
User Reference

Scheduling 2.0 v10x

By CMiC

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Computer Methods
international Corp.

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Scheduling 2.0

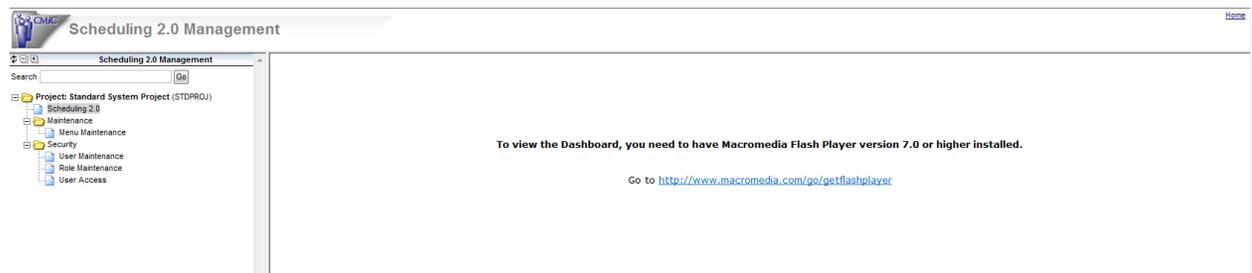
Overview of Scheduling 2.0

Scheduling 2.0 is designed to assist project managers in developing schedules, assigning resources to activities, and tracking progress.

Integration

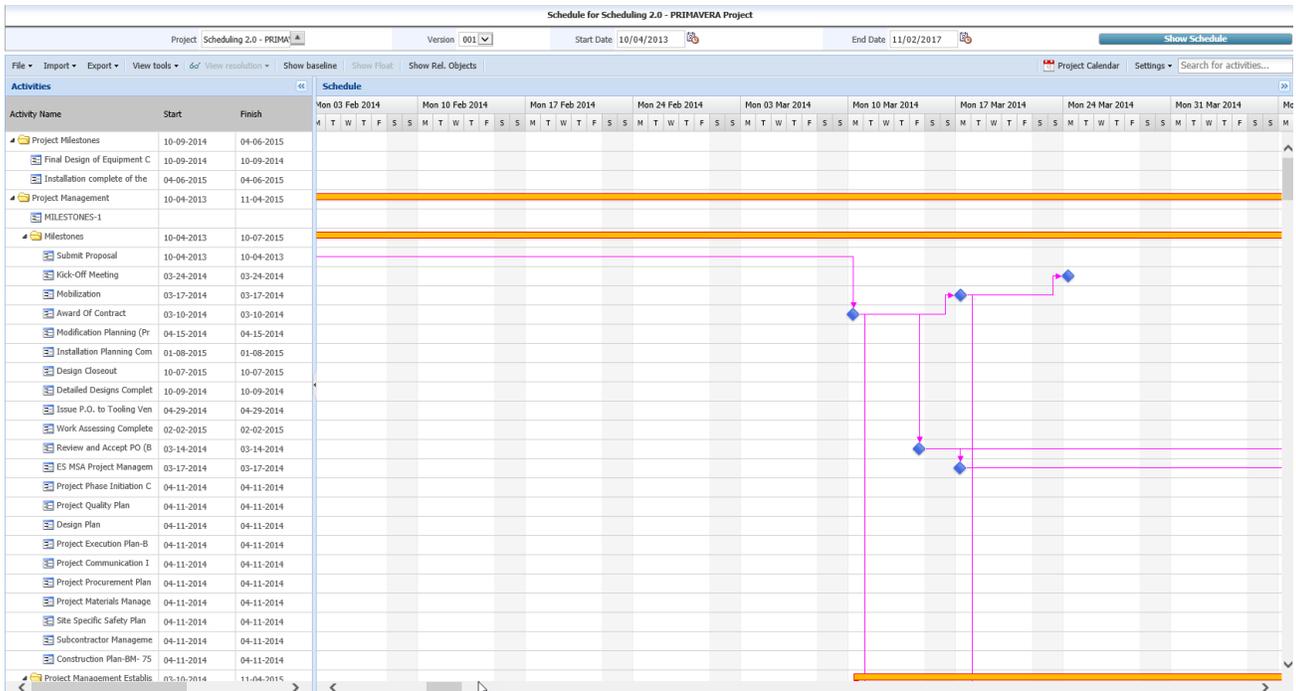
- **Project Management** – Scheduling integrates with Project Management via the Bid Items Entry and Submittals through a schedule activity which provides the Start and End Dates for which the Time Phased Budget can be generated or the Submittal Process can be tracked.

Using Scheduling 2.0

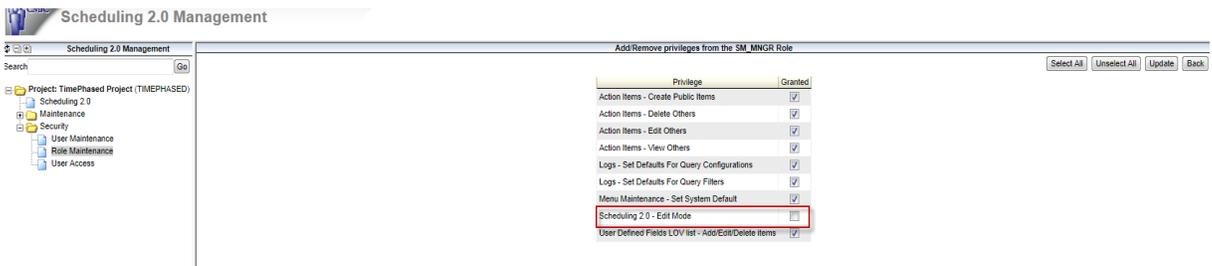


The Scheduling 2.0 tree-view consists of the Scheduling program, and nodes for Menu Maintenance and Security.

To launch the Scheduler, click on the program link. The Schedule is launched in a separate window:



The schedule is loaded in View mode unless the user has the security privilege to Edit. The security privilege ‘**Scheduling 2.0 – Edit Mode**’ is available for this purpose:



The Schedule screen is separated into the header section which displays the current Project Name, Version, Start Date and End Date. The Start Date and End Date formats are based on the User Preferences in CMiC Enterprise. The [Show Schedule] button is also located here.

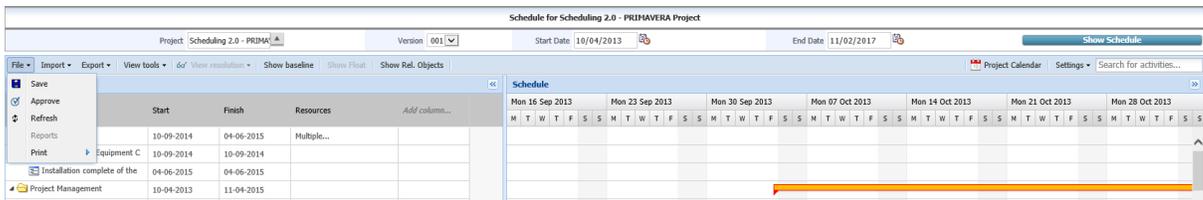
Show Schedule

[Show Schedule] is a Refresh of sorts. You can refresh the schedule using this, or you can select Start and End Dates to view in the schedule then press [Show Schedule]. It will show the schedule starting from 2 weeks before the Start Date entered and 4 weeks ahead of the End Date entered.

The menu area is in the header section as well, with each menu having a drop-down arrow to sub-menu items. In the lower pane, is the **Activities** section to the left and the Schedule section to the right.

Menu Options

Standard menu items of saving, printing, importing and exporting are included.



Saving a Schedule

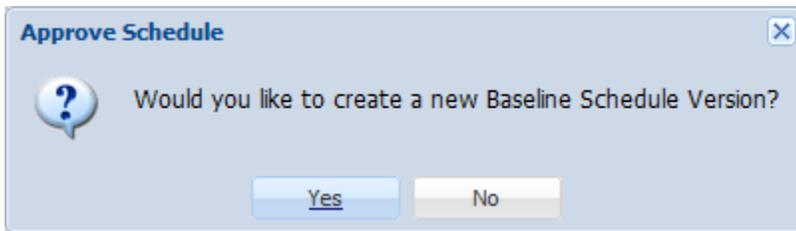
All changes should be saved before Refreshing the schedule. Refreshing before saving will cause changes made since the last save to be lost. This includes any columns added or removed from the Activities section.

Save should be used to save all changes made including any made in the Project Calendar window,

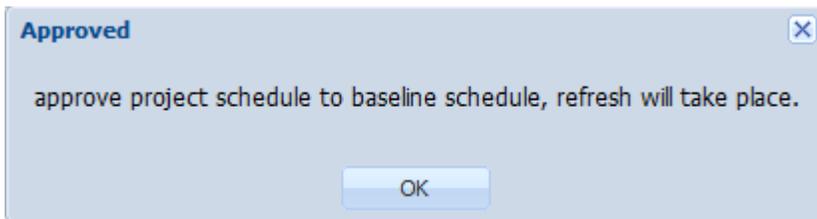
accessed with the button  Project Calendar.

Approving a Schedule

This action will save the current schedule as a baseline version and create a new schedule with version number next in sequence. A confirmation message will display.



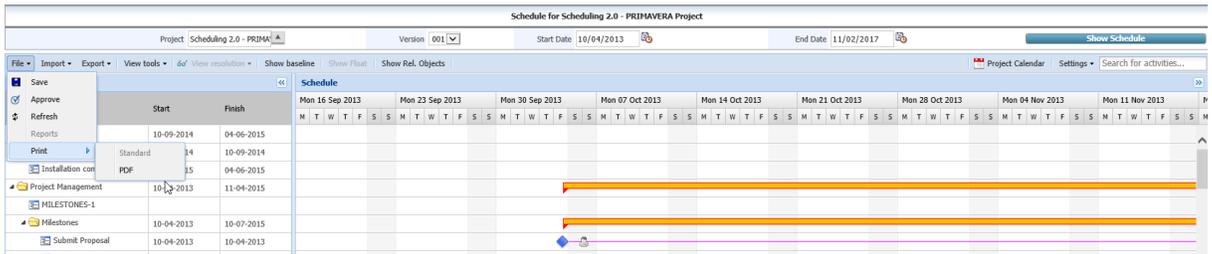
It essentially locks in any changes that were made to the schedule prior to approval. Comparisons can then be made between the current schedule and the baseline schedule.



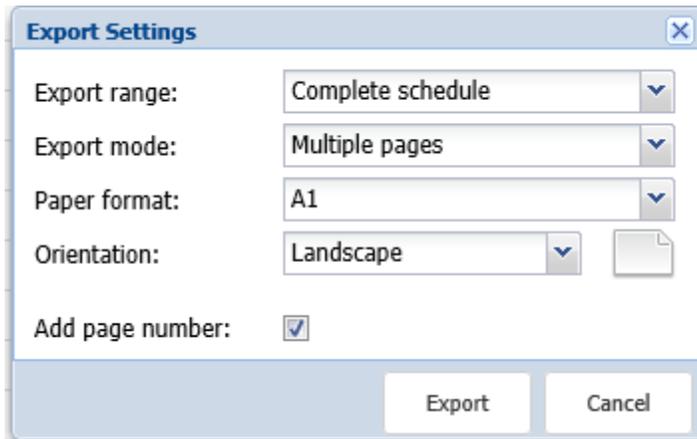
Refreshing the Schedule

This action commits any changes to the schedule and shows the effect of those changes on the schedule.

Printing the Schedule



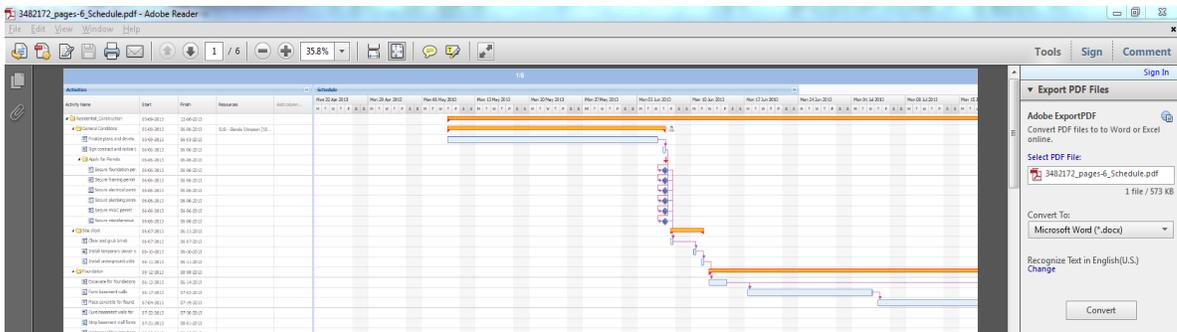
Click the Print > PDF menu item. A PDF document will be generated after selecting the desired settings and then clicking [Export].



At the end of the creation of the PDF, the user is prompted to open or save the file:

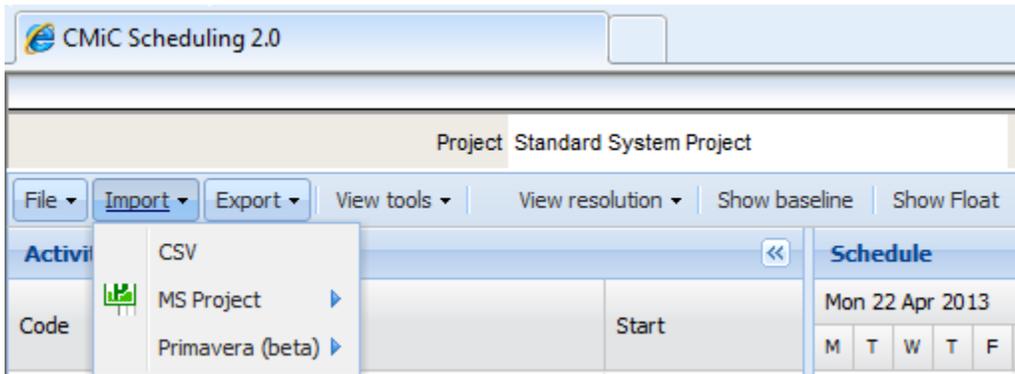


Sample of output:



The PRINT function is currently programmed to work with **Windows and Linux** machines. The files **phantomjs.exe**, **phantomjs_render.js** and **phantomjs_work.bat** (all for Windows); **phantomjs_render.js**, **phantomjs**, **phantomjs_work.sh** (all for Linux) are required to be in the \SQL installation directory.

Importing a Schedule



Scheduling 2.0 allows importing of CSV files as well as files from other third-party project management software, currently limited to MS Project (MPP, XML) and Primavera (XER, PM XML).

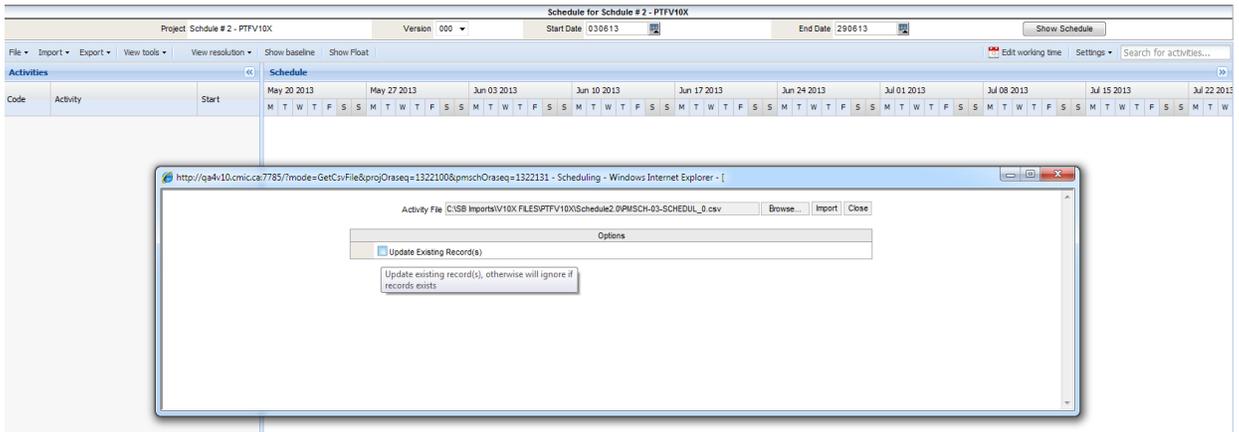
Importing a CSV File:

Import File Layout:

The screenshot shows a Notepad window titled "pmscheduleimport.ctl - Notepad". The menu bar includes "File", "Edit", "Format", "View", and "Help". The text content is as follows:

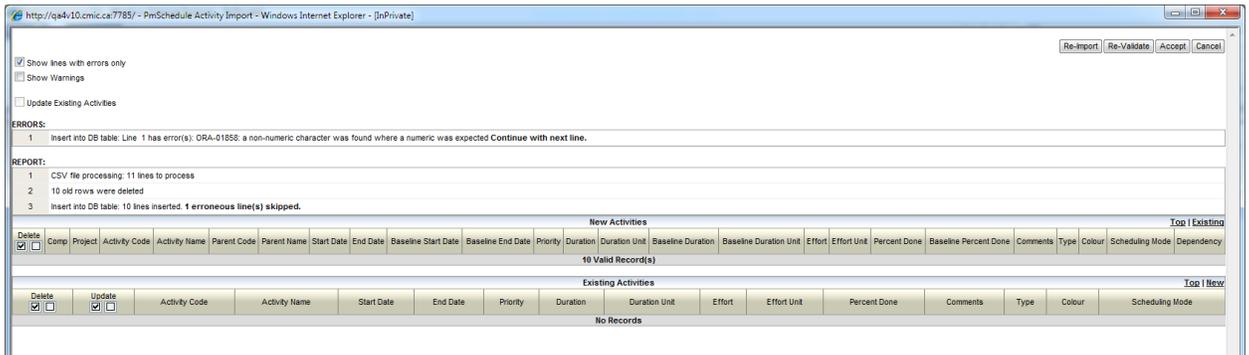
```
LOAD DATA
APPEND
INTO TABLE DA.PMFOREIGN_SCHEDULE_IMPORT
FIELDS TERMINATED BY "," OPTIONALLY ENCLOSED BY ''''
(
  PMFSCHEDI_COMP_CODE,
  PMFSCHEDI_PROJ_CODE,
  PMFSCHEDI_ACT_CODE,
  PMFSCHEDI_ACT_NAME,
  PMFSCHEDI_PARENT_CODE,
  PMFSCHEDI_START_DATE          DATE 'MM/DD/YYYY HH24:MI:SS',
  PMFSCHEDI_END_DATE            DATE 'MM/DD/YYYY HH24:MI:SS',
  PMFSCHEDI_BL_START_DATE       DATE 'MM/DD/YYYY HH24:MI:SS',
  PMFSCHEDI_BL_END_DATE         DATE 'MM/DD/YYYY HH24:MI:SS',
  PMFSCHEDI_DURATION,
  PMFSCHEDI_DURATION_UNIT,
  PMFSCHEDI_BL_DURATION,
  PMFSCHEDI_BL_DURATION_UNIT,
  PMFSCHEDI_EFFORT,
  PMFSCHEDI_EFFORT_UNIT,
  PMFSCHEDI_BL_EFFORT,
  PMFSCHEDI_BL_EFFORT_UNIT
  PMFSCHEDI_PERCENT_DONE,
  PMFSCHEDI_BL_PERCENT_DONE,
  PMFSCHEDI_PRIORITY,
  PMFSCHEDI_COMMENTS,
  PMFSCHEDI_ACT_TYPE
  PMFSCHEDI_ACT_COLOUR,
  PMFSCHEDI_SCHEDULING_MODE,
  PMFSCHEDI_DEPENDENCY
)
```

Click the CSV sub-menu item to get the following popup window:



Enter the file to be imported or use 'Browse' to search for it. Click [**Import**].

The next screen is the import validation screen which will allow the user to make changes where needed.



Un-check the **Show lines with errors only** flag to show the lines that have been imported:

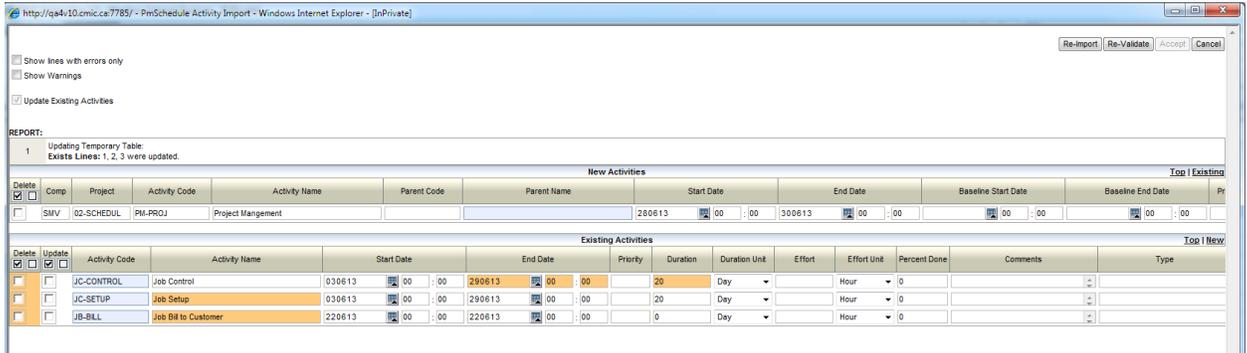


The import validation screen is separated into two sections: New Activities and Existing Activities.

The user can make changes and choose to **Update Existing Activities**.

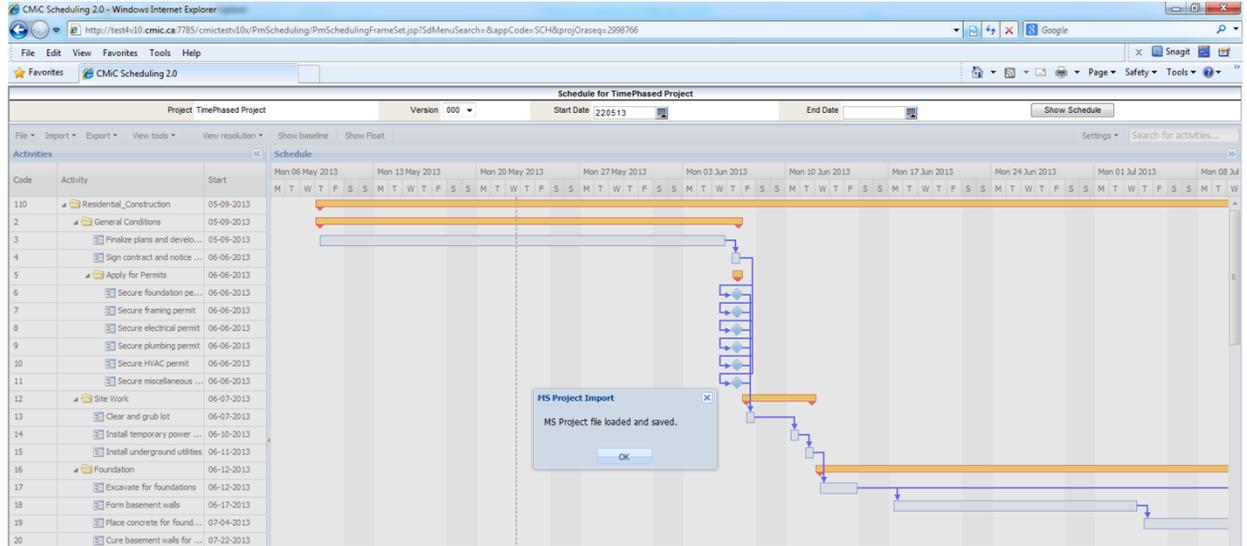
If the records are all valid, the [**Accept**] button is enabled, and is used to import the records into the schedule.

When there are differences between the current schedule and the one being imported, these differences will be highlighted in orange color on the validation screen, in the Existing Activities section, and any new activities will be shown in the New Activities section:



Importing a Microsoft Project file (MPP):

Importing a Microsoft Project file (MPP):

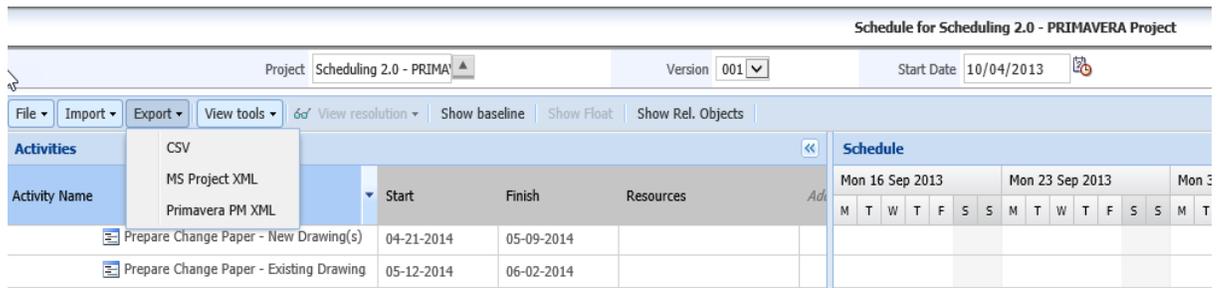


NOTE: Currently, importing will add to/replace the previously loaded schedule.

To import an MPP file, select the MS Project > MPP path and follow the same steps as described for importing CSV files.

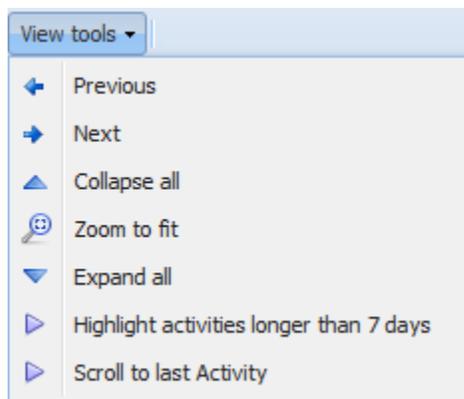
During the import if the Activity/Task Name is empty then "No Name Provided" is used instead.

Exporting a Schedule



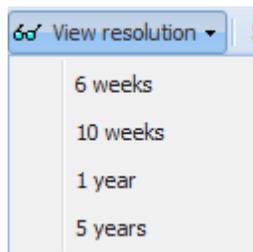
Scheduling 2.0 allows exporting of CSV files as well as files from other third-party project management software, currently limited to MS Project (XML) and Primavera (PM XML).

View Tools



This menu consists of menu items that allows the user to adjust the appearance of the schedule including zooming in and out, expanding and collapsing, and highlighting activities that extend for more than 7 days.

View Resolution



With 'View Resolution', the user can select a time range of the schedule to analyze more closely. There are 6 weeks, 10 weeks, 1 year and 5 year options.

Show Baseline

Pressing this button will display the baseline schedule, thereby allowing a comparative analysis between the current unapproved schedule and the baseline.

Show Float

This button will cause the float to be shown on the schedule. The float is the time difference between activities that are dependent (i.e. successors and predecessors).

Editing Project Calendar

Project Calendar

Calendar name: zBM-01 5x8 M-F(0700-1500) Parent calendar: No parent

Working hours for Jan 10, 2018:

- 07:00-15:00

Based on: standard day in calendar "zBM-01 5x8 M-F(0700-1500)"

Legend:

- Working day
- Weekends
- Overridden day
- Overridden week

January 2018

S	M	T	W	T	F	S
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Today

Day overrides Week overrides

+ Add Edit - Remove

Name	Date
Exception - DEC 24 to DEC 24	12-24-2007
Exception - JAN 01 to JAN 01	01-01-2006
Exception - MAY 22 to MAY 22	05-22-2016
Exception - DEC 24 to DEC 24	12-24-2008
Exception - MAY 18 to MAY 18	05-18-2014
Exception - SEP 06 to SEP 06	09-06-2015

Ok Cancel

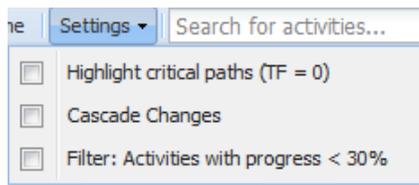
This screen displays information regarding the calendar that is being used by the current schedule.

A calendar can be based on a 24 hour day or can be set up to be shift-based.

Working days are shown in white background, weekends in grey, overridden days in blue and overridden weeks in pink.

Tabs in the lower section of the window are accessed to add **Day Overrides** and **Week Overrides**.

Settings



The Settings button displays additional options for analyzing the schedule. These options include highlighting the critical path (based on the Total Float = 0) and showing activities that have progressed for less than 30 % of the expected duration.

Searching For Activities

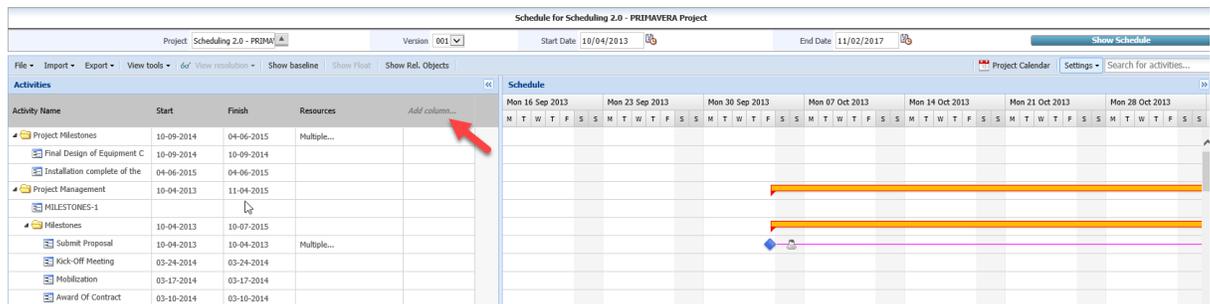
Using the ‘Search for activities’ box, the search is performed against any portion of the word in the Activity Name of lower level activities.

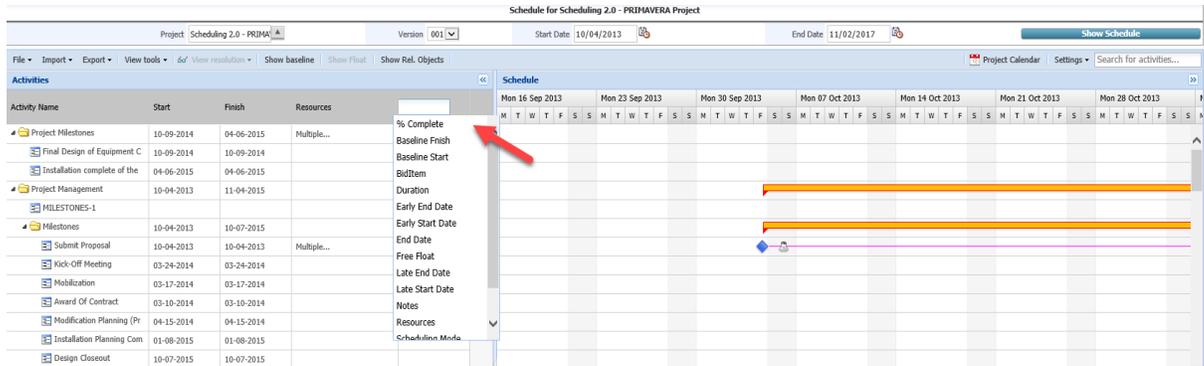
Activities

In the Activities section, there are a number of columns which are displayed by default:

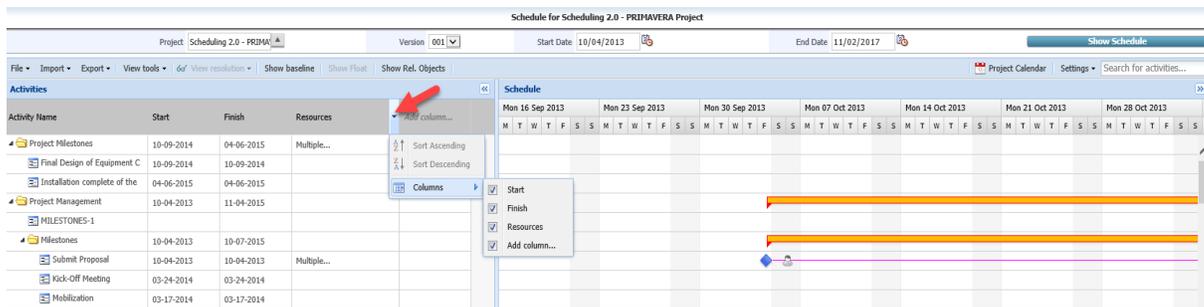
Activity Name, Start Date, Finish Date, Duration, Free Float, Total Float. The vertical bar which separates the Activities section from the Schedule can be dragged to the right to show all the columns.

Columns can be added to the Activities section by clicking on the down arrow in the header of ‘Add column’ as shown in the picture below and then clicking on the field you want added:





Columns can be removed by clicking on the down arrow in the header of any existing column as shown in the picture below, and de-selecting the columns you wish to remove:



Activity Name

An activity is a task to be carried out as represented on the schedule. The activity must have a start date and an end date.

Duration

The duration is automatically determined from the Start Date and Finish Date.

Resources

This column has an LOV of project contacts, from which personnel assignment can be made against the activity.

%Complete

This is the % Completion of the activity, and is represented on the schedule by a purple-colored bar. For a higher-level summary activity, the % completion is based on the progress of the sub-activities, and is shown as a pale-yellow bar at the summary activity level.

Schedule

The schedule is made up of a number of activities which can be inter-dependent. It is the depiction of the project management tasks – when they start and finish, which task is dependent on the other, which task has to finish before another can start, what lag time is built in for contingency etc.

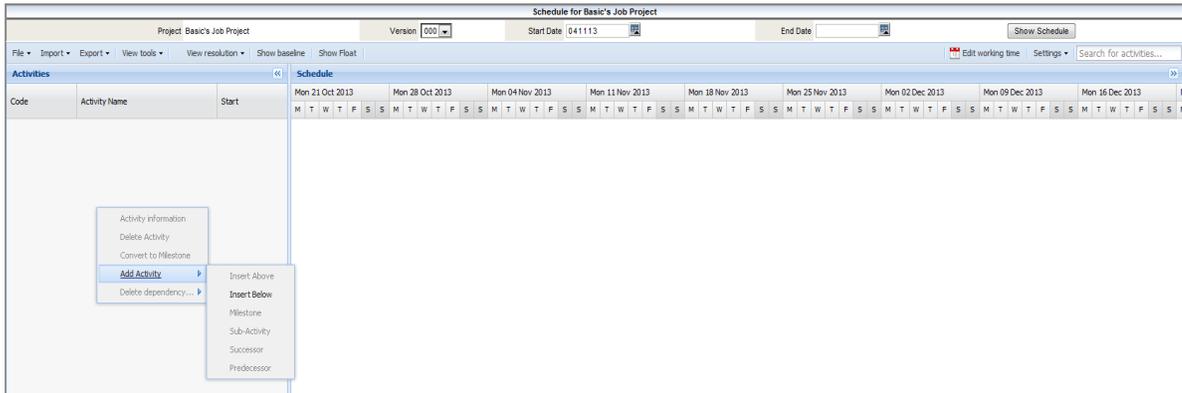
The background of the schedule consists of white and grey vertical bars. The white represent the working days, and the grey represent the non-working days. Working and non-working days are defined through the Calendar.

When work days are changed to non-working days, this causes adjustments in the schedule – the activity end date will be extended. When non-working days are changed to working days, the schedule may be adjusted accordingly.

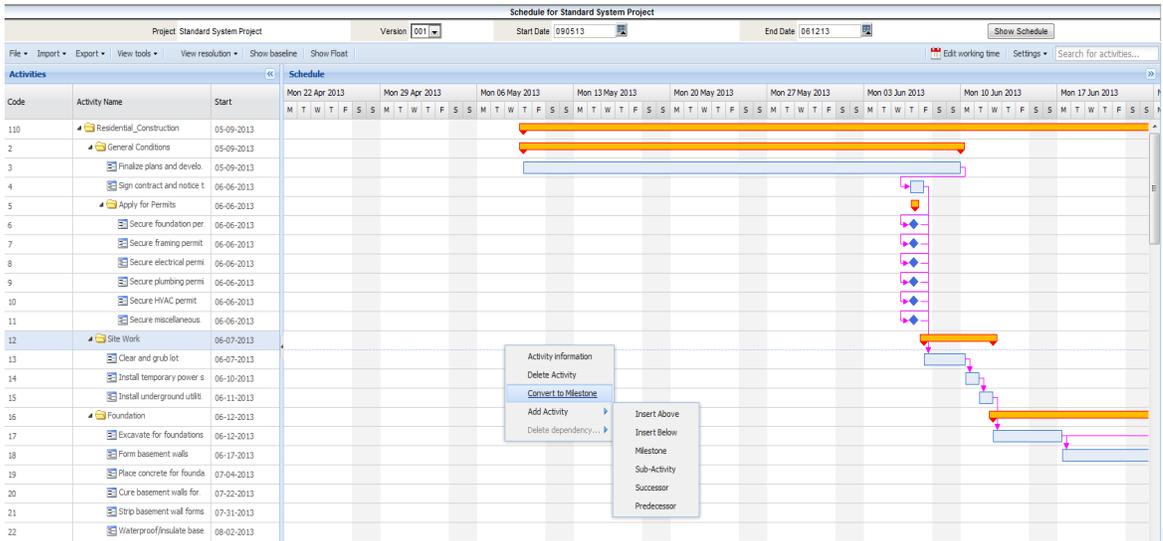
The schedule must have at least one activity.

The Activity is created by right mouse-clicking anywhere in the Activities section or the Schedule section.

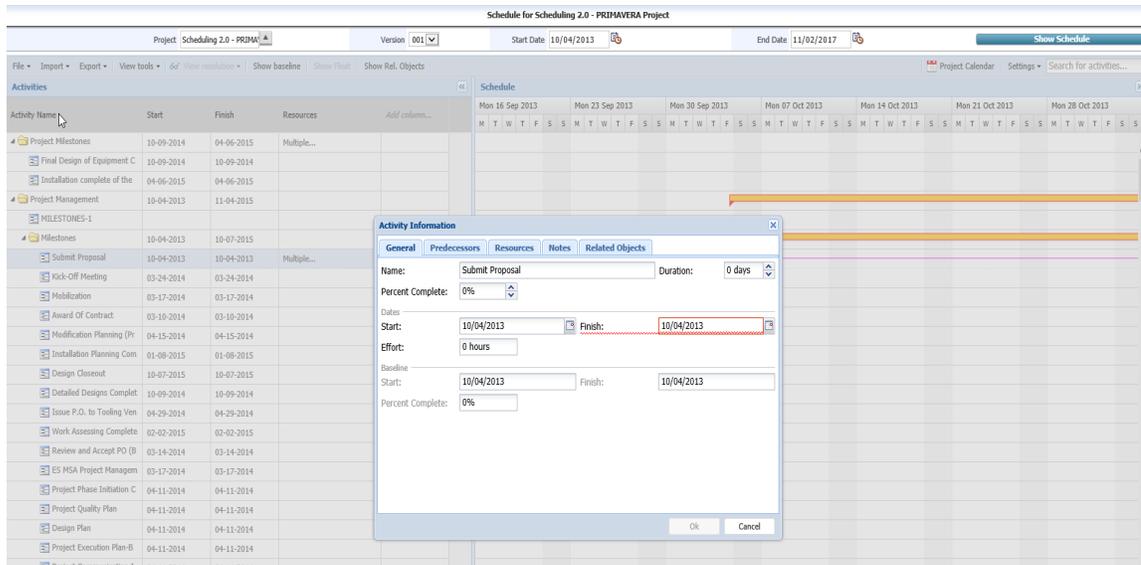
A menu is displayed with a number of options. Only the highlighted option ‘**Add Activity > Insert Below**’ is applicable to a new schedule.



Once the activities are created and saved, more substantive data can be added to the schedule, using the right mouse-click. Even more options will be highlighted:



A right mouseclick on the activity bar and then clicking **Activity Information** gives more detailed information in the **Activity Information** popup screen:



Changes can be made to the activity data, in this screen.

MILESTONE

This is a critical point (due date) on the schedule. It is represented by the icon .

SUCCESSOR

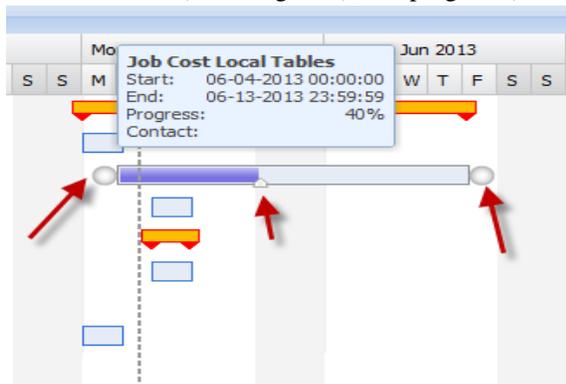
This is a dependent activity tied to the **end** of the activity that it is dependent on.

PREDECESSOR

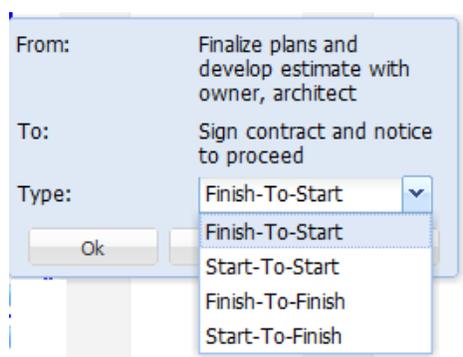
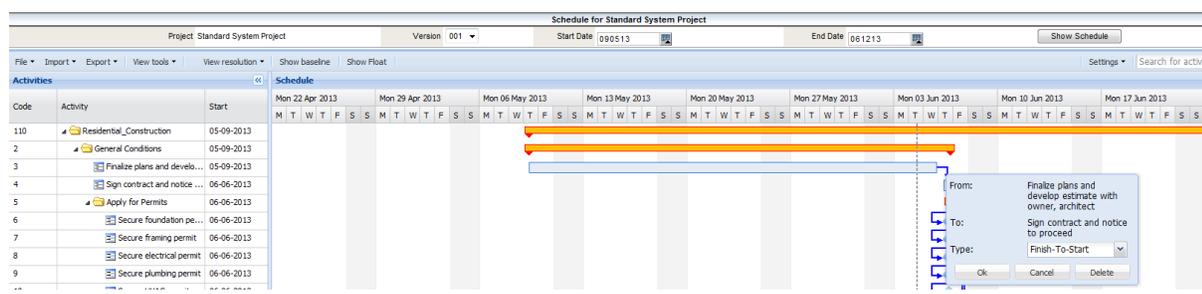
This is a dependent activity which must occur **before** the activity that is dependent on it.

Additional Schedule features

1. In Activities the 'red' triangle indicator is used to highlight when changes are made. After saving and refreshing the schedule, it gets removed.
2. Summary tasks are highlighted in bright yellow and the other detailed tasks are indented. Summary tasks can be expanded and collapsed by clicking on them.
3. Hovering the cursor over an activity bar in the Schedule will display the activity start and end delimiters and a popup window with information on the activity, namely the activity name, start and finish dates (including time), and progress (% Done):



- Use 'drag+ drop' to create Dependencies. The checkmark  to the target means the action is allowed, otherwise,  means not a valid dependency.
- Dependency can be: START to START (start of A begins at start of B)
 FINISH to FINISH (end of A depends on end of B)
 START to FINISH
 FINISH to START



- To Edit a dependency, the user must double-click on the arrow-head. The **Type** can be changed and **Lag Time** adjusted. Click 'OK' to accept the changes. Click Save and Refresh.
- To Delete a dependency, click the [Delete] button in the dependency popup window.

Calculations for Free Float and Total Float

Early Start (ES) = earliest start date of Activity **without affecting** the **Project's Start Date**

or

Early Start = Early Finish of Predecessor

Early Finish (EF) = **Early Start** + activity duration (including the resources assigned that also affect duration)

Late Start (LS) = **Late Finish** - activity duration (including the resources assigned that also affect duration)

Late Finish (LF) = latest end date of Activity **without affecting** the **Project's End Date**

or

Late Finish = **Late Start** of Successor

Early Float (EFS) = Difference between **Early Start** and **Late Start**

Late Float (LFF) = Difference between **Early Finish** and **Late Finish**

Free Float = Difference between **Activity End Date** and Activity's **Earliest Successor Start Date**

Total Float = **Minimum** between **Early Float** and **Late Float**

Integration with Project Management

The Scheduling module integrates directly with Project Management because the schedule is project-based.

All open projects in Project Management are available for use in the Scheduling module.

The integration also extends to the Related Objects in the schedule.

These Related Objects can be Bid Items and/or Submittals.

The link with Bid Items is made via the Activity field and is related to Time-Phased Forecasting (which has been deprecated).

The Link with Submittals can be made in the Submittal Activity field after a baseline schedule is created (i.e. the schedule is Approved).

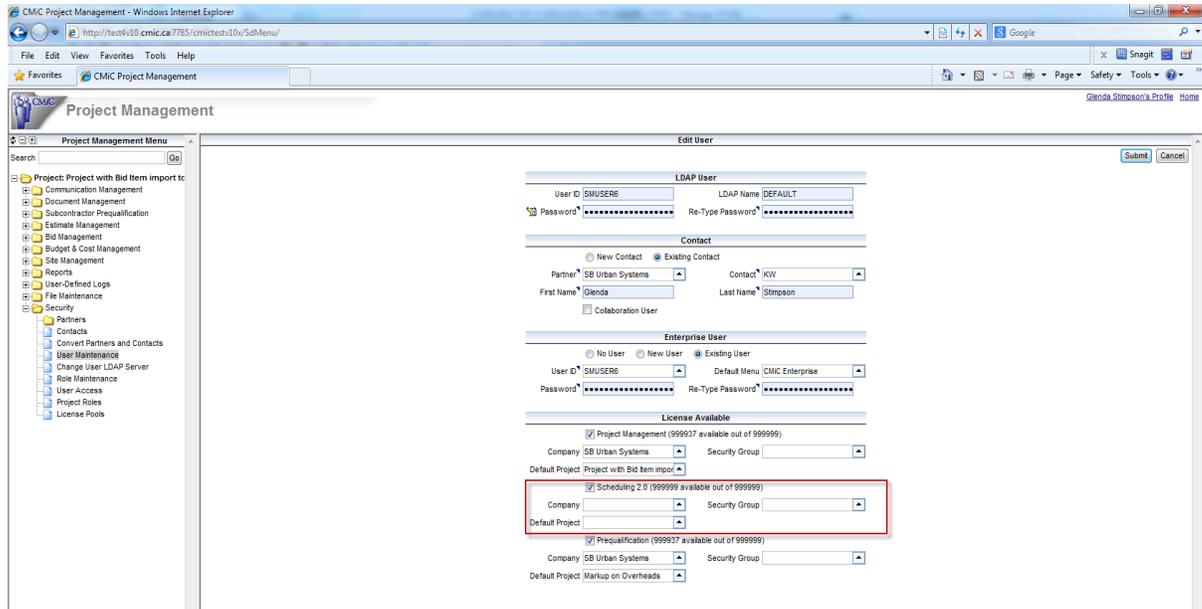
The linkages are made only if the user is a named user for Scheduling 2.0 (i.e. licence exists).

Example of Process

- 1) Create a schedule for an existing Project Management Project using Scheduling 2.0 (this schedule will be Version 000)
- 2) Approve the schedule (approved version becomes Version 001). Any additional Approvals will increment the Version number
- 3) Create or Open a Submittal in Project Management
- 4) Open the Activity LOV of the Submittal
- 5) The LOV will display all the activities available for the latest baseline only; older baselines are not available.

Security

User licensing for Scheduling 2.0 is set in the JSP Project Management – User Maintenance screen. When the Scheduling 2.0 flag is checked, additional fields become available for entry:



Once this screen is set up for the user, the next level of security is at the user/user role within the module:

ASSIGN PROGRAMS

SSRAD Preview	S	<input checked="" type="checkbox"/>
Scheduling 2.0	SCH	<input type="checkbox"/>
Scheduling 2.0 Management	SCH	<input type="checkbox"/>
License Pools	SEC	<input checked="" type="checkbox"/>

ASSIGN MENU ITEMS

Scheduling 2.0	SCH	<input type="checkbox"/>
Maintenance	SCH	<input type="checkbox"/>
Menu Maintenance	SCH	<input type="checkbox"/>
Security	SCH	<input type="checkbox"/>
User Maintenance	SCH	<input type="checkbox"/>
Role Maintenance	SCH	<input type="checkbox"/>
User Access	SCH	<input type="checkbox"/>

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