1 K2 smartforms Control Pack

K2 smartforms Control Pack

The K2 smartforms Control Pack is an addition to the current controls found in K2 smartforms. The Control Pack consist of reporting and worklist controls which can be used on Views or Forms. K2 smartforms provides the platform required for using these controls. For more information about the K2 smartforms product, see the following link:

http://help.k2.com/en/k2smartformshelp.aspx

Input controls - Additional controls added to the pre-existing list of Input controls found in K2 smartforms

Worklist control - Clickable list containing all the work items for the current user that has been generated and assigned by the workflow. The Worklist can be used to action these items

Report controls - Predefined reports providing status and statistical data on workflows

2 Installation and Configuration

2.1 Prerequisites

Installation and Configuration

The following is required before installing K2 smartforms Control Pack:

Prerequisites

- K2 smartforms 1.0.6 RC or later - See the K2 smartforms User Guide for more details

2.2 Install

K2 smartforms Control Pack installation uses the current K2 smartforms installation settings and K2 smartforms Control Pack components are dependent on the existing K2 smartforms components. If K2 smartforms is installed on a distributed environment, the K2 smartforms Control Pack should be installed in the same way. For more information about a distributed installation see the K2 smartforms distributed installation guide.

Installation Components

Path

K2 smartforms Control Pack will install under %ProgramFiles%\K2 blackpearl\

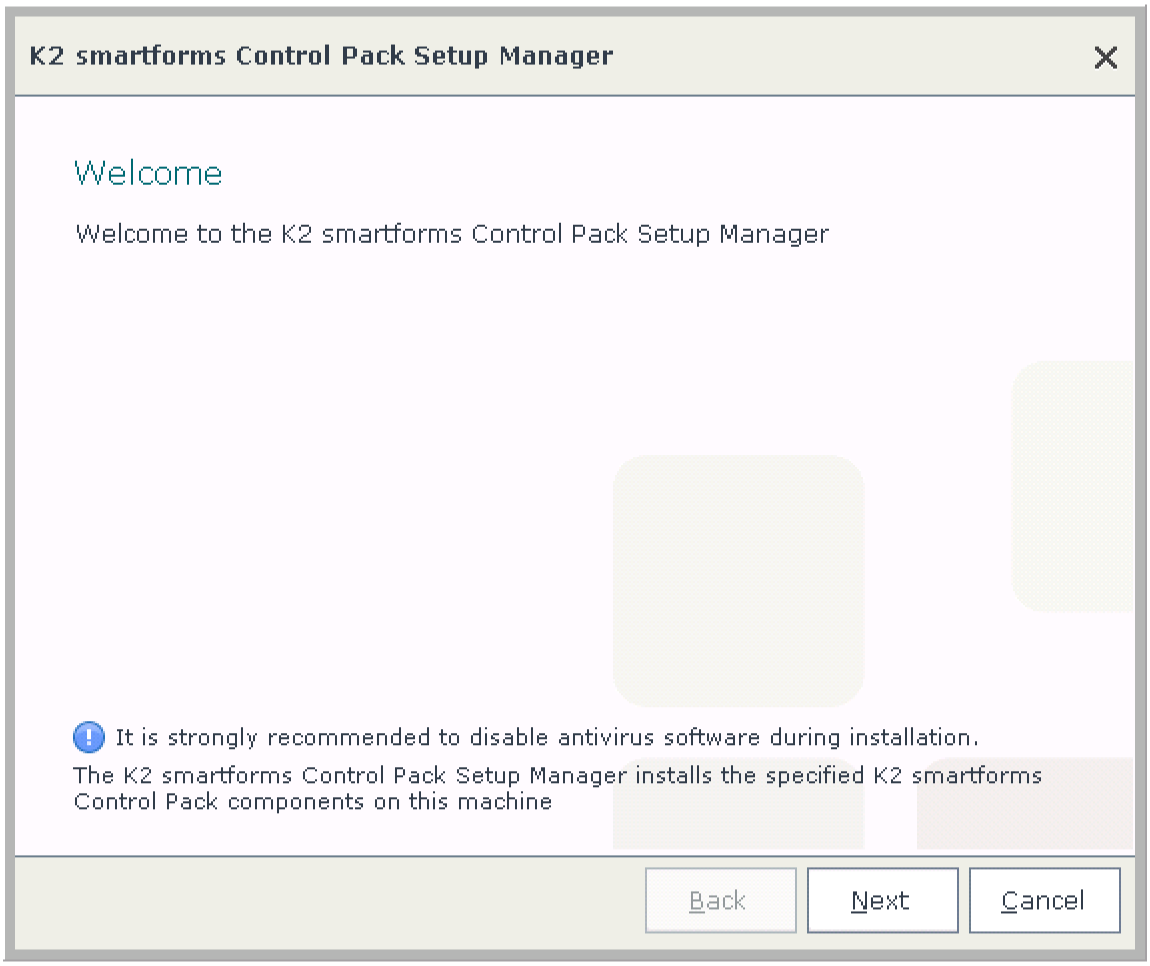
Components

The following K2 smartforms Control Pack components are installed during the installation process:

Component	Description	Where to install it
K2 Control Pack Server	Contains the Control Pack server and peripherals.	This component must be installed on the server where the K2 blackpearl server is configured to run or on a separate SQL server.
K2 Control Pack Designer	The designer that allows for the creation of Report and Worklist controls.	This component is installed on the existing SmartForms IIS site and requires at least the K2 Designer component to be on the server.
K2 Control Pack Runtime	Allows for the runtime site to be installed on a web server.	This component is installed on the existing SmartForms IIS site and requires at least the SmartForms Runtime component to be on the server.

Welcome screen

After you have installed the prerequisites, you are ready to install the K2 smartforms Control Pack Server. The **Welcome** screen is the first screen that will display.



What to do on this page

The steps below offer details on how to complete the page:

1. Click **Next** to proceed.

▸ EULA screen

The EULA describes the terms and conditions under which the K2 smartforms Control Pack (in whole or in part) can be installed. The software can only be installed when the person / individual agrees to the terms and conditions as outlined in the EULA.

End User License Agreement	
I agree to the terms and conditions of the license	The installer has the option to agree or not agree with the EULA. The product can only be installed if the installer selects **I agree.**

Important: Selecting **I agree** and clicking **Next** is indicative of full agreement with the terms and conditions of the EULA. Selecting the option **I agree** therefore binds the organization to comply with all terms and conditions as stated by the agreement.

What to do on this page

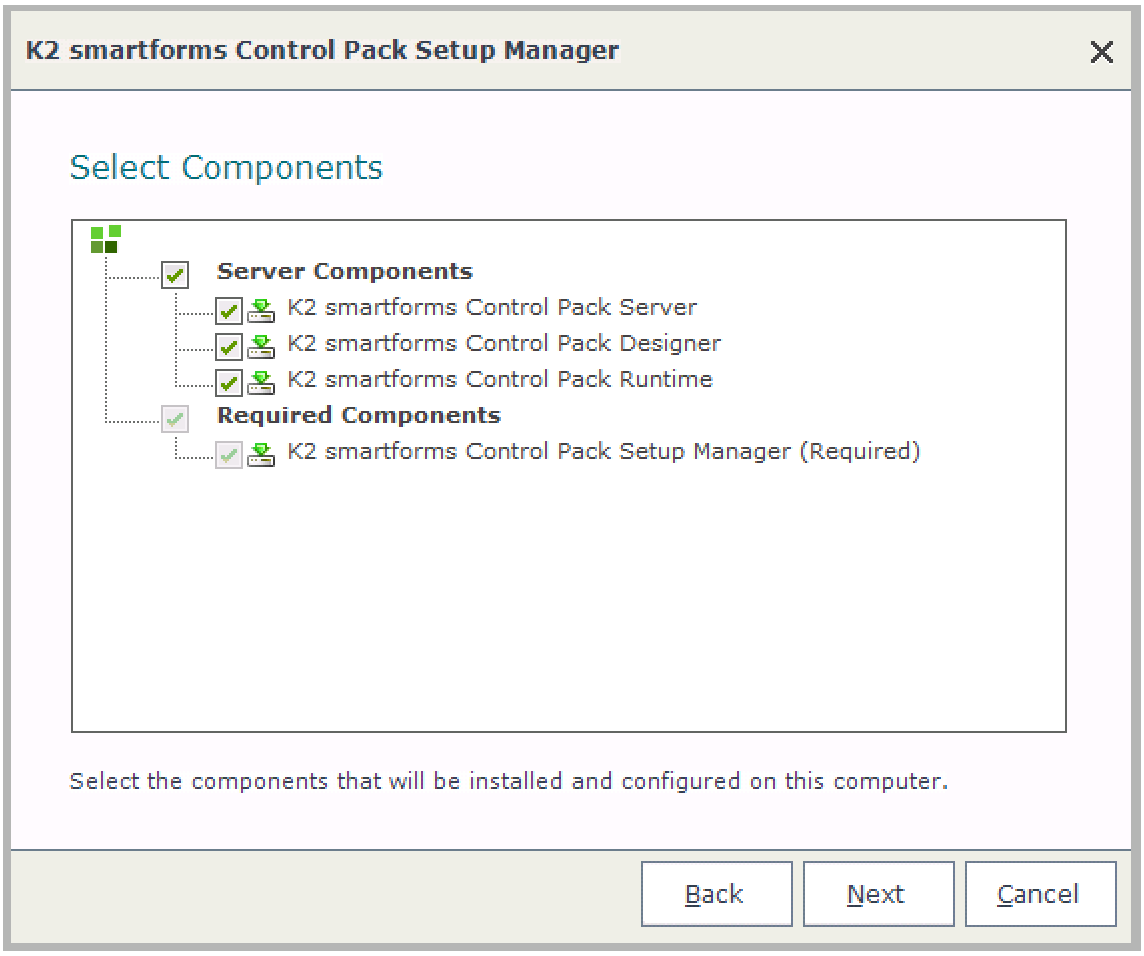
The steps below provide details on how to complete this page:

1	Read and become familiar with the contents of the EULA
2	Select the option **I agree** (Selecting this option legally binds the organization to terms and conditions)
3	Click **Next** to proceed
Optional Step	Click the **Print** button to print out the EULA

Select Components screen

The Select Components screen enables the selection of either all or specific components available in K2 smartforms Control Pack. Components that are not required can be disabled by removing the green check mark next to the component. Since each component plays a vital role in the K2 environment, disabling components for a standalone installation will reduce functionality. However, when installing a distributed installation, installing components on independent machines enhances performance. K2 smartforms Control Pack components are dependent on the existing K2 smartforms components.

This page includes items that are required by default and cannot be removed from the components list. For example, the K2 smartforms Control Pack Setup Manager is required to be installed with all K2 components.



Select Components	
Check box	• Checking the check box next to a component enables the item to be installed • Removing the check box excludes the component so that it is not installed

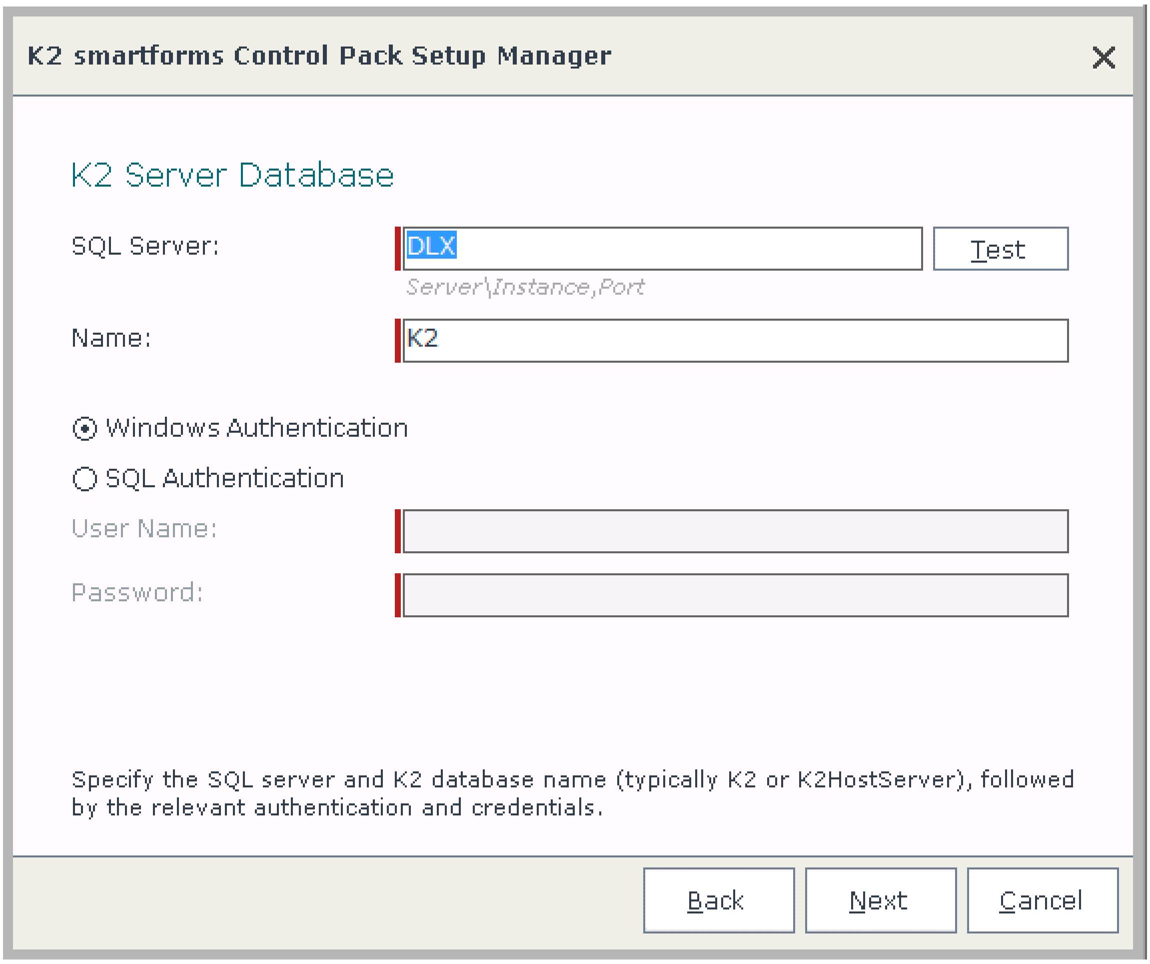
What to do on this page

The steps below provide details on how to complete this page:

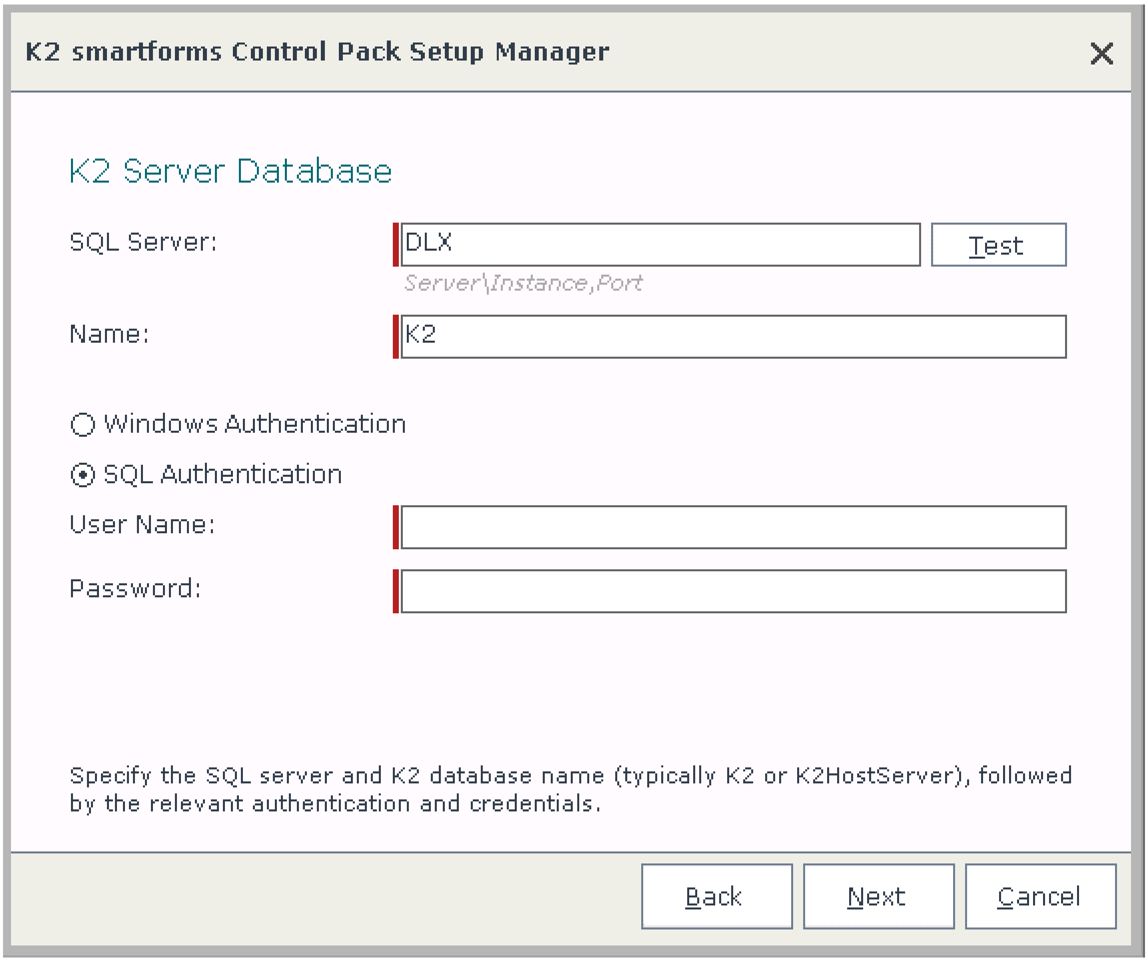
1. Select the desired components to install. For a standalone installation, all of the components should be selected. If K2 smartforms is installed on a distributed environment, the K2 smartforms Control Pack should be installed in the same way. For more information about a distributed installation see the K2 smartforms distributed installation guide.
2. Click **Next** to proceed.

K2 Server Database screen

On the K2 Server Database screen, type in the name of the SQL Server where you installed the K2 Databases. This points the K2 smartforms Control Pack Server component to the K2 blackpearl Host Server database set up by the K2 Server, to share configuration information. If you changed the Host Server database name, update it here and click **Next.**



Windows Authentication



SQL Authentication

Feature	Description
SQL Server	Populate the name of the SQL Server where the K2 smartforms Control Pack database will be installed. **Note**: When a named instance has been used, provide that named instance here i.e. Sqlserver\Instance
Name	The default name of the K2 Host Server Database is pre-populated here and can be altered. **Note**: The default names are recommended for ease of identification.

What to do on this page:

1
- The name of the Database server must populate the field labeled SQL Server (or named instance if a named instance has been used i.e. Sqlserver\Instance)
- The Database Name example **DLX** will be populated automatically

2
Authentication: The Form offers a choice in Authentication either Windows or SQL Authentication.
- If Windows Authentication is selected the credentials of the K2 Service Account will be used to authenticate the connection to the SQL Server.
- If SQL Authentication is selected, a connection string must be established to connect to the SQL Server

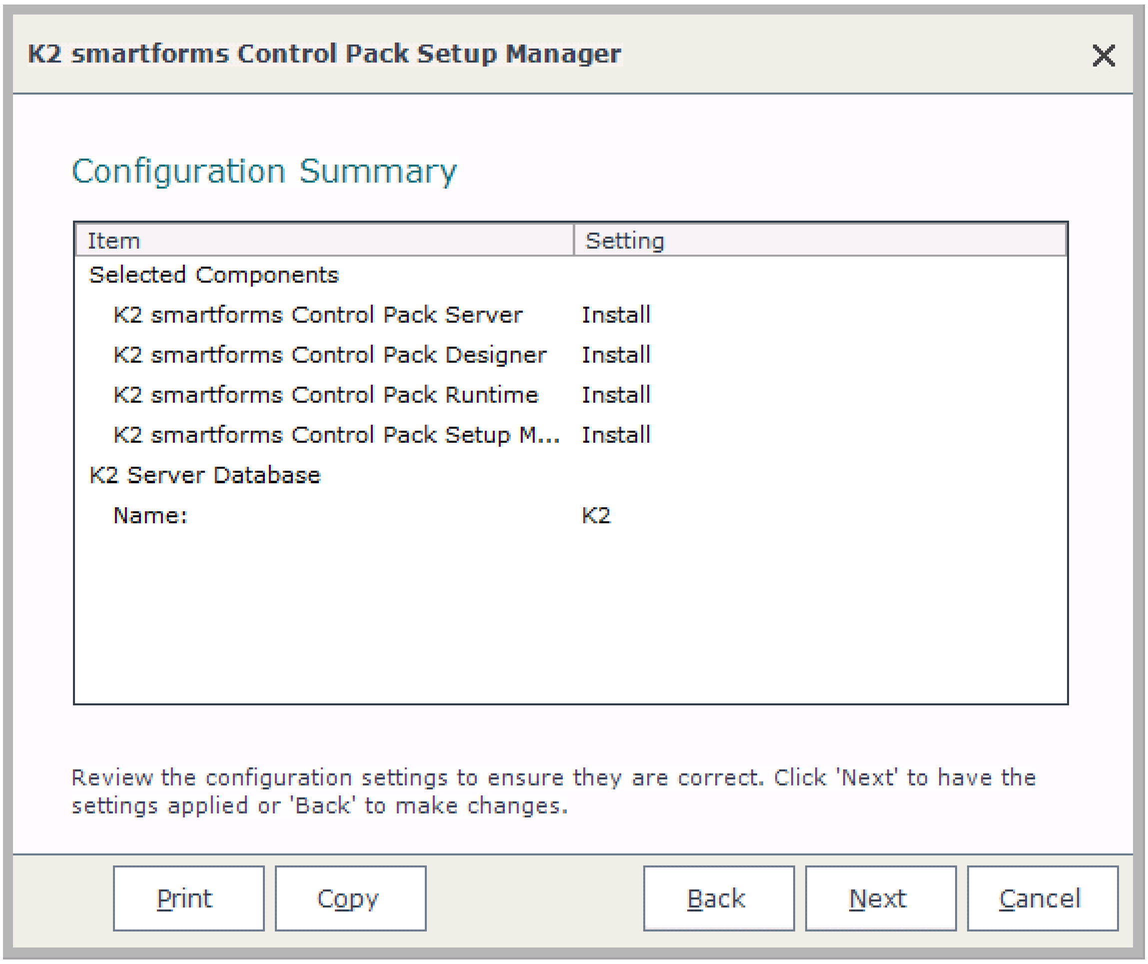
3
For **SQL Authentication Only:**
1. Enter the User Name and Password
2. Click Test to verify the connection to the database
3. If the test passes, proceed to **Step 4**
4. If not, the User Name and Password must be corrected before the Setup Manager will allow the installation to proceed

4
Click **Next** to continue

Configuration Summary screen

Once the Setup Manager starts the installation, the process CANNOT be stopped.

The Configuration Summary screen displays the details captured in the Setup Manager Wizard. Information contained in this summary should be scrutinized for accuracy.



Feature	Description
Print	Allows you to print your configuration settings. This can be a useful record of the configuration details.
Copy	Allows you to copy the contents of the screen to your clipboard. This can be a useful record of the configuration details.
Back	Navigate in reverse order through the wizard to make changes
Next	Continues the installation by opening the additional actions page
Cancel	Cancel the current installation session

What to do on this page

To make changes:

1. Click **Back** to navigate in reverse order through the Setup Wizard pages to locate the page that requires an update
2. Make the change
3. Click the **Next** button until the Configuration Summary page is displayed again
4. Click **Install** to proceed

To Install:

1. Review the summary details to make sure the captured information is accurate
2. Click **Next** to start the installation process

[Additional Actions screen]

The Additional Actions screen displays the additional, required actions that need to be performed, by clicking **Next** these actions will be performed by the K2 smartforms Control Pack Setup Manager before starting the installation process.

If the user clicks 'Next' then all listed actions will be done by the Setup Manager. Alternatively the user may elect to perform some of these actions manually at this point, and then click on 'Refresh' in which case the list will be refreshed to only contain the actions that are still required.

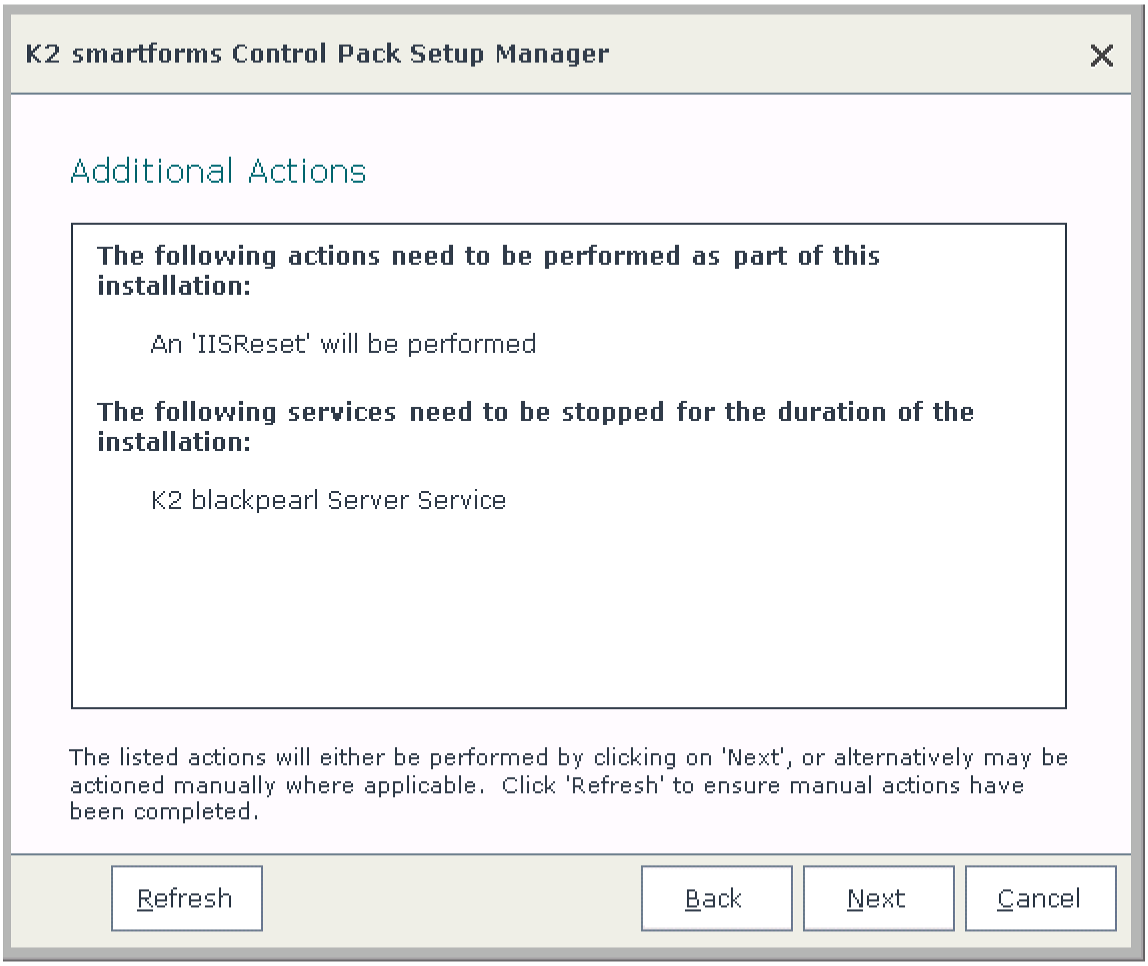


Fig.1 K2 smartforms Control Pack Setup Manager Additional Actions Screen

Feature	**Description**
Refresh	Click 'Refresh' to ensure manual actions have been completed
Back	Navigate in reverse order through the wizard pages to make changes
Next	Click 'Next' to proceed with the installation. Once this option is selected all the listed actions will be performed by the Setup Manager. **Note:** The installation cannot be stopped after this button is clicked.
Cancel	Cancel the current installation session

What to do on this page

To make changes:

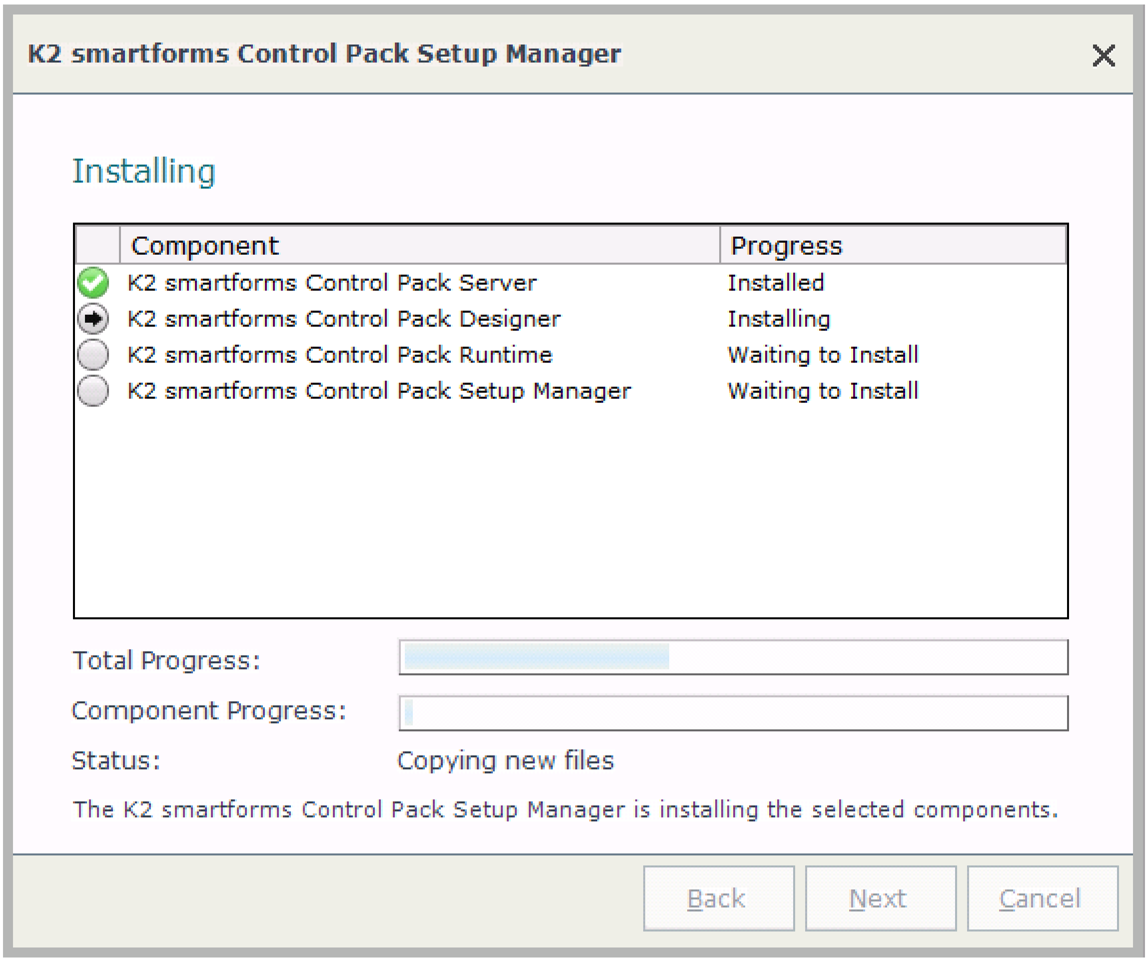
1. Click **Back** to navigate in reverse order through the Setup Wizard screen to locate the screen that requires an update
2. Make the change
3. Click the **Next** button until the Additional Actions screen is displayed again

To Install:

1. Review the **Additional Actions** details list
2. Click **Next** to start the installation process. **Note:** All listed actions will be done by the Setup Manager after clicking on the 'Next' button

Installing screen

The **Installing** screen displays the status of the installation, with a progress bar for each component as well as an overall progress bar. The component progress bar indicates the progress of the individual component, whereas the Total Progress Indicator reports on the installation progress as a whole.



What to do on this page

There is nothing to do on this screen but to wait for the installation to complete.

Important: It is strongly advised that the installation is not interrupted for any reason. Interrupting the installation will cause file corruption and unpredictable results in your environment.

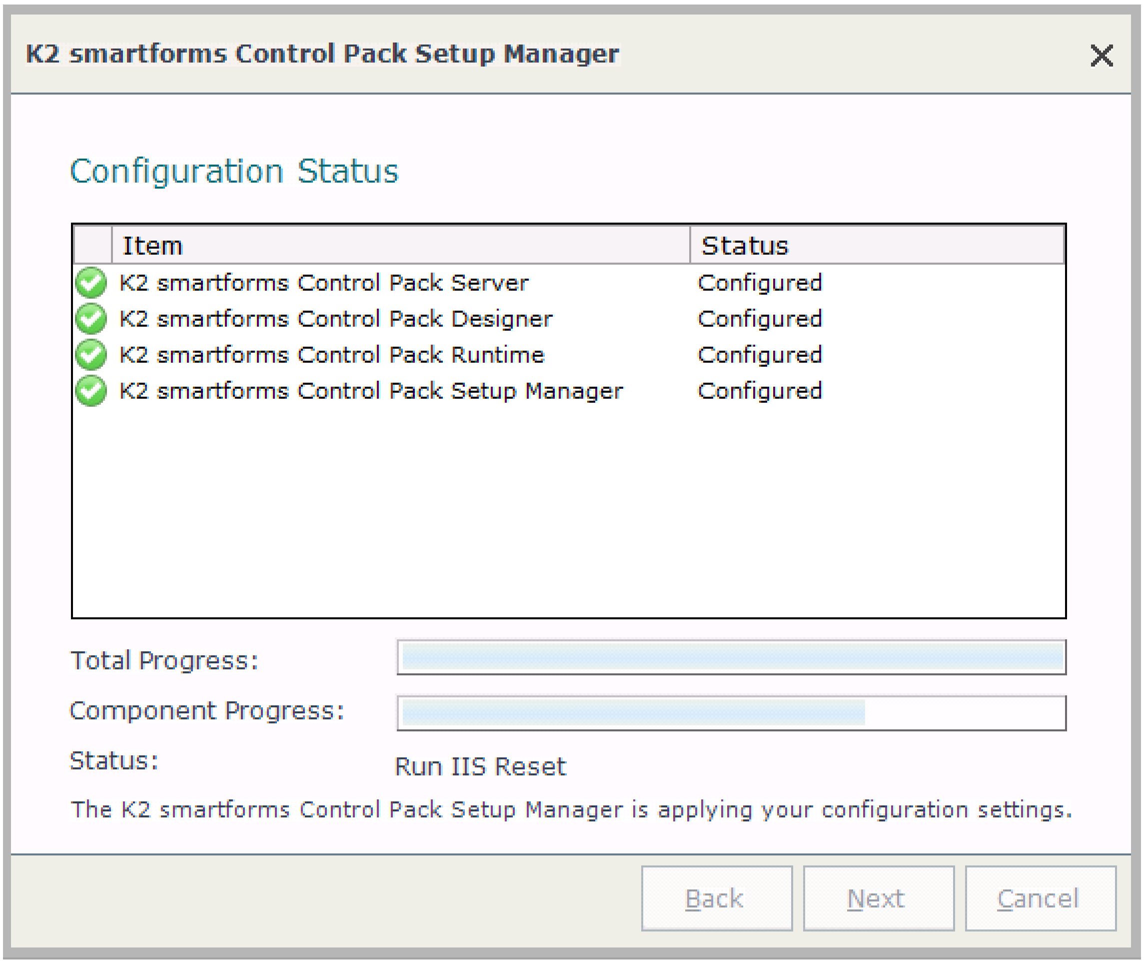
Installation Troubleshooting

If a component fails to install correctly a red X will be displayed next to the component name. A warning message will display on the Finish screen stating that a component failed to install correctly. Investigate why the component failed to install by viewing the install logs.

Configuration Status screen

The Configuration Status screen shows the current status concerning the configuration of components being installed.

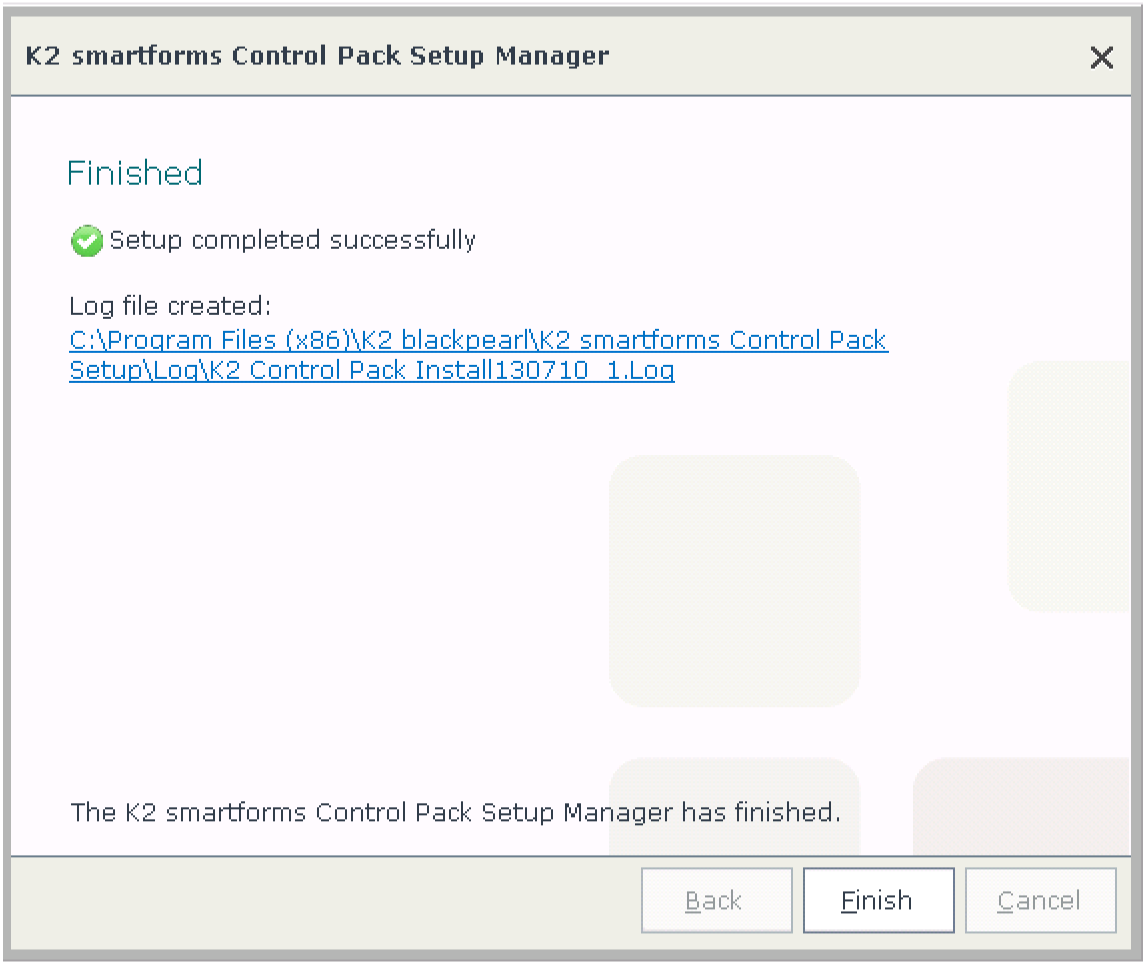
A progress bar for each component as well as an overall progress bar is shown. The Component Progress bar indicates the progress of the individual component, whereas the Total Progress bar indicates the configuration progress as a whole.



There is nothing to do on this page, simply wait for the components to be configured. Once everything is done, the Finished screen is displayed.

Finished screen

This Finished screen appears when the K2 Setup Manager is complete. There will be a link to the log file that was created. This log file can be helpful when troubleshooting issues in the K2 Environment.



What to do on this page

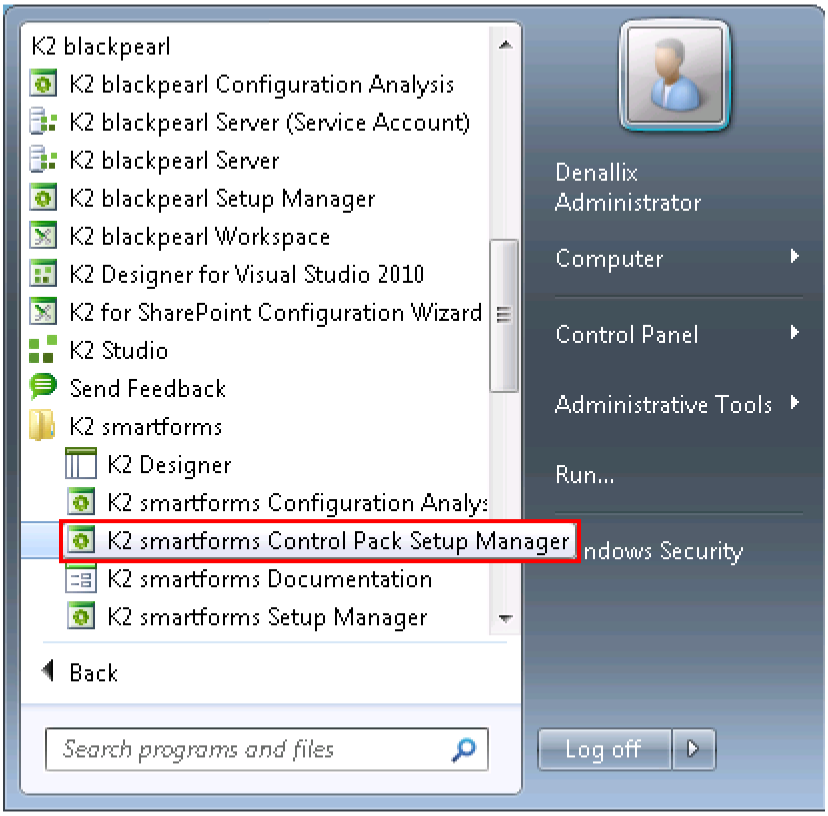
The K2 Setup Manager is complete. Clicking Finish will finalize the installation process.

2.3 Maintenance

Once you have K2 smartforms Control Pack up and running in your environment, there may be times when you need to modify components or change configuration settings. This can be accomplished by re-running the Setup Manager (to add or remove components), or re-running the Setup Manager to change configuration settings.

Managing K2 Components

- The K2 smartforms Control Pack components are listed in the **Add or Remove Programs**. However, the components are not managed from this location
- The K2 Setup Manager will need to be opened in order to manage the components. The Setup Manager can be accessed from the original source or from the menu option under Start > Program files > K2 blackpearl > K2 smartforms> K2 smartforms Control Pack Setup Manager
- The K2 blackpearl Setup Manager can not be used to remove K2 smartforms Control Pack or vice versa
- When reconfiguring K2 blackpearl, K2 smartforms and K2 smartforms Control Pack must also be reconfigured



Maintenance

When you run the K2 Setup Manager again, you will see four options:

K2 Maintenance	
Configure	Re-configures the existing K2 smartforms Control Pack Installation
Remove	Removes the existing K2 smartforms Control Pack Installation completely (including all components) from the target system
Modify	Modifies the existing installation by either adding or removing components[1]
Repair	The repair option re-installs the components currently installed on the local, target system

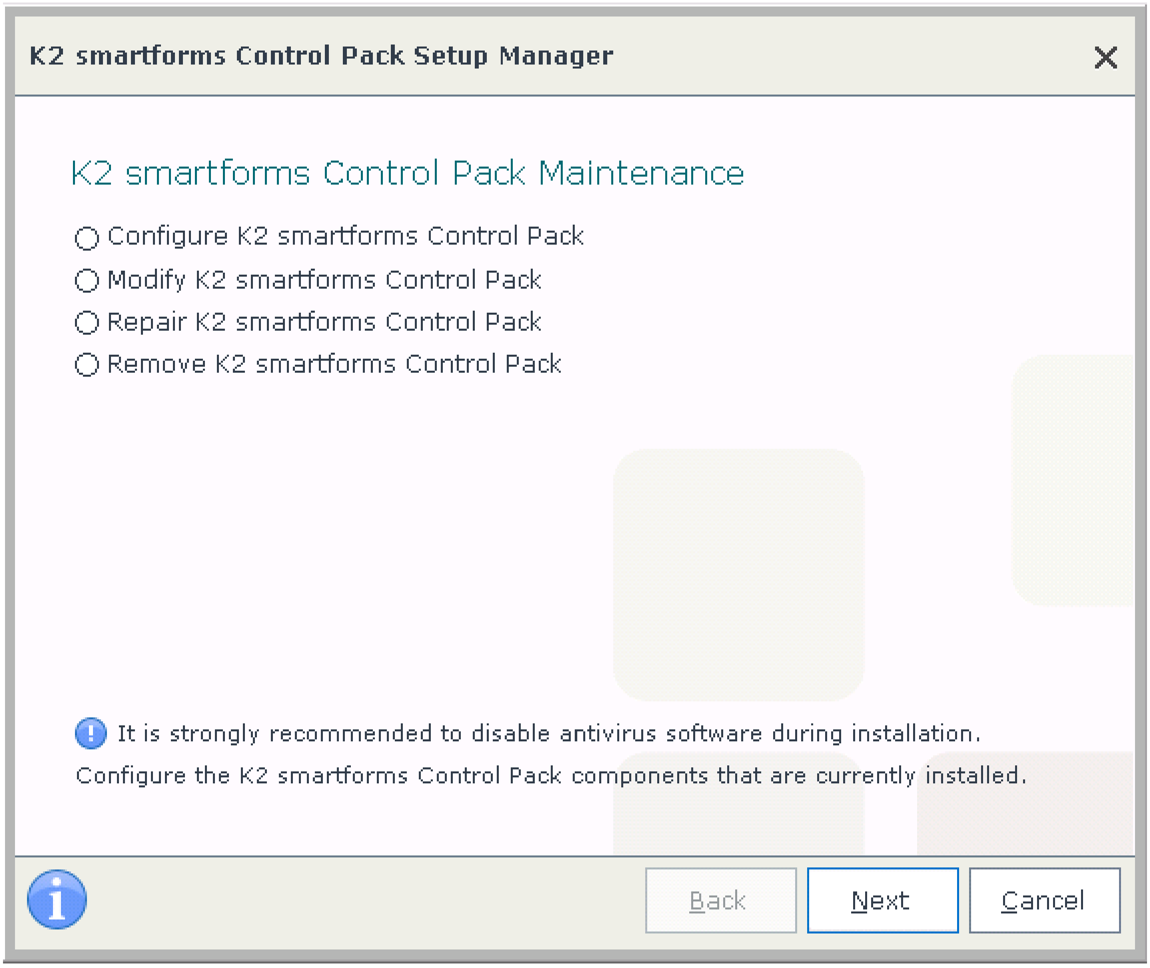
[1] The K2 Setup Manager may need to be run once the changes have been made

If any change is made to the K2 Designer web site the users must clear their browser cache for the changes to reflect.

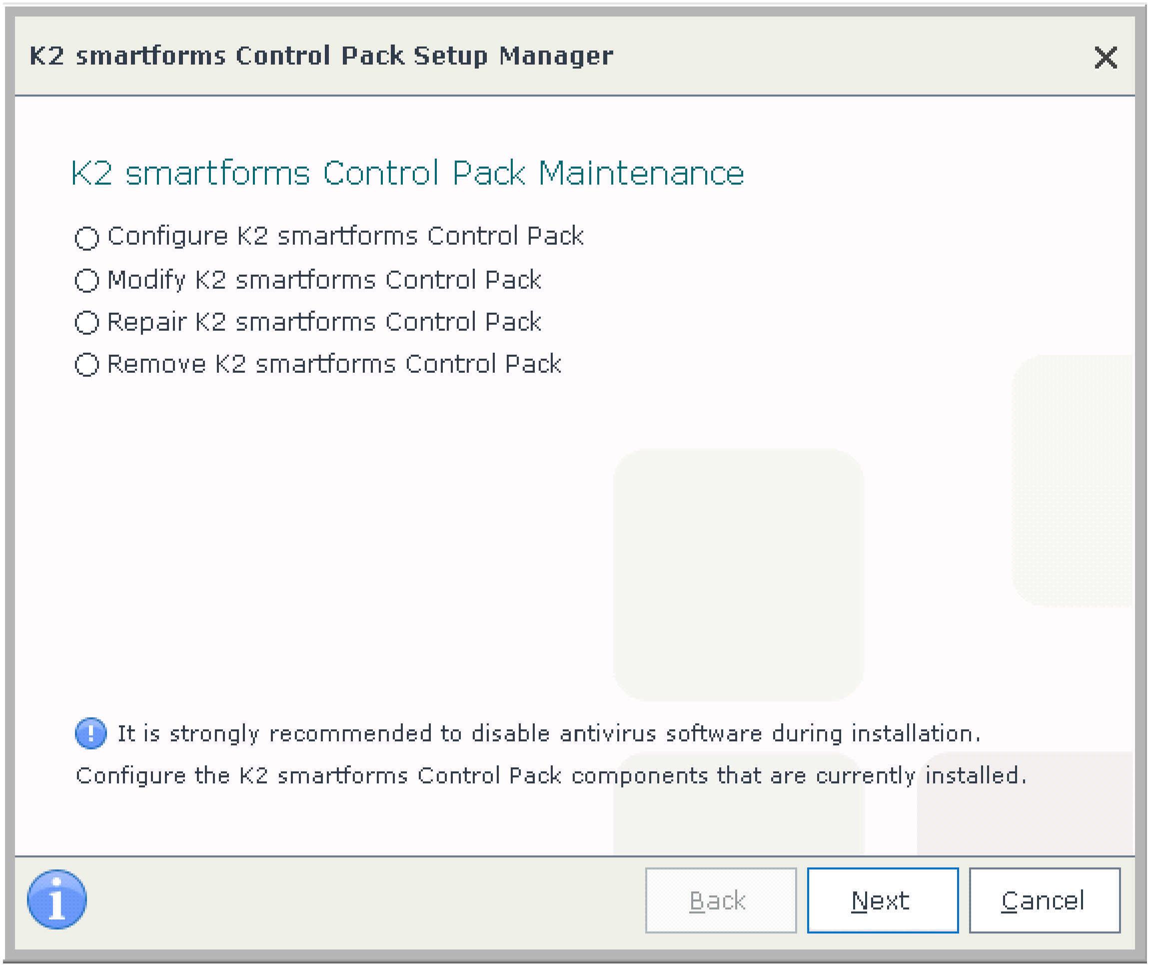
Configure

If, after the initial installation of K2 smartforms Control Pack, some components need to be reconfigured, rerunning the K2 Setup Manager will allow you to reconfigure those components. After selecting Configure from the initial screen, you can configure all the installed components. Follow the prompts through the wizard and restart the K2 server after the configuration is finished.

The Configure K2 smartforms Control Pack option configures all the installed K2 component configuration files and database scripts.



Modify



If, after the initial installation of K2 smartforms Control Pack, additional components are to be added to an existing server, rerunning the K2 Setup Manager will allow you to add new components.

After selecting Modify from the initial screen, you can select components to add by checking the check box next to the listed component, or remove an existing component by unchecking the check box next to an installed component.

The Modify option allows you to selectively add and remove K2 smartforms Control Pack components. You can install and remove different components during the same session of Modify. For example, you can select to uninstall a component while at the same time installing a different component.

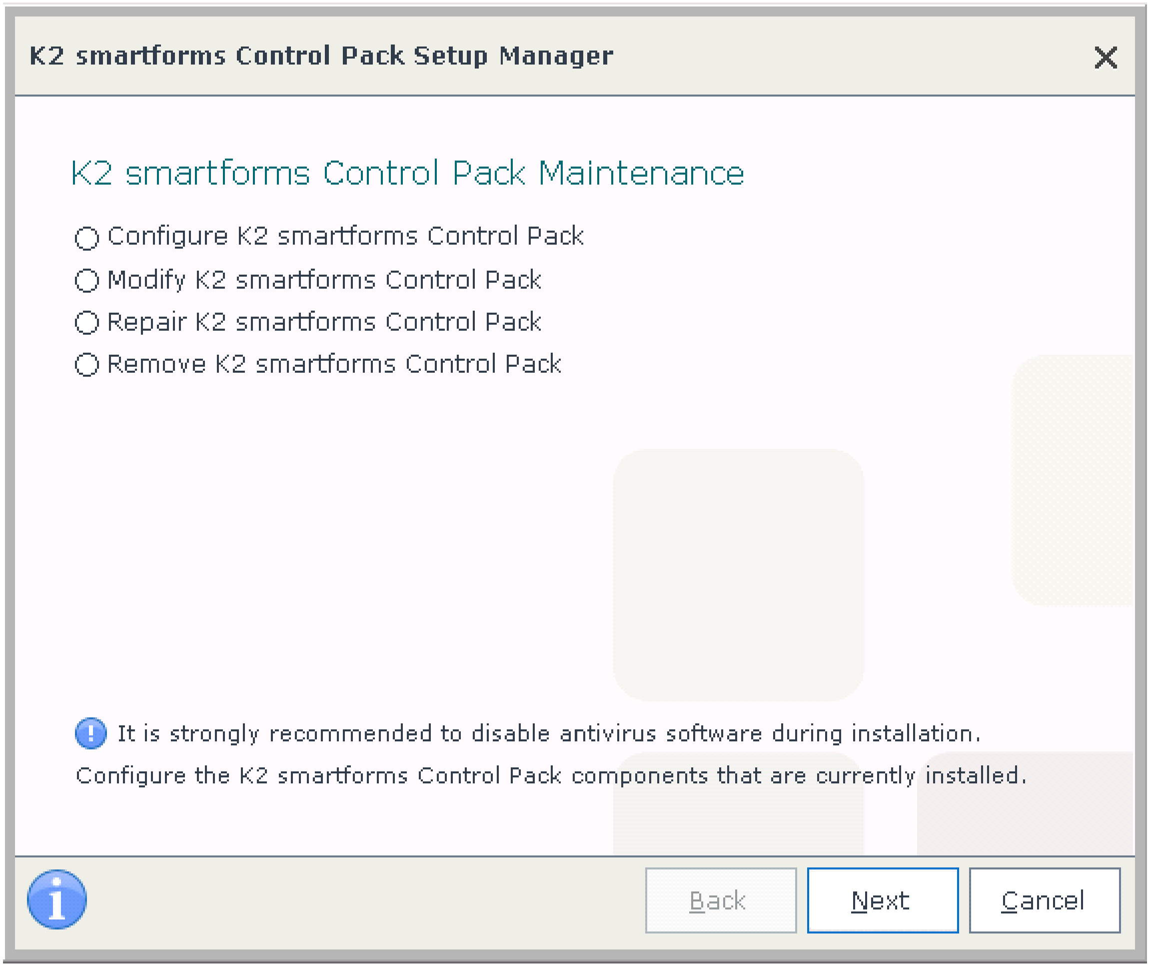
Please note the following important facts regarding Modify:

1. When running Setup.exe from a temporary folder (where you copied/extracted the installer to), and components have been installed previously, the modify option will show you all the components, because it detects the msi files in the Setup folder.
2. When running the Setup.exe from the folder where K2 smartforms Control Pack had been installed to, the Modify option will only show those components that are installed. You can then select which ones to remove. It will NOT show you components that have not been installed. This is because the msi files are not installed to the K2 smartforms Control Pack install directory. This means you cannot add components by running Setup.exe from this folder. You have to run it from the original setup folder that contains the msi files, or start the Setup Manager from the Start menu.

Before adding a new component, you should evaluate your K2 environment and make sure that the target server is a good fit for your requirements. Then, determine if all the prerequisites are met, and then run the K2 Setup Manager to add and configure the new components.

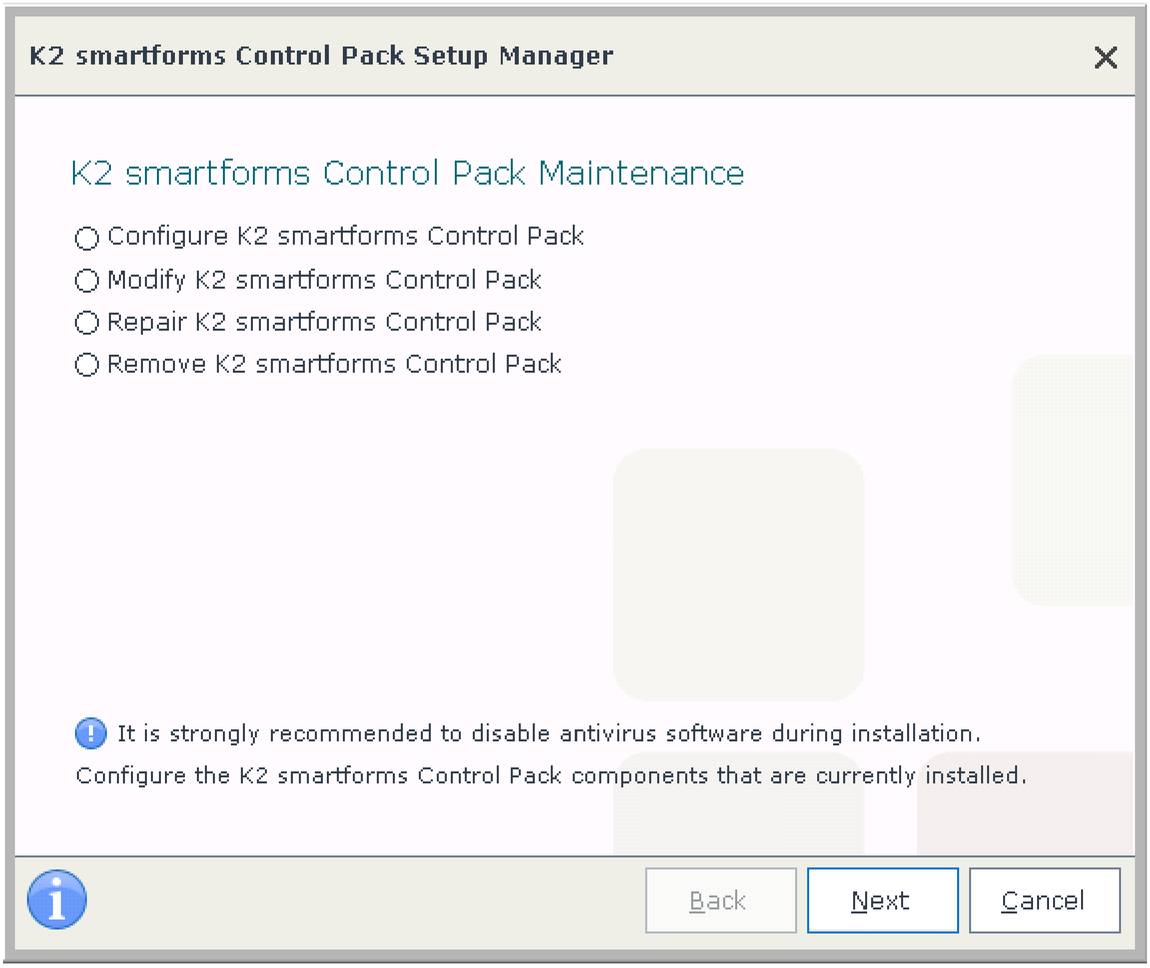
Repair

Repairing a K2 component is completed by rerunning the K2 Setup Manager and selecting repair. All the currently installed components on the server will be repaired. The repair process is essentially a reinstallation of all of the previously installed components. Therefore, you should back up the K2 databases and additional configuration files if you made any changes. A single component cannot be repaired. Selecting the Repair option will reinstall all K2 smartforms Control Pack components that are currently installed on that server. After you select repair, you will be prompted to stop any running programs and services that use K2 components. The Setup Manager can stop the K2 Service as well as Visual Studio and K2 Studio for you, but you will need to close other programs manually. You should validate your environment after a repair to ensure that your system is functioning properly.



Repairing a K2 smartforms Control Pack installation should be done only when absolutely necessary and only when components have been damaged by external circumstances.

- Remove



Removing K2 smartforms Control Pack is essentially a reversal of the Installation and Configuration process. The **Setup Manager** will identify the components installed and remove them completely from the target system. The process starts by running the K2 smartforms Control Pack Setup Manager and selecting the option to Remove K2 smartforms Control Pack.

This article walks through the steps to remove K2 smartforms Control Pack from a single server. For a distributed environment, perform these steps on all servers that have K2 smartforms Control Pack installed.

If you have installed K2 smartforms Control Pack in a distributed environment, uninstall the server components in the following order:

- K2 Control Pack Designer
- K2 Control Pack Runtime
- K2 Control Pack Server

To uninstall, perform the following steps:

1. Shut down all K2 related Workflows (K2 smartforms Designer, K2 Designer for Visual Studio, K2 Studio, K2 Workflow Designer, K2 Designer for SharePoint, K2 blackpearl Server service)
2. Run the installation manager (Setup.exe) and select **Remove K2 smartforms Control Pack**
3. Follow the prompts through the wizard and reboot after the uninstall is finished.

This will remove all components from the target system. You will be prompted to continue. If you want to remove just a single component, select Modify from the maintenance home page.

- You cannot use K2 blackpearl Setup Manager to remove K2 smartforms Control Pack or vice versa.
- If you remove K2 blackpearl - K2 smartforms and K2 smartforms Control Pack will no longer function and will have to be removed as it relies on K2 blackpearl to be in the environment.
- If you remove K2 smartforms - K2 smartforms Control Pack will no longer function and will have to be removed as it relies on K2 smartforms to be in the environment.

3 Input Controls

Input Controls

Input controls are available in the K2 smartforms View Designer and Form Designer and are in essense controls of which the value can be manipulated by the user. These controls can be applied in SharePoint 2013 to a Form which can then be edited in SmartForms.

Prerequisites

- K2 smartforms 1.0.6 RC

Knowledge Required

K2 smartforms provides the platform required to use these controls. For more information about the K2 smartforms product, see the following link:

http://help.k2.com/en/k2smartformshelp.aspx

Knowledge regarding the following items is required as it will help in the setup of rules, creation of the correct platform and understanding the end-to-end process:

- Views
- Forms
- Rules

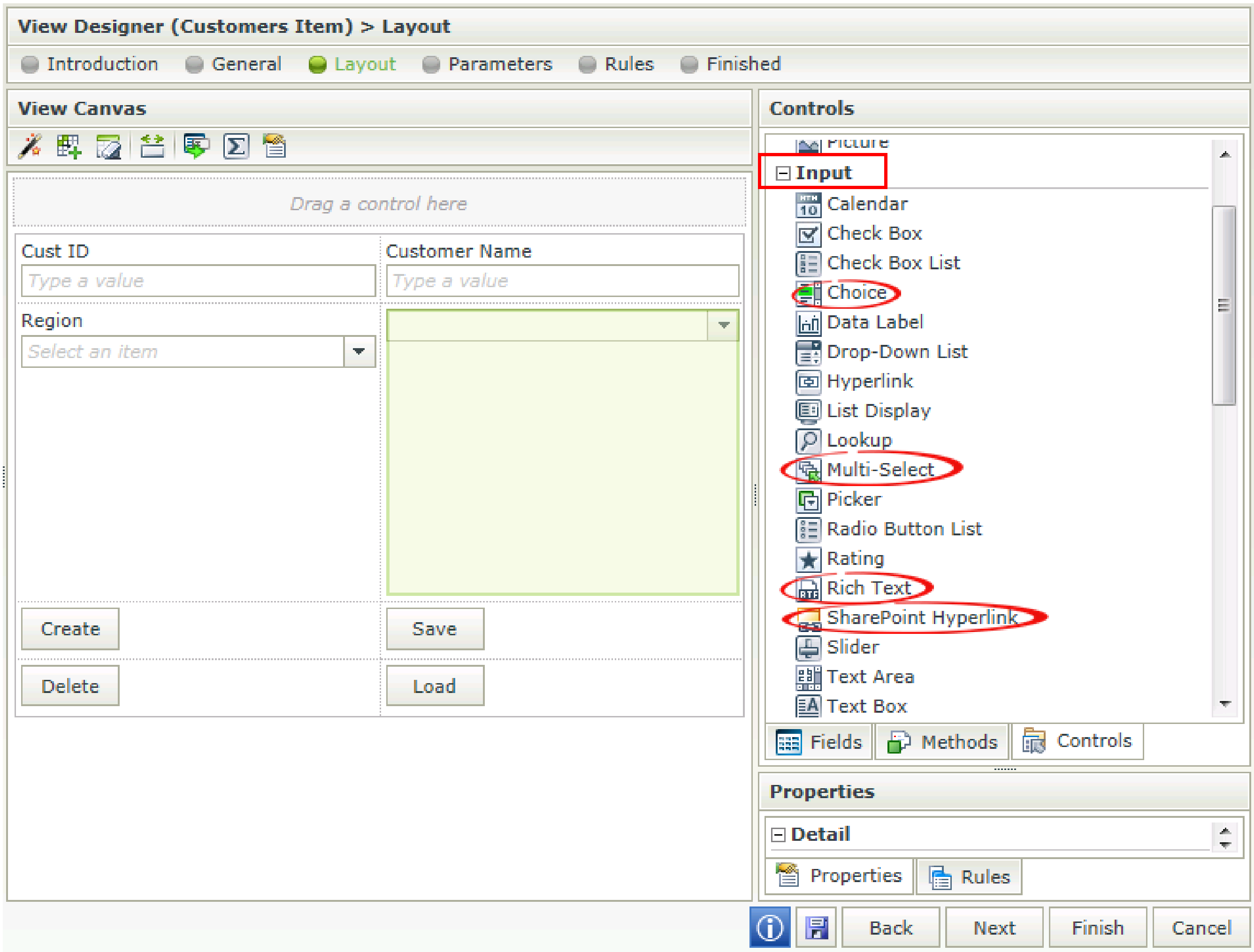
Input Controls

The following **Input** controls are available in addition to those found in K2 smartforms. These types can be applied in SharePoint 2013 to a Form which can then be edited in SmartForms:

- Choice - Provides the user with the ability to select a single or multiple values from a list of options
- Multi-Select - Allows comfortable input of multiple selections of items from a defined number of items
- Rich Text - Provides the user with text and graphics interchange
- SharePoint Hyperlink - Allows the user to display a hyperlink or picture

Location

The Input controls are located in the **Input** section of the Controls tab within the View Designer.



Considerations

- The Save as PDF control can be used to create a PDF document of the View containing these controls

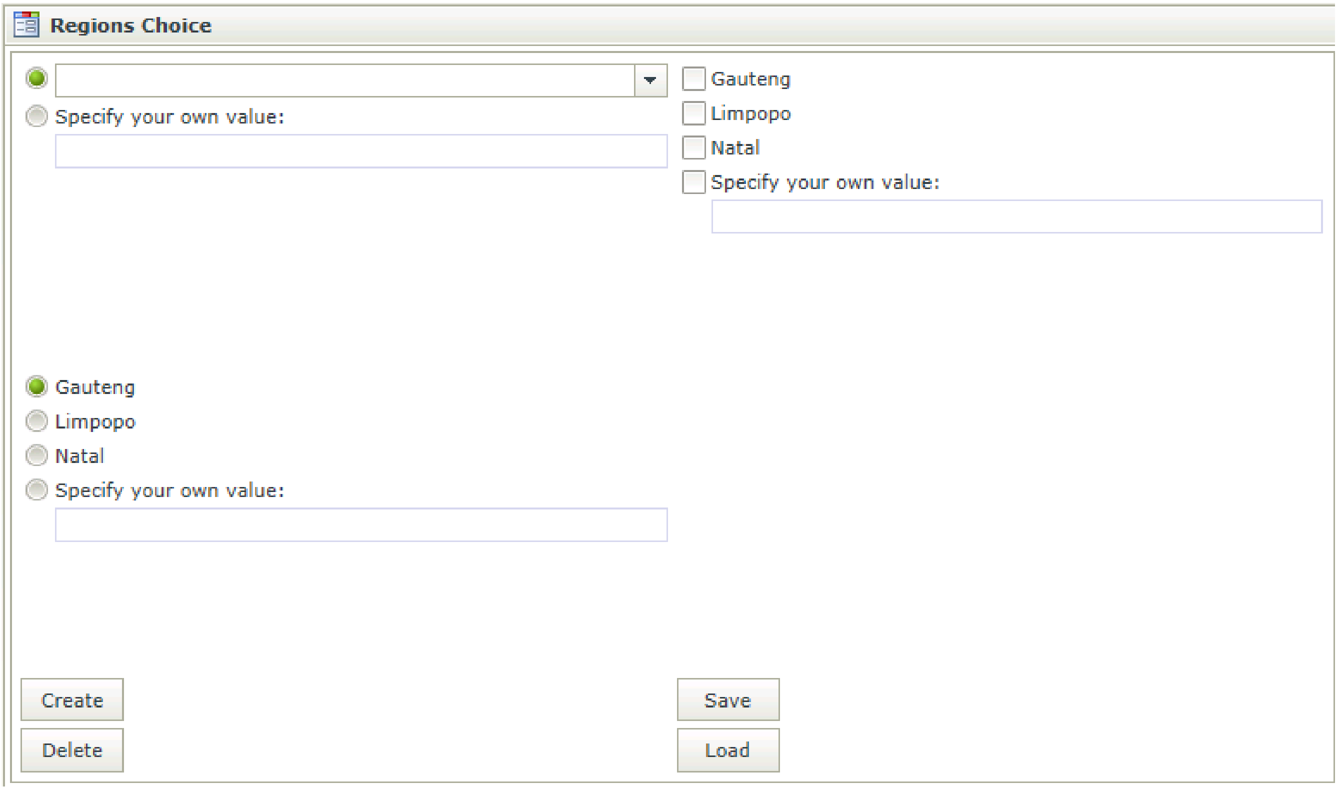
3.1 Choice

Choice Control

The Choice control is an input control and provides the user with the ability to select a single or multiple values from a list of options. The control can be configured to display as one of the following types:

- Drop-Down List - enables the selection of a single value from a list of options
- Check Box List - enables the selection of mutiple values at a time from a list of options
- Radio Button List - enables the selection of a single value from a list of options

Runtime Example



How to use the Choice control

1. Create a View
2. Drag the Choice control onto the canvas. The control can be found in the Input section of the Controls found in the View Designer, see the Properties section below
3. Configure the **Type** located in the Data Source section of the Properties
4. Configure the **Display Type** located in the Display section of the Properties
5. Configure the rest of the properties as required
6. Run the View

If a field exists with relevant data that can be used in a Drop-Down List, Check Box List or Radio Button List, the field can be dragged into the Choice control to bypass step 3 above

Considerations

- The value should correspond to the list item value
- A Choice control can be associated to a SmartObject or have static list values
- The data is a delimited list of values that the control saves and loads. It is important to always have a delimiter specified
- It is not advised to use this control when using complex data scenarios as there is no Key value available in the Data Source setup

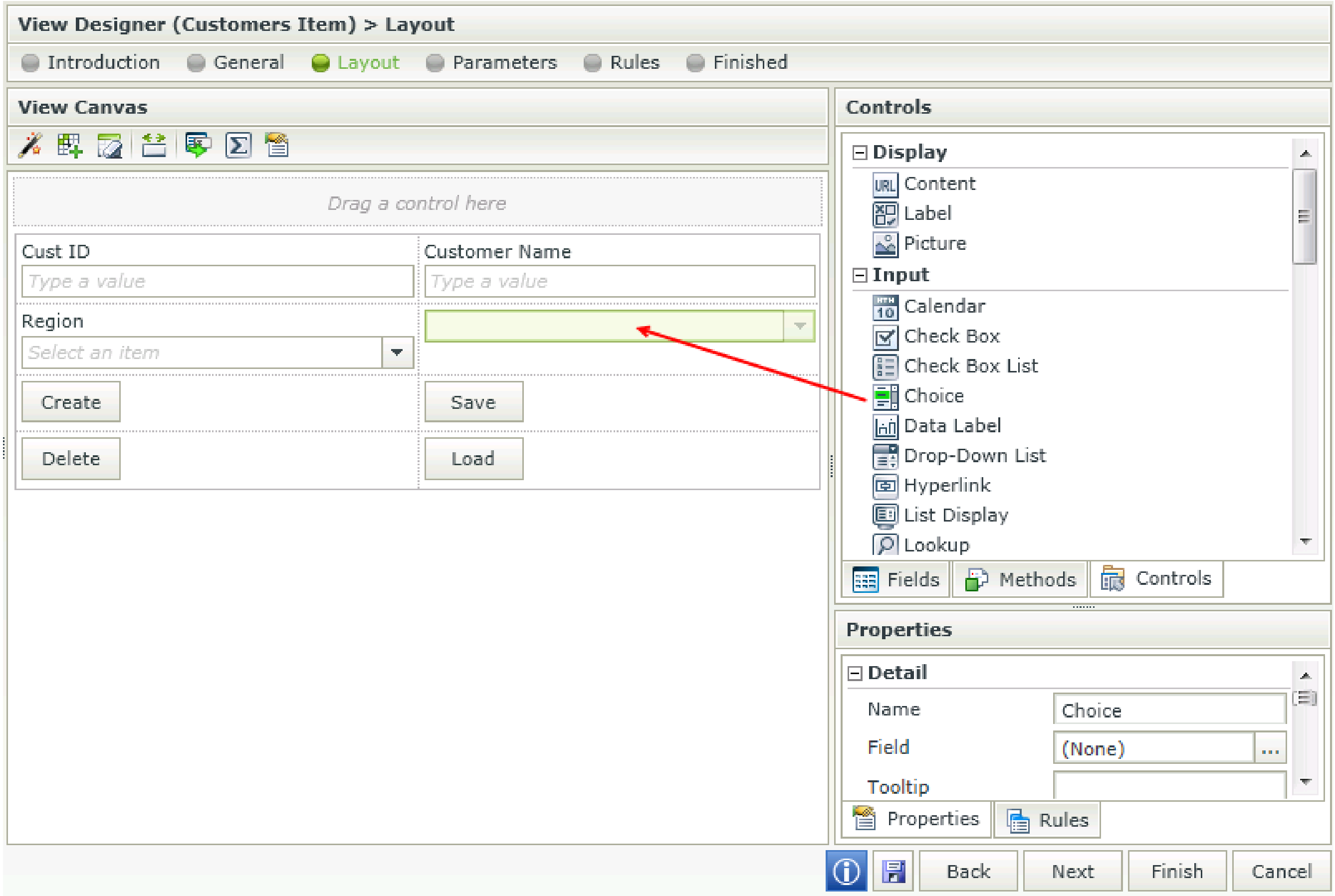
Interaction

The Choice control interacts with other controls through rules. Depending on the control properties, there are certain actions where the control surfaces. Following are a few examples:

- Populate a list control with data - The control can be populated if it has a SmartObject-based data source
- Execute a method on a control for values that are in a specific state - If the control is compatible with multi-value fields it will surface in this action
- Set a control’s properties- The control's settable properties can be configured using this action
- Show/Hide - The Visible property allows for the control to be shown or hidden through rules
- Enable/Disable - The Enabled property allows for the control to be enabled or disabled through rules
- Data Transfer - Data can be transferred from items listed in the Context Browser to the Choice control

Design Properties

The Choice control is available in the **Input** section of the Controls found in the View Designer.

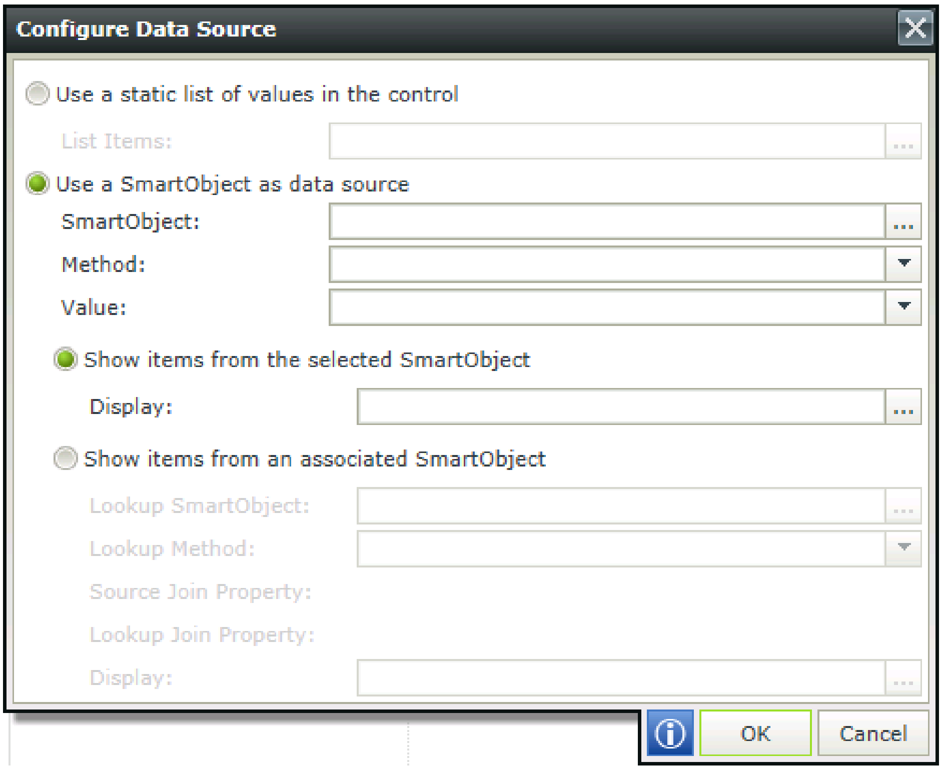


Property	**Description**	**Can be set in runtime using Rules**
Detail		
Name	A unique identifier for the selected control. This property is required	Yes, see Control Properties Actions for more information
Field	The field that is bound to the selected control	No
Tooltip	The value to be displayed when the cursor is hovered over the control during runtime	Yes, see Control Properties Actions for more information
Display Field	Allows you to show the control's display value before its data has been loaded	No
Data Type	A drop-down list containing the types of values that the selected control can accept	No
Data Source		
Type	Set up data-bindings for the selected control	No
Items	A read-only list of fixed list items	No
SmartObject	The selected SmartObject that has been bound to the control. See Configure Data Source section	No
Method	The method to be used to populate the control. See Configure Data Source section	No
Value	The SmartObject property to be used as a value member. See Configure Data Source section	No
Lookup SmartObject	An alternate SmartObject to be used as the source of the display values (*optional). See Configure Data Source section	No
Lookup Method	The method to be executed on the lookup SmartObject when retrieving the display	No

	values. See Configure Data Source section	
Source Join Property	The SmartObject property on the original SmartObject that will be used to join the original SmartObject with the Lookup SmartObject. See Configure Data Source section	No
Lookup Join Property	The SmartObject property on the lookup SmartObject that will be used to join the original SmartObject with the Lookup SmartObject. See Configure Data Source section	No
Display	The display name of the selected SmartObject that has been bound to the control. See Configure Data Source section	No
Display		
Display Type	The type of display to be used for the control. Select one of the following: • Drop-Down List • Check Box List • Radio Button List	Yes, see Control Properties Actions for more information
Delimiter	The type of delimiter to be used when using a Check Box List and saving the values into the SmartObject. The default is ";"	Yes, see Control Properties Actions for more information
Allow Own Value	Enables the user to specify a new value for the records that's being added	Yes, see Control Properties Actions for more information
Select Empty Value	Enables the user to have a blank value in the control resulting in an empty value when saved	Yes, see Control Properties Actions for more information
General		
Height	Adjusts the height of the control. Any whole number or pixel value up to 32767px. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Used to establish whether the control is read-only during runtime	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

Configure Data Source

When clicking on the ellipsis next to **Type** in the **Data Source** section, the Configure Data Source screen opens. Configure the data source to be used for the control



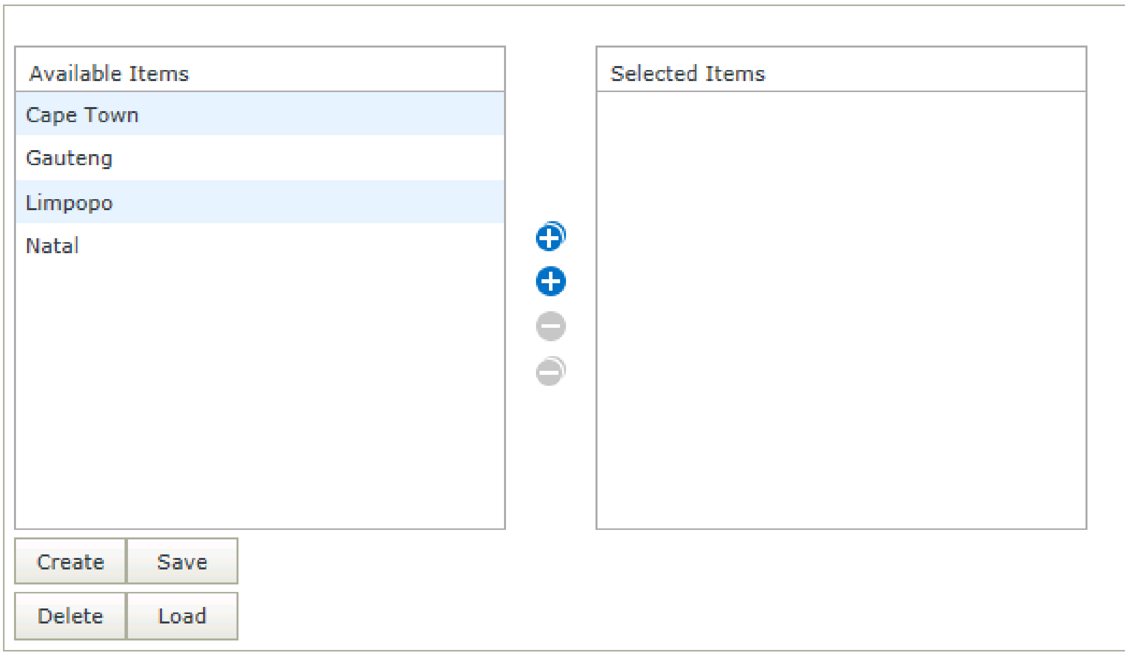
Feature	Description
Use a static list of values in the control	A static list of items can be configured. These values are stored as Text in the database. Click the ellipsis next to **List Items** to configure the list
List Items	List Item selected. Click the ellipsis next to **List Items** to configure the list
Use a SmartObject as data source	A SmartObject can be used as data source. Select this option if a SmartObject should be used as data source
SmartObject	The selected SmartObject that has been bound to the control. Click the ellipsis next to SmartObject to select the SmartObject
Method	The method to be used to populate the control. Select the method from the drop-down list
Value	The SmartObject property to be used as a value member. Select the property from the drop-down list
Show items from the selected SmartObject	Shows items from the selected SmartObject. Select the option
Display	The SmartObject property to be used as a display member. Select the item
Show items from an associated SmartObject	Shows items from an associated SmartObject. Select the option
Lookup SmartObject	An alternate SmartObject to be used as the source of the display values (*optional). Click on the ellipsis to select the SmartObject
Lookup Method	The method to be executed on the lookup SmartObject when retrieving the display values. Select the method from the drop-down
Source Join Property	The SmartObject property on the original SmartObject that will be used to join the original SmartObject with the Lookup SmartObject
Lookup Join Property	The SmartObject property on the lookup SmartObject that will be used to join the original SmartObject with the Lookup SmartObject
Display	The SmartObject property to be used as a display member. Select the item by clicking on the ellipsis

3.2 Multi- Select

Multi-Select Control

The Multi-Select control is an input control and allows comfortable input of multiple selections of items from a defined number of items. Single items can be added to the *Selected Items* list by clicking on a single item and clicking on the plus icon. When adding multiple items, hold down the *control* (ctrl) button on your keyboard, click on the items required and click on the plus icon. The items are transferred to the Selected Items list and will be used when executing for example a Save method.

Runtime Example



How to use the Multi-Select control

1. Create a View
2. Drag the Multi-Select control onto the canvas. The control can be found in the Input section of the Controls found in the View Designer, see the Properties section below
3. Configure the **Type** located in the Data Source section of the Properties
4. Configure the rest of the properties as required
5. Run the View

If a field exists with relevant data that can be used in a list, the field can be dragged into the Multi-Select control to bypass step 3 above

Considerations

- Values can be transferred to the Multi-Select control by using the Transfer Data action mappings screen
- The value should correspond to the list item value
- A Multi-Select control can be associated to a SmartObject or have static list values
- The data is a delimited list of values that the control saves and loads. It is important to always have a delimiter specified

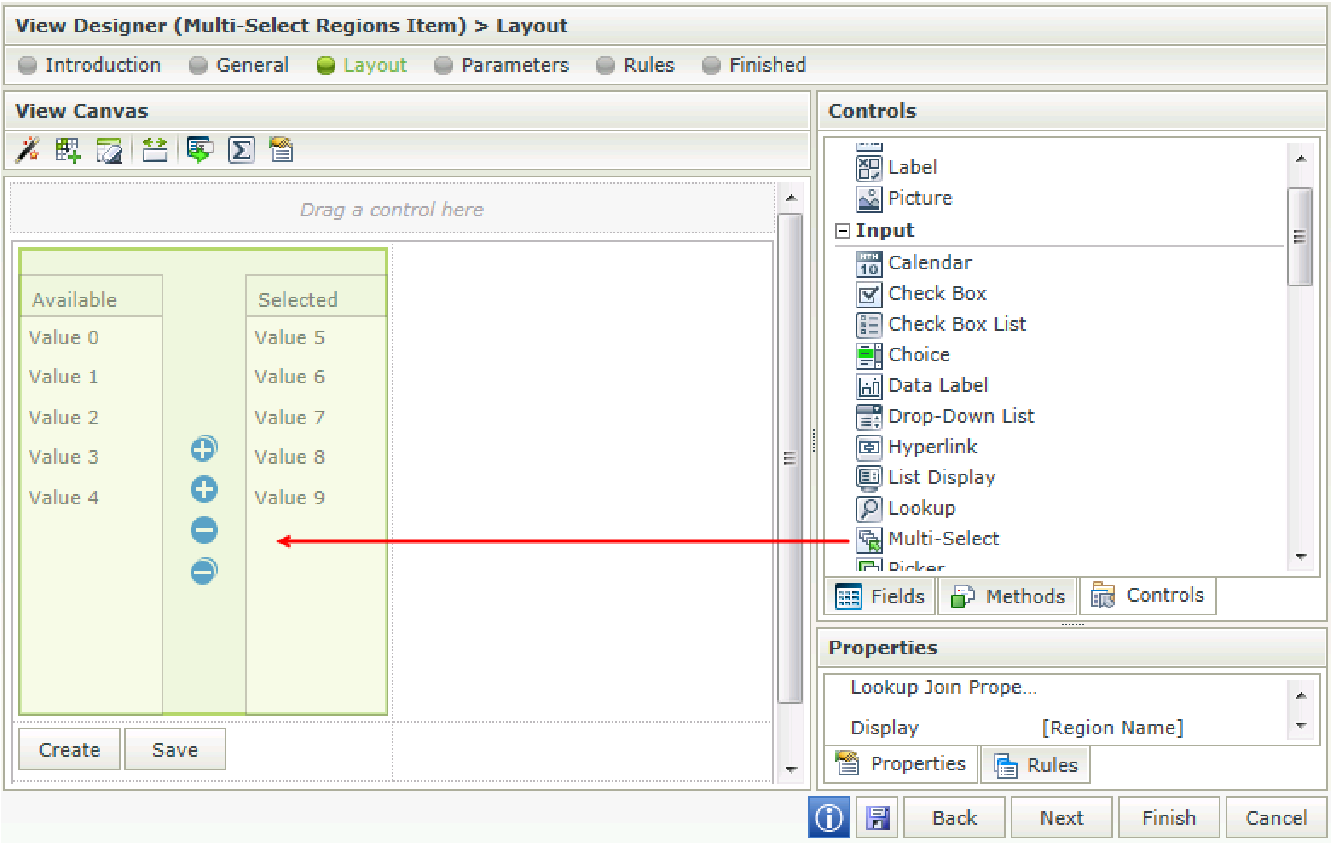
Interaction

The Multi-Select control interacts with other controls through rules. Depending on the control properties, there are certain actions where the control surfaces. Following are a few examples:

- Populate a list control with data - The control can be populated if it has a SmartObject-based data source
- Execute a method on a control for values that are in a specific state - If the control is compatible with multi-value fields it will surface in this action
- Set a control’s properties- The control's settable properties can be configured using this action
- Show/Hide - The Visible property allows for the control to be shown or hidden through rules
- Enable/Disable - The Enabled property allows for the control to be enabled or disabled through rules
- Data Transfer - Data can be transferred from items listed in the Context Browser to the Multi-Select control

Design Properties

The Multi-Select control is available in the **Input** section of the Controls found in the View Designer.

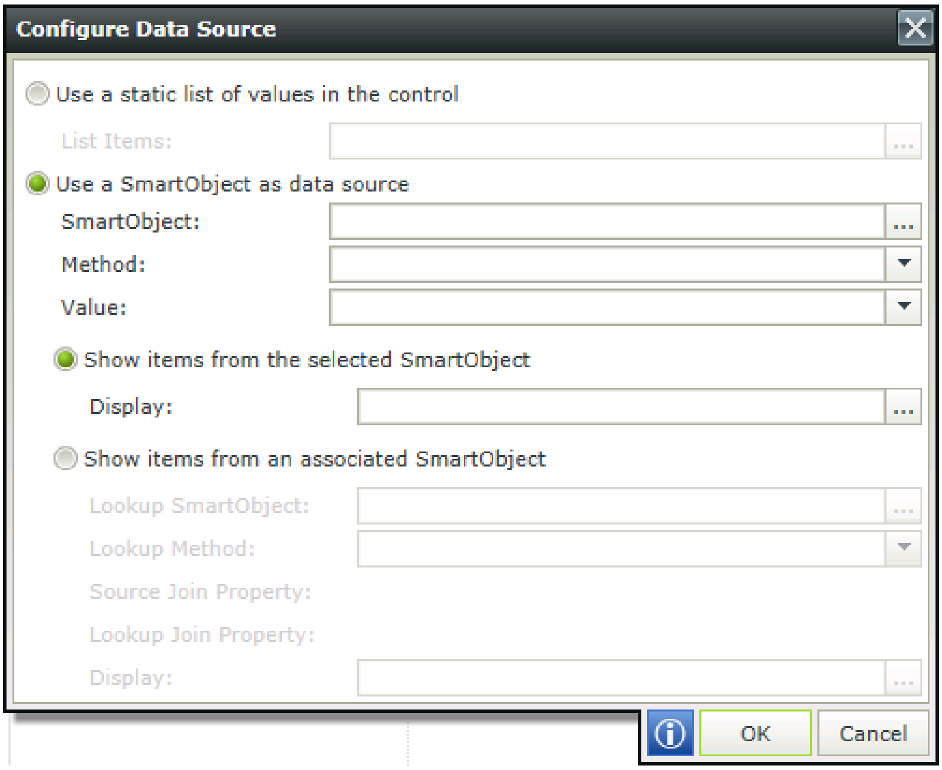


Property Detail	Description	Can be set in runtime using Rules
Name	A unique identifier for the selected control. This property is required	Yes, see Control Properties Actions for more information
Source Title	The Title of the available items list	Yes, see Control Properties Actions for more information
Destination Title	The Title of the selected items list	Yes, see Control Properties Actions for more information
Field	The field that is bound to the selected control	No
Display Field	Allows you to show the control's display value before its data has been loaded	No
Data Type	A drop-down list containing the types of values that the control can accept	No
Data Source Type	Set up data-bindings for the selected control	No
Items	A read-only list of fixed list items	No
SmartObject	The selected SmartObject that has been bound to the control. See Configure Data Source section	No
Method	The method to be used to populate the control. See Configure Data Source section	No
Value	The SmartObject property to be used as a value member. See Configure Data Source section	No
Lookup SmartObject	An alternate SmartObject to be used as the source of the display values (*optional). See Configure Data Source section	No
Lookup Method	The method to be executed on the lookup SmartObject when retrieving the display values. See Configure Data Source section	No
Source Join Property	The SmartObject property on the original SmartObject that will be used to join the original SmartObject with the Lookup	No

	SmartObject. See Configure Data Source section	
Lookup Join Property	The SmartObject property on the lookup SmartObject that will be used to join the original SmartObject with the Lookup SmartObject. See Configure Data Source section	No
Display	The display name of the selected SmartObject that has been bound to the control. See Configure Data Source section	No
Display		
Delimiter	The type of delimiter to be used when saving the values. The default is ";"	Yes, see Control Properties Actions for more information
General		
Height	Adjusts the height of the control. Any whole number or pixel value up to 32767px. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Used to establish whether the control is read-only during runtime	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

Configure Data Source

When clicking on the ellipsis next to **Type** in the **Data Source** section, the Configure Data Source screen opens. Configure the data source to be used for the control



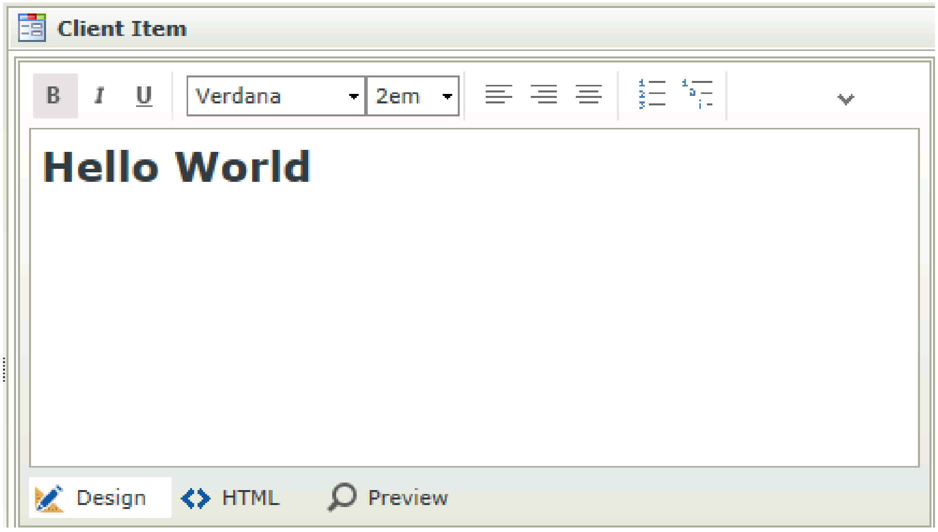
Feature	Description
Use a static list of values in the control	A static list of items can be configured. Click the ellipsis next to **List Items** to configure the list
List Items	List Item selected. Click the ellipsis next to **List Items** to configure the list
Use a SmartObject as data source	A SmartObject can be used as data source. Select this option if a SmartObject should be used as data source
SmartObject	The selected SmartObject that has been bound to the control. Click the ellipsis next to SmartObject to select the SmartObject
Method	The method to be used to populate the control. Select the method from the drop-down list
Value	The SmartObject property to be used as a value member. Select the property from the drop-down list
Show items from the selected SmartObject	Shows items from the selected SmartObject.
Display	The SmartObject property to be used as a display member. Select the item
Show items from an associated SmartObject	Shows items from an associated SmartObject
Lookup SmartObject	An alternate SmartObject to be used as the source of the display values (*optional). Click on the ellipsis to select the SmartObject
Lookup Method	The method to be executed on the lookup SmartObject when retrieving the display values. Select the method from the drop-down
Source Join Property	The SmartObject property on the original SmartObject that will be used to join the original SmartObject with the Lookup SmartObject
Lookup Join Property	The SmartObject property on the lookup SmartObject that will be used to join the original SmartObject with the Lookup SmartObject
Display	The SmartObject property to be used as a display member. Select the item by clicking on the ellipsis

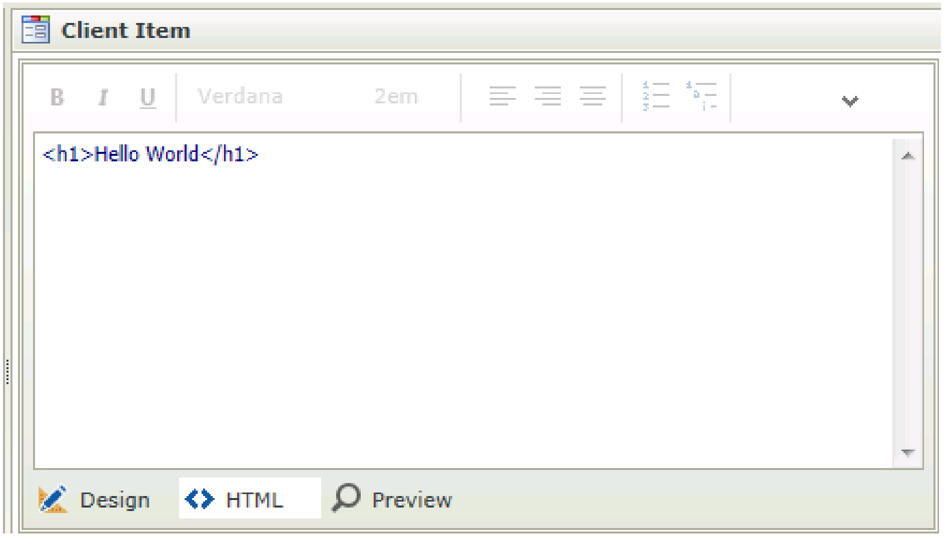
3.3 Rich Text

Rich Text Control

The Rich Text control is an input control and provides the user with text and graphics interchange. It is essentially a content editable control which transforms the data input into HTML. Using HTML format, the data can be customised within the user interface.

Runtime Examples





How to use the Rich Text control

1. Create a View
2. Drag the Rich Text control onto the canvas. The control can be found in the Input section of the Controls found in the View Designer, see the Properties section below
3. Configure the properties as required
4. Run the View

Considerations

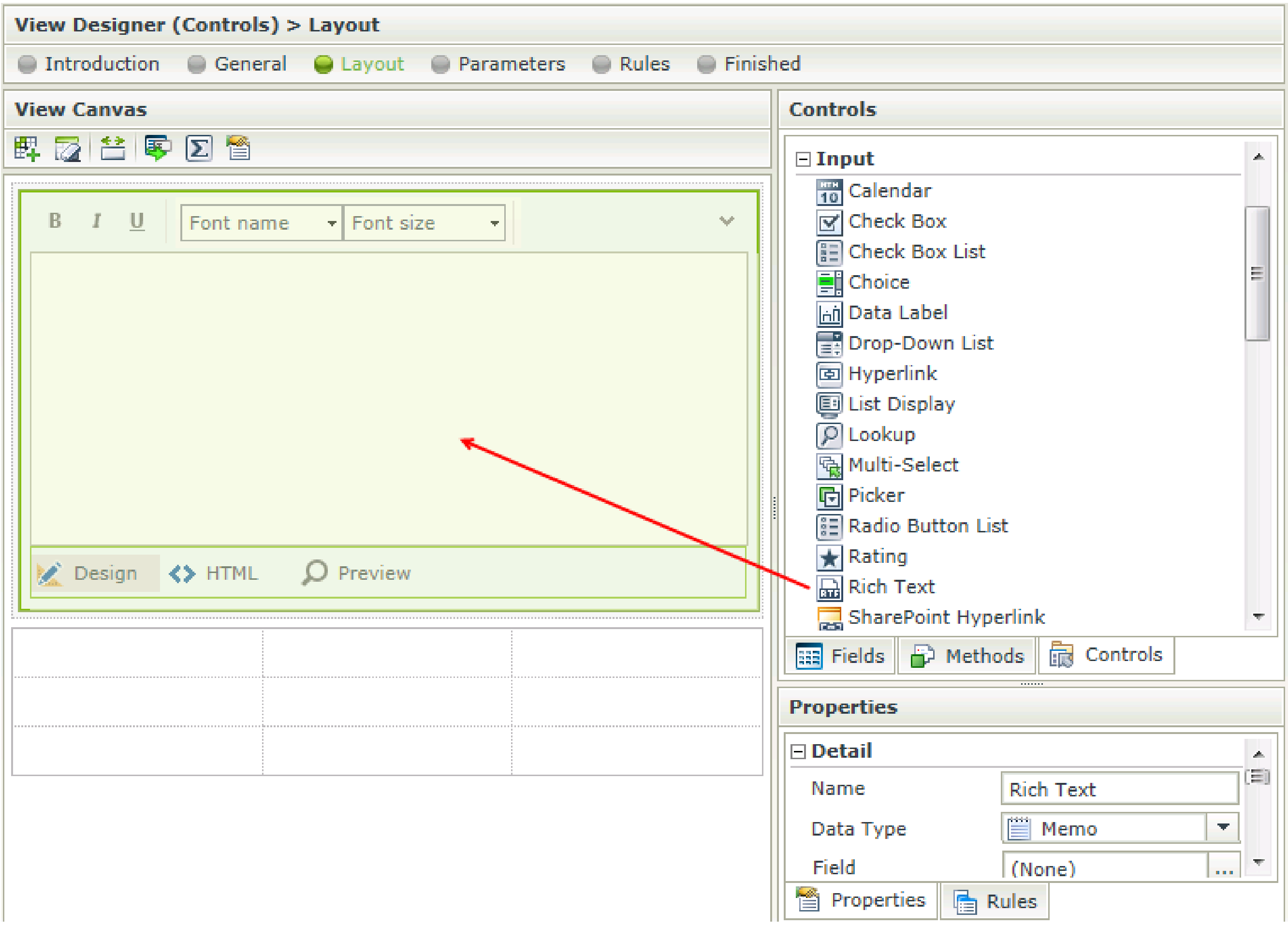
Interaction

The Rich Text control interacts with other controls through rules. Depending on the control properties, there are certain actions where the control surfaces. Following are a few examples:

- Set a control’s properties- The control's settable properties can be configured using this action
- Show/Hide - The Visible property allows for the control to be shown or hidden through rules
- Enable/Disable - The Enabled property allows for the control to be enabled or disabled through rules
- Data Transfer - Data can be transferred from items listed in the Context Browser to the Rich Text control

Design Properties

The Rich Text control is available in the **Input** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	Yes, see Control Properties Actions for more information
Data Type	A drop-down list containing the types of values that the selected control can accept	No
Field	The field that is bound to the selected control	No
Watermark	The text to display when the control is not populated	No
Tooltip	The value to be displayed when the cursor is hovered over the control during runtime	Yes, see Control Properties Actions for more information
Display		
HTML	The HTML code to be populated in the control at runtime. Can be Text or HTML Text	Yes, see Control Properties Actions for more information
General		
Height	Adjusts the height of the control. Any whole number or pixel value up to 32767px. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Used to establish whether the control is	Yes, see Control Properties Actions for

	read-only during runtime	more information
Expression	Opens the Expression Builder to configure expressions to populate the control with dynamically calculated values. Click on the ellipsis to open the Expression Builder	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No
Settings		
Show Toolbar	Shows or hides the toolbar at runtime	Yes, see Control Properties Actions for more information
Toolbar Items	Indicates which toolbar items to include at runtime	Yes, see Control Properties Actions for more information
Edit Mode		
Design View	Provides the user interface for design. Deselect the option if the Design View tab should not be available at runtime	No
HTML View	Displays the HTML representing the text and graphic display. Deselect the option if the HTML View tab should not be available at runtime	No
Preview	Enables the user to preview the design. Deselect the option if the Preview tab should not be available at runtime	No

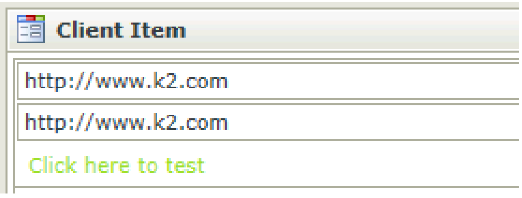
3.4 SharePoint Hyperlink

SharePoint Hyperlink Control

The SharePoint Hyperlink control is an input control and allows the user to display a hyperlink or picture. The control can be displayed as one of the following:

- Input - Provides the user with the ability to input the data at runtime by typing a description and web address for the URL
- Hyperlink - Displays the description as a hyperlink at runtime. It can't be set by the user at runtime, but rules can be used to set the hyperlink at runtime. Acts like a read-only display
- Picture - Renders the URL specified in the properties at design time as an image at runtime

Runtime Example



How to use the SharePoint Hyperlink control

1. Create a View
2. Drag the SharePoint Hyperlink control onto the canvas. The control can be found in the Input section of the Controls found in the View Designer, see the Properties section below
3. Configure the **Type** located in the Data Source section of the Properties
4. Configure the rest of the properties as required
5. Run the View

Considerations

- Values can be transferred to the SharePoint Hyperlink control by using the Transfer Data action mappings screen
- Values are saved using a delimiter and when returned the first value will be applied as the text and the second value will be applied as the description of the URL. It is important to always have a delimiter specified

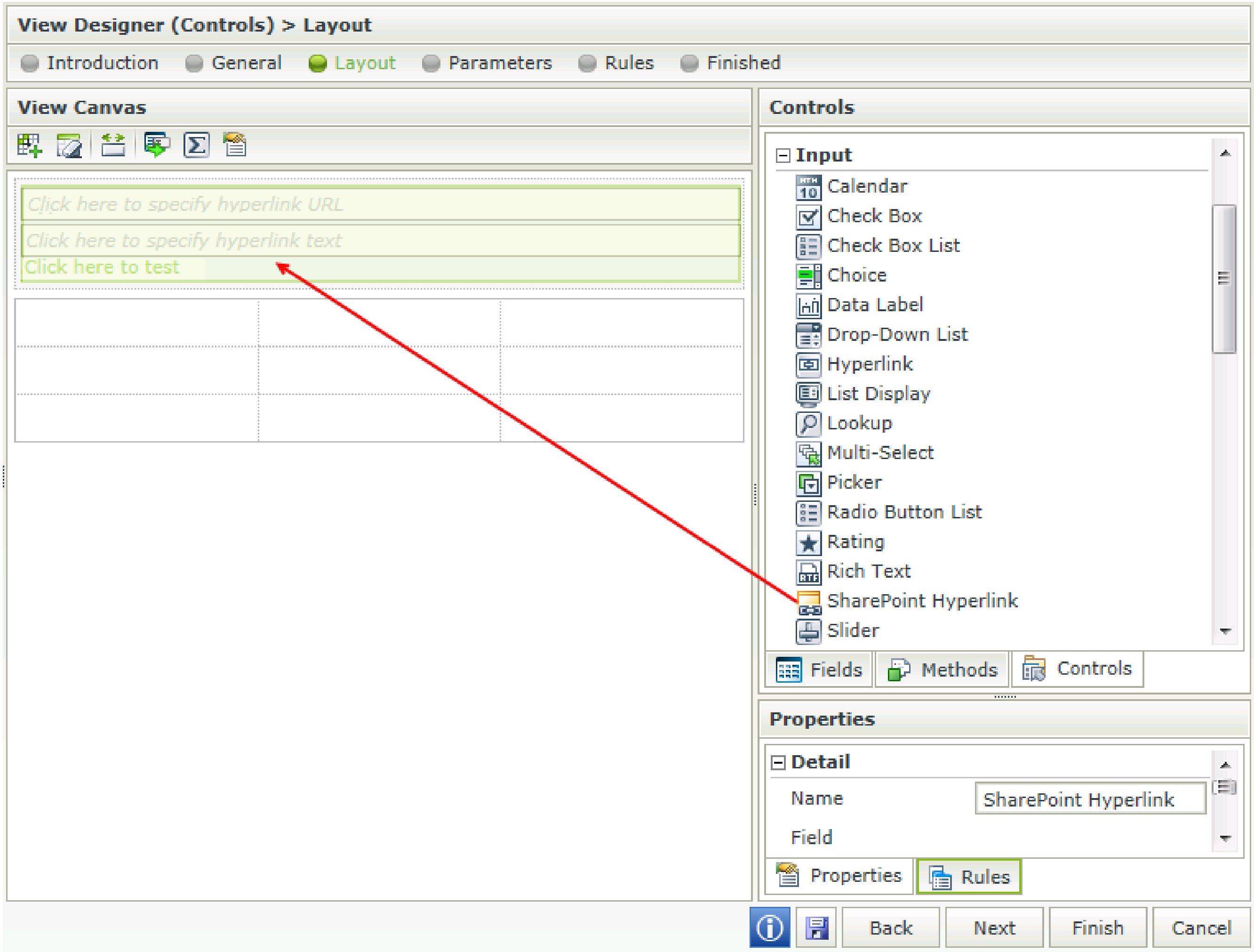
Interaction

The SharePoint Hyperlink control interacts with other controls through rules. Depending on the control properties, there are certain actions where the control surfaces. Following are a few examples:

- Set a control’s properties- The control's settable properties can be configured using this action
- Show/Hide - The Visible property allows for the control to be shown or hidden through rules
- Enable/Disable - The Enabled property allows for the control to be enabled or disabled through rules
- Data Transfer - Data can be transferred from items listed in the Context Browser to the SharePoint Hyperlink control

Design Properties

The SharePoint Hyperlink control is available in the **Input** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	Yes, see Control Properties Actions for more information
Field	The field that is bound to the selected control	No
Data Type	A drop-down list containing the types of values that the selected control can accept	No
Text	The text for the description of the hyperlink	Yes, see Control Properties Actions for more information
URL Title	Inserts a control label. Type a value to be displayed as the label of the control	Yes, see Control Properties Actions for more information
URL Watermark	The watermark url to be displayed in runtime if no data is available	Yes, see Control Properties Actions for more information
Display Title	Inserts a display label	Yes, see Control Properties Actions for more information
Display Watermark	The watermark display to be displayed in runtime if no data is available	Yes, see Control Properties Actions for more information
Test Hyperlink Text	Text to be displayed in runtime to test the hyperlink	Yes, see Control Properties Actions for more information
Settings		
URL	The URL to direct to when clicked (a protocol must be specified for a URL to be valid) for example http://www.k2.com	Yes, see Control Properties Actions for more information
Show Preview		No
Display		
Display Type	• Input - Provides the user with the ability to input the data at runtime by typing a description and web address for the URL	Yes, see Control Properties Actions for more information

	• Hyperlink - Displays the description as a hyperlink at runtime. It can't be set by the user at runtime, but rules can be used to set the hyperlink at runtime. Acts like a read-only display • Picture - Renders the URL specified in the properties at design time as an image at runtime	
Delimiter	The type of delimiter to be used when saving the values. The default is ","	Yes, see Control Properties Actions for more information
General		
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Used to establish whether the control is read-only during runtime	Yes, see Control Properties Actions for more information
Expression	Opens the Expression Builder to configure expressions to populate the control with dynamically calculated values. Click on the ellipsis to open the Expression Builder	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No
Validation		
Pattern	Validation pattern to be applied at runtime	No
Message	Message to be displayed for validation pattern	No

4 Worklist Control

Worklist Control

The Worklist control is available in the K2 smartforms View Designer and is a predefined list containing all the work items for the current user that has been generated and assigned by the workflow. The functionality of the Worklist control is similar to the current worklist found in K2 blackpearl. For more information on the features of the K2 blackpearl Worklist, see the following sections in the K2 blackpearl User Guide:

- Usage>Using Workflow>Understanding my Worklist
- Usage>Using Workflow>Worklist in K2 Workspace

Prerequisites

- K2 smartforms 1.0.6 RC
- Existing workflow instances

Knowledge Required

K2 smartforms provides the platform required for using this control. For more information about the K2 smartforms product, see the following link:

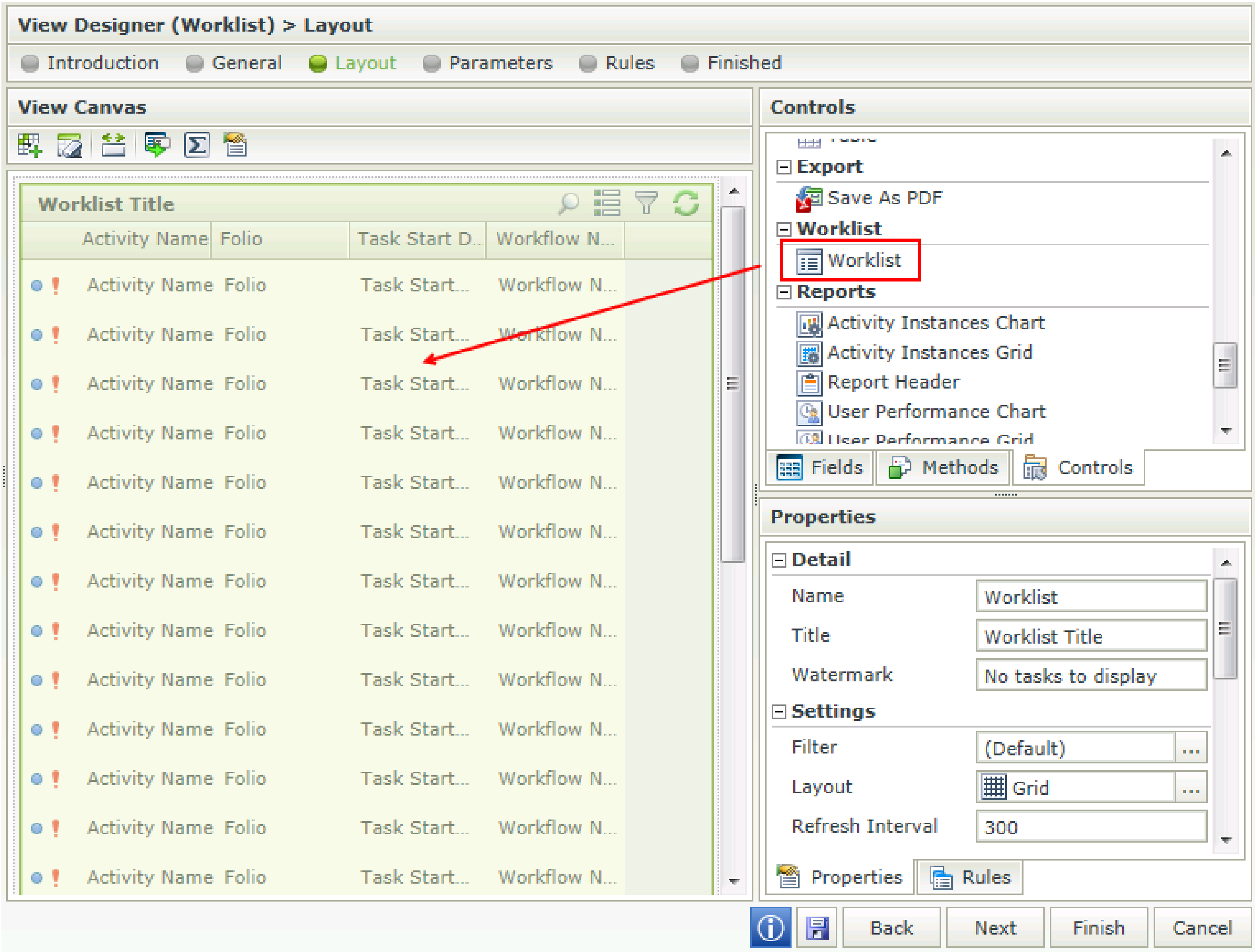
http://help.k2.com/en/k2smartformshelp.aspx

Knowledge regarding the following items are required as it will help understanding the end to end process:

- Views
- Forms
- Rules
- K2 Workflows

Location

The Worklist control can be found in the **Worklist** section of the Controls tab in the View Designer



Considerations

- Work items displayed in the Worklist are those assigned to the current signed in user
- The Save as PDF control can be used to create a PDF document of the View containing the Worklist control

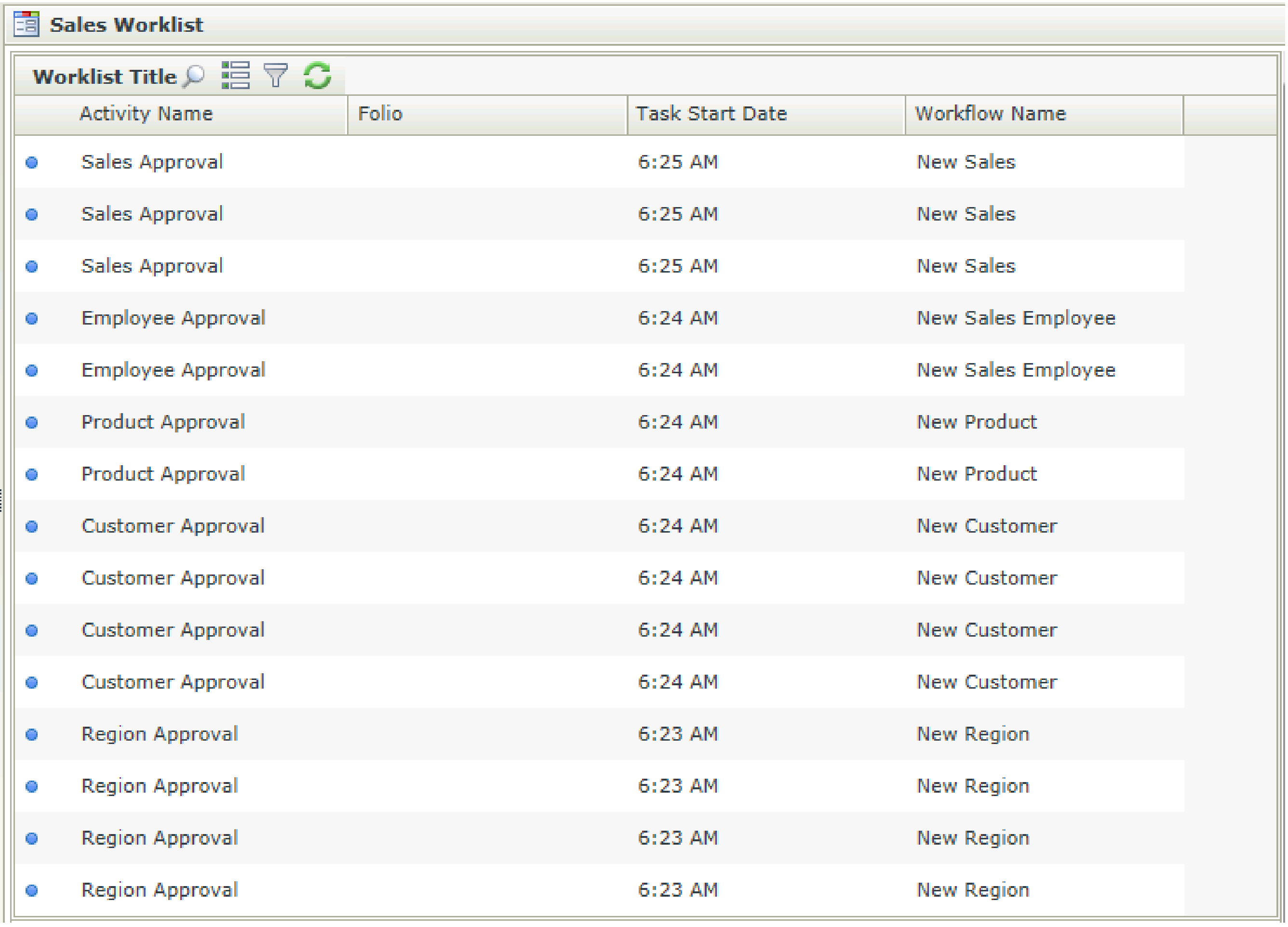
- When using custom themes, ensure to specify the CSS classes for the elements
- A list of columns to be displayed in runtime is available and can be accessed by selecting Grid from the Layout property of the control. The user can select or deselect columns to customize the display of the Worklist control in runtime
- Work items assigned to the user and started from any workflow designer such as K2 Studio, K2 Designer for Visual Studio, K2 Designer and K2 Designer for SharePoint are available using the Worklist control
- The Worklist control uses the default value for the current environment for the K2 Web Service URL field. The hostname, rather than IP Address is used to check for work items. If the hostname is not mapped to any IP Address, it will not return any work items

4.1 Creating a Worklist - Design Time

Creating a Worklist

The Worklist control can be found in the **Worklist** section of the Controls tab in the View Designer. The Worklist control is a list containing all the work items for the current user that have been generated and assigned by the workflow. You can use the Worklist to action the items assigned to you.

Runtime Example


Sales Worklist

Worklist Title

Activity Name	Folio	Task Start Date	Workflow Name
Sales Approval		6:25 AM	New Sales
Sales Approval		6:25 AM	New Sales
Sales Approval		6:25 AM	New Sales
Employee Approval		6:24 AM	New Sales Employee
Employee Approval		6:24 AM	New Sales Employee
Product Approval		6:24 AM	New Product
Product Approval		6:24 AM	New Product
Customer Approval		6:24 AM	New Customer
Customer Approval		6:24 AM	New Customer
Customer Approval		6:24 AM	New Customer
Customer Approval		6:24 AM	New Customer
Region Approval		6:23 AM	New Region
Region Approval		6:23 AM	New Region
Region Approval		6:23 AM	New Region
Region Approval		6:23 AM	New Region

How to use the Worklist control

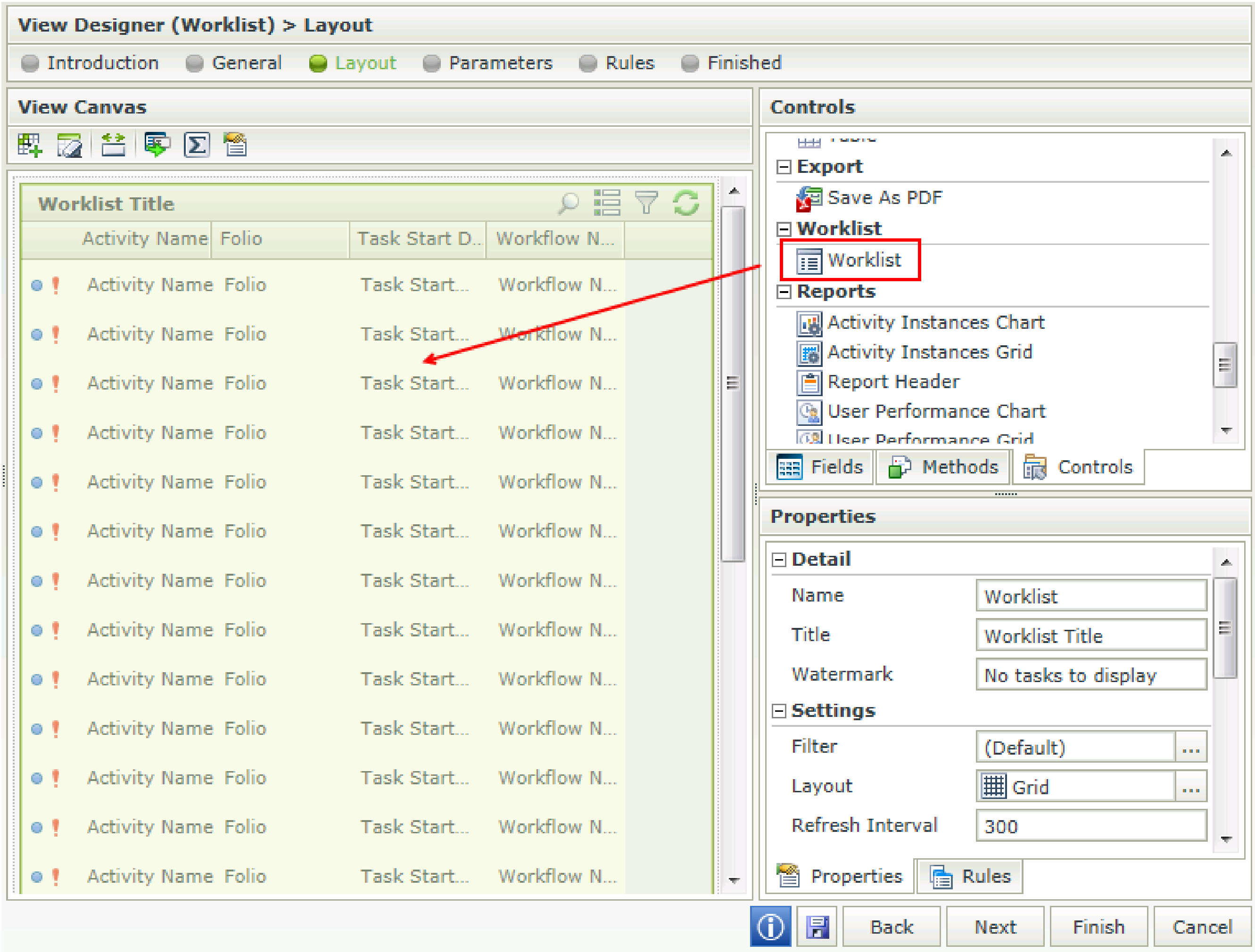
1. Create a View or a Form
2. Drag the Worklist control onto the canvas. The control can be found in the **Worklist** section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Worklist control as required, see the **Properties** section below

Considerations

- The Worklist control can be used on a View or a Form
- Work items displayed in the Worklist are those assigned to the current signed in user
- A list of columns to be displayed in runtime is available and can be accessed by selecting Grid from the Layout property of the control. The user can select or deselect columns to customize the display of the Worklist control in runtime
- When applying a filter to the Worklist in runtime, the filter is only valid for the duration of the browser session. If a new browser session is opened, the filter created in design time will apply

Design Properties

The Worklist control is available in the **Worklist** section of the Controls found in the View Designer.

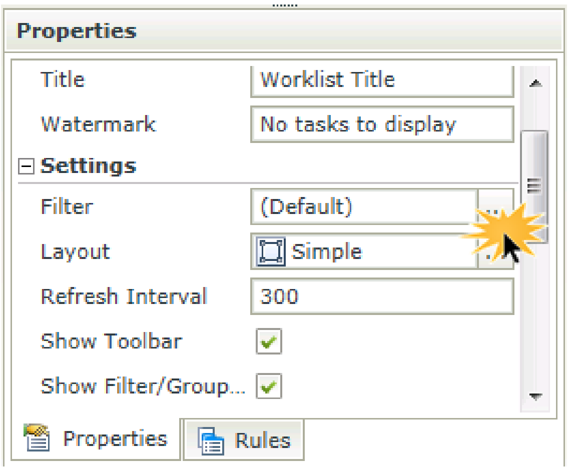


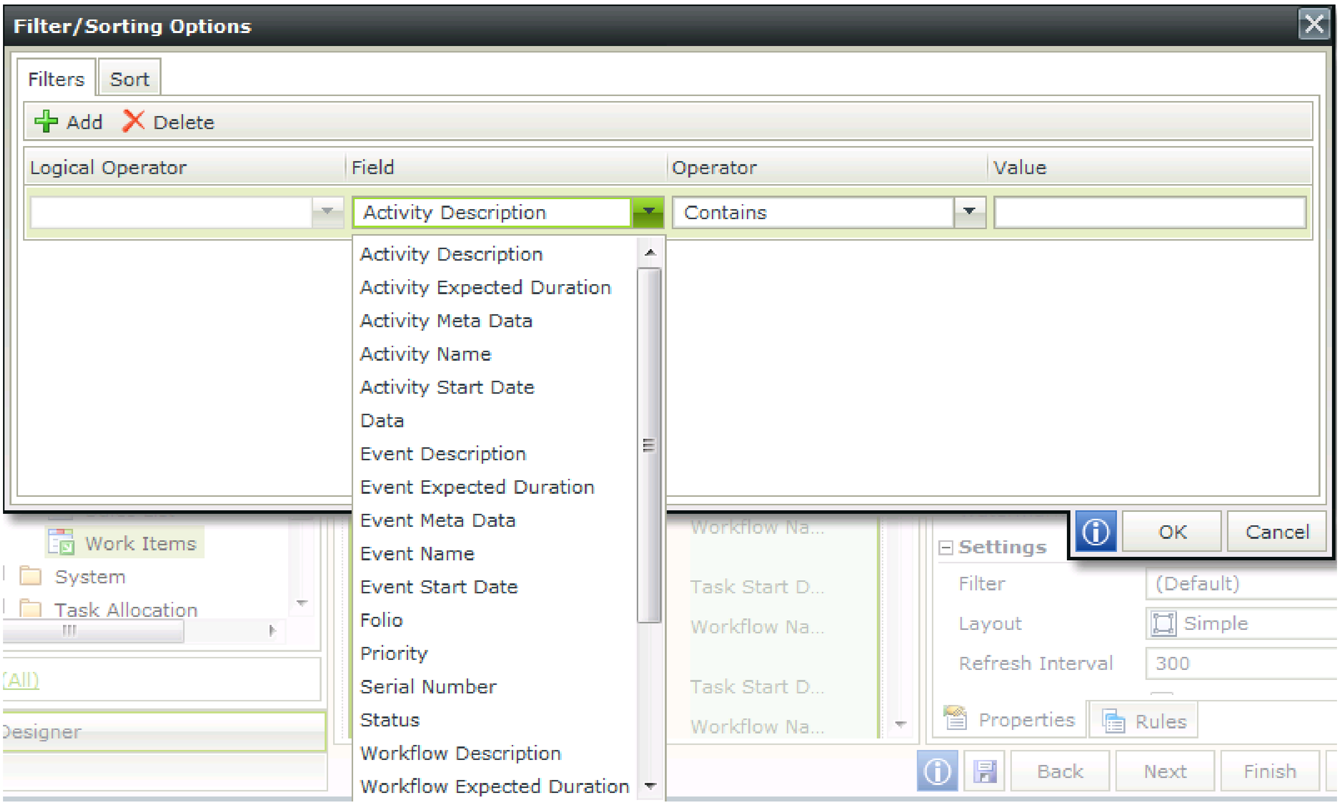
Property	**Description**	**Can be set in runtime using Rules**
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the Worklist to be shown in runtime	Yes, see Control Properties Actions for more information
Watermark	The text to display when the control is not populated	No
Settings		
Filter	Enables filtering and sorting of the data returned in runtime	Yes, see Control Properties Actions for more information
Layout	Enables the layout to be configured. Columns can be selected, deselected and moved as required. The Simple option displays the Activity Name, Folio, Activity Start Date and Process Name. Click on the ellipsis, select Grid and specify the columns to be displayed in runtime. Move columns up and down as required	Yes, see Control Properties Actions for more information
Refresh Interval	Indicates the time that will elapse before the worklist is automatically refreshed . Value is noted in seconds. Specify the interval to be used	Yes, see Control Properties Actions for more information
Show Toolbar	Shows or hides the Toolbar containing the Search and Multiselect icons	Yes, see Control Properties Actions for more information
Show Filter	Shows or hides Filter/Grouping in runtime	Yes, see Control Properties Actions for more information
Show Search	Shows or hides the Search at runtime	Yes, see Control Properties Actions for more information
Enable Search	Enables the search funtionality at runtime	Yes, see Control Properties Actions for more information

Rows	Indicates the number of work items to be displayed on the page. If the number is reached in runtime, the option is available at the bottom of the page to load the same number of items in addition to the current items. Specify the number of items to be displayed when the worklist is opened	Yes, see Control Properties Actions for more information
General		
Height	Adjusts the height of the control. Any whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

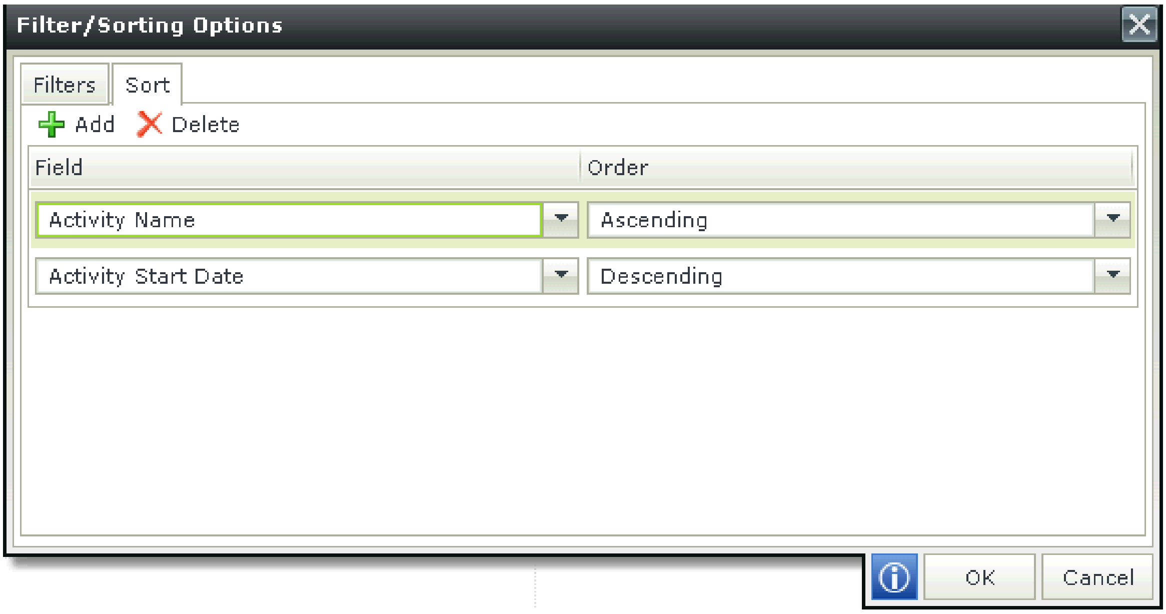
Configure Filters and Sort Options

Clicking on the ellipsis next to the Filter property, opens the Filter/Sorting Options dialog. Filters can be configured in design time to be applied in runtime. Multiple filters can be configured by using the Add button. When changing the filter in runtime, the filter is only valid for the duration of the browser session. If a new browser session is opened, the filter created in design time will apply



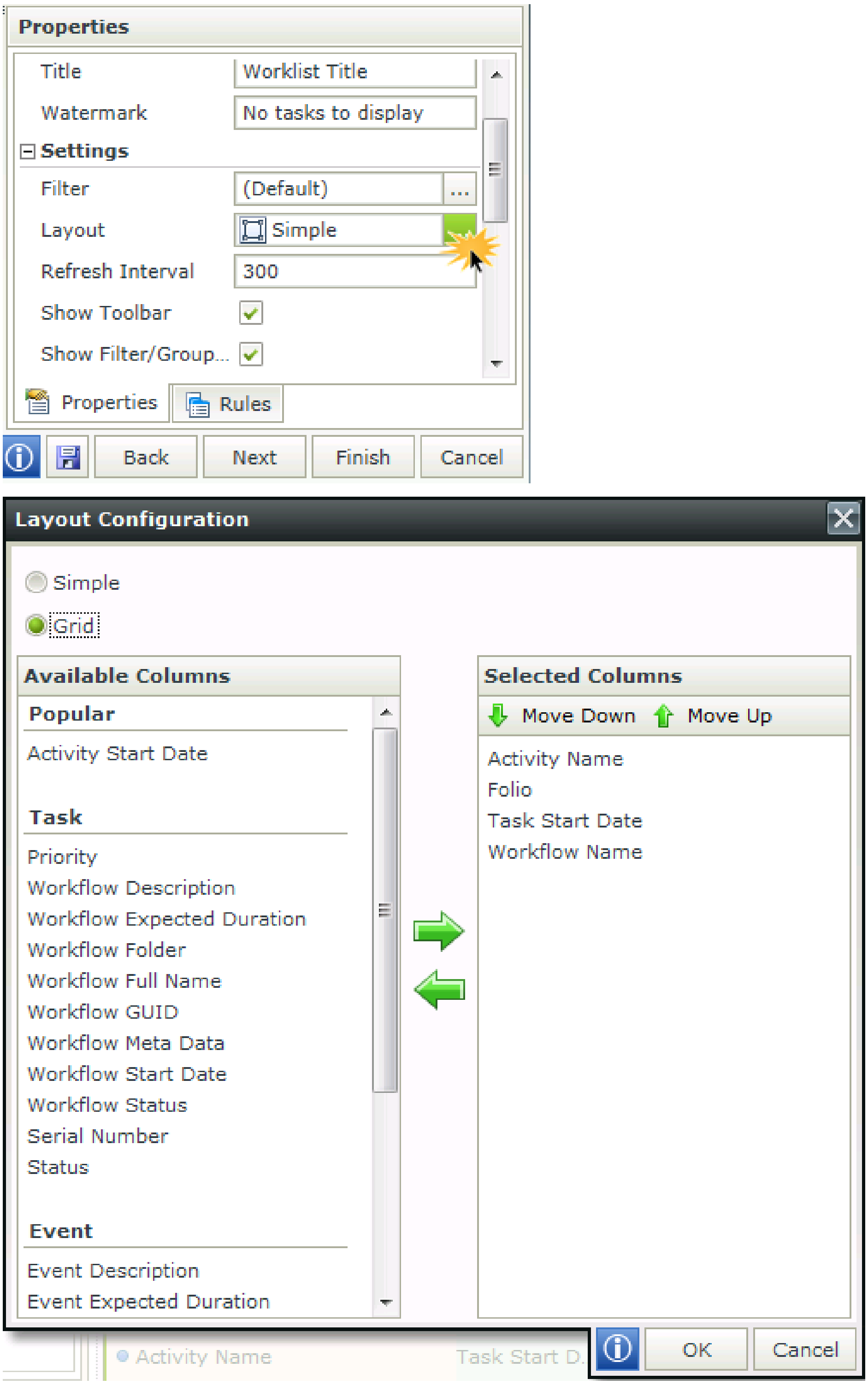


Selecting the Sort tab on the Filter/Sorting Options dialog enables the user to configure the sorting options to be applied in runtime. Multiple items can be added by using the Add button and will be sorted in the order they are listed.



▸ Configure Layout

Clicking on the ellipsis next to the Layout property opens the Layout Configuration dialog. Columns can be added or removed and ordered using the Move Up and Move Down buttons to fit the user's requirements. This will affect the display of the columns at runtime. This configuration is applied at runtime and cannot be changed by the user at runtime.


Properties
Title
Worklist Title
Watermark
No tasks to display
Settings
Filter
(Default)
Layout
Simple
Refresh Interval
300
Show Toolbar
Show Filter/Group...
Properties
Rules
Back
Next
Finish
Cancel
Layout Configuration
Simple
Grid
Available Columns
Popular
Activity Start Date
Task
Priority
Workflow Description
Workflow Expected Duration
Workflow Folder
Workflow Full Name
Workflow GUID
Workflow Meta Data
Workflow Start Date
Workflow Status
Serial Number
Status
Event
Event Description
Event Expected Duration
Selected Columns
Move Down
Move Up
Activity Name
Folio
Task Start Date
Workflow Name
OK
Cancel
Activity Name
Task Start D.

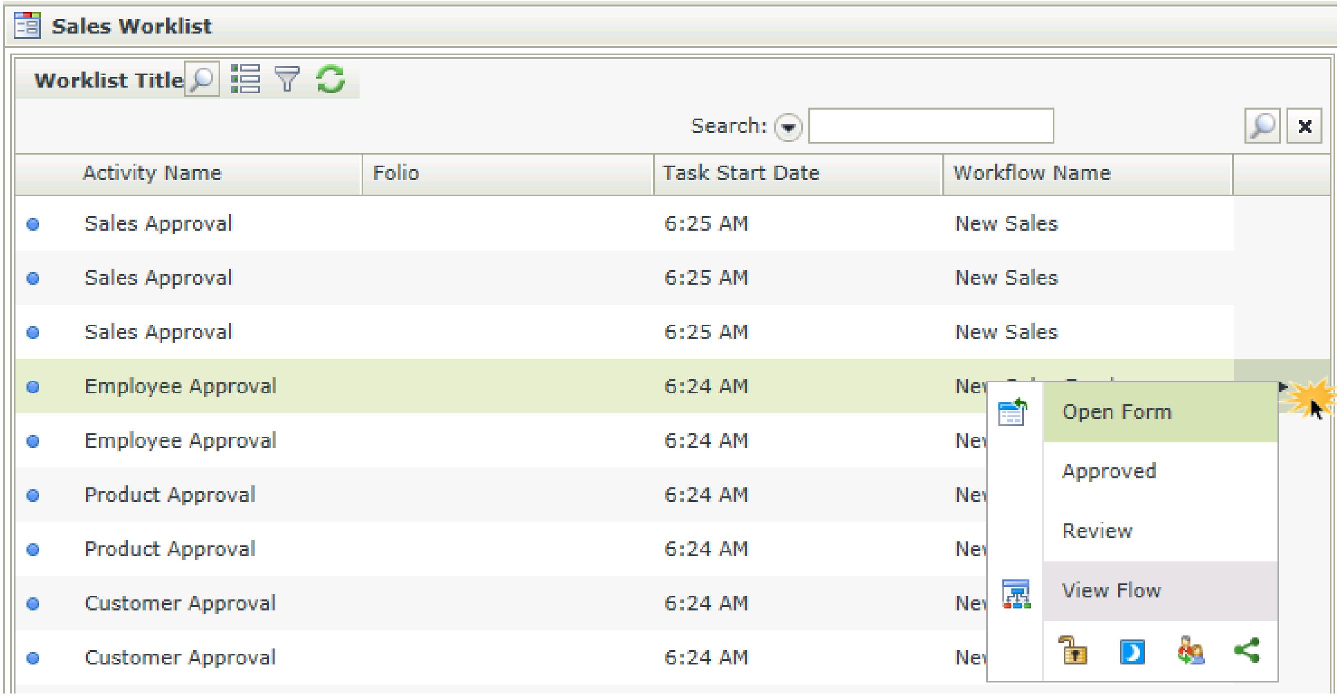
4.2 Using the Worklist - Runtime

Using the Worklist

The Worklist control is a list containing all the work items for the current user that have been generated and assigned by the workflow. You can use the Worklist to action the items assigned to you.

Worklist Actions

Select one of the following Worklist actions by clicking the drop-down arrow next to the work item:



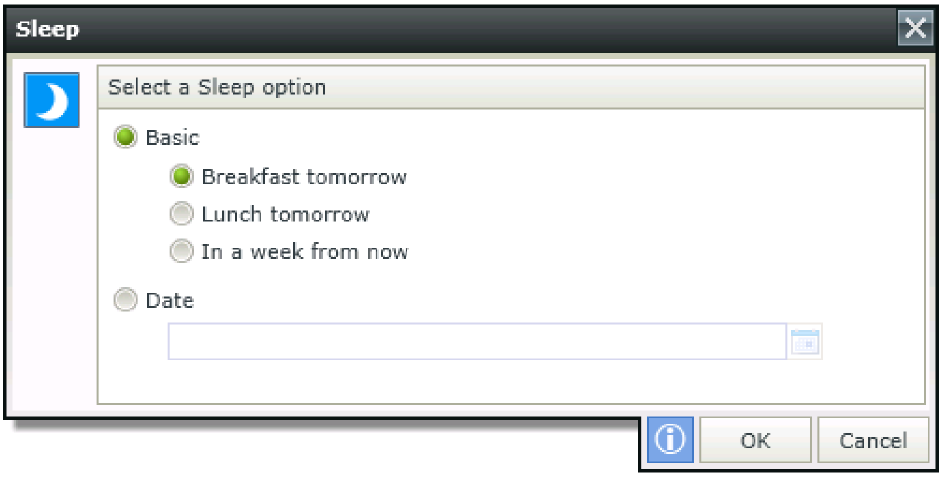
Feature	Description
Open Form	Selecting **Open Form** will open the work item in the selected forms technology such as InfoPath, an ADO.NET form or SmartForms
Action(s)	Displays the actions available on the task such as **Approved** or **Review**
View Flow	This feature provides a detailed view of the actions taken during the process, see the View Flow topic in the K2 blackpearl User Guide for more information
Release	This feature provides the ability to release an item that has been opened enabling other destination users to action the item
Sleep	Pauses or suspends a work item for a period of time. The work item is visible but cannot be actioned
Redirect	This feature allows a user to send the selected work item to a specific workflow participant to process. The work item will be removed from the current users **Worklist** and will appear in the selected user's **Worklist**.
Share	Allows a work item to be allocated to a different user for processing. The person who shares can determine which actions the shared person can perform. The work item will appear in both the users' **Worklist**. The first user to select the work item will process the item

To learn about dynamic roles and advanced destination planning, including specific examples of activity planning based on common business scenarios, visit the following link http://k2underground.com/files/folders/technical_product_documents/entry20948.aspx

Sleep Action

The "Sleep" action allows you to pause or suspend a work item for a period of time. The work item is visible but cannot be actioned.

To pause or suspend a work item click the drop-down arrow next to the work item and select **Sleep**. Select a Sleep option.

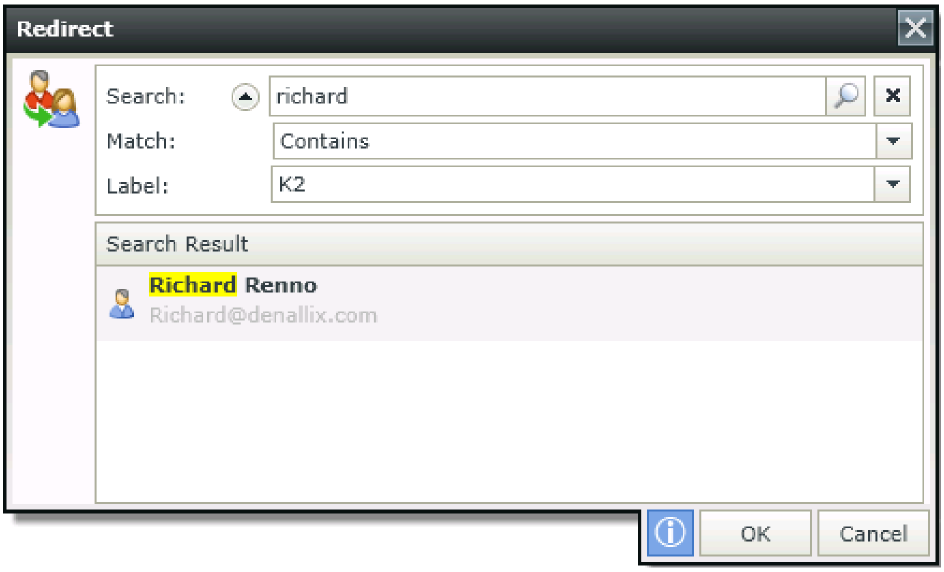


Feature	Description
Basic	
Breakfast tomorrow	The item is paused until 8 AM the following day
Lunch tomorrow	The item is paused until 1 PM the following day
In a week from now	The item is paused until 8 AM the following week
Date	
Date	Select the calendar icon to specify a date until which the task item must **Sleep** until.

Redirect Action

The “Redirect” action allows you to move a work item to another user. Once you Redirect a work item, that item will not be available on your own worklist but it will appear on the other user’s worklist, and he/she may open and complete the item.

To Redirect a work item to a different user click the drop-down arrow next to the work item and select **Redirect**. The Redirect window will open. Search for Users, Groups or Roles.



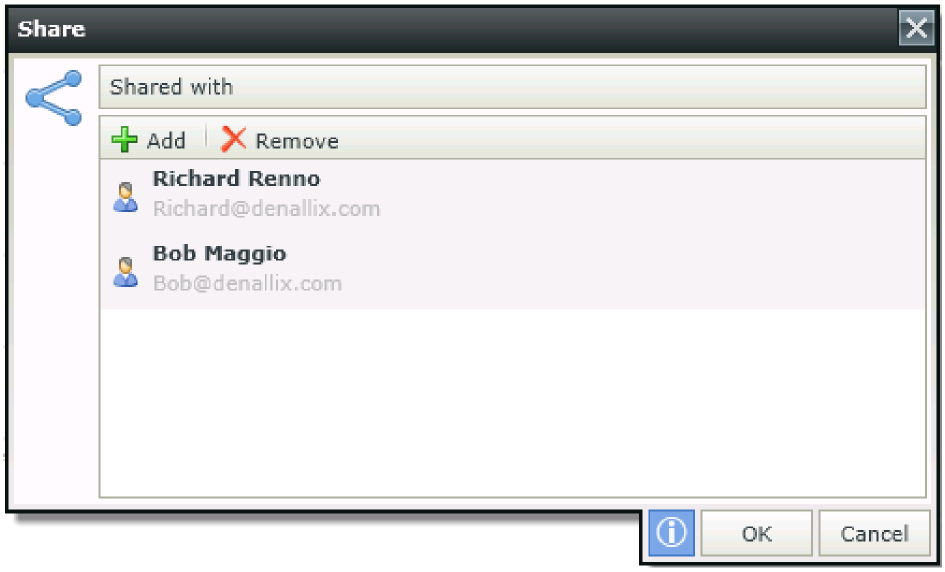
Feature	Description
Search	Type part or the full name of the user, group or role the task is to be redirected to and click the Search icon
Match	Click on the drop-down and select the match option such as Contains, Equals etc to use in the search
Label	Click on the drop-down and select the security label to use in the search
Search Result	Displays the names returned from the search. Select the user the task will be redirected to

Share Action

The “Share” action allows you to share the selected work item with another user. Once you Share a work item, that item will still be available on your own worklist but it will also appear on the other user’s worklist, and either one of you may open and complete the item.

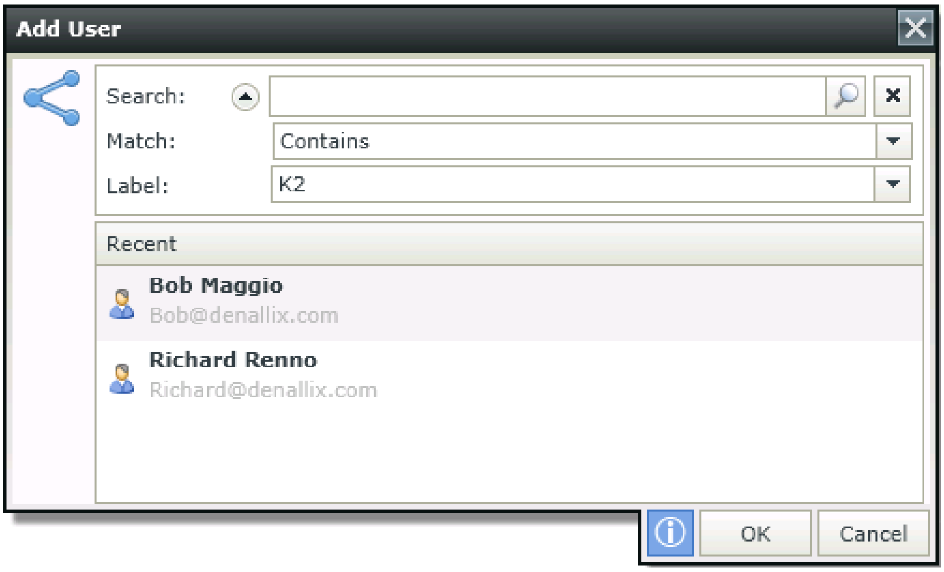
To share a work item with a different user or users click the drop-down arrow next to the work item and select **Share**.

The **Share** window will open.



Feature	Description
Add	Click **Add** to add a user or users to share with
Remove	Click **Remove** to remove the selected user from the list
Shared with	Displays a list of users the work item will be shared with

Click the **Add** button to share the item with a user, group or role. More than one user can be added.



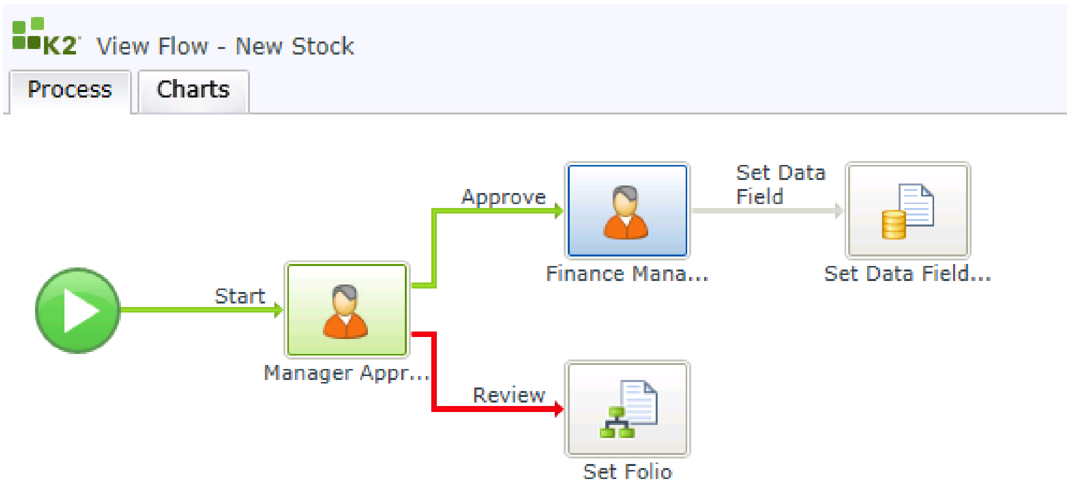
Feature	Description
Search	Type a user's name in the **Search** box.
Match	Click on the drop-down and select the match option such as Contains, Equals etc to use in the search
Label	Click on the drop-down and select the security label to use in the search
Recent	Displays the name of the user or users returned from the search

View Flow Action

View Flow

The "View Flow" action provides you with a detailed view of the actions taken during the workflow of the selected work item. See the View Flow topic in the K2 blackpearl User Guide for more information

To view the flow of a work item click the drop-down arrow next to the work item and select **View Flow**. The View Flow of that specific work item will open. The Process tab of the View Flow represents the steps of the workflow and which route has been taken. In the example below we can see that the “Manager Approval” task was completed with an outcome of “Approved”, and the workflow is currently waiting for the “Finance Manager Approval” task to complete



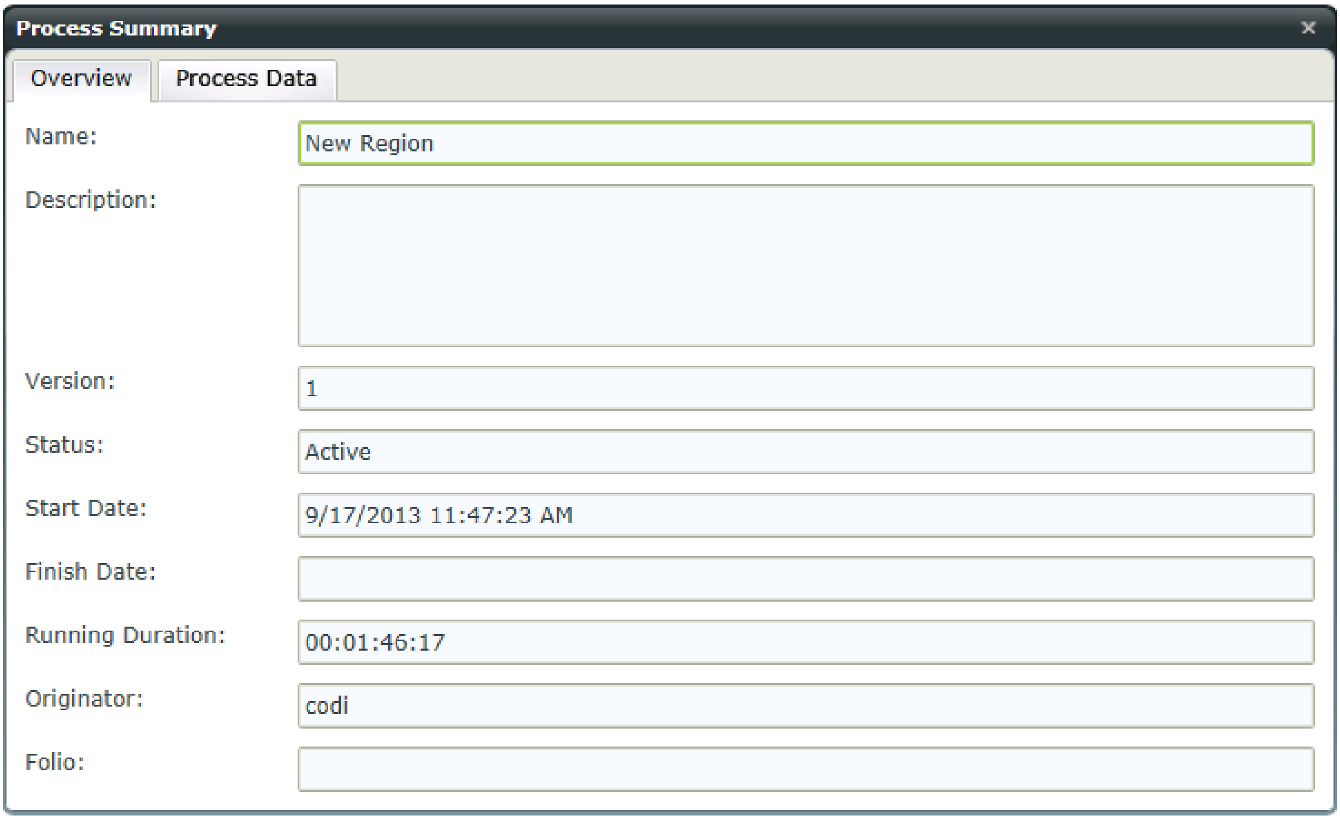
To interpret a View Flow diagram remember:

- Line Rules that evaluated to **true**, and were successful are colored **green**
- Lines Rules that evaluated to **false**, and were not successful are colored **red**
- Skipped lines or not yet evaluated lines remain clear

Process Summary

When clicking on the **Start activity**, the Process Summary dialog opens which contains the Overview and Process Data tabs.

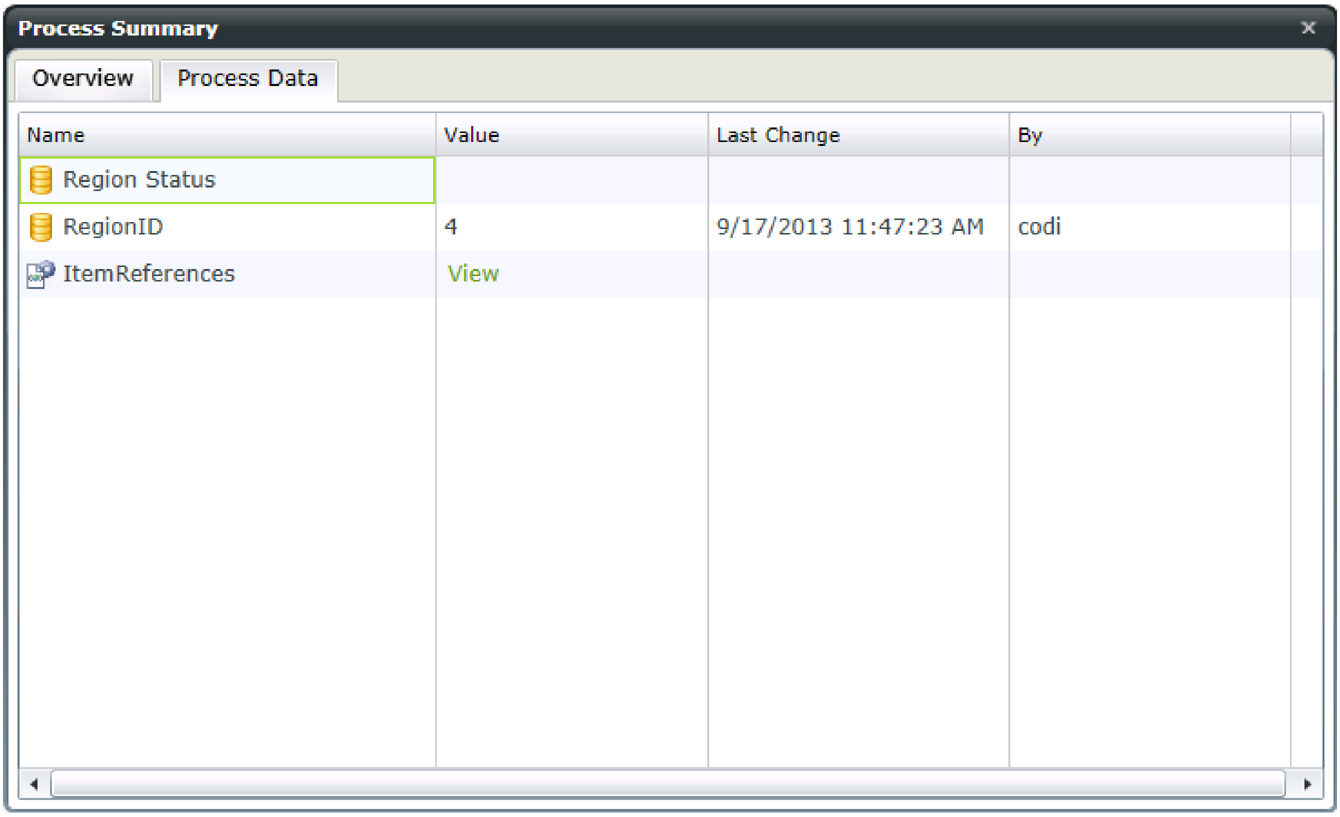
The **Overview** tab contains the details of the **Workflow**.



Feature	Description
Name	This is the Name of the Workflow as configured in any of the K2 designers
Description	This is the Description as configured in any of the K2 designers
Version	This is the version of the Workflow for which a Workflow instance was started
Status	This is the status of the Workflow instance e.g. completed, active, error etc
Start Date	This is the date that a Workflow instance was started

Finish Date	This is the date that the Workflow instance was finished
Running Duration	This is the actual duration of the Workflow instance from the start until the present or until completed.
Originator	This is the person where the Workflow instance originated from, i.e. the person who started the Workflow instance
Folio	This is the Folio used when the Workflow instance was started

The **Process Data** tab contains the details of the **Workflow Data Fields**. Columns can be resized by dragging the column lines as required. If the value of a Data Field or XML Field has changed in the process, a View link will be displayed. Click on the link to view the changes or hover over the item.

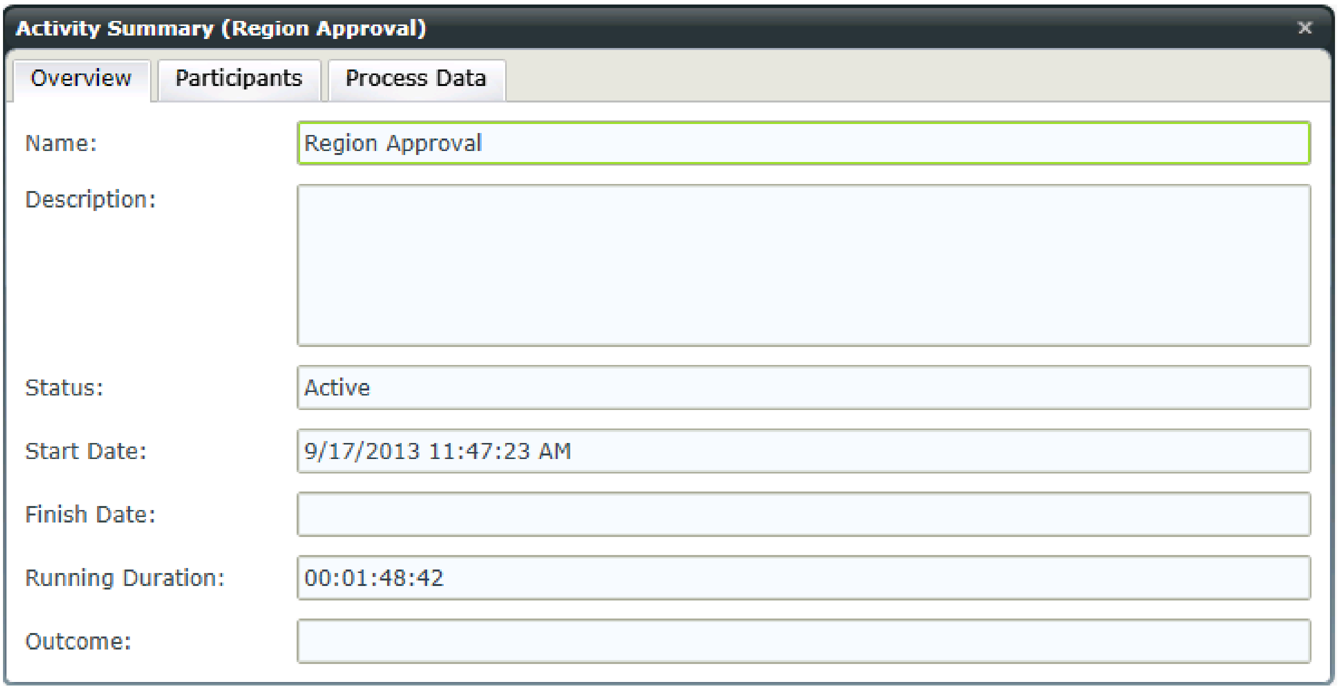


Feature	**Description**
Name	The name of the data field
Value	The value of the data field
Last Change	If the current value is different from the initial (default) value, this field will be populated with the date it was changed.
By	If the current value is different from the initial (default) value, this field will be populated with the person who last changed the data field

Activity Summary

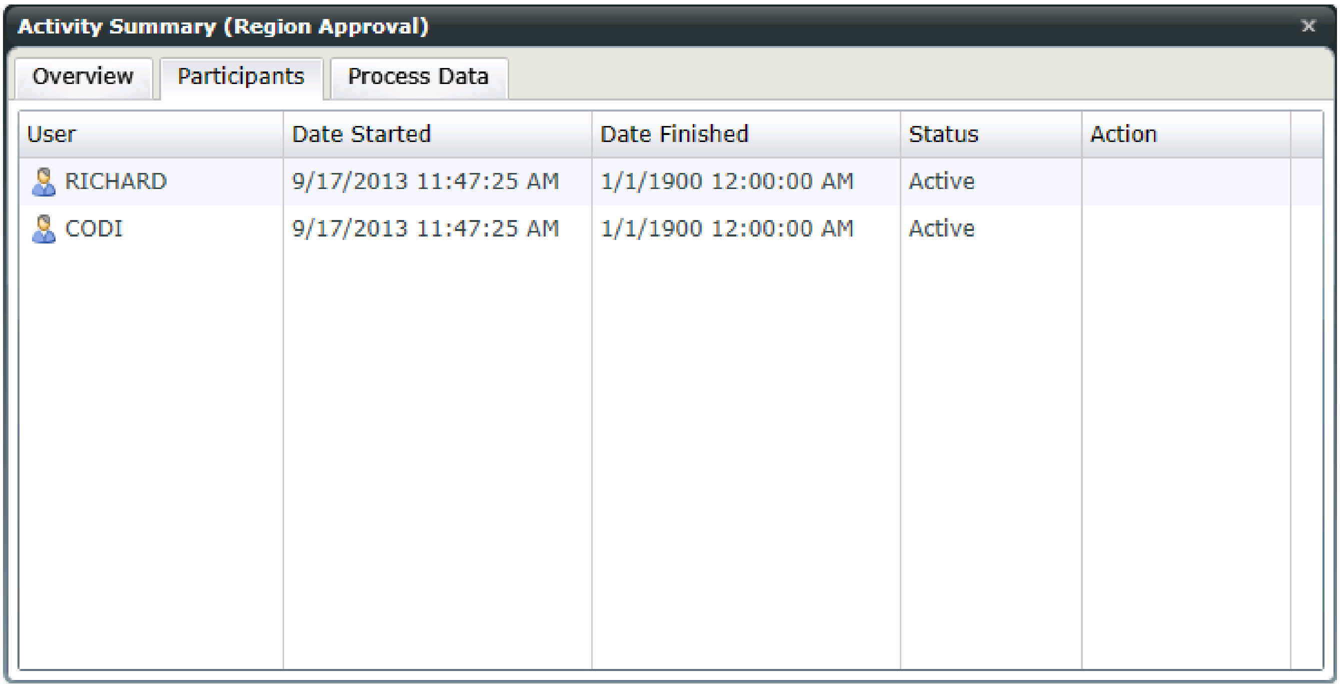
When clicking on an **Activity**, the Activity Summary dialog opens which contains the Overview, Participants, Process Data tabs.

The **Overview** tab contains the details of the specific **Activity**.



Feature	Description
Name	This is the Name of the Activity as configured in any of the K2 designers
Description	This is the Description as configured in any of the K2 designers
Status	This is the status of the Activity instance e.g. completed, active, error etc
Start Date	This is the date that an Activity instance of the workflow was started
Finish Date	This is the date that an Activity instance of the workflow was finished
Running Duration	This is the actual duration of the activity from the start until the present or until completed
Outcome	This is the Outcome as configured in the User Task

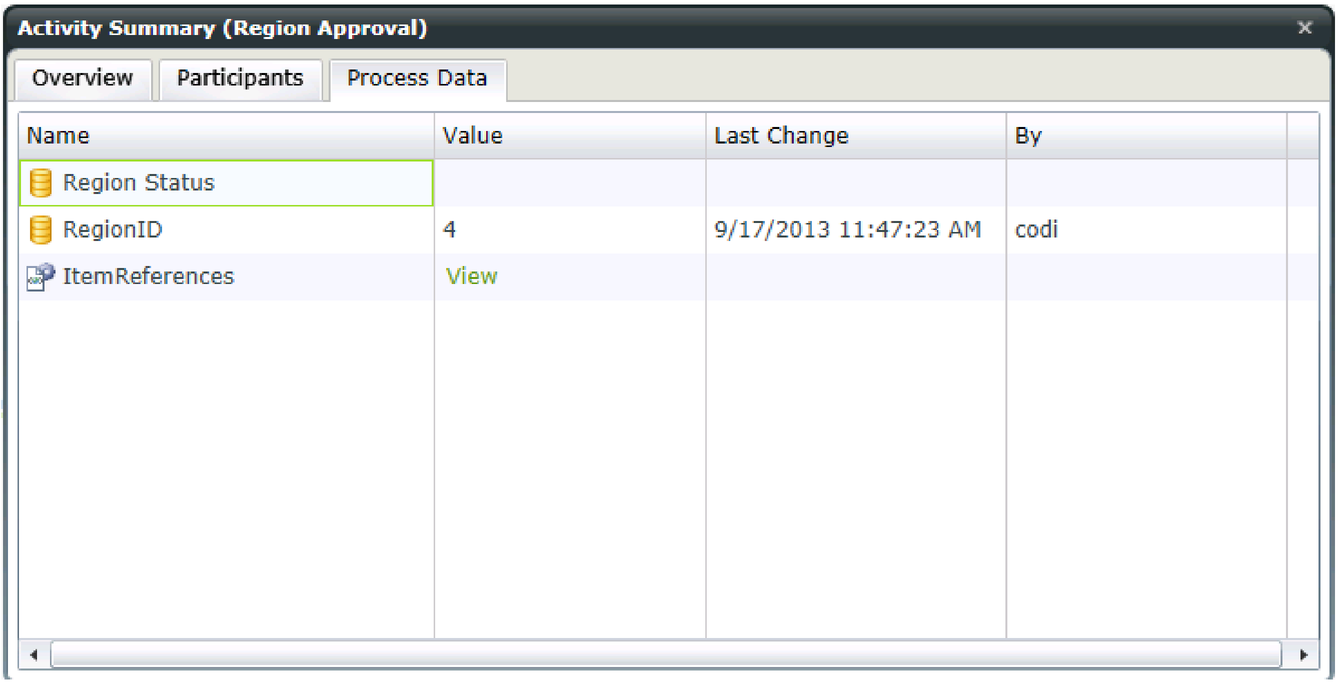
The **Participants** tab contains the details of the participants of the activity. Columns can be resized by dragging the column lines as required.



Feature	Description
User	The user who participated in the Activity instance of the workflow
Date Started	This is the date that an Activity instance of the workflow was started
Date Finished	This is the date that an Activity instance of the workflow was finished
Status	This is the status of the Activity instance e.g. completed, active, error etc

Action	This is the Action performed by the participant. The available actions are related to the Outcomes as configured by the workflow designer

The **Process Data** tab contains the details of the **Workflow Data Fields**. Columns can be resized by dragging the column lines as required.



Feature	Description
Name	The name of the Data Field
Value	The value of the Data Field
Last Change	If the current value is different from the initial (default) value, this field will be populated with the date it was changed.
By	If the current value is different from the initial (default) value, this field will be populated with the person who last changed the value

Refresh Interval

The Refresh interval can be changed in the web.config file by editing the value in the following node:

<add key="ViewFlowRefreshTime" value="30" />

The web.config file can be found in the following location:

Program Files\K2 blackpearl\WebServices\ViewFlow

The value is recorded in seconds and the minimum value that can be applied is 15 seconds.

5 Report Controls

Report Controls

Report controls are available in the K2 smartforms View Designer and Form Designer and consist of predefined reports that provide status and statistical data on workflows. It is essential to have existing K2 workflow instances when using these controls as the data returned in the reports is based on workflow-related data. Data returned can be displayed in the form of Charts or Grids and filters can be configured in design time, to be applied in runtime. A Report Header control can be used to filter these Charts or Grids further in runtime. Rules should be created to manage interaction between these controls.

Prerequisites

- K2 smartforms 1.0.6 RC
- Existing workflow instances

Knowledge Required

K2 smartforms provides the platform required to use these controls. For more information about the K2 smartforms product, see the following link:

http://help.k2.com/en/k2smartformshelp.aspx

Knowledge regarding the following items is required as it will help in the setup of rules, creation of the correct platform and understanding the end-to-end process:

- Views
- Forms
- Rules
- K2 Workflows

Permissions

Security is applied to the controls to ensure that the data is seen by authorized individuals within an organization. Permissions are based on the process rights assigned to the process in Management Console:

- Users with Admin or View permissions will have access to the Report controls.
- Users with View Participate permissions will be permitted to view the Report controls from the point where the user has been part of the workflow.

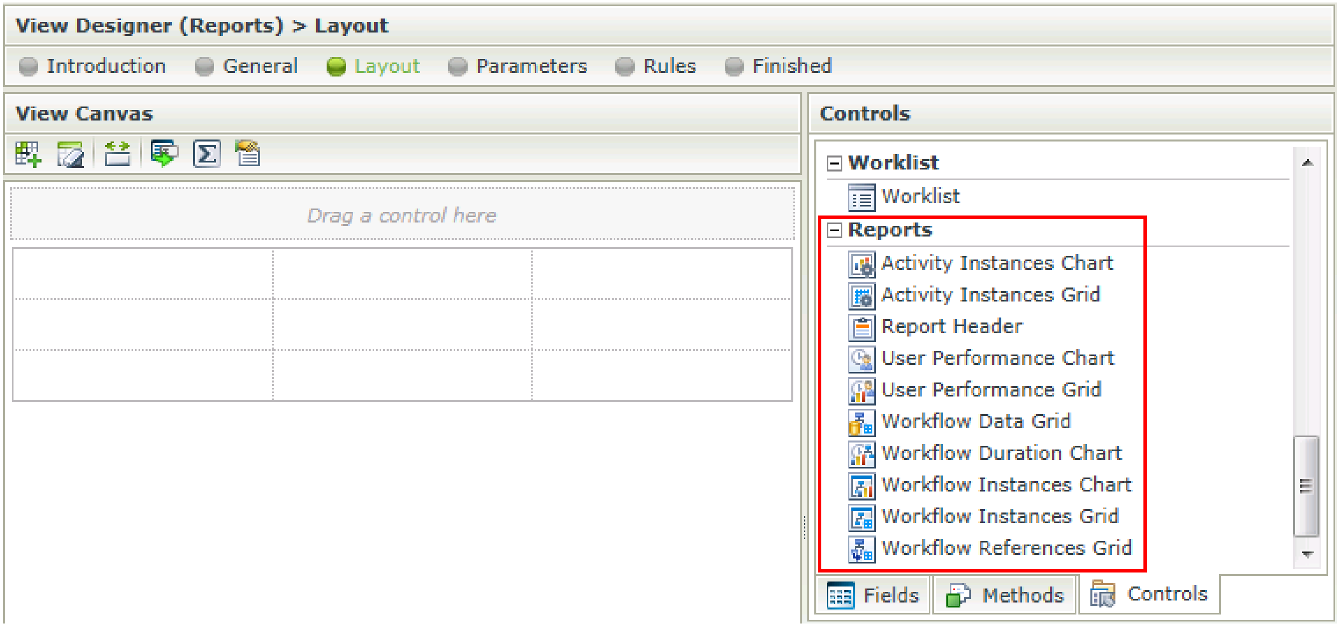
It is important to note that these permissions need to be assigned for each separate workflow by the System Administrator as set out in the K2 blackpearl Getting Started documentation. If rights to view report controls are assigned to a Group, these will not apply to the users in that Group with regard to viewing the Report controls. Rights need to be assigned at user level in order for the user to view the Report controls.

Report Controls

- Report Header - Contains common properties that can be used to filter Charts or Grids added to the View
- Activity Instance Chart - Graphic display of workflow activities according to the specified filter criteria
- Activity Instances Grid - Lists all activity instances of a workflow according to the specified filter criteria
- User Performance Chart - Graphic display of users who have participated in the selected activity according to the specified filter criteria
- User Performance Grid - Lists the users who have participated in the selected activity with activity data according to the specified filter criteria
- Workflow Data Grid - Lists all Data Fields per workflow instance according to the specified filter criteria
- Workflow Duration Chart - Graphic display of the average duration of workflow instances over time according to the specified filter criteria
- Workflow Instances Chart - Graphic display of workflows according to the specified filter criteria
- Workflow Instances Grid - Lists all workflow instances according to the specified filter criteria
- Workflow References Grid - Lists all Workflow Item References per workflow instance according to the specified filter criteria

Location

The Report controls are located in the **Reports** section of the Controls tab within the View Designer.



Considerations

- The Save as PDF control can be used to create a PDF document of the View containing report controls
- When using Custom Themes, be sure to specify the CSS classes for the elements
- Grid control columns are predefined and can't be changed. However, columns can be deselected in the properties section of the control so that they are not displayed in runtime, if required
- The data of K2 workflows or processes created by any workflow designer such as K2 Studio, K2 Designer for Visual Studio, K2 Designer and K2 Designer for SharePoint can be made available using the reporting controls
- When using a percentage for the width of Chart controls and used in conjunction with the Save as PDF control, a pixel width is calculated and applied to the control's width thus making the width of the Chart pixel based rather than percentage based. It is therefore advised to use a non-percentage based width when using a Chart with the Save as PDF control

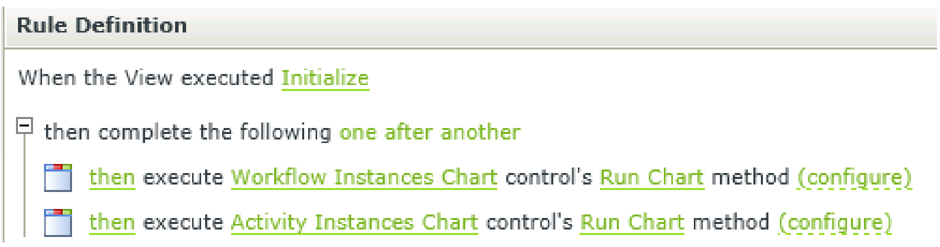
Interaction

Interaction with Report controls is managed through Rules. The following methods are available:

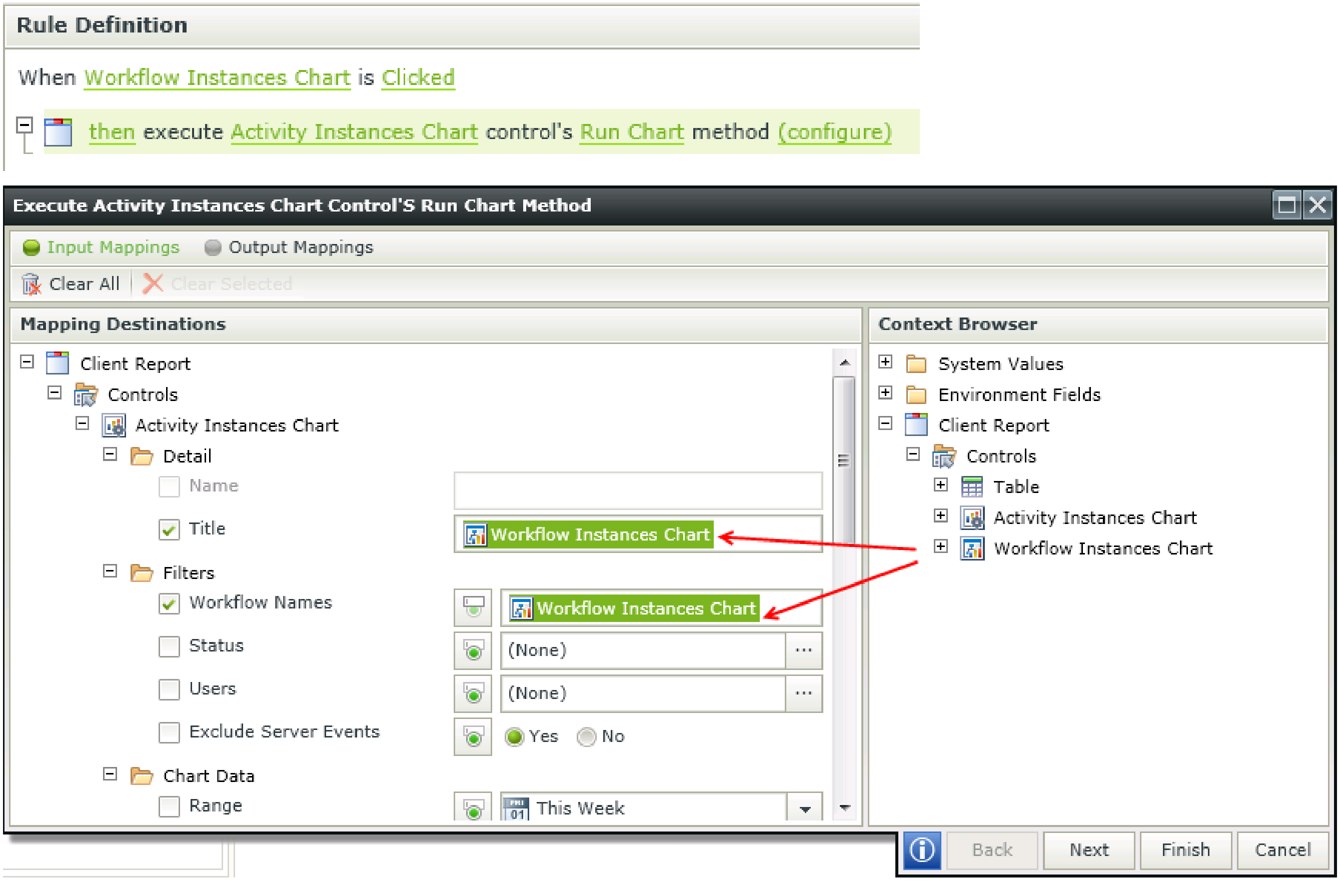
- Clear data
- Run Chart
- Run Grid
- Set control properties and values

Property values can be passed between the different controls. For example, if the same Date Range needs to be used on all controls within a View, the Date Range properties of all the controls can be bound to the parent control.

When using Chart controls, and for example selecting a bar, the value of the control will be set to the fully qualified name of the item (for instance a workflow). The *When a control on the View raises an event* rule event can then be used to pass the value of the workflow selected on a Workflow Instances Chart to a filter property in an Activity Instances Chart in order to see all the activity instances of the selected workflow. In addition, the Title of the Activity Instances Chart can be set using a *Set a control's properties* action to clearly identify the data being returned. The Rules required for the above example are as follows:
Event: When a View executes a method
Action: Execute a control's method (Workflow Instances Chart)
Action: Execute a control's method (Activity Instances Chart)



Event: When a control on the View raises an event
Action: Execute a control's method
Configuration: Map the Workflow Instances Chart node to the Workflow Names filter

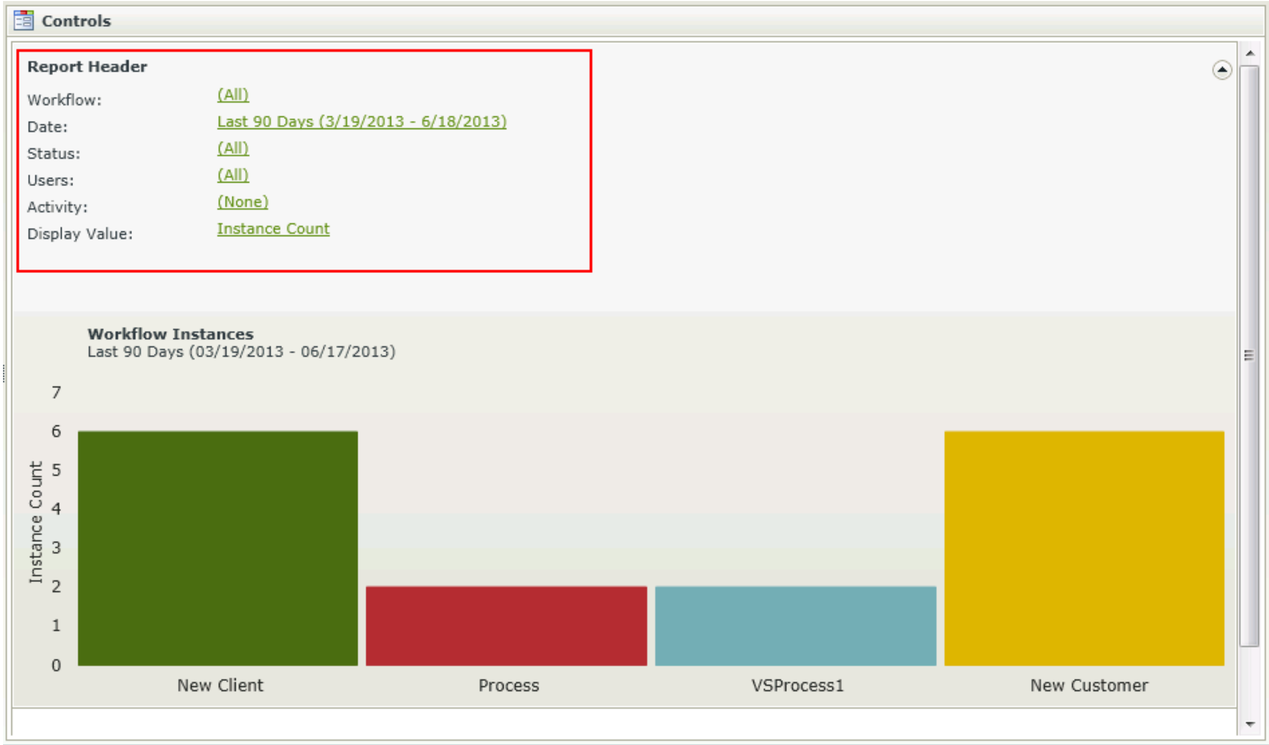

Rule Definition
When Workflow Instances Chart is Clicked
then execute Activity Instances Chart control's Run Chart method (configure)
Execute Activity Instances Chart Control'S Run Chart Method
Input Mappings
Output Mappings
Clear All
Clear Selected
Mapping Destinations
Client Report
Controls
Activity Instances Chart
Detail
Name
Title
Workflow Instances Chart
Filters
Workflow Names
Workflow Instances Chart
Status
(None)
Users
(None)
Exclude Server Events
Yes
No
Chart Data
Range
This Week
Context Browser
System Values
Environment Fields
Client Report
Controls
Table
Activity Instances Chart
Workflow Instances Chart
Back
Next
Finish
Cancel

5.1 Report Header

Report Header

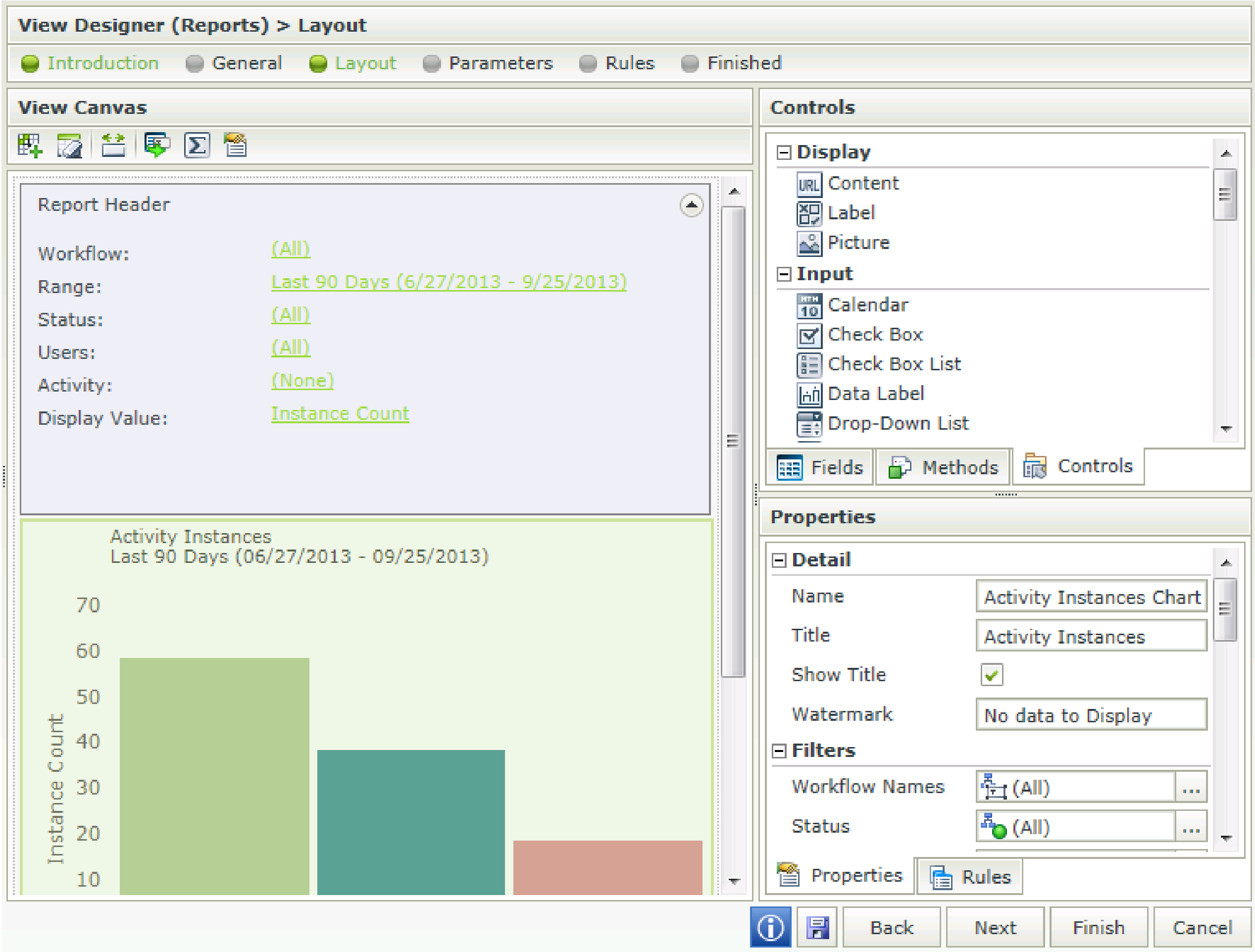
The Report Header control is essentially an interactive reporting dashboard allowing a user to view different types of workflow reports. The Report Header contains common properties that can be used to filter Charts or Grids added to the View. Rules can be configured to Run a Chart or Grid, once changes have been made to the Report Header in runtime. In addition, the Report Header can be used as a header indicating which filters have been applied to the reporting controls, by setting the properties of the Report Header to Read-Only. The user can then view the criteria applied, but is not able to apply any changes to the filters.

Example

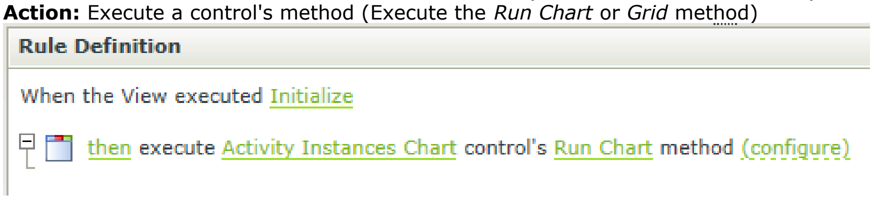


How to use the Report Header control

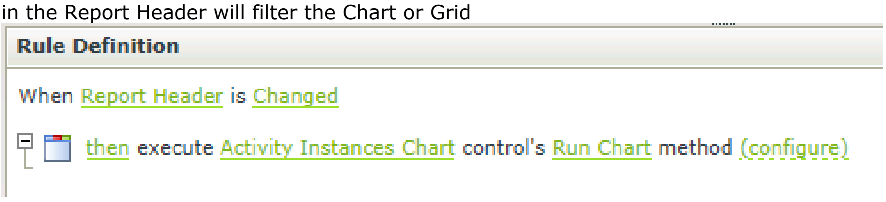
1. Create a View
2. Drag the Report Header control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Report Header control as required, see the **Properties** section below
4. Add another Report control such as a Chart or Grid to display the information and configure the properties of that control



5. Add a rule to Run the Chart or Grid when the View is Initialized. For example:
Event: When a control on the View raises and event (When the *View* is Initialized)
Action: Execute a control's method (Execute the *Run Chart* or *Grid* method)



6. Add a rule to Run the Chart or Grid when the Report Header is changed and configure properties if required. The criteria used in the Report Header will filter the Chart or Grid



Considerations

- Always remember to create a rule to Run the Chart or Grid when the View Initializes. This must be done for all report controls used on a View
- Not all properties of the Report Header apply to all the Report controls. For example, the Activity filter is not applicable on the Workflow Instances Chart or Grid. The Activity filter only applies to the User Performance Chart and Grid.

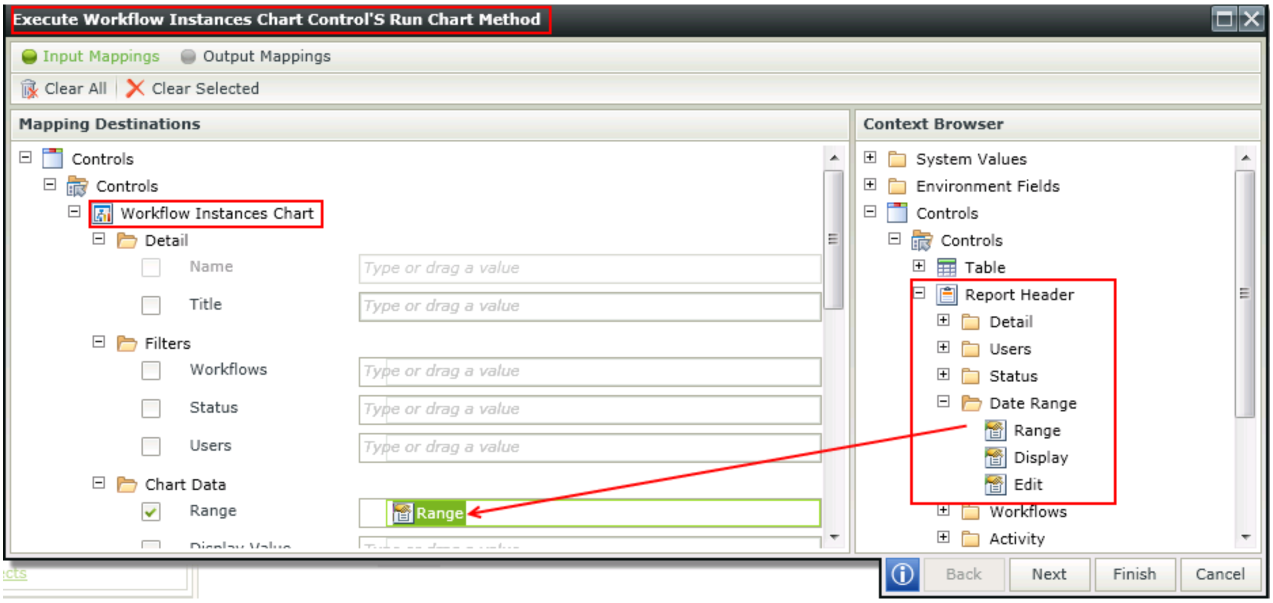
Interaction

The Report Header interacts with other Report controls through rules. As an example, by binding the Date Range of the Report Header to each reporting control, the Date Range filter can be used to apply the same Date Range to all reporting controls on the View in runtime.

The rule would use the following:

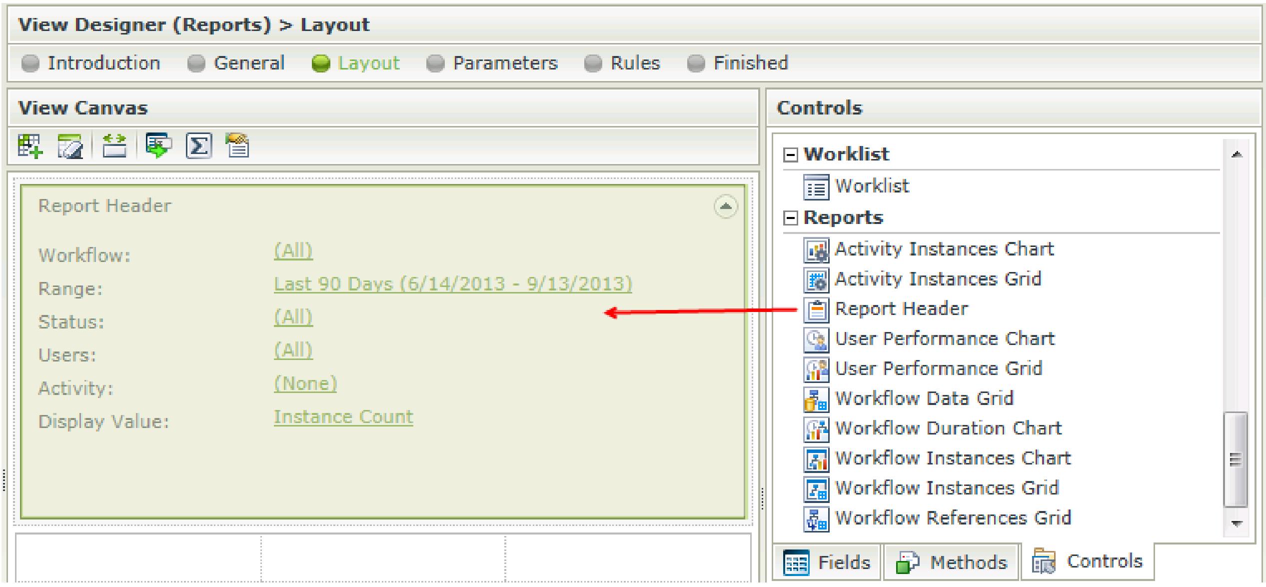
Event: When a control on a View executes a method (Report Header is changed)
Action: Execute a control's method (Workflow Instances Chart)
Action: Execute a control's method (Activity Instances Chart)

Configure the properties of each Action as below:



[Properties](#)

The [Report](#) Header control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required.	No
Title	The Title of the Report to be shown in runtime	Yes, see [Control Properties Actions](#) for more information
Users		
Users	Includes users who started or participated in a workflow instance. See the [Generic Picker Screens](#) topic for more information. Click on the ellipsis and search for the user(s) on which to filter the data	Yes, see [Control Properties Actions](#) for more information
Display	Enables the Users filter to be displayed on the Report Header in runtime. Deselect the option if the Users filter should not be displayed in runtime	Yes, see [Control Properties Actions](#) for more information
Edit	Enables the Users filter to be edited in runtime. Deselect the option if the Users filter should not be edited in runtime	Yes, see [Control Properties Actions](#) for more information
Status		
Status	The Status of the specific instance. Depending on which type of report control is used, the status will be applicable to an activity or a workflow instance. See the [Generic Picker](#)	Yes, see [Control Properties Actions](#) for more information

	Screens topic for more information. Click on the ellipsis and select a specific Status if required	
Display	Enables the Status filter to be displayed on the Report Header in runtime. Deselect the option if the Status filter should not be displayed in runtime	Yes, see Control Properties Actions for more information
Edit	Enables the Status filter to be edited in runtime. Deselect the option if the Status filter should not be edited in runtime	Yes, see Control Properties Actions for more information
Range		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date a workflow instance or activity instance was started. See the Generic Picker Screens topic for more information. Select a Date Range from the pre-defined drop-down list to filter on	Yes, see Control Properties Actions for more information
Display	Enables the Date Range filter to be displayed on the Report Header in runtime. Deselect the option if the Date Range filter should not be displayed in runtime	Yes, see Control Properties Actions for more information
Edit	Enables the Date Range filter to be edited in runtime. Deselect the option if the Date Range filter should not be edited in runtime	Yes, see Control Properties Actions for more information
Workflows		
Workflow Names	The workflow on which to filter when returning the data in runtime. If All is selected, all workflows will be shown. See the Generic Picker Screens topic for more information. Click on the ellipsis, expand the Workflows node and select a specific workflow(s) if required. More than one workflow can be added to the list	Yes, see Control Properties Actions for more information
Display	Enables the Workflows filter to be displayed on the Report Header in runtime. Deselect the option if the Workflows filter should not be displayed in runtime	Yes, see Control Properties Actions for more information
Edit	Enables the Workflows filter to be edited in runtime. Deselect the option if the Workflows filter should not be edited in runtime	Yes, see Control Properties Actions for more information
Activity		
Activity Name	The Activity on which to filter. This setting is only applicable to the User Performance Chart and Grid and will have no effect when selected on any other reporting control. See the Generic Picker Screens topic for more information. Click on the ellipsis, select the workflow then select a specific activity if required.	Yes, see Control Properties Actions for more information
Display	Enables the Activity filter to be displayed on the Report Header in runtime. Deselect the option if the Activity filter should not be displayed in runtime	Yes, see Control Properties Actions for more information
Edit	Enables the Activity filter to be edited in runtime. Deselect the option if the Activity filter should not be edited in runtime	Yes, see Control Properties Actions for more information
Display Value		
Display Value	The value to be used when displaying the data in the Chart or Grid. Duration or Instance Count can be used to display the data returned. Select the value required	Yes, see Control Properties Actions for more information
Display	Enables the Display Value filter to be displayed on the Report Header in runtime. Deselect the option if the Display Value filter should not be displayed in runtime	Yes, see Control Properties Actions for more information
Edit	Enables the Display Value filter to be edited in runtime. Deselect the option if the Display Value filter should not be edited in runtime	Yes, see Control Properties Actions for more information
Chart Type		
Chart Type	A Chart can be displayed as a Column, Pie or Bar Chart **Column Chart**- A column chart displays values as sets of vertical columns that are grouped by category **Pie Chart** - Is a circular chart divided into sectors, each sector shows the relative size of each value	Yes, see Control Properties Actions for more information

	Bar Chart - Is a chart with rectangular bars with lengths proportional to the values that they represent Select the option to be applied to the control	
Grid Lines		
Grid Lines	Network of intersecting parallel lines used as a reference for locating points. Disabled by default. Select the option if Grid Lines should be shown in runtime	Yes, see Control Properties Actions for more information
General		
Height	Adjusts the height of the control. Any whole number or pixel value up to 32767px. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Visible	Shows or hides the control in runtime. Deselect the option if the control should not be visible	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime. Deselect the option if the control should not be enabled for use on SmartForms	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime. Select the option if the control should be read-only	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options. Click on the ellipsis to open the Style Builder	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information. Click on the ellipsis to open the Conditional formatting screen	No

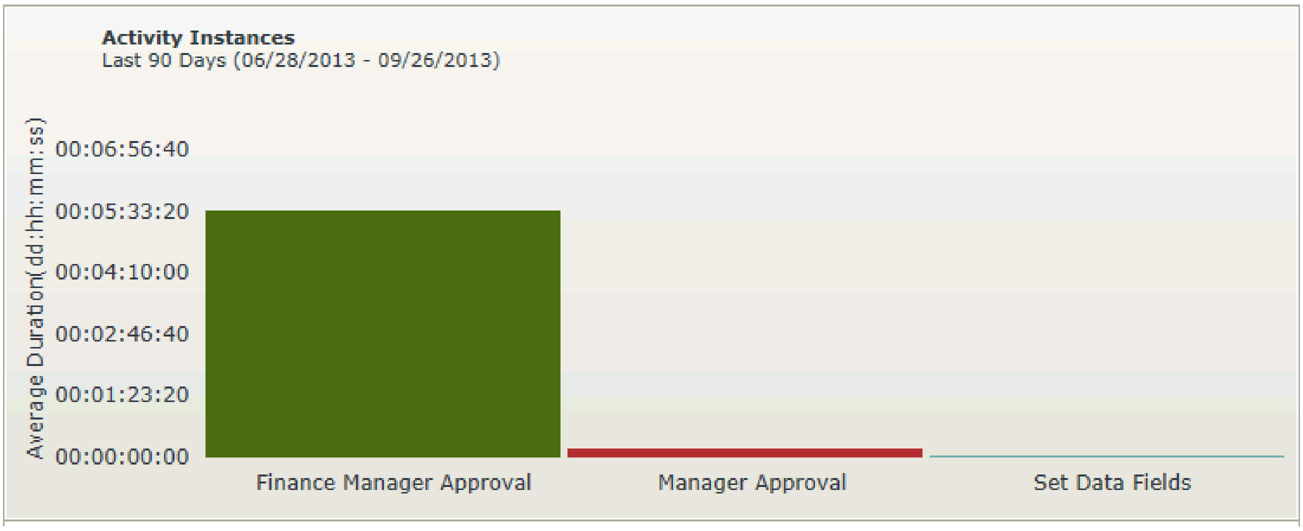
5.2 Activity Instances Chart

Activity Instances Chart

The Activity Instances Chart control is a graphic display of workflow activities according to specific filter criteria. The data is displayed as an aggregated view of the activity. Depending on the type of Display Value property used, this chart can be used to:

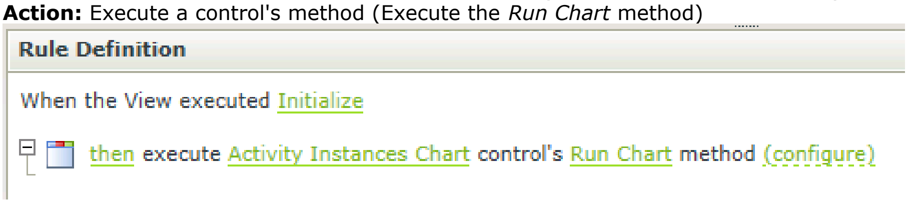
- Identify bottlenecks in a workflow.
- Determine how long it takes to complete each step/activity in the workflow, on average.
- Determine how many instances of each step/activity in a workflow were completed in a given timeframe.

Runtime Example



How to use the Activity Instances Chart control

1. Create a View
2. Drag the Activity Instances Chart control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Activity Instances Chart control as required, see the **Properties** section below
4. Add a rule to Run the Chart when the View is Initialized for example:
   Event: When a control on the View raises and event (When the *View* is Initialized)
   Action: Execute a control's method (Execute the *Run Chart* method)



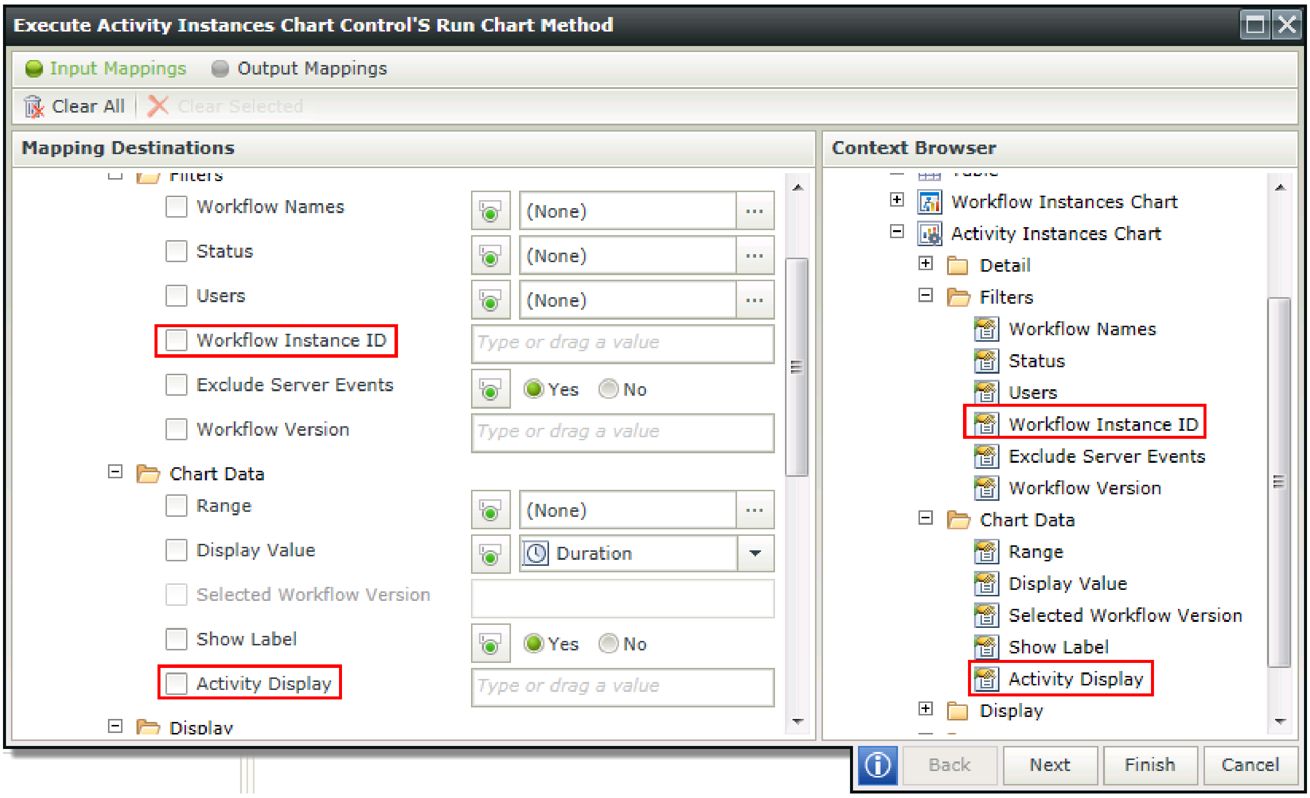
Considerations

- Always remember to create a rule to Run the Chart when the View Initializes
- When a workflow contains many activities, it is recommended to set the Label Angle in the Properties section of the control to ensure that labels are displayed properly and do not overlap
- The **value** of the Activity Instances Chart is the **fully qualified name** of the activity on the x-axis. When clicking on a bar, pie slice or column (depending on the type of Chart used) in runtime, the value of the Chart will be the name of the activity clicked and can subsequently be used to bind properties or configure rules
- When using a percentage for the width of the control and used in conjunction with the Save as PDF control, a pixel width is calculated and applied to the control's width thus making the width of the Chart pixel based rather than percentage based. It is therefore advised to use a non-percentage based width when using the Chart with the Save as PDF control

Interaction

Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

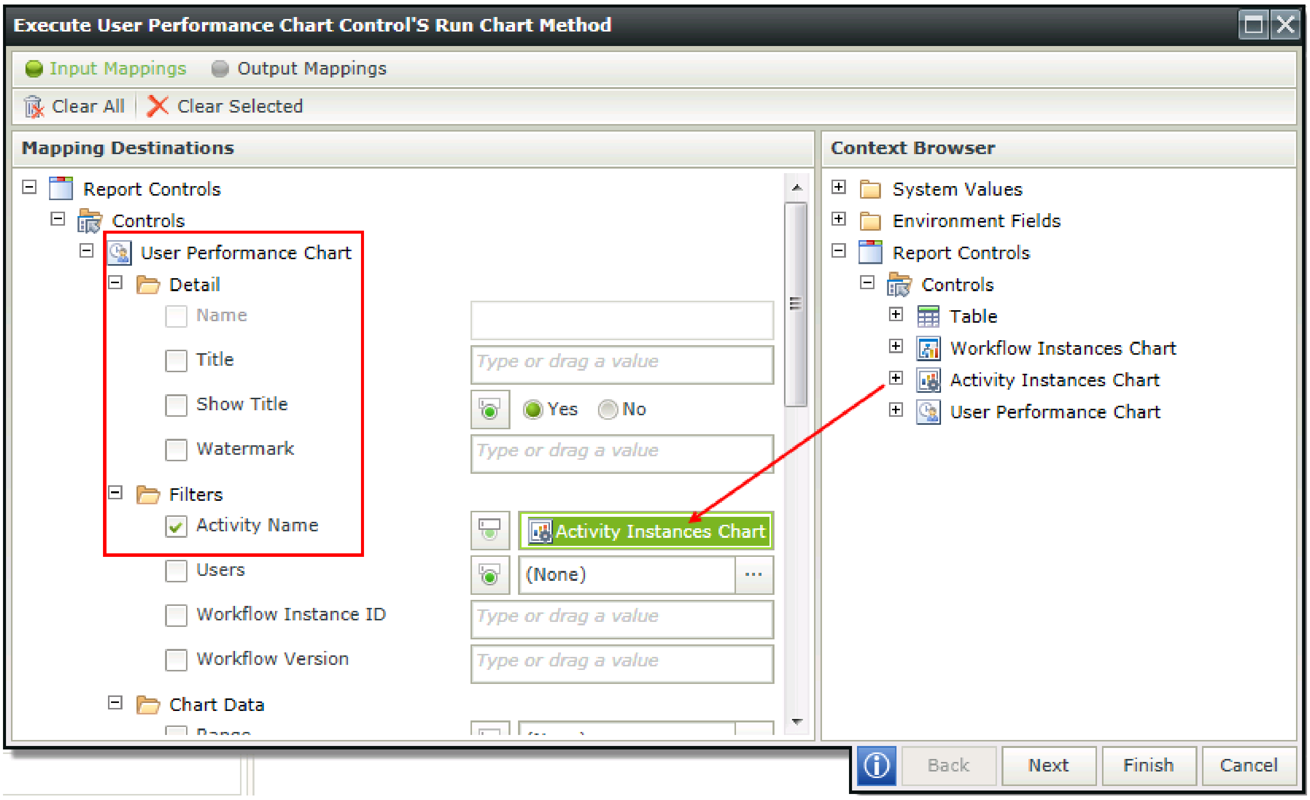
- The following properties are available as Input Mapping properties and in the Context Browser when using rules for mapping to other controls. These properties are additional to those mentioned in the **Properties** section of this topic, but are only available for interaction with rules:
  Workflow Instance ID - Can be used to filter the Activity Instances Chart down to a specified Workflow Instance ID
  Activity Display - The Activity Name of the selected Activity. The name is displayed without the Folder and Process Name



- When clicking for example the bar, pie slice or column of an Activity Instance Chart, the activity representing that bar can be used to populate a User Performance Chart. The following rule can be configured to effect this in runtime:
  Event: When a control on the View raises an event
  Action: Execute a control's method
  Configuration: Map the Activity Instances Chart to the Activity Name filter of the User Performance Chart

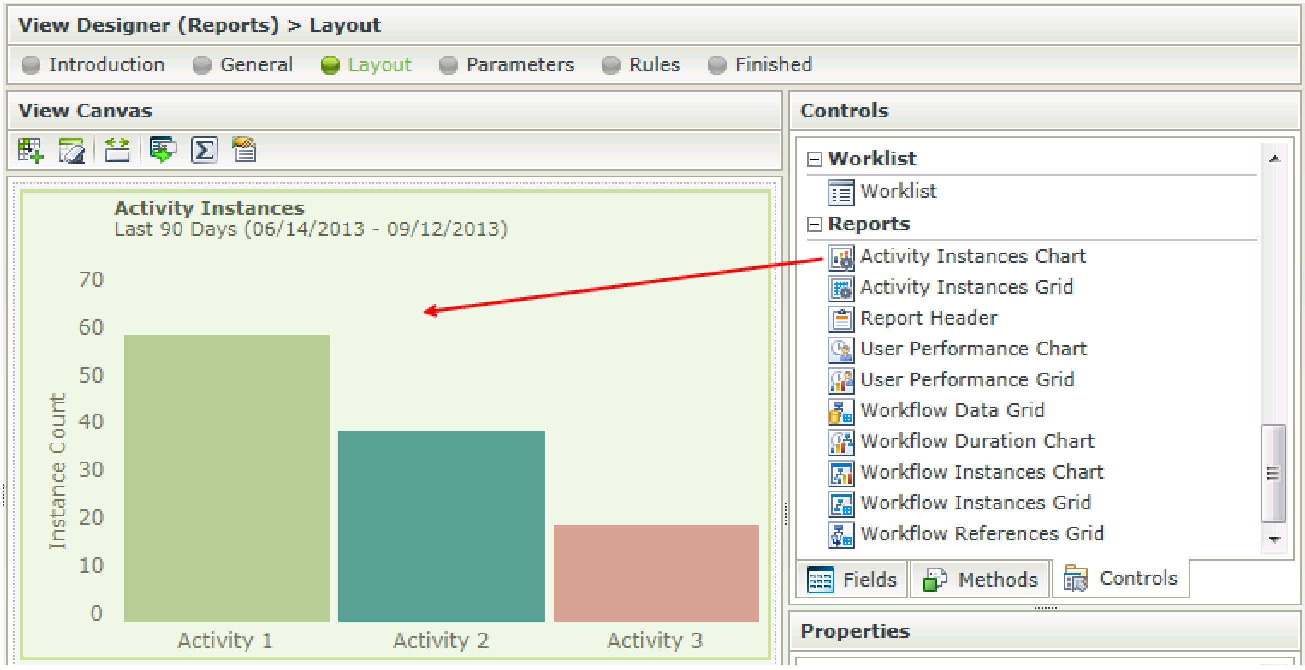
Rule Definition

- When Activity Instances Chart is Clicked
- then execute User Performance Chart control's Run Chart method (configure)



Design Properties

The Activity Instances Chart control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see Control Properties Actions for more information
Show Title	Shows or hides the in runtime	Yes, see Control Properties Actions for more information
Watermark	The text to be displayed in runtime if no data is available	Yes, see Control Properties Actions for more information
Filters		
Workflow Names	The workflow on which to filter when returning the data in runtime. If All is selected, all activity instances of all workflows will be taken into account when the data is returned. See the Generic Picker Screens topic for more information. Click on the ellipsis, expand the Workflows node and select a specific workflow(s) if required. More than one workflow can be added to the list	Yes, see Control Properties Actions for more information
Status	The Status of the specific activity instance to be filtered on. See the Generic Picker Screens topic for more information. Click on the ellipsis and select a specific Status if required	Yes, see Control Properties Actions for more information
Users	Includes users who have participated in a specific activity instance. See the Generic Picker Screens topic for more information. Click on the ellipsis and search for the user(s) on which to filter the data	Yes, see Control Properties Actions for more information
Exclude Server Events	When selecting this option, server events will not be included in the data displayed	Yes, see Control Properties Actions for more information
Workflow Version	A specific workflow version to be used to filter	Yes, see Control Properties Actions for more information
Chart Data		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date on which an activity instance was started. See the Generic Picker Screens topic for more information. Select a Date Range from the pre-defined drop-down list to filter on	Yes, see Control Properties Actions for more information
Display Value	The value to be used when displaying the data in the Chart. Duration or Instance	Yes, see Control Properties Actions for more information

	Count can be used to display the data returned	
Show Label	Enables Activity Labels to be shown on the Chart. Selected by default	Yes, see Control Properties Actions for more information
Display		
Chart Type	A Chart can be displayed as a Column, Pie or Bar Chart **Column Chart** - A column chart displays values as sets of vertical columns that are grouped by category **Pie Chart** - Is a circular chart divided into sectors. Each sector shows the relative size of each value **Bar Chart** - Is a chart using rectangular bars with lengths proportional to the values they represent	Yes, see Control Properties Actions for more information
Show Grid Lines	Grid Lines are a network of intersecting parallel lines used as a reference for locating points. This option enables the Grid Lines to be shown	Yes, see Control Properties Actions for more information
Label Angle	The angle at which Labels can be rotated in order to display more efficiently when viewing many activities. Default is 0. Type a percentage at which the Labels should rotate	Yes, see Control Properties Actions for more information
Select Effect	The following effects determines how the control will render in runtime. The effects are applied when an item is clicked: **Pie Chart** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item is exploded. The opacity of all other items are reduced to about 50% Explode - The selected item is exploded and has 100% opacity No Effect - 100% Opacity for all items **Column Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity **Bar Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity	Yes, see Control Properties Actions for more information
Transition Effect	Applies the Effect mentioned above in runtime	Yes, see Control Properties Actions for more information
General		
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Height	Adjusts the height of the control. Any whole number or pixel value to a maximum of 32767px can be entered. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information

Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

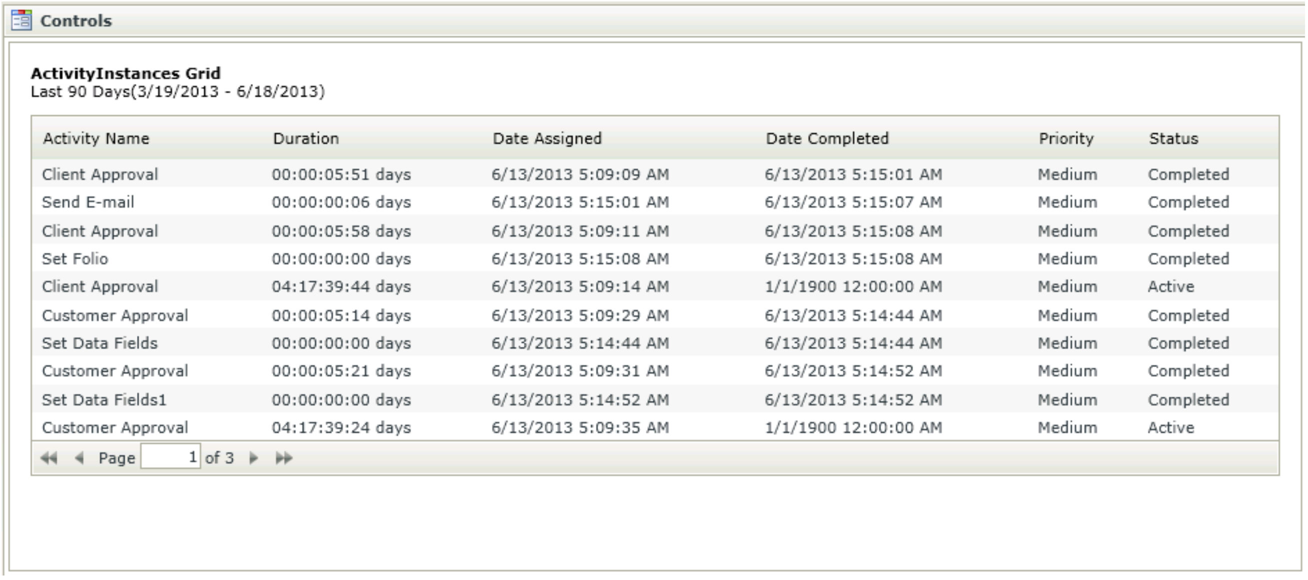
5.3 Activity Instance Grid

Activity Instances Grid

The Activity Instances Grid control lists all activity instances of a workflow according to specific filter criteria. The data is displayed as detailed information pertaining to an activity instance or instances. This grid can be used to:

- Determine the Priority and Status of activity instances.
- Determine when the activity instance was assigned and date of completion
- View the user involved with the specific activity instance. This is achieved by using a rule to interact with the User Performance Grid. See the **Interaction** section for more detail.

Runtime Example



Controls

ActivityInstances Grid
Last 90 Days(3/19/2013 - 6/18/2013)

Activity Name	Duration	Date Assigned	Date Completed	Priority	Status
Client Approval	00:00:05:51 days	6/13/2013 5:09:09 AM	6/13/2013 5:15:01 AM	Medium	Completed
Send E-mail	00:00:00:06 days	6/13/2013 5:15:01 AM	6/13/2013 5:15:07 AM	Medium	Completed
Client Approval	00:00:05:58 days	6/13/2013 5:09:11 AM	6/13/2013 5:15:08 AM	Medium	Completed
Set Folio	00:00:00:00 days	6/13/2013 5:15:08 AM	6/13/2013 5:15:08 AM	Medium	Completed
Client Approval	04:17:39:44 days	6/13/2013 5:09:14 AM	1/1/1900 12:00:00 AM	Medium	Active
Customer Approval	00:00:05:14 days	6/13/2013 5:09:29 AM	6/13/2013 5:14:44 AM	Medium	Completed
Set Data Fields	00:00:00:00 days	6/13/2013 5:14:44 AM	6/13/2013 5:14:44 AM	Medium	Completed
Customer Approval	00:00:05:21 days	6/13/2013 5:09:31 AM	6/13/2013 5:14:52 AM	Medium	Completed
Set Data Fields1	00:00:00:00 days	6/13/2013 5:14:52 AM	6/13/2013 5:14:52 AM	Medium	Completed
Customer Approval	04:17:39:24 days	6/13/2013 5:09:35 AM	1/1/1900 12:00:00 AM	Medium	Active

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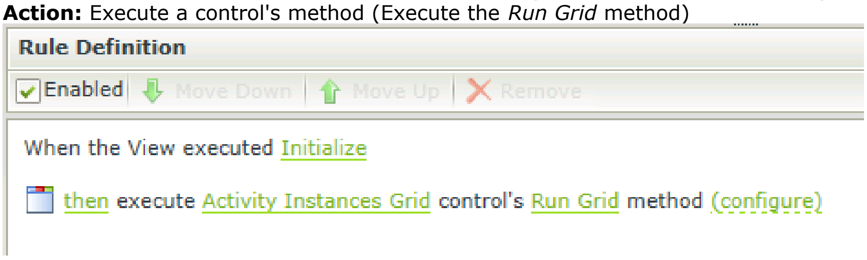
How to use the Activity Instances Grid control

1. Create a View
2. Drag the Activity Instances Grid control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Activity Instances Grid control as required, see the **Properties** section below
4. Add a rule to Run the Grid when the View is Initialized for example:
   Event: When a control on the View raises an event (When the *View* is Initialized)
   Action: Execute a control's method (Execute the *Run Grid* method)



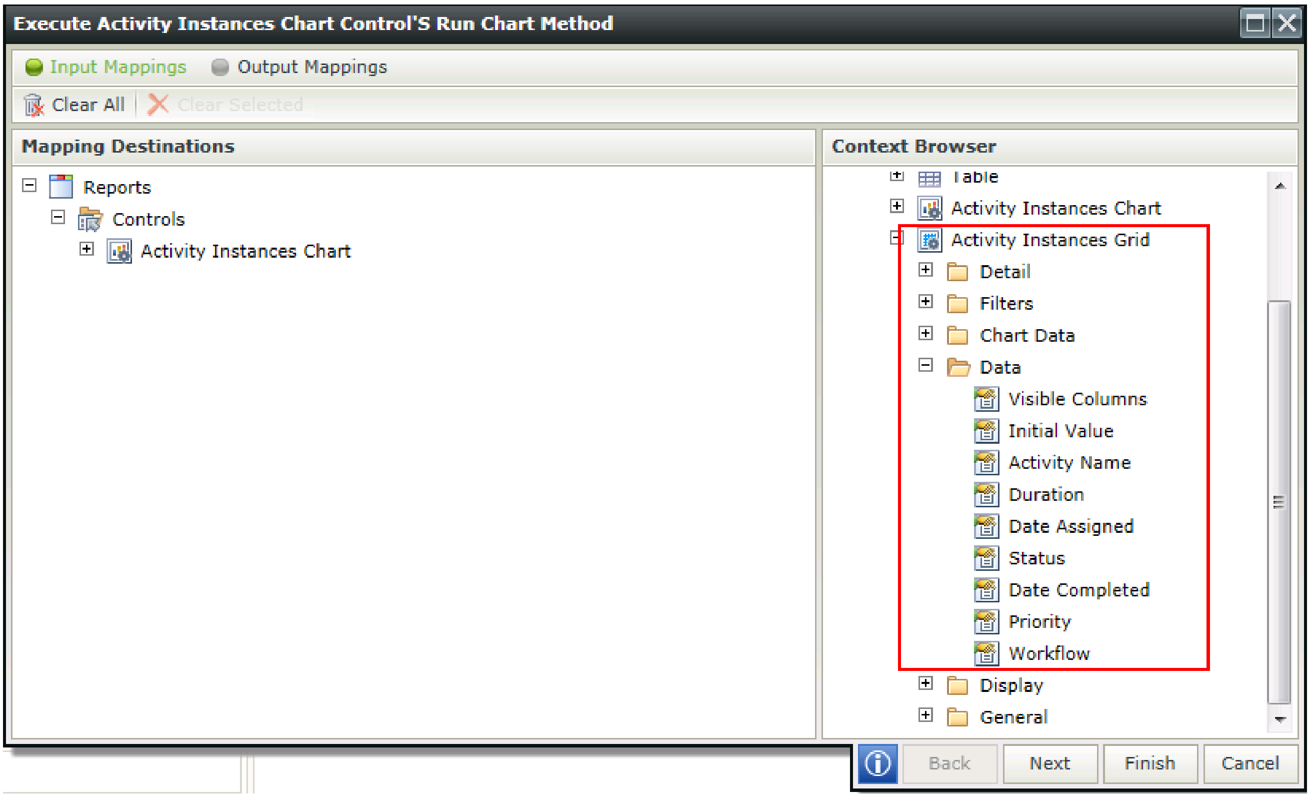
Considerations

- Always remember to create a rule to Run the Grid when the View Initializes
- The **value** of the Activity Instances Grid is the selected **instance id**. When clicking on a record in the Activity Instances Grid in runtime, the value of the Grid will be the selected instance id and can subsequently be used to bind properties or configure rules

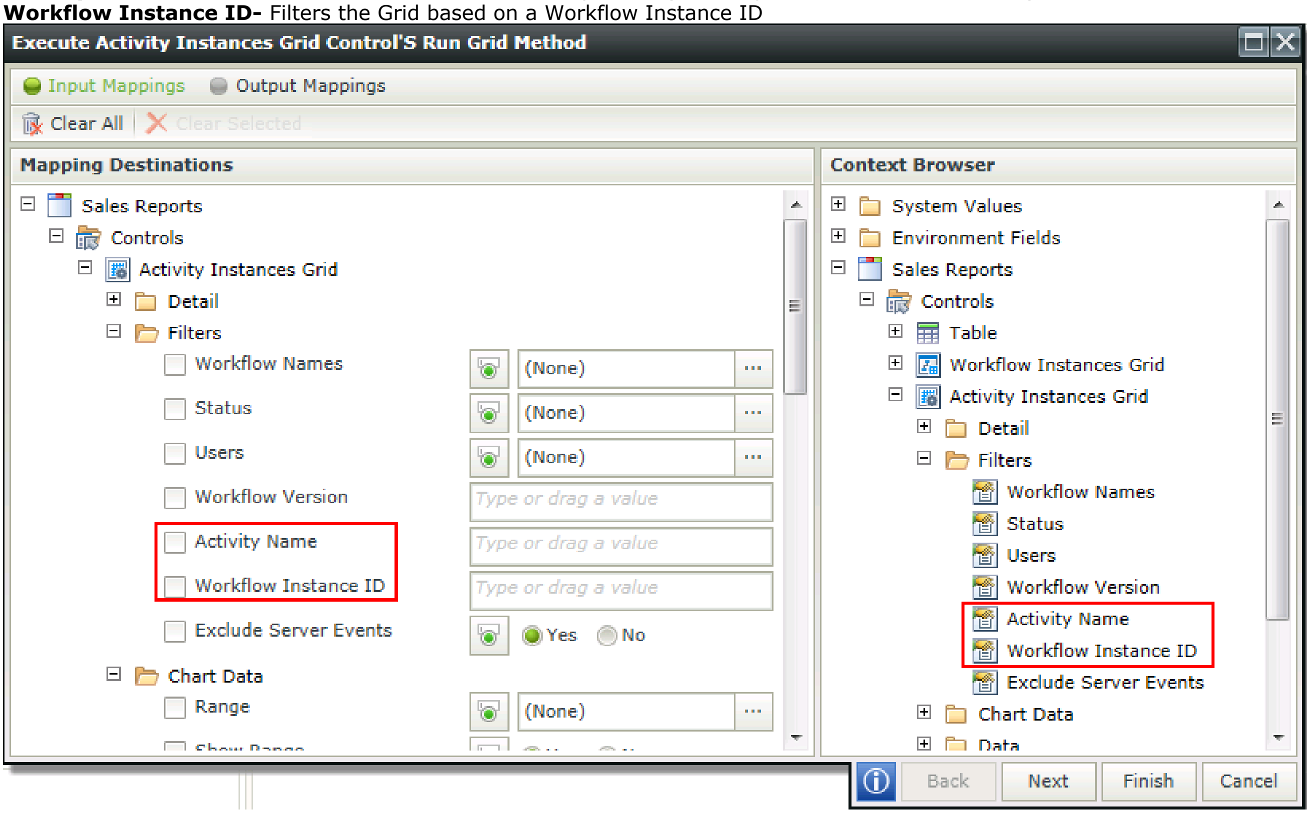
Interaction

Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

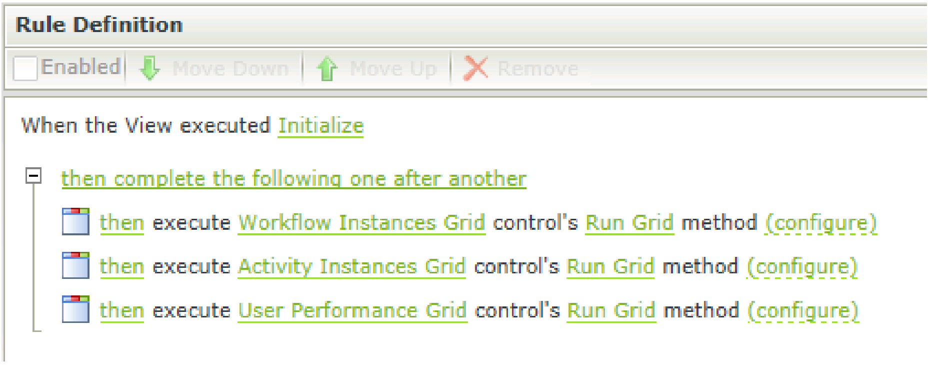
- The column properties displayed on the design canvas are available in the Context Browser for mapping to other controls. This means that the property can be dragged from the control to another control's properties or control value



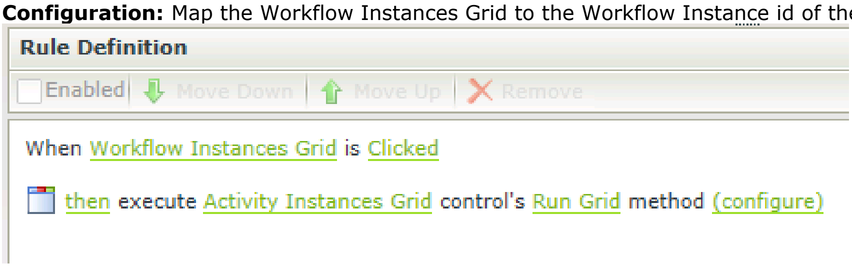
- The following properties are available as Input Mapping properties and in the Context Browser when using rules for mapping to other controls. These properties are additional to those mentioned in the **Properties** section of this topic, but are only available for interaction with rules:
  Activity Name - Filters the Grid based on the full Activity Name (including Folder and Process Name)
  Workflow Instance ID- Filters the Grid based on a Workflow Instance ID

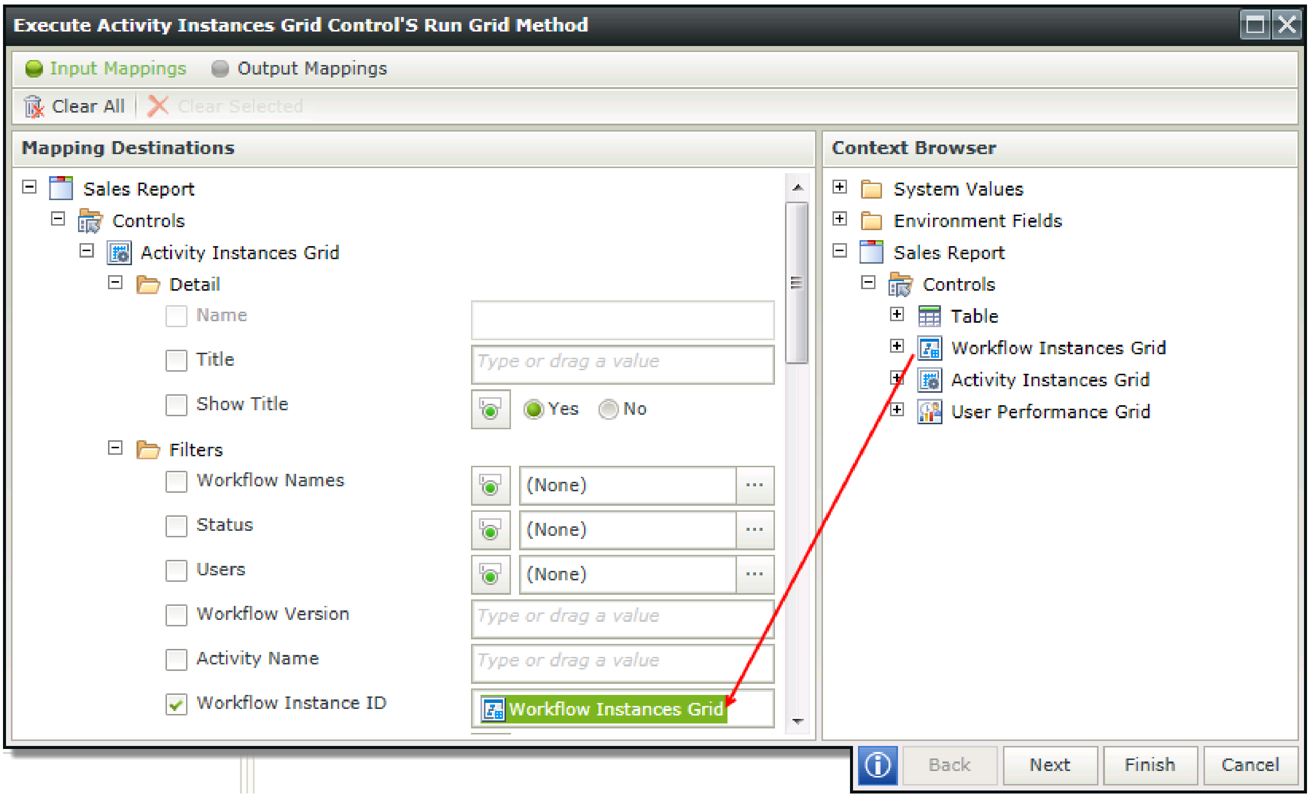


- If I want to see the User Performance Grid for a specific client event for a specific workflow instance for example, the following rules will apply:
  Event: When the View executes a method
  Action: Execute a control's method
  Action: Execute a control's method
  Action: Execute a control's method

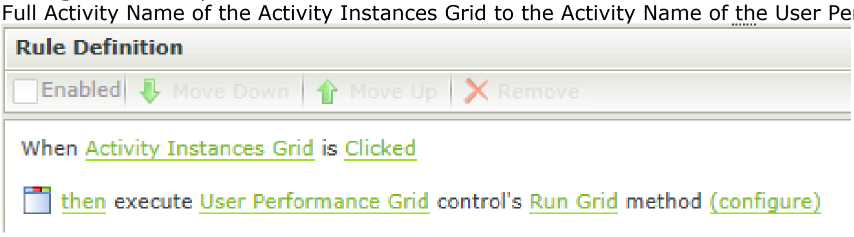


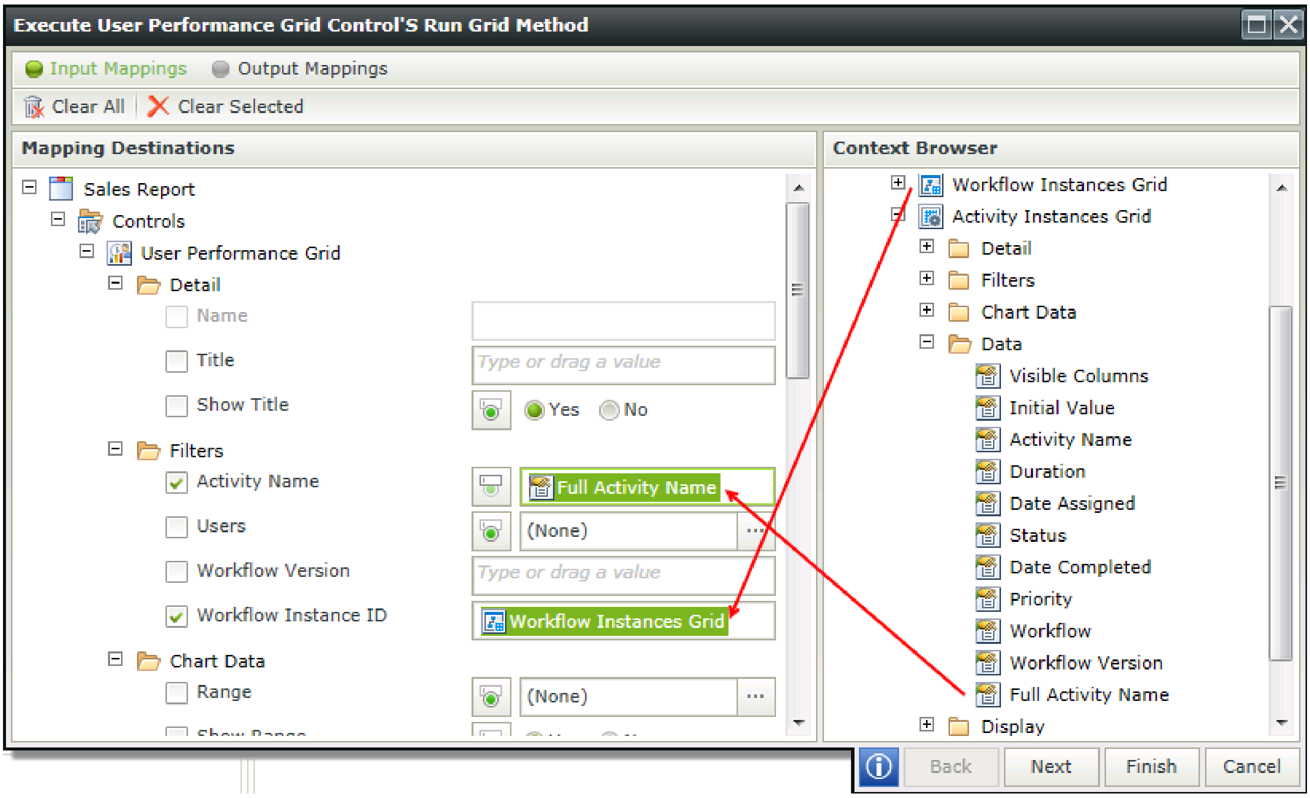
Event: When a control on the View raises an event
Action: Execute a control's method
Configuration: Map the Workflow Instances Grid to the Workflow Instance id of the Activity Instances Grid





Event: When a control on the View raises an event
Action: Execute a control's method
Configuration: Map the Workflow Instances Grid to the Workflow Instance ID of the of the User Performance Grid and the Full Activity Name of the Activity Instances Grid to the Activity Name of the User Performance Grid

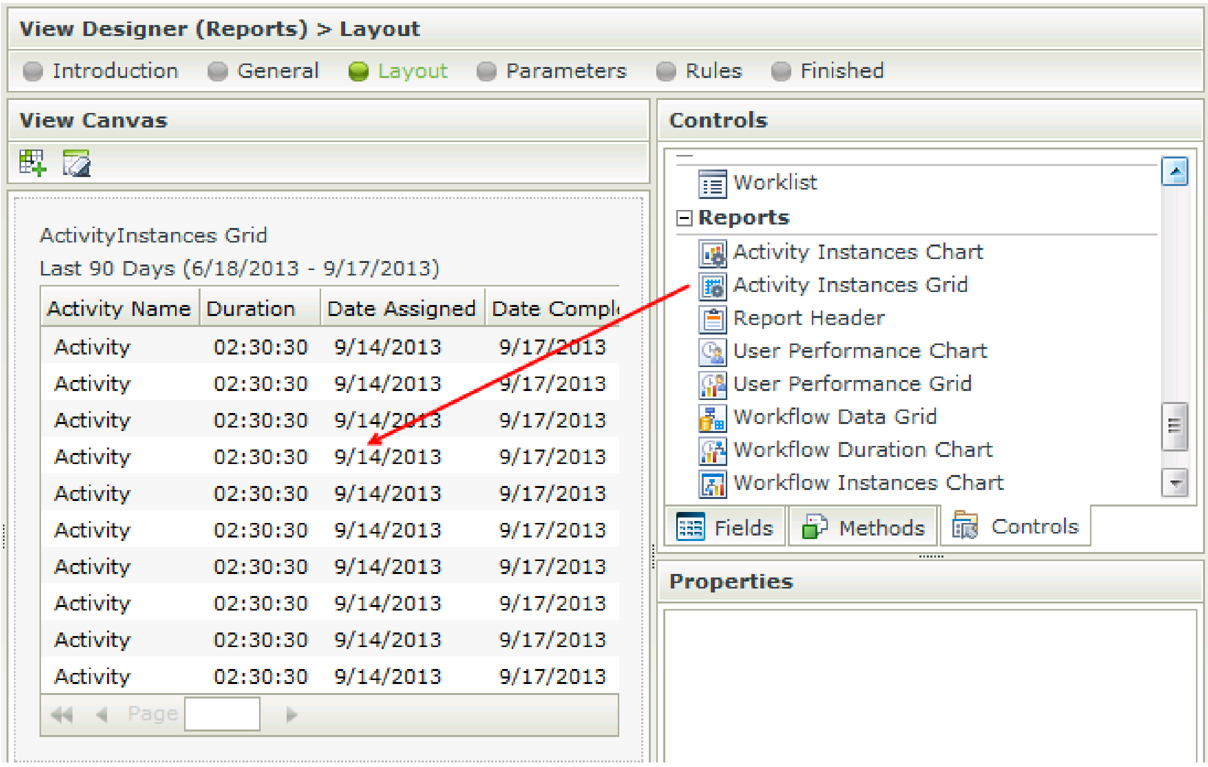




When clicking on an activity on the Workflow Instances Grid at runtime, the Activity Instances Grid will reflect only activities for that specific workflow instance. In turn when clicking on a filtered activity on the Activity Instances Grid, the User Performance Grid will only reflect users who have completed that specific activity of the workflow instance

- Design Properties

The Activity Instances Grid control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see Control Properties Actions for more information

Show Title	Shows or hides the Title of the control in runtime	Yes, see Control Properties Actions for more information
Filters		
Workflow Names	The workflow on which to filter when returning the data in runtime. If All is selected, all activity instances of all workflows will be shown. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Status	The Status of the specific activity instance. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Users	Includes users who have participated in a specific activity instance. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Exclude Server Events	When selecting this option, server events will not be included in the data displayed	Yes, see Control Properties Actions for more information
Workflow Version	A specific workflow version to be used to filter	Yes, see Control Properties Actions for more information
Chart Data		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date on which an activity instance was started. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Show Range	Shows or hides the Data Range in runtime	Yes, see Control Properties Actions for more information
Data		
Visible Columns	Enables the user to select which columns should be visible in runtime. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Initial Value	First record - Indicates whether the first record returned on the list should be selected when using the Run method. Typically used when expecting only one record to be returned and no user interaction is required to select the record. If None is selected, automatic selection of the first record will not take place when run	Yes, see Control Properties Actions for more information
Display		
Sort by Default	Enables sorting of the results by the default in runtime. Date Assigned is the default	Yes, see Control Properties Actions for more information
Use Paging	Enables paging in runtime	Yes, see Control Properties Actions for more information
Page Size	Enables the user to specify the amount of records to be shown per page in runtime. Default is 10. Type the number of records to be shown per page in runtime if required	Yes, see Control Properties Actions for more information
General		
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

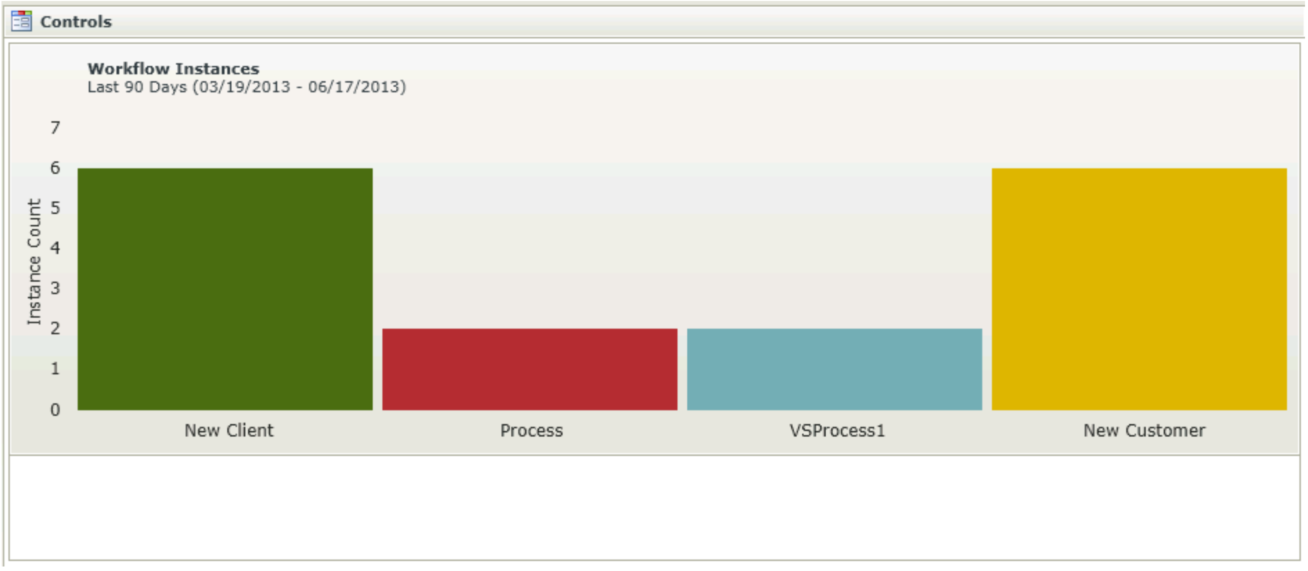
5.4 Workflow Instances Chart

Workflow Instances Chart

The Workflow Instances Chart control is a graphic display of workflows according to specific filter criteria. The data is displayed as an aggregated view of the workflow. Depending on the properties used, this chart can be used to:

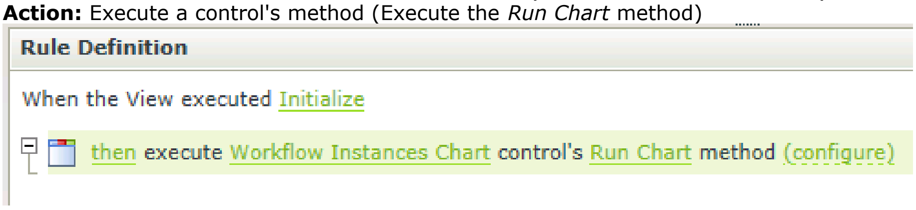
- Determine which workflows are used most often
- Determine which workflows take the longest to complete
- Identify trends and patterns in usage and load
- Determine the peak usage times for the workflow
- Determine the time periods when it takes the longest to complete the workflow

Runtime Example



How to use the Workflow Instances Chart control

1. Create a View
2. Drag the Workflow Instances Chart control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Workflow Instances Chart control as required, see the **Properties** section below
4. Add a rule to Run the Chart when the View is Initialized for example:
   Event: When a control on the View raises an event (When the *View* is Initialized)
   Action: Execute a control's method (Execute the *Run Chart* method)



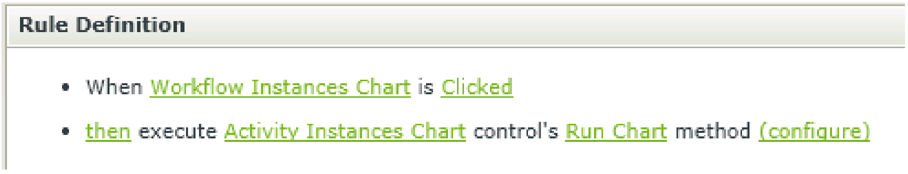
Considerations

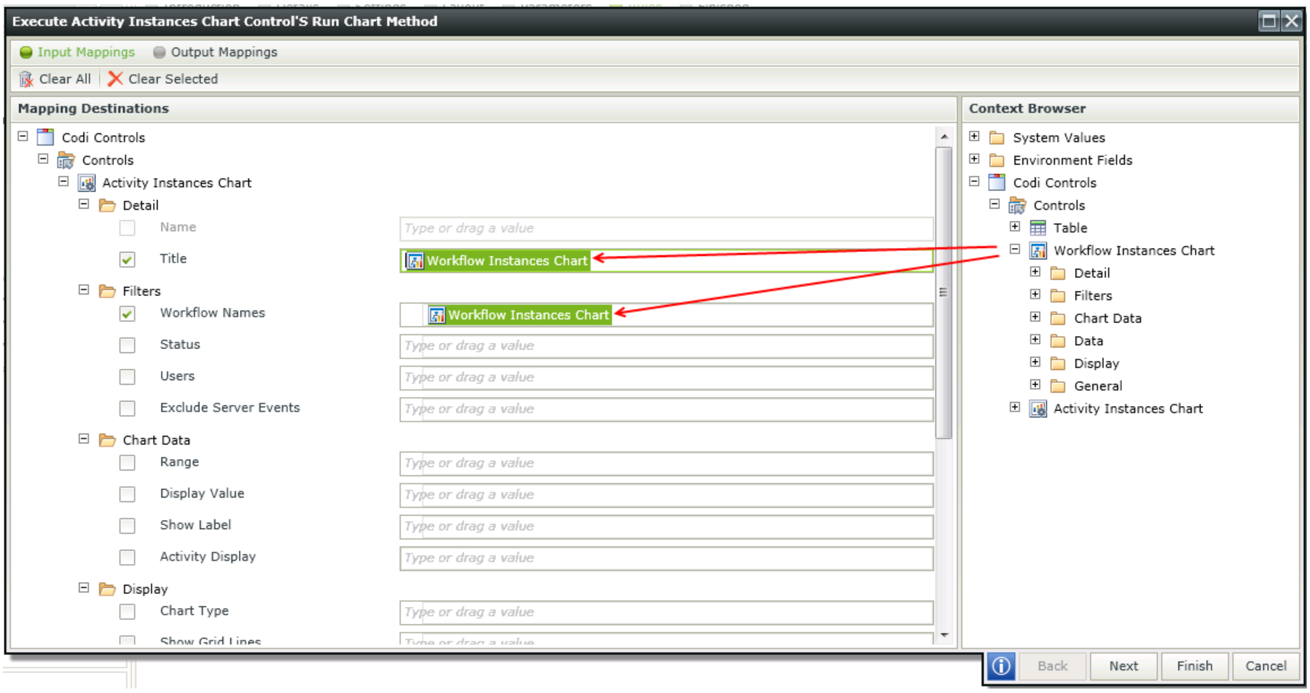
- Always remember to create a rule to Run the Chart when the View Initializes
- When expecting to display many workflows, it is recommended to set the Label Angle in the Properties of the control to ensure that labels are displayed properly and do not overlap
- The value of the Workflow Instances Chart is the fully qualified name of the workflow on the x-axis. When clicking on a bar, pie slice or column (depending on the type of Chart used) in runtime, the value of the Chart will be the name of the workflow clicked and can subsequently be used to bind properties or configure rules
- When using a percentage for the width of the control and used in conjunction with the Save as PDF control, a pixel width is calculated and applied to the control's width thus making the width of the Chart pixel based rather than percentage based. It is therefore advised to use a non-percentage based width when using the Chart with the Save as PDF control

Interaction

Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

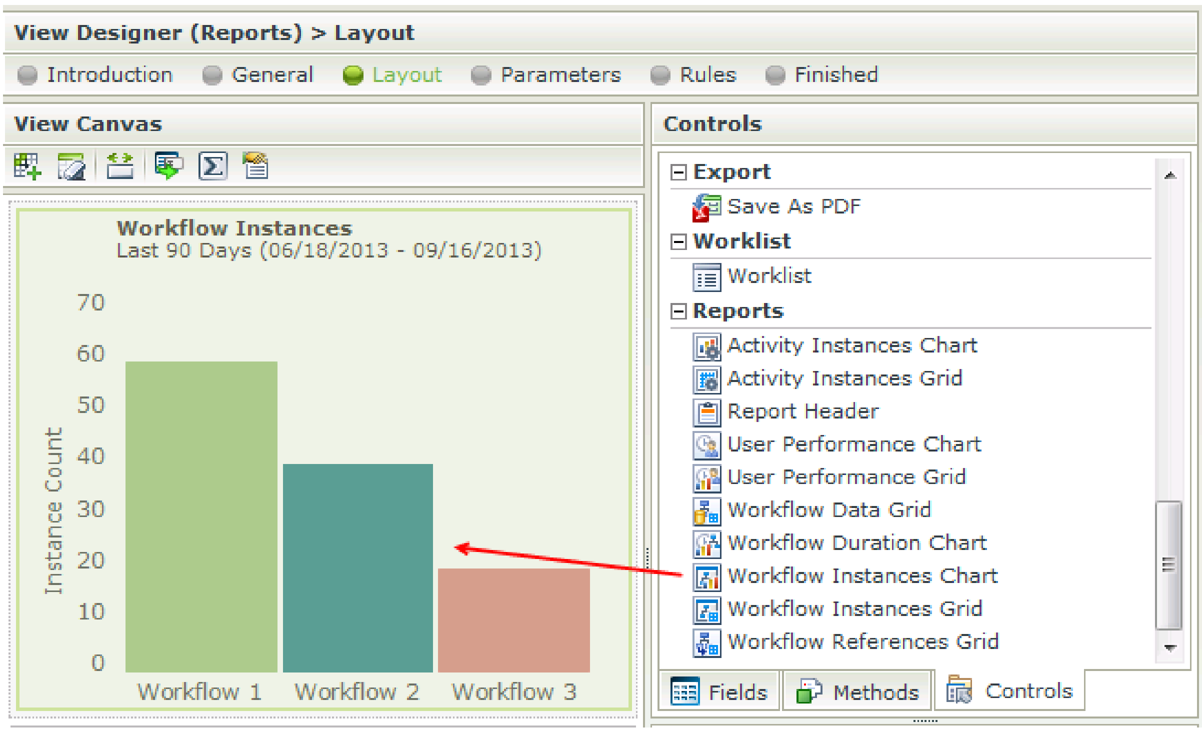
- When clicking for example on the bar, pie slice or column of a Workflow Instance Chart, the workflow representing that bar can be used to populate an Activity Instances Chart. In addition, the Title of the Activity Instances Chart can be set with the name of the workflow. The following rule can be configured to effect this in runtime:
  Event: When a control on the View raises an event
  Action: Execute a control's method
  Configuration: Map the Workflow Instances Chart to the Title and Workflow Names properties of the Activity Instances Chart





Design Properties

The Workflow Instances Chart control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see Control Properties Actions for more information
Show Title	Shows or hides the Title during runtime	Yes, see Control Properties Actions for more information

Watermark	The text to be displayed in runtime if no data is available	Yes, see Control Properties Actions for more information
Filters		
Workflow Names	The workflow on which to filter when returning the data in runtime. If All is selected, all workflow instances will be taken into account when the data is returned. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Status	The Status of the specific workflow instance to be filtered on. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Users	Includes users who started or participated in a workflow instance. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Version	A specific workflow version to be used to filter	Yes, see Control Properties Actions for more information
Chart Data		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date on which a workflow instance was started. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Display Value	The value to be used when displaying the data in the Chart. Duration or Instance Count can be used to display the data returned	Yes, see Control Properties Actions for more information
Show Label	Shows or hides the Labels in runtime	Yes, see Control Properties Actions for more information
Data		
Participation	The following criteria can be used in addition to the Users filter being applied: ● I've started - Users who have started a workflow instance ● I've participated in - Users who have participated in a workflow instance ● All - All users who have started or participated in a workflow instance When selecting a specific user(s) in the Filters section, the criteria mentioned above can be used to apply further filters to the data returned	Yes, see Control Properties Actions for more information
Display		
Chart Type	A Chart can be displayed as a Column, Pie or Bar Chart **Column Chart**- A column chart displays values as sets of vertical columns that are grouped by category **Pie Chart** - Is a circular chart divided into sectors. Each sector shows the relative size of each value **Bar Chart** - Is a chart using rectangular bars with lengths proportional to the values they represent	Yes, see Control Properties Actions for more information
Show Grid Lines	Grid Lines are a network of intersecting parallel lines used as a reference for locating points. This option enables the Grid Lines to be shown	Yes, see Control Properties Actions for more information
Label Angle	The angle at which Labels can be rotated in order to display more efficiently when viewing many. Default is 0. Type a percentage at which the Labels should rotate	Yes, see Control Properties Actions for more information
Select Effect	The following effects determines how the control will render in runtime. The effects are applied when an item is clicked: **Pie Chart** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item is exploded. The opacity of all other items are	Yes, see Control Properties Actions for more information

	reduced to about 50% Explode - The selected item is exploded and has 100% opacity No Effect - 100% Opacity for all items **Column Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity **Bar Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity	
Transition Effect	Applies the Effect mentioned above in runtime	Yes, see Control Properties Actions for more information
General		
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Height	Adjusts the height of the control. Any whole number or pixel value to a maximum of 32767px can be entered. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

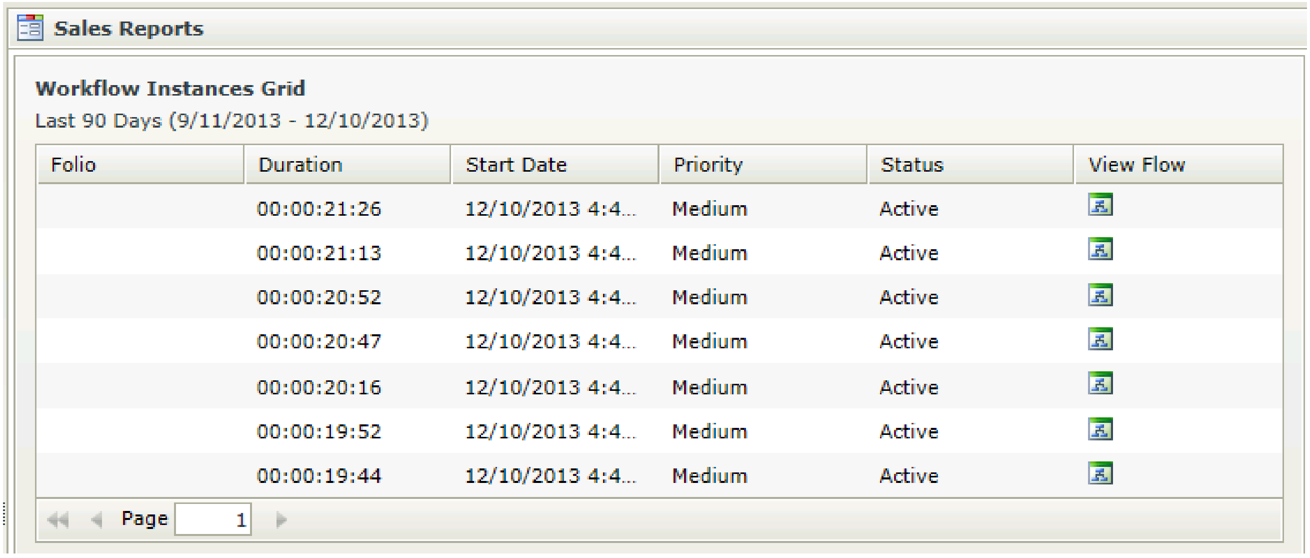
5.5 Workflow Instances Grid

Workflow Instances Grid

The Workflow Instances Grid control lists all workflow instances according to specific filter criteria. The data is displayed as detailed information pertaining to a workflow instance or instances. This grid can be used to:

- Determine the Priority and Status of workflow instances
- Determine the start date of a specific workflow instance
- Identify a specific workflow instance if the Folio is set during the workflow
- Open the View Flow of each workflow instance to view the color coded graphical representation of the workflow process. See the example in the **Interaction** section of this topic

Runtime Example


Sales Reports

Workflow Instances Grid

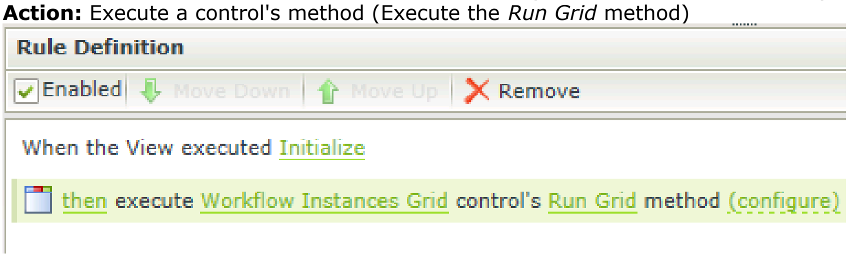
Last 90 Days (9/11/2013 - 12/10/2013)

Folio	Duration	Start Date	Priority	Status	View Flow
	00:00:21:26	12/10/2013 4:4...	Medium	Active	
	00:00:21:13	12/10/2013 4:4...	Medium	Active	
	00:00:20:52	12/10/2013 4:4...	Medium	Active	
	00:00:20:47	12/10/2013 4:4...	Medium	Active	
	00:00:20:16	12/10/2013 4:4...	Medium	Active	
	00:00:19:52	12/10/2013 4:4...	Medium	Active	
	00:00:19:44	12/10/2013 4:4...	Medium	Active	

Page 1

How to use the Workflow Instances Grid control

1. Create a View
2. Drag the Workflow Instances Grid control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Workflow Instances Grid control as required, see the **Properties** section below
4. Add a rule to Run the Grid when the View is Initialized for example:
Event: When a control on the View raises an event (When the *View* is Initialized)
Action: Execute a control's method (Execute the *Run Grid* method)



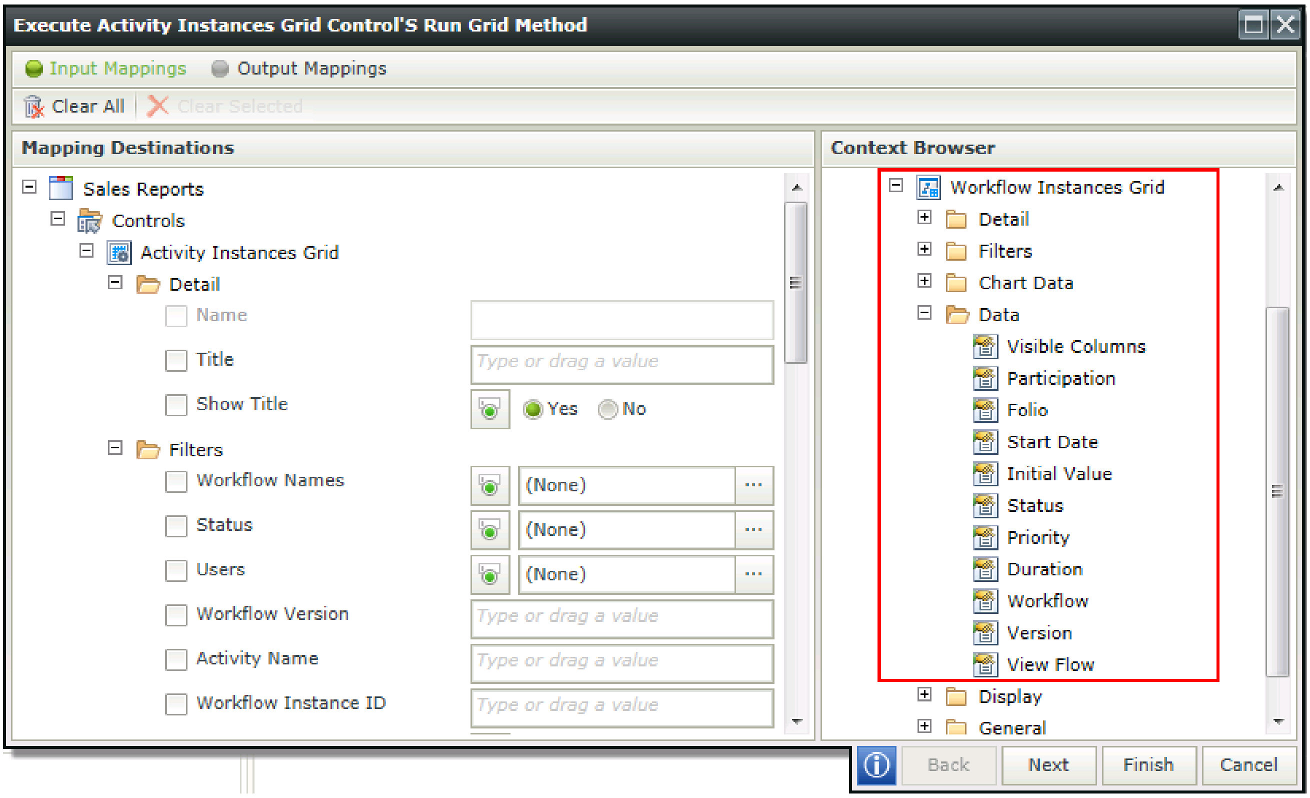
Considerations

- Always remember to create a rule to Run the Grid when the View Initializes
- The value of the Workflow Instances Grid is the selected instance. When clicking on a record in the Workflow Instances Grid in runtime, the value of the Grid will be the selected instance and can subsequently be used to bind properties or configure rules

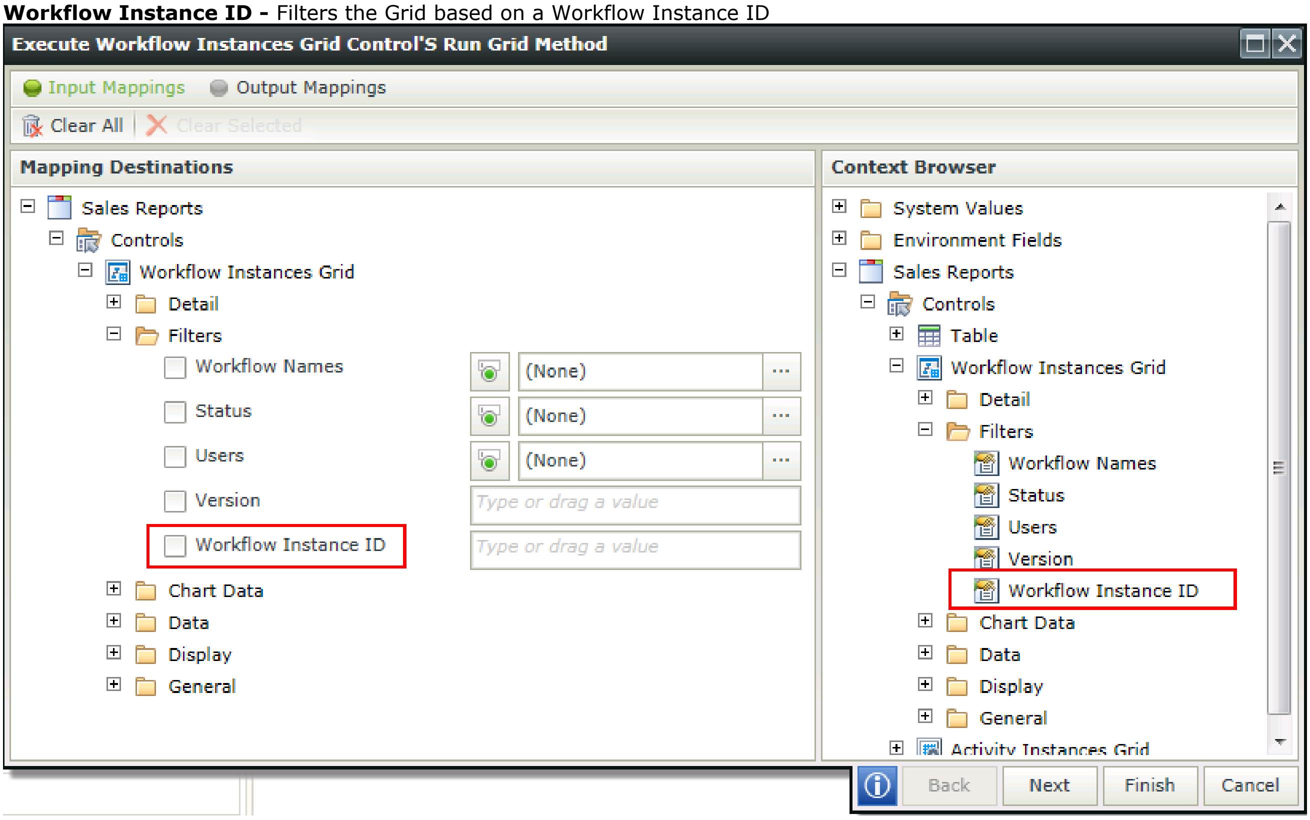
Interaction

Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

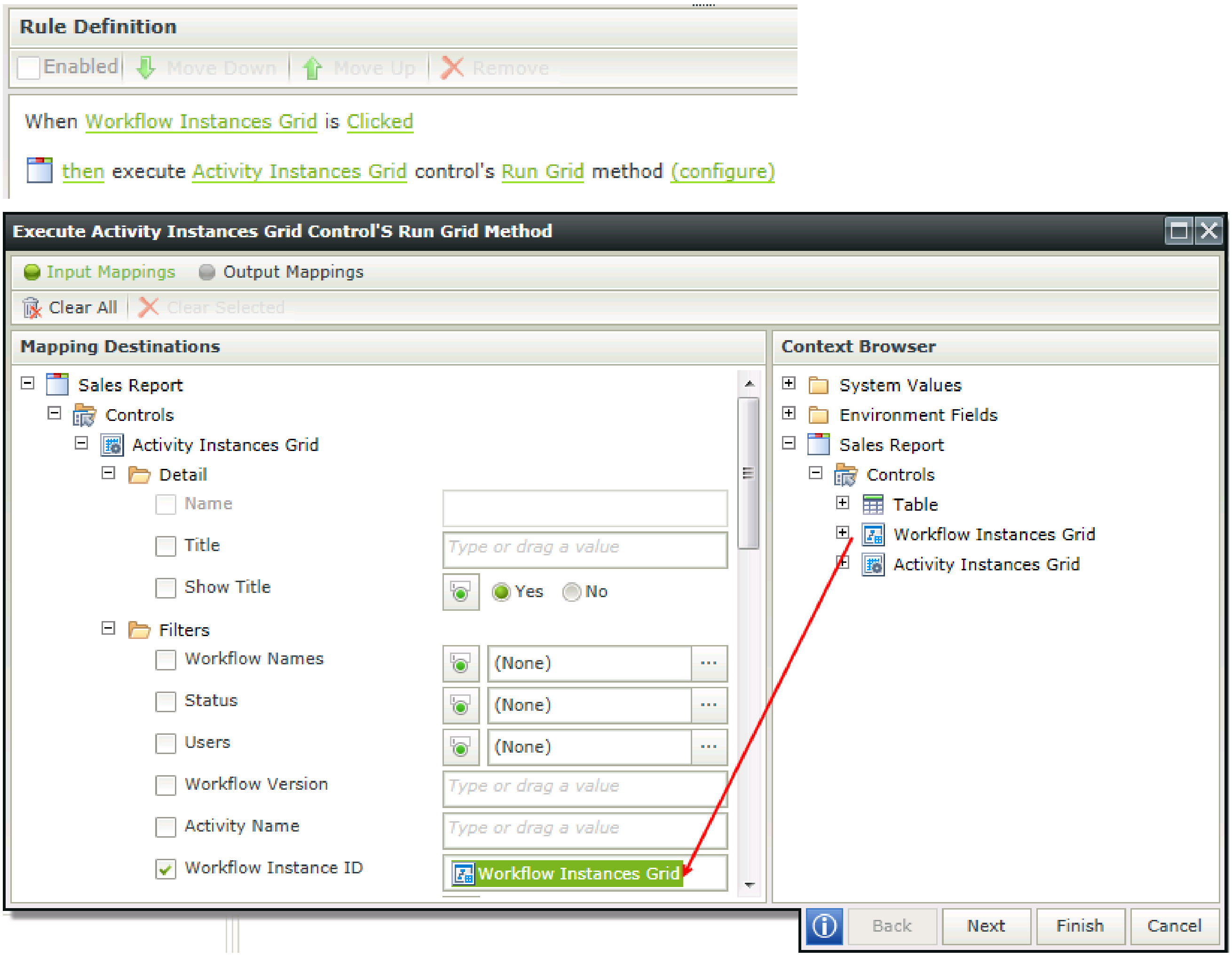
- The column properties displayed on the design canvas are available in the Context Browser for mapping to other controls. This means that the property can be dragged from the control to another control's properties or control value



- The following property is available as Input Mapping property and in the Context Browser when using rules for mapping to other controls. This property is additional to those mentioned in the **Properties** section of this topic, but is only available for interaction with rules:
Workflow Instance ID - Filters the Grid based on a Workflow Instance ID

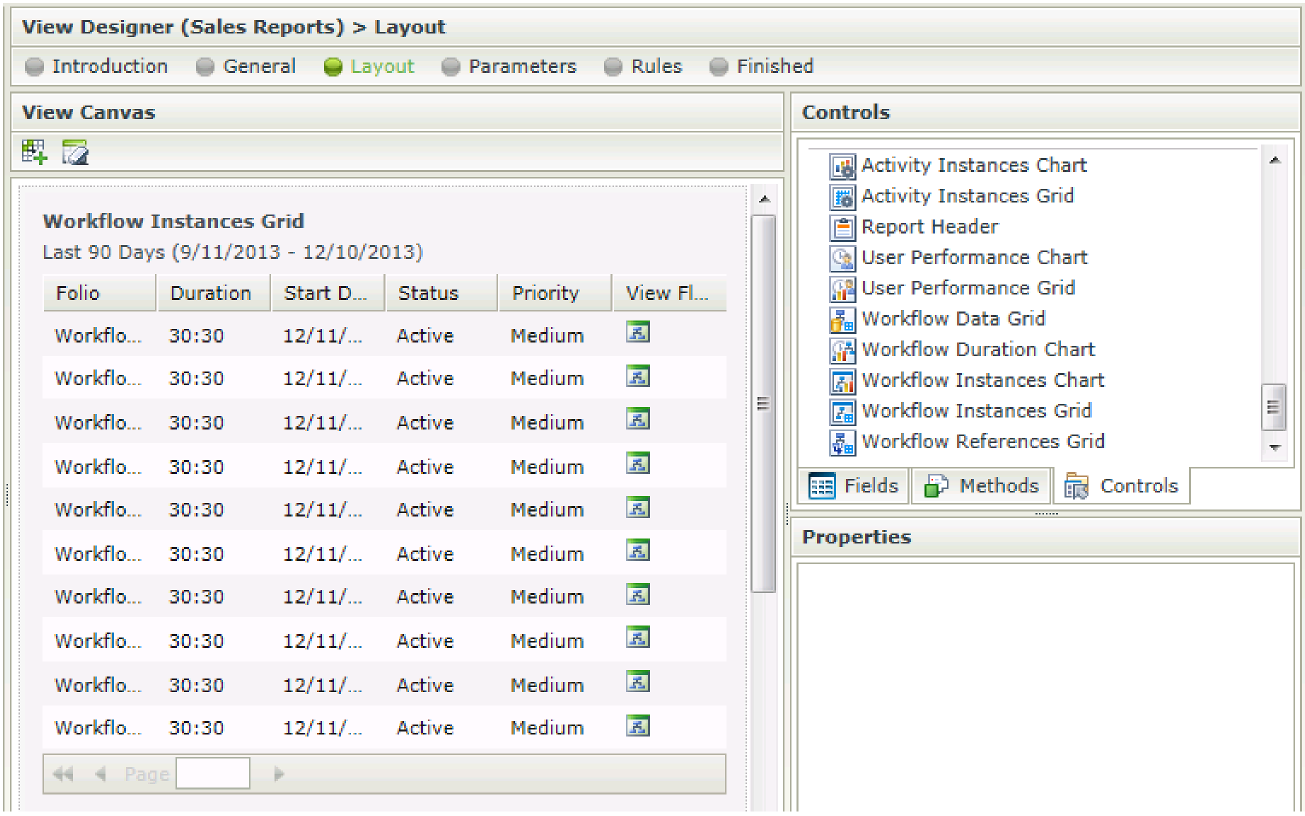


- When using a Grid control to populate another Grid control, for example if the selected workflow in a Workflow Instances Grid should be used to populate an Activity Instances Grid, the following rule will apply:
Event: When a control on the View raises and event
Action: Execute a control's method
Configuration: Map the Workflow Instance Grid to the Workflow Instance ID of the Activity Instances Grid



Design Properties

The Workflow Instances Grid control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see Control Properties Actions for more information
Show Title	Shows or hides the Title during runtime	Yes, see Control Properties Actions for more information
Filters		
Workflow Names	The workflow on which to filter when returning the data in runtime. If All is selected, all workflow instances will be taken into account when the data is returned. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Status	The Status of the specific workflow instance. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Users	Includes users who started or participated in a workflow instance. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more informationChart
Chart Data		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date on which a workflow instance was started. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Show Range	Shows or hides the Data Range in runtime	Yes, see Control Properties Actions for more information
Data		
Visible Columns	Enables the user to select which columns should be visible in runtime. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Participation	The following criteria can be used in addition to the Users filter being applied: • I've started - Users who have started a workflow instance • I've participated in - Users who have participated in a workflow instance • All - All users who have started or participated in a workflow instance When selecting a specific user(s) in the Filters section, the criteria mentioned above can be used to filter the data returned even further	Yes, see Control Properties Actions for more information
Initial Value	First record - Indicates whether the first record returned on the list should be selected when using the Run method. Typically used when expecting only one record to be returned and no user interaction is required to select the record. If None is selected, no record will automatically be selected when run	Yes, see Control Properties Actions for more information
Display		
Sort by Default	Enables sorting of the results by the default in runtime. Date Started is the default	Yes, see Control Properties Actions for more information
Use Paging	Enables paging in runtime	Yes, see Control Properties Actions for more information
Number of Items on the Page	Enables the user to specify the amount of records to be shown per page in runtime. Default is 10. Type the number of records to be shown per page in runtime if required	Yes, see Control Properties Actions for more information
General		
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information

Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

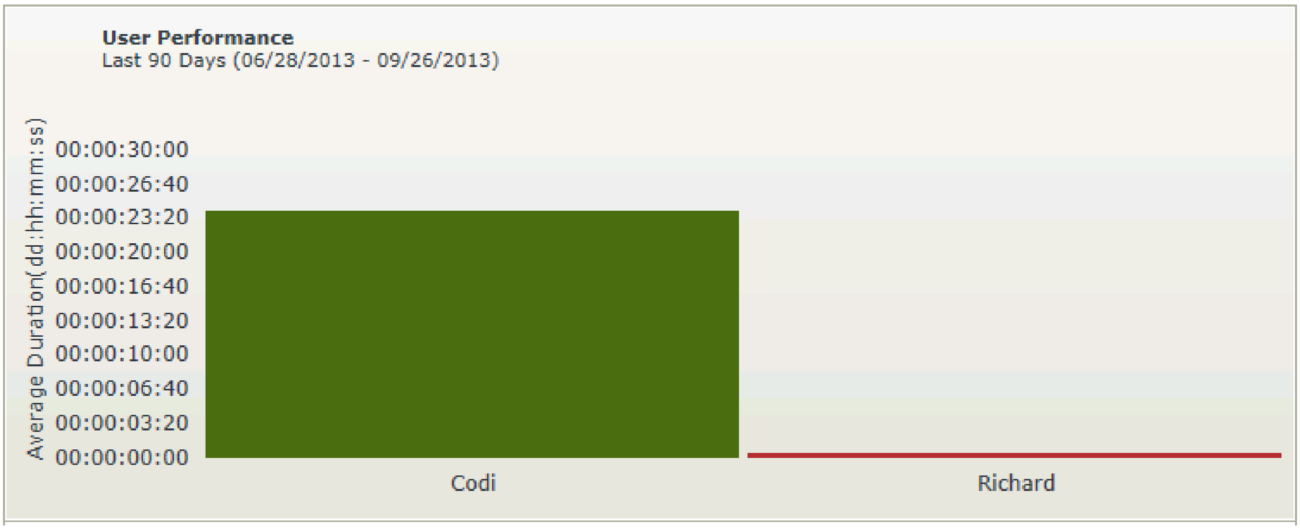
5.6 User Performance Chart

User Performance Chart

The User Performance Chart control is a graphic display of users who have participated in the selected activity according to specific filter criteria. The data is displayed as an aggregated view of instances per user. Depending on the properties used, this chart can be used to:

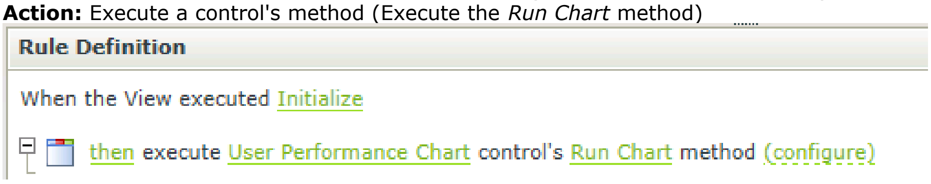
- Determine, over a given timeframe how long it takes each user to complete the same task
- Determine how many instances of the same task has each user completed over a given timeframe

Runtime Example



How to use the User Performance Chart control

1. Create a View
2. Drag the User Performance Chart control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the User Performance Chart control as required, see the **Properties** section below
4. Add a rule to Run the Chart when the View is Initialized for example:
Event: When a control on the View raises an event (When the *View* is Initialized)
Action: Execute a control's method (Execute the *Run Chart* method)



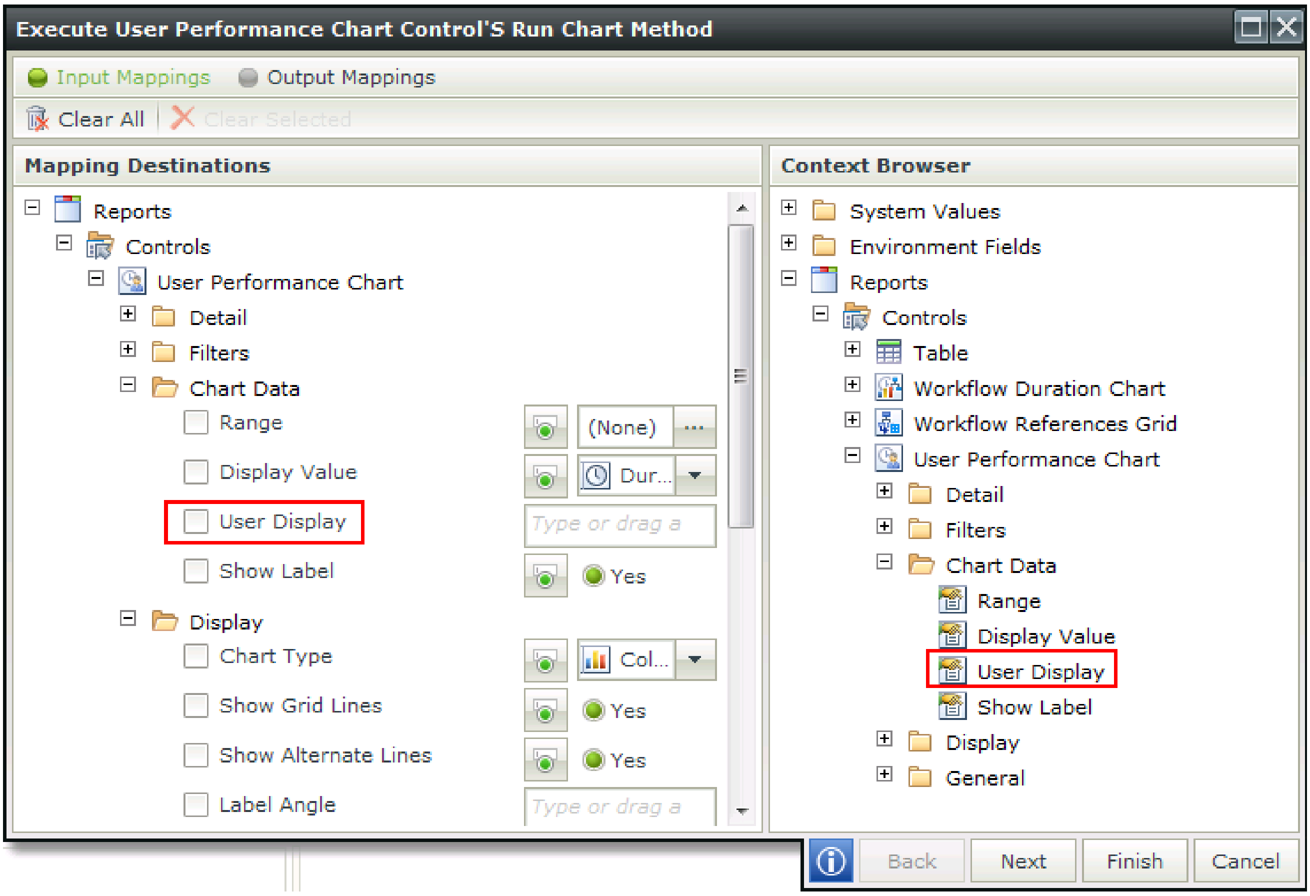
Considerations

- Always remember to create a rule to Run the Chart when the View Initializes
- When having many users, it is recommended to set the Label Angle in the Properties of the control to ensure that labels are displayed properly and do not overlap
- The value of the User Performance Chart is the fully qualified name of the user on the x-axis. When clicking on a bar, pie slice or column (depending on the type of Chart used) in runtime, the value of the Chart will be the name of the user clicked and can subsequently be used to bind properties or configure rules
- When using a percentage for the width of the control and used in conjunction with the Save as PDF control, a pixel width is calculated and applied to the control’s width thus making the width of the Chart pixel based rather than percentage based. It is therefore advised to use a non-percentage based width when using the Chart with the Save as PDF control
- The User Performance Chart is populated with data where a user has **completed** a specific activity. Any other statuses are not reflected as the user's performance is measured on completion of an activity

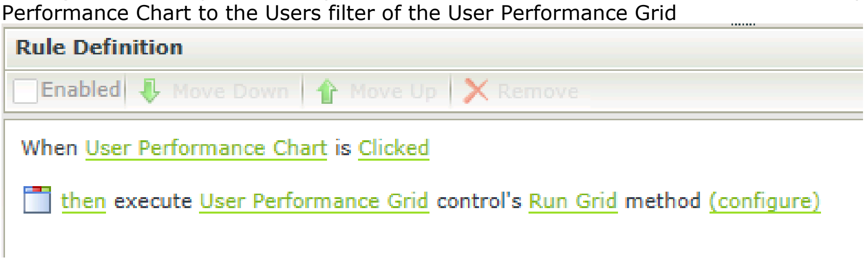
Interaction

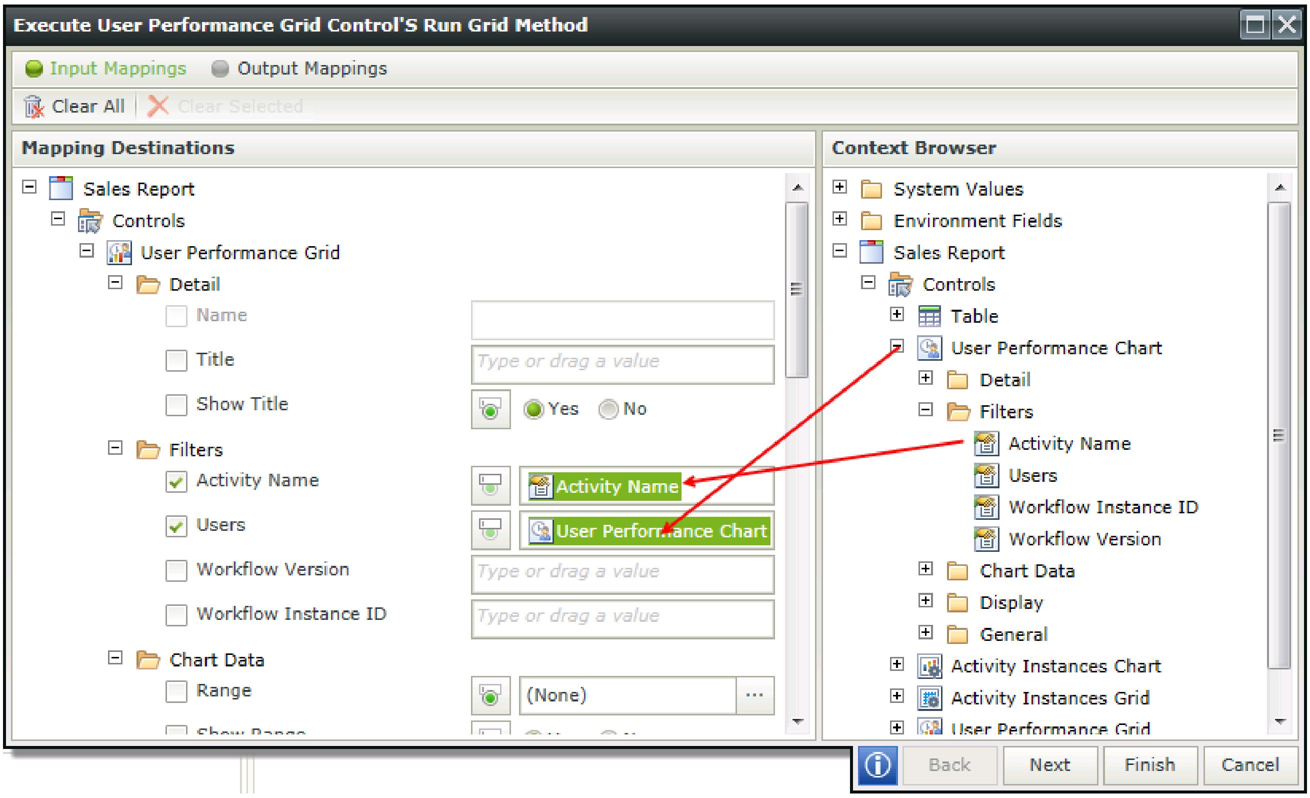
Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

- The following property is available as Input Mapping property and in the Context Browser when using rules for mapping to other controls. This property is additional to those mentioned in the **Properties** section of this topic, but is only available for interaction with rules:
User Display - Name of the selected user. The name is displayed without the Folder and Process Name



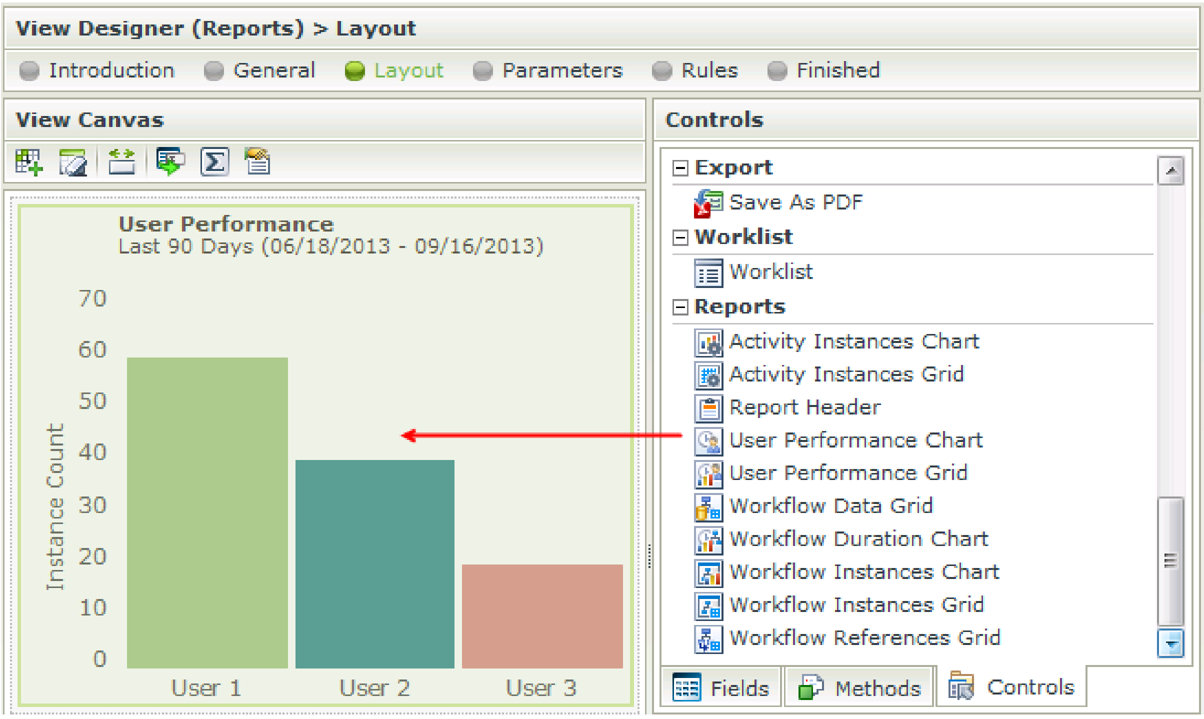
- When clicking on for example the bar, pie slice or column of a User Performance Chart, the user representing that bar can be used to populate a User Performance Grid. The following rule can be configured to effect this in runtime:
  Event: When a control on the View raises an event
  Action: Execute a control's method
  Configuration: Map the Activity Name of the User Performance Chart to the Activity Name filter and the User Performance Chart to the Users filter of the User Performance Grid





[Design Properties](#)

The [User](#) Performance Chart control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see [Control Properties Actions](#) for more information
Show Title	Shows or hides the Title during runtime	Yes, see [Control Properties Actions](#) for more information
Watermark	The text to be displayed in runtime if no data is available	Yes, see [Control Properties Actions](#) for more information
Filters		

Activity Name	The activity on which to filter when returning the data in runtime. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Users	Users who have actioned a specific activity. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Workflow Version	A specific workflow version to be used to filter	Yes, see Control Properties Actions for more information
Chart Data		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date when the user actioned the specific activity instance. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Display Value	The value to be used when displaying the data in the Chart. Duration or Instance Count can be used to display the data returned	Yes, see Control Properties Actions for more information
Show Label	Shows or hides the Labels in runtime	Yes, see Control Properties Actions for more information
Display		
Chart Type	A Chart can be displayed as a Column, Pie or Bar Chart **Column Chart**- A column chart displays values as sets of vertical columns that are grouped by category **Pie Chart** - Is a circular chart divided into sectors. Each sector shows the relative size of each value **Bar Chart** - Is a chart using rectangular bars with lengths proportional to the values they represent	Yes, see Control Properties Actions for more information
Show Grid Lines	Grid Lines are a network of intersecting parallel lines used as a reference for locating points. This option enables the Grid Lines to be shown	Yes, see Control Properties Actions for more information
Label Angle	The angle at which Labels can be rotated in order to display more efficiently when viewing many users. Default is 0. Type a percentage at which the Labels should rotate	Yes, see Control Properties Actions for more information
Select Effect	The following effects determines how the control will render in runtime. The effects are applied when an item is clicked: **Pie Chart** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item is exploded. The opacity of all other items are reduced to about 50% Explode - The selected item is exploded and has 100% opacity No Effect - 100% Opacity for all items **Column Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity **Bar Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity	Yes, see Control Properties Actions for more information
Transition Effect	Applies the Effect mentioned above in runtime	Yes, see Control Properties Actions for more information
General		

Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Height	Adjusts the height of the control. Any whole number or pixel value to a maximum of 32767px can be entered. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

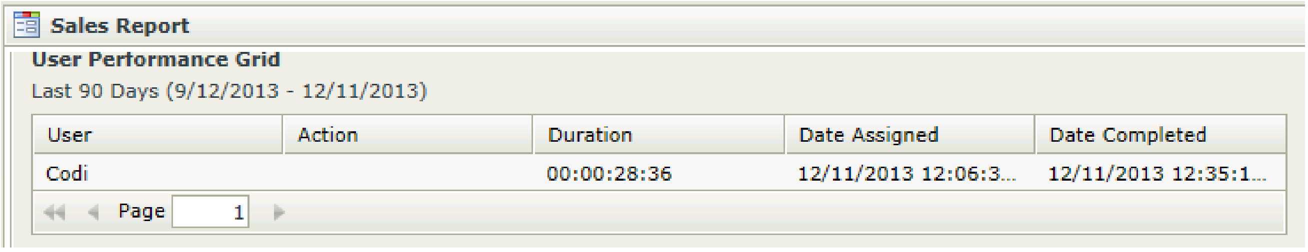
5.7 User Performance Grid

User Performance Grid

The User Performance Grid control lists users who have participated in the selected activity with activity data according to specific filter criteria. The data is displayed as detailed information pertaining to activity instances per user.This grid can be used to:

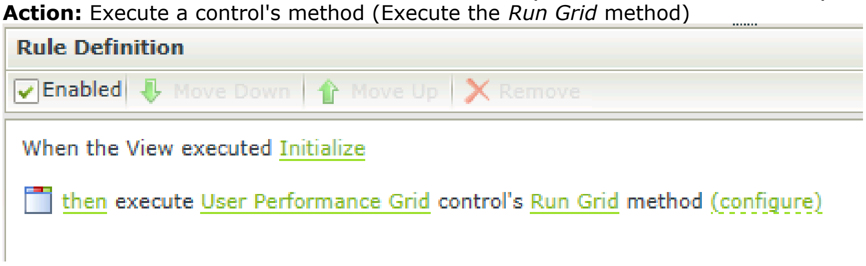
- View the detail such as Action and Status of activity instances per user
- View the detail of the user or users who have participated in a workflow instance. This is achieved by using a rule to interact with the Workflow Instances Grid. See the **Interaction** section for more detail
- Access the Workflow Data Grid to view the Data Fields used. See the **Interaction** section for more detail
- If workflow steps are incomplete, determine who the task is assigned to

Runtime Example



How to use the User Performance Grid control

1. Create a View
2. Drag the User Performance Grid control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the User Performance Grid control as required, see the **Properties** section below
4. Add a rule to Run the Grid when the View is Initialized for example:
   Event: When a control on the View raises an event (When the *View* is Initialized)
   Action: Execute a control's method (Execute the *Run Grid* method)



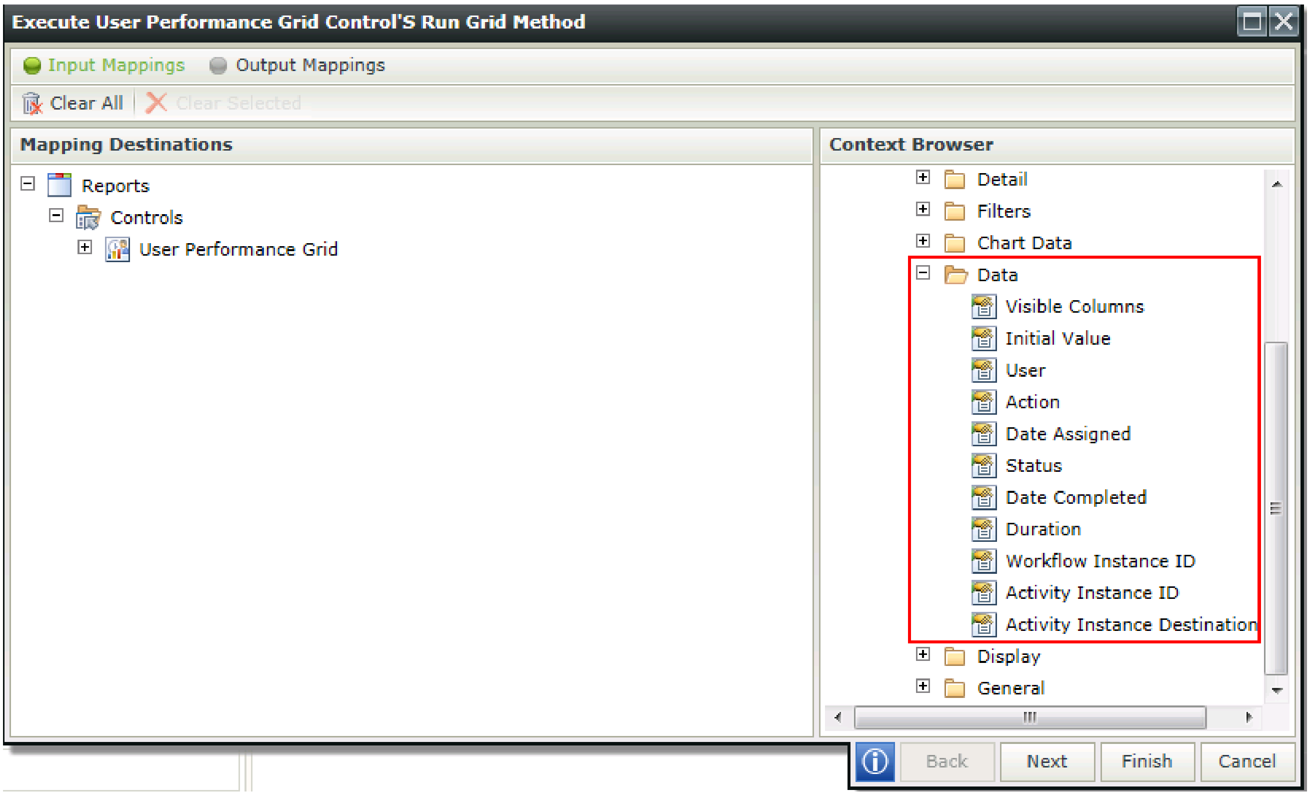
Considerations

- Always remember to create a rule to Run the Grid when the View Initializes
- The value of the User Performance Grid is the selected instance. When clicking on a record in the User Performance Grid in runtime, the value of the Grid will be the selected instance and can subsequently be used to bind properties or configure rules
- The User Performance Grid is populated with data where a user has **completed** a specific activity. Any other statuses are not reflected as the user's performance is measured on completion of an activity

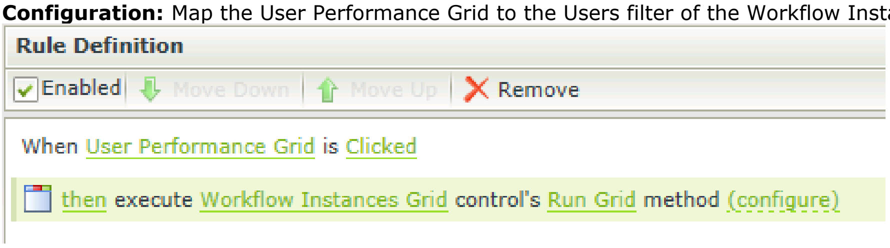
Interaction

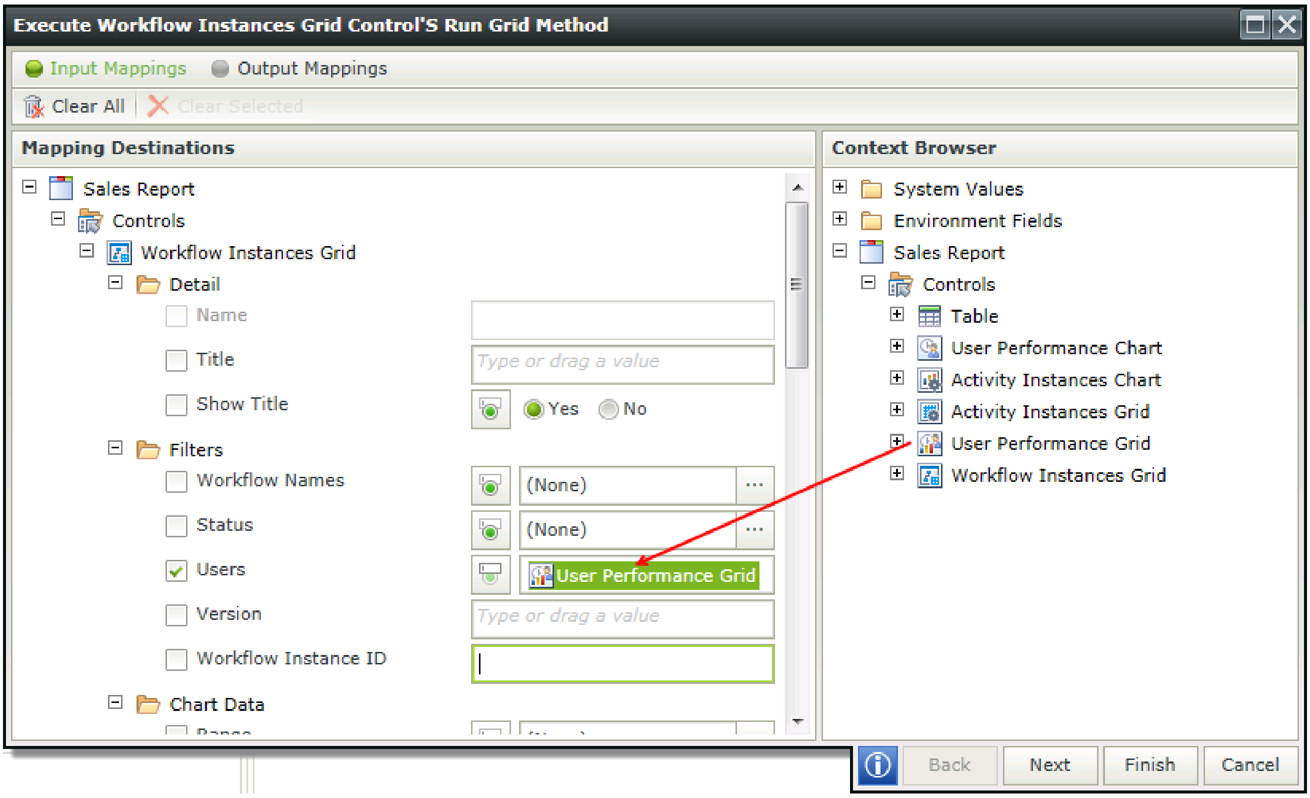
Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

- The column properties displayed on the design canvas are available in the Context Browser for mapping to other controls. This means that the property can be dragged from the control to another control's properties or control value



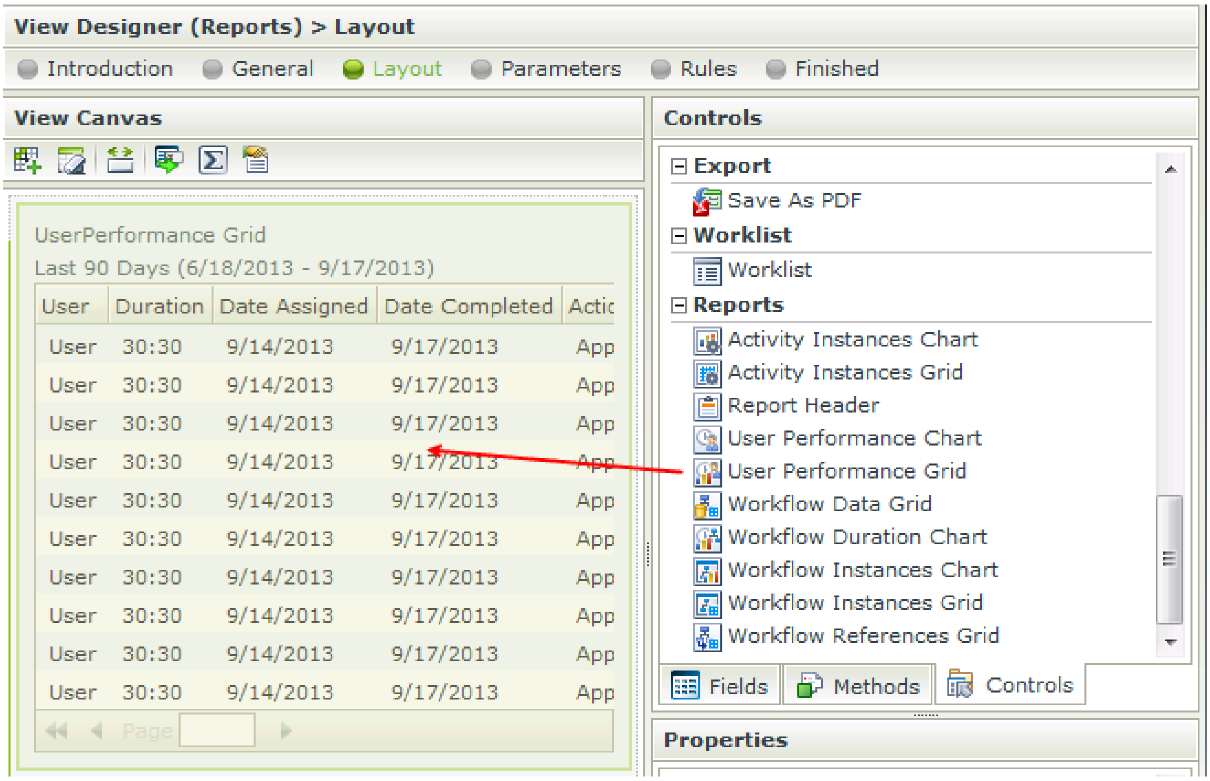
- A rule can be created to populate the Workflow Instances Grid when clicking on a record in a User Performance Grid. The rule will look like this:
  Event: When a control on the View raises an event
  Action: Execute a control's method
  Configuration: Map the User Performance Grid to the Users filter of the Workflow Instances Grid as shown below





[Design Properties](#)

The [User](#) Performance Grid control is available in the **Reports** section of the Controls found in the View Designer.



<

Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see [Control Properties Actions](#) for more information
Show Title	Shows or hides the Title during runtime	Yes, see [Control Properties Actions](#) for more information
Filters		
Activity Name	The activity on which to filter when returning the data in runtime. See the [Generic Picker Screens](#) topic for more information	Yes, see [Control Properties Actions](#) for more information
Users	Users who have actioned a specific activity. See the [Generic Picker Screens](#) topic for more information	Yes, see [Control Properties Actions](#) for more information
Workflow Version	A specific workflow version to be used to filter	Yes, see [Control Properties Actions](#) for more information
Chart Data		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date when the user actioned the specific activity instance. See the [Generic Picker Screens](#) topic for more information	Yes, see [Control Properties Actions](#) for more information
Show Range	Shows or hides the Data Range in runtime	Yes, see [Control Properties Actions](#) for more information
Data		
Visible Columns	Enables the user to select which columns should be visible in runtime. See the [Generic Picker Screens](#) topic for more information	Yes, see [Control Properties Actions](#) for more information
Initial Value	First record - Indicates whether the first record returned on the list should be selected when using the Run method. Typically used when expecting only one record to be returned and no user interaction is required to select the record. If None is	Yes, see [Control Properties Actions](#) for more information

	selected, no record will automatically be selected when run	
Display		
Sort by Default	Enables sorting of the results by the default in runtime. Date Completed is the default	Yes, see Control Properties Actions for more information
Use Paging	Enables paging in runtime	Yes, see Control Properties Actions for more information
Page Size	Enables the user to specify the amount of records to be shown per page in runtime. Default is 10. Type the number of records to be shown per page in runtime if required	Yes, see Control Properties Actions for more information
General		
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

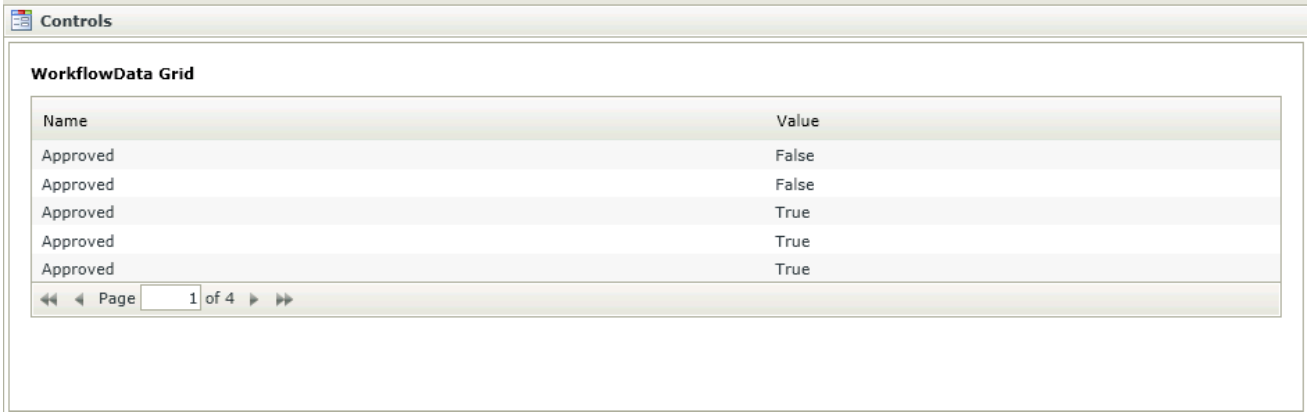
5.8 Workflow Data Grid

Workflow Data Grid

The Workflow Data Grid control lists all Data Fields per workflow instance according to specific filter criteria. This grid can be used to:

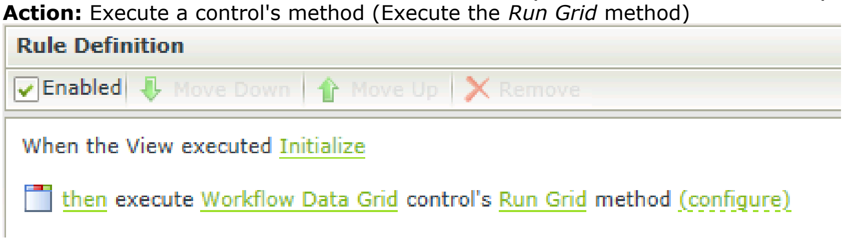
- View detailed information pertaining to Data Fields which relate to one or more workflow instance
- See the value per Data Field

Runtime Example



How to use the Workflow Data Grid control

1. Create a View
2. Drag the Workflow Data Grid control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Workflow Data Grid control as required, see the **Properties** section below
4. Add a rule to Run the Grid when the View is Initialized for example:
   Event: When a control on the View raises an event (When the *View* is Initialized)
   Action: Execute a control's method (Execute the *Run Grid* method)



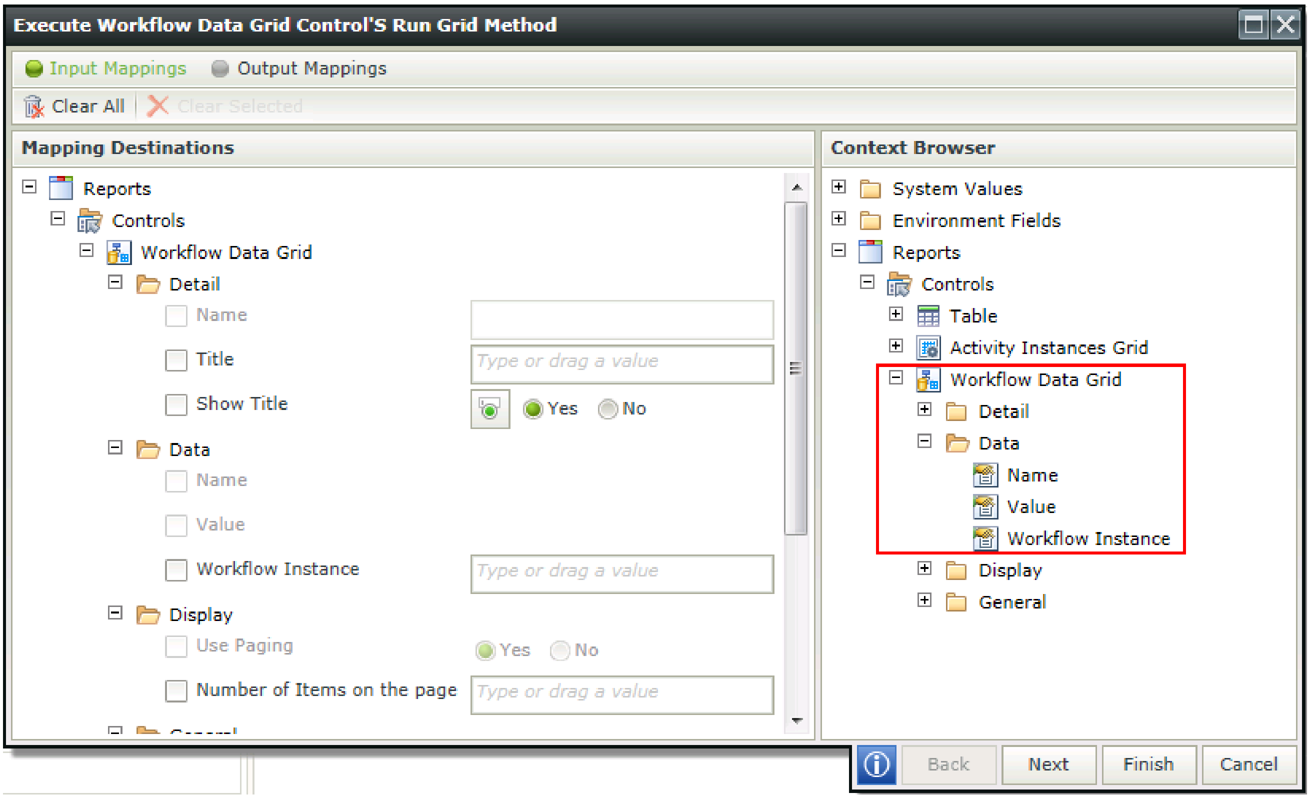
Considerations

- Always remember to create a rule to Run the Grid when the View Initializes
- A Workflow instance id needs to be mapped to the Workflow Data Grid in order to populate the grid

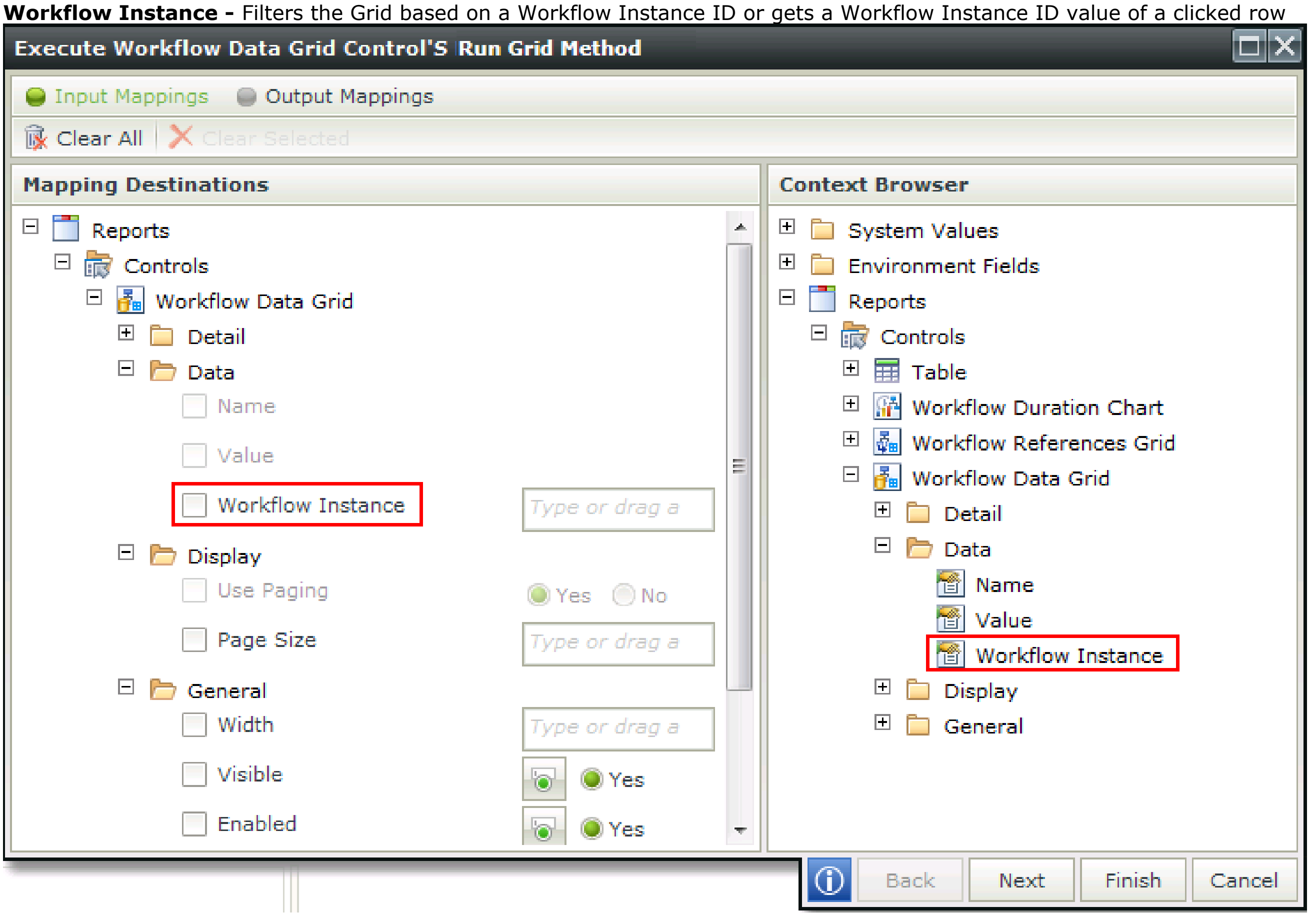
Interaction

Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

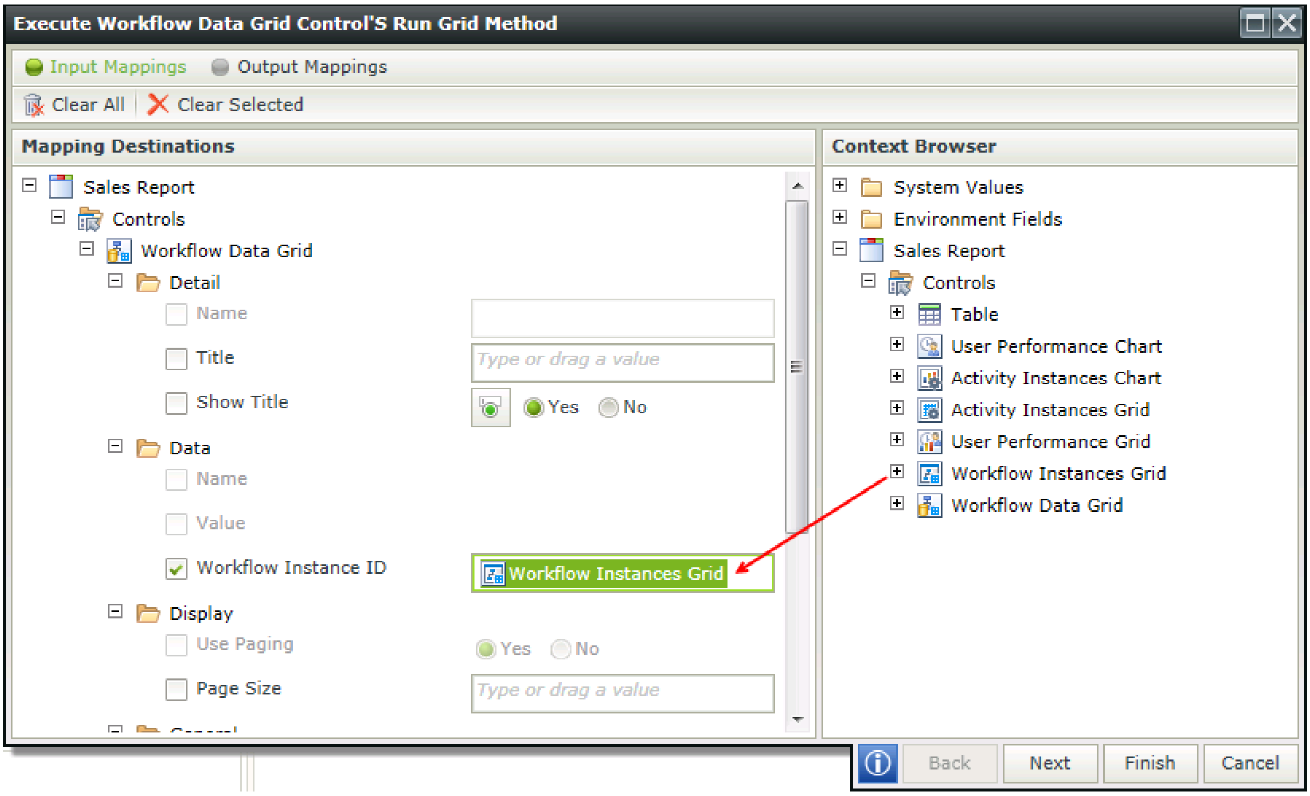
- The column properties displayed on the design canvas are available in the Context Browser for mapping to other controls. This means that the property can be dragged from the control to another control's properties or control value



- The following property is available as Input Mapping property and in the Context Browser when using rules for mapping to other controls. This property is additional to those mentioned in the [Properties](#) section of this topic, but is only available for interaction with rules:
  Workflow Instance - Filters the Grid based on a Workflow Instance ID or gets a Workflow Instance ID value of a clicked row

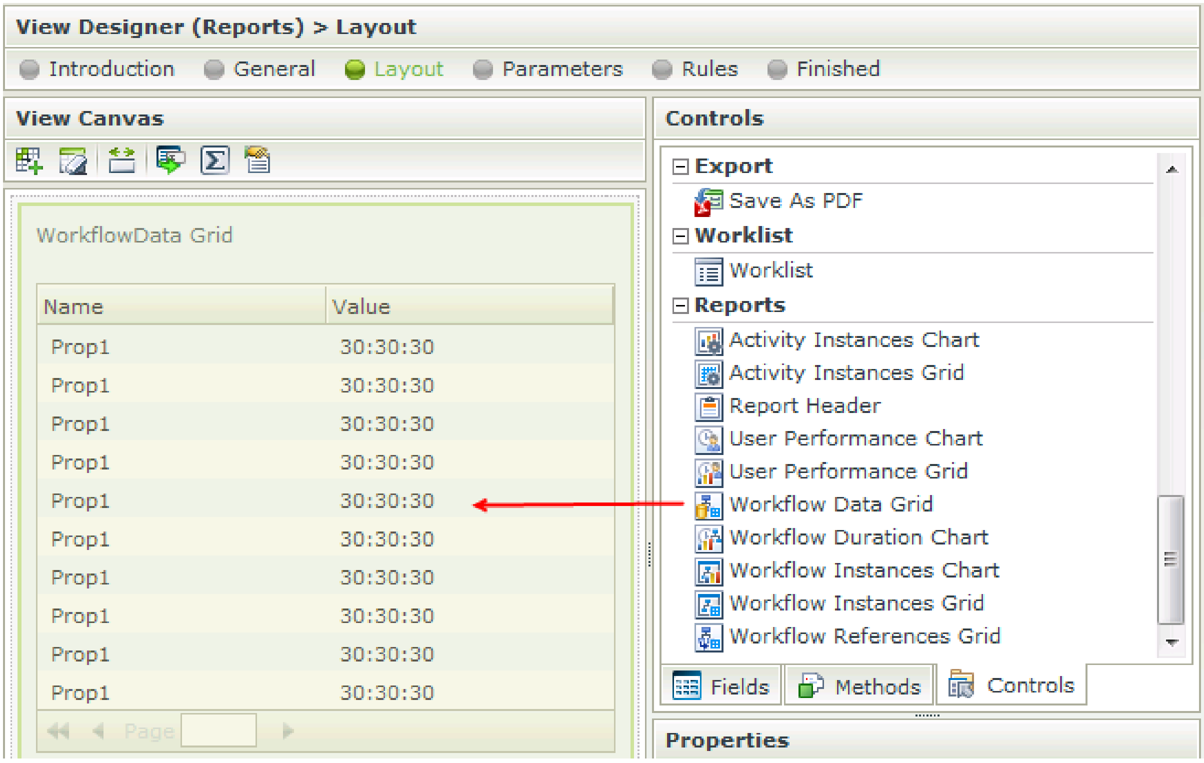


- A rule can be created to open the Workflow Data Grid when clicking on a record in a Workflow Instances Grid. The rule will look like this:
  Event: When a control on the View raises an event
  Action: Execute a control's method
  Configuration: Map the Workflow Instances Grid to the Workflow Instance ID property of the Workflow Data Grid



[Design Properties](#)

The [Workflow](#) Data Grid control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see [Control Properties Actions](#) for more information
Show Title	Shows or hides the Title during runtime	Yes, see [Control Properties Actions](#) for more information
Display		

Use Paging	Enables paging in runtime	Yes, see Control Properties Actions for more information
Page Size	Enables the user to specify the amount of records to be shown per page in runtime. Default is 10. Type the number of records to be shown per page in runtime if required	Yes, see Control Properties Actions for more information
General		
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables the control during runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

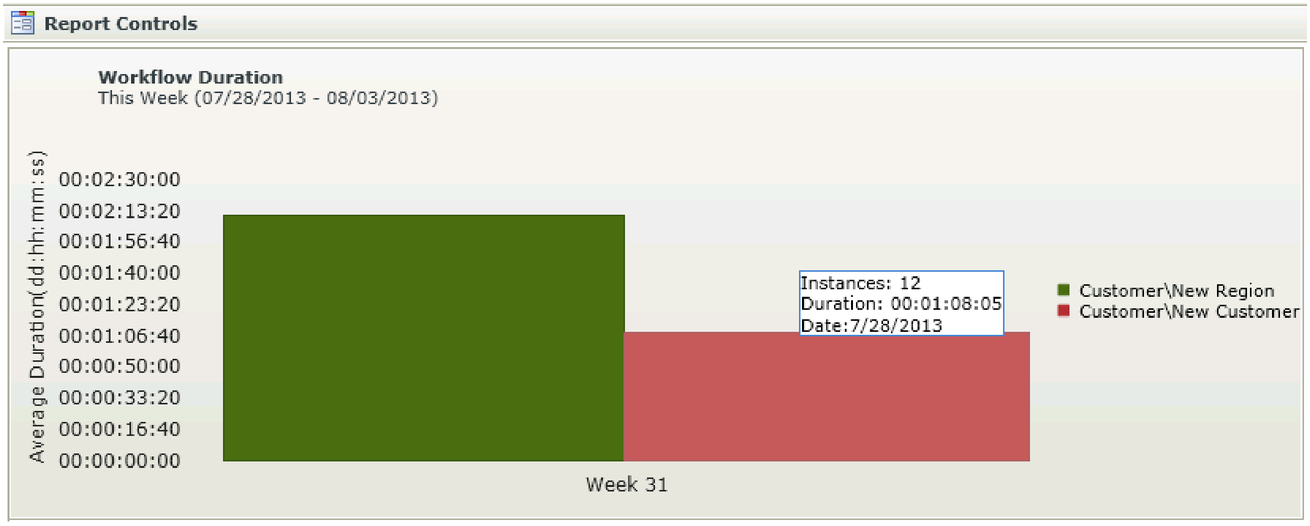
5.9 Workflow Duration Chart

Workflow Duration Chart

The Workflow Duration Chart control is a graphic display of the average duration of workflow instances over time, according to specific filter criteria. The data is displayed as an aggregated view of the workflow. Depending on the properties used, this chart can be used to:

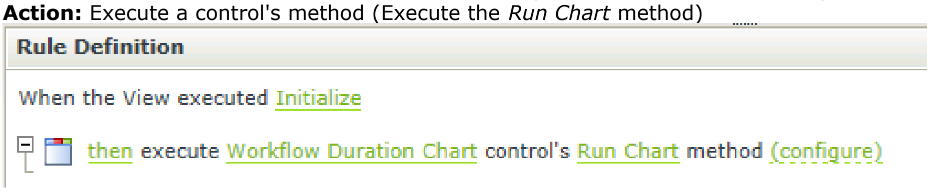
- Determine which workflows are used most often
- Determine which workflows take the longest to complete
- Identify trends and patterns in usage and load
- Determine the peak usage times for the workflow
- Determine the time periods when it takes the longest to complete the workflow

Runtime Example



How to use the Workflow Duration Chart control

1. Create a View
2. Drag the Workflow Duration Chart control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Workflow Duration Chart control as required, see the **Properties** section below
4. Add a rule to Run the Chart when the View is Initialized for example:
   Event: When a control on the View raises an event (When the *View* is Initialized)
   Action: Execute a control's method (Execute the *Run Chart* method)



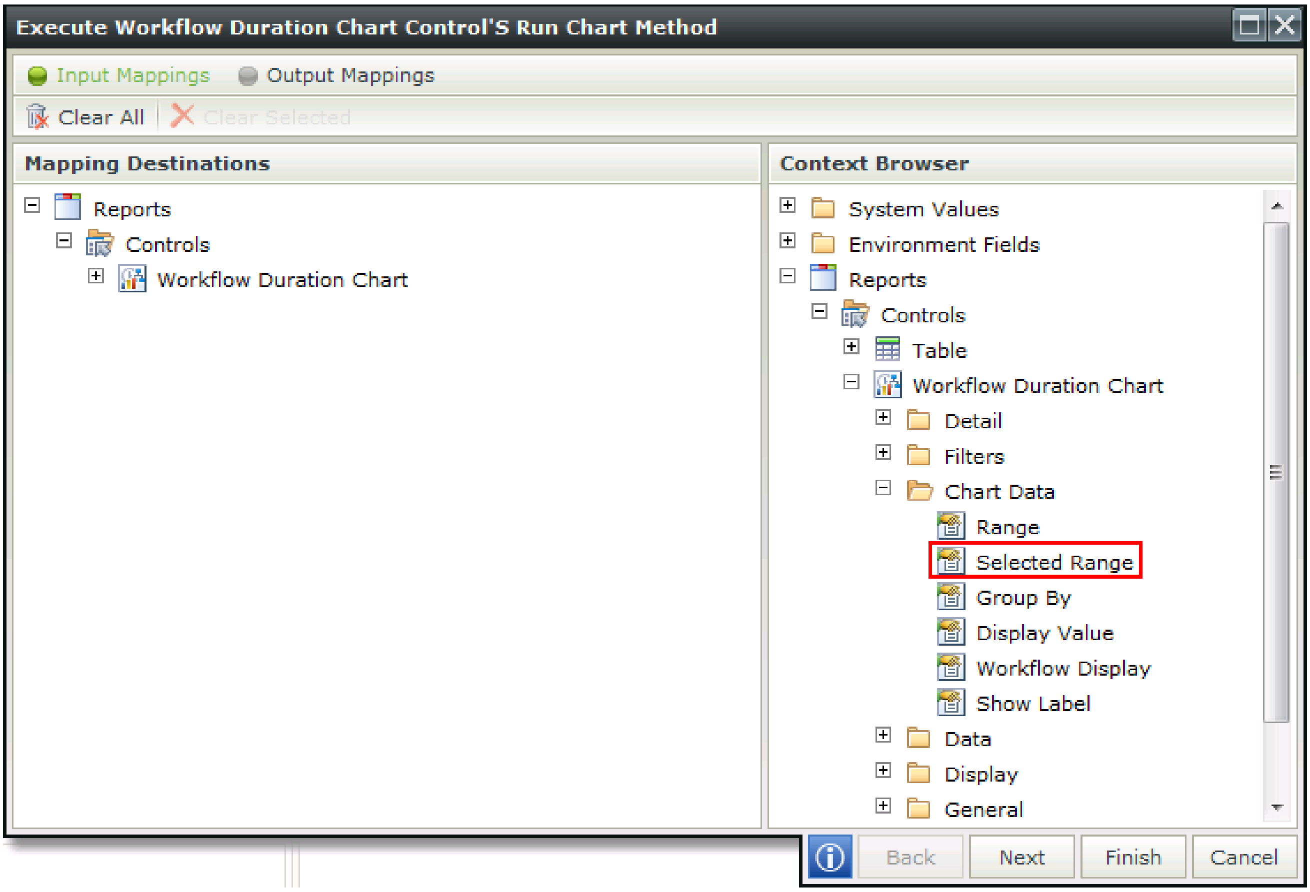
Considerations

- Always remember to create a rule to Run the Chart when the View Initializes
- When using a percentage for the width of the control and used in conjunction with the Save as PDF control, a pixel width is calculated and applied to the control's width thus making the width of the Chart pixel based rather than percentage based. It is therefore advised to use a non-percentage based width when using the Chart with the Save as PDF control
- A Workflow name(s) needs to be mapped to the Workflow Duration Chart in order to populate the chart

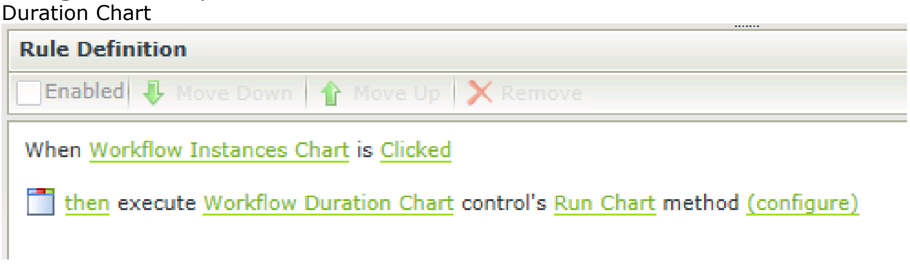
Interaction

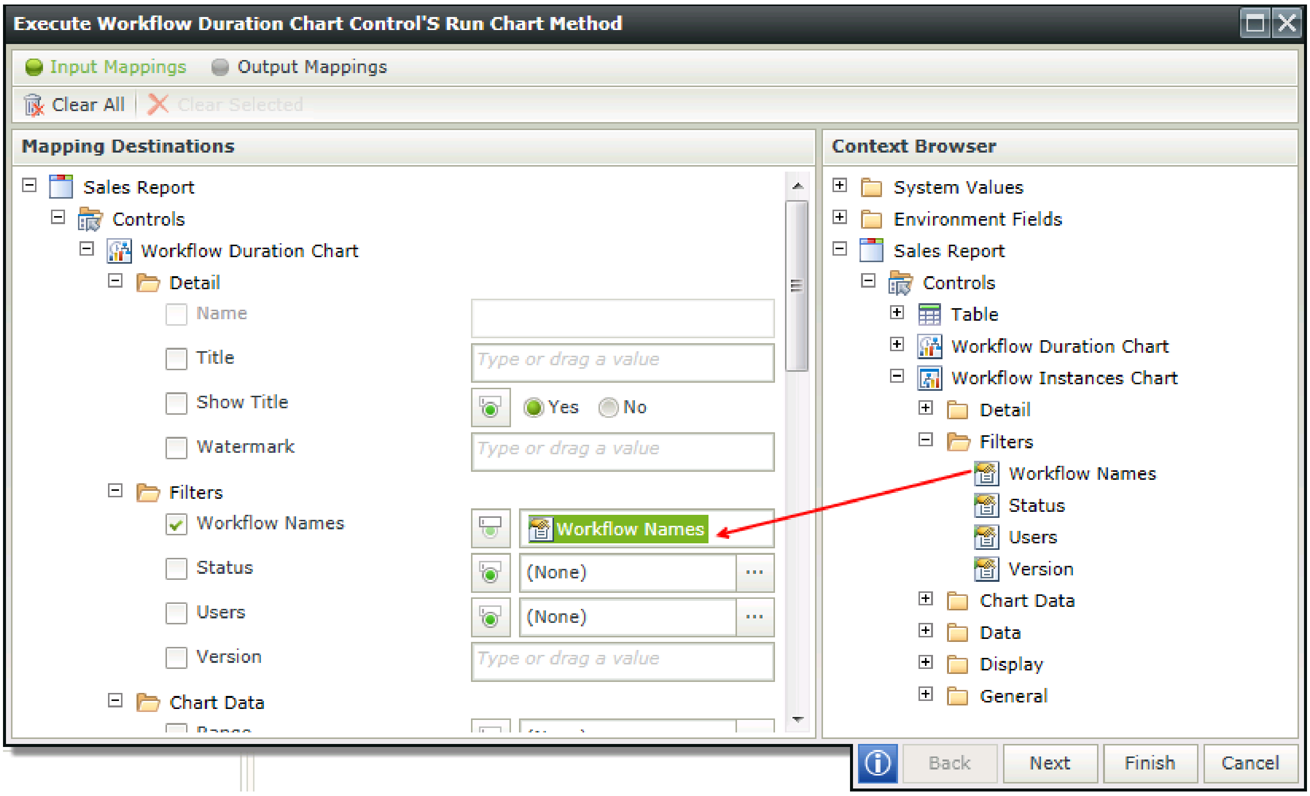
Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

- The following property is available in the Context Browser when using rules for mapping to other controls. This property is additional to those mentioned in the **Properties** section of this topic, but is only available for interaction with rules:
  Selected Range - The range of the selected column. This property returns the start and end dates to be passed into other controls



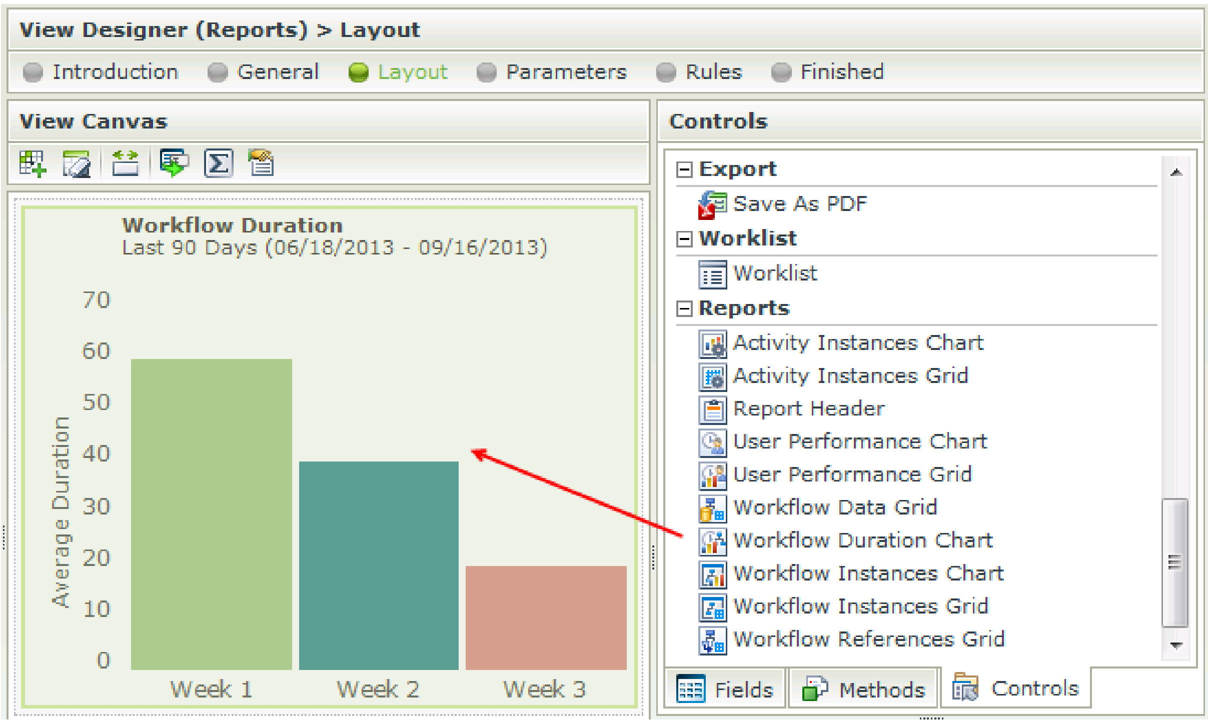
- A rule can be created to open the Workflow Duration Grid when clicking on a record in a Workflow Instances Chart. The rule will look like this:
  Event: When a control on the View raises an event
  Action: Execute a control's method
  Configuration: Map the Workflow Names filter of the Workflow Instances Chart to the Workflow Names filter of the Workflow Duration Chart





[Design Properties](#)

The [Workflow](#) Duration Chart control is available in the **Reports** section of the Controls found in the View Designer.



Property	Description	Can be set in runtime using Rules
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see [Control Properties Actions](#) for more information
Show Title	Shows or hides the Title during runtime	Yes, see [Control Properties Actions](#) for more information
Watermark	The text to be displayed in runtime if no data is available	Yes, see [Control Properties Actions](#) for more information
Filters		

Workflow Names	The workflow on which to filter when returning the data in runtime. If All is selected, all workflow instances will be taken into account when the data is returned. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Status	The Status of the specific workflow instance to be filtered on when returning the data in runtime. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Users	Includes users who started or participated in a workflow instance. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Version	A specific workflow version to be used to filter	Yes, see Control Properties Actions for more information
Chart Data		
Range	The Date Range to be used to filter the data. The data returned would typically be executed according to the date on which a workflow instance was started. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Group By	Indicates how the data should be grouped	Yes, see Control Properties Actions for more information
Display Value	The value to be used when displaying the data in the Chart. Duration or Instance Count can be used to display the data returned	Yes, see Control Properties Actions for more information
Workflow Display	The following methods can be used to display the average duration of workflow instances **Stacked** - Displayed on top of each other **Clustered** - Displayed next to each other **Aggregated** - Displayed as the total aggregated value for all workflows added in the filter	Yes, see Control Properties Actions for more information
Show Label	Shows or hides the Labels in runtime	Yes, see Control Properties Actions for more information
Data		
Participation	The following criteria can be used in addition to the Users filter being applied: • I've started - Users who have started a workflow instance • I've participated in - Users who have participated in a workflow instance • All - All users who have started or participated in a workflow instance When selecting a specific user(s) in the Filters section, the criteria mentioned above can be used to filter the data returned even further	Yes, see Control Properties Actions for more information
Display		
Chart Type	A Chart can be displayed as a Column, Pie or Bar Chart **Column Chart**- A column chart displays values as sets of vertical columns that are grouped by category **Pie Chart** - Is a circular chart divided into sectors. Each sector shows the relative size of each value **Bar Chart** - Is a chart using rectangular bars with lengths proportional to the values they represent	Yes, see Control Properties Actions for more information
Show Grid Lines	Grid Lines are a network of intersecting parallel lines used as a reference for locating points. This option enables the Grid Lines to be shown. Disabled by default. Select the option if Grid Lines should be shown in runtime	Yes, see Control Properties Actions for more information
Full Spread	Allows the user to choose between showing date values with 0 instance count and 0 duration returned. When deselected, only date values with instance count and duration greater than 0 will be shown	Yes, see Control Properties Actions for more information

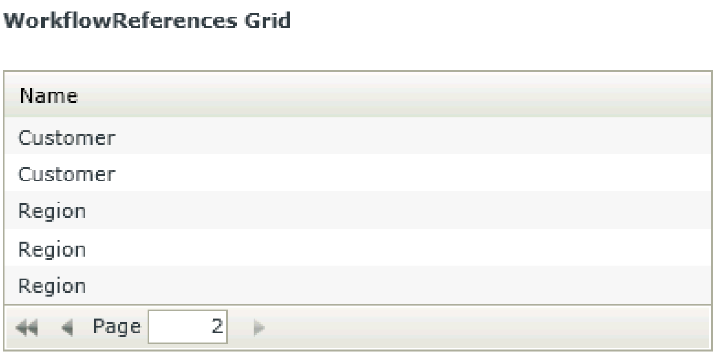
24-hour Clock	Determines whether a 12-hour or 24-hour Clock should be used. For example: 20:00 vs 08:00PM Deselect the option if a 12-hour Clock should be used	Yes, see Control Properties Actions for more information
Label Angle	The angle at which Labels can be rotated in order to display more efficiently when viewing many workflows. Default is 0. Type a percentage at which the Labels should rotate	Yes, see Control Properties Actions for more information
Select Effect	The following effects determines how the control will render in runtime. The effects are applied when an item is clicked: **Pie Chart** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item is exploded. The opacity of all other items are reduced to about 50% Explode - The selected item is exploded and has 100% opacity No Effect - 100% Opacity for all items **Column Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity **Bar Chart:** Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode and Fade - The selected item has an opacity of 100%. All other items are reduced to about 50% and faded out Explode - All items have 100% opacity No Effect - All items have 100% opacity	Yes, see Control Properties Actions for more information
Transition Effect	Applies the Effect mentioned above in runtime	Yes, see Control Properties Actions for more information
General		
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Height	Adjusts the height of the control. Any whole number or pixel value to a maximum of 32767px can be entered. When set to zero, it will automatically change the size to fit the content of the page. Type the dimension to be used	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling options	No
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

5.10 Workflow References Grid

Workflow References Grid

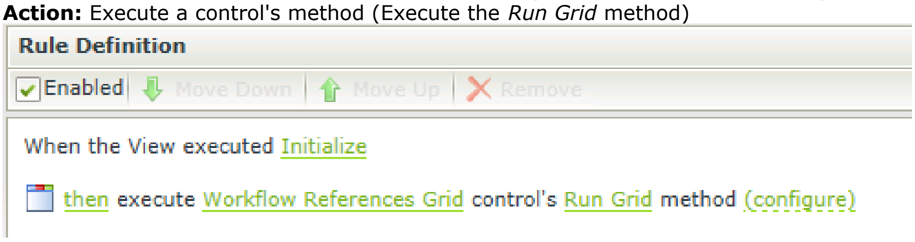
The Workflow References Grid control lists all Workflow Item References per workflow instance according to specific filter criteria. The reference can be further expanded to view the related data in runtime.

Runtime Example



How to use the Workflow References Grid control

1. Create a View
2. Drag the Workflow References Grid control onto the canvas. The control can be found in the Reports section of the Controls found in the View Designer, see the **Properties** section below
3. Configure the properties of the Workflow References Grid control as required, see the **Properties** section below
4. Add a rule to Run the Grid when the View is Initialized for example:
Event: When a control on the View raises an event (When the *View* is Initialized)
Action: Execute a control's method (Execute the *Run Grid* method)



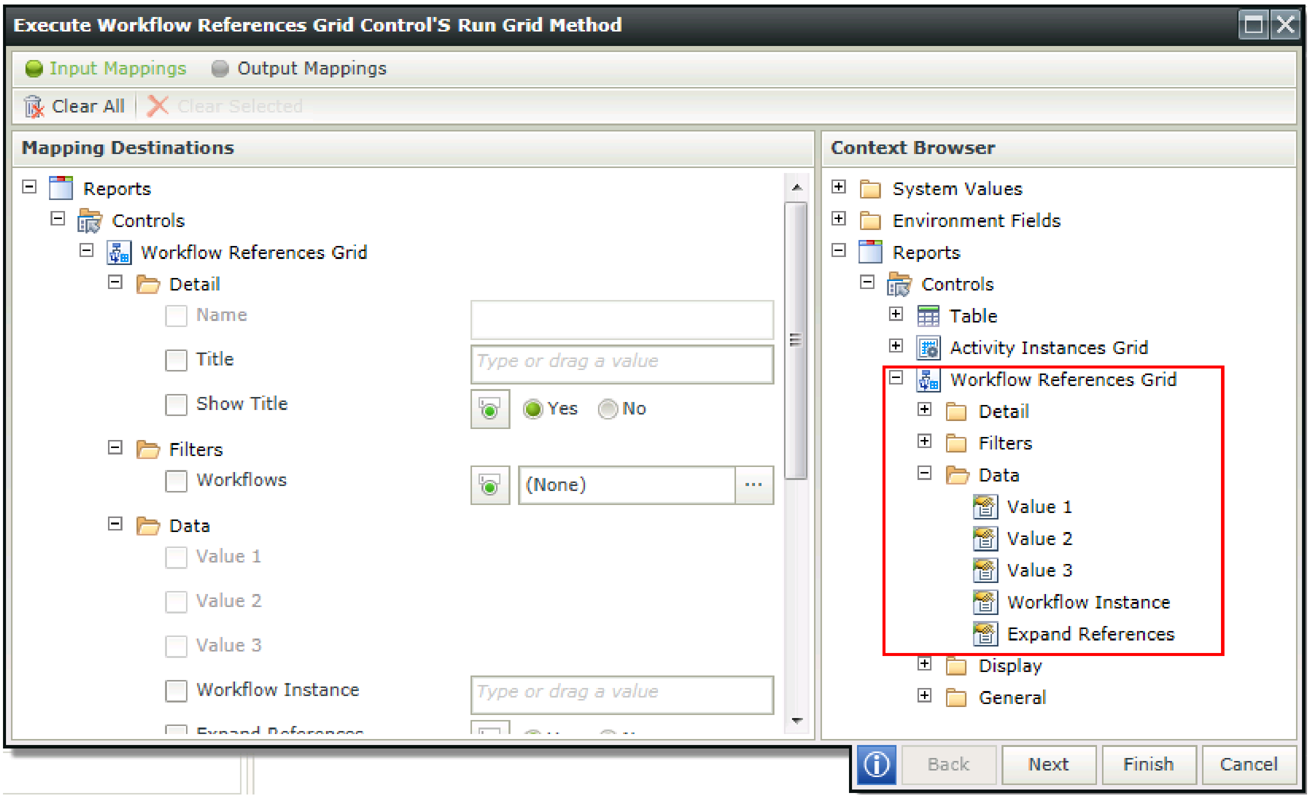
Considerations

- Always remember to create a rule to Run the Grid when the View Initializes
- Select the **Expand References** property if the user should be able to expand the reference in runtime to show the related data. This property is not selected by default
- A Workflow instance id needs to be mapped to the Workflow References Grid in order to populate the grid

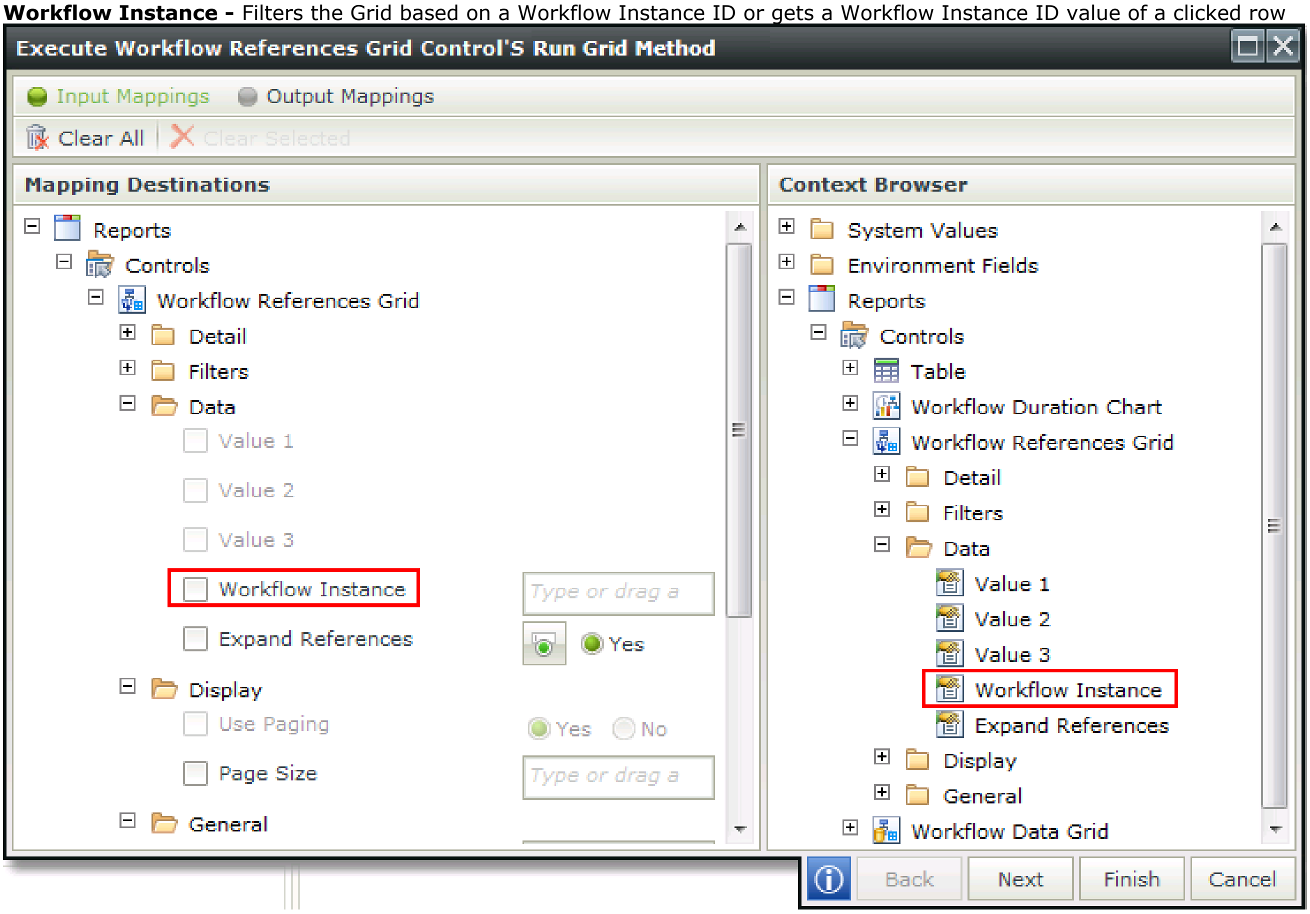
Interaction

Report controls interact with each other through rules. By binding properties between different controls, data can be used to populate properties or set values in runtime.

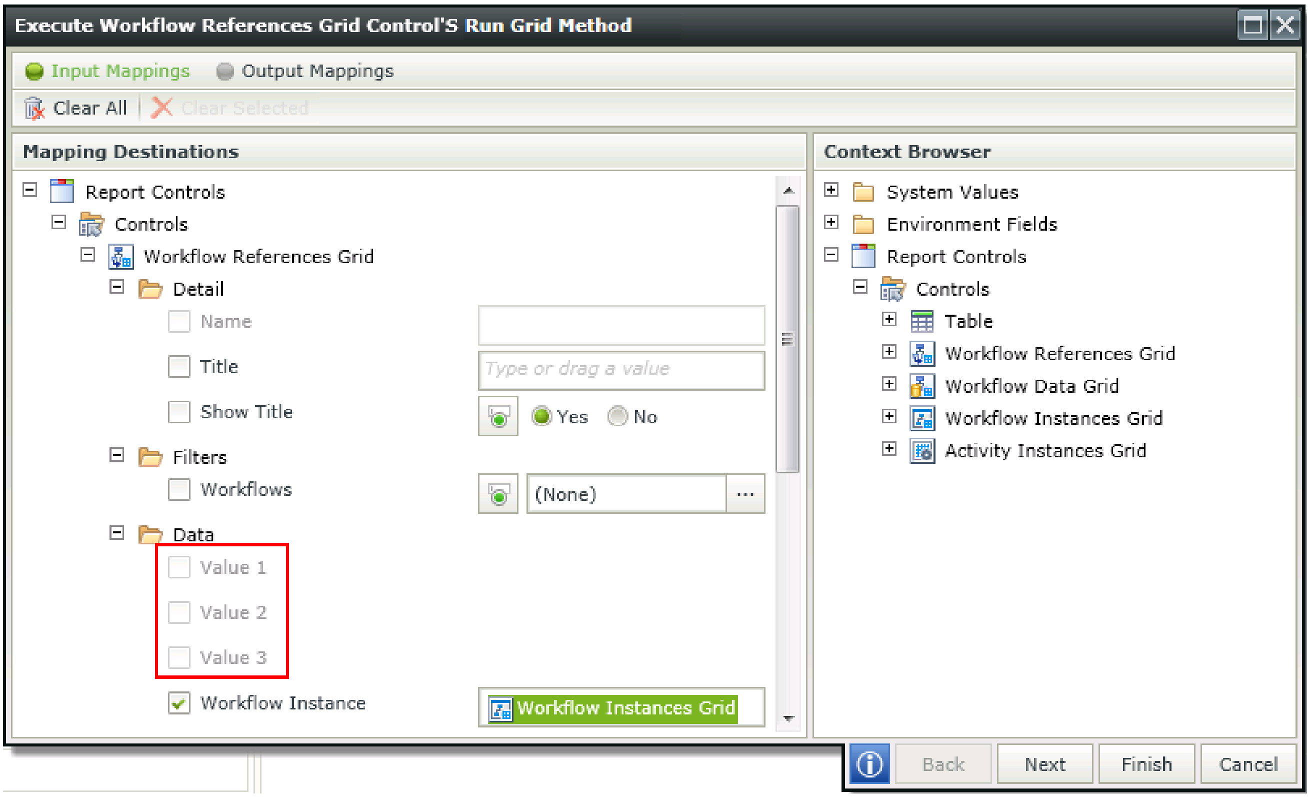
- The column properties displayed on the design canvas are available in the Context Browser for mapping to other controls. This means that the property can be dragged from the control to another control's properties or control value



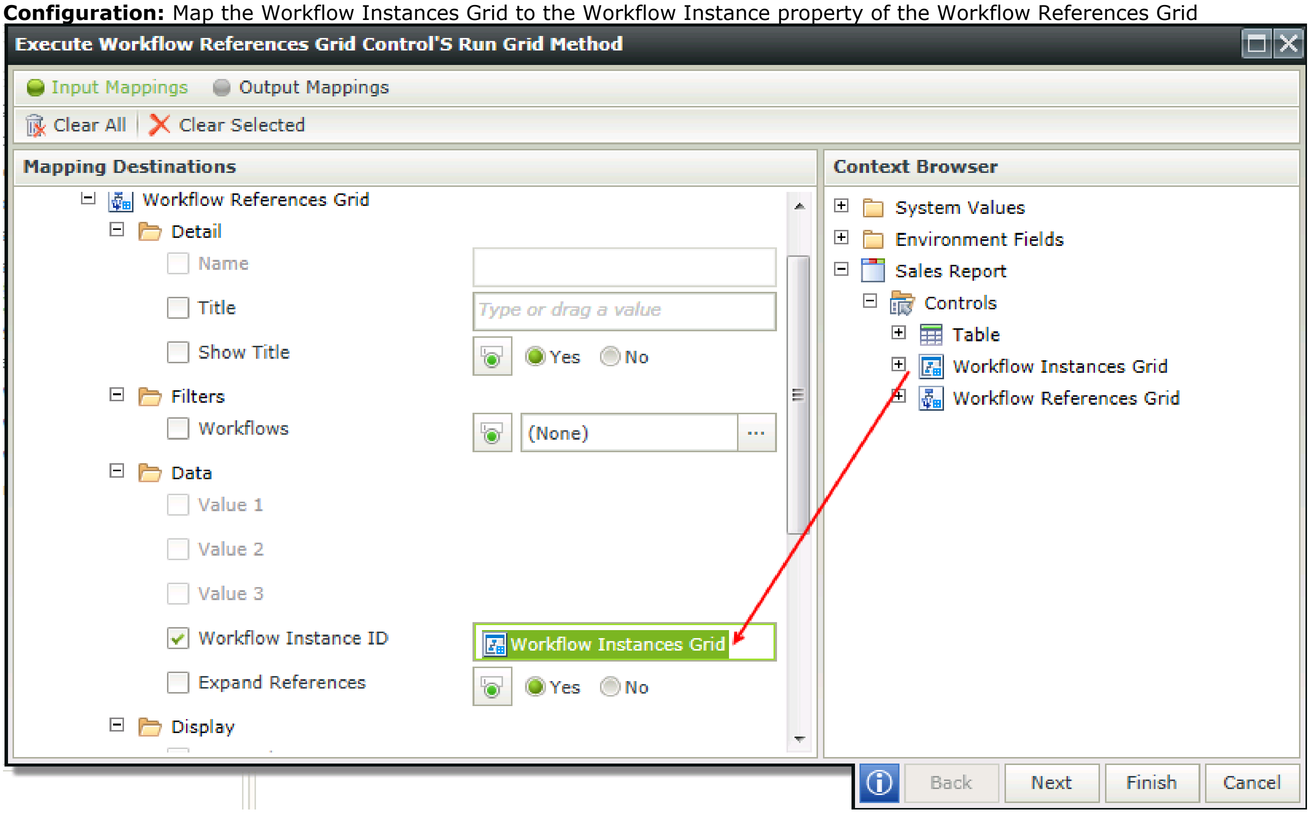
- The following property is available as Input Mapping property and in the Context Browser when using rules for mapping to other controls. This property is additional to those mentioned in the **Properties** section of this topic, but is only available for interaction with rules:
  Workflow Instance - Filters the Grid based on a Workflow Instance ID or gets a Workflow Instance ID value of a clicked row



- When setting the properties of the Workflow References Grid it is important to note the Value 1, Value 2 and Value 3 properties under the Data section. These properties will be populated on the grid by the values of the required properties stored as part of the Item References. These values are dynamic per Item Reference and are allocated in the order that they were created. The first required property will be linked to Value 1 and so forth.

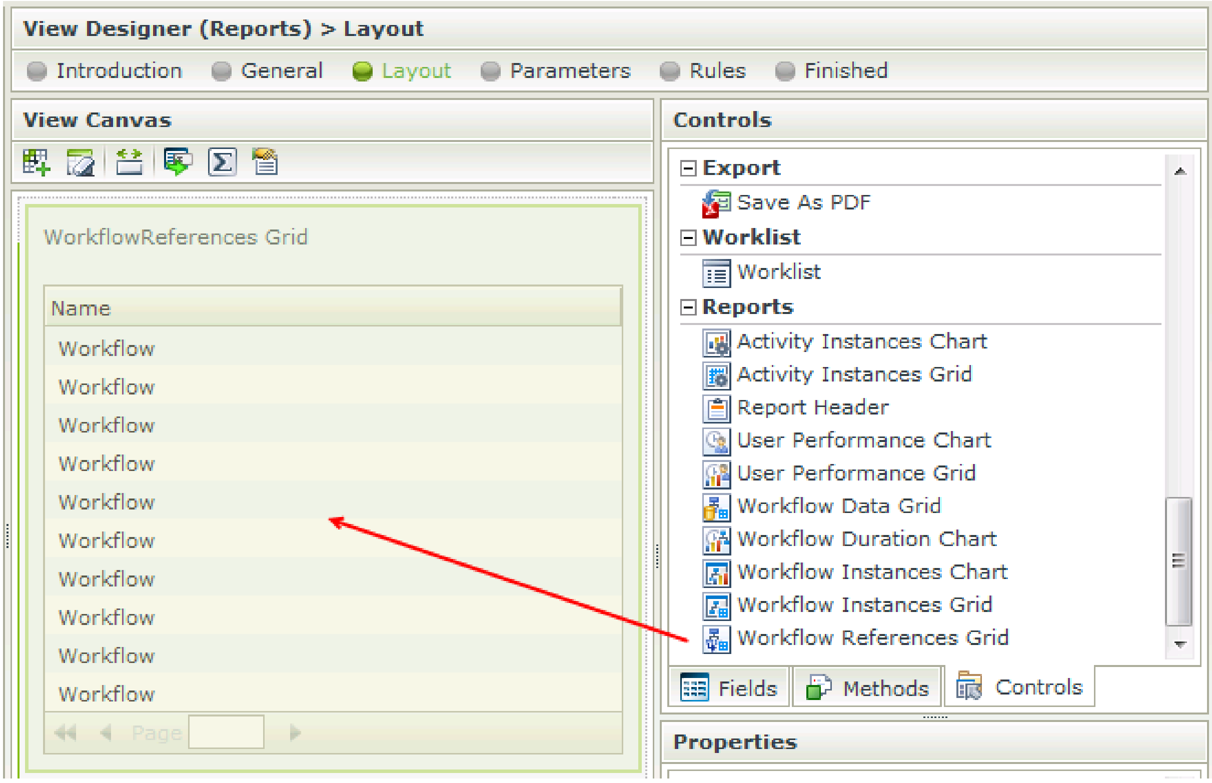


- A rule can be created to open the Workflow References Grid when clicking on a record in a Workflow Instances Grid. The rule will look like this:
  Event: When a control on the View raises an event
  Action: Execute a control's method
  Configuration: Map the Workflow Instances Grid to the Workflow Instance property of the Workflow References Grid



Design Properties

The Workflow References Grid control is available in the **Reports** section of the Controls found in the View Designer.



Property	**Description**	**Can be set in runtime using Rules**
Detail		
Name	A unique identifier for the selected control. This property is required	No
Title	The Title of the control to be shown in runtime	Yes, see Control Properties Actions for more information
Show Title	Shows or hides the Title during runtime	Yes, see Control Properties Actions for more information
Filters		
Workflows	The workflow on which to filter when returning the data in runtime. If All is selected, all workflow instances will be taken into account when the data is returned. See the Generic Picker Screens topic for more information	Yes, see Control Properties Actions for more information
Data		
Expand References	Expands the reference in runtime to show the related data	Yes, see Control Properties Actions for more information
Display		
Use Paging	Enables paging in runtime	Yes, see Control Properties Actions for more information
Page Size	Enables the user to specify the amount of records to be shown per page in runtime. Default is 10. Type the number of records to be shown per page in runtime if required	Yes, see Control Properties Actions for more information
General		
Visible	Shows or hides the control in runtime	Yes, see Control Properties Actions for more information
Enabled	Enables or disables the control in runtime	Yes, see Control Properties Actions for more information
Read-Only	Enables the control to be read-only in runtime	Yes, see Control Properties Actions for more information
Width	Adjusts the width of the control. Any whole percentage up to 100%, whole number or pixel value to a maximum of 32767px can be entered. Type the dimension to be used	Yes, see Control Properties Actions for more information
Styles	Opens the Style Builder enabling the user to specify style features like Format, Font, Borders, Padding and Margins. See the Style Builder topic for more information on styling	No

	options	
Conditional Styles	Opens the Conditional Formatting Designer. This is used to design styles that will apply only when certain conditions are met. See the Conditional Styles section for more information	No

5.11 Generic Picker Screens

Generic Picker Screens

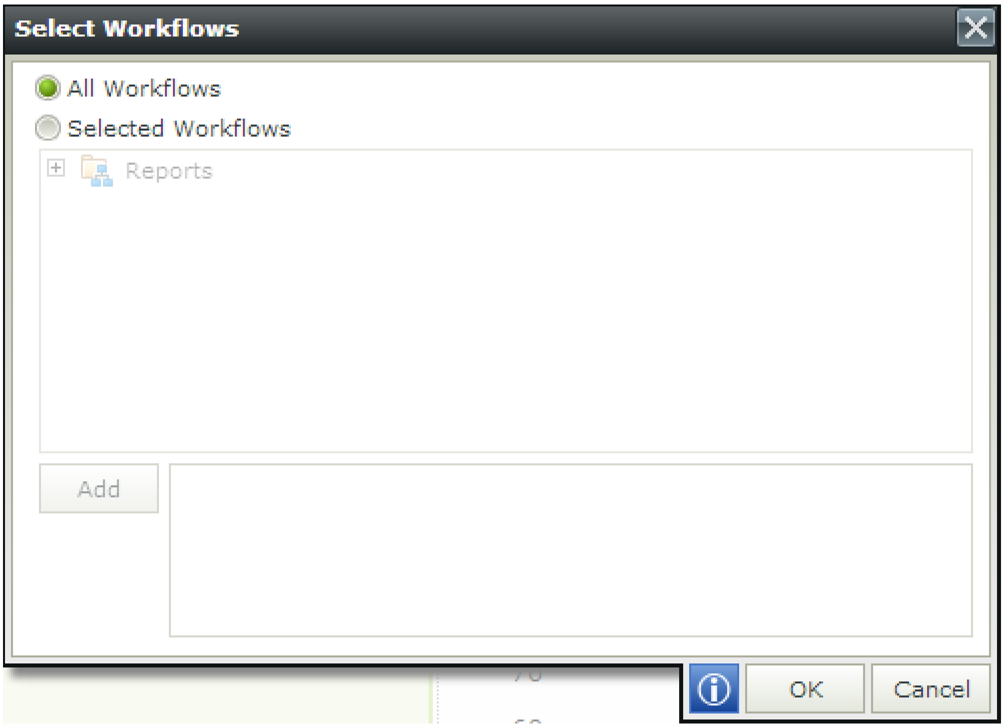
The following generic picker screens are available in the Report controls:

Select Workflows Picker

Users can choose between one or more workflows to filter their reports. The **All Workflows** option will return all workflows available that the current user has the correct permissions to view. The Select Workflows picker is found on the following report controls:

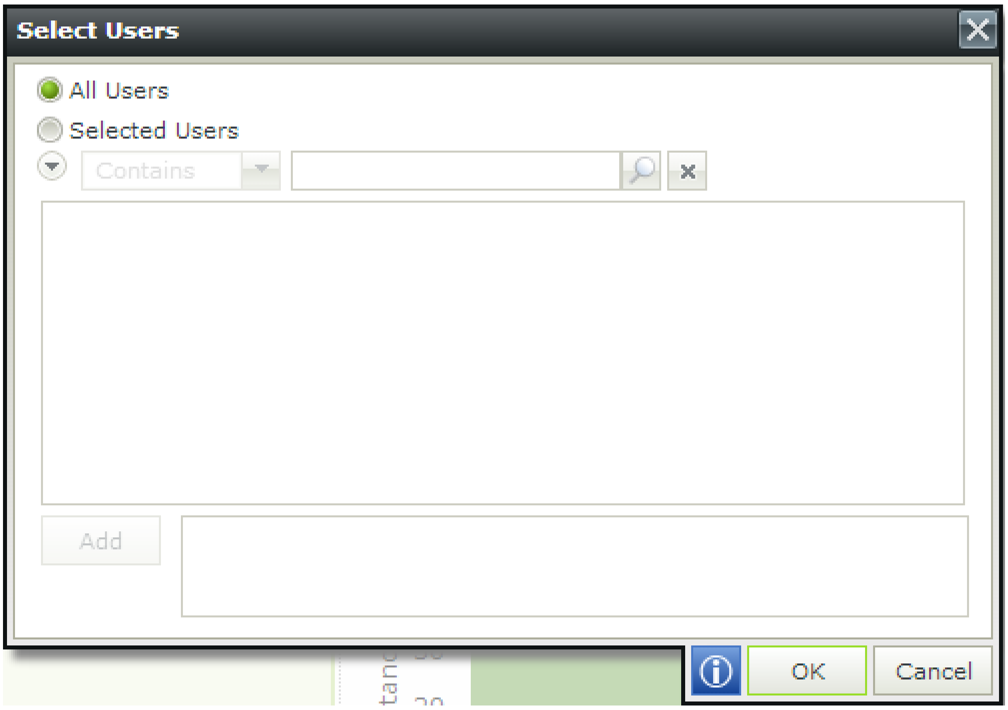
- Workflow Instances Chart
- Workflow Instances Grid
- Workflow References Grid
- Activity Instances Grid
- Activity Instances Chart
- Report Header

The default value once opened on the Activity Instances Chart is **Selected Workflows**, for the other report controls it is **All Workflows.** The Activity Instances Chart is the only control which allows for a default value of **None** to be passed as the value for the workflow names. The rest of the report controls default to **All Workflows**. At least one workflow should be selected to continue.



Select Users Picker

Users may choose one or more users to filter their reports. Every report control other than the Workflow References Grid and Workflow Data Grid contain this picker for filtering users. The default value for all the report controls is **All Users.** Expand the search section by clicking on the arrow to the left to specify a security label if required.



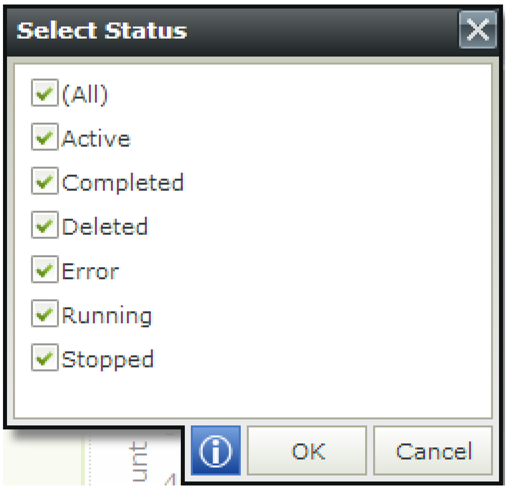
Select Status Picker

Users may choose one or more status from the picker to filter their report. At least one status should be selected to continue.

Note: The User Performance Chart and User Performance Grid do not have a status filter as records for these controls require a status of **Completed** to show in the result set.

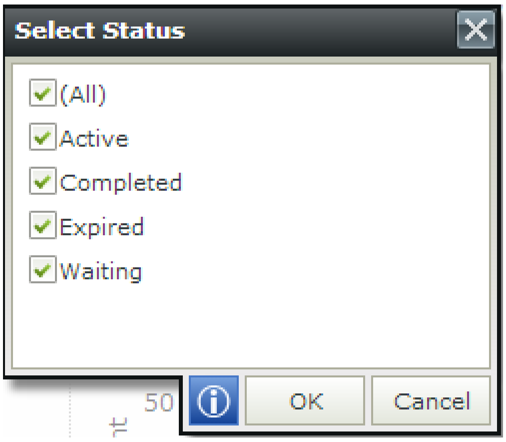
Workflows:

The Workflow Instances Chart and Workflow Instances Grid controls contain statuses from the Workflow Status Picker.



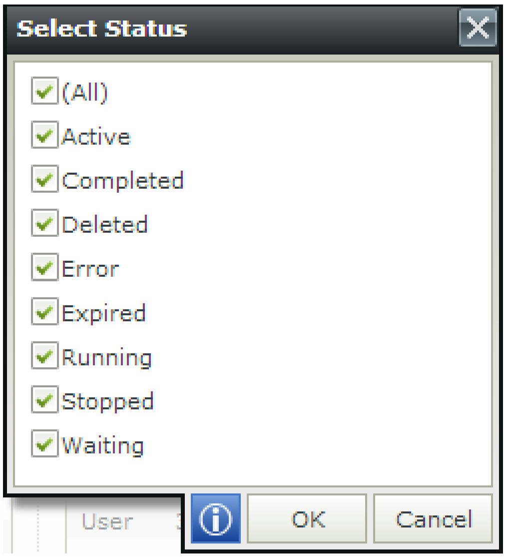
Activities:

The Activity Instances Grid and Activity Instances Chart contain statuses from the Activities Status Picker.



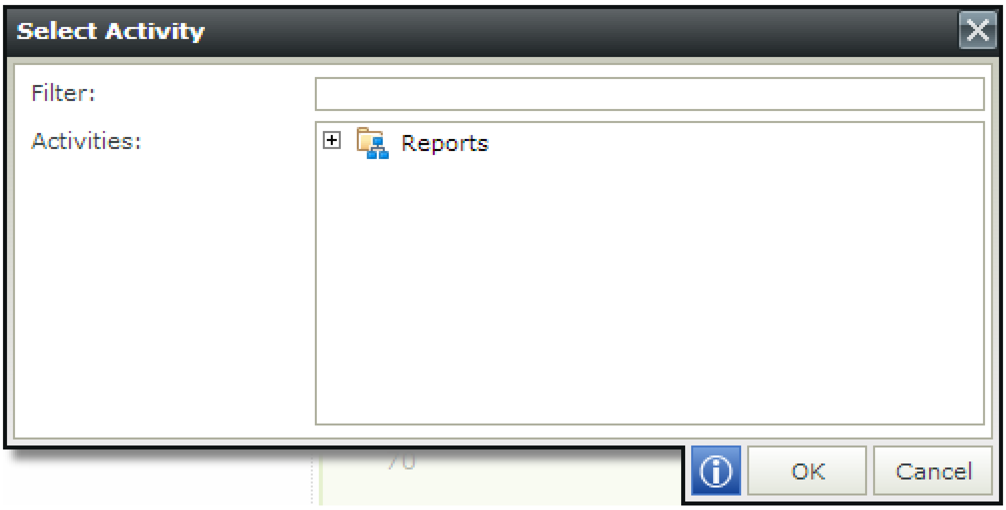
Combined:

The Report Header Control has a combined set of both workflow and activity statuses that the user may choose from.



[Select Activity Picker]

Users may choose only one activity from the Select Activity picker. This filter is found on the User Performance Chart and User Performance Grid. The default value for these controls is **None** which will not return anything when set incorrectly. The Filter on the picker dialog allows the user to search for a specific activity name and returns a result set that matches the typed value.



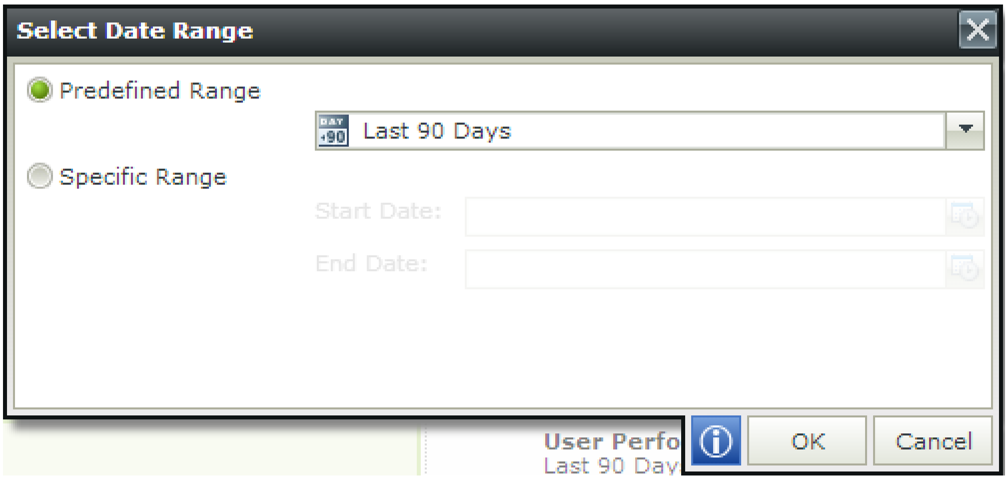
[Select Date Range Picker]

Users are able to choose a date range based on:

- Predefined range - Allows for a predefined list of date ranges.
- Specific range - Allows for a specified range from start date to end date.

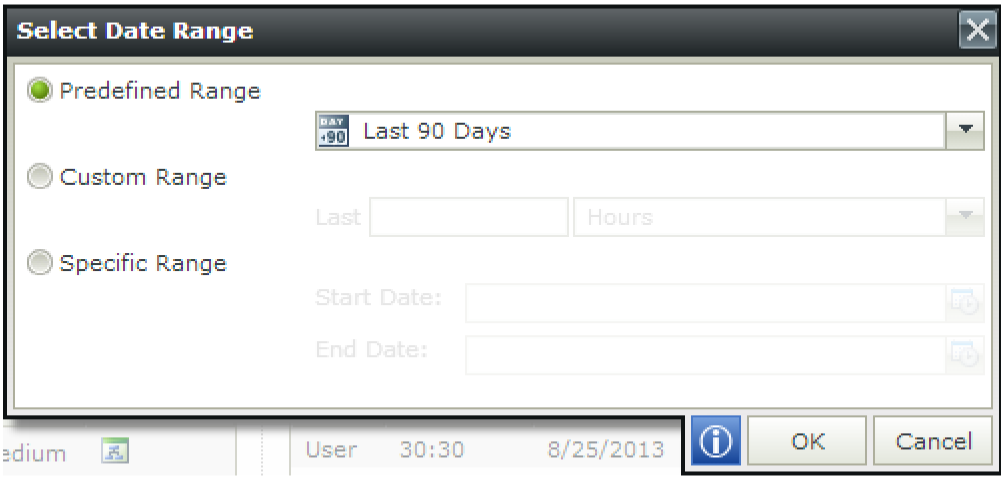
- Custom range - Allows the user to view the **Last** set number of Hours, Days, Weeks, Months, Quarters, Years.

Normal:



Report Header Runtime/Workflow Duration Chart:

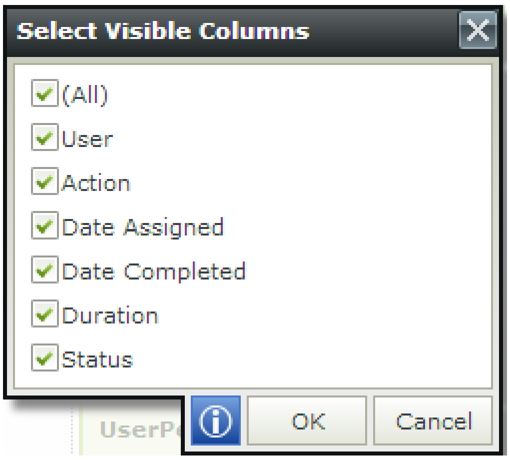
The Report Header and Workflow Duration Chart controls are the only report controls containing the **Custom Range** setting.



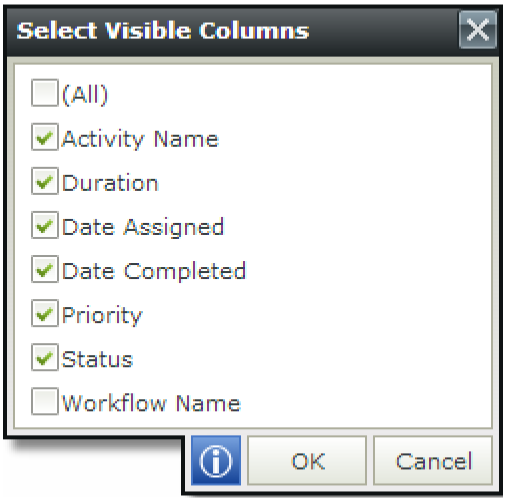
[Select Visible Columns Picker]

Users may choose which columns they would like to have visible for the User Performance Grid, Activity Instance Grid and Workflow Instance Grid. At least one visible column should be selected.

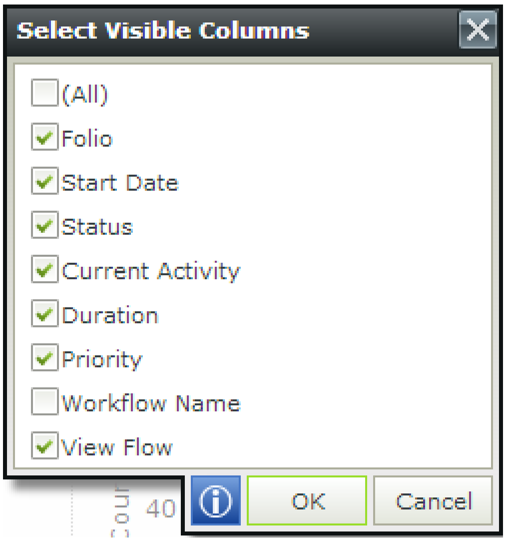
User Performance Grid:



Activity Instances Grid:



Workflow Instances Grid:



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