

# Process Director Documentation

## Scheduler Component Guide




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## Scheduler Module Overview

 Use of the Scheduler module has largely been deprecated in the product. BP Logix recommends using the Goal object for most scheduled operations that were formerly implemented via the Scheduler Module.

The Process Director Scheduler Module (PDSM) is used to launch processes (Workflows or timelines) at pre-defined intervals within a specified window of time. In that sense, the PDSM operates somewhat like the Windows Scheduler or the Unix cron facility. The user opens a form, indicates what process is to be run and how often, and submits the form. From that point forward (or, from the “start date” forward, if one is specified), the process will automatically be launched at the appropriate times.

The PDSM is useful for any job that has to be completed on a regular basis, such as: report generation; routine daily, monthly, or quarterly filings; or overnight processing.

One of the advantages of the PDSM over other schedulers is that it can be configured by business users without IT involvement, and provides an audit trail of all processes initiated by the scheduler.

## Architecture

**!** Use of the Scheduler module has largely been deprecated in the product. BP Logix recommends using the Goal object for most scheduled operations that were formerly implemented via the Scheduler Module.

The PDSM consists of the following major components:

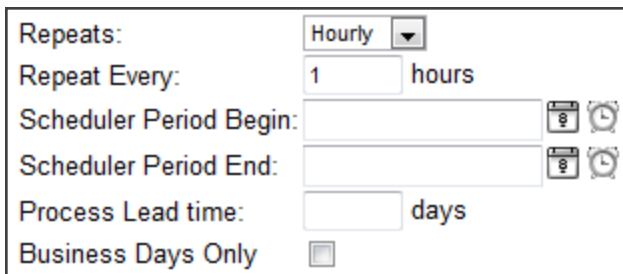
- Schedule picker control
- Schedule Process Custom Task
- Various Knowledge Views

These components work together to create an environment in which not only is the specified process run at the correct times, but all the information surrounding past, current, and planned process launches are made available to the user.

Let's review each component:

### Schedule picker control

The schedule picker control is a typical form control, accessed via the Form builder or Microsoft Visual Studio.



The screenshot shows a form with the following fields and controls:

- Repeats:** A dropdown menu currently set to "Hourly".
- Repeat Every:** A text input field containing "1" followed by the label "hours".
- Scheduler Period Begin:** A date/time picker field with a calendar icon and a clock icon.
- Scheduler Period End:** A date/time picker field with a calendar icon and a clock icon.
- Process Lead time:** A text input field followed by the label "days".
- Business Days Only:** A checkbox that is currently unchecked.

- **Repeats:** Choices are hourly, daily, monthly, or yearly.
- **Repeat Every:** Specify the frequency with which the process will be launched.
- **Starts On:** (Optional) The specified process won't be launched before this date/-time.
- **Ends On:** (Optional) The specified process won't be launched after this date/-time.

- Lead Time: (Optional) Tells the scheduler to launch the process a certain number of days prior to “Starts On” (effectively moves “Starts On” date up the indicated number of days).
- Business Days Only: When checked, only launch the process on business days.

## Schedule Process Custom Task

The schedule process Custom Task is used within a Workflow or timeline definition to:

- Review existing schedule form instances
- Determine if any process needs to be launched
- Launch the appropriate process(es)

As you'll see, this Custom Task requires that the form used to schedule the process launch contain not only a schedule picker control, but a number of other controls as well that also provide important information for the PDSM. Each control is named with an ID, as is typical for all form controls; these IDs are provided to the Custom Task to enable it to pull the appropriate information from the form and behave accordingly.

Schedule Options	
Schedule Form	Process Scheduler Form
Process Field	process (Process to be Launched on the Specified Schedule)
Schedule Field	sched_control (Control used to select frequency and interval during which named process will be launched)
Next Run Time Field	NextProcessRunTime (Next Process Run Time)
Audit Form	auditform (Audit Form)
Audit Field Prefix:	AUDIT_

- Schedule Form: Form definition of the form containing the schedule picker control and the other important data specified in this Custom Task.
- Process Field: The form field on the scheduler form that contains the ID of the content picker control pointing to the process to be launched.
- Schedule Field: The form field on the scheduler form that contains the ID of the schedule picker control.
- Next Run Time Field: The form field on the scheduler form that contains the ID of the date/time picker control used by the Custom Task to automatically calculate and store the next scheduled run time for the process.


- **Audit Form:** (Optional) The form field on the scheduler form that contains the ID of the content picker control pointing to the form definition of the audit form. The audit form is described in more detail below.
- **Audit Field Prefix:** This value is prepended to the name of each control on the schedule form to create the matching control on the audit form.

## **Knowledge Views**

Certain Knowledge Views are used by the PDSM to identify and display processes it has launched, or are scheduled to be launched.

- **All Processes Run for this Schedule:** This Knowledge View is shown on the schedule form instance. It displays all process instances that were launched as a result of that schedule form instance. This is used by the Form and won't be launched by a user.
- **All Scheduled Items:** Displays a list of all schedule form instances.
- **Upcoming Scheduled Items:** Displays a list of all schedule form instances whose Next Run Time Field falls within a specified number of days from now.

## Implementation

 Use of the Scheduler module has largely been deprecated in the product. BP Logix recommends using the Goal object for most scheduled operations that were formerly implemented via the Scheduler Module.

In addition to the components described in the preceding section, a working PDSM implementation will include:

- Schedule form containing the schedule picker control
- Schedule Workflow containing the schedule process Custom Task
- Audit form (optional)

### Schedule form

The schedule form definition includes all the fields required by the schedule process Custom Task, as well as any other information the user might wish to include. A typical schedule form might look like the example shown below. In addition to the fields required by the Custom Task, this form also includes a serial number, the name of the form creator, and other information.

A new form instance is created for each different process, or schedule, that has to be run. For example, if process "A" has to run every Monday and process "B" has to run every Tuesday, there would be two instances of the schedule form created. In addition, if process "C" has to run every day at noon and again every day at 5pm, there would also need to be two instances of the schedule form: one specifying that the process be run every day at noon, and another specifying 5pm.

The form isn't configured to launch a process when submitted.

Serial Number: 1988  
Schedule Name:   
Scheduled By: Aviel Natan Menter

Repeats: Hourly  
Repeat Every: 1 hours  
Scheduler Period Begin:   
Scheduler Period End:   
Process Lead time: days  
Business Days Only:

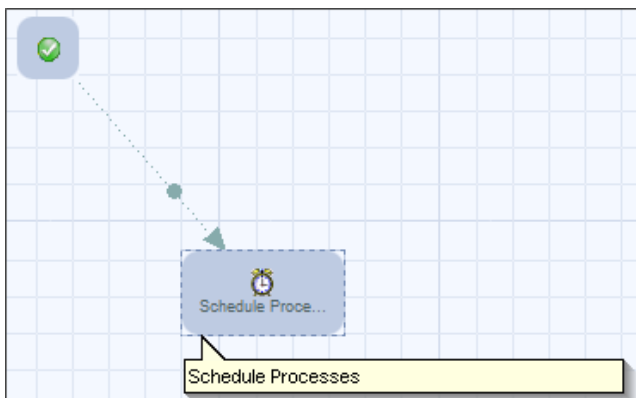
Notify: Aviel Natan Menter  
Workflow:   
Next Process Run Time:   
Next Schedule Time:   
Audit form (optional):

All Processes Run for this Schedule (0 items)

<input type="checkbox"/>	Name	Status	Started On	Completed On
No records found				

## Schedule Workflow

The schedule process Custom Task is one step in what is normally a very short Workflow. It is possible to set up this Workflow in such a way that it executes the Custom Task step, then waits, then loops. However, BP Logix recommends that, instead, you launch the schedule Workflow from the Windows Scheduler on a recurring basis.



Each time the schedule Workflow runs, the Custom Task examines every schedule form instance. If the current time falls within the specified start date / end date window, it will launch the appropriate process specified in a given instance if (a) the next run time has been reached, or (b) the next run time is blank. Therefore, one way to force an execution of a scheduled process is to manually clear the next run time field within the relevant form instance.

## Audit Form



Each time a process is launched via the PDSM, a link to the schedule form instance that caused it to be launched is attached to the new process as a reference. As noted above, the schedule form sometimes includes information that the new process may need to use, so having the ability to access the information on the form is valuable. Furthermore, the PDSM uses this connection to determine which processes were started by which schedule form instance.

However, the schedule form instance is dynamic. For example, each time the form is used to launch a process, the next run time is updated. It is sometimes desirable to have available a static version of the data as it existed when the process was started. The audit form fills this role.

The audit form can be a near-replica of the schedule form, or it can be different, but it always contains one or more fields inherited from the schedule form. In order to distinguish the fields on the audit form from those on the schedule form, the names of the equivalent controls are changed to include a user-specified string (see "Audit Field Prefix", above). So, for example, if the next run time control on the schedule form is called "NEXTRUN", then the "AUDIT\_NEXTRUN" field on the audit form will be the equivalent.

When the scheduled process is launched, the PDSM copies fields from the schedule form to the equivalent fields on the audit form. So, in the preceding example, "AUDIT\_NEXTRUN" would contain the data that filled the "NEXTRUN" field in the schedule form—the time this instance was scheduled to run.

Once the copy is complete, the original schedule form instance is updated, such that the next run time field now contains the time and date of the subsequent scheduled execution of the process. So right away the schedule form instance and the audit form diverge.

The audit form is useful as a tool to examine when and why a particular process instance was launched.

## **Workspace**

It is recommended that you create a Workspace that contains the items for the scheduler components. The Workspace should contain a button to the scheduler Form (for creating new scheduled items) and two portlet windows pointing to the "All Scheduled Items" and the "Upcoming Scheduled Items" Knowledge Views.

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Edit Workspace

Configuration | User Administration | Installation Settings | Troubleshooting

Workspaces | Partitions | Global Knowledge Views

Workspace Name: Scheduler Profile \*

Description:

New users added to the system should be automatically added to this Workspace

Relative Order on Toolbar: 0

Workspace Icon:

How to Display Workspace: Text

Workspace Tooltip:

Assign Users | Assign Groups

Top Navigation Buttons | Home Page Windows | Advanced Options

Type	Icon	Label	Tooltip	Data
Home Page		Home Page	<input type="text"/>	<input type="text"/>
Partition eForms (...)		Add Schedules Items	<input type="text"/>	Sample eForm
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				
Button Not Used				

OK | Update | Cancel

Edit Workspace   Configuration   User Administration   Installation Settings   Troubleshooting

Workspaces   Partitions   Global Knowledge Views

Workspace Name  
Scheduler Profile \*

Description

New users added to the system should be automatically added to this Workspace

Relative Order on Toolbar 0

Workspace Icon

How to Display Workspace Text

Workspace Tooltip

Assign Users

Assign Groups


Top Navigation Buttons   Home Page Windows   Advanced Options

1   1 2   1 2 (selected)   1 2 3   1 2 3   1 2 3   1 2 3 4

Type	Data
1 Partition Knowledge View (...)	All Scheduled Tasks
2 Partition Knowledge View (...)	Upcoming Scheduled Items

OK   Update   Cancel

## Scheduler Picker Control Tag

 Use of the Scheduler module has largely been deprecated in the product. BP Logix recommends using the Goal object for most scheduled operations that were formerly implemented via the Scheduler Module.

A scheduler control can also be accessed using a control tag. The control tag should use the following syntax:

```
{FORM:schedule_control, FIELD= STARTS_ON|ENDS_ON|LEADTIME|REPEAT_
EVERY|REPEATS|BUSINESSDAYS}
```

Specific fields in the scheduler control can be accessed using the Field parameter, as such:

FIELD=

- STARTS\_ON: returns the date the schedule specified in the schedule picker starts on.
- ENDS\_ON: returns the date the schedule specified in the schedule picker ends on.
- LEADTIME: returns the schedule picker's specified lead time
- REPEAT\_EVERY: returns the frequency with which the schedule process repeats
- REPEATS: returns the unit that the frequency is measured in (will be hourly, daily, monthly, or yearly)
- BUSINESSDAYS: returns a Boolean (yes/no) value reflecting whether the schedule runs only on business days.