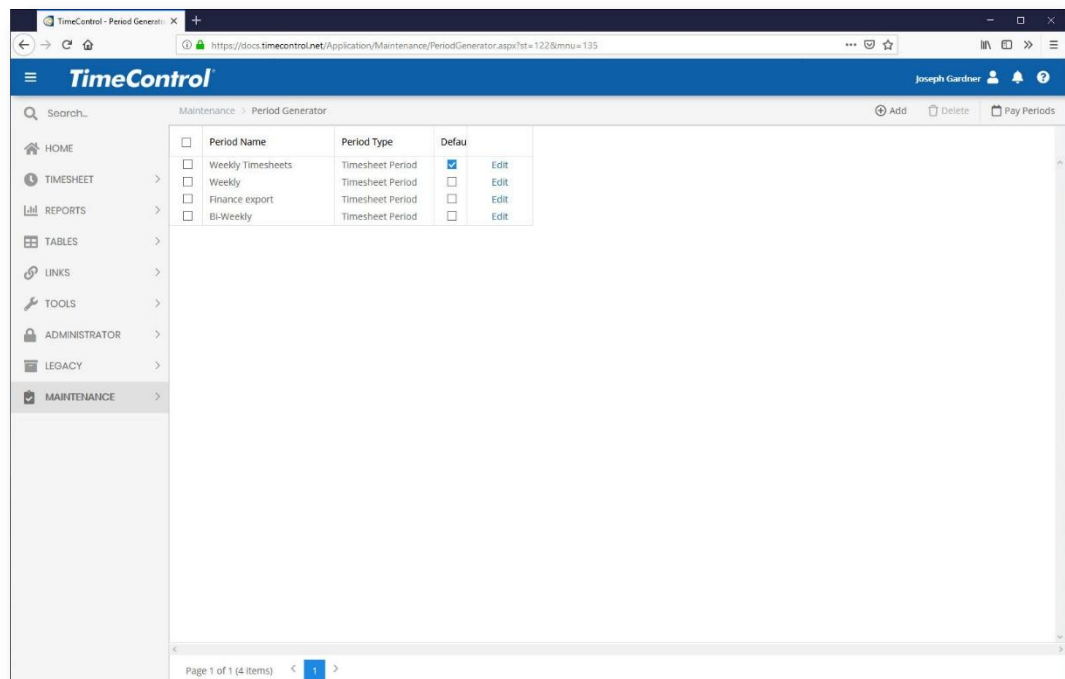
Multiple Timesheet periods are designed for organizations where different groups of users are accommodated within the same instance of TimeControl. For example, if one group of users in the field within a TimeControl Industrial deployment were doing timesheets daily and other back-office users in the same system were doing weekly timesheets, then having multiple periods is ideal. The daily timesheets would be collected, approved and posted and used by the project systems every day and the back office staff would have perhaps a weekly timesheet collection, approval and posting cycle.

There may be an initial desire to have several timesheet durations within the same system but there are a number of implications the internal processes and

technical elements such as filters, validation rules and reports might add additional maintenance effort to a deployment. These are discussed in more detail in Appendix E of this guide: Choosing the right timesheet length Tutorial.

Multiple Periods Generator

Aside from the periods associated to the timesheets themselves, TimeControl can also create reporting and export periods of time in the same manner. These could be use, for example for Payroll or integration with other systems. Pay periods do not have to be an exact match to the timesheet periods and can be used for approvals, reporting and, exporting. This would allow for example, a weekly timesheet but a bi-monthly pay period with processes for approving, reporting and then transferring the data to the project management system weekly and the payroll system bi-monthly.

To create a Pay Period, select the Pay Period option in the Period Generator then click Add. TimeControl will ask for a title for this list of pay periods.
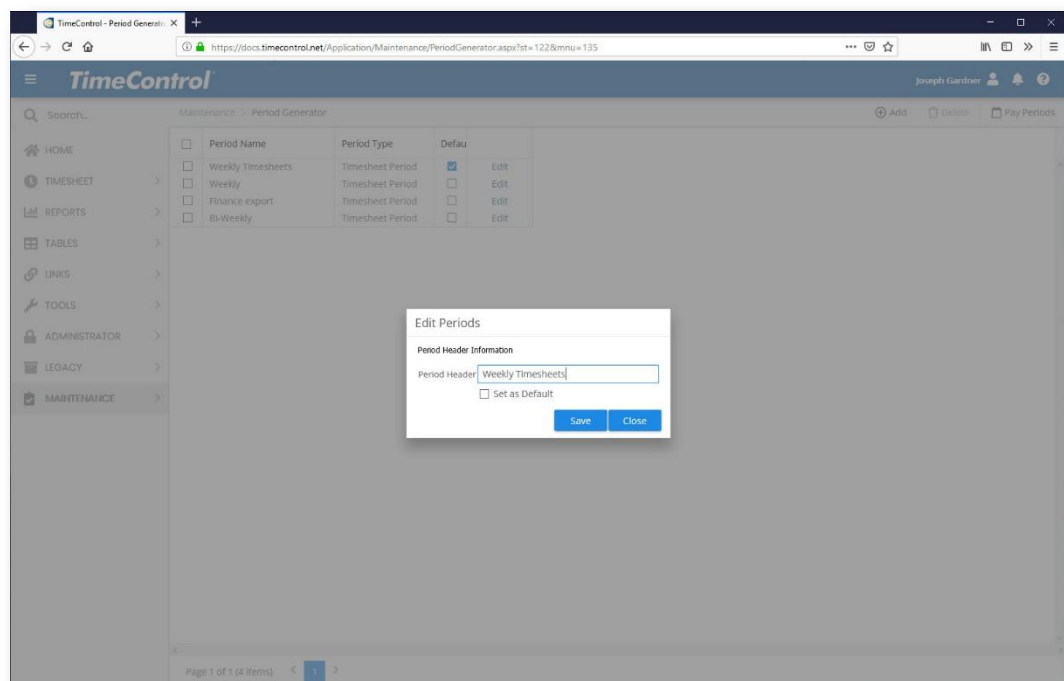
Now click on Edit to create or change any period details.
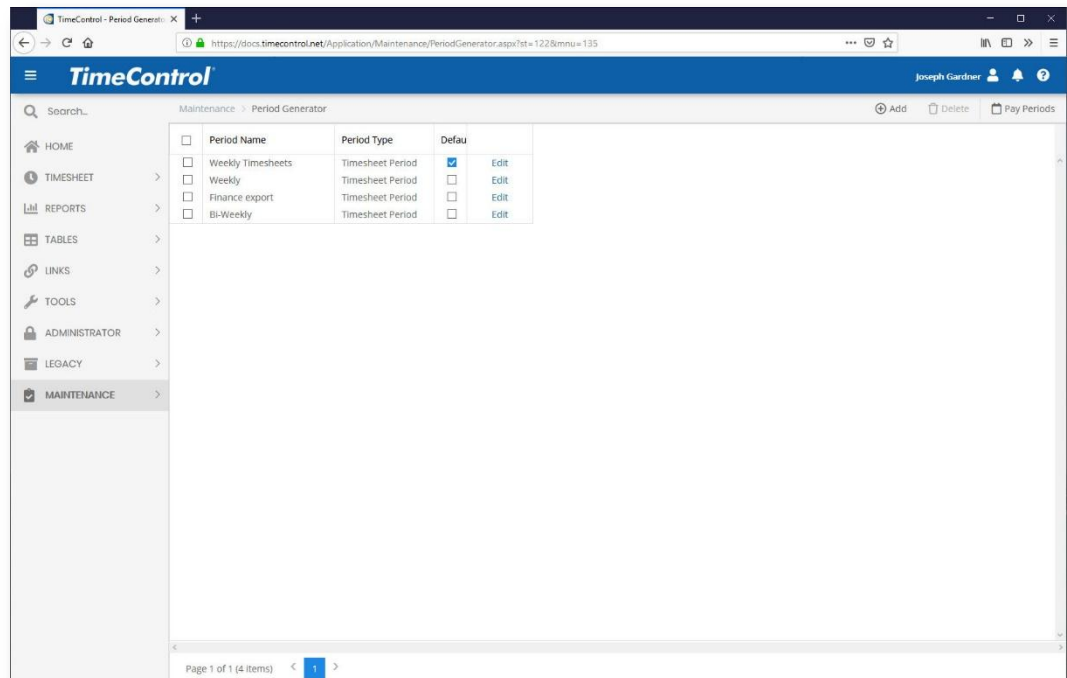
Click Generate to create new periods using the automatic generator
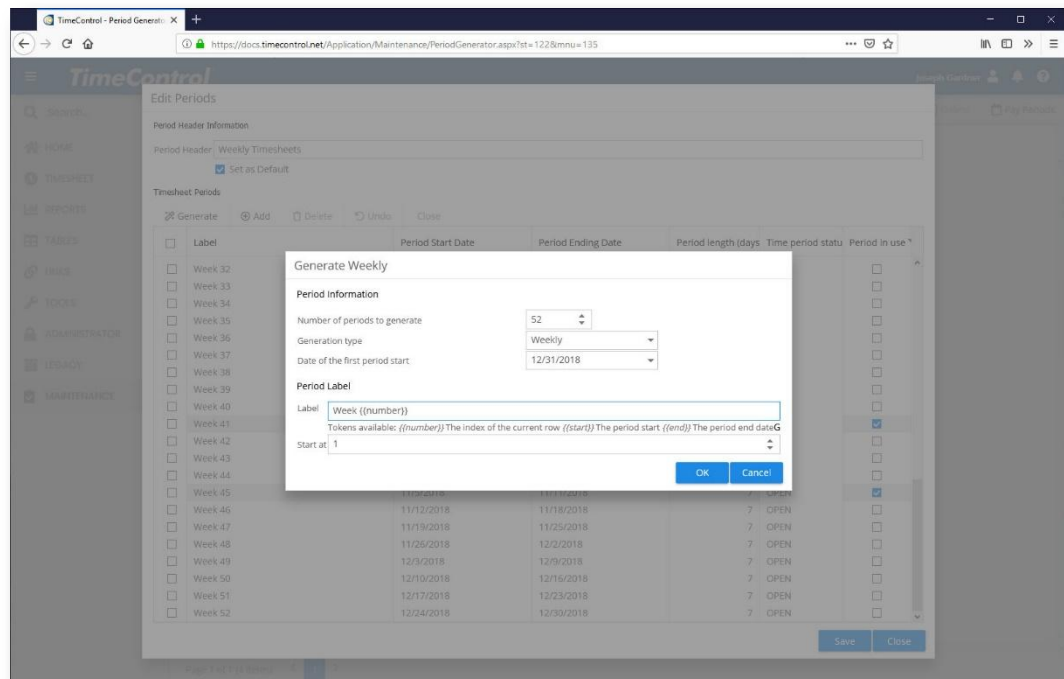
Just as with the Period Generator, make a selection of the number of periods to create, the frequency and the label for each period and the start date.

Click Ok to continue.

If successful, TimeControl will create the periods and give you a notice.
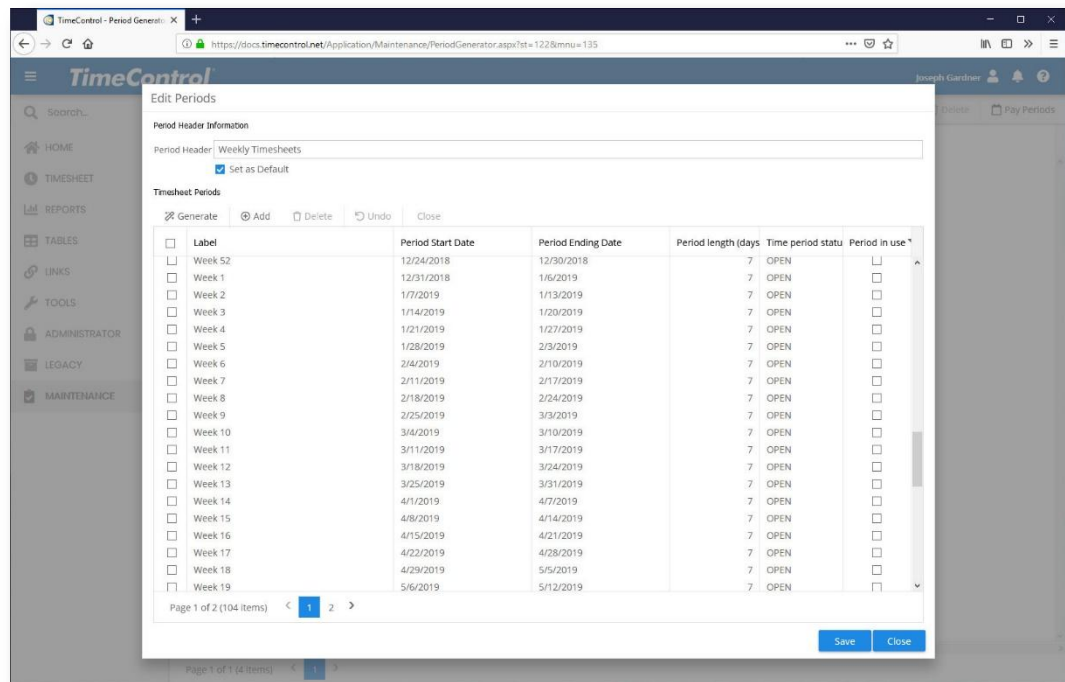
Click Save to save these periods or Cancel if you wish to start over. Once saved, the periods will be immediately available to systems that use them.

The list will show which periods have timesheets that are affected by them. Any timesheet that has any part of its duration in the period will cause the "Period in Use" flag to be shown. A period cannot be deleted if it is in use.

The "Time Period Status" flag allows an administrator to leave a period "Open" or Closed". A User Profile security status allows timesheets in "Closed" pay Periods to be shut down from any modification including through the Debit Credit Process.

Searchable Interface

TimeControl allows the dialog in pop-up search dialogs to be extended. In the timesheet or in tables, when a user clicks on a project, charge or rate field ellipses, TimeControl pops up a list of possible entries from the associated table. The list is constrained by whatever filters have been pre-configured for that user. The fields that are displayed for searching in this dialog are controlled form the Searchable Interface view.
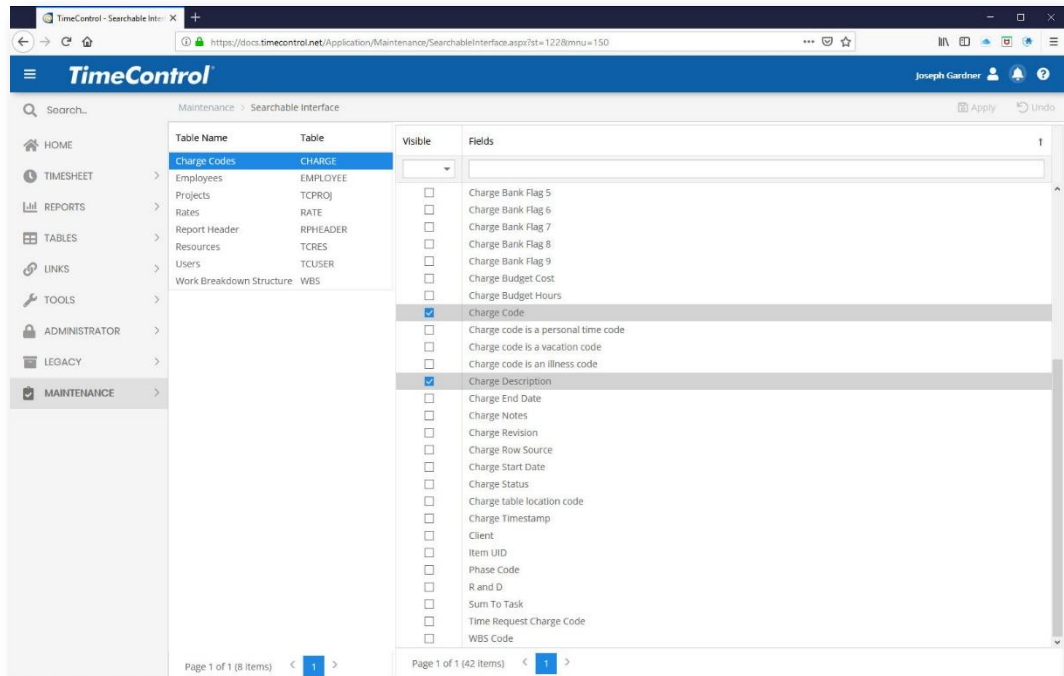
Click on the fields you wish to make visible in Search Dialogs for the associated table. In the timesheet, when the ellipses is clicked to search for an entry, the fields selected will be part of the search criteria.

Manage Logs

The Manage Log function allows the user to view server-stored logs in the TimeControl/Logs area of the server. This allows Administrators without direct access to the Server on which the TimeControl TTS is stored to view logs that may be relevant to system maintenance.
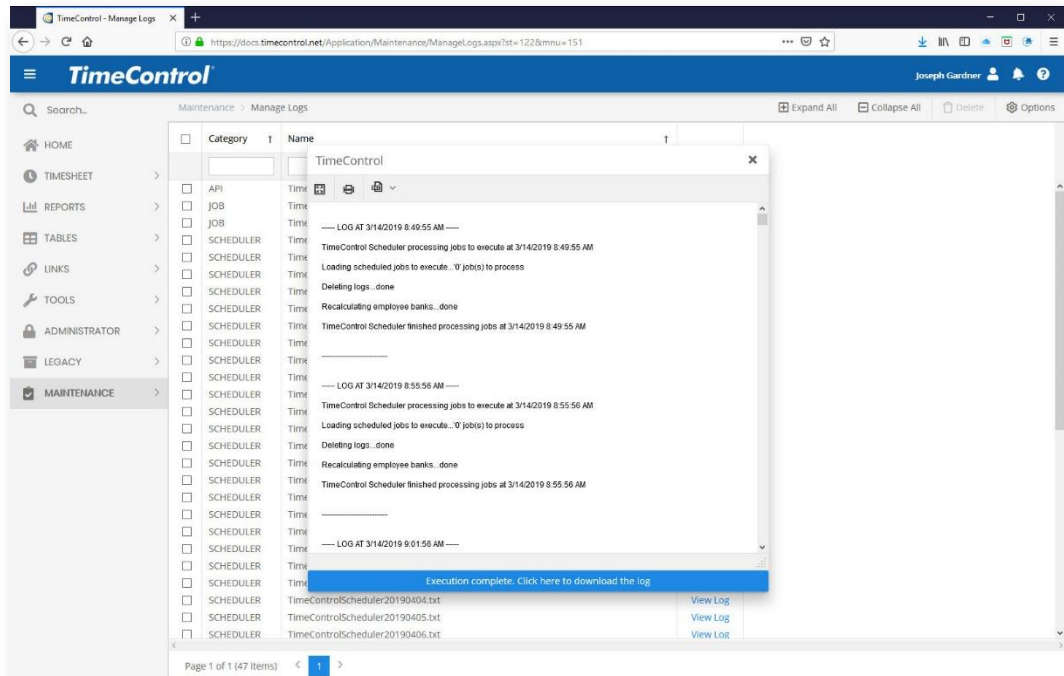
Clicking on Manage Logs will display a list of all logs found in the /logs directory. The user can View or Delete the logs from this module.

Manage Queued Jobs

TimeControl can identify what jobs are currently running in the background. If a job is taking too long or there is a potential problem with a queued job that hasn't started, you can view and if necessary delete jobs from the queue.
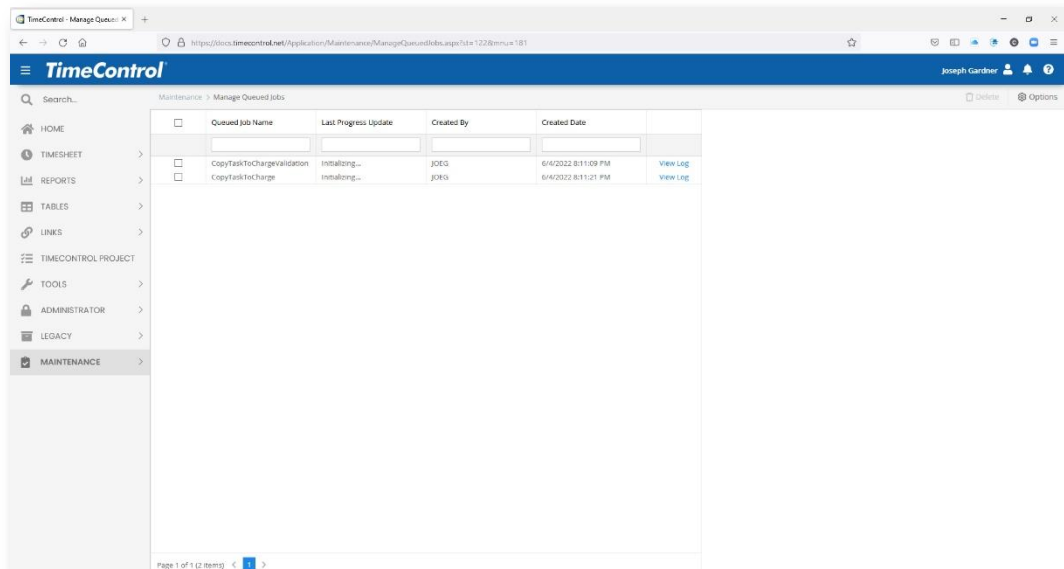
To do so, go to the Queued Job option in the Maintenance Menu. You will see a list of all jobs currently running in the Queue. Selecting a job will activate a Delete button if Delete is still an option. You can also View the Log of this job to ensure it is running properly.

Backup

For users of TimeControlOnline, System Administrators may wish to take a complete off-line backup of data for archival or security purposes. TimeControlOnline data is already backed up with double redundancy by HMS including an off-site backup done nightly. However, TimeControlOnline does support a client receiving a complete backup of their data offsite. The data is encrypted and compressed using 7Zip and to limit unnecessary bandwidth, complete data backup downloads are restricted to one generation of a backup per week. If a backup already exists that is less than 1 week old, the Administrator will be told they will need to wait to create a new one.

Click on Create Backup to generate a new backup.
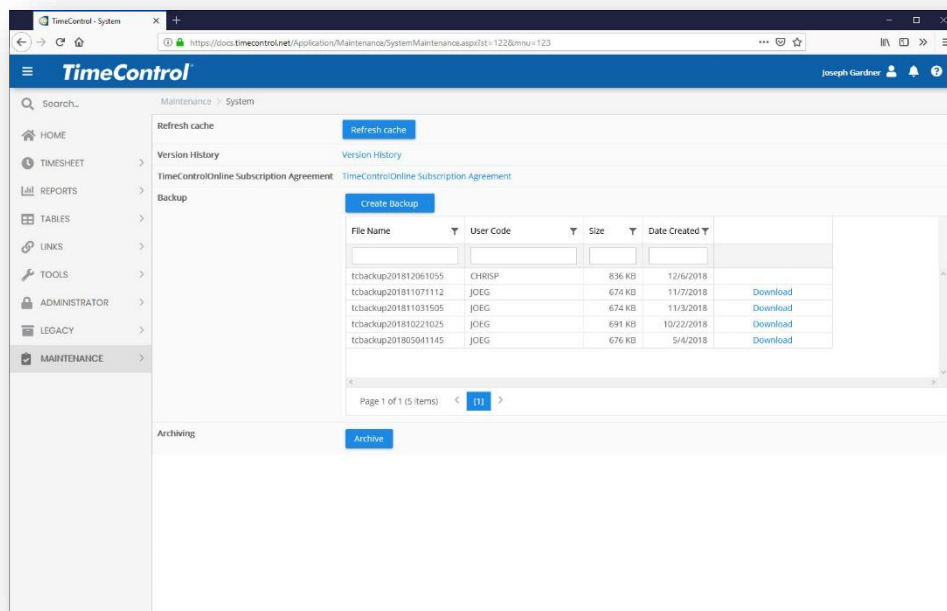
Creating the backup may take some time depending on the size of the dataset.

Once it is created, you can click on the link to download the file. Only the creator of the backup file will have authorization to download it.

You will need a copy of 7Zip to un-compress the file. When you click on the download, TimeControl will present you with the password to decrypt the file.

Since the file is a complete copy of all your TimeControl data, it is highly recommended that this function be restricted only to System Administrators.

Disaster Recovery for TimeControlOnline

HMS Software hosts its TimeControl timesheet system in an online hosted environment for clients who subscribe to this service. We are very proud that our service has a better than 99% up-time record. This comes from careful planning and design architecture of the system but in case there is a problem one day, the design of the service includes provisions for disaster recovery with several fallback contingency plans. Anyone who uses online services for production systems must first count on the supplier for reliable service but must also think of how to recover in the event of catastrophic failure.

HMS Backup and Restore processes

1. Online data backups from Amazon

HMS uses the Amazon EC2 hosting service. Data is maintained on an Amazon Virtual Server. Amazon itself maintains its own continuous mirror service for both data and application servers with instant roll-over in case of hardware failure. Clients are usually never aware that there was a hardware issue if one occurs as corrections for this are done instantly by the Amazon Service.

Time to recover from failure at this level: 0

2. Nightly backups

HMS uses MySQL as our database format and uses a scheduled backup to back up the database from the TimeControl MySQL server onto backup files on a nightly basis. We do this on a client-by-client basis. This is done every day at 1:00am EST for our US-based servers and 1:00am local time for other data centers. We maintain 30 separate days of backups on a rolling calendar. If required, we could restore a system back to a particular day in time over the last 30 days. (If, for example, the client had a problem that corrupted their data but the corruption was not noticed for several days, we could roll back to a date prior to the issue if required for that specific client.)

3. Weekly backups

HMS runs a backup of the database every Friday at 11:15pm (EST) for US data servers and 11:15pm local time for other data centers and then stores the data on a weekly basis. We maintain a minimum of 4 weeks of backups on a rolling basis.

3. Offsite backups

To ensure that an unexpected catastrophic failure of the Amazon service does not affect clients, HMS moves copies of the backup files offsite and maintains these backups on a separate secure server. For US Servers, we store the backups in an Amazon data center that is separate from the data instance. For other data centers we use Amazon Glacier to store the backups separately and securely.. We maintain a minimum of 30 days of daily backups and a minimum of 4 weeks of weekly backups on a rolling calendar. Backups are moved overnight starting at 2:00am.

4. Internal verification

HMS Staff verify the internal backup files each morning to ensure that the scheduled transfer has been completed successfully and that all files have been safely transferred to HMS.

5. Client download

To guard against a catastrophic failure at both Amazon and HMS, Clients have the ability to download a complete backup (referred to as a "Data Dump") of their own data. These backups can be downloaded from the TimeControl Online site a maximum of once per week. The data will be in a MySQL compliant format.

We believe this 5-level process has provided adequate protection for different vectors of failure.

This process has been verified internally with our own IT staff who have tested and verified the ability to restore off-site backups. No external audit has been done on this process.

Recovering from catastrophic failure

Here are possible failures that HMS has considered, how it plans to recover from them and how you can protect yourself based on possible eventualities:

1. **Hardware failure of the Amazon virtual machine**
   In this case, Amazon automatic recovery techniques can usually recover instantly and mirrored servers take over in hundredths of a second.
   Time to recover: instant
   Potential data loss: none
   HMS action to be taken: none
   Client action to be taken: none

2. **Extended failure of the Amazon virtual machine**
   Amazon has had a limited number of outages which have lasted an extended period under unusual circumstance. Amazon have been very responsive to keeping its many clients updated on exactly what is occurring and when they expect service to be restored. If Amazon

expects the outage to be restored in 4 hours or less, then HMS will monitor the situation and keep clients up to date. If the failure is expected to last longer or the failure lasts longer, HMS can re-establish the TimeControlOnline environment in alternate Amazon environments using an image of the virtual machine. Domain names would need to be redirected to the new servers and data restored from nightly backups.
Time to recover: 4-8 hours
Potential data loss: entries made since last night's backup
HMS action to be taken: restore the virtual "snapshot" of TimeControl, upload backup data files, restore data files from last night'
Client action to be taken: testing firewall settings from a different IP address.

3. Catastrophic failure of an Amazon data center
    In the unlikely eventuality that an Amazon data center would suffer a catastrophic HMS can re-establish the TimeControlOnline service on a separate data server, or even internally.
    Time to recover: 12-24 hours
    Potential data loss: entries made since last night's backup
    HMS action to be taken: Install TimeControl on separate data center server, load database backup files from last night's backup, redirect domain names to the new servers.
    Client actions to be taken: testing firewall settings from a different IP address.

4. Catastrophic failure of HMS Software
    In the unlikely event that HMS would cease to exist as a company without any notice, clients can still protect themselves. If HMS were to go out of business, clients who had taken HMS's recommendation to download a weekly backup of their own TimeControlOnline data and who had purchased a minimal copy of TimeControl for internal use would be able to re-establish TimeControl immediately. In order to do so, clients would need to purchase a 10 user (the smallest license possible) of a TimeControl license. They could install this license internally and would use a MySQL compliant database for data storage. Since TimeControlOnline uses a MySQL data format, clients could take a copy of their TimeControlOnline backup that they had downloaded weekly then restore the most current backup into their internal system and continue working with it while determining whether HMS would be reconstituted and able to offer service again or whether it would be better to migrate over time to a new timesheet system.
    Time to recover: 4-24 hours

Potential for data loss: entries made since last week's backup and download

HMS actions to taken: none. (Sadly in this unlikely scenario, we'd no longer be here.)

Client actions to be taken: 1: ensure that a minimal TimeControl license had been purchased in advance and installed using a MySQL compliant database. 2: Download backups from TimeControlOnline weekly. 3: Restore the last week's backup into the internal system. 4: Redirect staff to the internal system.

TimeControlOnline Support

Heuristic Management Systems Inc. (HMS) provides Technical Support Services to its TimeControlOnline Subscribers (Subscriber). These services are described below:

1. Support

HMS will provide technical support services to Subscriber as described below via telephone, email or internet during the terms of this agreement.

Assistance is provided on a "best efforts" basis and may include the suggestion of short-term "workaround" solutions. Technical assistance is limited to the correction of defects in the software, software upgrades or updates and software documentation.   HMS does not guarantee that the problems will be solved or that any item will be error-free.

Subscriber will name a single point of support and alternates as may be required so that communications between HMS and Subscriber are not duplicated or contradictory.

The Subscriber agrees to provide HMS with adequate information and documentation (ex: screen shots, steps to reproduce the problem, etc.) regarding a technical issue in order for HMS to diagnose it. HMS does not guarantee a resolution of the problem if it cannot be reproduced.

Any materials sent to the Subscriber in reference to a support issue will be sent by email or be made available for download. Materials will be sent to a single point of support which Subscriber will identify. All issues will be tracked in the HMS helpdesk system.

1a. Technical Support Services under this agreement include the following:

i.   Access to HMS technical support staff by telephone or email during normal business hours (Monday to Friday from 9:00 a.m. to 5:00 p.m. EST or EDT) for the diagnosis and resolution of a defect in the software where the software does not function as described in the software documentation.

ii.   HMS will respond on a best-efforts basis according to HMS Service Severity Levels listed in Appendix A.

1b. Technical Support Services under this agreement do not include the following:

i.   Training; demonstrating or explaining how to use the software;

ii.   Consulting; changes to Subscriber's existing configuration including but not limited to filters, accruals, triggers, reports and validation rules;

iii. Changes to configuration of TimeControlOnline effected by anyone other than HMS;

iv. Changes to configuration work completed by HMS that has already been accepted by the Subscriber;

v. Integration between TimeControlOnline and other software;

vi. Configuration of software other than TimeControlOnline;

vii. The modification of TimeControlOnline or its merger (in whole or in part) with any other software;

viii. Assistance with Subscriber hardware including network and servers;

ix. Technical support outside normal business hours;

1c. Subscriber obligations

Subscriber agrees to the following:

i. To use the Software in accordance with included documentation;

ii. To fulfill all Subscriber obligations under the TimeControlOnline Master Subscription Agreement;

iii. To implement the recommendations made by HMS to resolve an issue in a timely manner.

2. Updates, Upgrades and New Versions

During the term of this Agreement, HMS agrees to update TimeControlOnline with new updates, major upgrades or new versions of the Software and associated documentation when these are released, so as to maintain Subscriber's system current with the latest version of TimeControlOnline. Minor updates are defined as enhancements to the current version of the software which do not include significant new functionality. These updates may include fixes for problems encountered in the software. Major upgrades are defined as significant enhancements to the software which may contain new functionality. New Versions are defined as those involving significant new functionality and/or changes in technological architecture.

3. Intellectual Property Rights

All materials supplied by HMS pursuant to this Agreement are supplied under the same terms and conditions as contained in the original TimeControlOnline Master Subscription Agreement.

5. Term

The term of this agreement shall be associated to the Subscriber's TimeControlOnline Subscription agreement and shall expire immediately upon the termination of the Subscriber's TimeControlOnline subscription.

HMS Support Service Levels and Service Level Agreement

Service Severity Levels

HMS's business hours are from 9am – 5pm Eastern Time (GMT-5) excepting Canadian Holidays. You can contact technical support by email at support@hms.ca or phone (+1 514-695-8122) or through the TimeControl website at www.timecontrol.com.

HMS makes every effort to ensure that clients do not experience an interruption in service in their use of TimeControlOnline.

HMS is committed to correct any defects as quickly as possible. All responses for Technical Support are on a best-effort basis. HMS does not guarantee resolution of any incident in the following response times. HMS's guidelines for responses listed below indicate our goals in resolving an incident and HMS has a long history of working within these targets. All duration calculations of response time are based on HMS business hours. Responses to Incidents may include workarounds, updates to the software, changes in documentation, recommendations for operating system or configuration changes or recommended changes in practices.

Our categorization of Incidence priority and the associated response is based on the following Incident Priority Levels:

Service Incident Priority Levels

Priority 1: Major Service Failure (System Down, hanging or crashing)

A system failure has occurred which significantly restricts use of TimeControlOnline by the Subscriber to perform necessary business functions.

HMS Response: In case of a Major Service Failure, intervention to correct this condition will receive our highest priority. Our internal target is to respond within 2 business hours and have TimeControlOnline back in operation within 4 business hours.

Priority 2: Operational Function failure

A defect in TimeControlOnline restricts the use of one or more portions or features of the Software by the Subscriber to perform necessary business functions but does not completely restrict use of the Software.

HMS Response: Issues with TimeControlOnline functionality can be caused by a wide range of factors and are most commonly caused by difficulties with changes to the internal environment, data configuration or changes in the data when linked to a 3rd party product. Our internal target is to respond to a client with Operational Functional failure difficulties within 4 business hours and to resolve the difficulty within 3 business days.

Priority 3: Operational Function Workaround

A defect in TimeControlOnline restricts the use of one or more functions of TimeControlOnline. However the defect can be reasonably circumvented via a workaround or the difficulty does not substantially restrict the use of one or more functions of the Software by the Subscriber to perform necessary business functions.

HMS Response: When a Subscriber experiences difficulty with a feature but a workaround or a method of circumventing the difficulty can be defined, HMS will determine with the Subscriber the urgency of correcting the problem or the convenience of continuing to use the workaround. HMS' internal target is to respond to a Subscriber experiencing Operational Functional Workaround within 4 business hours, to provide a workaround or process to circumvent the problem within 3 business days and depending on the Subscriber's requirements, to either provide a correction to the problem within 2 business weeks or in the next natural release of TimeControlOnline.

Priority 4: Minor functional issue

An issue has been identified in the Software or documentation however, the Software is operational and the issue has little impact on system operations.

HMS Response: HMS shall note the issue and shall correct it in the next natural release TimeControlOnline.

Priority 5: Request for Enhancement

The Subscriber has identified a new feature, enhancement or improvement that they wish to be incorporated into TimeControlOnline.

HMS Response: Enhancements to TimeControlOnline in each new release come from numerous sources including requests from Subscribers. When a Subscriber suggests an improvement in TimeControlOnline, HMS groups the suggestion into one of three categories:

1. HMS believes the suggestion is something that would be of benefit to many users but the Subscriber does not wish to commission the change as a priority. HMS will pool the suggestion along with others they have received into a list for consideration in future releases. While HMS will

advise the Subscriber if and when they will commit to the enhancement, HMS do not guarantee that the suggestion will be in the product or when.

2. HMS believe the suggestion is something that would be of benefit to many users and the Subscriber wishes to commission the change as a priority. Upon agreement of the scope and terms of the mandate, HMS will affect the change and then will add the functionality into the core product and will support it internally as a natural element of TimeControlOnline. In this case, the intellectual property of the function will remain with HMS in order for HMS to support it in future releases.

3. HMS believes the suggestion is something unique to a Subscriber's requirements and the Subscriber wishes to commission the change. If the change can be created in a fashion that does not interrupt TimeControlOnline's core functionality for other users, upon agreement of the scope and terms of mandate, HMS will create the module and make it uniquely available to this Subscriber. Once tested and accepted, HMS will support the module within the current version of TimeControlOnline. There is no guarantee that additional work might not be required to have the module supported in future TimeControlOnline releases.

TimeControl Online Sandbox

TimeControl Online administrators can optionally subscribe to the TimeControl Sandbox. This is a parallel service that is a separate instance of TimeControl Online and features to replicate the exact data from the production instance of TimeControl. The purpose of the service is to provide TimeControl Online administrators a separate TimeControl for the testing of new features and the creation and testing of new Link definitions, Validation Rules and Accrual processes without affecting the main system. The TimeControl Sandbox is also an ideal place for training as it will have all of your own environment and data available.

Sandbox Setup

HMS creates a second instance of your TimeControl Online environment and links this instance to your production instance of TimeControl.

Updating the Sandbox from Production

At any time, the Administrator can restore the complete current production database into the Sandbox. Simply go to the Maintenance/System page and select Restore from Production.
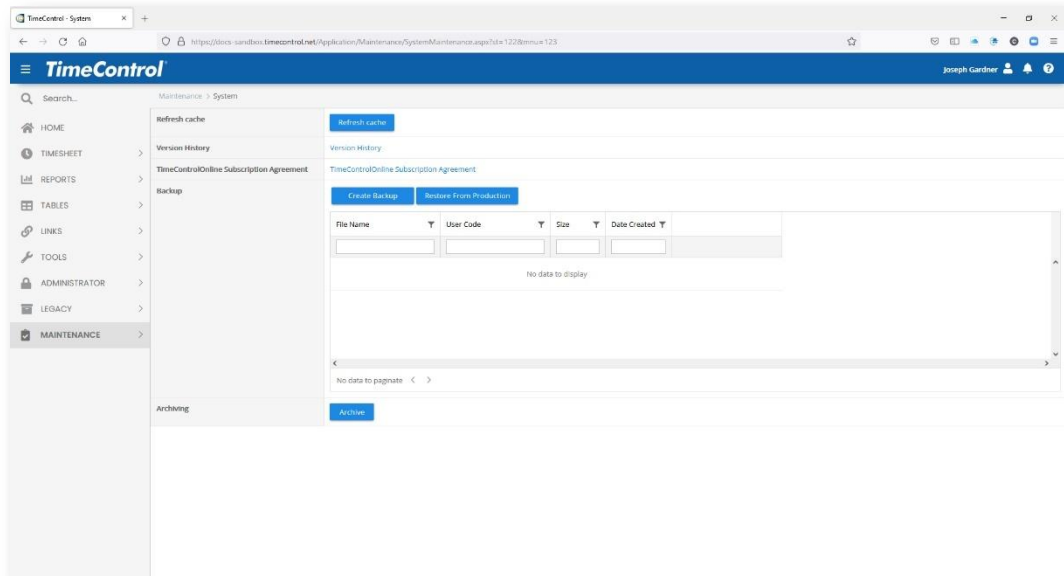
TimeControl will ask you to confirm that you wish to overwrite the existing Sandbox data with the current production data.
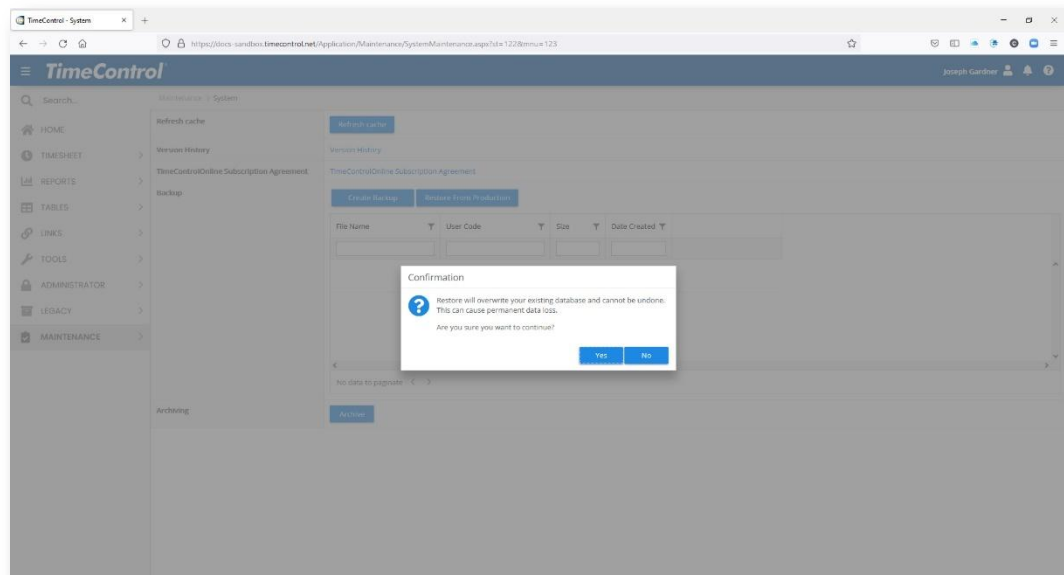
Existing Sandbox data will be removed and replaced with the data from the selected backup.
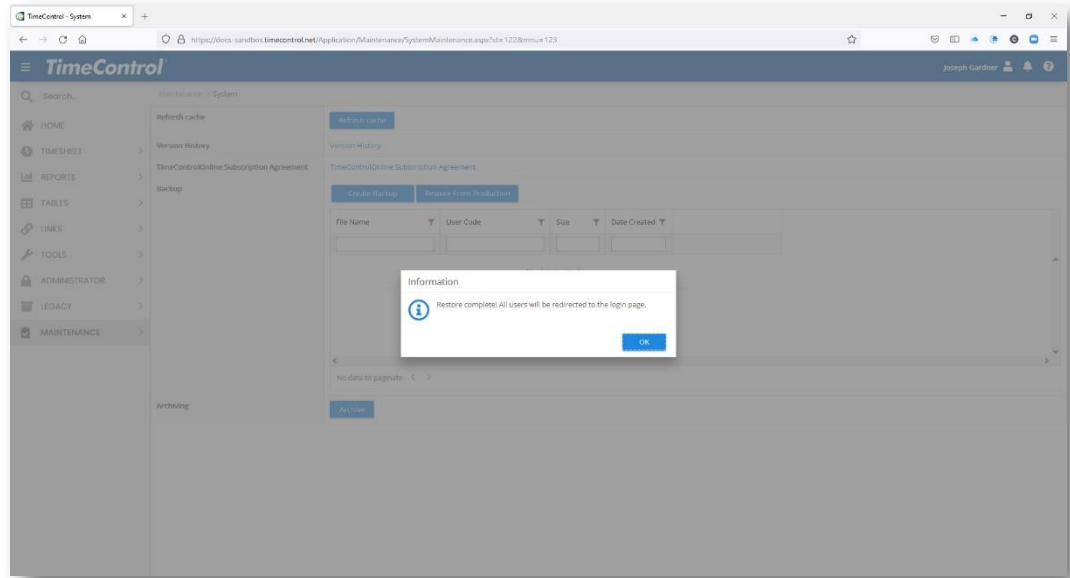
Once the transfer to the Sandbox is complete, TimeControl will let you know your Sandbox has been updated.

Notes about the TimeControl Sandbox

Transfers are one-way from the Production instance to the Sandbox instance. A Sandbox instance database can never be restored into the Production instance database. This prevents any possibility of damaging the production database.

To move configuration changes into the Production system, use the *Export Packages* function to export packages such as Reports, Validation Rules, Filters and more from the Sandbox and then from within the Production Instance use the *Import Packages* function to import the packages into the Production system.

The TimeControl Scheduler in the Sandbox is turned off and is not available. This prevents any unexpected transfers to or from corporate or project management systems. The Scheduler Jobs are not, however deleted. They can be viewed in the Manage Jobs function or from within each area where Scheduled Jobs can be created. Even though these records exist, the Sandbox Scheduler itself is not running and therefore, these records will not be activated.

TimeControl Documentation

TimeControl includes extensive documentation. There are four standard documents included with each system:

User Guide

The TimeControl User Guide contains information
that will be of specific interest to the bulk of users including how to add and release a timesheet for approval. This information is not replicated in the other documentation. The User Guide does not include every possible interface as most users only use TimeControl for entering their timesheet or TimeRequests and referencing information they have entered in the past.

Reference Guide

The Reference Guide is this document. It contains information that will be of interest to TimeControl Administrators and those configuring TimeControl. There are specific editions of the Reference Guide for TimeControl on-premise, TimeControl Online and TimeControl Industrial.

API Guide

The Application Programming Interface Guide is dynamically generated with information on how to access TimeControl's extensive API programmatically.
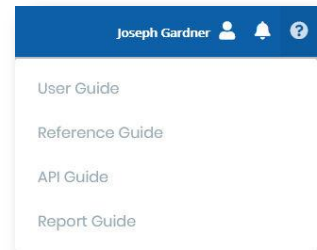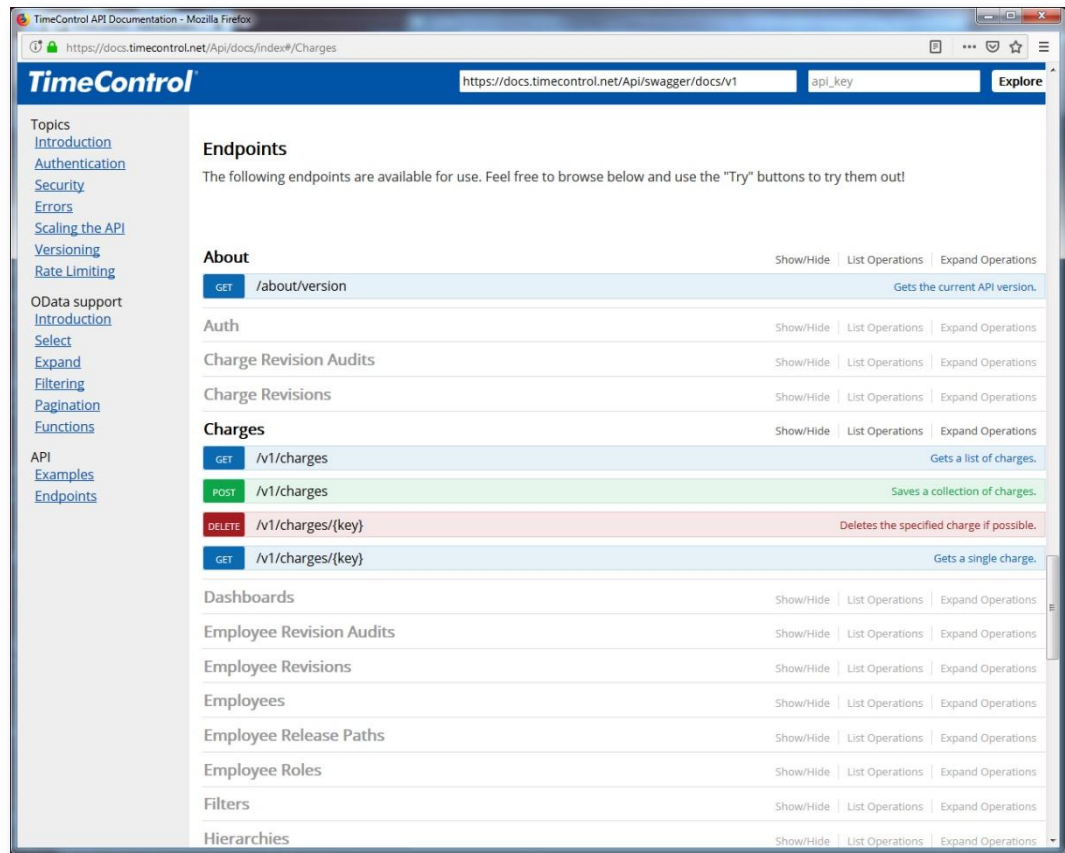
Report Guide

This guide contains information how to create or modify TimeControl reports using the Report Interface.

TimeControl BI Guide

This guide contains information how to create or modify TimeControl BI Dashboard views

TimeControl Project Guide

This guide contains information how to use the premium online version of TimeControl which includes TimeControl Project.

Installation Guide

This guide is included with TimeControl and TimeControl Industrial on-premise and includes information how to install and TimeControl on premise.

Additional information and documentation can be found on the TimeControl.com website under Resources (https://www.timecontrol.com/resources) and in the TimeControl Blog at blog.timecontrol.com (http://blog.timecontrol.com).

TimeControl API

TimeControl includes an Application Programmable Interface that lets a programmer interact with TimeControl using a programming language. The TimeControl API is a REST architecture and requires installation of the REST Web service. Additional information on the structure of the TimeControl API is located in the Appendices of this Guide.

Additional Documentation

Using the TimeControl Manage Menu Items function, you can add additional documentation to make it directly available from TimeControl. The new item can be a PDF that you locate anywhere.

Appendix A – Customizing TimeControl

TimeControl is one of the most flexible timekeeping systems available. Since every organization has some elements of their data environment that are unique, we have allowed data to be altered as required within the system.
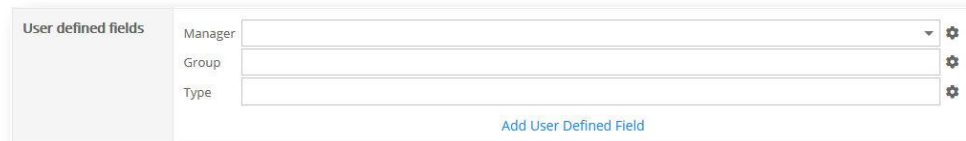
Adding a new Field

TimeControl is designed to support the addition of user defined fields to virtually every table within the system. There are two methods of accomplishing this. The method to use is dependent on the rights the TimeControl system has been granted within your TimeControl database. If, as is recommended, the TimeControl system has been given the rights to create field and to adjust the definition of the database, you can use the interface built right into every TimeControl table. If, however, this is unsuccessful, your Database Administrator may have elected not to grant this right to TimeControl in which case the fields will have to be added manually to the database itself using an "Alter" command if it is a SQL database.
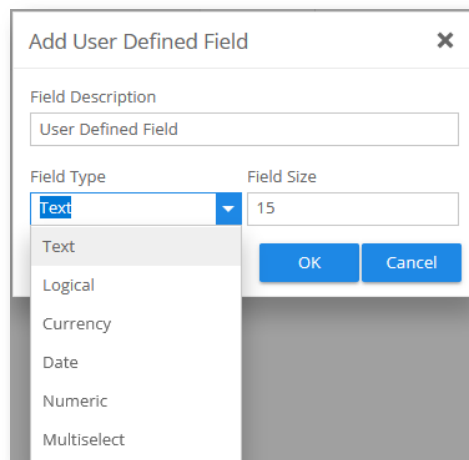
It is easy to imagine uses for this level of functionality. The employee table, for example could be populated with a number of fields from our corporate H/R system that could be used during TimeControl reports. The rate table could be populated with a number of external fields for burdens that could be used during exports to other systems, or within TimeControl during reports.

TimeControl allows an unlimited number of User Defined Fields in each table. Following the procedure below will result in the addition of a new field in the system which is recognized by the table dialog, security, User Profiles, Filters, Exports, Imports and Reports. Remember, each TimeControl table already includes 3 user-defined fields that have been placed there for your own use.

To add user-defined fields that will appear on table pages, follow this procedure:

Open the Table you wish to add a field to and select **Add User Defined Field.**

The following dialog will appear:

Give the field you plan to add a name and select the type of field it should be. You can also set the width of the data field here.

Your new customized fields should appear in both the table, and in selection lists for security, reporting, and filters. If there are too many fields to fit into the table area, the table will automatically become a scrolling window allowing you to scroll up or down to see fields that do not fit on the screen.

Adding a new field to the timesheet

TimeControl user defined fields can also be added to the timesheet itself.

To add additional fields to the timesheet, go to the Administrator | System Preferences module, select the Timesheet tab and click on Add Timesheet User Defined field

You may then add the field with the definition and type you wish.

TS_FLD1(Field 1), TS_FLD2 (Field 2) and TS_FLD3 (Field 3) are already defined in the timesheet table as text fields.

These fields can also be linked to user-defined tables for validation of entry. Follow the instructions in the Linked Fields section of the General Preferences chapter of this document. Once this option is changed, we recommend restarting the TimeControl Transaction Server (TTS) on the main server in order to ensure that any data that must be cached properly for this feature to work has been loaded.

If fields are not linked, they become free-form text fields and are not validated against a list of possible values. Validation rules can still be applied of course as with any other field within the timesheet.

Linking fields to a pop-up list of values

To link a user defined field to a pre-populated list of values, click on the right-arrow icon to the right of the field itself. If the field has already been linked to a pop-up list, a down-arrow will appear at the far right edge of the field itself.

Clicking on the link icon will bring up a dialog for linking the field:

In this example, the fields do not have link next to it. Clicking on the Link icon to the right of the field, gives us the option to Create a link. Click **Create Link** to add the link. Field labels for any existing field can be updated in the Manage Languages module.

The link now exists but there are no values in it. Clicking the Link icon again will give us additional options. Select **Edit Link** to add values for the drop-down list

You can elect to remove the link if you prefer. This will remove any values in the pop-up list.

You can enter, edit or remove an unlimited number of possible values for this field in this dialog. In addition, you can define here what the internal value (Code) and the displayed value (Description) will be and the order in which these values will appear in the pop-up list. You may also elect to deactivate an entry making it no longer selectable for future entries yet still remain valid for entries already done with that value.

The completed effect is visible here where a drop-down list of values for our new user defined field is being displayed.

Multi-Select Fields

TimeControl supports multi-select User Defined fields where clicking on the field allows multiple entries to be created in the same field.
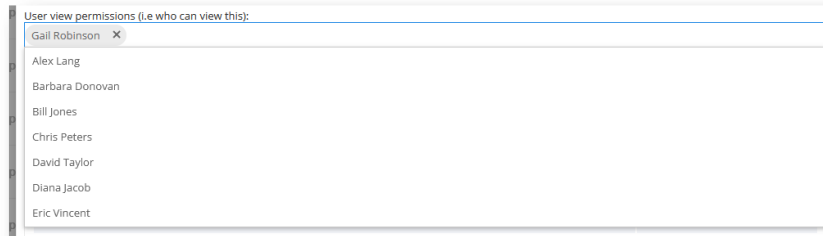
For example, in the screen above, a list of possible users can be entered. Gail Robinson has been selected already and clicking again in the field, brings up a list of possible users to add to her in this entry.

Branding

TimeControl allows you to brand your instance of the system with two logos. You can create an upload your own logo files to personalize your TimeControl by going to the System Preferences page. There is no method of branding the TimeControl Mobile App.
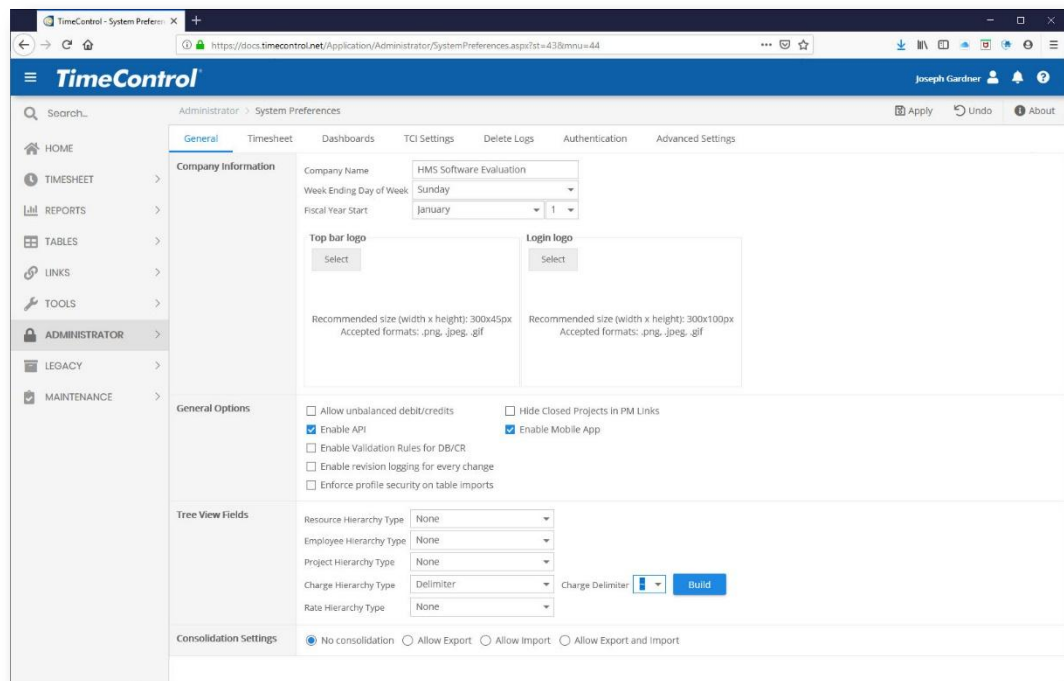
Login Screen Logo

The default login screen can be personalized with your own logo which will appear at the top right of the login screen. The size of this logo should not exceed 300x100 pixels.
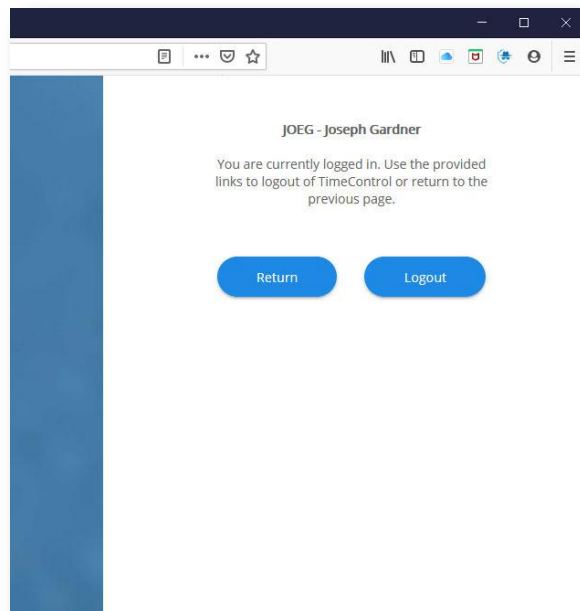
You can create and save your own branding logo in the System Preferences area.
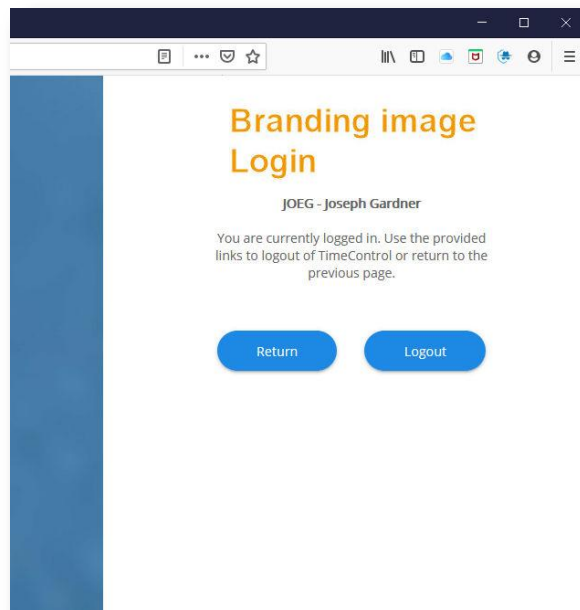
Interface Header Logo

In the main interface a branding logo can be placed to the right of the main TimeControl logo.
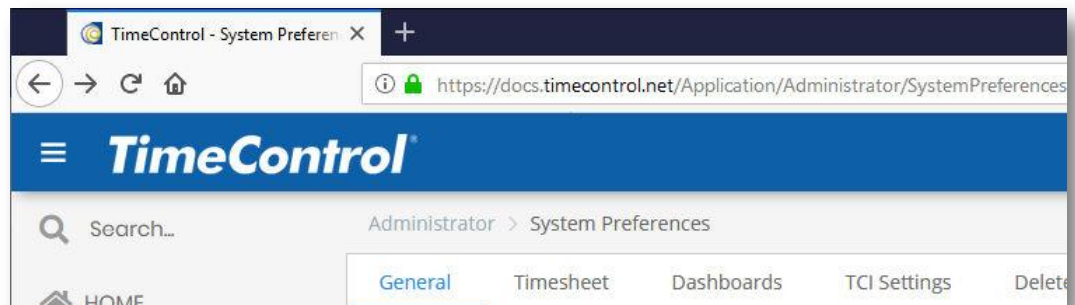
You can upload and save a logo for this space in the System Preferences area. The graphics file should not excel 300x45 pixels in size.
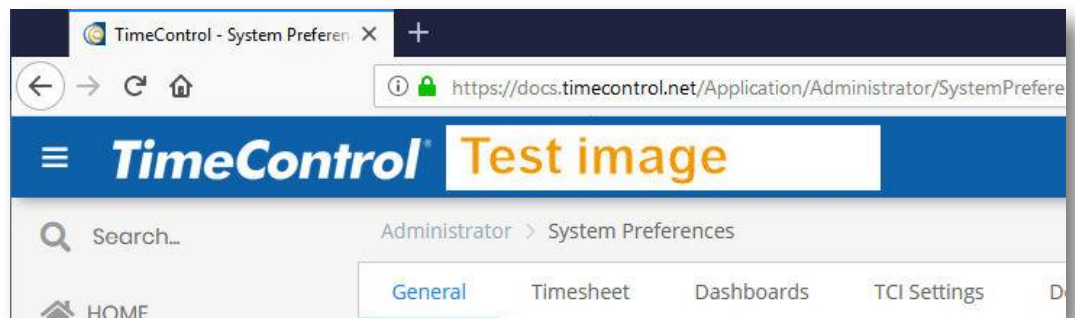
In this example the file has just been changed from transparent to grey but your own edit can include anything you wish in the graphic.

HMS does not support removal of the TimeControl logo or trademark notice at any time.

Installing into SharePoint

The TimeControl web-based architecture was designed to be integrated into SharePoint or SharePoint on Office365. Many clients choose to place the TimeControl functionality within SharePoint. This gives the organization the flexibility to display TimeControl within SharePoint or on its own in the regular web-based interface.

Create a Web Part for TimeControl

To place the TimeControl interface into SharePoint, you must first allow TimeControl to be rendered in an iframe in another domain. This is controlled in TimeControl's System Preferences on the Advanced Settings tab.

You can choose to allow TimeControl to be rendered anywhere or only in a stated domain. For security reasons, TimeControl will not respond to an iframe's request from another domain or system if this area is not completed.

In SharePoint, you will need to authorize content from your TimeControl URL domain to be displayed within a SharePoint site. Go to Site Administration Settings and click on "HTML Field Security"
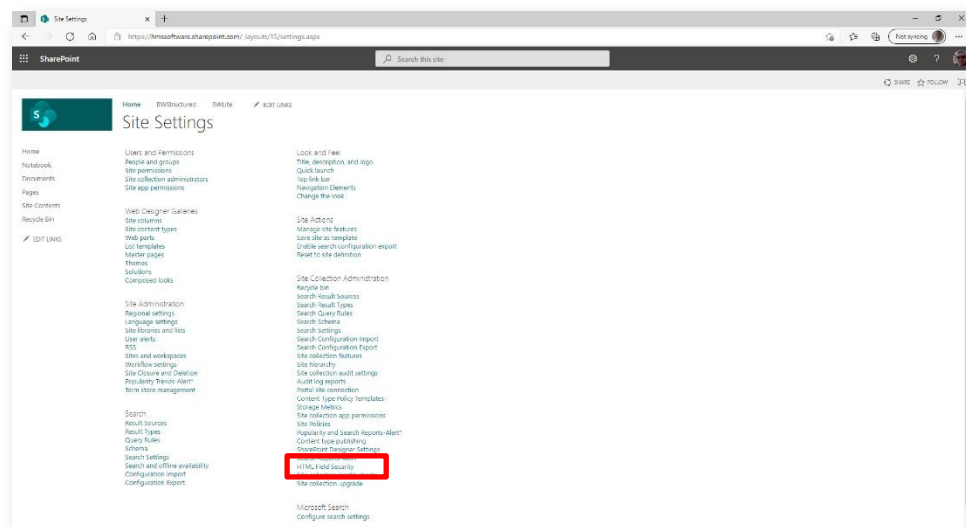
Now add your TimeControl domain. For TimeControl Online, you can add "timecontrol.net".
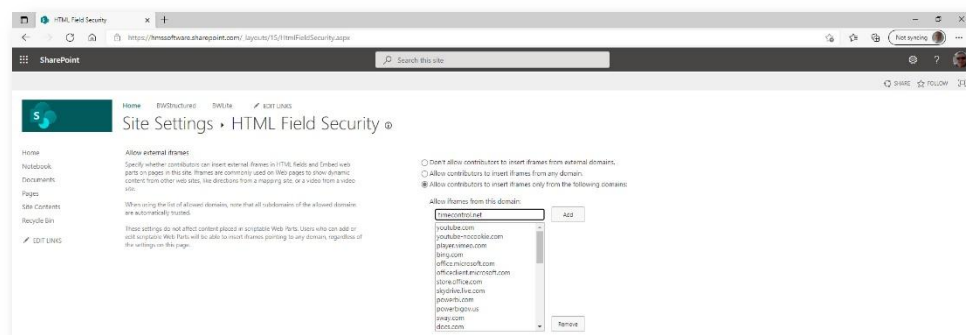
Now in SharePoint, you can add a page, edit it as you desire to remove or add anything else you need and then add an Embed web part. This will allow you to define an iframe command to display TimeControl in the appropriate area. You

will need the complete URL of your TimeControl, TimeControl Industrial or TimeControl Online and decide on the width and height of the display. TimeControl will adjust itself to the size SharePoint provides.
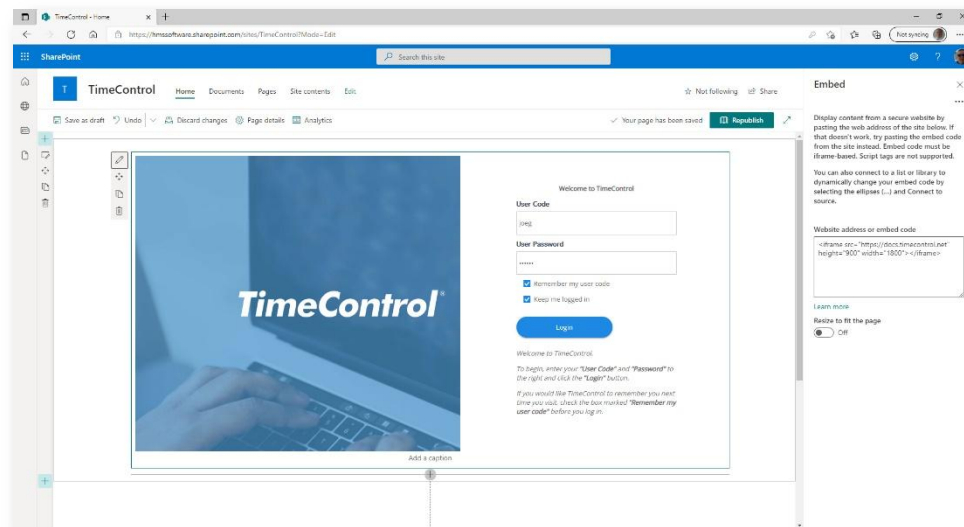
Installing in a Microsoft Teams Tab

Microsoft Teams allows you to create tabs for any team and to have that tab be visible to all. Teams allows TimeControl to be rendered right inside the tab. If your organization uses Teams extensively, this can be a good way of keeping the TimeControl interface handy.

To create a new tab in Teams you must first have administrative privileges. Then click the + sign next to the tabs and you'll see a list of possible apps. Your list may not look exactly like this screen as the options will include Apps to which you have access.
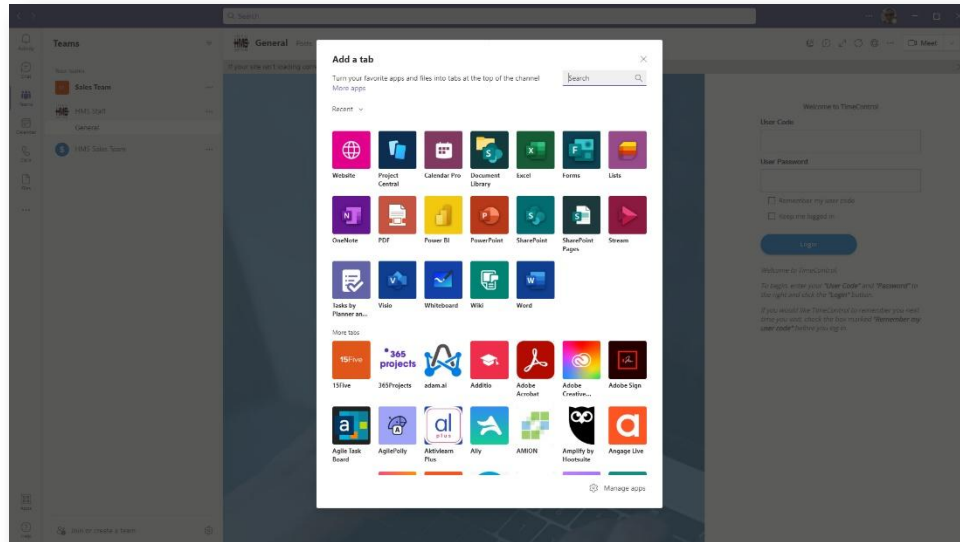
Add a Website type then fill in a Tab name and the URL for the website.
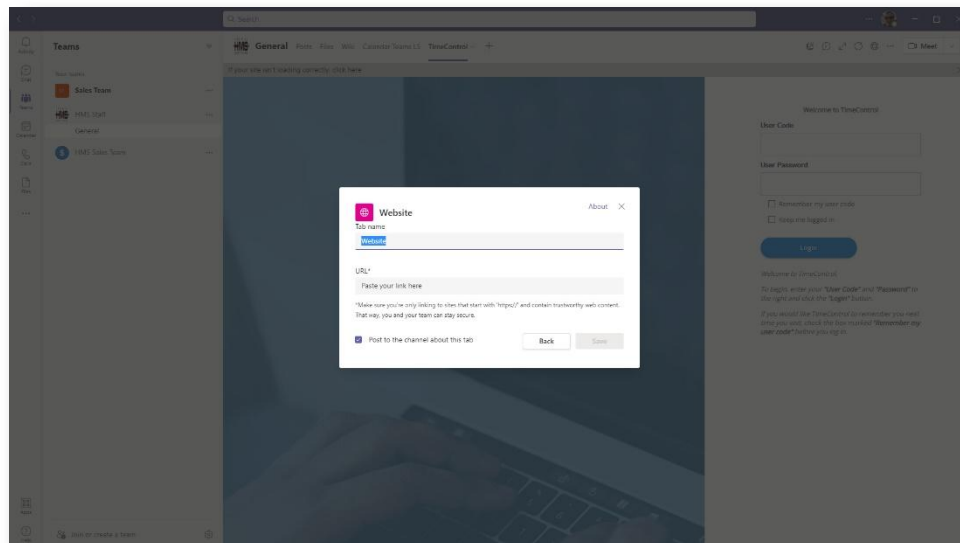
You're done! TimeControl will now appear in Teams for that team as a tab.
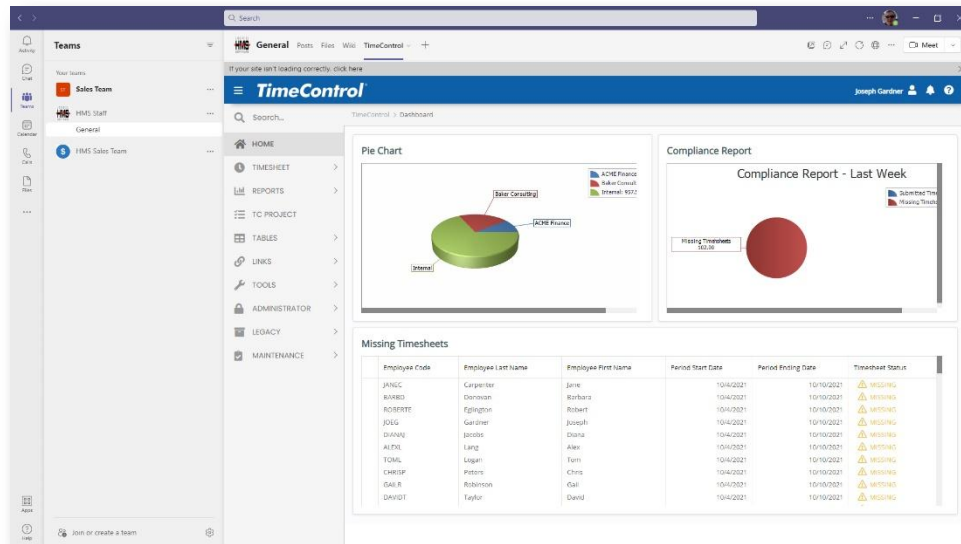
Integrating with Microsoft Project Server

TimeControl is designed to integrate directly to on premise installations of Microsoft Project Server 2002 through 2019. TimeControl uses the Project Server Interface (PSI) in Project Server 2007 through 2019, TimeControl can also make a link directly between the TimeControl server and the Microsoft Project Server systems.

Configuring TimeControl and Project Server

In order to have TimeControl and Project Server interact, several measures must be taken to support Project Server's security and authentication model.

First, the TimeControl Connection pool's "**User Name**" must be entered as domainname\username. This is the TimeControl Connection Pool screen.
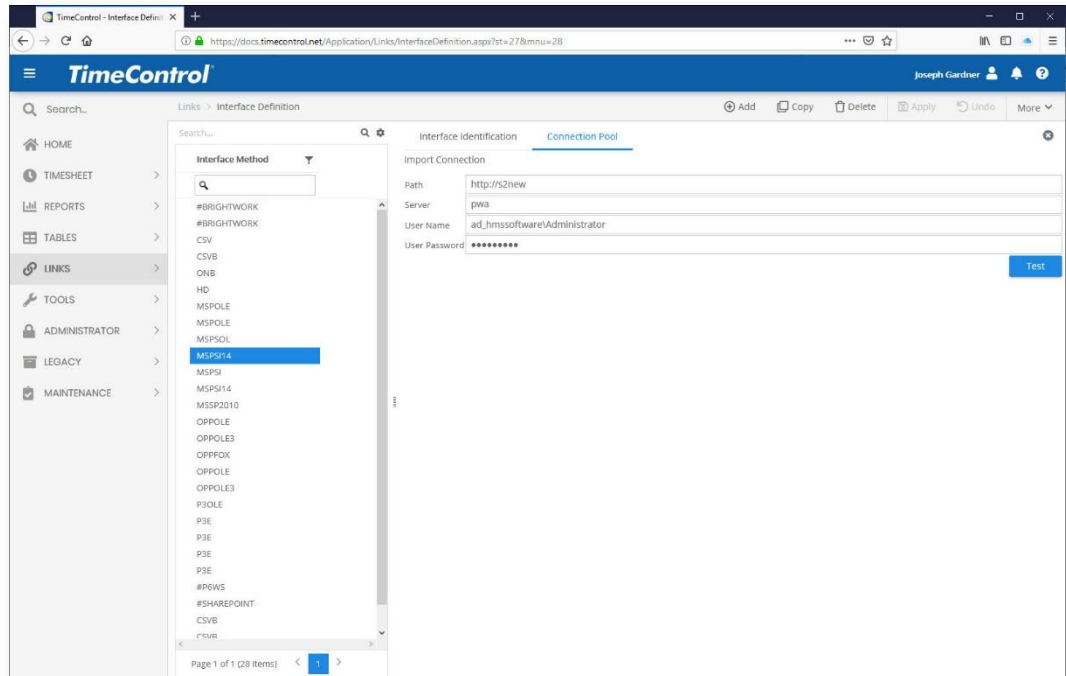
> ☞ Note: Resources defined in Microsoft Project with a Booking type of "Proposed" will not be updated by TimeControl into Project Server. Any actuals on this booking type will be refused by Project Server and the refused items logged in the TimeControl transfer log. The information that is refused by Project Server will be sent again by TimeControl on subsequent transfer attempts until they are accepted.

> ☞ Note: Only "Published" Microsoft Project plans can be imported into TimeControl. Additionally tasks that are not "Published" within a Published project will not have their actuals updated in Project Server. Tasks within Microsoft Project are set to Published by default but any tasks changed to "Not Published" will not have actual updated from TimeControl and attempts to update such tasks will be refused and the refused items logged in the TimeControl transfer log.
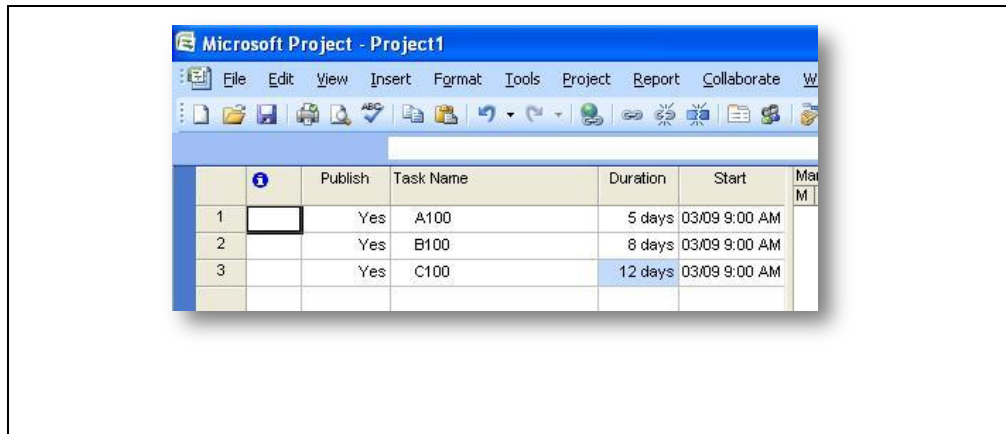
Integrating with Microsoft Project Online

TimeControl is designed to integrate directly to Microsoft Project Online, Microsoft's in-the-cloud subscription service of Microsoft Project Server. The link has been designed and created using CSOM technology which is a part of Project Online.

Organizations may wish to create a SharePoint worksite and create an webpart into which TimeControl can be referenced. This would allow end users to see TimeControl in the same Project Web Access interface that is used for Project Server. This does not affect the integration of the TimeControl and Project Server data in any way.

Configuring TimeControl and Project Online

The Subscription Service of Microsoft Project Server is called Project Online. This service is hosted and supported by Microsoft directly and is not to be confused with 'private-cloud' hosting of Project Server. If you are hosting Project Server outside of the Microsoft Office 365 environment then you should refer to the Microsoft Project Server Link. If you wish to integrate TimeControl with Project Online, then you're in the right place.

Configuring Project Online and Link Constraints

To integrate TimeControl with Project Online, there are several pre-configuration choices that you will need to use in Project Online and several constraints that are important to know.

- Project Online must use "Project Server Permission" mode. There is an option in Project Online to use SharePoint Permission or Project Server Permission modes. The integration may not function properly if you are using SharePoint permission mode.

- An Approval Rule in Project Online must be created to automatically approval the status updates that arrive from TimeControl. A rule will need to be created for each Status Manager that receives updates to tasks. Failure to create such a rule might result in updates being inadvertently rejected by a Status Manager and the resulting hours from TimeControl being lost.
- All assignments will be become owned by "TimeControl". We recommend creating a Project Online user called "TimeControl" (the full name would be in the format TimeControl@companyname.onmicrosoft.com) This is the user that defined in the Connection Pool to connect to Project Online. This allows TimeControl to update the status of the tasks with actual hours but has no other affect to Project Online users.
- The account used in the Connection Pool must have full administrative rights including "Status Broker Permission".

Constraints

- Project Online will not accept actual hours for dates past the assignment finish dates. For example, an assignment start is June 1. The assignment finish is June 10. Project Online will not accept any hours from TimeControl beyond June 10. This must be corrected by the project manager in Project Online through extending the expected finish of the task and reinitializing the transfer.

- When assignments are created via TimeControl for a task, TimeControl will set the assignment finish date to the task's finish date in an effort to minimize errors due to the Project Online constraint of not accepting hours past the assignment finish date.

Defining the Link to Project Online

Authenticating the TimeControl Server is done in the TimeControl Interface Definition in the Connection Pool tab.

In the Interface Definition Connection Pool you will need to enter the URL of Project Online as well as your Office 365 user name and password. . This will allow TimeControl to locate your subscription to Project Online and to authenticate. This user must have access to a Project Online Premium license which includes rights to the Project Online Service. This Service is used by TimeControl to integrate the two products. Clicking on Test Connection will let you know if TimeControl has been able to locate the Online Service on the Project Online subscription and if it has sufficient rights to communicate with it.

☞ Note: Resources defined in Microsoft Online with a Booking type of "Proposed" will not be updated by TimeControl into Project Online. Any actuals on this booking type will be refused by Project Server and the refused items logged in the TimeControl transfer log. The information that is refused by Project Online will be sent again by TimeControl on subsequent transfer attempts until they are accepted.

☞ Note: Only "Published" Microsoft Online plans can be imported into TimeControl. Additionally tasks that are not "Published" within a Published project will not have their actuals updated in Project Online. Tasks within Microsoft Online are set to Published by default but any tasks changed to "Not Published" will not have actual updated from TimeControl and attempts to update such tasks will be refused and the refused items logged in the TimeControl transfer log.

☞ Note: Tasks set to be scheduled manually will not be updated by TimeControl. These tasks should be set to schedule automatically.

Appendix B - The TimeControl API

Overview

The TimeControl API is built to allow users to interact with TimeControl resources programmatically. The API will let you automate processes, or help you interact with TimeControl information through a program or code. The TimeControl API is also used to enable the TimeControl mobile application to function. The TimeControl API can be used to onboard employees into TimeControl, manage rate values, export hours into an external system, or even manage timesheets.

Design and Security

The TimeControl API is a web service designed within a REST (REpresentational State Transfer) architecture and works over standard HTTP or HTTPS. The service runs with Microsoft Server's Internet Information Services, using .NET 4.5.1 or higher, and is installed as a virtual directory alongside the TimeControl website. We strongly recommend that the API be used with SSL (Secure Socket Layer). If SSL is not enabled, all information sent to and from the API will be sent as clear-text.

The TimeControl API serves two purposes: Programmatic access to selected elements of TimeControl's data and process as well as access to the TimeControl Mobile App. Security within System Preferences can activate or deactivate either of these services. Security selections within User Profiles determines if the user with that profile can access the service.

Enabling the TimeControl Mobile App access will enabled all timesheet-related endpoints.

Enabling the API access will enable all other endpoints (e.g. employees, charges, projects).

API Key Tab

When using the TimeControl API, some applications will require a unique key associated to one user.. This tab will only appear if in the User Profile of this user, API is selected. Typically API access is granted only to one or small number of users as it can allow automated access to any part of TimeControl to which the User Profile of this user is permitted.
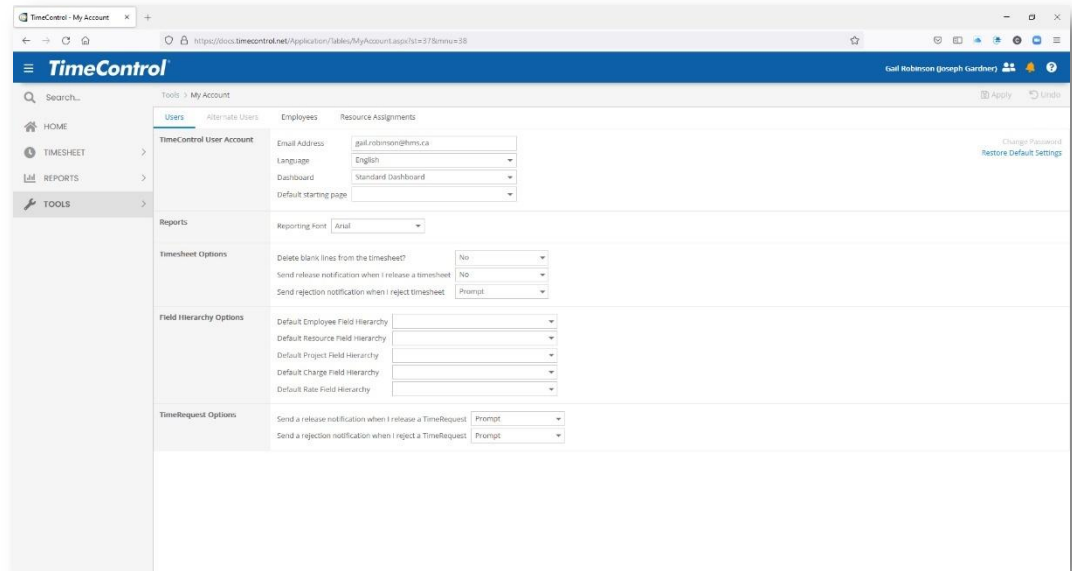
For any user whose User Profile record does not have API Access turned on, this tab will not be visible and isn't required.

Creating an API Key

If API Access has been selected, this tab will appear along with a list of all unique API keys that have been generated for this user.
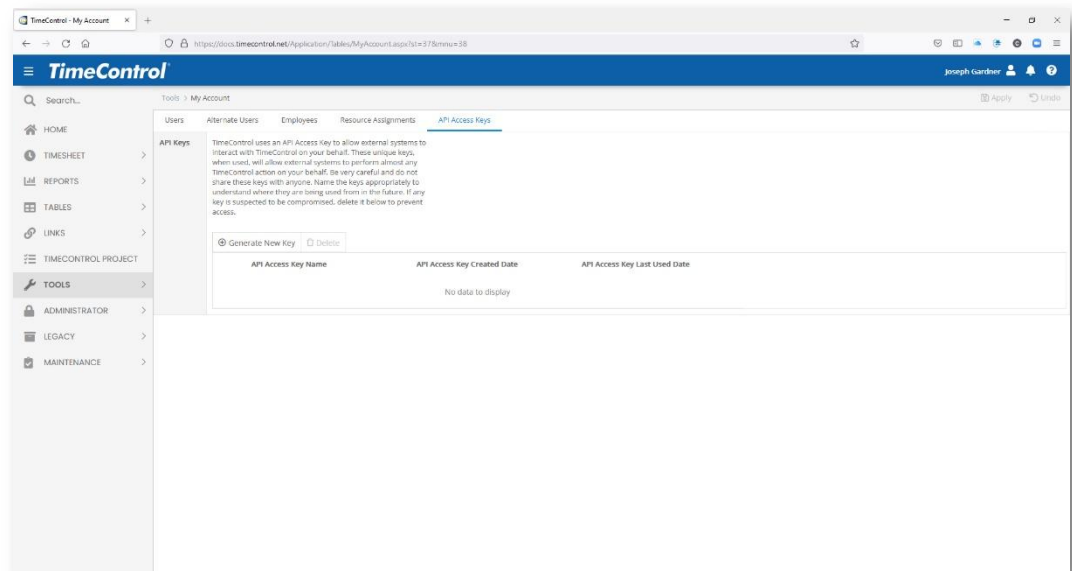
To add a key, click the Add button.
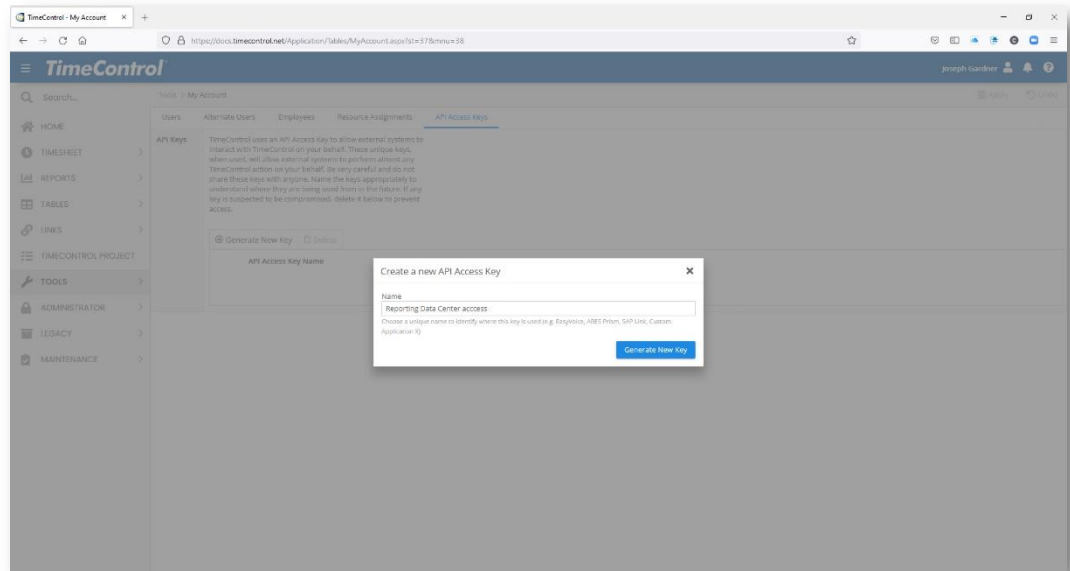
Now enter a name for this key that will allow you to identify what application or purpose it is being used for.
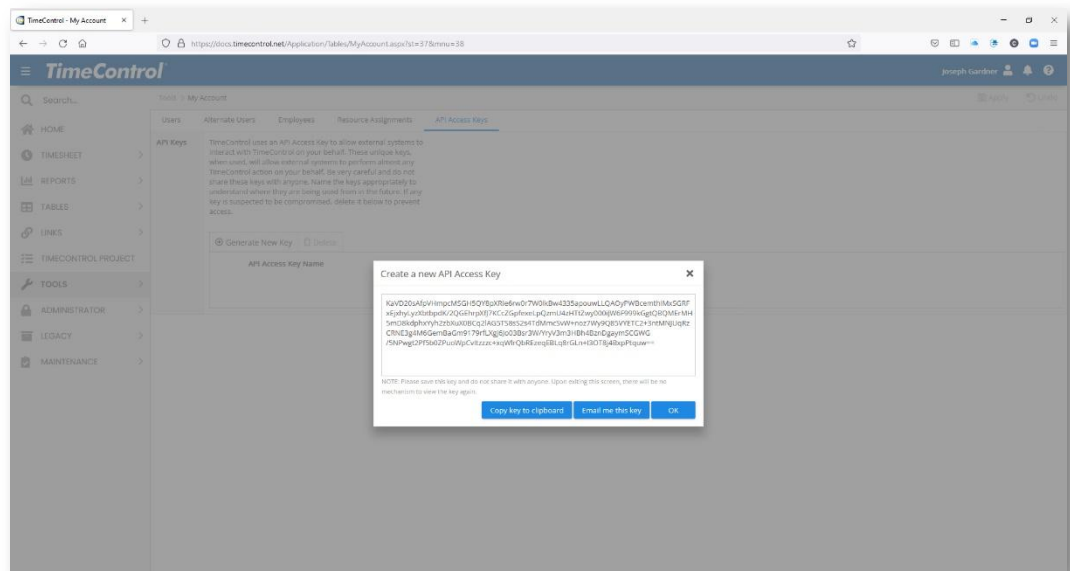
The key will be a long string of numbers and letters. This is the only time you will see this key. Copy the key and keep it in a safe place or email it to yourself. This long string of letters and numbers is what the external application will require.

Click Ok when you have safely stored the key.
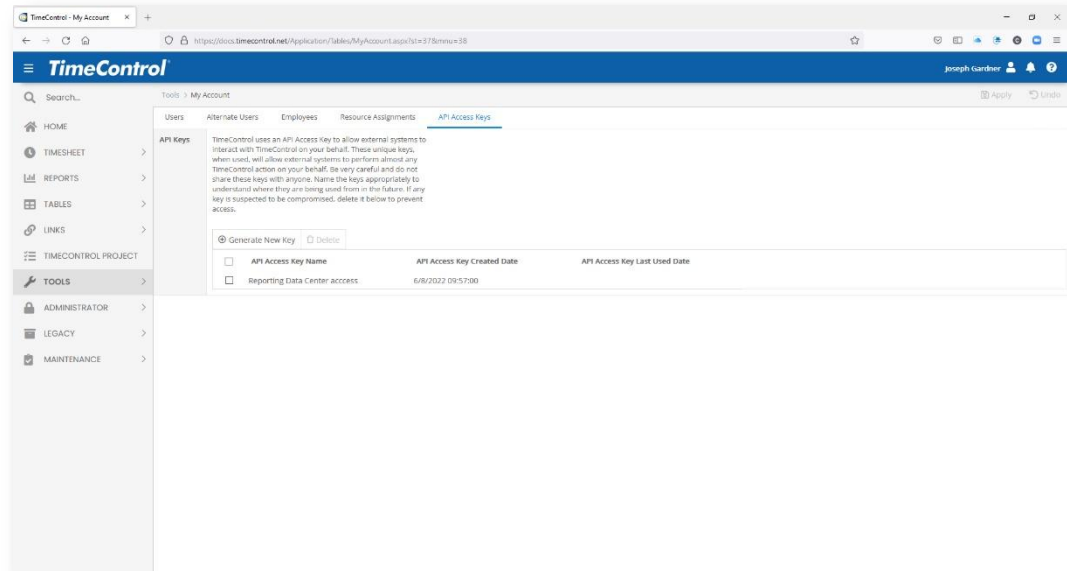
In the API Tab you will now see a list of the keys that have been generated. The details of this key is no longer visible. The only function possible by selecting this record is to delete it.

Installation

The TimeControl installation process asks if you would like to install the TimeControl API. When selected, the API installation creates a virtual directory in the TimeControl website.

If the API is not installed, neither the API nor TimeControl Mobile will function. Instructions on installing the API or upgrading to install the API at a later date are included in the TimeControl Installation Guide. For organizations concerned about the security of an external programmatic access into TimeControl's data, not installing the API will ensure that it is inaccessible regardless of settings within TimeControl.

Documentation

The TimeControl API Guide is dynamic documentation available from the TimeControl Documentation tab. Includes all available endpoints, methods, parameters and, options that can be configure in the API. For new or newly upgraded installations, the API documentation link will only be available by default for the "TimeControl Administrator" user profile. Administrators can make this menu option available to other profiles through menu security within User Profiles.
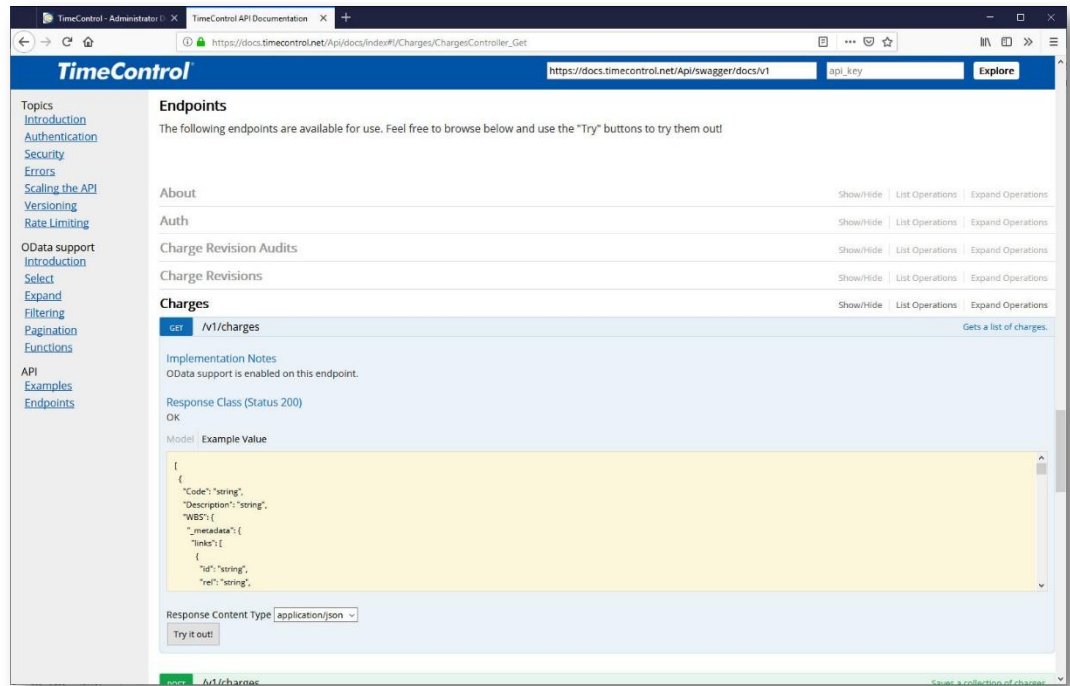
The documentation is located at the following URL based on your domain name:

https://**your-timecontrol-url.com**/api/docs/index

Within the API docs, you will find that each end-point includes a list of methods, and example code. The API docs even let you try example code right from the example page by clicking the **Try it out!** Button.
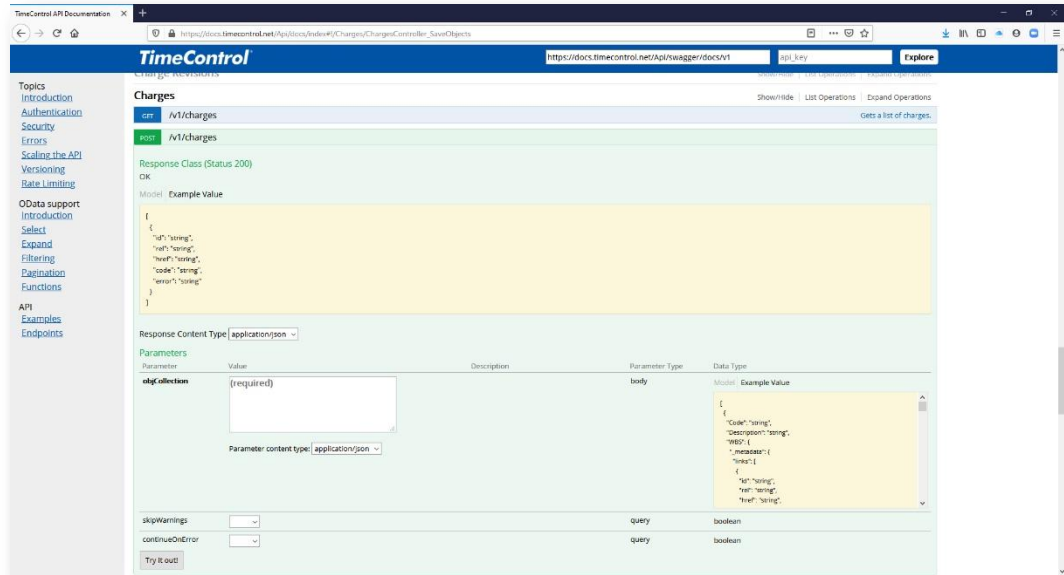
In order to use the **Try it out!** button, you must first have activated the API, have it activated for your user profile and have permissions for whatever it is you are trying to do. For example, if you are trying to read the Rates table but the user profile associated to your user record does not have access to the Rates table, the API won't return the result.

> **WARNING**
>
> The API is running on the current TimeControl actual data. If you use a Post or Delete method, you will be changing data in the actual TimeControl system you are using.

The TimeControl Mobile App and API

The TimeControl Mobile App is a free application available on the Apple App store for iOS devices and Google Play for Android devices. The App connects to the TimeControl API and TimeControl Mobile Web Services which must be installed in order for the Mobile App to have a service to connect to. During installation or upgrades, an option to install the TimeControl Mobile and API module is presented.
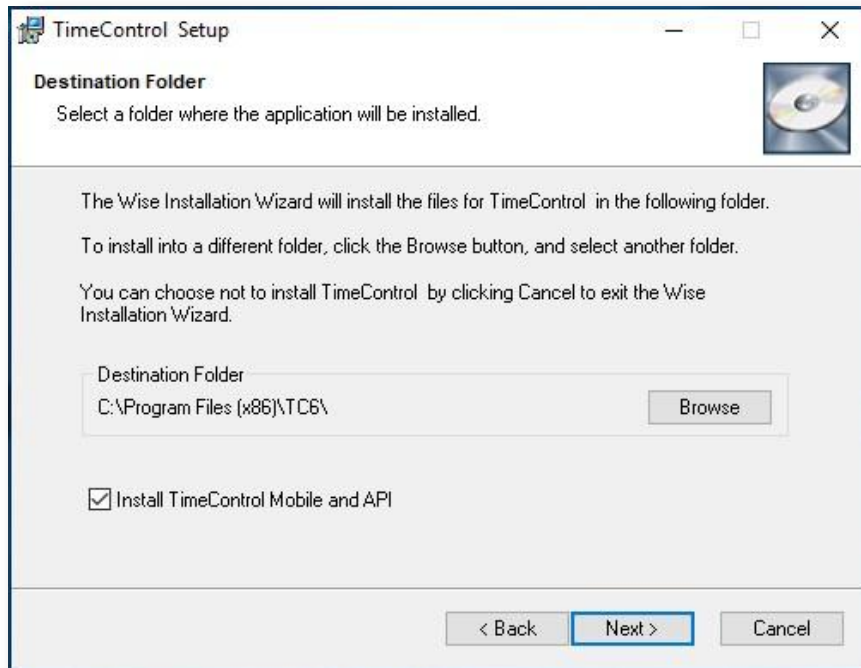
If the option is selected, the appropriate files and services are installed for both TimeControl Mobile and the API. There is no option to install one but not the other as both are based on the same structure.

The TimeControl Mobile App is available on the Apple Store at: https://itunes.apple.com/us/app/timecontrol-mobile/id1279374009?mt=8

For Android devices, the TimeControl Mobile App is available from Google Play at: https://play.google.com/store/apps/details?id=com.timecontrol.mobile&pcampaignid=MKT-Other-global-all-co-prtnr-py-PartBadge-Mar2515-1

Connecting TimeControl Mobile or the API

To access either the API or the TimeControl Mobile service, the TimeControl Server must be able to be reached by the appropriate device. This typically means the server must be outward facing as has been discussed earlier in this Guide. If the TimeControl server is secured behind a firewall, then mobile devices will only be able to reach it if they too are connected behind the firewall. Likewise, if the API server is secured, program code designed to reach the API must be executed from a place that has access to the TimeControl server.

One installed, TimeControl Mobile App and the TimeControl API are controlled through TimeControl security:

TimeControl Mobile Security Settings
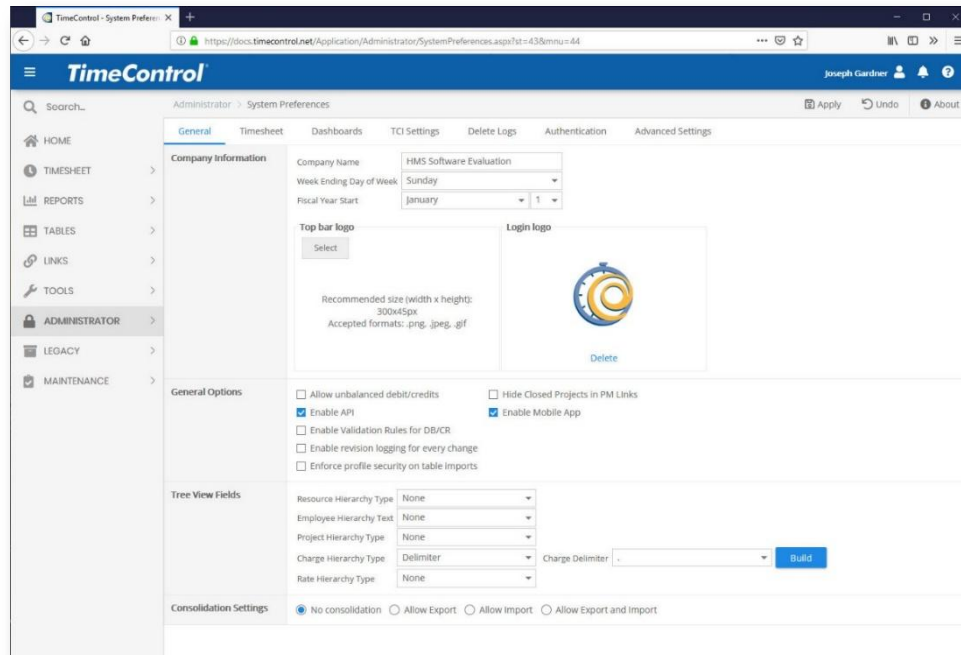
The TimeControl Mobile App must be selected in System Preferences to turn on the option for anyone to use in this instance of TimeControl. You can enable the API or the TimeControl Mobile service or both.
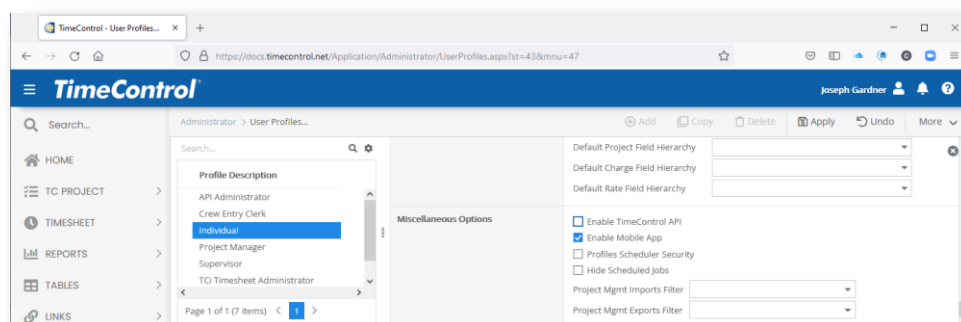
The TimeControl Mobile App must be selected for the User Profile of the user trying to access TimeControl through the TimeControl Mobile App.

TimeControl API Security Settings
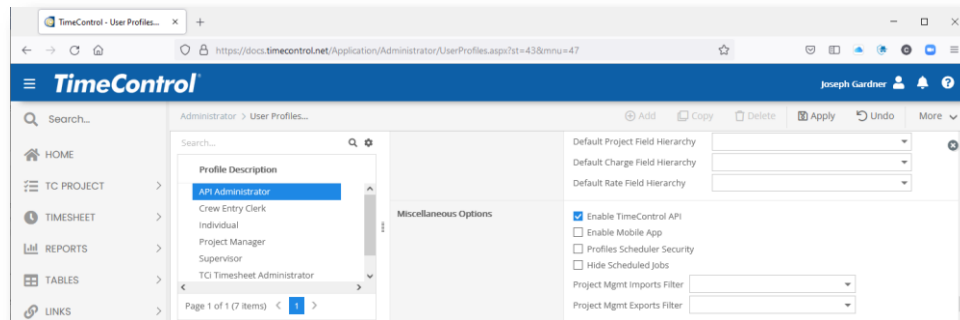
To access the API, the user requesting authentication must have Enable TimeControl API selected in their User Profile. Typically, a user is created for just this purpose. The API enabled user will be able to access only those commands and data to which their profile has access.

TimeControl Mobile and API Security

The TimeControl API is a web service designed within a REST (Representational State Transfer) architecture, and works over standard HTTP or HTTPS. The service runs with Microsoft Server's Internet Information Services, using .NET 4.8 or higher, and is installed as a virtual directory alongside the TimeControl website.

We strongly recommend that the API be used with SSL (Secure Socket Layer). If SSL is not enabled, all information sent to and from the API will be sent as clear-text. SSL is the default installation.

The TimeControl API follows the same security as TimeControl itself. When logging in, you only have access to things you have access to through the user interface. For example, if your user profile does not have menu security to access the employee table, then authenticating to the TimeControl API with your user name will not give you access to the Employees API endpoint. The API will take into account menu security, table security, and field security. If you do not have access to a specific field, the field will not be returned in the API responses. If you try to save a value in a request without permission to that field, your request will be rejected.

By default, all requests to the API support CORS (Cross-Origin Resource Sharing) from all origins, allowing you to interact with our API from any client application / location. If you would like to limit which origins can use the API, the

CORS can be configured within the **TimeControl.INI**. To do so, create a section in the **TimeControl.ini** file as shown in the example below:

```
[REST_API]

CORS_ORIGINS=*
```

This is the equivalent of allowing traffic from any source which is TimeControl's default.

The following example:

```
[REST_API]

CORS_ORIGINS=http://yourdomain.com
```

would allow traffic from only yourdomain.com.

The TimeControl Mobile Interface

For those who do not wish to deploy a mobile App to connect to TimeControl, an interface called TimeControl Mobile is automatically installed as an additional interface into TimeControl. This is distinct from the TimeControl Mobile App which was discussed above. The installation will create a subdirectory of the TimeControl web files called /mobile. Users who access TimeControl from their smartphone at their usual URL plus /mobile (e.g. timecontrol.<domainname>.com/mobile will be presented with the mobile interface. This interface is designed for organizations which do not have the ability or desire to deploy a mobile App to individual mobile devices.

Disabling the TimeControl Mobile Interface

Organizations which do not want to make the mobile interface available to their users should copy and remove the /mobile directory after installation is complete.

Appendix C - Rates Tutorial

Introduction

One of the most powerful aspect of TimeControl is the remarkably flexible method by which rates are applied to timesheet hours. As a multi-purpose timesheet, TimeControl's rates may have to serve numerous purposes. In other timesheet systems, the designers typically think of rates only for the purpose or system for which the timesheet is designed. It is not uncommon in some systems

to find limitations on rates or on how many costs can be calculated or on how many rate codes an employee might have.

TimeControl's flexibility allows it to be used for multiple purposes at once. In a scenario where the timesheet data is being used to link to more than one system, what the rates will do in that timesheet becomes a more important aspect of the design.

As you'll see in the coming pages, the TimeControl Rates environment is configured with many options and touches several aspects of the TimeControl timesheet system.

In this tutorial we'll look at the functionality and options for each TimeControl area of configuration or functionality and then go deeper to talk about some of these functions in context of different use-case scenarios.

The Rates Table

Rates Table Display

The story about TimeControl rates starts with the Rates Table. This is a rather simple table where the only required fields are the Code, Description and Rate Type. Rates are displayed in a list on the left hand side and the details of the selected record are displayed on the right.

Rates can be entered manually one at a time or imported in volume using the Links module.
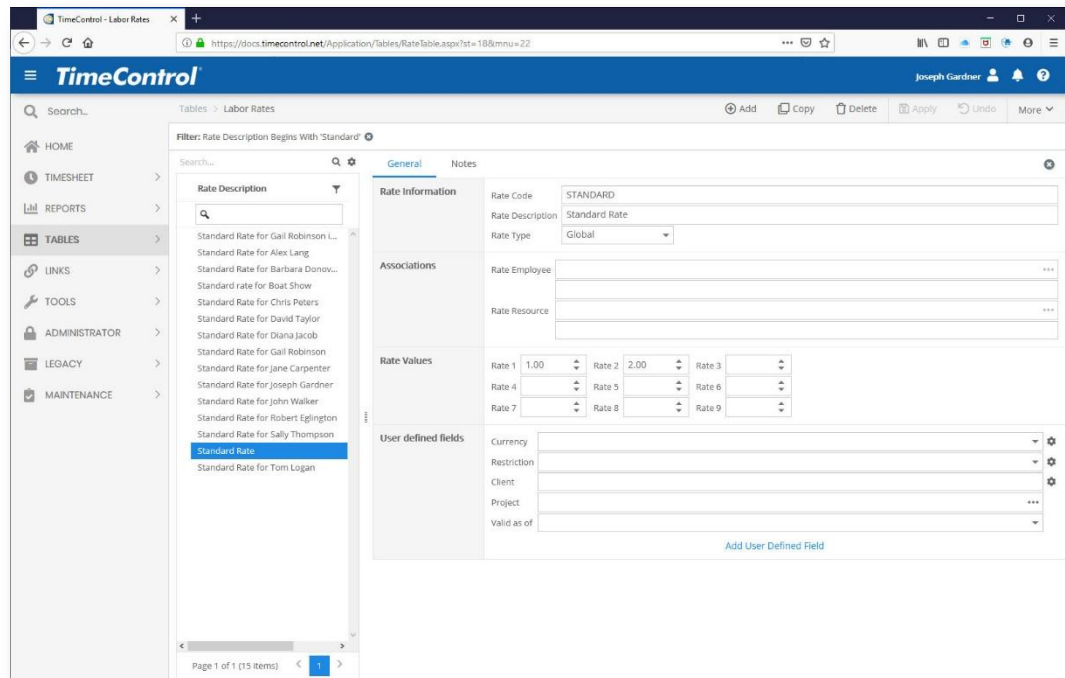
There is no limit to the number of rate codes that can be entered and no limit to the number or rates an individual employee has access to. The only limits are those you create yourself using filtering.

The Rates detail view allows notes to be added for each rate record in a separate tab and, in the main tab, data is divided into four categories:

Rate Information

Rate Code:

Unlike other TimeControl tables, the Code does not need to be unique here. We can have many rates that have the code name "Standard". TimeControl adds several fields together to ensure a unique selectable value for the employee's timesheet. For Global Rates, TimeControl uses the Rate Code and Rate Type (Global) to be unique. For Resource-based rates, TimeControl combines the Rate Code, the Rate Type (Resource) and the Resource Code to be unique. For Employee-based rates, TimeControl uses the Rate Code, the Rate Type (Employee) and the Employee Code to be unique.

If in the timesheet selection TimeControl finds more than one rate code for the employee with the same code (e.g. A Global and a Resource) then it will only show the rate code which is most specific to that employee. For multiple rate codes with the same Rate code It will give preference to an employee-based Rate Code then to a resource-based Rate Code then finally to a global-based Rate Code.

Associations

In the Associations area, TimeControl will activate the Employee Code/Description if the Rate Type is "Employee" or the Resource Code/Description if the Rate Type is "Resource".

Multiple Rate Values

By default, TimeControl supports 9 values for each Rate Code. New users to TimeControl will sometimes confuse the Rate Value with a Rate Code. For each Code, you can enter 9 definitions of what that time should be priced at. The Rate Value is defined in hours.

Some organizations will assign one of these values to the internal cost and another value to the invoice price. Then, each time a timesheet is posted, it will multiply each value times the number of hours (or fraction) and store the result in a cost field associated to the rate value. The Posted Detail table which contains the timesheet data after it's posted will have a Rate Value 1 that matches a Cost Value 1 and a Rate Value 2 matched with a Cost Value 2.

This simple concept results in a powerful combination of how costs are managed in TimeControl. An organization can simultaneously price the same hour of work in multiple ways. There could be an internal cost of that hour that would match payroll, an external price for that hour that would appear on invoicing and perhaps even an average value project cost that could be used to compare costs in a project management system.

With so many values available, an organization can use other values for other purposes. A separate currency could appear in one value so that an hour of work could appear in a local currency value and have an associated base-currency

value. In a single TimeControl report, both US dollars and Euros could appear. Using calculated fields in the TimeControl Report Designer, you could show the profit by comparing the Cost Values of the Internal Cost with the Cost Values of the Invoice Price.

User Defined Fields

Finally, as is the case in all TimeControl Tables, user defined fields can be used to further categorize the rate code. You'll see a specific example later in this paper on how to use user defined fields to make project-specific rates but rates can be categorized by almost anything and user defined fields are excellent for that.

Rate Type: Global

The first type of rate that can be created is a Global rate. A Global rate will be available to all employees unless it is hidden by a Rate Filter in the Employee Table.

When we select a Global Rate Type, the options in Associations are greyed out and unselectable.

Rate Type: Resource

You can also define rates at the Resource Level. If a Rate Type of Resource is selected, the Association must be entered to select which Resource this Rate is linked to. If on the timesheet, TimeControl detects both a Global Rate Code and a Resource-specific Rate Code which are identical, it will select the Resource Rate Code as that is more specific to this employee.

Rate Type: Employee

You can select an Employee Rate Code by choosing a Rate Type of Employee in which case you must complete the Employee selection in the Associations area. If on the timesheet TimeControl detects either a Global or Resource Rate code with the same Code name, it will show the Employee-based Rate code as that is more specific to this employee.
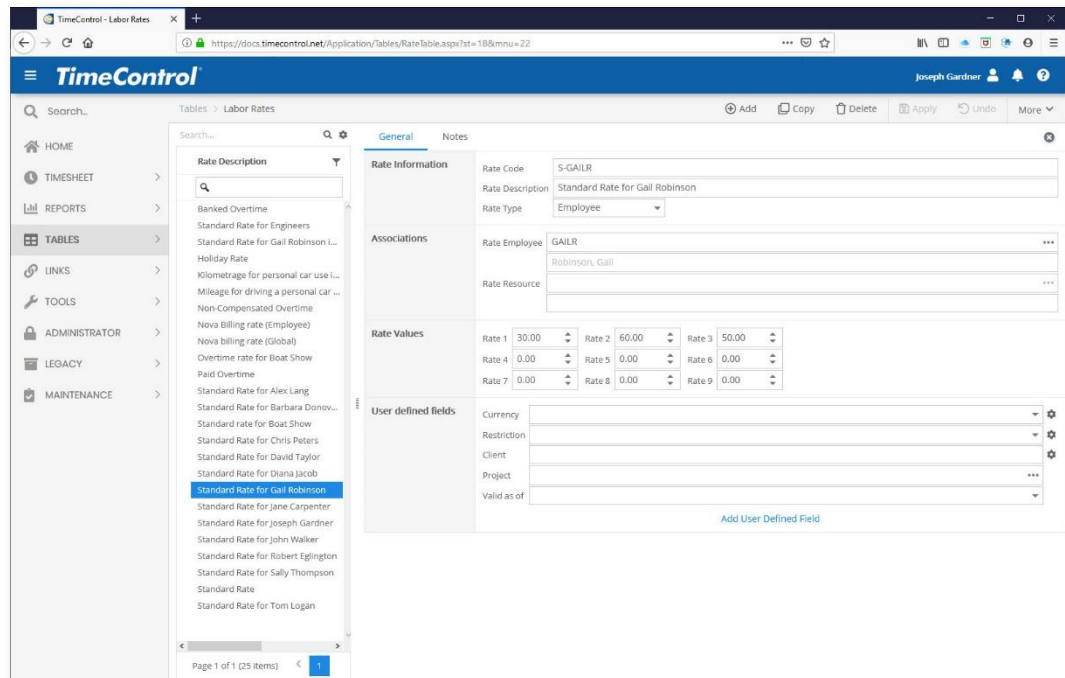
There is no limit to the number of rate codes that can be Employee specific. For example, it is not uncommon to have regular and overtime rates for each employee and each project. Then TimeControl would only show this employee's rate selections to them on the timesheet. If a filter further constrained this to show project-specific rates, an individual would only see two choices (regular and overtime) for each project line but in the background, TimeControl might be managing a table with thousands of Rate Codes in order to show only those two in that situation.

Expense Rates associated in the timesheet

TimeControl can also associate rates to expense items. This will allow a predetermined value to populate the dialog in a timesheet expense item entry.

To do this we need to first set up a resource that will be referenced in an expense line item that is in a timesheet.

In this example we will add a resource for mileage. In the Resource Table we add the resource "MILEAGE" and declare it to be a "Non-Labor" type. TimeControl will display a list of Non-Labor resources when adding a resource entry.
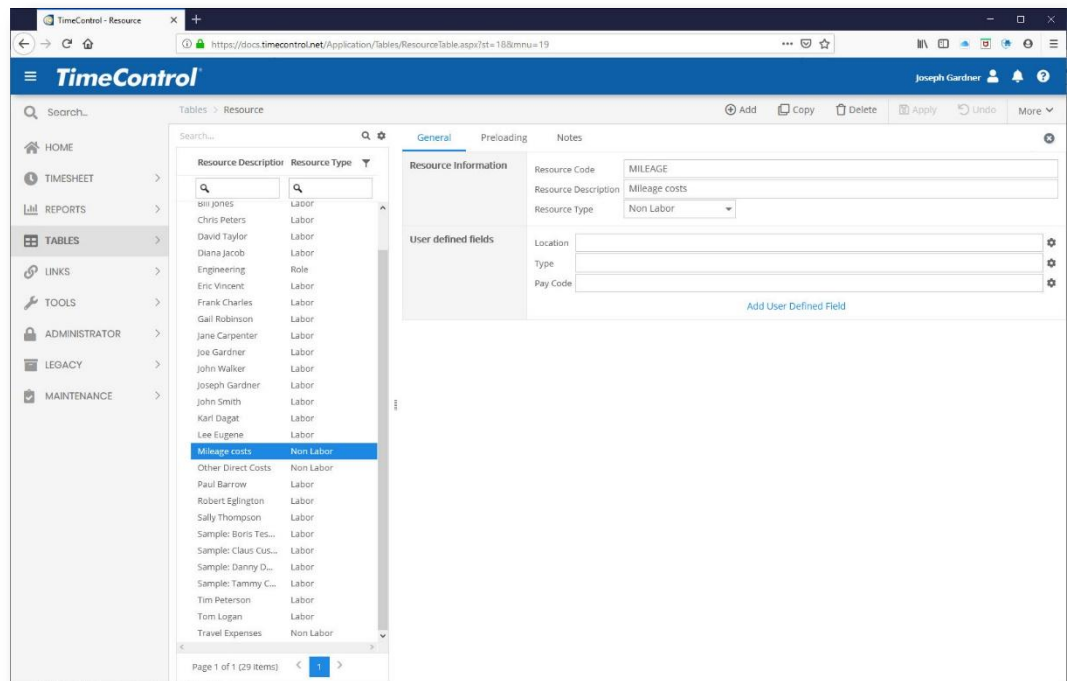
Once the resource is present, we can now go to the Rate Table.

We will create a new rate and again call it "MILEAGE". We select "Resource" as the Rate Type. When we click in the Resource field, we will see a list of possible resources. We'll select the "MILEAGE" resource we just created.

In the Rate Values we'll add "$0.51" for Internal Cost (Rate Value 1.

When we save this, it will now become available for expense entries as we'll see in the next screen.

Now we go to a timesheet, add a line and click on the "+" button to expand the timesheet line to show Expenses. Add an expense entry either in the grid or, as we see below, by hovering over "Append" in the Expense grid to get the Expense dialog.

The user selects "MILEAGE" as their expense entry and then enters the quantity. When the quantity of 450 miles is entered, TimeControl automatically calculates this at $0.51 per mile or $229.50 as a Sub-Total. The user can then enter optional values for taxes and the grand total is calculated.

Rate Hierarchy

In System Preferences, in the Tree View Fields selection, there is an option for how to display rate codes. You can select one or several fields in order and TimeControl will build a hierarchy with those fields each becoming a different level. If we select the Rate Type for example, the Rate Table view will change. If we now go back to the Rates Table we can see that the rates are now displaying in a hierarchy based on Rate type.

The hierarchy defined will appear anywhere rates are selected. In the screen below we can now see the hierarchy in the Rate Table. This same type of tree structure will be found also in the timesheet selection, the default rate selections and elsewhere. If there is a filter that shows only some Rate Codes, the tree structure will appear only for those elements which have a Rate Code within them.

This is true also for anywhere else rates are displayed. Going to a user's timesheet and selecting the rate choices will show only their appropriate rate choices but will display them in the hierarchy defined in System Preferences.

Rate Filters in the Employee Table

One powerful aspect of Rate management in TimeControl is to filter what Rate Codes will appear for a particular situation. You can filter rates by any dynamic selection you wish and have only those rates appear. For example, you might want to filter rates to show only the current year's rates and on the first of the year start showing only next year's rates. That enables escalated rate management. Or, you might have a situation where based on the client, project and role, different rates should be visible and that the employee must select only from those.

This is activated in the Employee Table view. As we can see here, for this employee, we are selecting a filter that says only rates associated to their project are shown.
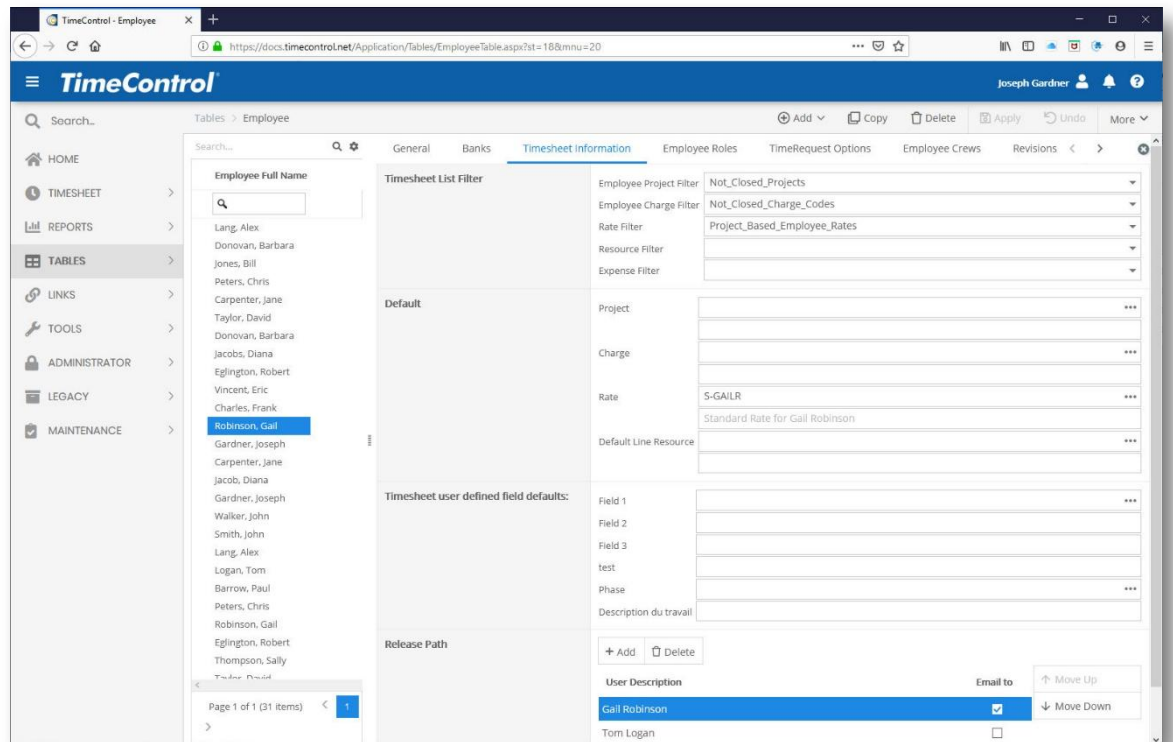
Making such a filter is fairly straightforward in the TimeControl filter menu.

This particular example is in the following screen.
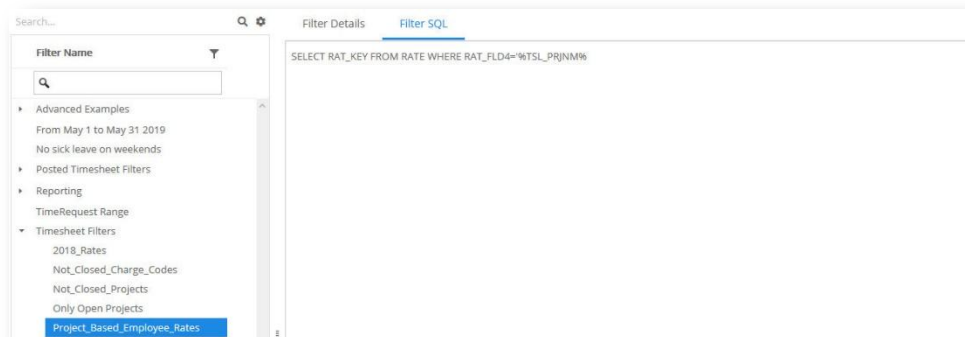
In this case we're using one of TimeControl's value macros for filters. The full expression is:

SELECT RAT_KEY FROM RATE WHERE RAT_FLD4="%TSL_PRJNM%"

This expression says: Show only the rates where the value found in Rate Table User Defined Field #4 is equal to the project name of that timesheet line number (TSL_PRJNM).

Rate Labels in Manage Languages

TimeControl is a multi-language system but it also allows you to change the menu names, field names, messages and other terms in any of the existing languages. We can use this to make our Rates more clear. This next screen shows the Manage Languages function where we can find an existing term like "Rate 3" and change it to "Average Project Cost"
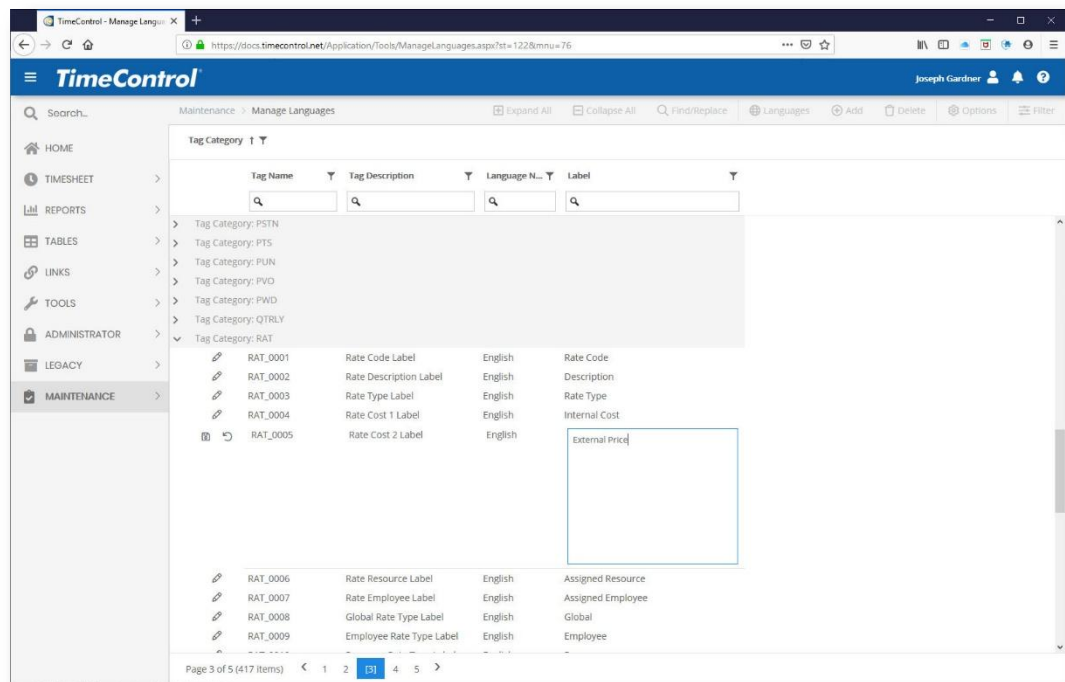
Back in the Rate Table, you can see that we now have Internal Cost, External Price and Average Project Cost replacing the labels "Rate 1", "Rate 2" and "Rate 3".
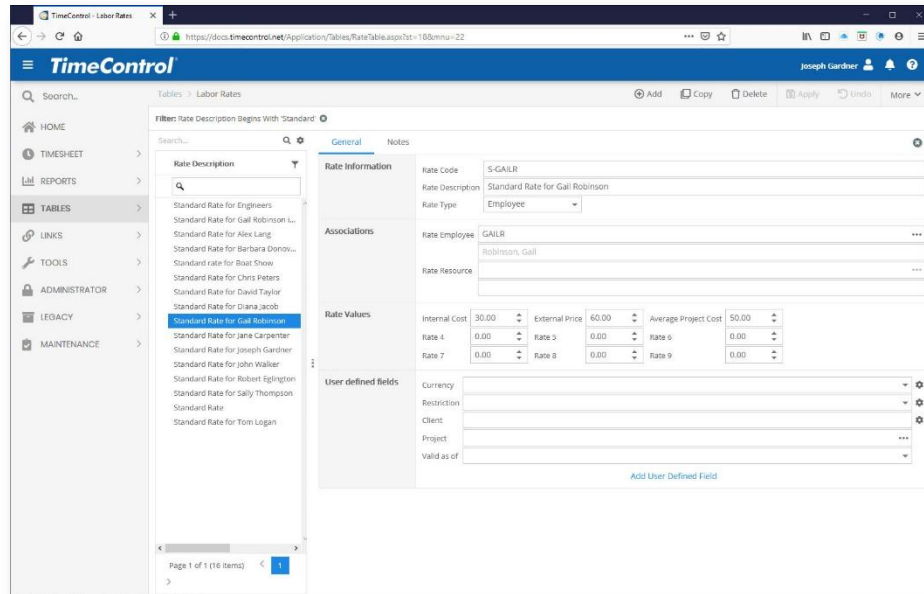
Rate Defaults in MyAccount or Employee Table

Users can save time on their timesheets by selecting a rate code that they use most frequently. This can be done by the individual user on the Employee Tab of the MyAccount function. MyAccount is at the top right of the screen. The Employee is able to select any rate that is available to their view.
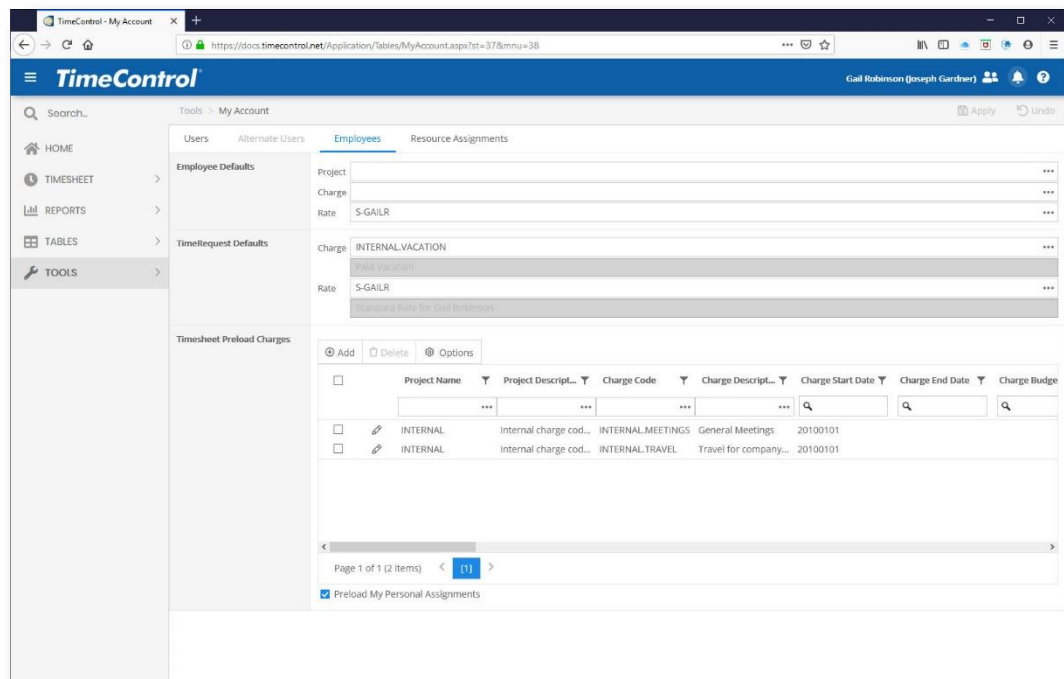
Administrators can set up default selections for employees in the Employee Table. The Timesheet Information Tab allows for the Default Rate Code to be selected.

A Default Rate is a requirement for TimeControl Pre-Loading of timesheets and it can save a lot of time.

Rate Default in the Project Table

Some organizations will want to set a default rate for a project. If this is the case, a rate can be set up for each employee with the same name such as "NOVA" for all Nova projects. Each employee would have an Employee-based rate code of NOVA available. We'll also need to create a Global rate of NOVA in order to make it the project default. In the project table as we see below, we've done a selection of a rate as the default. Only Global rates can be selected here as we don't want the situation where a rate was selected but might not be available to a particular user.

With this rate now in the project table, whenever this project is selected in the timesheet or is part of a pre-load, this rate code will be the one that TimeControl inserts by default in the rate column. If there is an employee or resource-based code called Nova which is more specific to that employee, then that will be the particular "NOVA" that TimeControl uses during the Posting process.

The "Project Rate Required" option will force the selected Project Rate to be the one associated to that project so there is no mistake by the end user.

Project Management Links

When sending data back to a project management system one of the options is to send back the costs. The Rate Value selected will be a key decision here.

In the Project Table or in the Links Wizard, two options are presented that reference the Rate Values. First, decide at the bottom of the page if you are going to transfer the actual costs at all. If not, there's no need to select the rate value. If you intend for the project management system to take the hours as uncosted data and do its own calculations with the rates it has stored, then don't transfer the actual costs in order to avoid double counting or ending up with unsynchronized costs which don't match.

If the intent is to have TimeControl's costs match the project costs in the project management system, then select one of the 9 Rate Values to transfer. TimeControl will take the Posted Cost for that associated value and send that information to the project system.
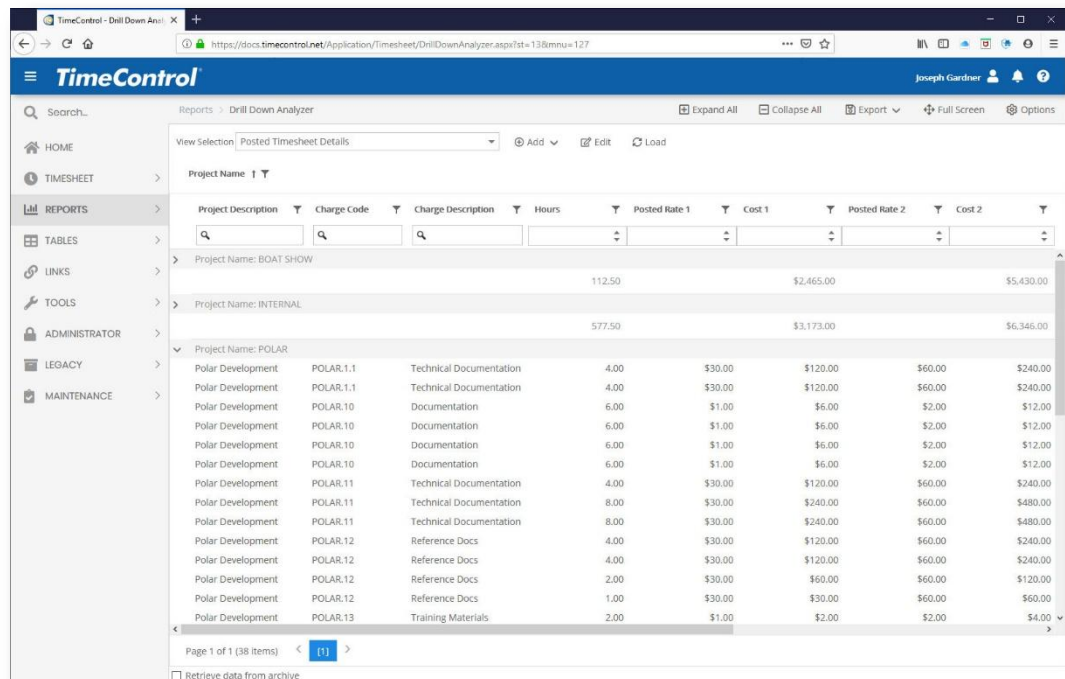
Some organizations will want to send the internal cost. Some will want to send a billing value and others will want to use an average project cost value. This last concept is fairly common among those who have had to wrestle with managing restricted rate functionality in the project system and trying not to do too much accounting in the project system.

One thing to avoid here is to transfer the data to the project system and then use the project system to transfer it again for invoicing, payables, payroll tax reporting or any other auditable purpose. Given you already have the auditable data in TimeControl, it's unlikely that that the project system will give any additional added value to the costing data. You can make a link instead directly from TimeControl to the financial system that needs it.

How are costs calculated?

TimeControl posts the costs that are associated to each Rate Value during the Posting Process. For each of the 9 Rate Values, TimeControl will create a corresponding Cost on the Posted Detail record. Since this is done at the moment of Posting, if rates have changed during the week, the rate that is present at the moment of Posting will be the one used for the calculation.

In this next screen we can see the Drill-Down Analyzer showing data for a project with the hours, 2 Rate Values and the associated Costs:

Looking in a bit more detail, you can see that on the first line, there is an entry for 4 hours of time and based on the rate code selected for that timesheet, there was a Rate Value 1 or Internal Cost of $30.00. The Posted cost is 4 x $30.00 or $120.00.

On the same line, the Rate Value 2 or external price rate is 4 hours with a Value of $60. The Posted Cost 2 for that entry is 4 x $60 or $240.

So, for this entry we can see values that might have represented the Internal Cost and the External Billing value for the same timesheet entry. The end user doesn't ever see this of course. They simply chose the appropriate rate code based on the codes available to them. The values of these entries were never displayed to the end user.

Rate Security in User Profiles

Rates are considered very sensitive in most organization. If the rates include personnel salary or wage data there may be privacy issues that are mandated by law to ensure that the rate data is not displayed.

The main areas of User Profiles that can secure Rates data are in the User Profiles security screens.

In the menu area, you can turn off access to the entire Rate Table, thus hiding it from view. Most users will not require access to the table anyway and it is a basic tenet of security design to not give access when no access is needed.

This screen shows the User Profiles menu page. You can remove access to just the Labor Rates menu selection or turn off the entire Tables Tab (as is done in this example) so users with the Individual User Profile will not see any table selections in their menu.
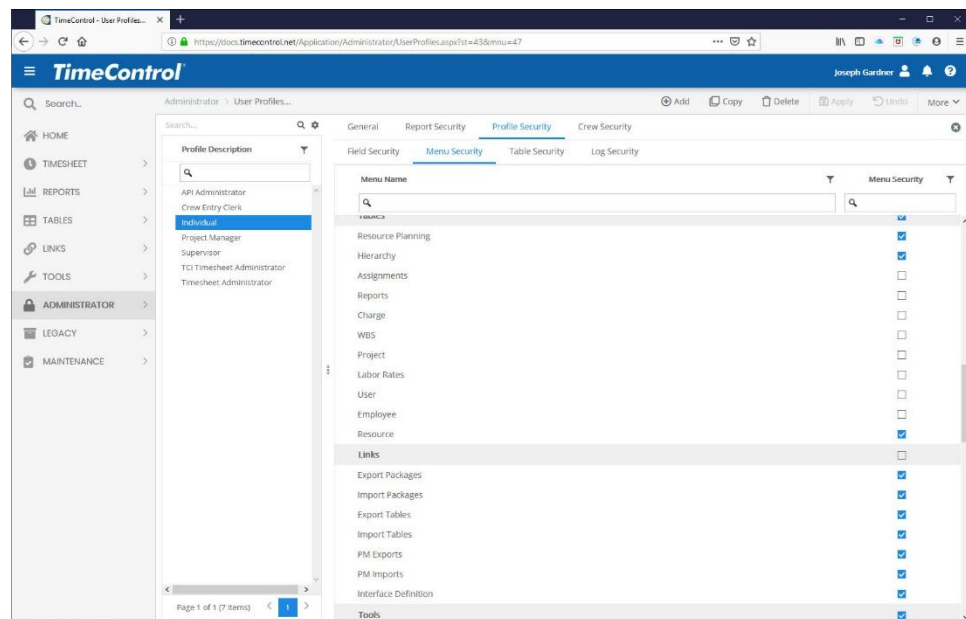
The User Profiles Field security screen allows you to define any field in any table as visible (blank = no constraint), Read-Only, Value Hidden or Invisible.

- A blank entry would mean the field label is visible and the field value is

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editable.

- An entry of read-only would mean the field label is visible and the field value is visible but not editable.

- An entry of value-hidden would mean the field label is visisble but the field value is not visible and not editable.

- An entry of invisible would mean that the field label is invisible and the field value is not visible and not editable.

This next screen shows the Internal Cost Value as Read-Only, the External Price as Invisible and the Average Project Value as Value Hidden.
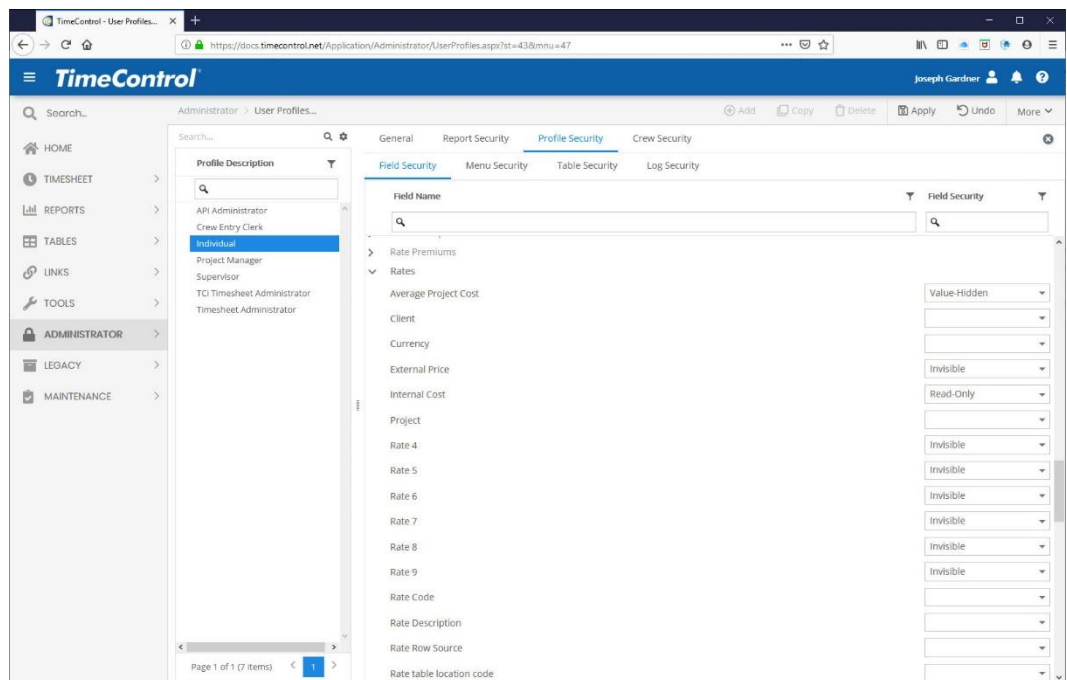
When these selections are made, they are honored across the entire TimeControl system. For example, if you have made Rate Value 1 as invisible, then the Rate won't be visible in the Table view but it also won't be visible in reports, in exports or anywhere else. Remember, you may need to also secure the Posted Cost fields in the Posted Detail table.

A final place to think about security of the Rates Table is in User Profiles/Table Security.

There are several options for each table including the Rates Table that can be established in this area and are specific to that User Profile so that different rights can be associated to different groups of people.

Even if a role has access to the Rates Table, you can define whether a user with that role can:

- Add (Insert) a new record
- Edit (Update) an existing record
- Delete a record
- Add a new User Defined filed (Structure) to the table
- Change the Links for the User Defined Fields (Linked Fields)
- Add Values to the pop-up list for a User Defined Field (Edit Links)

The last value on the right hand side of the security screen says "Filter". This can be used to apply a filter from the Filter Table when accessing this table. This feature would allow an organization to have some Rate Administrators who could see one department and other Rate Administrators that would see any other department.
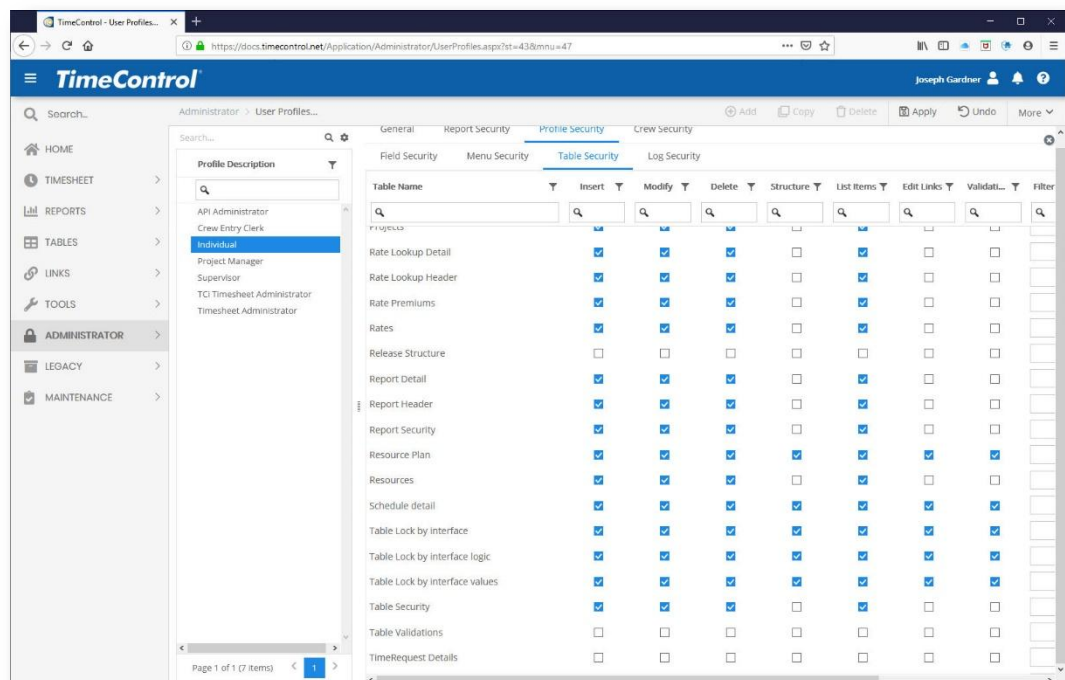
Using Validation Rules to check rate selections

You can use TimeControl's extensive Validation Rules system to check for anything else that may be Rate related. You can use the Employee-level filter to only show certain rates for certain conditions but the Validation Rules would check and deliver either a warning or an error based on the rates selected.

For example, we could check timesheets for only project personnel to see if the Rate Code selected on a timesheet line was associated with the proper project such as was shown above in the "Project Specific Rates" example.
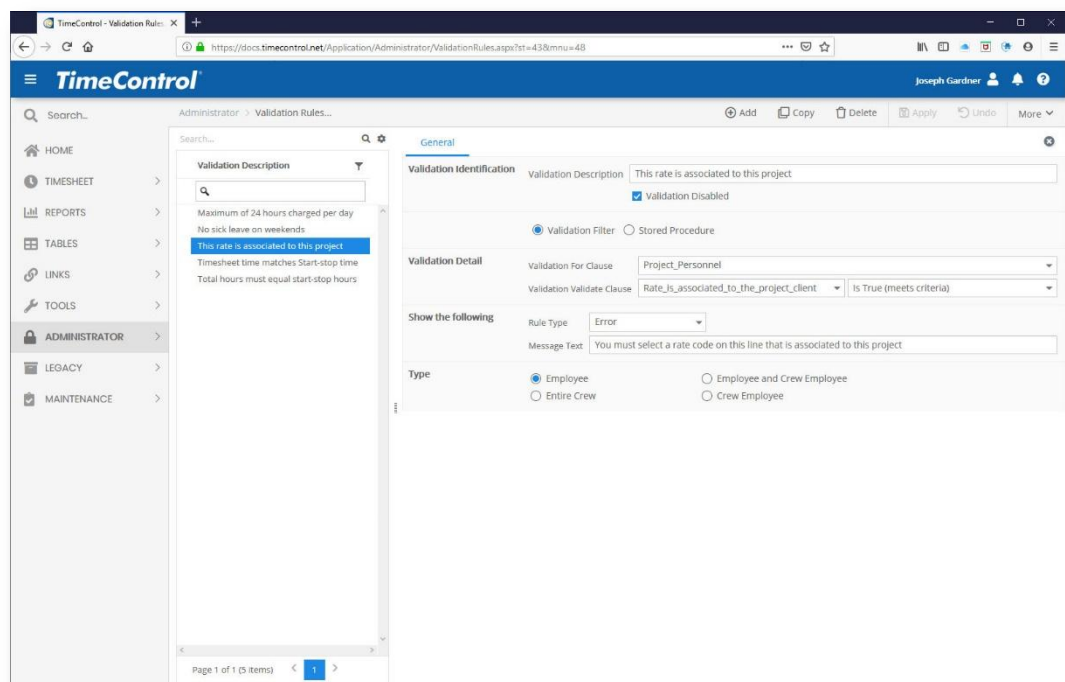
In this case the Detail section shows how we are applying this rule only to Project Personnel by selecting the Filter called "Project Personnel". Then in the next line we are validating for "Rate is Associated to the Project by selecting the filter for that.

Here's the example filter that would be used in such a validation rule.
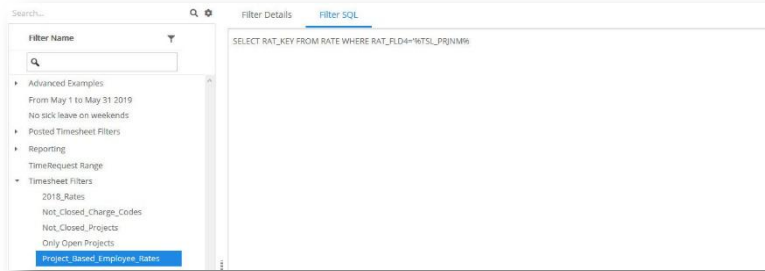
In this case we're using one of TimeControl's value macros for filters. The full expression is:
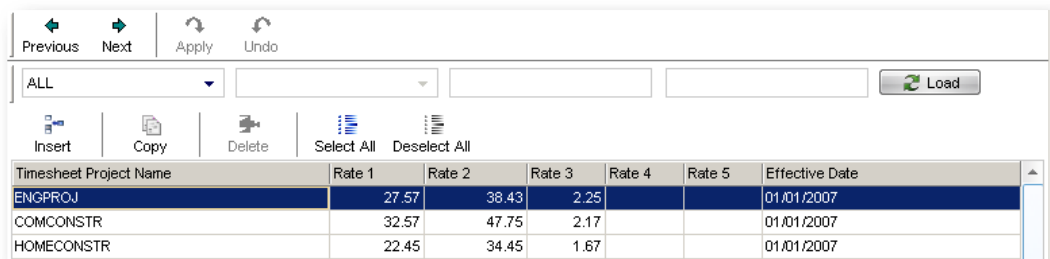
SELECT RAT_KEY FROM RATE WHERE RAT_FLD4="%TSL_PRJNM%"

This expression says: Show only the rates where the value found in Rate Table User Defined Field #4 is equal to the project name of that timesheet line number (TSL_PRJNM).

Extended Rates in TimeControl Industrial

TimeControl Industrial includes all the remarkable Rates functionality we've seen above but goes one step further when entering Crew Timesheets. The Crew Timesheet Module of TimeControl is designed to enter a high volume of timesheet data in the field as part of Field Data Collection for Labor, Equipment and Materials. There may be hundreds of possible rate combinations and these have to be properly selected on the Crew Timesheet. TimeControl Industrial includes a function call "Extended Rates" which makes the proper rate selection based on the information in finds in each line. For example, if there is a premium for a particular project when working on the night shift and the shift number is on the timesheet line, TimeControl can automatically see both the project column entry and the shift column entry and then make the appropriate rate selection for that employee. Numerous columns can be matched in order to do this.

The Extended Rate table is very simple. It has a number of columns that are matched in the timesheet and then the Rate Values (1 through 9) for that Rate selection.

The definition for this is made in the System Preferences area of TimeControl Industrial where the fields in the Extended Rate Table are matched to those in the Crew Timesheet.
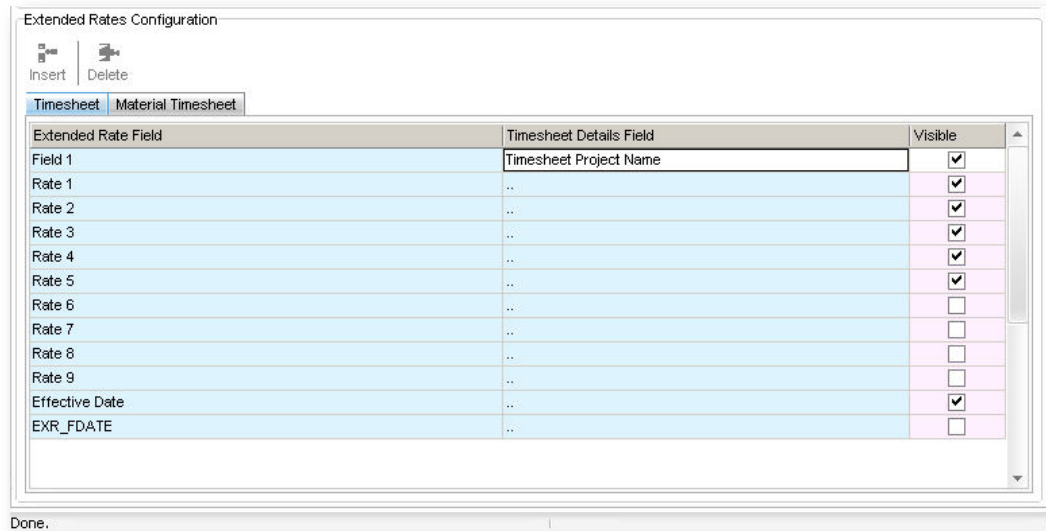
Use-Case Scenarios

Since 1994 when TimeControl first appeared in the market, HMS has been asked to solve timesheet challenges that involved rates functionality. Here are several of the most common business situations and how you can overcome these challenges using the functionality we've described above.

Time and Billing rates

If you are using TimeControl for time and billing, you'll need to use rates to track the billing price in order to make invoices from the TimeControl data. You may also need to track internal costs as the profit for each hour worked would be the difference between the billable price and the cost. So it's typical to use at least two Rate Values.

Billing rates are likely to have the complexity of being specific to a client or to a client and contract. In this case, use one of the user-defined fields to identify the client and/or the client's contract so those rates can be associated to the correct category.

In some billing scenarios, the invoicing is done based on the role rather than the employee. This can be easily accomplished by using either resource rates or by making a rate code for each role/person. While this might result in a large volume of rates, you can use the Rate Filters in the Employee Table to reduce the number of rates to those specific to the employee and the line they are working on.

You can find out more about Time and Billing Rates on the TimeControl Website in the Time and Billing Solution area at: www.timecontrol.com/solutions/timebilling/.

Project Specific Rates

Some organizations have asked to have multiple rates associated to each project and then display only those rates on a timesheet line when that project is selected. We call this project specific rates.

To do this, start with creating a user defined field on the Rates Table. You'll need rights to Change the "Structure" in User Profiles Security.
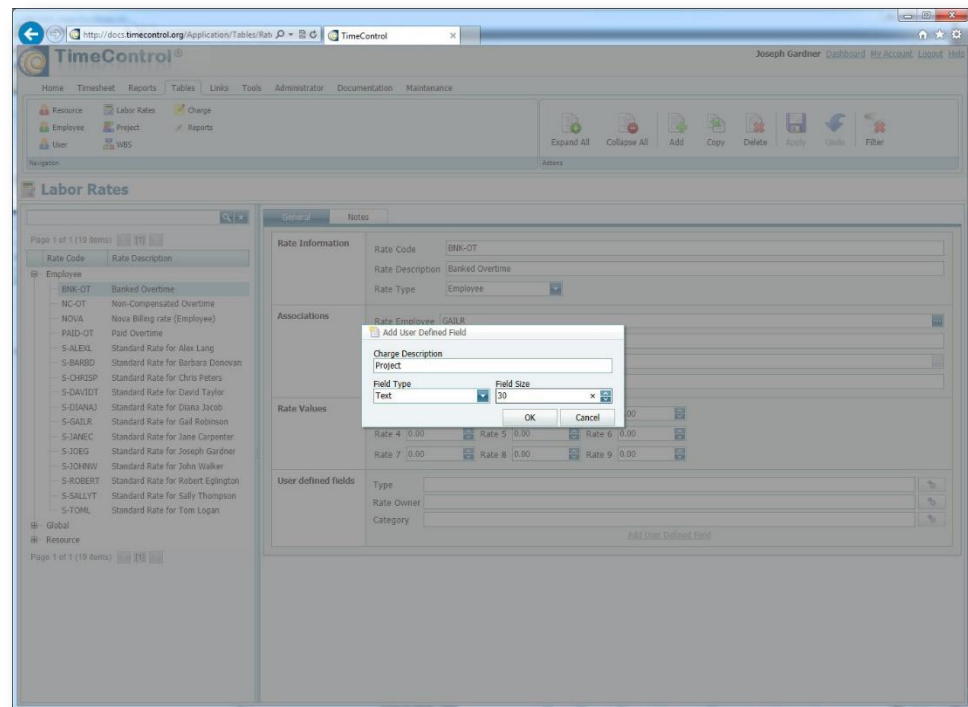
Once the field is created, go to Manage External Links / Manage External Tables and associate the new User Defined Field to the Project Name and Description files in the Project Table.

Now in the Rates Table we should be able to get a drop-down or pop-up list of Projects to which each rate code can be associated.
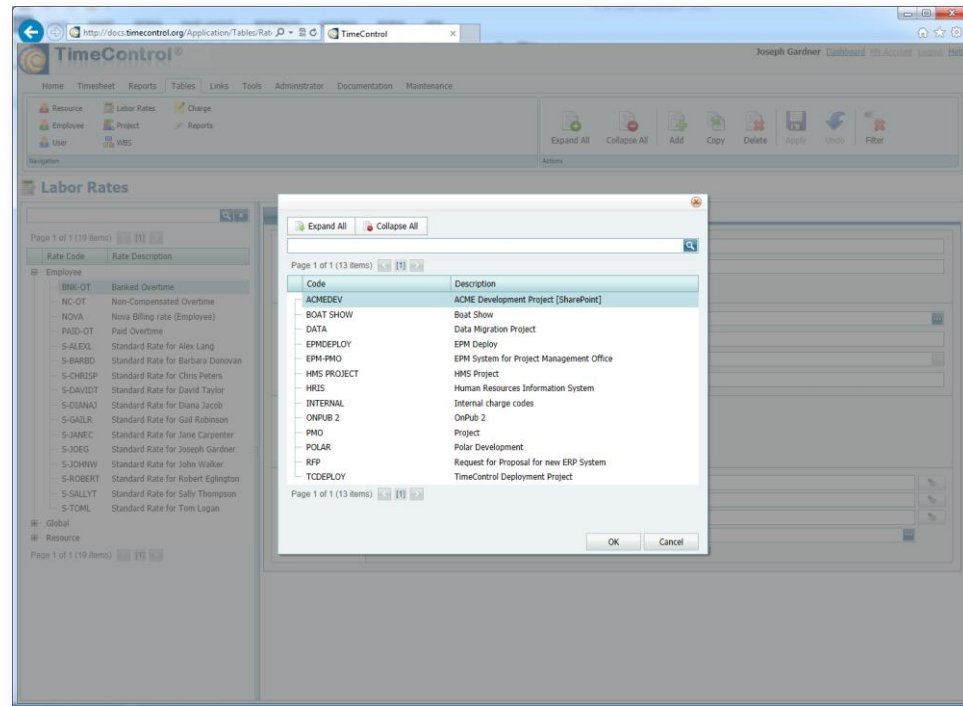
All that's left to do is create a filter that will only show the appropriate rate that is associated to the project in the timesheet line. We've described that example in the Rate Filters in the Employee Table earlier in this document.

Rates when linked to Project Management

When linking to a project management system, there are a couple of things to think about. First, do you want to send only the hours and keep the actual and billable costs in TimeControl or do you want to send the fully costed information to the project system?

If you have decided to send the fully costed information to the project system, the next decision is what value do you want to cost at? Will you manage your project costs at an internal cost value, external pricing value or, and this is quite popular, an average project cost value.

Once you've decided which Rate Value will be used for linking to project management, it's best to lock that in place so that there is no confusion by transferring with a different Rate Value in the middle of the project.

Rates when linking to an ERP

When linking to a Finance System or ERP, the first question to be asked is what will be done with the information. It is common, for example, to use TimeControl for Time and Attendance data for the Payroll system. If this is the case, then it is likely that the payroll cost won't be required. All payroll systems typically do their own calculations. What may be critical however, is that the rate codes might require some user defined fields to be established to deliver certain codes to payroll. It might be critically important for example to have a code that identifies each Rate Code as a regular or overtime code or a Payable or Non-payable code for payroll.

If the data will be used for Invoicing then the same logic applies. Will we need the pricing values from TimeControl or just the hours.

When we are linking to multiple systems such as both Payroll and Invoicing then using the User Defined Fields in the Rate Table and the Rate Values in each Rate Code will allow you to distinguish which information is transferred to which system.

The beauty of the TimeControl system is the manner in which multiple systems can be serviced simultaneously.

Managing hourly rates when salary cost must be calculated

You can do both hourly billing and salaried cost in TimeControl. The simplest way to do this is to have a "regular time" rate in which the annual salaried cost is divided by the number of working hours per year. For example, a 40 hour workweek will give us 2080 hours per year of workable time. Divide this into a $65,000 per year salary and we know we need to account for exactly $31.50 per hour. We can then make a validation rule to insist that every timesheet have exactly 40 hours using the "regular time" rate. Any other time such as overtime for example, would have to use a different rate. In the overtime rate, the internal cost would be zero and the billable cost would be the billable price value.

Escalated Rates

Some organizations have a rate situation where rates will change automatically on a given date. If, for example, an organization will have rates after January 1st reflect the next year's billing values, TimeControl can use Rate Filters and a user-defined field to support this.

To accomplish this, first create a field in the Rates Table to hold a date. This will be the "Valid as of" date to use in escalation. You'll need to go to new rates and add the value in each rate for the New Year.

Now you'll need to create a Rates filter which refers to that field and says to show only those rates with a value higher than that field.

Finally, you'll need to reference this filter in the Employee Table in the Rates Filter area of the Timesheet tab.

This example will ensure that as of the first of January 2019 only those rates which are 2019 rates will appear and will be selectable on the timesheet. The definition could be set up months in advance and would not be visible to end users until the New Year occurred.
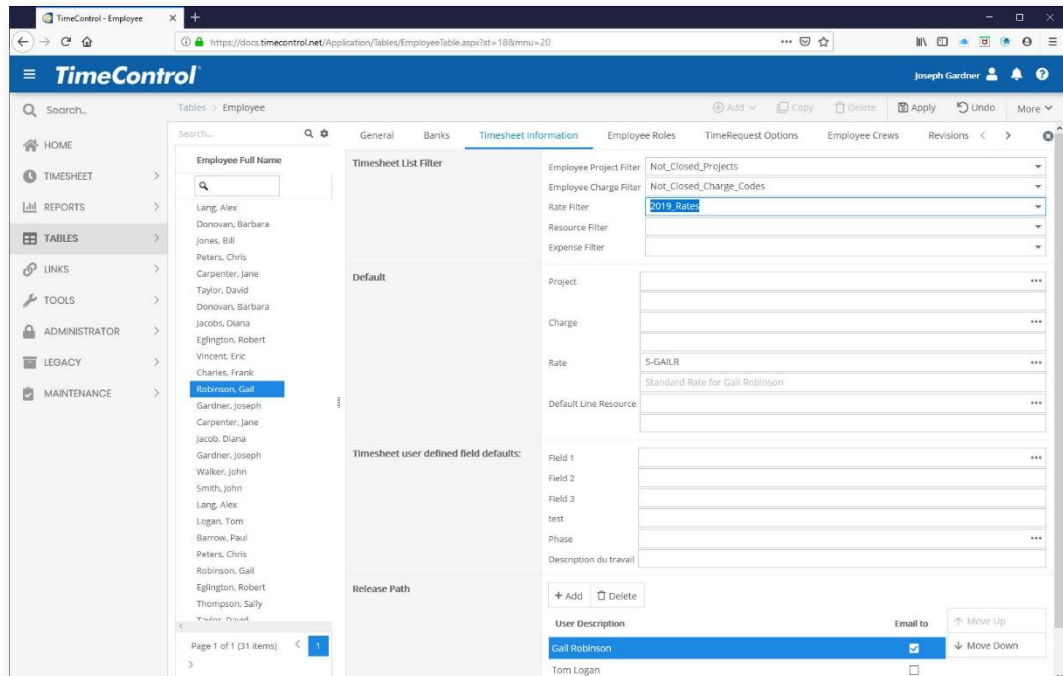
There is one additional challenge which might occur when the New Year (as is the case for 2019) or the escalation date falls in the middle of the week. If this must be accommodated, then use partial posting (which is described in the TimeControl Reference Guide) to post the first part of the week with the earlier rates and then do the regular posting which will catch the remainder of the lines at the end of the week.

Multi-currency Rate Issues

While TimeControl does not automatically convert multiple currencies, the enormous capacity of the Rates system does allow for several ways to manage multiple currencies and report on them at the same time.

You could, for example, use one of the 9 Rate Values for each rate code to have a foreign currency value. Then at posting time, this value could be used to translate to a base currency in a TimeControl Post-Posting procedure in which a list of currency exchange values is polled either internally or on a service on the Internet.

There is more information on this subject on the TimeControl blog at:

https://blog.timecontrol.com/managing-multiple-currencies-in-timecontrol

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Questions and Answers about rates

Question: How many rates can an employee have?

Answer: There is no limit to the number of rates that can be selected by an employee.

Question: How many rates can be put on a single timesheet?

Answer: One per line

Question: What if I want to track burdens on a rate?

Answer: You can use one or more of the 9 Rate Values or one or more of an unlimited number of user defined fields to record the burdens. If the Rate Values are used, the values will be multiplied by the number of hours in an associated cost field during Posting. You can then report on these costs in the Reporting system.

Question: If a Debit/Credit is used to adjust a timesheet later and the rate has changed, will the new rate be used or the old one?

Answer: If the rate has been changed, then the Debit/Credit will be calculated at the new rate. In order to do an adjustment which would reflect both the old and new rate, a new rate could be created and the Debit done with the old rate code and the Credit done with the new rate code.

Question: How could we do escalated rates?

Answer: Create rates for the escalation date and use Rate Filters to show the old rate code up until the escalation date and the new rate codes after the escalation date.

Question: Our rates will be changing on the first of the year which is mid-week. How do I have rates change in the middle of a timesheet period?

Answer: Use Partial Posting to post the first part of the week at the old rate values, then change the rates to the new values and post the rest of the week normally at week's end.

Question: Can we just take the rates from an external system?

Answer: Sure. The Links module allows you to import rates that have been exported from another system to an Excel or CSV file.

Question: Can we transfer the rate codes from TimeControl to Microsoft Project, Primavera or some other system?

Answer: This is a question for the publishers of the systems you are thinking about but for any transfer to work, the destination system must be able to accommodate the data. TimeControl's rates can have 9 values. If the destination system does not have such capabilities, the data will have nowhere to be accommodated. TimeControl can have an unlimited number or rates per employee. If the destination system does not support this, the transfer had nowhere to put that data.

Question: Are rates required on every timesheet line?

Answer: Yes. A rate code must be selected on each timesheet line

Question: We don't use rates and I don't want users to have to see them or select them. Is there any way to turn rates off?

Answer: You can hide rates rather easily. If each user has a default rate value (such as "S" for standard), then hiding the field in User Profiles Field Security will have that column disappear from the timesheet and, even though it will be populated with the default value, no user ever needs to look at the rate codes again.

Question: At what level of time resolution is the Rate Code calculated into a Cost Value?

Answer: At the minute. All TimeControl times are stored internally as minutes. During the Posting process, the cost values are defined as the number of minutes times the (Rate Value/60).

Appendix D – Approvals Tutorial

Overview

HMS has been designing corporate timesheet systems since its first project in 1983. Our clientele includes organizations in both the public and private sector. Whether the client is a 10 user IT company or a Fortune 1000 multi-national, one aspect of timesheets that is universal is the desire to ensure that the data is complete and accurate and that involves creating an approval process.

The purpose of an approval process is to ensure the organization has collected a complete and accurate record of the time spent on the appropriate tasks and that the data has been accepted into the organization.

TimeControl has built its reputation around having a highly flexible and powerful approval process that must meet the requirements of more than one aspect of the organization at the same time. Approving data is highly dependent on the context from which it is approved. Human Resources might be interested only in the exceptions; the vacation time, sick leave or other absences. Payroll might be interested only in the total amount of time or the rates at which time was charge or any overtime that was incurred. Billing might be interested in the total hours spent on any one client and that the appropriate billing rates were used. Project Management might be interested in what hours were spent on which

tasks and what the estimate to complete that task is. TimeControl must be able to accommodate all these perspectives within the same process and the approval process of each organization is unique.

When you are creating your own approval process with TimeControl, you build that process out of the many building blocks of functionality and capability within the system. This paper gives an overview of those building blocks. For more discussion about the challenge of matrix approvals, we recommend looking at the "Timesheet Approvals Challenge" white paper and the materials on Matrix Approvals on the TimeControl website at www.timecontrol.com/solutions/matrixapprovals.

TimeControl Approvals Building Blocks

Creating your own TimeControl approvals process starts with understanding the different capabilities written into the system and the degree to which each of them can be adapted to your needs.

The most useful way to work through these sections is to think of your business challenges and then see how combining features described here could be used to overcome those challenges. Those who have the most difficulty creating an approval process in TimeControl typically start off with a preconceived notion of how it should look and how it should work based on other systems they've used and then try to adjust the TimeControl functionality into those ideas. We've highlighted the most significant elements of the building process into categories below and they include:

Starting with Good data

If the purpose of an approvals process is to ensure complete and accurate timesheet data, then starting with data you can count on is a great place to begin. Some approvals processes concentrate on ensuring that the charge code is a valid one or that the department is properly spelled. TimeControl can do these things for you in the background by only allowing data that has been approved into the system for selection.

Employee Filters

Using filters in the TimeControl Employee table, you can refine the notion of good data even further by ensuring that only the data that meets certain criteria can be seen by any given user. These filters allow projects, charge codes and rate codes to be filtered on an employee-by-employee basis.

Drop-down values

When there is an option to write in a value or use a drop-down selection of values, we always vote for drop-down selection because of the remarkable increase in data integrity. If there is a list of departments, then you have a much better chance of getting everyone to say it the same way if they are just choosing from possible departments and not imagining what the department is called or wondering how it is spelled.

Default values

Why not start with the right value? TimeControl can. TimeControl allows users who have the same entries most of the time for project, charge or rate to make those a default so they don't need to go searching for them.

Pre-loading the right charges

TimeControl allows the preloading of several kinds of timesheet data. TimeRequest™ can pre-load statutory holidays and approved vacation entries before you even get to the timesheet. Then project management systems can be configured to pre-load assignments to your resource code along with the last estimate to complete information. Finally, you can elect to pre-load charges in your own personal preferences.

Making these selections in advance guides the data to be the right choices before you do even the first minute of work in your week.
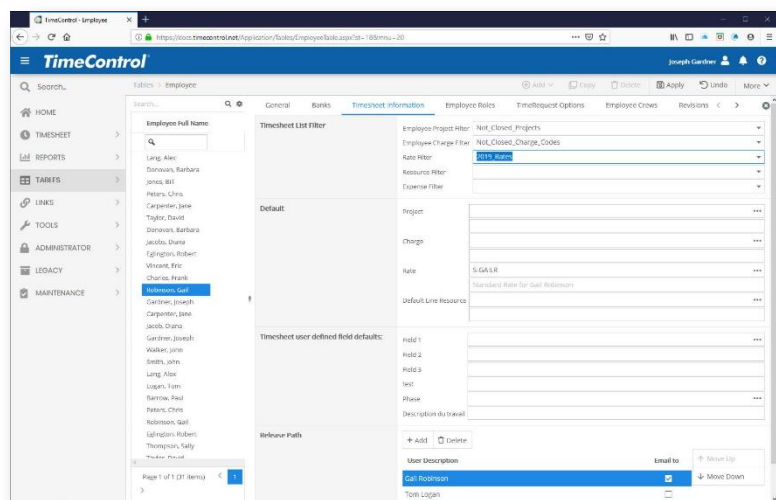
Validation Rules

Creating Business Validation Rules in TimeControl is a powerful method of testing the data that has

been entered by the end user. Validation Rules can check virtually anything that can be defined in the data and Validation Rules can apply to everyone or only a select group. Rules can be simple such as "No more than 24 hours" or complex such as "No overtime unless a) you are entitled to overtime, b) have done more than 40 hours in a week and c) spent none of that 40 hours on sick leave".

Multi-Level Organizational Approvals

TimeControl Approvals include the concept of multiple levels of approval for the entire timesheet so a supervisor, a contract manager, a manager, an administrator can all be along the approval path. This is for approving the entire timesheet in context. Line item approvals are a distinct element of the process discussed below

Batch Release

When a supervisor has a lot of timesheets to approve, they can take advantage of the Validation Rules by releasing a large volume of timesheets all at the same time. The Validation Rules will stop or pause on any timesheet that violates that rule and this allows a supervisor to release all the timesheets that are within normal parameters and to review in greater detail those timesheets that exceed the norm.

Alternate Users for when the supervisor is away

When a supervisor or manager or administrator will be out of the office for a few days or weeks, TimeControl allows their responsibilities to be delegated to someone else during that time. Logging into TimeControl as an Alternate gives you temporary access to the absent user's role and lets approvals move forward in their absence. TimeControl keeps track of who really did the approvals in its audit log.

Managing Missing Timesheets

Part of a complete approval process is ensuring that all the timesheets are accounted for. TimeControl includes functionality for this in a Missing Timesheet report, Missing Timesheet Notification and Timesheet Status on the Dashboard.

The approval implications of Partial Posting

Some organizations must release timesheets in mid-week in order to conform with payroll or billing rules that can't wait for the end of the week. In this case, timesheets must be released prior to them being complete.   There are implications of this in the approval process when the end of the week arrives and the rest of the timesheet is completed.

Line Item Approvals with Project Manager Validation

TimeControl's unique *Matrix Approval Process for Labor Actuals™* includes the concept that there are different perspectives with different interests in what to approve on the timesheet. While the total hours, overtime pay and exception time-off might have been approved by a supervisor, a project manager or billing manager will have a much more significant interest in what the time was spent on line-by-line. The PM Validation screens were created for this purpose.

Line Item Approvals beyond Project Managers

TimeControl is able to create an approval process that adds additional axes to the *Matrix Approval Process for Labor Actuals.* Imagine an environment where there is the approval for the entire timesheet for payroll and non-project items then a separate approval for project managers before data is transferred into the project system and yet another account manager approval before data is transferred to billing and a client-side approval before data is transferred to a client's account. Line Item Approval adds the capacity of as many additional parallel approvals for line items as you wish. Just like Project Manager Validations, these approvals occur after the whole timesheet is posted but prior to data being transferred to particular systems.

Audit Log

The Audit Log is now referred to as the Timesheet Release Audit Log and is available from the Reports tab.

Adjustments with Debit / Credit

Even when approvals go well, there can be the opportunity for corrections at a later date. TimeControl's adjustment function is called Debit/Credit and it works just like any accounting system. You can remove hours from one line and you can add them to another. One option in TimeControl is to enforce "Balanced" Debit/Credits. If this option is enabled, then the total hours after all adjustments are complete <u>must</u> equal the total hours that were originally approved.

Appendix E – Choosing a Timesheet Length Tutorial

Overview

HMS has been designing corporate timesheet systems since its first project in 1983. Our clients includes organizations in both the public and private sector. Whether the client is a 10 user company, a Fortune 1000 multi-national or a public sector organization, one aspect of timesheets that is universal is the desire to ensure that the data is complete and accurate.

One of the most significant challenges with timesheets is not that they are rare, but that they are often too plentiful. When we think of a timesheet just by thinking of its entry screen, we often think of all timesheets as being exactly the same. It is only when we think of what the timesheet system must accomplish that our perspectives vary.

For payroll, the timesheet is, of course, all about ensuring that each employee is properly paid. We think of payroll validation rules, we think of things like attendance and overtime calculations. We think of the approval process as something that is aligned to our payroll schedule. Some organizations pay every week. Some pay every two. Some pay on the 15th and last day of the month. Some pay monthly. Whatever the schedule, the time collection process from the payroll perspective should be aligned to the payroll schedule.

For the Human Resources Department, our interest is often in the time that isn't spent at the office. If an employee is absent, is this an authorized absence? Has the employee taken more time off than they have been allotted? What it an absence for sickness? Is it an extended absence? There may an absence that has implications for both payroll and HR. Perhaps a jury duty day will be paid but is also authorized time off. HR departments often think of such calculations on a monthly basis.

TimeControl can be configured to support timesheets of different lengths but since it can serve the needs of many different parts of the organization with a single timesheet, what is the best length to choose or, should there be several timesheet cycles within the same TimeControl system? Over the next few pages we'll provide some of the key criteria to think about in making a selection.

TimeControl Variable Length Timesheets

TimeControl supports numerous timesheet lengths which can be configured by the Administrator. In the most common TimeControl deployment, a single timesheet length will be selected but TimeControl can have different groups of employees on different timesheet durations and cycles.

Timesheet Period Lengths defined

The possible length of periods are:

- ❑ **Daily**
  A daily timesheet is defined as a calendar day. When using TimeControl Industrial, multiple crew timesheets can be posted in a single calendar day to accommodate multiple shifts.
- ❑ **Weekly**
  A weekly timesheet is 7 days long. The administrator can configure the starting day of the week and, once chosen, that day will be in effect for all timesheets.
- ❑ **Bi-weekly**
  A bi-weekly timesheet is 14 days long. The administrator chooses the starting date of the periods and the day of that starting date will determine the start days of all timesheet periods defined.
- ❑ **Bi-monthly**
  Bi-monthly will generate two periods per month. The first will go from the 1st of the month until the 15th and the second period will start on the 16th and continue until the end of the month. The first period of each month will always be 15 days long. The second period will be 13, 14, 15 or 16 days long depending on the length of the month.
- ❑ **Monthly**
  Monthly timesheets will go from the 1st of the calendar month until the last day of the month.
- ❑ **Custom**
  Custom periods are manually created and provide a great deal of flexibility. Some organizations might prefer a timesheet to match a 13-month fiscal year for

example with each month lasting 4 weeks. Other organizations might prefer a 4/4/5 quarter with one timesheet period lasting 5 weeks, the next 2 lasting 4 weeks. This will make 4 even fiscal quarters.

Custom periods can support any length of time and since the other period definitions above, once saved, can be edited, some organizations might want to make shorter timesheet periods at the end of the year in order to close the calendar year with completed timesheets.

All data is saved per day

Regardless of how long the timesheet is, once the timesheet data is posted, it will all be saved day by day. A record will be created for each cell of each line which corresponds to the day that timesheet effort was entered.

This is extremely important in the discussions to come because no matter how long the timesheet was when the data was entered, the posted timesheet data will *always* be stored for each day. So, concerns that the posted data will not conform to a schedule for an external system are unfounded. TimeControl can send posted data for one system every two weeks, another system every week and a third system every month so long as the timesheets for those periods have been posted. We'll discuss the implications of this later.

Timesheet length needs can vary

Every organization will have different needs for the frequency of timesheet collection that matches the system for which the data is being collected. We'll discuss some of the most common here.

Project Management

Project managers need updates on the status of their projects so that they are able to make decisions on where to allocate their resources next. The frequency with which they need that data is often highly dependent on the nature of the project. In a multi-year capital expenditure project, perhaps monthly updates would be acceptable. In a plant shutdown and maintenance project, then multiple updates per day would be required. In a research and development or technology project, updates are often weekly.

Project management needs not only the expended hours but also the prediction from workers of how much work is left to accomplish for each tasks. This data can all be entered in TimeControl.

Human Resources

Human Resources are often tasked with tracking the benefits for each employee. Their interest in the timesheet data is therefore often associated with exceptions to a regular pay period. If there is vacation time, personal time off, sick leave, holiday time that was worked or banked overtime, then HR will want that data. The frequency with which HR needs that data is wholly dependent on the decisions of the organization on when it is earned. If an employee has entered 8 hours banked overtime over the last two days are they entitled to take a day off tomorrow? That depends on your corporate policies. In many organizations, time off is earned as the payroll is processed or at the end of the month. It is not uncommon for HR to do its own updates at the end of the month and so collecting timesheets more frequently than that is not of interest to them.

Payroll

The frequency of payroll varies from organization to organization and sometimes even for different people within the organization. It is quite common, for example, to have a payroll every 2 weeks (bi-weekly) for a total of 26 pay periods per year. It is also common for payroll to happen twice per month (bi-monthly) for 24 pay periods per year. Payroll will have numerous procedures to match up with the payroll periods and approvals of the timesheets to meet these practices and procedures will push them to want timesheet collection to match the pay periods.

Finance

Finance is always working around a fiscal year but the interim steps to that financial year are the financial quarters and financial months. It is rare for a Finance department to produce reports and analysis for financial periods that are less than a month in length. Those monthly periods however, might not be calendar based. Some organizations will adopt a 5/4/4 quarter with 5 weeks in the first month and 4 weeks in each of two subsequent months. This will make for financial quarters of exactly the same size. Some organizations will elect to have a 13 month year with each month lasting 4 weeks. This makes 13 months of exactly the same length. Many organizations will simply follow the calendar though each month might have more or less days than the month before or after it. If time collection was only of interest to the Finance department for billing or R&D tax credits for example, then it might be happy with monthly periods.

With these different parts of the organization having different cycles, if a timesheet were to be implemented for only one of these groups, then the configuration of the timesheet

length is quite simple. The timesheet will be configured to match the other element which already exist in the cycle.

The challenge with this is that if another aspect of the organization needs a timesheet, must they make a completely separate implementation of a tool to accommodate their own length of cycle? Unfortunately, this is all too often done. With TimeControl, different timesheet cycles can be supported for different groups within the same system but there are implications to that choice that we'll discuss later in this guide.

TimeControl was designed to fulfill the needs of many different aspects of the organization at the same time and it is when we must accommodate more than one system or process simultaneously that we have any discussion over how long the timesheet collection process must be.

The challenges of compromise

So far we've been focusing on the basic definitions of the elements of the challenge. Now, let's turn to the actual problem. It is common to have multiple requirements for timesheet collection from these different aspects of the organization. If we cannot compromise, we are stuck with either defining multiple periods or, worse, having multiple timesheets. In a worst case scenario, there will be a timesheet for payroll, another for human resources, another for project management, yet another for R&D tax credits and so on. If you are reading this and thinking that you must be alone in having such a diverse collection of timesheets, you are mistaken. It is sadly common. In these organizations, some employees must do 2, 3 or even 4 timesheets each week. The cost in lost productivity far outweighs the convenience to the administration of having distinct time collection systems.

Solving this dilemma means choosing a multi-function timesheet and the implementation of such a timesheet means that the different aspects of the organization will have to work together to find a common process for the new system. It is often the first time that a group like payroll will meet the project management group or that the billing group will meet the human resources group. As a result, the processes of each group will often be foreign to the other.

We won't focus on all the elements of how a single timesheet must be configured to accommodate the limitless combinations of organizational departments. Let's just talk about the length of the timesheet.

What is the current process?

When you are looking at your own environment and these groups are gathering for the first time, it's good to start with a quick poll of what the actual situation is.

"How often do you need time collected?" should be the first question. If the different groups involved all answer with the same response, we need not delve any deeper. Everyone is already in agreement and we don't even need to really know why. Just be happy with the response and configure TimeControl to that length. Unfortunately, this is rarely the case.

It is more likely that there will be multiple responses and that means delving a little deeper. Start by distinguishing between "How often do you need time sent to your system?" and "How often do you need time approved?" You may find that no one has ever thought of this before. Perhaps, for example, payroll approves timesheets every two weeks but only because they need the information every two weeks. If there are real constraints, they are often revealed in this process.

How often do we link to our system?

Remember, TimeControl is <u>always</u> saving the timesheet data day by day. That means we can focus less on how often do we link the timesheet data out of TimeControl and into our external system and we can focus more on how often do we need to approve and close a timesheet period. Making the distinction between these two elements of the timesheet is critical to finding a compromise in timesheet length that is effective for the organization.

What is your real process cycle?

Sometimes a department will group multiple processes into a cycle different from what might have done if it thought about the process from scratch. For example, a payroll department might collect time for a bi-monthly timesheet where the first period of the month goes from the 1st to the 15th and the second period of the month goes from the 16th to the end of the month. Yet, when you ask about payroll rules for overtime, you might find out that this is actually calculated on a weekly basis and at the end of the each timesheet period there is a complex manual process to try to determine the appropriate calculations for overtime or a process where overtime is only paid in the *next* period so complete weeks can be analyzed.

In this case, a timesheet collection that is weekly will allow easy automated validation rules and the payroll export could still be scheduled either on the 16th and the 1st of the month (one day after the end of the period) or on the first day of a new week following the end of the payroll period.

Distinguish between when data should be collected and when it is needed

Often, people will not think about when to collect data and when it is needed as separate challenges. For example, perhaps Finance asks for a timesheet cycle of every two weeks because that's when they know payroll works. But, Finance doesn't actually use the data until the month is complete so they can do costing reports. So, a weekly or monthly or bi-monthly collection of data doesn't actually affect their process so long as they can get a report or export monthly.

Remember, each timesheet cycle includes process implications

Sometimes an organization will think this over and say "Let's just do daily timesheet collection then." That's certainly possible in TimeControl but it also has some implications that aren't appropriate for everyone. If you choose daily collection, then all your approvals, missing timesheet reports, adjustments and validation reports are also daily. For some groups, this makes perfect sense. With TimeControl Industrial, for example, daily timesheet collection is common as is the validation and approval of the hours because the type of work is done in the field and the timesheet is part of field data collection. Other back-office workers might have a weekly timesheet with weekly approvals and reports in that scenario and that too, would make sense.

A common use-case scenario

Here is a common scenario:

1. Payroll needs the timesheet information every two weeks to accommodate overtime and paid vacation and holiday time. In fact, the payroll process dictates that they really need the approved time within 5 days of the week's completion so they can make the next payroll run.
2. Project management needs the timesheet information weekly in order to make timely decisions on progress to-date on tasks and expected completion work in progress.

In this case, making a compromise of weekly timesheets with weekly approvals will accommodate the support of processes. Payroll's timesheet export will take 14 days of data. Project management will take 7 at a time. The official approvals will almost certainly be much faster than 5 days (in TimeControl a couple of hours are often enough) and both systems can receive approved, validated data in a timely fashion. Because TimeControl includes both the project management links to move data back and forth to the project system and the validation and approval rules for payroll, it can be used for both systems.

Gathering the building blocks of your new timesheet configuration before you start entering data is a critical element to a successful deployment. Remember to determine:

1. The actual length of timesheets now for each of the departments that are implicated.
2. How often each department's system requires a link from the timesheet data.
3. The distinction between when timesheets must be approved and when the data from those timesheets must be linked to each system.
4. The real process cycle requirement independent of what the legacy practice has been.

Multiple Timesheet Durations

TimeControl supports the definition of multiple timesheet durations simultaneously. In the Employee Table, each employee can be assigned to a different Timesheet Period definition. This means that some users can be working with weekly timesheets and others can be working with bi-monthly timesheets. An employee can only be associated to a single Timesheet Period at one time. There are several implications to this, however. We'll outline the more common challenges here.

More durations, more process

When you have some users on one timesheet schedule, and other users on a different timesheet schedule, you'll need to replicate your processes for each group. This includes how you'll define missing timesheets, how you'll report on the data, when the data will be closed and available for export will vary.

Timesheets will close at different times

There are numerous aspects of what can be done with timesheet data once it's posted. Being posted implies that TimeControl's timesheet data has gone through at least two major aspects of the approval process and is ready for export and reporting for certain purposes. Prior to being posted, timesheet data can be returned as a draft document to the originator to be adjusted, deleted or rewritten. But when the closing dates of when timesheets are posted are different for different groups, there may be more thought required on how to handle the processes dependent on posted data. This may include exports to other systems or combined reports for corporate use.

Approvals

TimeControl already supports a vast array of Approval functionality including our trademarked *Matrix Approval Process for Labor Actuals™* and designing an approval process can often be a challenge but with multiple timesheet durations you may need to do some of this work more than once. Some TimeControl

Validation Rules will need to be distinguished to work for one group of timesheets vs. another. Filters for reporting on draft timesheet data may need to be updated. There may be requirements for reports that are quite different from one group to another. All of this is possible using TimeControl of course, but there may be more effort involved in having a multiple timesheet duration deployment.

Employees can't be in two timesheets

In early days of a TimeControl deployment there is sometimes conversation of one group needing one duration of timesheet and another group needing something different. TimeControl can support both durations but employees must be in only one group at a time. If not, they'd need to do two timesheets, one for each requirement and if so, the major benefits of TimeControl may become elusive.

Where is multiple timesheet durations effective?

There is a case for multiple timesheet duration and it works best when there are distinct groups of employees who fall into different timesheet requirements yet a desire to ultimately have all timesheet data in the same system. Use case scenarios for this are common in multi-national deployments where the standards of one country or region are quite different than those of another or in organizations where very different groups of users are using the same system. This might happen, for example, when contractors and salaried staff are using the same TimeControl or in a situation where field workers and back-office staff are in the same system.

When is multiple timesheet duration not effective?

When different consumers of the timesheet data want the collection of data to match their import or reporting processes and these differ from requirement to requirement, multiple timesheets may not make sense. For example, HR insisting that timesheets must be collected monthly because that's when they do their time-off calculations might compete with Project Management's requirement to update their project plans weekly. In this case, looking back at the compromise section of this guide may be helpful as the needs of when to collect and approve may be quite different of the need to export and report on data.

Validation Rule implications

TimeControl's Business Validation Rules is a powerful method of testing the data that has been entered by the end user.

Validation Rules are applied at the moment the timesheet is released and it is checked each time it is released. You can make rules that apply to everyone or any selected group and you can have an unlimited number of rules in any TimeControl system.

Validation Rules are defined with two filters defined in the Filter Table. These filters will determine first, which timesheets are to be checked and second, what they are to be checked for. The first filter might be used to make some rules applicable only for certain groups of people. For example, you might wish some rules to apply to contractors that will be different than those applied to salaried staff.

Rules can check virtually anything that can be defined in the data. Rules can be simple such as "No more than 24 hours" or complex such as "No overtime unless a) you are entitled to overtime, b) have done more than 40 hours in a week and c) spent none of that 40 hours on sick leave".

A validation rule can be either a warning or an error. For example, you might have a rule that says "Warning: you have charged overtime on this timesheet. Please double check it before releasing for approval". Or, you could have a rule that says "Error, you cannot charge overtime unless you have done at least 40 hours of regular time this week."

TimeControl includes an interface for making the filters that will be used for rules and filters can include dynamic macro values. For example, you can make a filter identifying a date two weeks from today by entering [TODAY+14] in the appropriate area of the filter dialog. Filters can also include other filters which can make creating complex filter conditions a bit more understandable. One of the most powerful aspects of creating a filter however, is that it can be created with pure SQL. The interface allows a skilled implementer to use SQL commands to define a review of data that can check almost anything. Some users have taken advantage of this to create validation rules that reach even outside of TimeControl itself. For example, one user created a validation rule that checked if the banked vacation hours located for this user in the HR system's database would be exceeded by the current timesheet. There is virtually no limit of the types of rules that can be created.

There are a few cautions that come along with validation rules:

1. Rules are so open that they can contradict each other. You could configure TimeControl with two rules: a) Timesheets are valid if they have hours only during the week and b) Timesheets are valid if they have hours only during the weekend. If these two rules are applied to everyone, no timesheets will ever be releasable. It is important to keep track of what rules you have created to ensure that timesheets can be properly completed
2. When deploying TimeControl for the first time, resist the temptation to have hundreds of rules. It is easier to get acceptance of the system when there is only a handful of rules to get the system started. You can then introduce new rules once

you are underway, introducing perhaps one or two rules per week for the most commonly viewed errors. A system that has so many rules that end users are unable to figure out how to release their timesheet is at risk of failing due to a lack of acceptance.

3. If you have multiple timesheet durations defined, then the Validation Rules will need to be specific to the duration. This may mean including a filter to ensure that certain validation rules are applicable to some employees and other rules are applicable to others.

Satisfying everyone

If you choose a method that suits one aspect of the organization over the other, how can you satisfy the needs of the other interested parties?

When we integrate TimeControl's Matrix Approval Process for Labor Actuals™ with the flexibilty of timesheet length configuration, we are better able to accommodate the needs of many organizations.

When TimeControl is selected to be the single source of timesheet data for multiple aspects of the organization, is can be configured to accommodate many needs simultaneously.
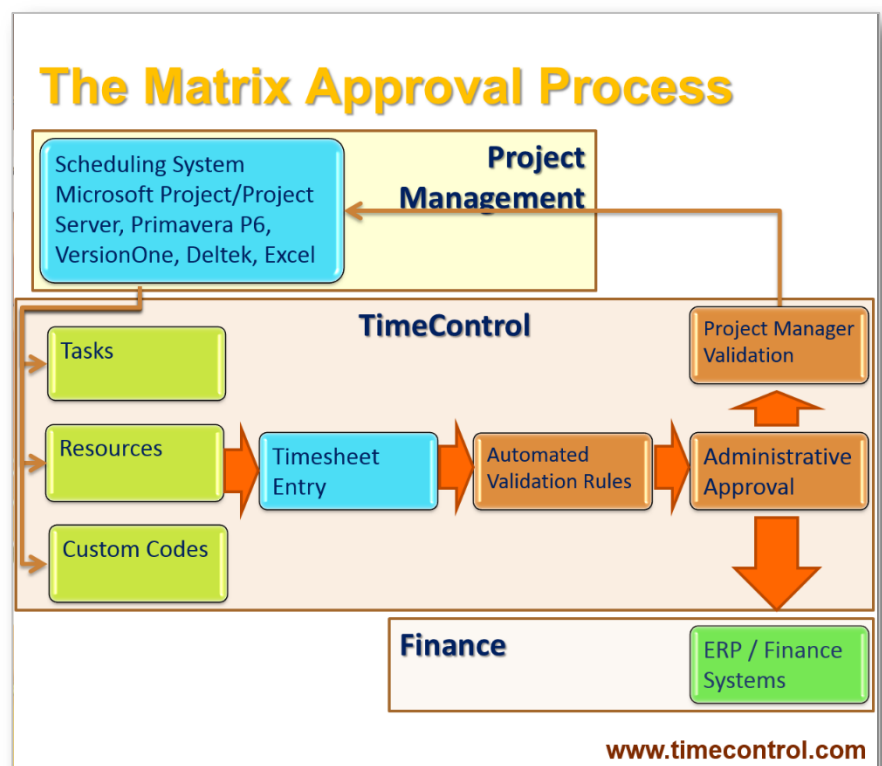
To make your own configuration, think about the elements we have discussed thus far:

1. Determining the actual process of timesheet collection by each group now
2. Determining when data is required to be linked to different systems in order to meet that group's requirements
3. Distinguishing between approval timing and link timing for each group

And, remember some of the key elements of functionality in TimeControl to accommodate these requirements:

a. TimeControl <u>always</u> saves data in a day-by-day format
b. Timesheets are posted and closed at the end of the timesheet cycle (the length of the timesheet)
c. TimeControl does not need to have the timesheet length and the link cycle match. We can approve, for example, weekly and export to finance monthly.
d. Multiple timesheet duration cycles can be supported but each employee can only be in one at a time.
e. The export cycle can be different for each group or system

In general terms, it is always better to have the timesheet length match the requirements of the group that needs the data most frequently. In many cases (but not all) this is project management who are using the approved timesheet data to make business decisions in an ongoing manner.