



PNMsoft Knowledge Base

Sequence Administrator Guides

## **Flowtime Configuration Options**

© 2016 PNMsoft All Rights Reserved

This document, including any supporting materials, is owned by PNMsoft Ltd and/or its affiliates and is for the sole use of the PNMsoft customers, PNMsoft official business partners, or other authorized recipients. This document may contain information that is confidential, proprietary or otherwise legally protected, and it may not be further copied, distributed or publicly displayed without the express written permission of PNMsoft Ltd. or its affiliates.

PNMsoft UK 38 Clarendon Road Watford Hertfordshire WD17 1JJ

Tel: +44(0)192 381 3420 • Email: [info@pnmsoft.com](mailto:info@pnmsoft.com) • Website: [www.pnmsoft.com](http://www.pnmsoft.com)

**Microsoft Partner**

Gold Application Development

## TABLE OF CONTENTS

<b>General Document Information .....</b>	<b>1</b>
Purpose.....	1
Prerequisites.....	1
<b>Introduction .....</b>	<b>2</b>
A Web Part and its Instances .....	2
<b>Customising Flowtime Pages using the GUI .....</b>	<b>3</b>
Adding a Flowtime Web Part to a Page.....	4
Flowtime with HotOperations.....	5
Web Part Editor .....	6
Form Viewer Web Part – Additional Notes.....	8
<b>Configuring the HotOperations Portal .....</b>	<b>9</b>
Editing HotOperations Portal Settings.....	10
Customizing HotOperations Pages.....	11
Dashboard Web Part.....	11
Work Allocation Web Part.....	12
Cases/Tasks List Web Part .....	13
HotOperations Config Files .....	15
<b>Advanced Customisation Using Configuration Files.....</b>	<b>17</b>
Services.config .....	17
Filtering Web Parts using service.config.....	18
ServiceMetadata .....	22
DataBoundColumns .....	22
MenuColumn.....	23
IconColumn .....	23
CustomColumn.....	23
GlobalVariablesColumns .....	23
CalculatedColumn.....	25
Commands .....	25
Example of creating a new command:.....	29
DisplayRules .....	31
WorkflowExplorer.config.....	32
Stages Display Mode.....	33
<b>Theme Control .....</b>	<b>34</b>
Customizing the Theme.....	34
Changing SharePoint’s Look .....	34
Customizing the Flowtime Theme (CSS and Graphics) .....	36
Customizing the Form Theme.....	38

Changing the Flowtime Site Logo.....	39
Customizing the Flowtime Master Page .....	40
<b>Filtering Flowtime Lists Using the Query String .....</b>	<b>41</b>
Syntax .....	41
Operators.....	41
Examples .....	41
<b>Starting/Opening a Workflow Using a URL .....</b>	<b>43</b>
Runtime URL .....	43
Main Parameters.....	43
Additional Parameters .....	43
An Example .....	44
Control Over Activity Focus.....	44
<b>Examples: Rebranding Flowtime Pages.....</b>	<b>45</b>
Customizing the Process Page .....	45
Customizing alerts/dialogs with custom CSS .....	45
Adding Custom Font.....	47
Customizing Controls' CSS.....	47
Adding Image Buttons .....	48
Rebranding Additional Flowtime Pages .....	48

## General Document Information

### Purpose

The purpose of this document is to enable Sequence Administrators and Developers to configure the Flowtime environment, with a focus on customising the display of columns in Flowtime grids and the display of commands in grid toolbars and edit menus.

This document includes two levels of configuration complexity:

- **Basic:** Configuration using the Flowtime GUI.
- **Advanced:** Configuration using the Flowtime configuration files.

### Prerequisites

- Knowledge of Sequence.
- Familiarity with Flowtime web parts.
- (Optional): JavaScript development skills.

## Introduction

Sequence Flowtime environment is a SharePoint-hosted interface that enables end users to operate, manage and monitor their business process applications in a team and within an organisation.

Sequence Flowtime is comprised of Web Parts which display data on processes, messages, charts, delegations and more.

### Flowtime

Many of these web parts are grids, which display records such as available processes, process instances and messages. Each of these grids has set of columns, commands and an item edit menu.

Users can configure which columns are displayed on a per user basis, and administrators can configure which columns and commands are displayed on a system-wide basis. Both users and administrators can edit Flowtime pages, removing and adding available web parts, in order to create customized Flowtime dashboards.

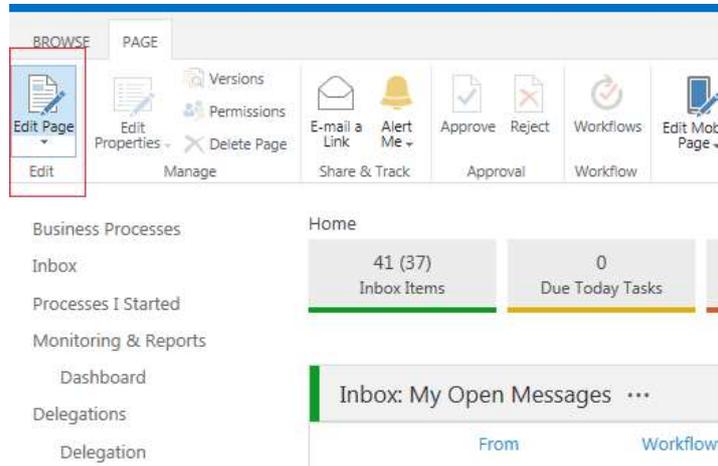
## A Web Part and its Instances

Any given web part, such as the Message grid, can be added multiple times to various Flowtime pages. Each instance of the web part that is added can be configured by the user/administrator so that it displays differently, according to the needs of the user(s).

## Customising Flowtime Pages using the GUI

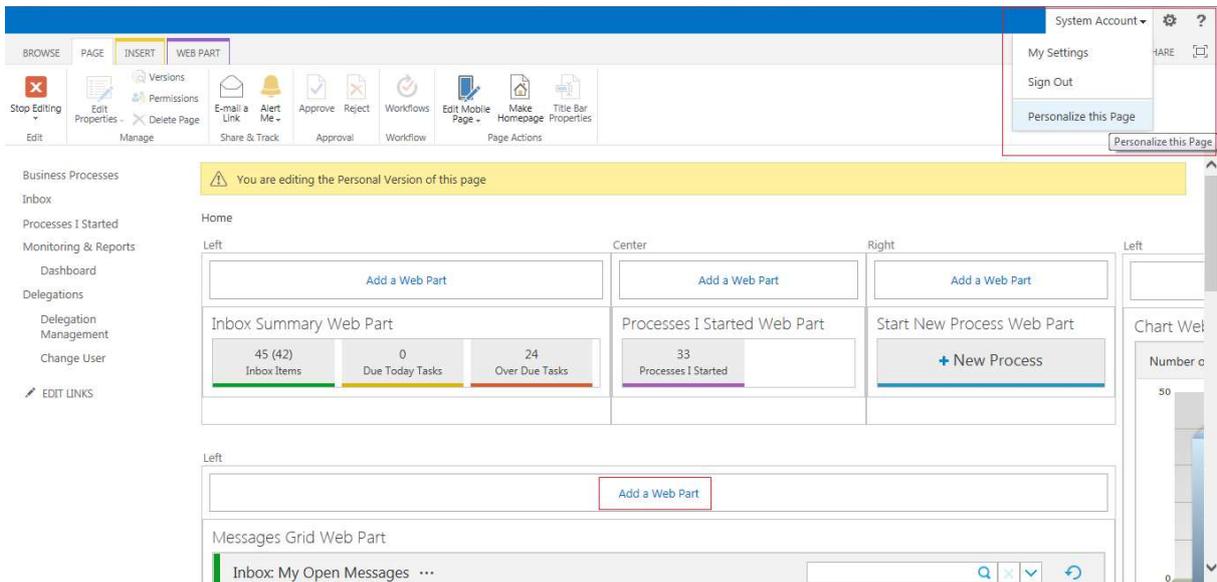
Flowtime provides many customisation options from within its GUI.

Administrators can customize Flowtime pages for all users, by selecting **Edit Page** from the top ribbon:



**Edit Page**

Individual users can customize their own display. This can be done by selecting **Personalise This Page** from the top right user dropdown options:



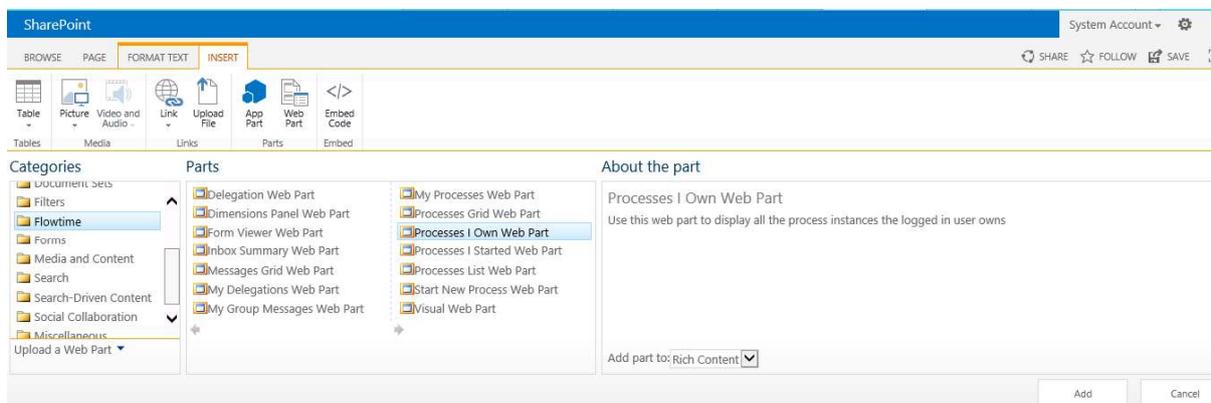
**Edit Page**

You can edit each page using additional options in the top ribbon (using SharePoint native options).

## Adding a Flowtime Web Part to a Page

Once you have entered the edit page view, you can easily add Flowtime web parts to pages by clicking **Add a Web Part** (see above).

The Add Web Part dialog box opens:



### Add Web Part

From v7.4 and above, you can add Flowtime web parts from the **Flowtime** folder (see image above). They include:

- **Delegation:** Displays all the delegations assigned to the current user. Using this web part the user can login to delegation mode (change user).
- **Dimensions Panel:** Displays a dimension for a visual.
- **Form Viewer:** Displays a Form from any workflow which has been designed in the UX Studio. For more information on this web part, see - Form Viewer Web Part – Additional Notes below. (Available from v7.10)
- **Inbox Summary:** A summary bar of Inbox items, Due and Overdue Tasks.
- **Messages Grid:** The messages and tasks that were sent to this user.
- **My Delegations:** Use this web part to display a set of delegations defined by the logged in user..
- **My Group Messages:** Enables a manager to view all his group's messages.
- **My Processes:** Displays all process instances that were created by a specific user.
- **Processes Grid:** Displays all the process instances of a specific process (filtered by the user permissions).
- **Processes I Own:** Displays all the process instances the user owns.
- **Processes I Started:** A summary bar which shows the number of processes the user started.
- **Processes List:** Displays all available processes (processes that the user has permissions to view/manage).
- **Start New Process:** Enables a user to select and start a new process.
- **Visual Web Part:** Displays a visual created using Sequence Analytics.

There are additional web parts in the **Miscellaneous** section, including:

- **Chart:** Sequence charts.

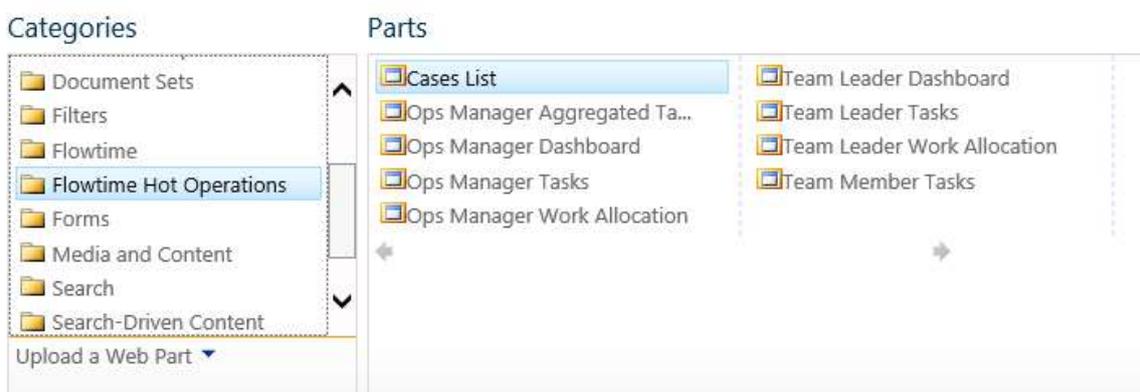
- **Dashboard Filter:** A web part which enables filtering grids and charts.
- **Delegation:** Enables changing users.
- **Reporting Services:** Enables adding MRS Reports.
- **Workflow Selection:** Enables selecting a workflow for filtering a chart.

By adding the above web parts to pages and configuring their settings, you can create a highly customized user dashboard.

## Flowtime with HotOperations

APPLIES TO: SEQUENCE 8.0 AND ABOVE WITH HOTOPERATIONS LICENSE

For installations with HotOperations, the following additional web parts are available from the **Flowtime HotOperations** folder:



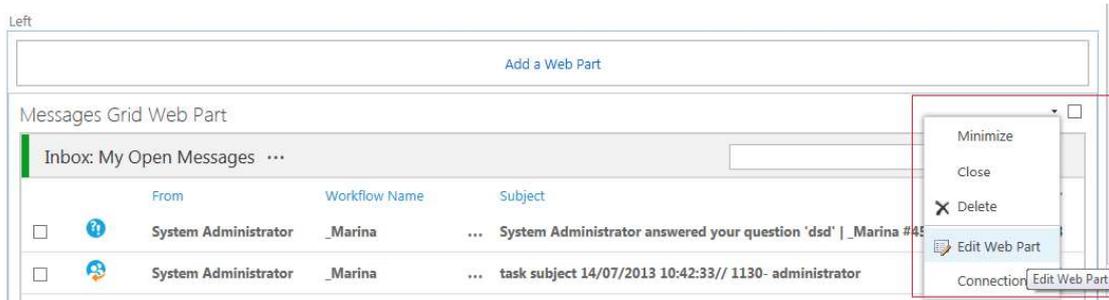
### Flowtime HotOperations Web Parts

- **Cases List:** Enables the users to see all the cases with their unique properties, and includes a friendly form to edit the case properties for single or multiple cases.
- **Ops Manager Aggregated Tasks:** Displays the dynamic tasks in a solution for the Ops Manager, in an aggregated manner. The Ops Manager can re-assign tasks or review the tasks of the solution using this view.
- **Ops Manager Dashboard:** Displays the charts, reports and tables that indicate the status of work and business outcomes.
- **Ops Manager Tasks:** Displays all the dynamic tasks in a solution for the Ops Manager. Every task is displayed as a separate record.
- **Ops Manager Work Allocation:** Displays the dynamic tasks in a solution for the Ops Manager in a board display. This board enables the Ops Manager to view and allocate/re-allocate work to teams.
- **Team Leader Dashboard:** Displays the charts, reports and tables that indicate the status of the team's work and performance.
- **Team Leader Tasks:** Displays the tasks of the all team members for the Team Leader. Enables managers to perform management actions such as re-assign tasks by employee or role.
- **Team Leader Work Allocation:** Displays the dynamic tasks of the all team members for the Team Leader in a board display. This board enables the Team Leader to view and assign/re-assign tasks to team members.
- **Team Member Tasks:** Displays the dynamic tasks of a team member.

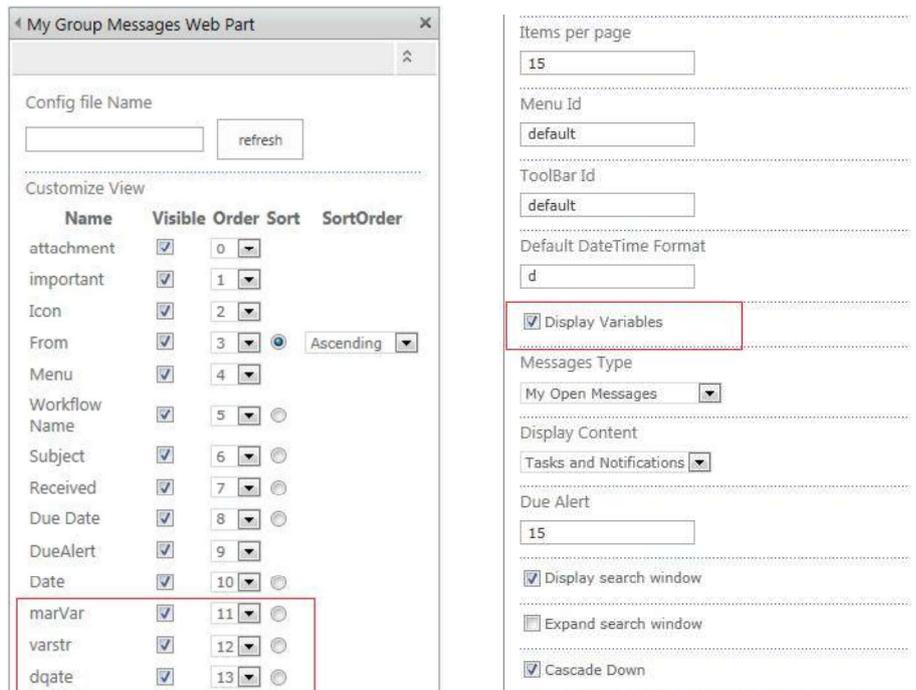
## Web Part Editor

The Web Part editor enables users/administrators to edit an instance of a Web Part (users must have appropriate permissions to do so). This editor gives users quick control over which columns are displayed in the instance of the grid web part.

To open the web part editor, select the drop-down menu at the top right corner of the web part, and select Edit Web Part:



### Selecting Edit Web Part



### Web Part Editor

Now you can define the display of the web part instance. Each web part has some shared options and some options which are specific to that web part.

For example, the following options are available for the Messages web part:

- **Visible:** Set if a specific column is visible.
- **Order:** Set the order of columns displayed.
- **Sort:** Sort the grid records according to the selected column.
- **Sort Order:** For each column, you can select if the column is sorted in Ascending or Descending order.

- **Variables:** Control which variables are visible/hidden as columns (variables are defined in the App Studio per workflow).
  - **Items per page:** Define the number of items displayed per page of the grid.
  - **Menu/Toolbar Id:** Set which menu or toolbar to use (if you defined a custom menu/toolbar in the code – see below).
  - **Display Variables:** Set if to display variables at all in this web part instance.
  - **Default DateTime Format:** Define the datetime format. This can be entered in standard datetime format, or according to the formats show on [this page](#).
  - **Stop Light:** Display an icon (red/yellow) if a task is approaching/reached its due date.
  - **Display Content:** Filter the displayed records according to a specific type (e.g. only show Notifications).
  - **Messages Type:** Select which type of records to view (e.g. My Open Messages).
  - **Due Alert:** Enter the number of days before the due date after which to display the Orange (almost due) icon.
  - **Display search window:** Display the search window above the grid.
  - **Allow Moving to Closed:** Enable users to move the item to closed (e.g. move an Open Message to Closed Messages).
  - **Expand Search Window:** Display the search window with expanded options.
- ...and additional native SharePoint Layout and Appearance options for web parts.

The Processes Grid Edit Web Part includes these additional options:

- **Display Monitoring Link:** Include a link to each process's monitoring page.
- **Specify Monitoring Page URL:** Define a customized URL as the monitoring page.
- **Workflow Space:** Display only processes of a specific Workflow Space.
- **Monitoring Pages URL:** Define specific monitoring URLs per for each workflow space.

**Processes Grid Web Part**

For example, in this Messages web part, we have made the Due Date column visible, and set dates to display in Long Date ('D') format:

	From	Workflow Name	Subject	Received ^	Due Date	Custom Column
<input type="checkbox"/>	System Administrator	sendOverdueMsg ...	overdue yesterday	Thursday, July 11, 2013	Wednesday, July 10, 2013	29
<input type="checkbox"/>	System Administrator	sendOverdueMsg ...	overdue today	Thursday, July 11, 2013	Thursday, July 11, 2013	30
<input type="checkbox"/>	System Administrator	sendOverdueMsg ...	overdue in 5 days	Thursday, July 11, 2013	Thursday, July 18, 2013	31
<input type="checkbox"/>	System Administrator	sendOverdueMsg ...	overdue yesterday	Thursday, July 11, 2013	Wednesday, July 10, 2013	32
<input type="checkbox"/>	System Administrator	sendOverdueMsg ...	overdue today	Thursday, July 11, 2013	Thursday, July 11, 2013	33

### Simple Edits

## Form Viewer Web Part – Additional Notes

The Form Viewer web part displays a Form from any workflow which has been designed in the UX Studio. This may be useful, for example, if you require Flowtime users to view specific information on a regular basis.

Forms are for viewing only (not for user input) and do not support CRUD operations. The embedded Form does not have a workflow/activity instance.

When you add a Form Viewer web part, in the web part editor, in the **Form Path** field, select the path to the Form you wish to display.

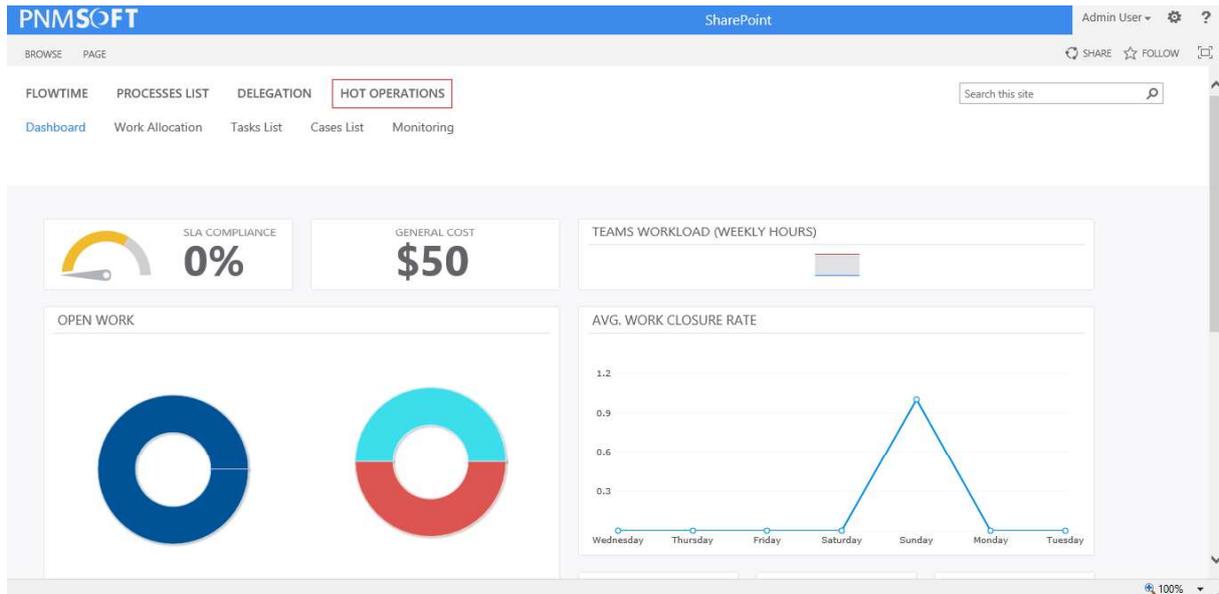
The Form Viewer web part is available from v7.10.

## Configuring the HotOperations Portal

APPLIES TO: SEQUENCE 8.X WITH HOTOPERATIONS LICENSE

HotOperations is a Case Management and Work Allocation product which can be added to Sequence 8.x, with a separate license. HotOperations includes an additional portal within Flowtime which enables teams to manage high volumes of work and allocate work optimally between teams and users.

Installations that include HotOperations have an additional **HOT OPERATIONS** link in the Flowtime top menu, which leads to the HotOperations portal.



**HotOperations Portal**

The portal includes several screens. These screens appear differently for the three types of roles who use HotOperations:

- Ops Managers
- Team Leaders
- Team Members

The Ops Manager and Team Leader portals are similar, and include the following screens:

- Dashboard
- Work Allocation
- Cases/Tasks Lists

The Team Members portal includes only that team member's Tasks/Cases list.

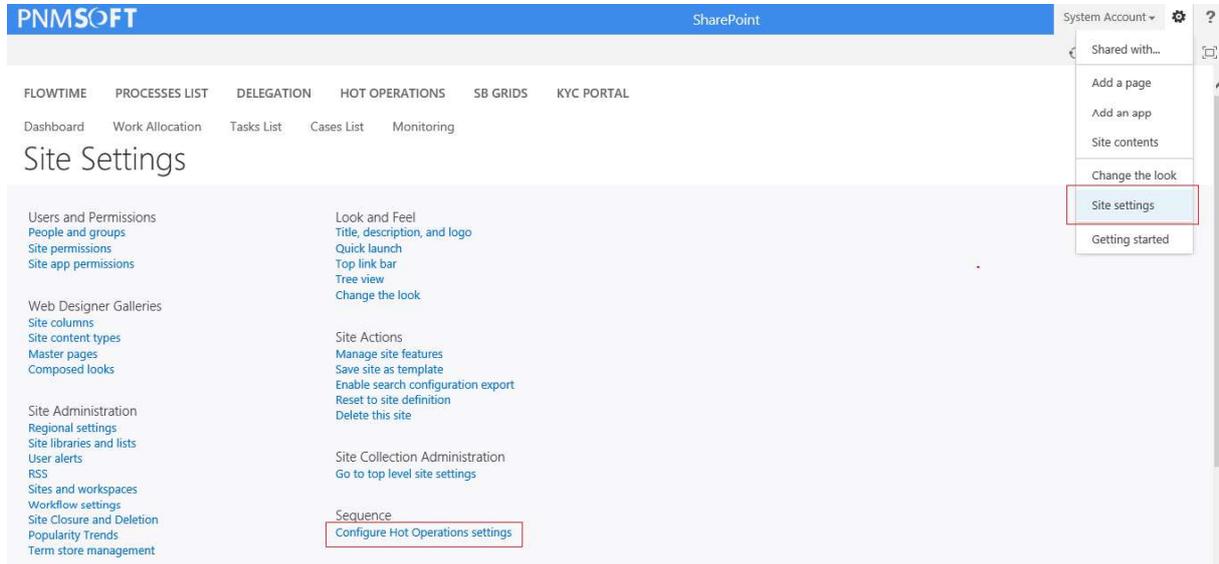
[Click here](#) to view HotOperations portal screenshots and more information on how each screen is used by each role.

You can quickly customize the HotOperations portal to meet your organization's requirements. The sections below explain how to do this.

## Editing HotOperations Portal Settings

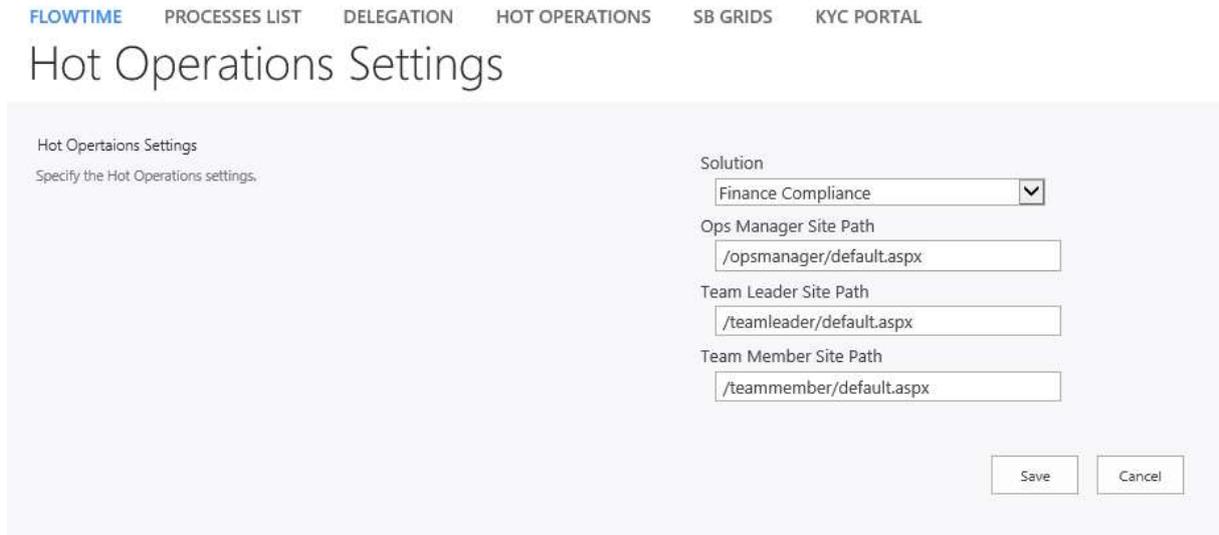
For portal-wide changes, you can edit the HotOperations Portal general settings.

Select **Site settings > Configure Hot Operations settings**:



### HotOperations Settings

The *HotOperations Settings* screen appears:



### HotOperations Settings

In this screen, you can set the following:

- **Solution:** From the dropdown list, select which solution will be connected to this HotOperations portal. Selecting a different solution will change all the portal web parts to show the data of the new solution, unless they have been specifically set to another solution (which overrides the general settings).
- **Ops Manager Site Path:** enter the path to the Ops Manager site. This path can be used by Ops Managers to access their portal.

- **Team Leader Site Path:** Same as above, but for team leaders.
- **Team Member Site Path:** Same as above, but for team members.

You can make additional changes to site elements such as editing the top menu links, using SharePoint's built-in features, in the Site Settings screen (e.g. **Site settings > Top link bar**).

## Customizing HotOperations Pages

You can make customizations to each HotOperations page for each user role, to meet your specific solution's requirements.

Each HotOperations page includes several web parts, which can be added/removed, moved or edited, similar to any SharePoint page web part.

You can add additional HotOperations web parts to pages from the **Add Web Part** menu, **Flowtime HotOperations** folder. These are listed in the Flowtime with HotOperations web parts section above.

*Note: Web parts that have not been customized will retrieve their Solution from the Site Settings.*

## Dashboard Web Part

The Dashboard web part includes charts that display solution data.

### To edit the Dashboard web part:

1. From the top menu, select **Page > Edit Page**.
2. Click the web part you would like to edit and select **Edit Web Part**.

The Web Part editor appears:

The screenshot displays the 'Web Part Editor' for a 'Dashboard' web part. The main editor area shows a preview of the dashboard with the following data:

- SLA COMPLIANCE:** 100%
- GENERAL COST:** \$153,400
- TEAMS WORKLOAD (WEEKLY HOURS):** A bar chart showing workload for four teams.
- OPEN WORK:** A donut chart showing 'Allocated' (blue) and 'UnAllocated' (pink) work.

The configuration panel on the right includes the following settings:

- Solution:** [Dropdown menu]
- Mode:** Auto
- Data Stream Name:** HotOperations/OpsMana
- Layout Name:** Default
- Theme:** Default
- Appearance:**
  - Title:** Dashboard
  - Height:** Should the Web Part have a fixed height? (Selected: No. Adjust height to fit zone.)
  - Width:** Should the Web Part have a fixed width? (Selected: No. Adjust width to fit zone.)
  - Chrome State:** Normal

### Editing a Dashboard Web Part

3. Edit the web part's options as you would any SharePoint web part. In addition to general options, you can edit several specific HotOperations options:
  - **Solution:** Select the HotOperations Solution whose data will be displayed in the Dashboard's charts. If no Solution is selected, the Solution that is set in HotOperations Site Settings will be displayed.
  - **Mode:** Controls the display behavior of the web part. The options are:
    - **Auto** – the dashboard grid is responsive.
    - **Fixed** – the dashboard grid has a fixed size.  
In Default theme, it is 12 columns \* 100px (column width) = 1200px  
In Compact theme, it is 12 columns \* 70px (column width) = 840px
    - **Fluid** – the dashboard grid column width is in percentages.
  - **Data Stream:** the path to the Sequence folder which includes data files for the Solution. Changes to this field should only be made by advanced designers.
  - **Layout Name:** This is an advanced option which depends on the Data Stream. For the HotOperations\OpsManagerDashboard there are two layouts:
    - Default – used in the Ops Manager dashboard
    - Board – used in the Ops Manager board (small charts above the board)
  - **Theme:** There are two available themes:
    - Default – a full view, used in the Dashboard page.
    - Compact – a compact view, used in the Ops Manager board.

## Work Allocation Web Part

The Work Allocation web part includes a large widget which enables Ops Managers and Team Leaders to allocate work to their team(s). Edit this web part as described above.

This web part has the following additional HotOperations option:

- **Solution:** Select the HotOperations Solution whose tasks/cases will be displayed in the work allocation widget. If no Solution is selected, the Solution that is set in HotOperations Site Settings will be displayed.

The screenshot shows the 'Ops Manager Work Allocation' web part configuration. The main view displays a dashboard with 'UNALLOCATED WORK' and 'ALLOCATED WORK BY TEAMS' sections. The 'UNALLOCATED WORK' section lists items with Risk Rating, Reviewer, and Classification. The 'ALLOCATED WORK BY TEAMS' section shows work items assigned to teams like 'Atlanta Hub' and 'Atlanta Hub/Off Shore Delivery Ce...'. A configuration panel on the right allows editing the web part's appearance, including title, height, width, and chrome state.

Editing a Work Allocation Web Part

## Cases/Tasks List Web Part

The Cases/Tasks List web part includes a list of cases/tasks. Ops Managers and Team Leaders can allocate cases/tasks to teams/team members. Team members can action cases/tasks. Edit this web part as described above.

Cases List

Cases List: Open ...

Change Properties    Reallocate    Set as important    Remove importance flag   

<input type="checkbox"/>	Case Id	Case Owner	Case Created	Last Updated	Team	Case Stage
<input type="checkbox"/>	194176	Orna Kahil	... 5/16/2016	5/29/2016	EMEA Delivery Center	Traigned
<input type="checkbox"/>	194177	Orna Kahil	... 5/16/2016	5/29/2016		Traigned
<input checked="" type="checkbox"/>	194178	Orna Kahil	... 5/16/2016	5/29/2016		Created
<input type="checkbox"/>	194200	Orna Kahil	... 5/18/2016	5/29/2016	HUB 1	Financial Check
<input type="checkbox"/>	194201	Orna Kahil	... 5/18/2016	5/18/2016	US Delivery Center	Financial Check
<input type="checkbox"/>	194202	Orna Kahil	... 5/18/2016	5/18/2016	EMEA Delivery Center	Financial Check
<input checked="" type="checkbox"/>	194203	Orna Kahil	... 5/18/2016	5/18/2016	US Delivery Center	Financial Check
<input type="checkbox"/>	194204	Orna Kahil	... 5/18/2016	5/18/2016	WEST EUROPE Delivery Center	Review
<input type="checkbox"/>	194222	Inbal Shaul	... 5/19/2016	5/29/2016	US Delivery Center	Traigned

### Cases List Web Part

This web part has the following additional HotOperations options:

- **Solution:** Select the HotOperations Solution whose tasks/cases will be displayed in the Cases/Tasks list. If no Solution is selected, the Solution that is set in HotOperations General Settings will be displayed.
- **Type:** The type of tasks/cases to display (Allocated Tasks, Unallocated Tasks, etc.).

In addition, this web part includes general Flowtime grid settings which enable you to modify the grid columns, sort order, etc. as described in the Web Part Editor section above.

Config file Name:  refresh

Customize View

Name	Visible	Order	Sort	Sort Order
Importance	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	Ascending
Case Id	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	
Case Owner	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	Ascending
Due Date	<input checked="" type="checkbox"/>	10	<input type="checkbox"/>	
Menu	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	
Case Created	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	Descending
Last Updated	<input checked="" type="checkbox"/>	5	<input type="checkbox"/>	
Team	<input checked="" type="checkbox"/>	6	<input type="checkbox"/>	
Case Stage	<input checked="" type="checkbox"/>	7	<input type="checkbox"/>	
Case Status	<input checked="" type="checkbox"/>	8	<input type="checkbox"/>	
Title	<input checked="" type="checkbox"/>	9	<input type="checkbox"/>	
Effort	<input checked="" type="checkbox"/>	11	<input type="checkbox"/>	
Mortgage Type	<input checked="" type="checkbox"/>	12	<input type="checkbox"/>	

Items per page:

Menu Id:

ToolBar Id:

Default DateTime Format:

Display Variables

Exportable

Users can filter

Solution:

Type:

Editing a Tasks/Cases Grid Web Part

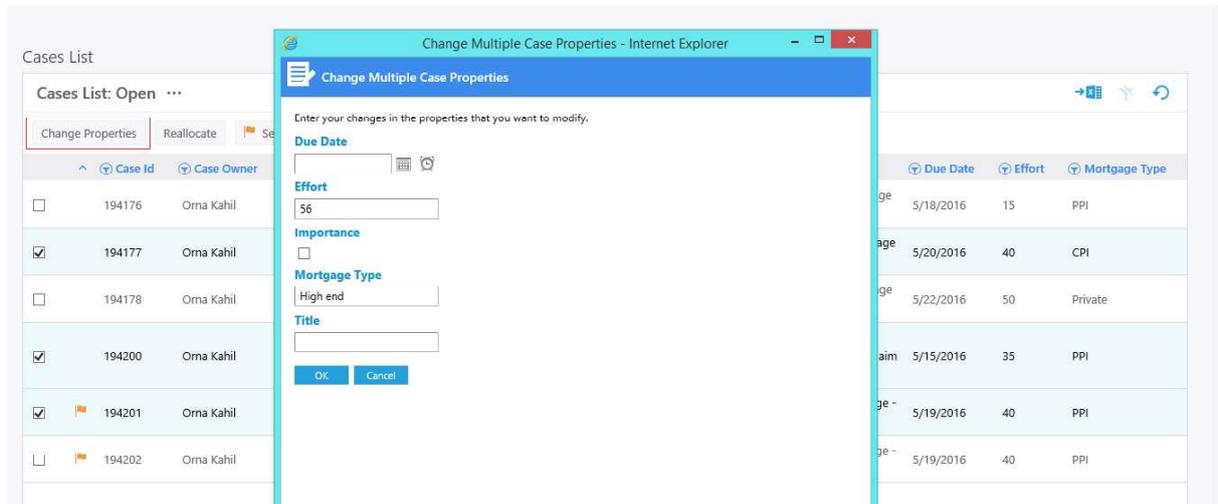
## Multiple Sort

The Cases/Tasks List web part enables sorting by multiple columns. In the Web Part editor, you can select to sort by one or more columns, and select if the sort will be **Ascending** or **Descending** (see the screenshot above for an example).

If more than one column is selected, the sort is performed in the order in which the columns are displayed in the editor. The order can be further customized by editing the config files (see below).

## Change Multiple Case Properties

Users can select multiple cases in this grid and then select **Change Properties**. The *Edit Multiple Case Properties* form appears which enables them to edit multiple case properties at once.



**Change Multiple Case Properties**

You can customize this form by creating your own view. To do this, follow these steps:

1. Create a form activity in the Master Workflow. It must be called **GeneralViews**.
2. In this activity, add a view and name it **EditCasePropertiesView**.
3. (Optional) Add combos and read-only grids where needed.
4. Make sure the ID of the fields is the name of the variables.

## HotOperations Config Files

You can achieve advanced customization of the HotOperations portal by editing the HotOperations config files. There is a config file for each HotOperations web part:

- AggregatedHotCasesServiceMetadata.config
- HotCasesServiceMetadata.config
- OpsManagerAggregatedTasksServiceMetadata.config
- OpsManagerTasksServiceMetadata.config
- TeamLeaderTasksServiceMetadata.config
- TeamMemberTasksServiceMetadata.config

For example, you can determine the sorting behavior of columns in HotOperations grids, by editing the DataBound column fields in these files:

```
<DataBoundcolumn
  DataType="System.String"
  DataField="CaseStage"
  Name="CaseStage"
  Caption="Resx(CaseStage)" />
<DataBoundcolumn
  DataType="System.String"
  DataField="CaseStatus"
  Name="CaseStatus"
  Caption="Resx(CaseStatus)" />
<workflowvariablescolumns >
  <ColumnTemplates>
    <VariableDataBoundViewColumn
      DataField="scmCaseImportance"
      ShowCaption="false"
      Filterable="false"
      Order="1"
      Sort="true"
      SortDirection="Descending"
      SortOrder="1"
      Template="&lt;span class='k-grid-flag-column' #if(data.scmCaseImportance){# isFlag='true' #}# /&gt;" />
    <VariableDataBoundViewColumn
      DataField="scmCaseDueDate"
      Order="4"
      Sort="true"
      SortDirection="Ascending"
      SortOrder="2"/>
  </ColumnTemplates>
</workflowvariablescolumns>
</Columns>
```

#### Editing Sort Behavior in Config File

In the example above, we have set that the Cases List grid will be sorted first by the Importance field (Descending) and then by the Due Date (Ascending). The sort order is determined by the numeric value of the SortOrder field. The Order field determines the order of appearance in the grid.

## Advanced Customisation Using Configuration Files

Sequence SP4 (v.7.4 and above) includes a updated Flowtime. This Flowtime edition gives Administrators and Developers much greater flexibility to customize the user interface than ever before. Now Administrators and Developers have much more control over both the web parts themselves and their instances.

*Note: You should only perform the following configurations if you are an advanced developer/administrator with previous experience with Sequence.*

You can edit each web part's structure and functionality in the Flowtime configuration files.

### To access the Flowtime configuration files:

1. Navigate to `C:\Program Files\PNMsoft\Shared Resources\Components\Flowtime\Config`. (You can edit these files in Notepad, Notepad++, Visual Studio or an appropriate editor).

### Services.config

This file includes the services which define how data is imported into the Flowtime web parts. If necessary for your solution, you can write your own services instead of using the existing services.

```

1 <?xml version="1.0"?>
2
3 <configuration>
4   <configSections>
5     <sectionGroup name="ft">
6       <section name="MessagesService" type="PNMsoft.Sequence.Runtime.Rest.Configuration.ServiceConfigurationSection,
7         <section name="BusinessProcessesService" type="PNMsoft.Sequence.Runtime.Rest.Configuration.ServiceConfiguratio
8         <section name="UserInstancesService" type="PNMsoft.Sequence.Runtime.Rest.Configuration.ServiceConfigurationSec
9         <section name="ProcessInstancesService" type="PNMsoft.Sequence.Runtime.Rest.Configuration.ServiceConfiguration
10        <section name="GroupMessagesService" type="PNMsoft.Sequence.Runtime.Rest.Configuration.ServiceConfigurationSec
11        <section name="DelegationService" type="PNMsoft.Sequence.Runtime.Rest.Configuration.ServiceConfigurationSectio
12      </sectionGroup>
13    </configSections>
14
15    <ft>
16
17      <MessagesService
18        ServiceType="PNMsoft.Sequence.Runtime.Rest.Messages.UserMessagesService, PNMsoft.Sequence.Runtime.Rest, Versio
19        ServiceMetadata="~/shared resources/Components/Flowtime/config/ServiceMetadata/MessagesServiceMetadata.config"
20      </MessagesService>
21
22      <GroupMessagesService
23        ServiceType="PNMsoft.Sequence.Runtime.Rest.Messages.GroupMessagesService, PNMsoft.Sequence.Runtime.Rest, Versio
24        ServiceMetadata="~/shared resources/Components/Flowtime/config/ServiceMetadata/GroupMessagesServiceMetadata.con
25      </GroupMessagesService>
26
27      <BusinessProcessesService
28        ServiceType="PNMsoft.Sequence.Runtime.Rest.Processes.ProcessesService, PNMsoft.Sequence.Runtime.Rest, Versio
29        ServiceMetadata="~/shared resources/Components/Flowtime/config/ServiceMetadata/ProcessesServiceMetadata.conf
30      </BusinessProcessesService>
31
32      <UserInstancesService
  
```

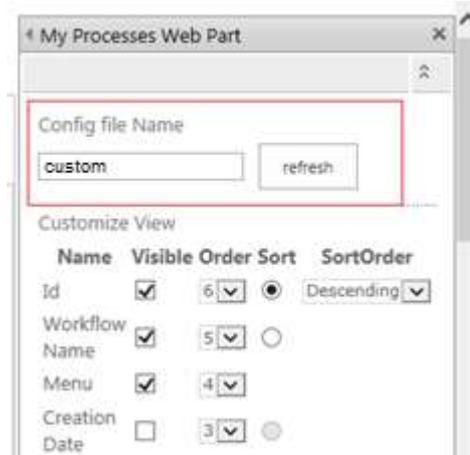
Service.config

To create your own service(s), you must copy Service.config and change its name (e.g. 'service.custom.config'). Then, make your changes on this copy (so as not to change the default file).

For example, to define custom functionality for the Message Service, in service.custom.config you can edit the Message Service block (see in the image above), changing its:

- **ServiceType:** the Type of the service. (To customize, you must replace the full type).
- **ServiceMetadata:** a link to the metadata configuration file which this service uses. You can edit this link to point to a custom file which you created – see below for more info on customising the ServiceMetadata file.

To activate your customized service.config file for a particular web part instance, in the Flowtime Web Part Editor, select the file you created in the Config file Name field:



Config File Name Selection

*Note: if no file is selected, the default service.config file is used.*

## Filtering Web Parts using service.config

You can filter a web part using the service config file (from v8.2 and higher).

Here is an example, where we filter a web part by its 'DueDate' and 'From' column values:

```
<?xml version="1.0" encoding="utf-8"?>
<ServiceMetadata>
  <Commands Name="MessagesServiceMetadata"
  Id="sq.ui.commands.ft.messages"></Commands>
  <ViewDataDefinition>
    <Columns>
      <CustomColumn Name="Attachment" Width="25px" Template="&lt;span
class='k-grid-attachment-column' #if(data.HasAttachment){#
hasAttachment='true' #}# /&gt;"/>
      <CustomColumn Name="Important" Width="25px" Template="&lt;span
class='k-grid-important-column' #if(data.Importance == 1){#
isImportant='true' #}# /&gt;"/>
      <IconColumn/>
      <DataBoundColumn DataType="System.Int64" DataField="Id" Name="Id"
Visible="false"/>
      <MenuColumn/>
      <DataBoundcolumn DataType="System.String" DataField="From" Name="From"
Caption="Resx(From)"/>
    </Columns>
  </ViewDataDefinition>
</ServiceMetadata>
```

```

    <DataBoundcolumn DataType="System.String" DataField="Subject"
Name="Subject" Caption="Resx(Subject)"/>
    <DataBoundcolumn DataType="System.DateTime" DataField="Received"
Name="Received" Caption="Resx(Received)"/>
    <DataBoundcolumn DataType="System.DateTime" DataField="DueDate"
Name="DueDate" Caption="Resx(DueDate)"/>
    <DataBoundcolumn DataType="System.DateTime" DataField="ReminderDate"
Name="ReminderDate" Format="g" Caption="Resx(ReminderDate)" Visible="true"/>
    <DataBoundcolumn DataType="System.String" DataField="WorkflowName"
Name="WorkflowName" Caption="Resx(WorkflowName)" />
    <DataBoundcolumn DataType="System.String" DataField="Stage"
Name="Stage" Caption="Resx(Stage)" Visible="true" />
    <DataBoundcolumn DataType="System.String" DataField="To" Name="To"
Visible="false" Caption="Resx(To)"/>
    <DataBoundcolumn DataType="System.Int64"
DataField="WorkflowInstanceId" Name="WorkflowInstanceId" Visible="false"/>
    <DataBoundcolumn DataType="System.Int64"
DataField="ActivityInstanceId" Name="ActivityInstanceId" Visible="false"/>
    <CustomColumn Name="DueAlert" Width="25px" Template="&lt;span
class='k-grid-duealert-column' /&gt;"/>
    <DataBoundcolumn DataType="System.Int32" DataField="ReminderId"
Name="ReminderId" Visible="false"/>
    <globalvariablescolumns/>
    <DataBoundcolumn DataType="System.DateTime" DataField="CompletionDate"
Name="CompletionDate" Visible="false"/>
    <DataBoundcolumn DataType="System.Boolean" DataField="ReadOrNew"
Name="ReadOrNew" Visible="false"/>
    <DataBoundcolumn DataType="System.Int32" DataField="MessageType"
Name="MessageType" Visible="false"/>
    <DataBoundcolumn DataType="System.Guid"
DataField="fldMessageBehaviorType" Name="MessageBehaviorType"
Visible="false"/>
    <DataBoundcolumn DataType="System.Int32" DataField="Importance"
Name="Importance" Visible="false"/>
    <DataBoundcolumn DataType="System.Boolean" DataField="hasAttachment"
Name="HasAttachment" Visible="false"/>
    <DataBoundcolumn DataType="System.String" DataField="CustomUrl"
Name="CustomUrl" Visible="false"/>
    <DataBoundcolumn DataType="System.String" DataField="CustomIcon"
Name="CustomIcon" Visible="false"/>
    <DataBoundcolumn DataType="System.Guid" DataField="CustomType"
Name="CustomType" Visible="false"/>
    <DataBoundcolumn DataType="System.Guid" DataField="WorkflowTemplateId"
Name="WorkflowId" Visible="false"/>

```

```

    <CalculatedColumn DataType="System.Int32" Name="QueueType"
    Calculator="PNMsoft.Sequence.Flowtime.Services.Views.Messages.QueueTypeColumn, PNMsoft.Sequence.Flowtime.Services, Version=8.0.0.0, Culture=neutral, PublicKeyToken=0a1a1b90c1c5dca1" Visible="false"/>
    <CalculatedColumn DataType="System.Boolean" Name="OverDue"
    Calculator="PNMsoft.Sequence.Flowtime.Services.Views.Messages.OverDueColumn, PNMsoft.Sequence.Flowtime.Services, Version=8.0.0.0, Culture=neutral, PublicKeyToken=0a1a1b90c1c5dca1" Visible="false"/>
    <CalculatedColumn DataType="System.Boolean" Name="DueToday"
    Calculator="PNMsoft.Sequence.Flowtime.Services.Views.Messages.DueTodayColumn, PNMsoft.Sequence.Flowtime.Services, Version=8.0.0.0, Culture=neutral, PublicKeyToken=0a1a1b90c1c5dca1" Visible="false"/>
  </Columns>
  <ColumnsFilter>
    <FilterExpression>
      <Conditions>
        <ConditionExpression>
          <Field>WorkflowName</Field>
          <Operator>Equal</Operator>
          <Values>
            <Value DataType="System.String">Workflow A</Value>
          </Values>
        </ConditionExpression>
      </Conditions>
    </FilterExpression>
  </ColumnsFilter>
</ViewDataDefinition>
</ServiceMetadata>

```

Filter Operators:

- Or
- And

Condition Operator:

- Equal
- NotEqual
- LessThan
- LessEqual
- GreaterThan
- GreaterEqual
- Like

- NotLike
- BeginsWith
- DoesNotBeginWith
- EndsWith
- DoesNotEndWith
- On
- NotOn
- OnOrAfter
- After
- OnOrBefore
- Before
- Today
- Yesterday

## ServiceMetadata

The ServiceMetadata files define the metadata of the service, i.e. which columns and commands will be available for it. Remember that there is a link from Services.config to this file from each service – see above.

There is a ServiceMetadata file for each grid web part in Flowtime. The image below shows the ServiceMetadata file for the Messages grid:

```
1 <?xml version="1.0" encoding="utf-8" ?>
2 <ServiceMetadata>
3   <Commands Name="MessagesServiceMetadata" Id="sq.ui.commands.ft.messages"></Comm
4   <ViewDataDefinition>
5   <Columns>
6     <CustomColumn Name="attachment" />
7     <CustomColumn Name="important" />
8     <IconColumn />
9     <DataBoundColumn
10      DataType="System.Int32"
11      DataField="Id"
12      Name="Id"
13      Visible="false"/>
14     <DataBoundcolumn
15      DataType="System.String"
16      DataField="From"
17      Name="From"
18      Caption="Resx(From)" />
19     <DataBoundcolumn
20      DataType="System.String"
21      DataField="To"
22      Name="To"
23      Visible="false"
24      Caption="Resx(To)" />
25     <MenuColumn />
26     <DataBoundcolumn
27      DataType="System.String"
28      DataField="WorkflowName"
29      Name="WorkflowName"
30      Caption="Resx(WorkflowName)" />
31     <DataBoundcolumn
32      DataType="System.String"
33      DataField="Subject"
```

A ServiceMetadata File

## DataBoundColumns

This file contains a **DataBoundColumns** block for each column in the grid.

This block contains the following fields:

- **DataType:** the data type of the column (e.g. System.String).
- **DataField:** the name of the field in the database which is the source of this column's data. If you add a new column, you must ensure that this field exists in the database.
- **Name:** the name of the column.
- **Visible:** if set to false, this column will not appear in the Web Part Editor (such that it cannot be displayed in Flowtime).
- **Caption:** the display name of the column in the Flowtime grid. This is generally taken from the Resx file. E.g. Caption="Resx(From)".

- **Format:** you can define a different format for each column. E.g. for a Datetime column, you can define a different datetime format (see **Default DateTime Format** above).

You can add new columns or edit existing columns to a grid web part by adding or editing the DataBoundColumns blocks, thereby customising the web part.

**For example**, you could create a new column based on a new database field such as 'Rank' and make it visible = True. Then, the 'Rank' column would be available for display in that grid in Flowtime, and would appear in its Web Part Editor.

*Note: In general, it is advisable to create a copy of the existing ServiceMetadata file, and make your changes on the copy. Then in the Services.config file (or in its copy) you can point the Service to the customized ServiceMetadata file.*

## MenuColumn

In addition to the DataBoundColumn block, you can also add a **MenuColumn** block, which includes the grid's edit menu as one of the columns (see this block in the image above and in Flowtime displayed as '...' in the image below).

## IconColumn

The **IconColumn** block defines the icon column of the grid (see images above and below).

	From	Workflow Name	Subject	Received
<input type="checkbox"/>	System Administrator	_Marina	System Administrator answered your question 'dsd'   _Marina #45 :	7/14/2013
<input type="checkbox"/>	Alan Jackson	sendOverdueMsg	overdue in 5 days	7/11/2013
<input type="checkbox"/>	Alan Jackson	sendOverdueMsg	overdue today	7/11/2013
<input type="checkbox"/>	Alan Jackson	sendOverdueMsg	overdue yesterday	7/11/2013
<input type="checkbox"/>	System Administrator	sendOverdueMsg	sendOverdueMsg #40 has been rolled back.	7/11/2013

Icon, Menu Columns

## CustomColumn

The **CustomColumn** block defines custom columns, such as the exclamation mark (for important records), the due alert icon, the attachment icon. Their functionality is controlled by JavaScript files. Do not edit these files. If required, you can replace the custom columns with your custom functionality.

## GlobalVariablesColumns

The **GlobalVariablesColumns** block loads all the global variables to the Web Part Editor.

```

MessagesServiceMetadata.config
37      DataType="System.DateTime"
38      DataField="Received"
39      Name="Received"
40      Caption="Resx(Received)" />
41    <DataBoundcolumn
42      DataType="System.Int32"
43      DataField="ActivityInstanceId"
44      Name="ActivityInstanceId"
45      Visible="false"/>
46    <DataBoundcolumn
47      DataType="System.DateTime"
48      DataField="DueDate"
49      Name="DueDate"
50      Caption="Resx(DueDate)" />
51    <customcolumn Name="DueAlert" />
52    <GlobalVariablesColumns />
53    <DataBoundcolumn
54      DataType="System.DateTime"
55      DataField="CompletionDate"
56      Name="CompletionDate"
57      Visible="false" />
58    <DataBoundcolumn
59      DataType="System.Boolean"
60      DataField="ReadOrNew"
61      Name="ReadOrNew"
62      Visible="false" />

```

**GlobalVariablesColumns**

*Note: In the Processes Grid web part, instead of globalvariablescolumn, there is the workflowvariablescolumns.*

**Customizing Variables Display**

You can add an additional ColumnTemplates block to customize how variables are displayed as grid columns. You can using this block to set options such as the order they are displayed, their template, etc.

Here is an example:

```

<workflowvariablescolumns >
  <ColumnTemplates>
    <VariableDataBoundViewColumn
      DataField="scmCaseImportance"
      ShowCaption="false"
      Filterable="false"
      Order="1"
      Sort="true"
      SortDirection="Descending"
      SortOrder="1"
      Template="&lt;span class='k-grid-flag-column'
      #if(data.scmCaseImportance){# isFlag='true' #}# /&gt;" />
    </ColumnTemplates>
  </workflowvariablescolumns>

```

If no such block is added, the variables are displayed in grid columns using default settings.

## CalculatedColumn

The **CalculatedColumn** block enables you to add a new column that is based on a calculation performed on existing data (e.g. a 'Due Today' column, showing if the task is due today).

To add such a column, you would need to reference/create an assembly class (which you must add to the GAC) which performs the calculation. You must also add a reference to the assembly `PNMsoft.Sequence.Runtime.Rest.dll` in order to use the `ICalculatedColumn` class.

```

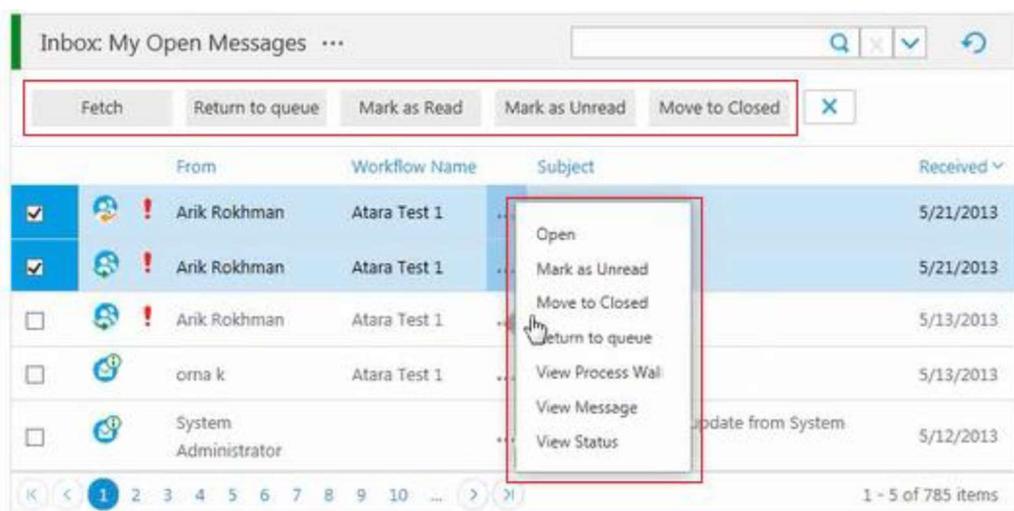
100     DataField="WorkflowTemplateId"
101     Name="WorkflowTemplateId"
102     Visible="false" />
103     <CalculatedColumn
104         DataType="System.Boolean"
105         Name="OverDue"
106         Calculator="PNMsoft.Sequence.Runtime.Rest.Views.Messages.OverDueColumn, PNMsoft.S
107         Visible="false"/>
108     <CalculatedColumn
109         DataType="System.Boolean"
110         Name="DueToday"
111         Calculator="PNMsoft.Sequence.Runtime.Rest.Views.Messages.DueTodayColumn, PNMsoft.:
112         Visible="false"/>
113     <CalculatedColumn
114         DataType="System.Int32"
115         Name="QueueType"
116         Calculator="PNMsoft.Sequence.Runtime.Rest.Views.Messages.QueueTypeColumn, PNMsoft
117         Visible="false"/>
118
119     </Columns>
120 </ViewDataDefinition>
121 </ServiceMetadata>

```

### CalculatedColumn

## Commands

Flowtime grids include commands which are available from a toolbar and from the grid's edit menu:



### Grid Commands

You can define which commands are available for each grid, by editing the **Commands Name** block in the `ServiceMetadata` file, and editing/creating copies of the config files in the `Commands` folder (see image below). You can add, remove and create new commands as necessary for your solution.

You must add command config files to the *Commands* folder (otherwise they will not be recognized). The file name must begin as defined in the Commands Name block in the ServiceMetadata file.

```

MessagesServiceMetadata.config
1 <?xml version="1.0" encoding="utf-8" ?>
2 <ServiceMetadata>
3 <Commands Name="MessagesServiceMetadata" Id="sq.ui.commands.ft.messages"></Com
4 <ViewDataDefinition>
5 <Columns>
6 <CustomColumn Name="attachment" />
7 <CustomColumn Name="important" />
8 <IconColumn />
9 <DataBoundColumn
10 |   DataType="System.Int32"
11 |   DataField="Id"
12 |   Name="Id"
13 |   Visible="false"/>
14 <DataBoundcolumn
15 |   DataType="System.String"
16 |   DataField="From"
17 |   Name="From"
18 |   Caption="Resx (From)" />
19 <DataBoundcolumn
20 |   DataType="System.String"
21 |   DataField="To"
22 |   Name="To"
23 |   Visible="false"
24 |   Caption="Resx (To)" />
25 <MenuColumn />
26 <DataBoundcolumn
27 |   DataType="System.String"
28 |   DataField="WorkflowName"
29 |   Name="WorkflowName"

```

**Commands Name Block**

Here is an example of the Message Grid command config file:

```

MessagesServiceMetadata.config | MessagesServiceMetadata.default.config
208
209 <ContextMenuItem
210 |   Id="ShowStatus"
211 |   Command="ShowStatus"
212 |   CssClass="k-grid-menu-item"
213 |   Text="{ $resources.ViewStatus }">
214 |   <DisplayRules>
215 |     <Rule Value="!(ToGuid($item.WorkflowTemplateId) == Guid.Empty)" />
216 |   </DisplayRules>
217 </ContextMenuItem>
218
219 <ContextMenu Id="default">
220 |   <Items>
221 |     <ControlRef Id="Open" />
222 |     <ControlRef Id="MarkAsRead" />
223 |     <ControlRef Id="MarkAsUnRead" />
224 |     <ControlRef Id="MoveToClose" />
225 |     <ControlRef Id="FetchMessage" />
226 |     <ControlRef Id="ReturnMessage" />
227 |     <ControlRef Id="OpenProcessWall" />
228 |     <ControlRef Id="OpenMessage" />
229 |     <ControlRef Id="ShowStatus" />
230 |   </Items>
231 </ContextMenu>
232
233
234 <ToolBarItem
235 |   Id="FetchMessages"
236 |   Command="FetchMessages"
237 |   CssClass="k-grid-toolbar-item"
238 |   Text="{ $resources.Fetch }">
239 </ToolBarItem>
240

```

**Message Grid Command Config File**

```

MessagesServiceMetadata.config MessagesServiceMetadata.default.config
253 </ToolBarItem>
254
255 <ToolBarItem
256   Id="MarkMessagesAsUnRead"
257   Command="MarkMessagesAsUnRead"
258   CssClass="k-grid-toolbar-item"
259   Text="{resources.MarkAsUnread}">
260 </ToolBarItem>
261
262 <ToolBarItem
263   Id="MoveMessagesToClose"
264   Command="MoveMessagesToClose"
265   CssClass="k-grid-toolbar-item"
266   Text="{resources.MoveToClosed}">
267 </ToolBarItem>
268
269
270 <ToolBar Id="default">
271   <Items>
272     <ControlRef Id="FetchMessages" />
273     <ControlRef Id="ReturnMessages" />
274     <ControlRef Id="MarkMessagesAsRead" />
275     <ControlRef Id="MarkMessagesAsUnRead" />
276     <ControlRef Id="MoveMessagesToClose" />
277   </Items>
278 </ToolBar >
279
280
281
282 </ControlTable>
283
284 </CommandDocument>
285

```

**Command and Toolbar Blocks in the Command Configuration File**

The commands config file has several blocks:

**ContextMenu Id:** this block defines the commands that are displayed from each grid record's ... menu. This block references several ContextMenuItem blocks.

**ContextMenuItem:** this block defines the details and functionality of each menu command.

**ToolBar Id :** this block defines the commands that are displayed from each grid's toolbar. This block references several ToolBarItem blocks.

**ToolBarItem:** this block defines the details and functionality each toolbar command.

You can create/edit/remove the above blocks in order to customize which commands are displayed in a web part instance. In the Web Part Editor, you can then select which block to invoke by setting the Menu Id and Toolbar Id fields.

Due Date  9

DueAlert  0

---

Items per page

---

Menu Id

---

ToolBar Id

---

Default DateTime Format

---

**Menu Id, Toolbar Id in Web Part Editor**

Each **Command/Toolbar Item** block has the following fields:

- **Id:** The Id of the command.
- **Command:** The command function.
- **CssClass:** The css class defining the display of the command.
- **Text:** The command text (is advised to be taken from the resource file).

The commands functions are stored in a **Command Table** block (also in the command config file – see the image below). There are several types of commands in this table:

- **JavaScript**
- **OpenWindow**
- **You can create your own custom command.**  
Note: When you add a JavaScript command, you should place the code in: Shared Resources\Components\Flowtime\js\external.js.  
This will ensure your system stability during upgrades.

A Javascript command is built as follows:

- **Id:** the Id of the command.
- **Function Name:** the name of the JavaScript function in the system.
- **Parameters:** the parameters to pass to the function (you can create an expression).  
For example, for the Menu > Open command, you must pass the Id of the item you have selected, so the value of the parameter is the expression: \$Item.Id.

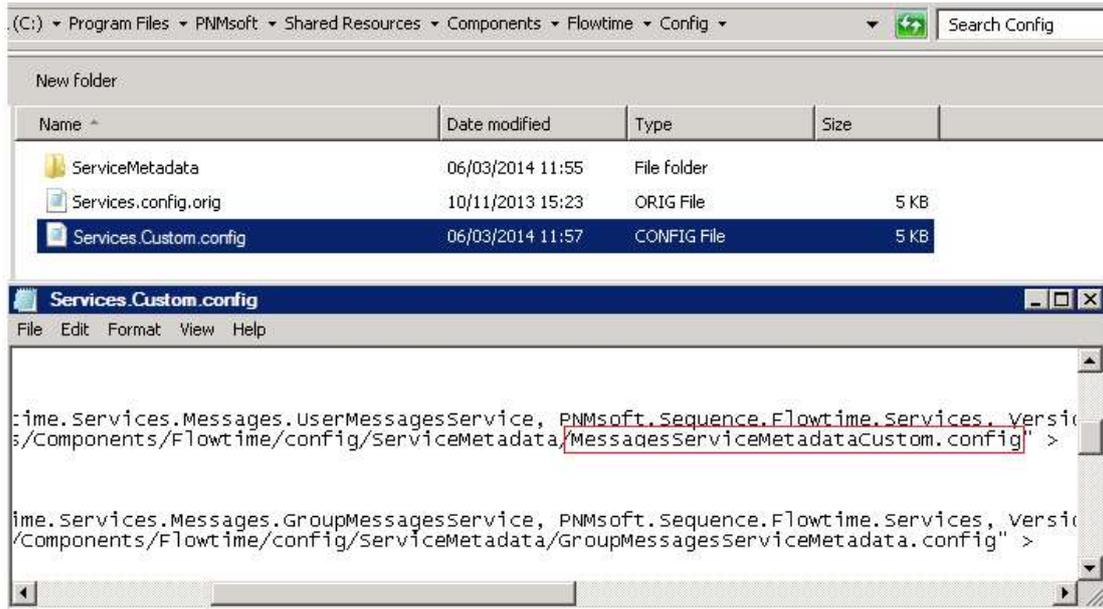
```

1 <?xml version="1.0"?>
2 <CommandDocument xmlns="http://schemas.pnmsoft.com/sequence/2013/01/ui/commands"
3   CommandManagerId="sg.ui.commands.ft.messages">
4
5   <CommandTable>
6
7     <JavaScriptCommand
8       Id="Open"
9       FunctionName="Open">
10      <Parameters>
11        <Parameter Value="{ToInt32($item.Id)}" TypeCode="Int32" />
12      </Parameters>
13    </JavaScriptCommand>
14
15    <JavaScriptCommand
16      Id="MarkAsRead"
17      FunctionName="MarkAsRead">
18      <Parameters>
19        <Parameter Value="{ToInt32($item.Id)}" TypeCode="Int32" />
20      </Parameters>
21    </JavaScriptCommand>
22
23    <JavaScriptCommand
24      Id="MarkAsUnRead"
25      FunctionName="MarkAsUnRead">
26      <Parameters>
27        <Parameter Value="{ToInt32($item.Id)}" TypeCode="Int32" />
28      </Parameters>
29    </JavaScriptCommand>
30
  
```

**Command Functions Table**

## Example of creating a new command:

1. Create a new custom Service.config file, ServiceMetadata file and Comand.config file named as follows:
  - Services.Custom.config
  - MessagesServiceMetadataCustom.config
  - MessagesServiceMetadataCustom.default.config
2. In Services.Custom.config, reference the custom ServiceMetadata file: MessagesServiceMetadataCustom.config.

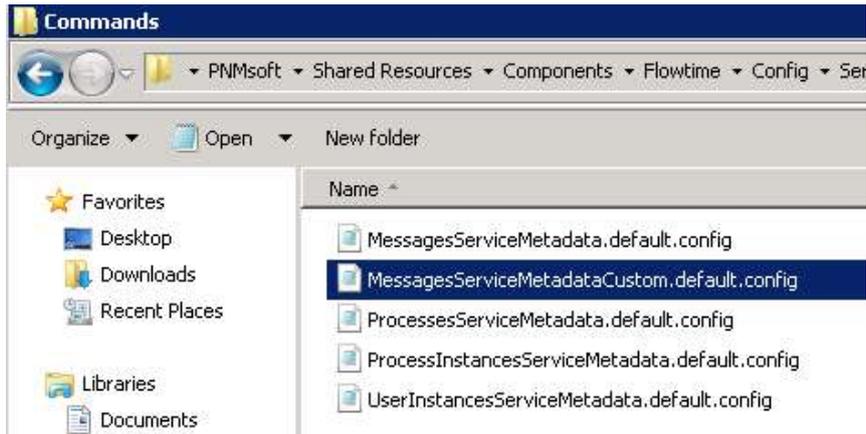


**Services.Custom.config**

3. In MessagesServiceMetadataCustom.config, reference the custom command config file: MessagesServiceMetadataCustom.default.config.

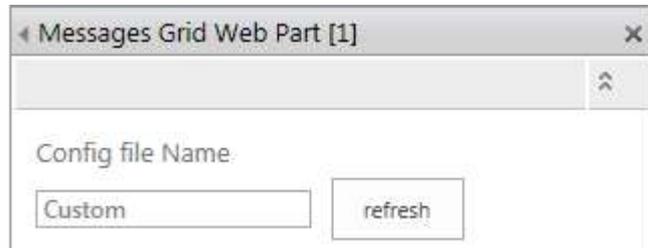


**MessagesServiceMetadataCustom.config**



**MessagesServiceMetadataCustom.default.config**

4. In in the Flowtime webpart, change the Config file name to: Custom. (This references the new custom Services.**Custom.config** file.)



**Config file Name**

5. Click **OK** and refresh the page. The custom messages webpart with the new command should now appear.

## DisplayRules

The **DisplayRules** block (also in the command config file) defines which commands are displayed in which situations according to a set of rules.

For example, the Fetch command should only be displayed for Tasks that can be fetched (queue type = 2) and have not reached their completion date (see image below).

```

152
153
154     <ContextMenuItem
155         Id="MoveToClose"
156         Command="MoveToClose"
157         CssClass="k-grid-menu-item"
158         Text="{Resources.MoveToClosed}">
159     <DisplayRules>
160         <Rule Value="{ToDateTime($item.CompletionDate) == new DateTime(1900,1,1) }" />
161     </DisplayRules>
162 </ContextMenuItem>
163
164     <ContextMenuItem
165         Id="FetchMessage"
166         Command="FetchMessage"
167         CssClass="k-grid-menu-item"
168         Text="{Resources.Fetch}">
169     <DisplayRules>
170         <AndRule>
171             <Rule Value="{ToInt32($item.QueueType) == 1}" />
172             <Rule Value="{ToDateTime($item.CompletionDate) == new DateTime(1900,1,1) }" />
173         </AndRule>
174     </DisplayRules>
175 </ContextMenuItem>
176
177     <ContextMenuItem
178         Id="ReturnMessage"
179         Command="ReturnMessage"
180         CssClass="k-grid-menu-item"
181         Text="{Resources.Return}">
182     <DisplayRules>
183         <AndRule>
184             <Rule Value="{ToInt32($item.QueueType) == 2}" />
185             <Rule Value="{ToDateTime($item.CompletionDate) == new DateTime(1900,1,1) }" />

```

**Display Rules Block**

You can also customize/create new DisplayRules blocks as needed.

## WorkflowExplorer.config

This config file defines the display of the Process Page. It is located in:

*C:\Program Files\PNMsoft\Shared  
Resources\Components\WorkflowExplorer\Config\WorkflowExplorer.config*

Here too, you can create a copy of the file and customize it for your needs (for example, to display different properties on the left side of the page).

For example, you can hide the sidebar on the left side of the Process Instance page by setting the property: `sideBarInitialState="collapsed"`

The screenshot shows a web application interface for a 'Service Request # 13941'. The page is titled 'Service Request # 13941 - Process Request' and includes a navigation bar with 'Fetch Task', 'Questions(0)', 'Comments(0)', and 'Process Wall'. The main content area is divided into four sections:

- Customer Details:**

Customer	Energion
Reference	U5423
Address	Thames House, 11 Millbank, London
Postcode	SW1 1YY
Telephone	09876 54321
- Location:** A map of London showing the location of the service request.
- Contact Details:**

Contact	John Good
Job Title	Contracts Manager
Address	Thames House, London
Telephone	0207 455 6789
Email	jgood@energion.com
- Service Request Details:**

Request #	13941	Customer Reference	23247
Request Type	Request Type 3	Date Requested	22/07/2014
Request	Please provide Order items	Priority	Medium

**Sidebar Collapsed**

## Stages Display Mode

(From v8.0 and above) You can set the workflow stages bar to display above, below or in-line with the form, by editing this key, using these values: Top, Bottom, Inline:

```
<ui showSideBar="True" showTopBar="True" sideBarInitialState="expanded" stageBarLocation="Inline" commandsUI="CommandsUI.Default"/>
```

The screenshot displays a web application interface for a request form. On the left, there is a sidebar with 'Process #3735' and 'Activity Properties' (Created: 4/29/2016, Permission: Full Control) and 'Workflow Properties' (Workflow Name: Showcase Demo, Created: 4/29/2016, Owned By: James Luxford, Last Updated: 4/29/2016, Permission: Full Control). The main content area shows a 'Request' form titled 'Your Request' with a progress bar at the top containing stages: Submit, Review, Approve, Action, and Close. Below the progress bar, the form is divided into 'Contact Details' and 'Request Details' sections. The 'Contact Details' section includes input fields for First Name (James), Last Name (Luxford), Email (james@acme.com), Telephone (01923 716800), Company Name (Acme Inc), and Address. The 'Request Details' section includes a date picker for 'The date of your request' (5/1/2016) and a dropdown menu for 'What would you like to request?' (Select --). The user profile 'James Customer' is visible in the top right corner.

**Inline Stages**

## Theme Control

You can control and customize the SharePoint theme using the Themes configuration files under *C:\Program Files\PNMsoft\Shared Resources\Themes*. There are three available themes: default, SharePoint 2010 and Sequence8.

In the Flowtime web.config you can define which theme to use.

SharePoint 2010 is an older theme appropriate for SharePoint 2010.

The default theme (from v7.4 and higher) is a newer SharePoint 2013 theme, containing the format, css, and definitions for all the web parts.

Sequence8 is the newest theme, containing a refreshed look and feel for Sequence v8.x.

To control the Flowtime site theme, edit this key in the Flowtime web.config file:

```
<appSettings>
  <add key="PNMsoft.Sequence.Flowtime.Theme" value="Sequence8" />
</appSettings>
```

*Note: In SharePoint 2010, in order to work with the new v7.4 web parts, set the theme to 'default'.*

You can also add new customized themes to the Themes folder as needed by your solution.

## Customizing the Theme

There are several ways you can customize your Flowtime environment theme. Each of these methods is described below.

### Changing SharePoint's Look

SharePoint includes the native capability to select from various Looks. You can quickly change the Look of Flowtime using this feature.

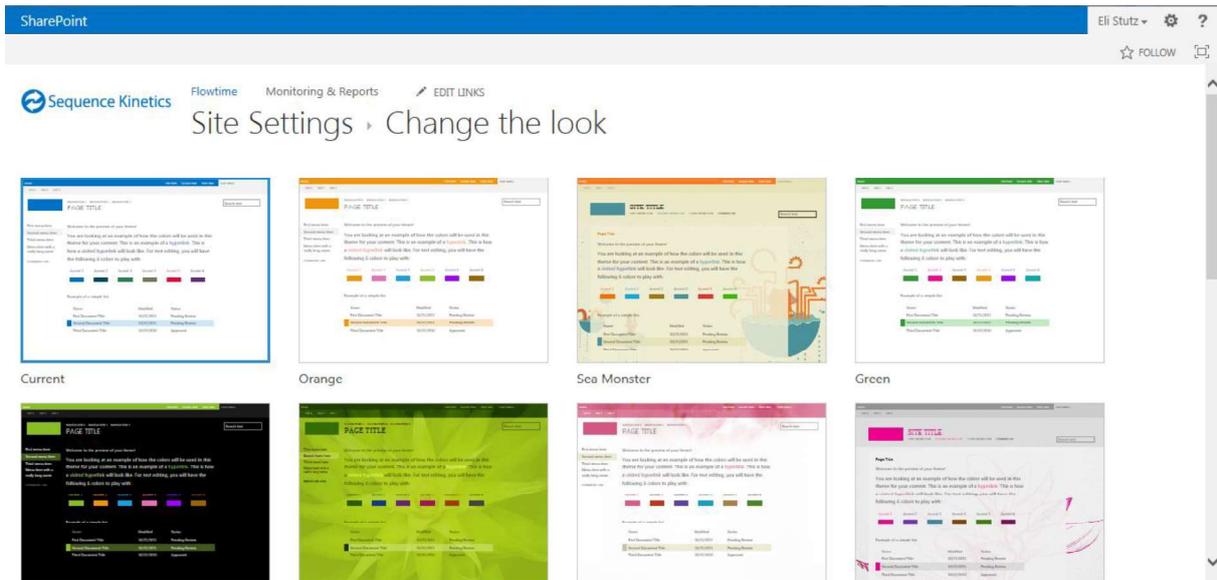
#### To change the Look:

1. From the settings menu, select **Change the Look**.

The screenshot shows a SharePoint site interface. At the top, there's a navigation bar with 'SharePoint' and user information 'Eli Stutz'. Below that, there's a search bar and a settings gear icon. A dropdown menu is open from the settings gear, showing options like 'Shared with...', 'Edit page', 'Add a page', 'Add an app', 'Site contents', 'Change the look', 'Site settings', and 'Getting started'. The 'Change the look' option is highlighted with a red box. In the background, there's a dashboard with various widgets, including a bar chart titled 'Number of Workflows' and a table of messages.

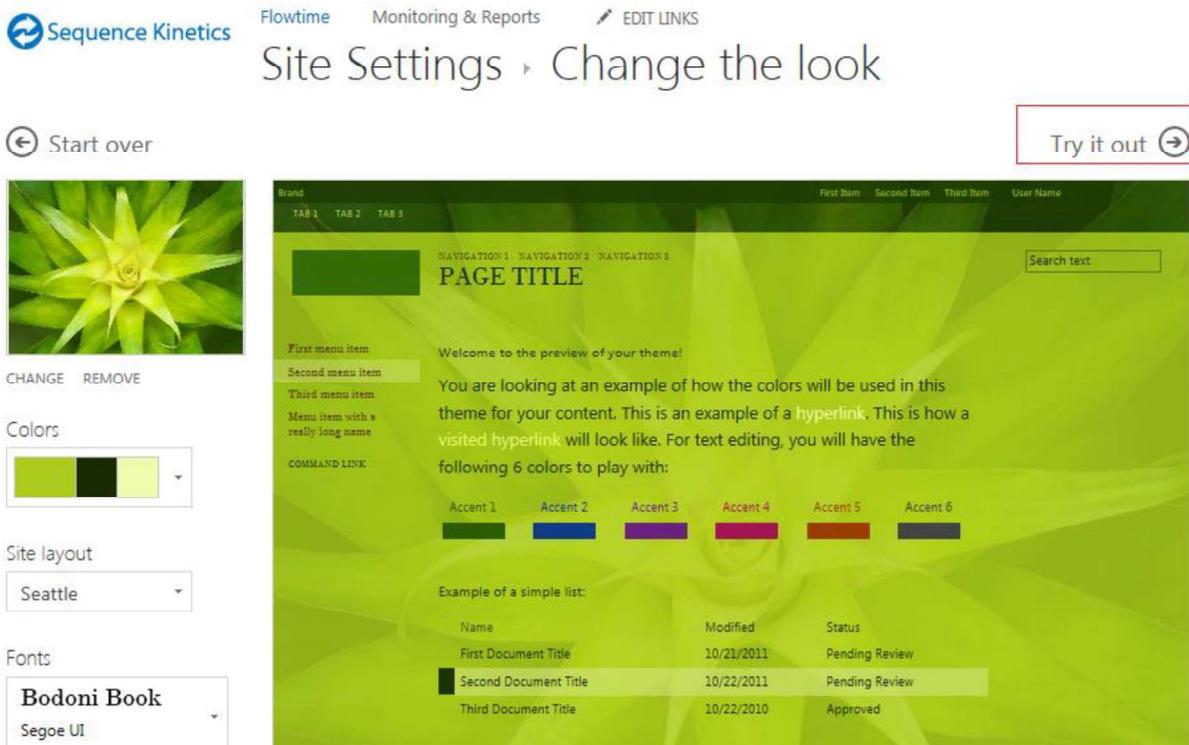
Change the Look

2. Click any of the various available looks:



**Change the Look – Selection**

3. Click Try it out.



**Flowtime Look Selection**

The new look will be applied on your Flowtime.

To apply a custom theme to the SharePoint site, please refer to this resource:

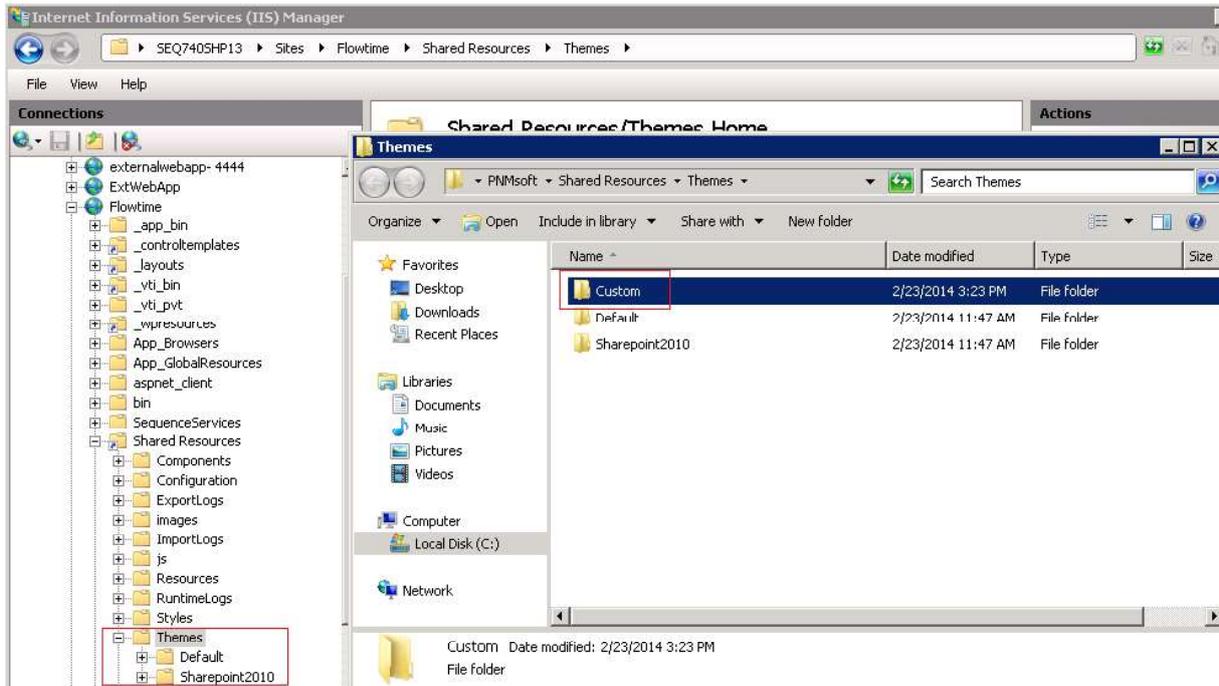
<http://msdn.microsoft.com/en-us/library/office/jj927175.aspx>

## Customizing the Flowtime Theme (CSS and Graphics)

You can customize the CSS and Images of the Flowtime theme by copying the theme folder you are using (Default or SharePoint 2010) and customizing that copy.

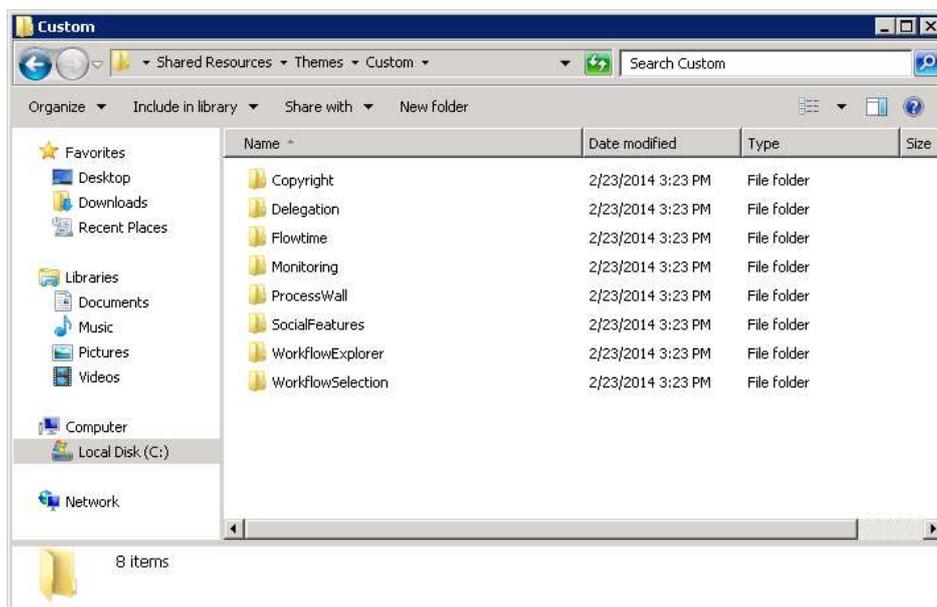
### To customize the Flowtime theme:

1. In the Flowtime site installation files, navigate to *Flowtime\Shared Resources\Theme*.
2. Create a copy of one of the two theme folders (e.g. Default) and rename it 'Custom'.



**Creating a Custom Theme Folder**

3. Open the Custom folder. Under this folder are all the css and images of the Flowtime web parts and dashboards:



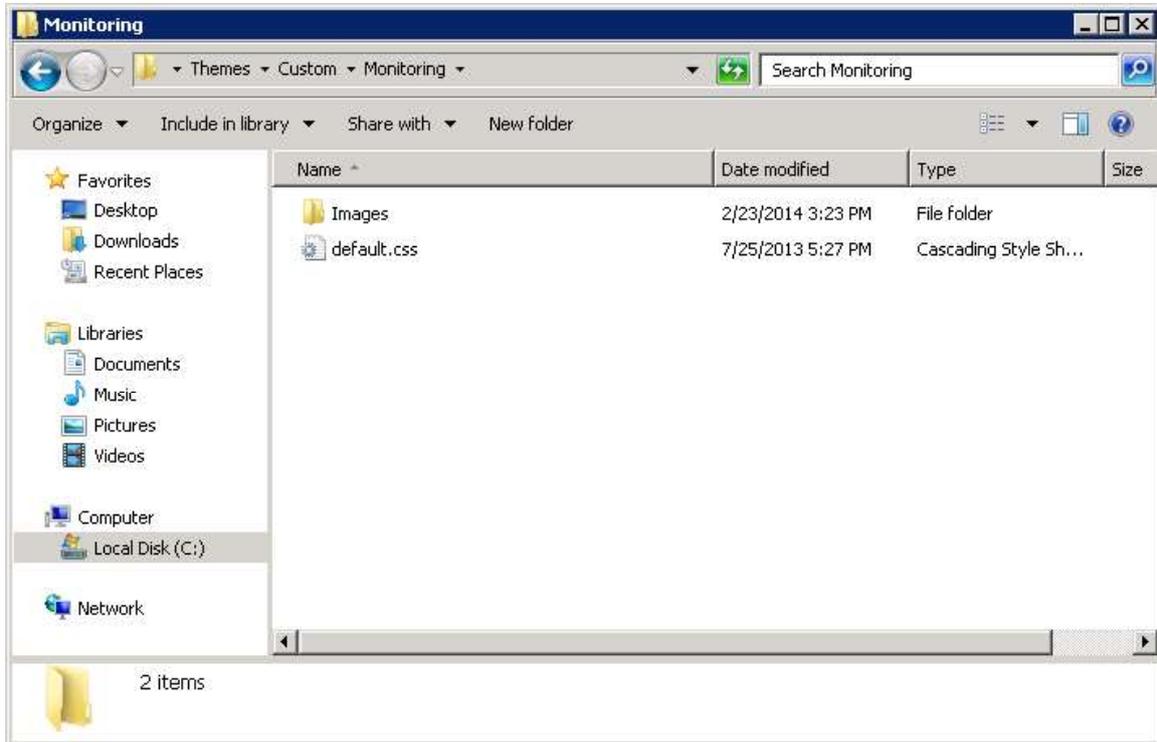
**Flowtime Theme Folders**

The Flowtime folder contains all the grid definitions.

The WorkflowExplorer folder contains all the definitions for the Process execution page.

...and so on, for all the Flowtime webparts and pages.

For example, in the Monitoring folder, you can find the css and images of the Monitoring page:



**Monitoring Page css and Images**

4. Replace images and customize the css in these folders as required by your organization.

For example, to change all the toolbar colors from blue to orange in the Process Execution page, open *CustomWorkflowExplorerDefault.css* and replace #25a0da with 'orange'.

```

td.weTreeNodeSelected
{
    border: 1px solid orange;
    background-color: orange;
}

```

**Replace Colour**

Once you are done with you css and image edits, perform the following steps:

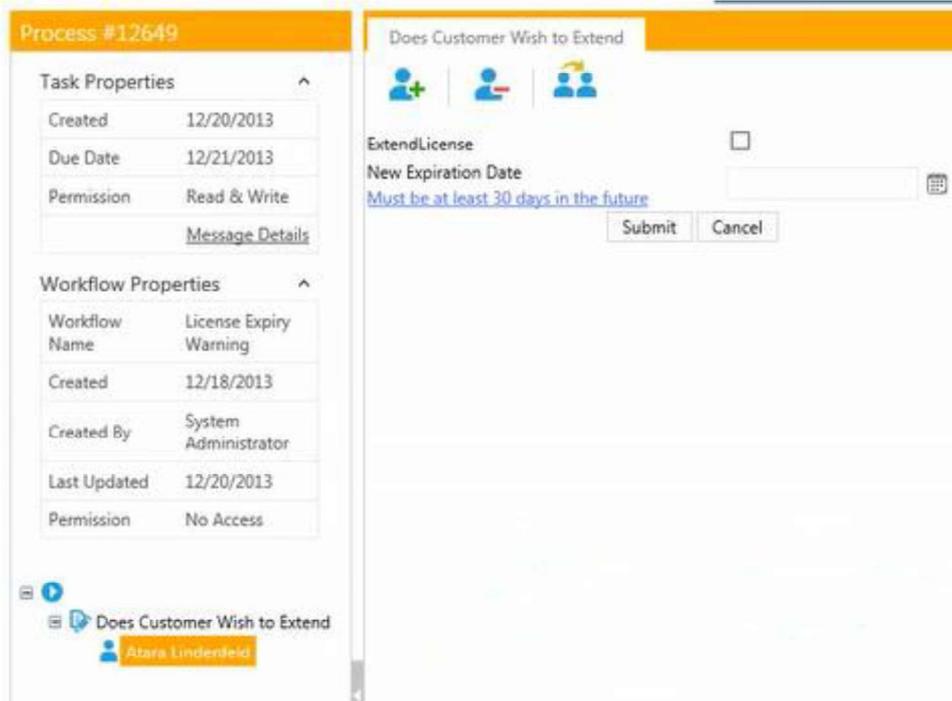
5. Open the Flowtime web.config file.
6. In the following section, replace "default" with "Custom":

```

<appSettings>
  <add key="aspnet:RestrictXmlControls" value="true" />
  <add key="ReportViewerMessages" value="Microsoft.SharePoint.Portal.Analytics.UI.ReportViewerMessages, Mic
  <add key="aspnet:AllowAnonymousImpersonation" value="true" />
  <add key="PNMsoft.Rad.web.UI.ResourcePath" value="~/shared Resources/Resources/Sequence/Rad" />
  <add key="sequence.clientHelper.enableUncontrolledqueries" value="false" />
  <add key="PNMsoft.Sequence.Forms.web.UI.FormControl.Theme" value="Metro" />
  <add key="PNMsoft.Sequence.Forms.web.UI.FormControl.Theme.Controls.Skin" value="Metro" />
  <add key="PNMsoft.Sequence.Forms.AttachmentLinkExpiration" value="180" />
  <add key="PNMsoft.Sequence.Flowtime.Theme" value="Custom" />
</appSettings>

```

Your customizations now take effect in Flowtime.



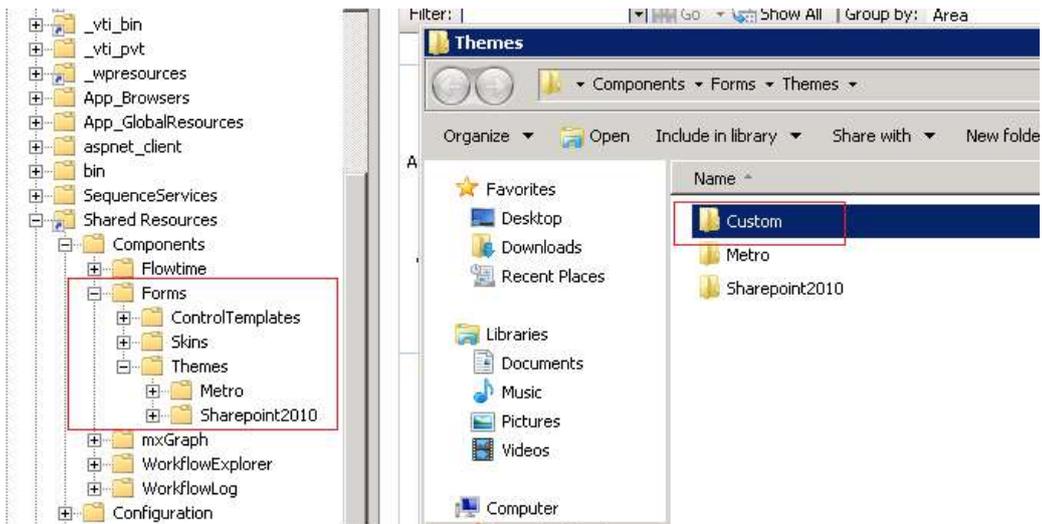
**Customizations Take Effect**

## Customizing the Form Theme

You can customize the theme of Forms that are displayed within Flowtime processes.

### To customize the Form Theme:

1. Navigate to Shared Resources\Components\Forms\Themes.
2. Create a copy of the Metro or SharePoint2010 folder and name it 'Custom'.



**Custom Form Theme**

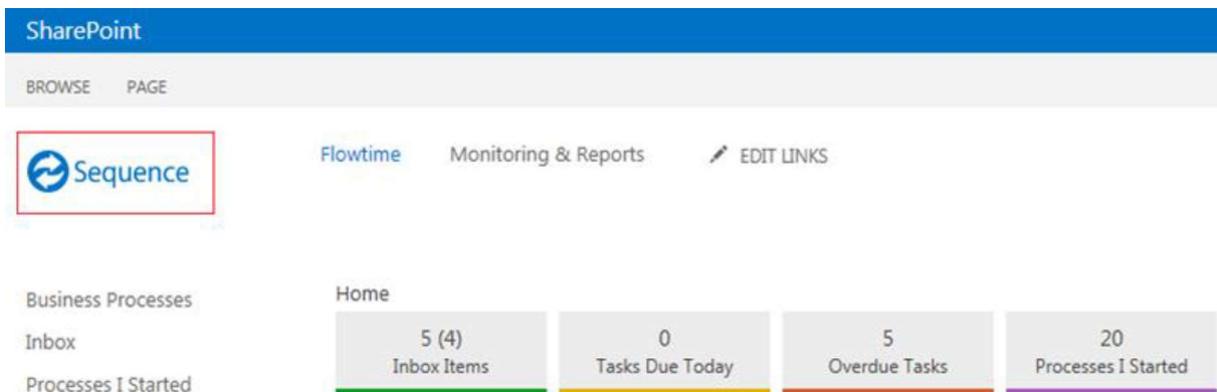
3. Edit the *layout.css* file in the Custom folder as required by your solution.
4. In the Flowtime web.config, replace 'Metro' with 'Custom' in the following section:

```
<appSettings>
  <add key="aspnet:RestrictXmlControls" value="true" />
  <add key="ReportViewerMessages" value="Microsoft.SharePoint.Portal.Analytics.UI.ReportViewerMessag" />
  <add key="aspnet:AllowAnonymousImpersonation" value="true" />
  <add key="PNMSOFT.Rad.Web.UI.ResourcePath" value="~/Shared Resources/Resources/Sequence/Rad" />
  <add key="sequence.clientHelper.enableUncontrolledqueries" value="false" />
  <add key="PNMSOFT.Sequence.Forms.Web.UI.FormControl.Theme" value="CUSTOM" />
  <add key="PNMSOFT.Sequence.Forms.Web.UI.FormControl.Theme.Controls.skin" value="Metro" />
  <add key="PNMSOFT.Sequence.Forms.AttachmentLinkExpiration" value="180" />
  <add key="PNMSOFT.Sequence.Flowtime.Theme" value="default" />
</appSettings>
```

Now the form theme is displayed according to your customizations.

## Changing the Flowtime Site Logo

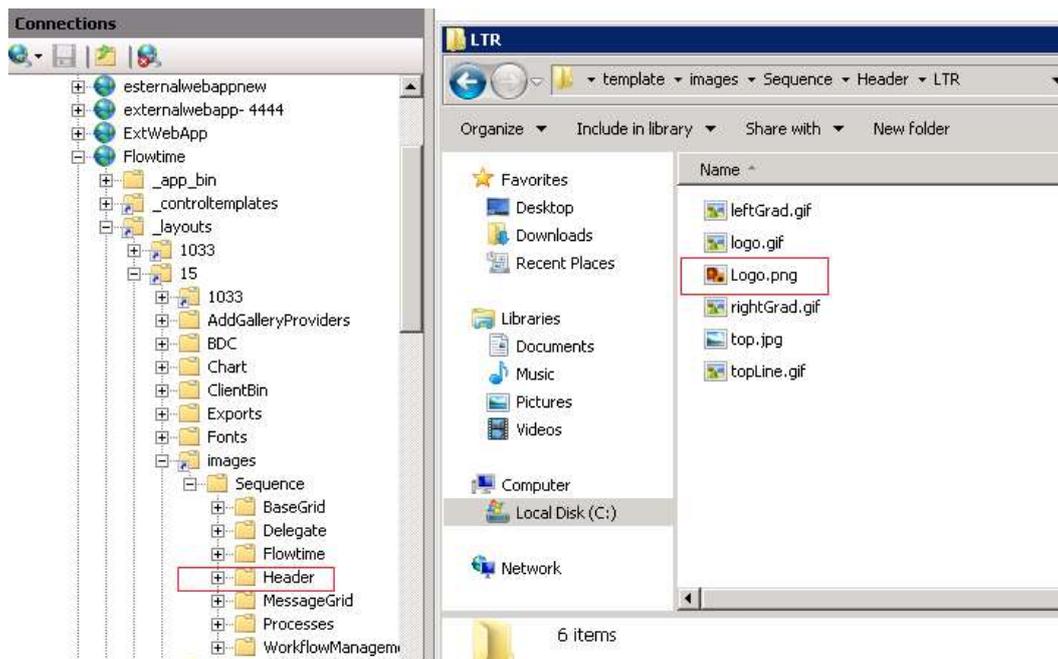
At the top left of Flowtime, the Sequence logo is displayed:



**Flowtime Logo**

You can replace this logo by replacing the following file:

\_layouts\15\images\Sequence\Header\LTR\Logo.png



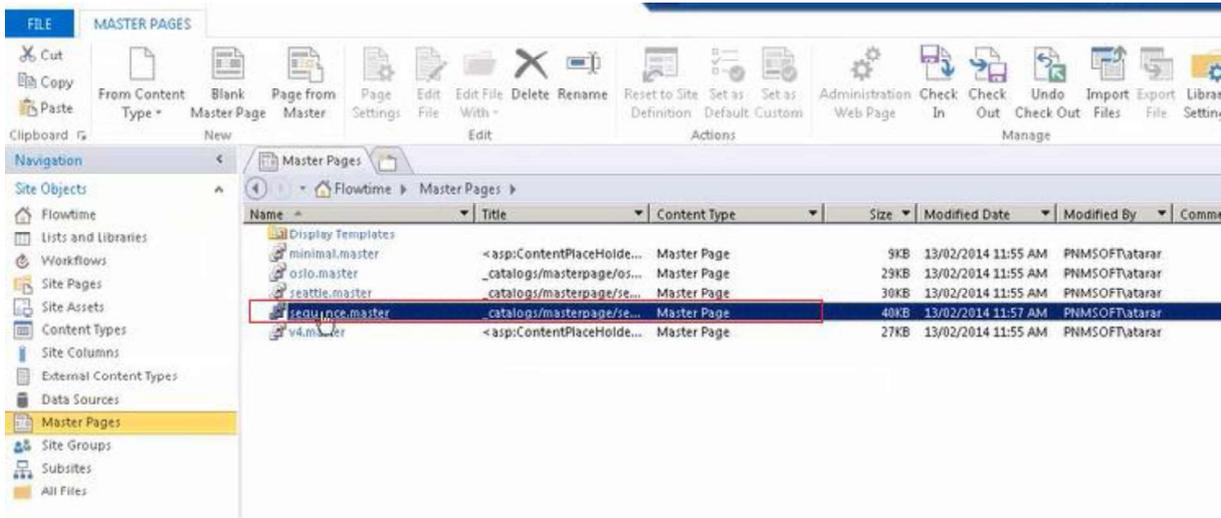
**Flowtime Site Logo**

## Customizing the Flowtime Master Page

Master pages control the layout of Flowtime pages. To customize this layout, you can customize the Master Page in SharePoint Designer.

### To customize the Flowtime Master Page:

1. Open the Flowtime site in SharePoint Designer.
2. Open and edit the file *sequence.master* in the Master Pages folder.



### Customizing Master Pages

Alternatively, you can create a new master page in this folder and customize it as you wish. Then, use one of the following options for setting Flowtime pages to use the new master page:

- Click the new master page and click **Set as Default** from the top ribbon. As Flowtime pages point to the Default master page, they will now point to the new master page.
- Click the new master page and click **Set as Custom** from the top ribbon. You can then set specific Flowtime pages to use the Custom master page, by pointing these pages' master page field to custom.master page in their source code SharePoint Designer.
- Create a new master page and set specific Flowtime pages to use that master page, by pointing these pages' master page field to the new master page in their source code SharePoint Designer.

## Filtering Flowtime Lists Using the Query String

You can filter the Flowtime grids using the query string. You can use this capability to create a Flowtime portal that is customized to your customer needs.

### Syntax

The syntax for using the query string to filter lists in Flowtime pages is:

```
?ft$[columnname]=[operator]([value])
```

[columnname] is the name as it appears in the metadata file.

[value] is the filter value

[operator] is the operator to use

### Operators

You can use the following operators:

eq – Equals

neq – Does not equal

lt – Less than

lte – Less than or equal to

gt – Greater than

gte – Greater than or equal to

contains – Contains

notcontains – Does not contain

startswith – Starts with

endswith – Ends with

isnull – Is null

notnull – Is not null

For date columns only:

on – On

noton – Not on

today – Today (no value)

yesterday – Yesterday (no value)

### Examples

Here are 2 examples:

All my messages and tasks from Mark Green:

```
...\inbox.aspx?ft$from=eq(mark green)
```

All Workflow instances from type X that were opened today:

...\Process.aspx?workflowId=9704e522-9db6-48c0-82ce-f8301a53a069&ft\$creationdate=Today()

All workflow instances from Category X and from Customer Y

...\Process.aspx?workflowId=9704e522-9db6-48c0-82ce-f8301a53a069&ft\$category=eq(Product Training)&ft\$customer=contains(un

*Note: The operator AND is used between the filters.*

---

## Starting/Opening a Workflow Using a URL

In many scenarios you may be required to create links/buttons which open an existing workflow or initiate a new instance of a workflow.

Using Flowtime's runtime URLs, you can easily open existing workflows, start new ones and also control some of the UI elements, like show/hide the left side tree.

To do this, you can call the Runtime.aspx page with parameters.

First let's have a look at the URL for the Runtime page:

### Runtime URL

As long as you don't use any special IIS configurations, the Runtime URL should be as follows:

`http://[ServerNameAndPort]/_Layouts/RunTime.aspx`

where [ServerNameAndPort] is the IP/DNS name of the server, with the port.

So it should look something like: `http://22.34.232.12:8080`.

*Note: When building URLs in code, it is recommended not to hard code the server name and port as these might change for a single instance, and are very likely to be different between environments.*

For client side code, you can [get the host name using JS](#).

For server side code, you can use string `baseUrl = Request.Url.Scheme + "://" + Request.Url.Authority + Request.ApplicationPath.TrimEnd('/') + "/";`

### Main Parameters

**To initiate a new instance, use the following Runtime.aspx parameters:**

`workflowInstanceId=[int]` – Opens a specific workflow instance ID

`workflowid=[Guid]` – Starts a new instance for this workflow ID

`WorkflowSpaceId=[Guid]` – Starts a new workflow instance for the workflow space, using the active version.

*Note: While it is fine to use workflowid, the best practice (unless you have a specific requirement) is to use WorkflowSpaceId. So your URL will always open the active version of the workflow.*

**To open an existing workflow, use the following Runtime.aspx parameters:**

`workflowInstanceId=[int]` – Opens a specific workflow instance ID

`messageInstanceId = [int]` – Opens a specific message in a workflow instance

`activityInstanceId=[int]` – Opens a specific activity in a workflow instance

### Additional Parameters

You can use the following additional parameters to control the page display:

`_weShowSideBar` – Shows/hides a side bar. The valid values are yes|no, true|false, 1|0

`_weShowTopBar` - Shows/hides a top bar. The valid values are yes|no, true|false, 1|0

\_weSideBarState – Initial state of the side bar. The valid value is expanded|collapsed

\_welsFrame – Creates a workflow explorer as a frame (without side and top bars).

The valid values are yes|no, true|false, 1|0

Culture=[[Language Culture Name](#)] - Add a Culture to force system globalization settings in the form (such as date formats)

uiculture=[[Language Culture Name](#)] - Add a uiculture to force system globalization settings in the form (such as date formats)

## An Example

To open workflow instance 87, without the left side tree, without form tabs, using globalization settings for UK (en-GB):

[http://10.20.20.11:8080/\\_layouts/15/runTime.aspx?culture=en-GB&uiculture=en-GB&workflowInstanceId=87&\\_weShowSideBar=no&\\_weShowTopBar=no](http://10.20.20.11:8080/_layouts/15/runTime.aspx?culture=en-GB&uiculture=en-GB&workflowInstanceId=87&_weShowSideBar=no&_weShowTopBar=no)

## Control Over Activity Focus

(From v8.2 and above) You can declare which activity will be in focus when opening Runtime.aspx with the workflow id as the parameter.

The developer can control if the page will focus on the first or last activity.

To control this option, you can add a key to the configuration file:

*C:\Program Files\PNMsoft\Shared  
Resources\Components\WorkflowExplorer\Config\WorkflowExplorer.config*

```
<ui workflowTreeSelectionMode="Last" />
```

This key can be set to the values: First or Last

**Note:** *This option is only applicable when opening the page with workflow instance id.*

## Examples: Rebranding Flowtime Pages

You may be required to customize the style and CSS of Flowtime pages, for example, for the purpose of rebranding them according to the company template and styles. Sequence enables you to do this quite easily. The following sections provide some examples of how this can be achieved.

### Customizing the Process Page

You can customize elements of the Process Page such as:

- Customizing alerts/dialogs with custom CSS
- Adding custom font
- Customizing controls' CSS
- Adding image buttons instead of default ones

### Customizing alerts/dialogs with custom CSS

The following code is an example template for prompt, confirm and alert dialog boxes.



Customized Alert Example

You can add this code to the form markup and edit it as needed to customize such dialog boxes for your requirements:

```
<sq:RadWindowManager ID="RadWindowManager2" runat="server">
  <AlertTemplate>
    <div class="rwDialogPopup radalert">
      <div class="rwDialogText">
        {1}
      </div>
      <div>
        <a onclick="$find('{0}').close();" class="rwPopupButton"
href="javascript:void(0);">
          <span class="rwOuterSpan"><span
class="rwInnerSpan">##LOC[OK]##</span> </span>
        </a>
      </div>
    </div>
  </AlertTemplate>
  <PromptTemplate>
    <div class="rwDialogPopup radprompt">
```

```

        <div class="rwDialogText">
            {1}
        </div>
    <div>
        <script type="text/javascript">
            function RadWindowprompt_detectenter(id, ev, input)
            {
                if (!ev) ev = window.event;
                if (ev.keyCode == 13)
                {
                    var but =
input.parentNode.parentNode.getElementsByTagName("A")[0];
                    if (but)
                    {
                        if (but.click) but.click();
                        else if (but.onclick)
                        {
                            but.focus(); var click = but.onclick;
but.onclick = null; if (click) click.call(but);
                        }
                    }
                    return false;
                }
                else return true;
            }
        </script>
        <input onkeydown="return RadWindowprompt_detectenter('{0}', event,
this);" type="text"
            class="rwDialogInput" value="{2}" />
    </div>
    <div>
        <a
onclick="$find('{0}').close(this.parentNode.parentNode.getElementsByTagName('input'
)[0].value);"
            class="rwPopupButton" href="javascript:void(0);"><span
class="rwOuterSpan"><span
                class="rwInnerSpan">##LOC[OK]##</span></span></a> <a
onclick="$find('{0}').close(null);"
                class="rwPopupButton" href="javascript:void(0);"><span
class="rwOuterSpan"><span
class="rwInnerSpan">##LOC[Cancel]##</span></span></a>
        </div>
    </div>
</PromptTemplate>
<ConfirmTemplate>
    <div class="rwDialogPopup radconfirm">
        <div class="rwDialogText">
            {1}
        </div>
        <div>
            <a onclick="$find('{0}').close(true);" class="rwPopupButton"
href="javascript:void(0);">

```

```

        <span class="rwOuterSpan"><span
class="rwInnerSpan">##LOC[OK]##</span></span></a>
        <a onclick="$find('{0}').close(false);" class="rwPopupButton"
href="javascript:void(0);">
        <span class="rwOuterSpan"><span
class="rwInnerSpan">##LOC[Cancel]##</span></span></a>
    </div>
</div>
</ConfirmTemplate>
</sq:RadWindowManager>

```

## Adding Custom Font

Add this example CSS in a CSS file in the Sequence Share Resources folder:

```

@font-face {
font-family: 'MyWebFont';
src: url('webfont.eot'); /* IE9 Compat Modes */
src: url('webfont.eot?#iefix') format('embedded-opentype'), /* IE6-IE8 */
    url('webfont.woff2') format('woff2'), /* Super Modern Browsers */
    url('webfont.woff') format('woff'), /* Pretty Modern Browsers */
    url('webfont.ttf') format('truetype'), /* Safari, Android, iOS */
    url('webfont.svg#svgFontName') format('svg'); /* Legacy iOS */
}
body {
font-family: 'MyWebFont', Fallback, sans-serif;
}

```

*Note: You can apply this CSS to whichever elements on your process page you require (applying it to 'body' as shown above will apply it to the whole page).*

## Advantages of using @font-face

Current design trends demand that titles, logos and headings use non Web-safe fonts. This means that to use fonts

### Example of Customized Font

## Customizing Controls' CSS

You can overwrite the controls' CSS classes in order to display controls according to your requirements.

Please refer to the following documentation which explains how to do this:

<http://docs.telerik.com/devtools/aspnet-ajax/controls/grid/appearance-and-styling/modifying-existing-skins>

The link above is an explanation of how to modify the Grid control's skin. You can navigate to additional pages on modifying other controls within the documentation using the left tree navigation: select the Control > Appearance and Styling.

## **Adding Image Buttons**

You can add image buttons to the Process Page instead of the default ones. To do so, use the following guide: <http://members.pnmsoft.com/Online%20Help/Pages/Button%20Control.aspx>.

## **Rebranding Additional Flowtime Pages**

You can customize various elements of the Flowtime pages (e.g. Homepage and additional pages) using SharePoint Designer. SharePoint Designer enables you to make changes to elements such as:

- The page markup
- Location of elements

You can also edit the page CSS manually.