



# HarePoint Workflow Scheduler Manual

For SharePoint Server 2010 and SharePoint Foundation 2010



Product version 1.0

October 19, 2011

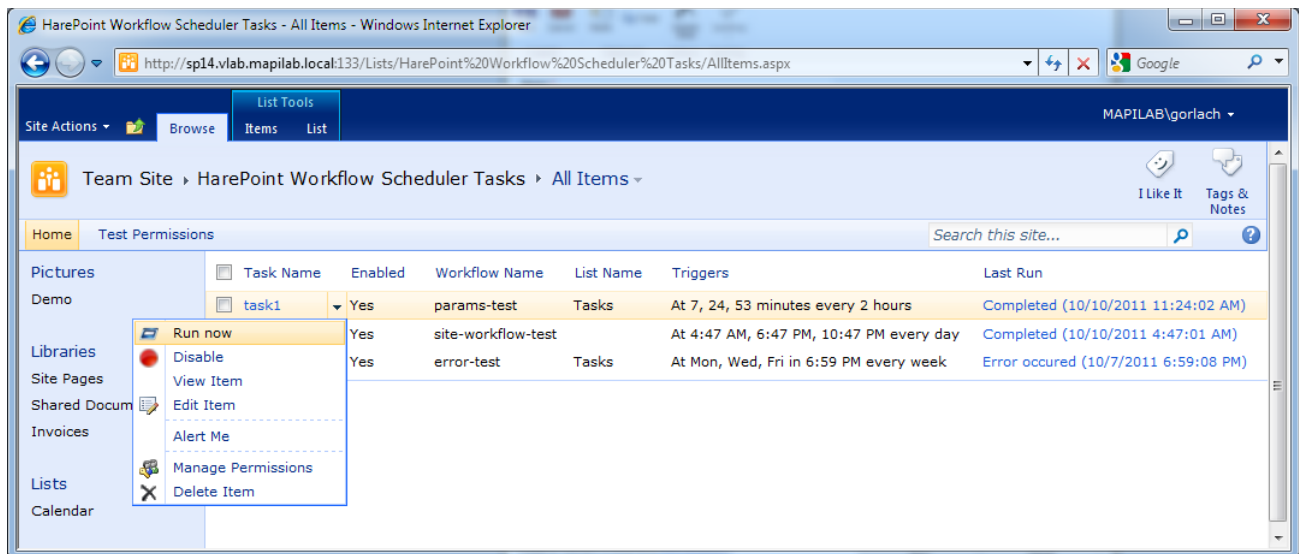
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## I. Introduction

Workflow Scheduler is a software product that allows starting workflows manually and according to a schedule with specified parameters. With its help you can automate the SharePoint portal by running scheduled site workflows, start list workflows for all list items or those selected by a CAML query or manually, test your workflows with various sets of parameters, and test servers' load. The product supports both declarative workflows created in Microsoft SharePoint Designer and workflows created in Microsoft Visual Studio.



The product allows:

- Starting workflows for all list items or for those selected manually or by a CAML query.
- Setting launch parameters, including parameters described in the InfoPath form linked to the process.
- Adjusting flexibly the autorun schedule: by days of the week, by dates in a month, daily at a specified time, etc.
- Receiving alerts, daily or weekly summaries by email or via SMS with workflows results.
- Specifying accounts under which a workflow will be run.

## II. Deployment

### 1. System requirements

HarePoint Workflow Scheduler is designed to operate in:

- Microsoft SharePoint Server 2010,
- SharePoint Foundation 2010.

(hereinafter referred to as SharePoint) environments.

The Product has no special requirements to the operating system and its components, RAM memory space and CPU type. The Product may operate at any configuration where SharePoint is deployed; it requires 10 Mb of disk space on each SharePoint server.

### 2. Licensing and support

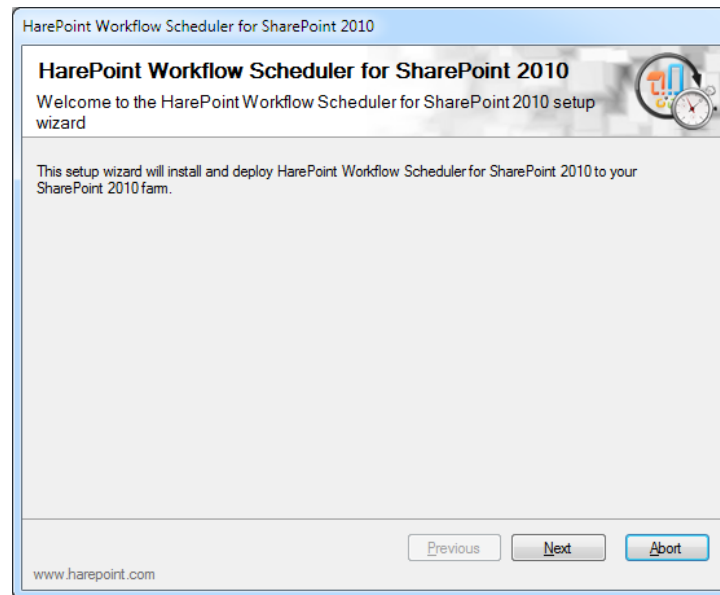
HarePoint Workflow Scheduler is FREEWARE. It means that you can use it for commercial and non-commercial purposes without any fee. Visit the Product's homepage to get the full text of End-User License Agreement.

We provide on-line technical support with normal priority for this Product. To get support, give feedback or to thank, visit Support Area at our web site: <http://www.harepoint.com/Support/>

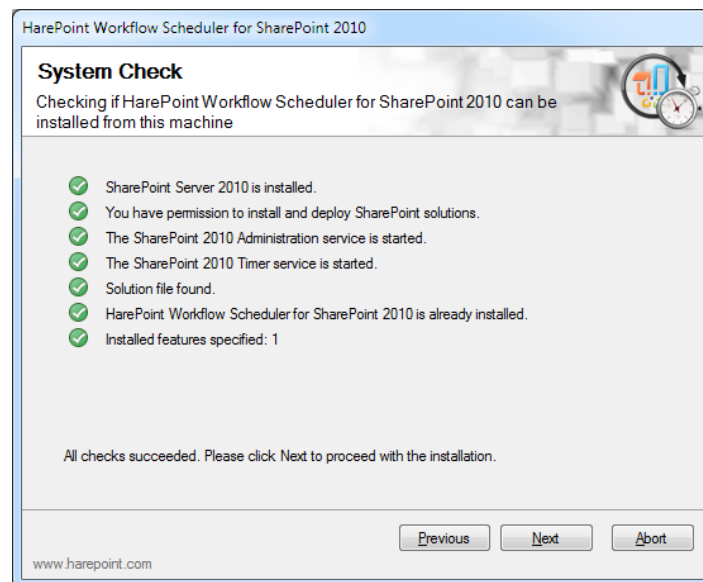
### 3. Installing HarePoint Workflow Scheduler

To install the product you'll need Farm Administrator rights.

Please access any WFE server of the SharePoint farm, unpack the product archive into a folder on the local disk. Run SETUP.EXE in the selected folder. Installation Wizard will start:

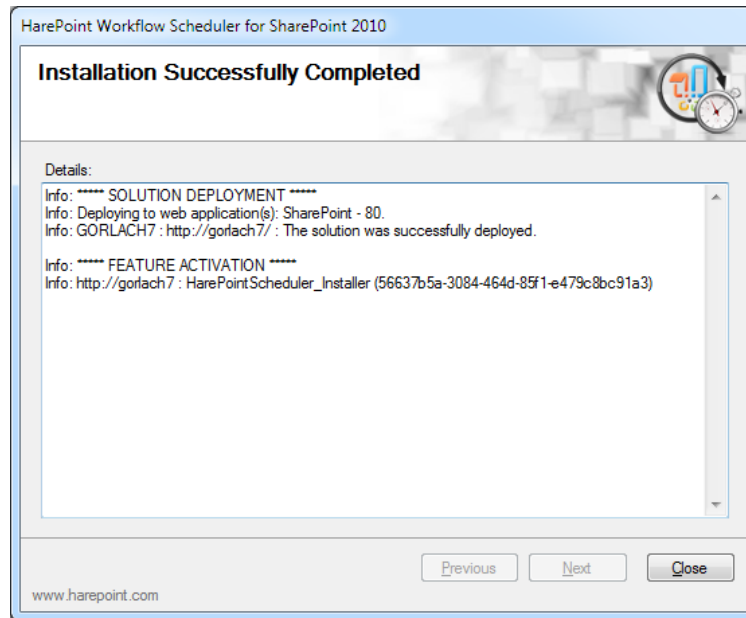


Press Next button on the wizard's welcome screen and the wizard will check if the product can be installed:



Should any problems be detected, please rectify them and restart the installation wizard.

At the next step of the Wizard, you'll choose site collections where the Product should be deployed. Select required site collections and follow the instructions of the Wizard to complete installation:

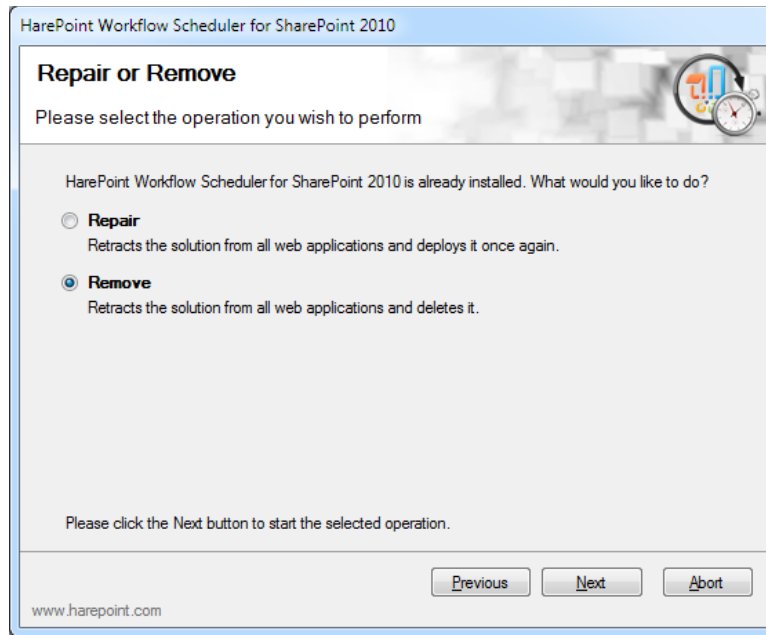


The Product does not require any post-install configuration and ready to work now. But we recommend reading of article “Task triggering mechanism” in Section III before you start.

## 4. How to repair, upgrade or remove the Product







To repair, upgrade or remove the product you'll need Farm Administrator rights.

Please enter any WFE server of the SharePoint farm, unpack the product archive into a folder on the local disk. Run SETUP.EXE in the selected folder. Installation Wizard will be launched. Following instructions of the Wizard, pass system check step similar to those ones during the product installation (see Chapter 3). Upon completing these steps the Wizard will ask you to repair, upgrade, or remove Product components.



Select the required type of operation and follow further instructions of the Wizard.

After the Product is removed by Wizard, the Product's logs, tasks and settings will be kept in the three corresponding lists. Open the link "All Site Content" to view and/or delete "HarePoint Workflow Scheduler Logs", "HarePoint Workflow Scheduler Properties" and "HarePoint Workflow Scheduler Tasks" lists.

Lists		
 Announcements	Use this list to track upcoming events, status updates or other team news.	2 5 months ago
 Calendar	Use the Calendar list to keep informed of upcoming meetings, deadlines, and other important events.	24 10 days ago
 HarePoint Workflow Scheduler Logs		0 33 minutes ago
 HarePoint Workflow Scheduler Properties		2 33 minutes ago
 HarePoint Workflow Scheduler Tasks		0 33 minutes ago
 Links	Use the Links list for links to Web pages that your team members will find interesting or useful.	0 8 months ago



## III. Product Overview

### 1. Getting started

To operate the Product you need Site Collection Administrator privileges. Please note that all the product settings have scope of Site Collection.

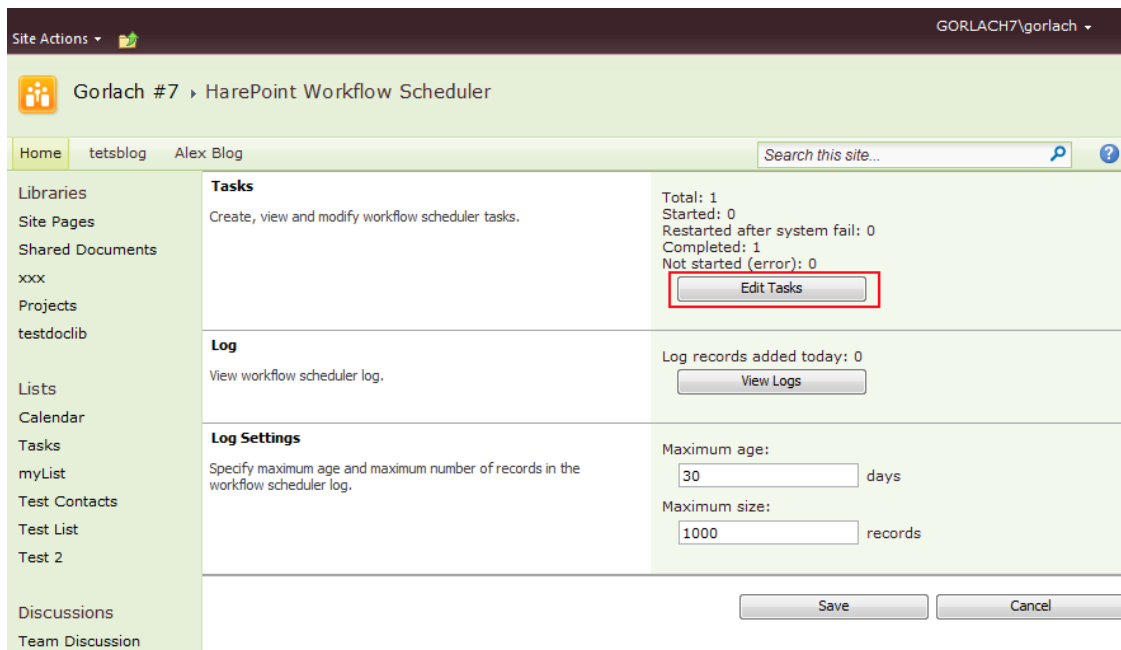
To start working with the Product go to Site Collection Administration section and select HarePoint Workflow Scheduler to open the Product's main page.

Work with the Product can be brought to two main actions:

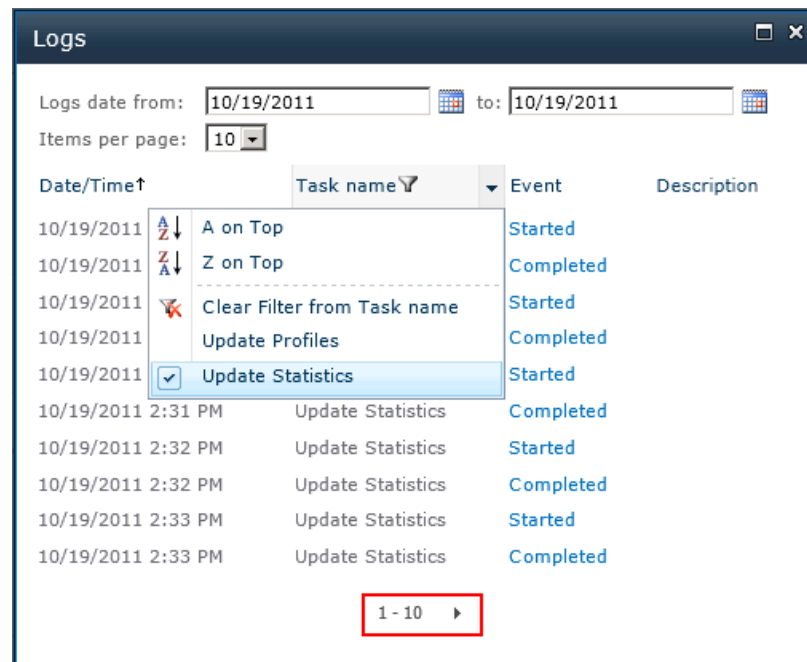
1. creating tasks for automated execution of workflows;
2. obtaining reports and statistics on results of tasks, viewing logs.

On the product's main page:

- *Tasks* section demonstrates general statistics on current tasks of the product, clicking Edit Tasks button moves you to the list of tasks of the Product (see next chapter) with the possibility to edit, create and manually start tasks;



- Logs section shows general statistics for increase of the Product's log, clicking View Logs button pops up a window with the product's log:



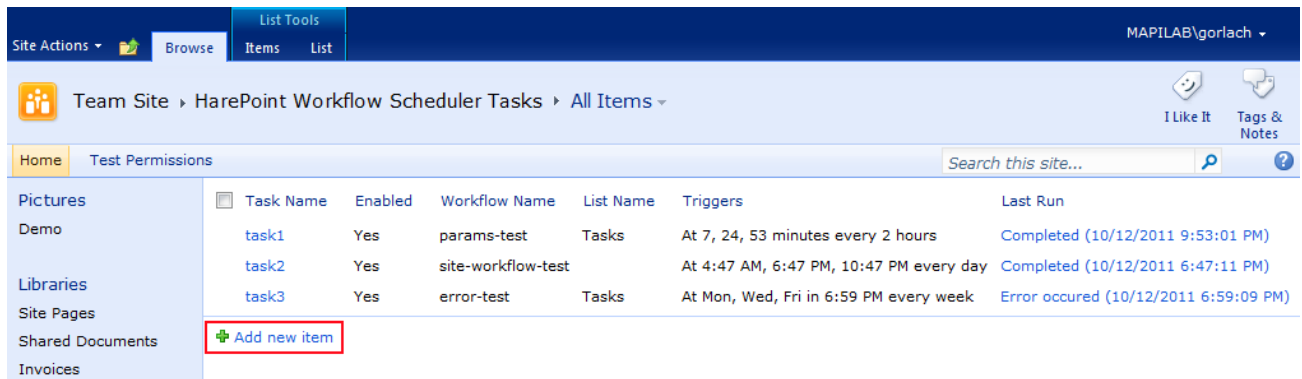
You may use navigation links at the bottom of the window to scroll pages, select records by a specified period using a form at the top of the page, sort records and apply filters by clicking on the page's column headers;

- clicking value in the Event column opens a history of implementing a specific copy of the workflow;
- Log Settings section specifies maximum size of the log, upon reaching any of threshold values (maximum number of records or maximum age) the log will be truncated.

The next chapter of this guide will explain how to create, run and edit tasks.

## 2. Workflow tasks

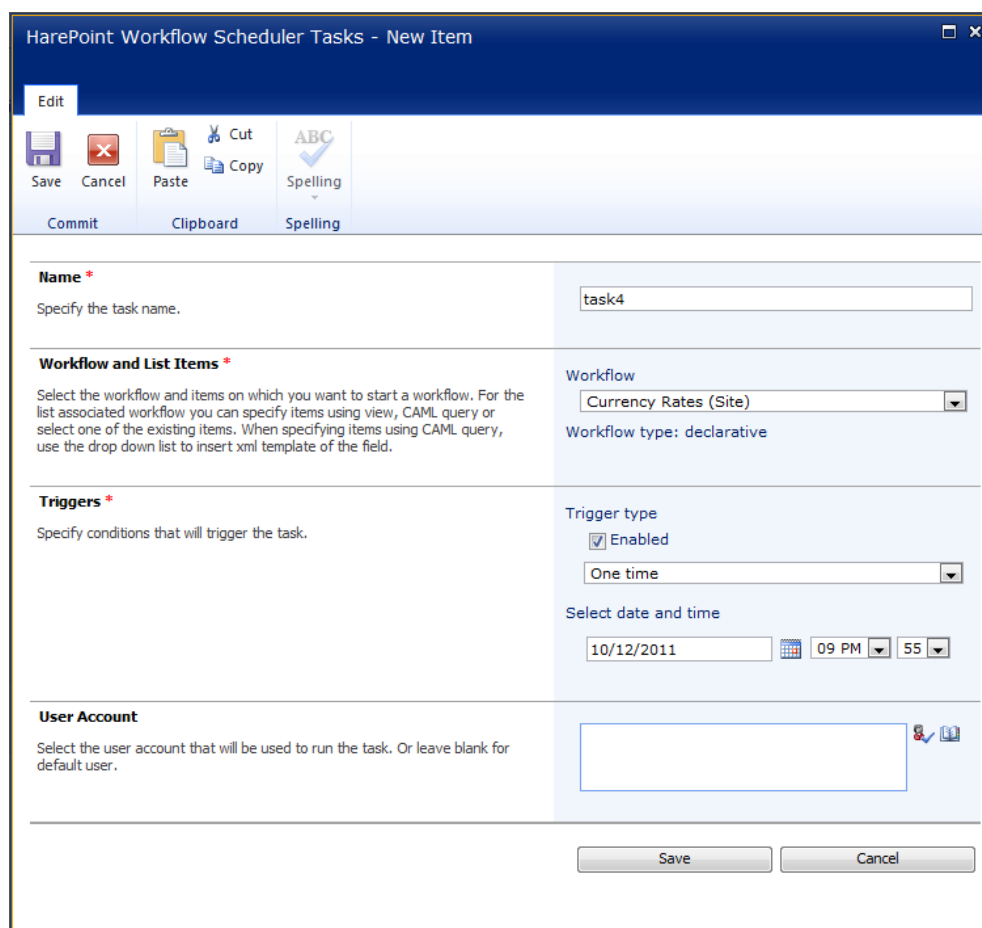
To work with workflow tasks (hereinafter referred to as the ‘tasks’) in Site Collection Administration select HarePoint Workflow Scheduler item, and click Edit Tasks button on the opening Product’s main page . You will be moved to the page with a list of tasks:



Task Name	Enabled	Workflow Name	List Name	Triggers	Last Run
task1	Yes	params-test	Tasks	At 7, 24, 53 minutes every 2 hours	Completed (10/12/2011 9:53:01 PM)
task2	Yes	site-workflow-test	Tasks	At 4:47 AM, 6:47 PM, 10:47 PM every day	Completed (10/12/2011 6:47:11 PM)
task3	Yes	error-test	Tasks	At Mon, Wed, Fri in 6:59 PM every week	Error occurred (10/12/2011 6:59:09 PM)

[Add new item](#)

To add a new task click “Add new item” link, and a Create new task page will pop up in the new window:



**HarePoint Workflow Scheduler Tasks - New Item**

**Edit**

**Name \***  
Specify the task name.  
task4

**Workflow and List Items \***  
Select the workflow and items on which you want to start a workflow. For the list associated workflow you can specify items using view, CAML query or select one of the existing items. When specifying items using CAML query, use the drop down list to insert xml template of the field.

**Workflow**  
Currency Rates (Site)

**Workflow type:** declarative

**Triggers \***  
Specify conditions that will trigger the task.

**Trigger type**  
☒ Enabled  
One time

**Select date and time**  
10/12/2011 09 PM 55

**User Account**  
Select the user account that will be used to run the task. Or leave blank for default user.

Save Cancel

## Name

In the first mandatory section of task settings, please specify the task name as it will be displayed in the task list and log files.

## Workflow and List Items

Select a workflow in the “Workflow and List Items” section. The product supports declarative workflows created in Microsoft SharePoint Designer, and workflows created in Microsoft Visual Studio.

When selecting List Workflow, two additional settings (“Views” and “List items”) will appear in the section.

**Views**. Selection of views linked with the list. It is extremely topical for such lists as Tasks where you may select, for example, “Due Today” view so that the workflow would process only tasks for today, rather than all contained in the list.

**List items**. You may select one of three options:

1. All. In this case the workflow will be run for each item in the current view.
2. One. In this case you select manually a list item for which the workflow will be started by clicking “Select List Item” button.
3. Selected by CAML query. In this case you need to create a Where-type CAML query to select list items at the moment of triggering the task. The workflow will be started for each selected item.

Workflow  
Demo (List)

Workflow type: declarative

List: Demo

Views  
All Pictures

List items

☒ All

☐ One:

Select List Item

☐ Selected by CAML query ?

```
<Where>
<Eq>
  <FieldRef Name="FIELD NAME"/>
  <Value Type="FIELD DATA TYPE">FIELD VALUE</Value>
</Eq>
</Where>
```

Available fields:  
Approval Status

Insert field XML

If you are unfamiliar with CAML queries then you may start learning this language by reading the article in Wikipedia which contains links to articles for more in-depth studying:

[http://en.wikipedia.org/wiki/Collaborative\\_Application\\_Markup\\_Language](http://en.wikipedia.org/wiki/Collaborative_Application_Markup_Language)

Under the form of the CAML query text editor you can find a list of fields of list items available for usage in the query and “Insert field XML” button which inserts a string of the following type

```
<FieldRef Name="PercentComplete"/><Value Type="Number">FIELD VALUE</Value>
```

to the text editor. The “FIELD VALUE” text must be replaced manually with the required value.

We also recommend a freeware utility U2U CAML Query Builder to create complicated queries:

<http://www.u2u.be/Tools/wincamlquerybuilder/CamlQueryBuilder.aspx>

### Event Parameters

If the selected workflow uses parameters, including those specified via an InfoPath form, the “Event Parameters” section will be displayed after the “Workflow and List Items” section:

The screenshot shows a section titled "Event Parameters" with a description: "Specify the initial data of the workflow. For a designer workflow set the startup parameters. For a custom workflow, set the initial data in the free form." To the right of this text is a button labeled "Set Workflow Parameters".

When selecting a workflow which does not use parameters this task settings section will be hidden. See next chapter for more information on use of workflow parameters.

### Triggers

This section specifies the schedule of the task’s implementation. A workflow task may be disabled for automated execution by unchecking the “Enabled” field:

The screenshot shows the "Triggers" section with the instruction "Specify conditions that will trigger the task." The "Trigger type" is set to "One time" and the "Enabled" checkbox is checked. The "Select date and time" section shows a date field and a time field set to "09 PM" and "55".

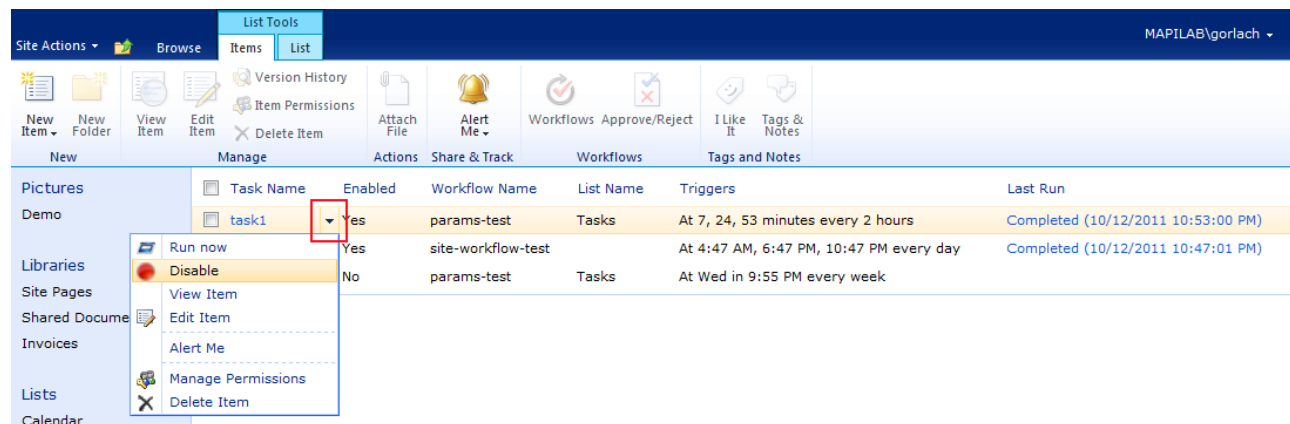
A task may be programmed for a single running or for everyday running with any frequency up to one minute, or for running on specified days of the week, dates of a month or dates in the year. Please note that you can select only one type of schedule (for example, only days of the week) for a task. When selecting a schedule type the form of schedule programming is reloaded on the page:

The screenshot shows the "Triggers" section with the instruction "Specify conditions that will trigger the task." The "Trigger type" is set to "Week" and the "Enabled" checkbox is checked. The "Recur every" field is set to "1" week. The "Select days of week and time" section shows checkboxes for days of the week (Sun, Mon, Tue, Wed, Thu, Fri, Sat) and a time field set to "09 PM" and "39".

### User Account

This section specifies an account under which the workflow will be run. By default this option shows the account of the current user.

After filling in all the fields, click Save in the task edit window, the window will be closed and you will return to the task list.



When moving the cursor over the line with a task, a mark appears in the “Task Name” column. Clicking on this mark opens the task’s context menu. This menu contains the following options:

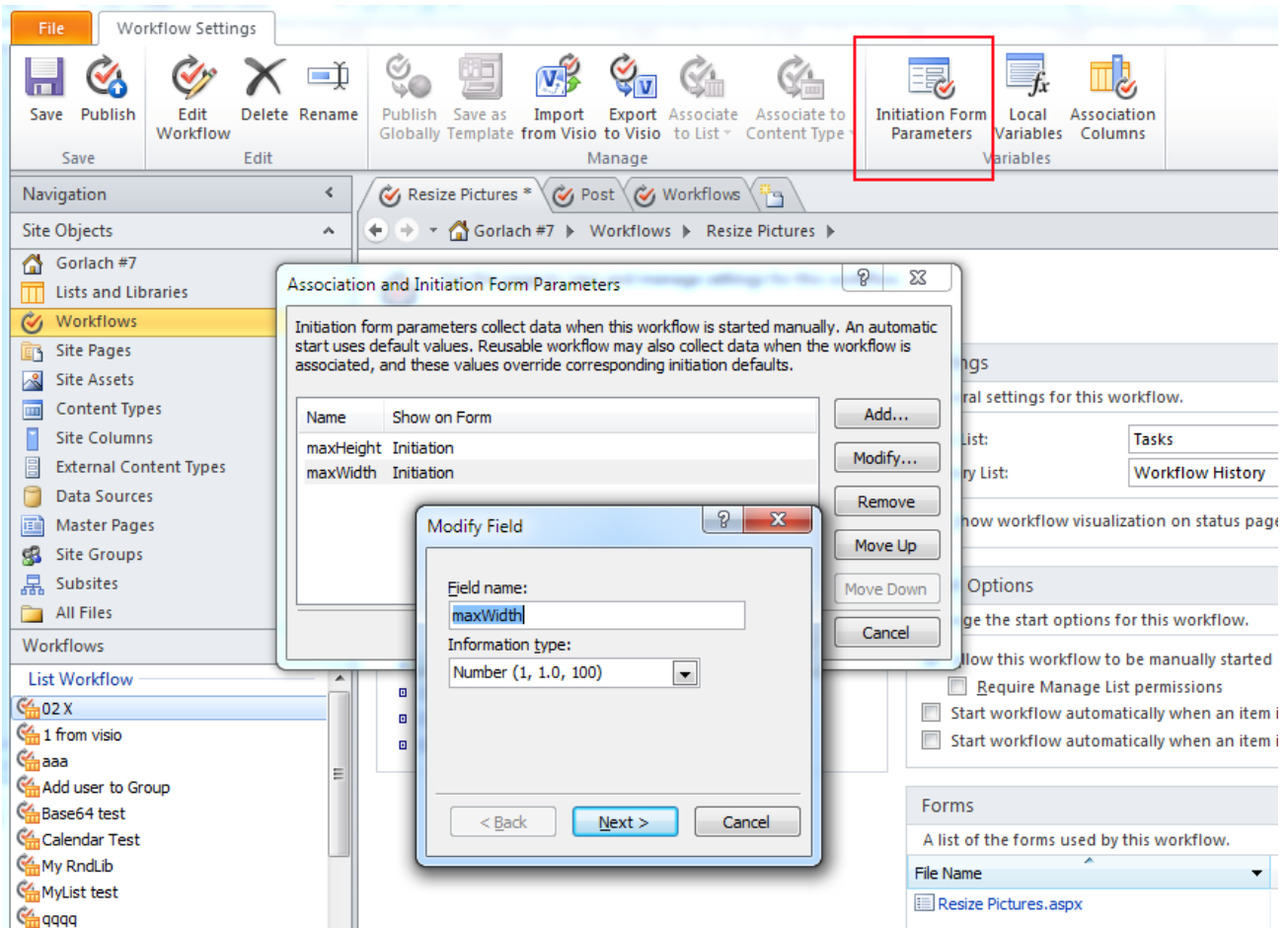
1. Run now. Starts the task. Please note that some time may pass between putting the task into a queue to start and updating its status due to specific features of SharePoint architecture. Refresh the task list page manually to see changes in the task status (it will change to “Started”) in the “Last Run” column.
2. Disable/Enable. Disables/enables execution of the task according to the schedule.
3. Edit item. Opens a task edit window (this can also be done via List Tools\Items taskbar).
4. Alert Me. Allows to subscribe to events linked with the task (this can also be done via List Tools\Items taskbar). See chapter 4 for more details.
5. Manage Permissions. Opens a standard permissions settings page for the selected task.
6. Delete Item. Deletes the task.

Values of other columns in the task list:

1. Enabled. Value “No” means that automated execution of the task according to the schedule is disabled. But the task may be started manually via the context menu.
2. Workflow Name. Name of the workflow started by the task.
3. List Name. For List Workflows it contains the name of the list linked with the workflow, for Site Workflows the field is empty.
4. Triggers. Contains the task execution schedule.
5. Last Run. Contains the result and time of the last run of the task. Clicking on the value in the column opens the program’s log. Please note that after manual start of the task the value in this field is not updated automatically, so you should renew the page manually.

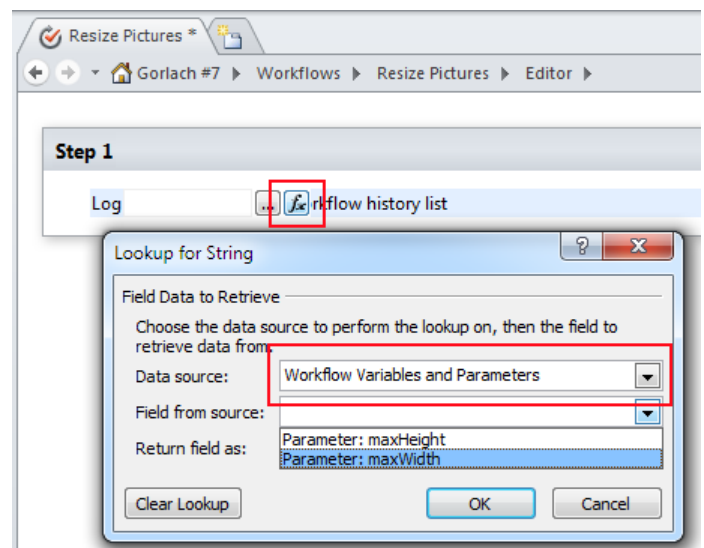
### 3. Using parameters in workflow

Parameters may be passed to a workflow at its startup via the InfoPath form or a page with the form on the SharePoint site. To specify parameters, open or create a workflow in SharePoint Designer and click the “Initiation Form Parameters” button:



Parameters inside a workflow can be easily accessed by the same method as the one used to access the workflow variables.

When defining parameters for a workflow an InfoPath form for input of the defined parameters is automatically created on the Microsoft SharePoint Server. And an ASPX page is created at the Microsoft SharePoint Foundation; this page can be seen when starting a workflow manually by a standard method.



Site Actions ▾ Browse Page GORLACH7\gorlach ▾

Gorlach #7 ▸ Shared Documents : banner-88x31-rambler-blue  
To start the workflow, use the submit button in the form below.

Home tetsblog Alex Blog Search this site... 🔍 ?

### Resize Pictures

**maxHeight:**

**maxWidth:**

When creating a task for such a workflow in HarePoint Workflow Scheduler the “Event Parameters” section (see chapter 2) will appear on the page.

#### Event Parameters

Specify the initial data of the workflow. For a designer workflow set the startup parameters. For a custom workflow, set the initial data in the free form.

Clicking the “Set Workflow Parameters” button opens a pop-up window for input of parameters of the workflow:

Set Workflow Parameters

**maxHeight:**

**maxWidth:**

Defined values of the parameters will be used each time the task starts.

Please note that parameters do not always have fixed values. For example, you may select current date as a default value for dates or in the task settings.

However if you need to integrate a workflow with other services, for example, databases or web-services, then it will be quite difficult to do it via parameters. In this case we recommend

#### Association and Initiation Form Parameters

Initiation form parameters collect data when this workflow is started manually. An automatic start uses default values, associated, and these values.

Name	Show on Form
maxHeight	Initiation
maxWidth	Initiation

#### Column Settings

Default value:

☐ (None)

☒ Today's date

☐ 14.10.2011 12:33:02

Display format: Date only

< Back Finish Cancel



taking notice of our commercial product HarePoint Workflow Extensions which contains about 200 activities for workflows providing a variety of functionalities for workflows from SharePoint administration and integration with Active Directory up to converting graphics and office documents.

HarePoint Workflow Extensions is free to download at our web site:

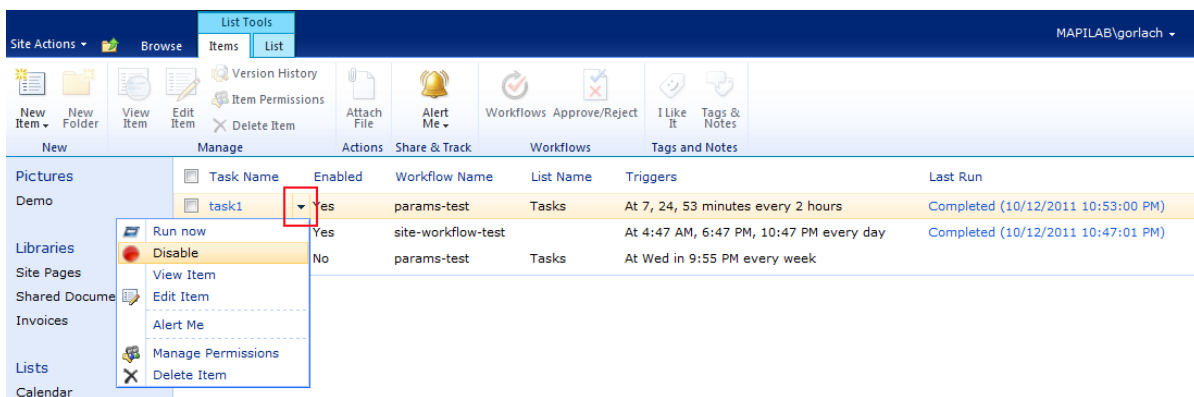
<http://www.harepoint.com/Products/HarePointWorkflowExtensions/>

## 4. Manage product logs and alerts

Information on results of tasks execution in Workflow Scheduler can be obtained via the program's logs or via the SharePoint standard alert tool.

To view the Program's logs select HarePoint Workflow Scheduler in Site Collection Administration. The Product's main page will open where you can define maximum size of log files and open a log file for reading by clicking "View Logs" button (for more see first chapter).

To create an alert in Site Collection Administration, please select HarePoint Workflow Scheduler the Product's main page will open. Click the "Edit Tasks". A page with the Product's task list will open.



Select a task for which you want to receive an alert and select "Alert Me" in the task's context menu (opens by clicking a mark in the "Task Name" column) or on the List Tools \ Items taskbar.

You may also set up sending alerts via email or SMS and either receive alerts after each change of the task's status (e.g., changes from Completed status to Started status at the start up) or subscribe to a daily or weekly report.

If a task is implemented more than once a day, it is preferable to subscribe to event summary (select "Send a daily summary" in the "When to Send Alerts" section) so that your mailbox would not be overloaded with messages.

A summary sent to email looks as follows:

A screenshot of the 'HarePoint Workflow Scheduler Tasks: task1 - New Alert' dialog box. The dialog has several sections: 'Alert Title' with a text field containing 'HarePoint Workflow Scheduler Tasks: task1'; 'Send Alerts To' with a text field containing 'GORLACH7\gorlach'; 'Delivery Method' with radio buttons for 'E-mail' (selected) and 'Text Message (SMS)'; 'Send Alerts for These Changes' with radio buttons for 'Anything changes' (selected), 'Someone else changes an item', 'Someone else changes an item created by me', and 'Someone else changes an item last modified by me'; and 'When to Send Alerts' with radio buttons for 'Send notification immediately' (selected), 'Send a daily summary', and 'Send a weekly summary'. There is also a 'Time' field set to 'Thursday 5:00 PM'. The dialog has 'OK' and 'Cancel' buttons at the bottom.

[Reply](#) | [Reply to All](#) | [Forward](#)

**HarePoint Workflow Scheduler Tasks: task3**

Team Site [no-reply@mapilab.com]

**Sent:** Thursday, October 13, 2011 13:00

**To:** Alexander Gorlach

[Team Site](#)

## HarePoint Workflow Scheduler Tasks - Daily Summary

[Modify my alert settings](#) | [View HarePoint Workflow Scheduler Tasks](#) | [Mobile View](#)

Title	Modified	Modified by	
<a href="#">task3</a>	10/12/2011 6:59 PM	System Account	<a href="#">Edited</a>
<b>runStatus</b>	Error Started		
<b>Last Run</b>	<a href="#">Error-occured (10/10/2011 6:59:11 PM)</a> <a href="#">Started (10/12/2011 6:59:00 PM)</a>		
<a href="#">task3</a>	10/12/2011 6:59 PM	System Account	<a href="#">Edited</a>
<b>workflowInProgressInfo</b>	0<;>1		
<a href="#">task3</a>	10/12/2011 6:59 PM	System Account	<a href="#">Edited</a>
<b>runStatus</b>	Started Error		
<b>Last Run</b>	<a href="#">Started (10/12/2011 6:59:00 PM)</a> <a href="#">Error occured (10/12/2011 6:59:09 PM)</a>		

To unsubscribe from alerts, select “My Settings” in the user menu in SharePoint and click “My Alerts” link on the page opened:

Site Actions

Gorlach #7 ▸ User information: GORLACH7\gorlach - GORLA

Home | tetsblog | Alex Blog

Libraries

Site Pages

Shared Documents

xxx

Projects

testdoclib

Lists

[Edit Item](#) | [My Regional Settings](#) | [My Alerts](#)

Account	GORLACH7\gorlach
Name	GORLACH7\gorlach
E-Mail	someone@example.com
Mobile Number	

**My Settings**  
 Update your user information, regional settings, and alerts.

**Sign in as Different User**  
 Login with a different account.

**Request Access**  
 Email the site administrator to request additional permissions.

**Sign Out**  
 Logout of this site.

**User Self Service**  
 Update your Active Directory user information.

**Password Change**  
 Change your password.

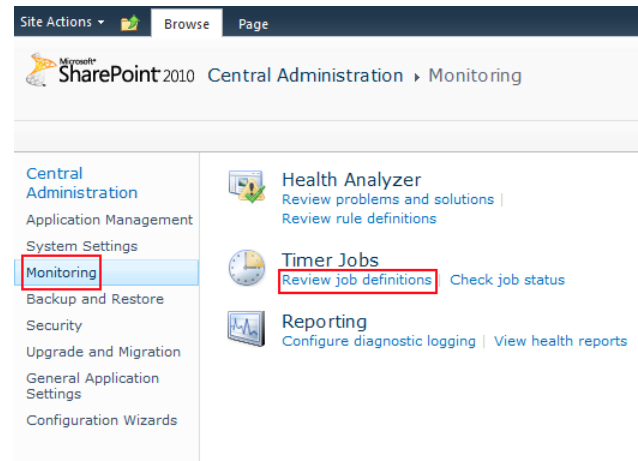
## 5. Task triggering mechanism

Two timer jobs are created during the product installation: “HarePoint Workflow Scheduler Job” and “HarePoint Workflow Scheduler Job Logs Clearing”.

By default “HarePoint Workflow Scheduler Job Logs Clearing” is started once a day to check and truncate the product’s logs.

By default “HarePoint Workflow Scheduler Job” is started with a one minute interval and checks if there are any tasks to run. If, for some reason, you set up starting this service once in 30 minutes, and let us suppose the SharePoint starts it at 00 and 30 minutes of each hour, then:

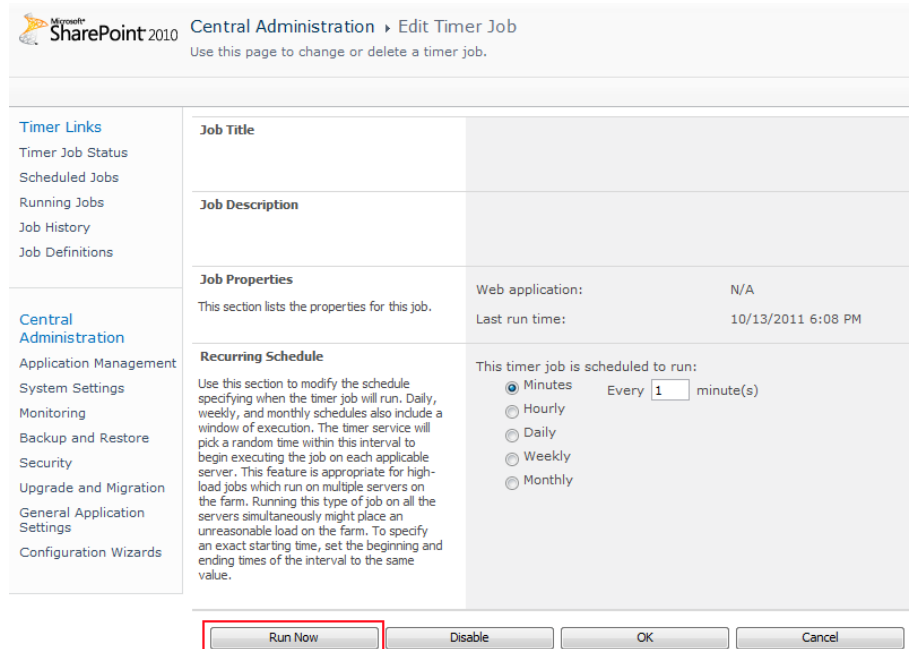
1. a task scheduled for start at 3.15 p.m. will be started at 3.30 p.m.;
2. a task scheduled for start at 3.10 p.m., 3.20 p.m. and 3.30 p.m. will be started ONCE at 3.30 p.m.



To change the job launch schedule, please open Central Administration site, go to the Monitoring section and open the “Review job definitions” link. Select the job for which you want to change the launch schedule from the opening list.

Due to specific features of the SharePoint architecture, after the product installation it may take some time before the first launch of “HarePoint Workflow Scheduler Job” which is required to start tasks created in the product, even though the job is scheduled to start every minute and theoretically it should be launched immediately after the Product installation.

After the first manual job start any subsequent jobs will be started according to the settings.



## Appendix A. Troubleshooting

### **A.1 Product is not available at Site Collection Administration**

Open “Site Collection Features” at Site Collection Administration and check that “HarePoint Workflow Scheduler” feature is activated.

### **A.2 Tasks starts later than specified or not start.**

Check the “HarePoint Workflow Scheduler Job” schedule at Central Administration site. See chapter 2 of Section III for more details.