WorkflowGen

WorkflowGen 5.7.4 Administration Module Reference Guide

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TOC

Overview

This guide describes all the screens of the WorkflowGen **Administration module** and provides a complete list of related operating rules. It also describes the workflow built-in applications and how to use them. It is an important resource that will assist you in understanding how the software behaves under various situations.

The guide also includes a list of possible errors along with their explanations.

Administration module overview

The WorkflowGen **Administration module** is a web application whose main functions are:

- Managing directories, groups, and users
- Defining processes and global information
- Defining security relating to users and processes

Since these operations are highly sensitive, access and management to the **Administration module** should be considered carefully.

Administration module access

The **Administration module** can be accessed through the following URL:
http://**yourwebsite**/wfgen/admin/default.aspx.

Note: "default.aspx" is optional if pre-configured as the default document of the WorkflowGen website. As well, **yourwebsite** can be a DNS or an IP address; however, a DNS address is recommended to ensure a smooth transition in the event that the site is moved to different servers, or if using a web farm configuration.

Authentication

Depending on the authentication method chosen by the WorkflowGen Administrators, you may have to enter a username and a password when you want to login to WorkflowGen. These login credentials can also correspond to the ones used when you open a Windows session.

Language selection

You can choose a language from the home page of the **Administration module**. If the list is not displayed, the application has been configured to use a specific language. The country beside the language allows the system to use the correct regional settings in the application (mainly in displaying dates or numeric values).

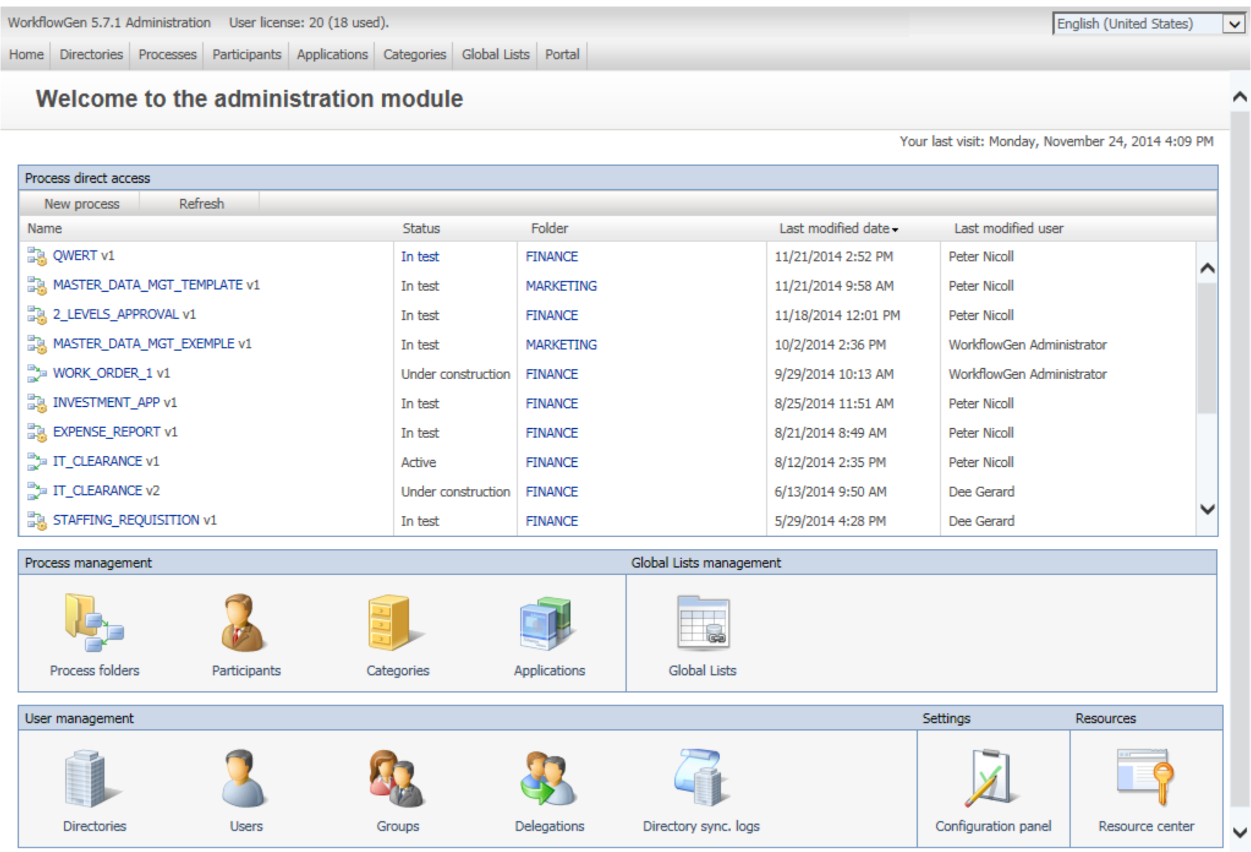
For example, **English (United Kingdom)** corresponds to an English GUI with the regional settings of the United Kingdom (date format: dd/mm/yyyy), while **English (United States)** corresponds to an English GUI with the regional settings of the United States (date format: m/d/yyyy).

Currently, you can choose from the following languages:

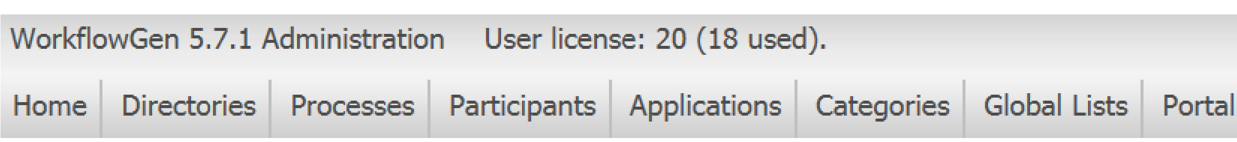
- English (Australia)
- English (Canada)
- English (United Kingdom)
- English (United States)

- Français (Canada)
- Français (France)
- Français (Suisse)
- Deutsch (Deutschland)
- Deutsch (Schweiz)
- Italiano (Italia)
- Português (Portugal)
- Español (España)

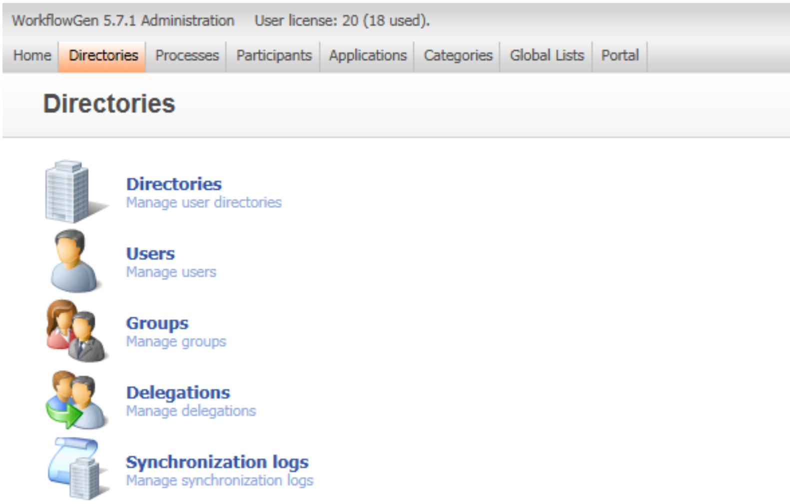
Administration module structure



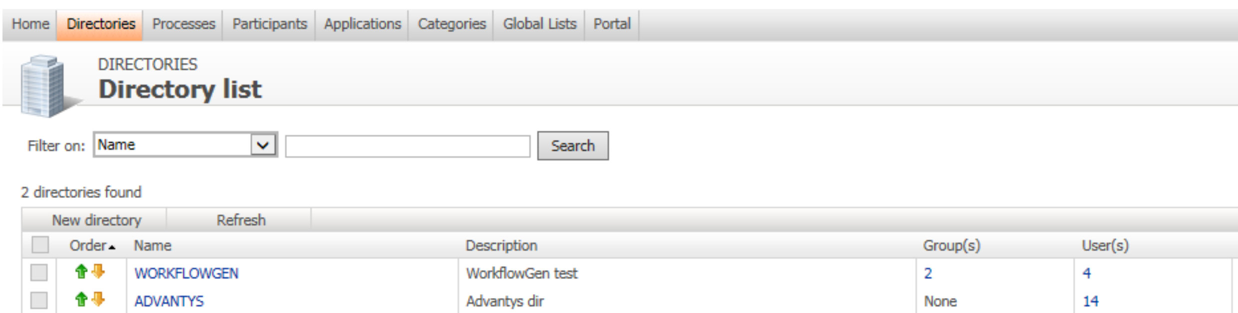
The **Administration module** banner menu lets you access the following screens:



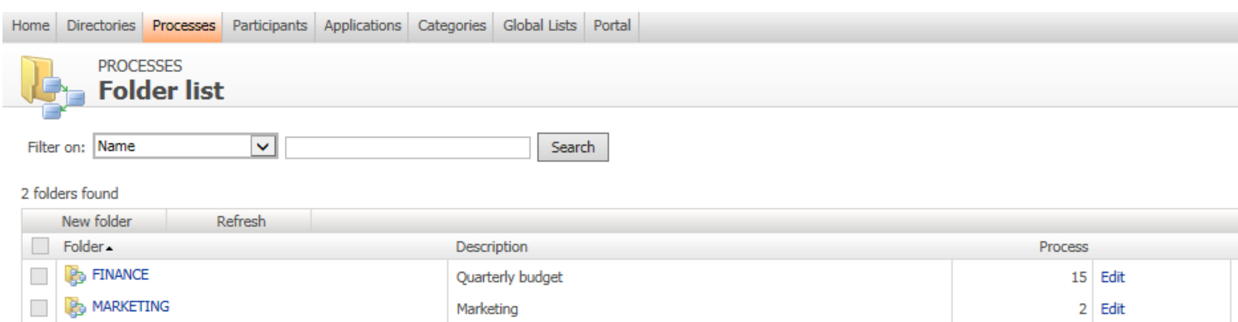
Click **Directories** in the banner menu to access the **Directories** screen:



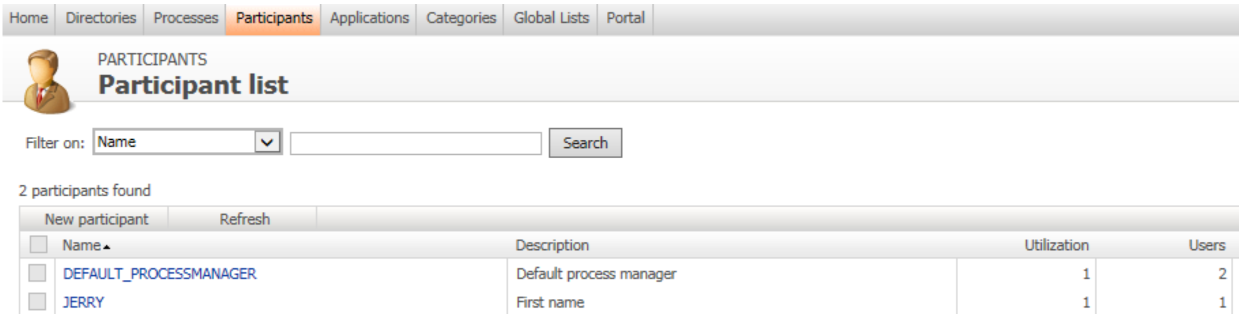
Then click **Directories** in the **Directories** screen to open the **Directory list**.



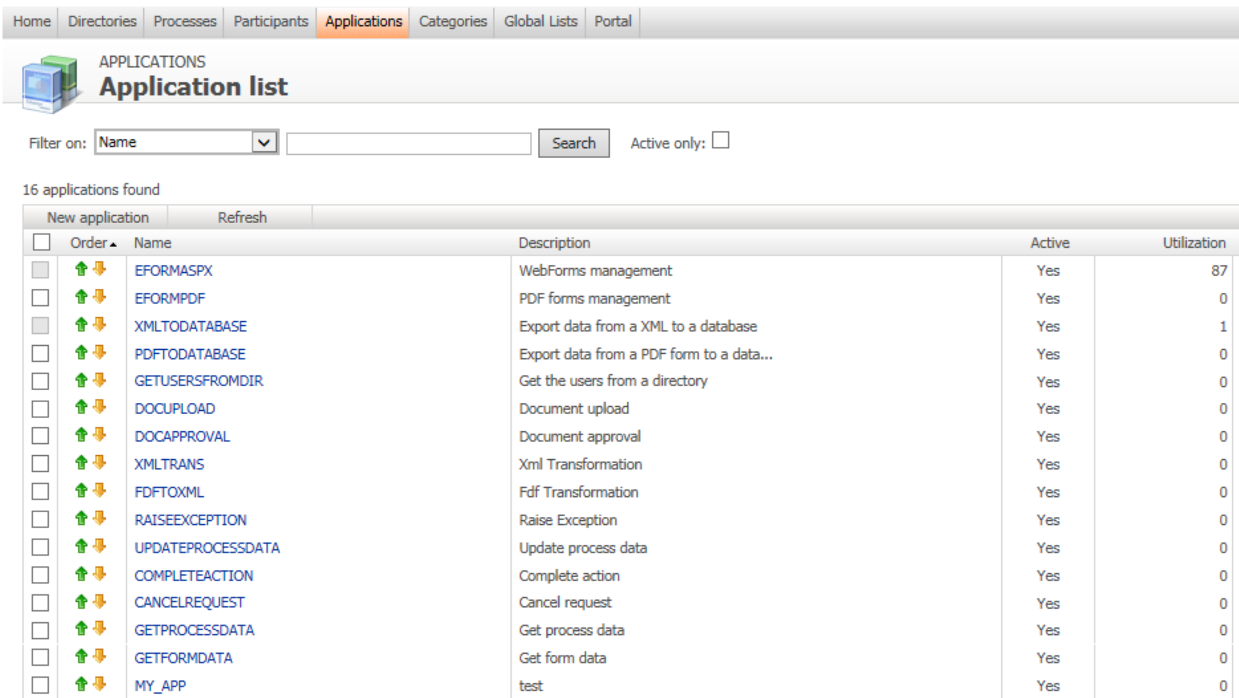
Click **Processes** in the banner menu to open the **Processes Folder list**.



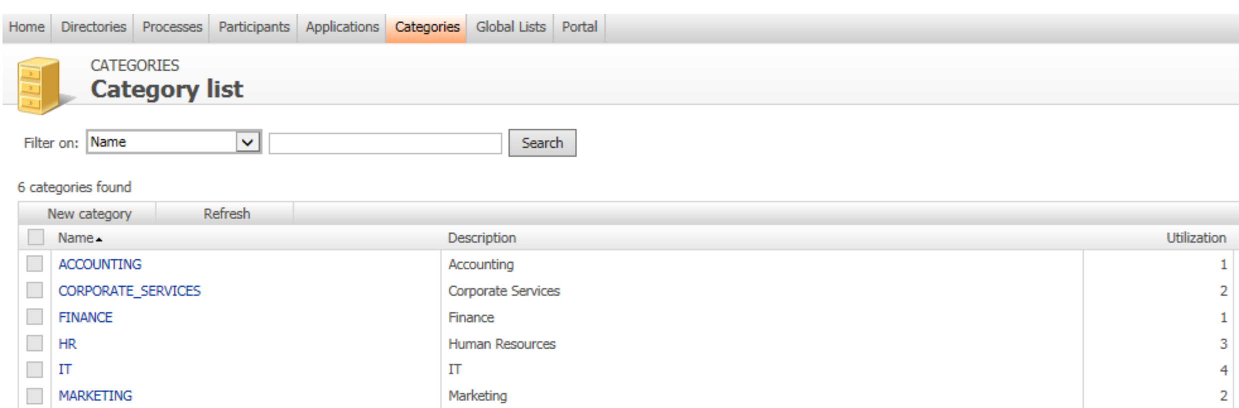
Click **Participants** in the banner menu to open the **Participant list**.



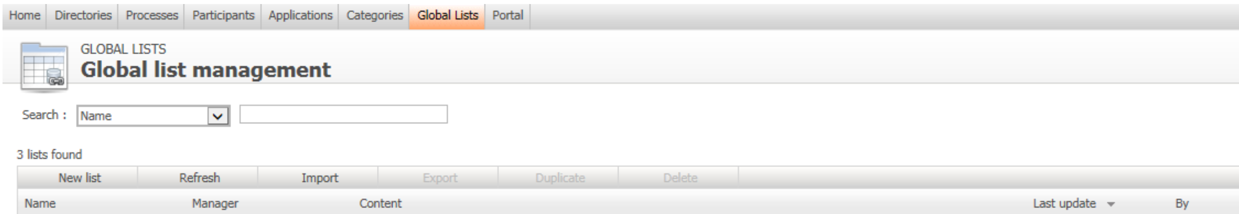
Click **Applications** in the banner menu to open the **Application list**.



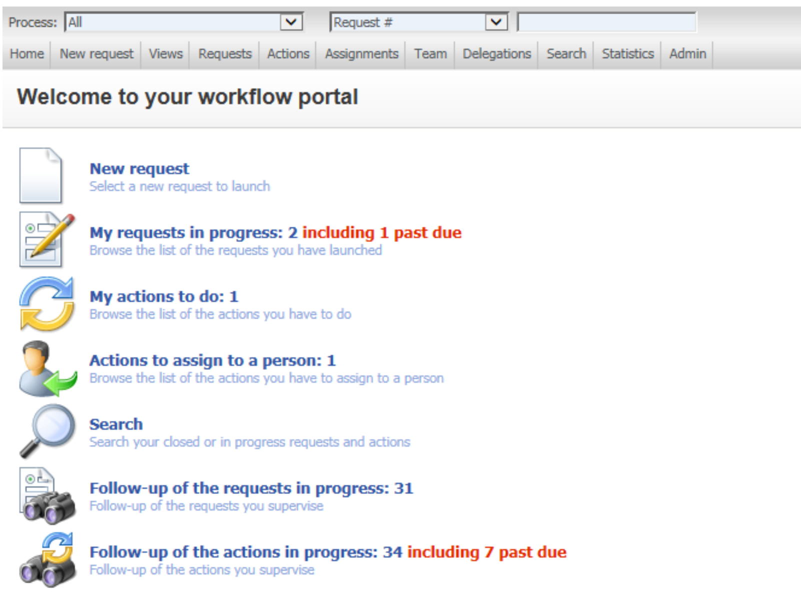
Click **Categories** in the banner menu to open the **Category list**.

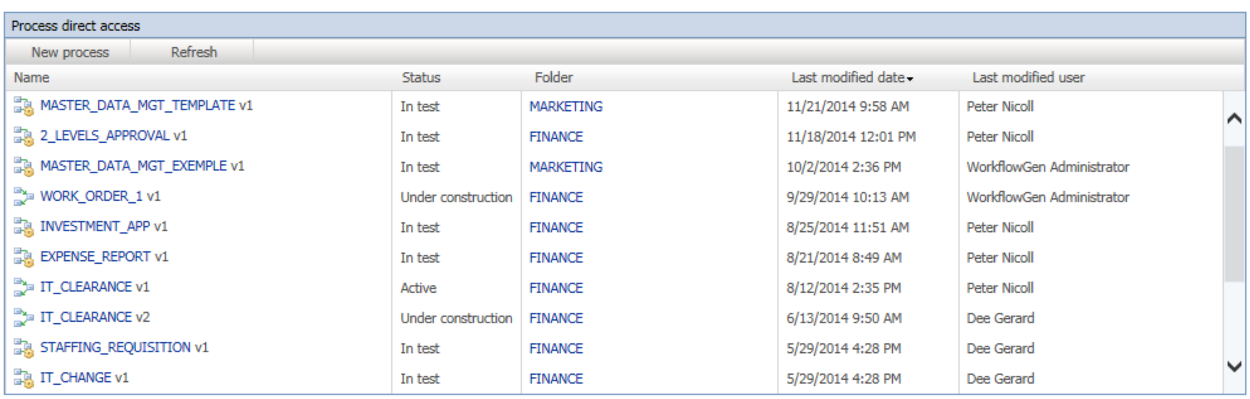


Click **Global Lists** in the banner menu to open **Global list management**.



Click **Portal** in the banner menu to access the workflow portal. For detailed information on this screen, see the **WorkflowGen Portal User Guide**.

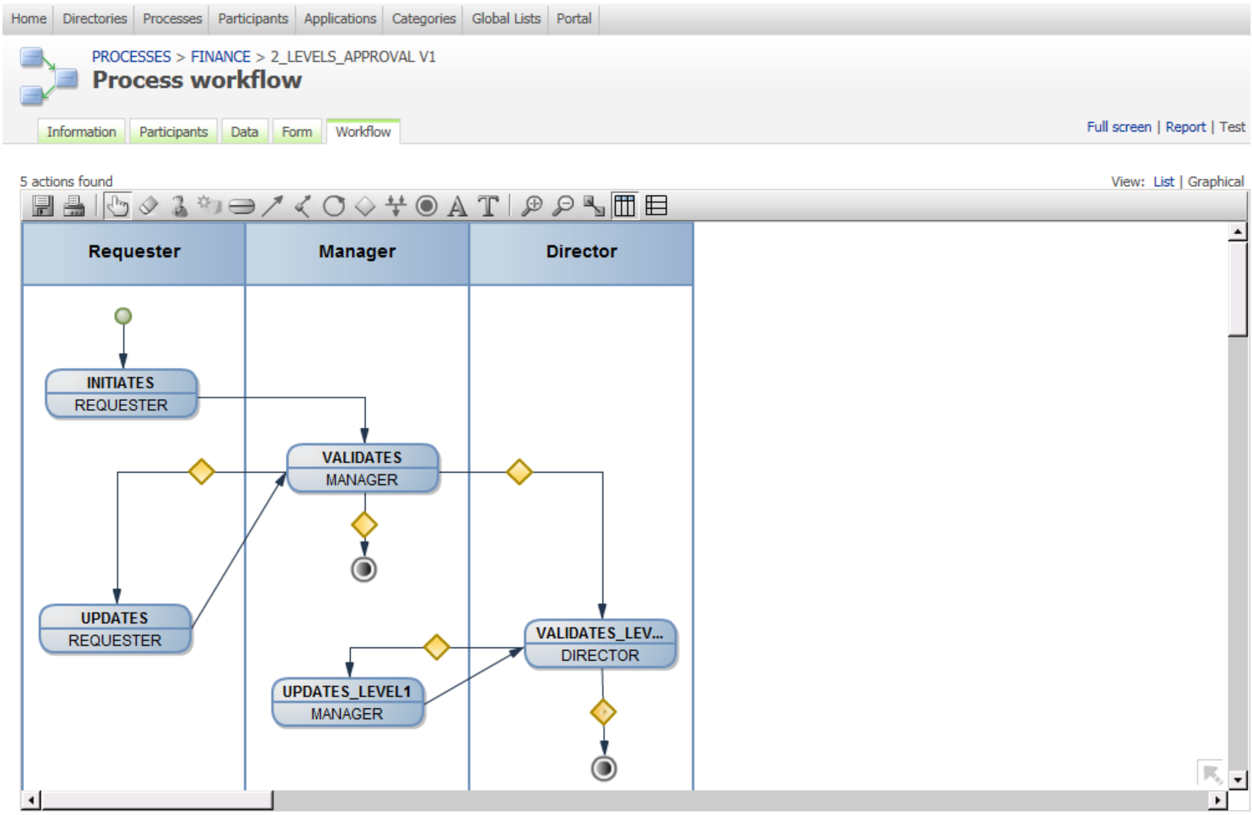




In the **Process direct access** section of the **Administration module** home page, click an entry in the Process list to access the **Process workflow**, which includes the following tabs:

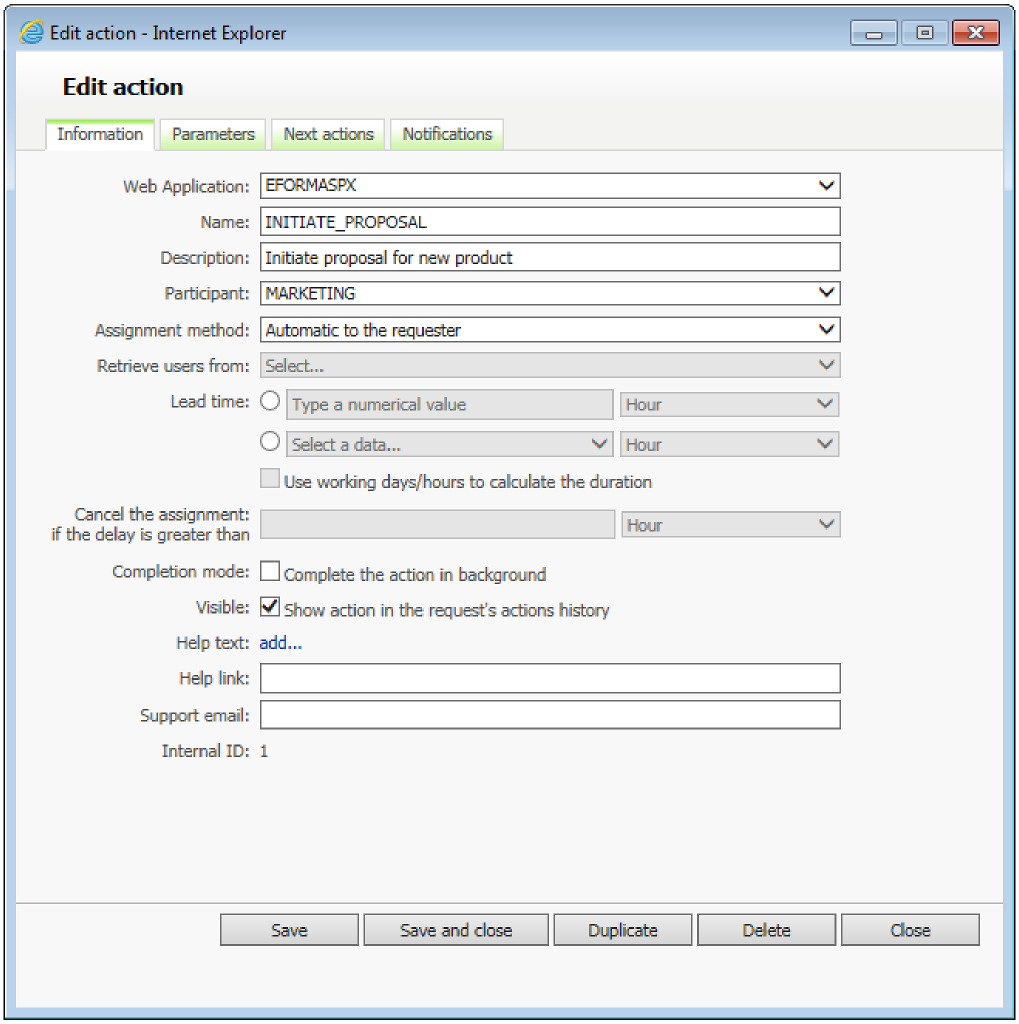
- Information
- Participants
- Data

- Form
- Workflow (in **List view** or **Graphical view**)



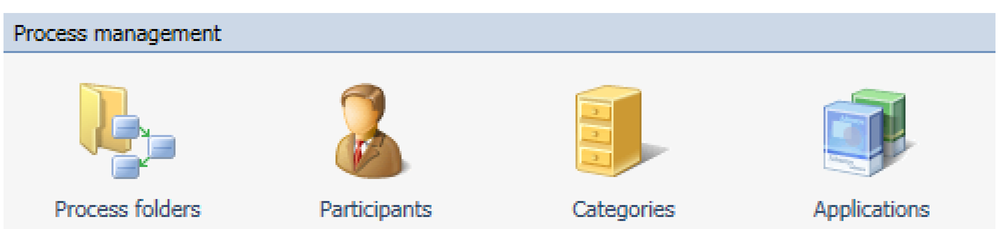
Choose the **List** view and click an entry in the Workflow list to open the **Edit action** form, which includes the following tabs:

- Information
- Parameters
- Next actions
- Notifications



The **Process workflow** screen also includes the following links:

- Full screen
- Report
- Test

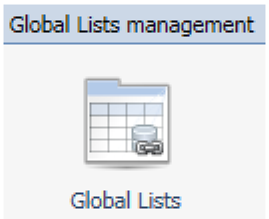


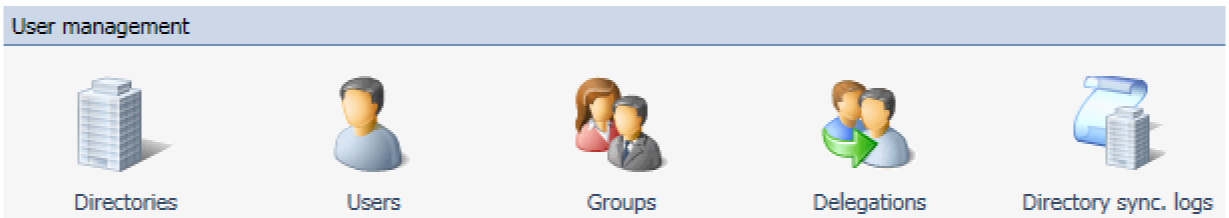
In the **Process management** section of the **Administration module**, click:

- **Process folders** to access the **Folder list** and subsequently, the **Process list** and **Process form**.
- **Participants** to access the **Participants list** and subsequently, the **Participants form**.

- **Categories** to access the **Categories list** and subsequently, the **Category form**.
- **Applications** to access the **Applications list** and subsequently, the **Application form**.

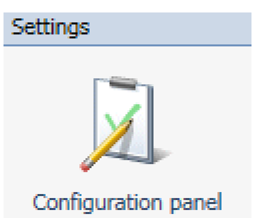
In the **Global Lists management** section of the **Administration module**, click **Global Lists** to access **Global Lists** (see **Global lists** on page 75).





In the **User management** section (see **User management** on page 35) of the **Administration module**, click:

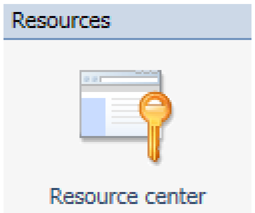
- **Directories** to access the **Directories list** and subsequently, the **Directory form** (see **Directories** on page 35).
- **Users** to access the **Users list** and subsequently, the **User form** (see **Users** on page 37).
- **Groups** to access the **Groups list** and subsequently the **Group form** (see **Groups** on page 43).
- **Delegations** to access the **Delegations list** and subsequently the **Delegation form** (see **Delegations** on page 46).
- **Directory sync. logs** to access the **Synchronizations logs list** and subsequently the **View log** (see **Directory synchronization** on page 49).



In the **Settings** section of the **Administration module**, click **Configuration panel** (see **Configuration panel** on page 24) to access the **Edit configuration** window, which includes the following tabs:

- General
- Portal
- Administration module

- Directory sync
- Applications
- Product info



In the **Resources** section of the **Administration module**, click **Resource center** to access the **WorkflowGen BPM Resource center** website.

Nomenclature

Most of the information that is kept in the WorkflowGen database is identified through a combination internal ID name.

For technical reasons and legibility, these names must contain only characters: alphanumeric combinations, the hyphen " **-** ", and underscore " **_** " characters (no spaces).

Administrators can limit the characters to the ANSI table or allow the use of the entire range of alphanumeric characters, including double-byte characters (Unicode).

On the **Administration module** tab of the **Configuration panel**, select the **Name encoding restriction** checkbox. In most cases, the name must not be longer than 30 characters.

Security

Access to the **Administration module** is limited to users with an Administrator profile and users that are participants designated as process managers. However, during the software installation, access control may be deactivated temporarily.

Once authentication is activated, the following restrictions apply:

- Administrators have no access restrictions except for the **Configuration panel** module, which requires a specific access right (see technical documentation).
- Process managers have access to the process definition and the statistics of their folders; however, they have no control over directories, groups, user management, delegations, global participants, or application management.
- Process supervisors have access to the statistics of their processes available on the user portal, but cannot log in to the **Administration module**.

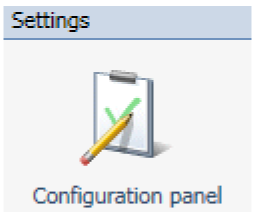
Deleting and archiving

To maintain the integrity of completed requests, information cannot be deleted if it relates to the process definition or to global data. Similarly, information used in "real (active) requests" made by users cannot be deleted.

Configuration panel

Overview

The **Configuration panel** is used to configure the main settings for the WorkflowGen application.



This panel can be accessed from the home page of the **Administration module** or from the URL "http://[servername]/wfgen/admin/Config.aspx".

Access to the **Configuration panel** can be set in the WorkflowGen configuration file "web.config" found in the **wfgen** directory of your site. To add Administrators, add their user names (separated by commas) to the ApplicationConfigAllowedUsersLogin parameter. (The users must first have administrator profiles.)

The **Configuration panel** is divided into the following sections:

- **General:** General WorkflowGen settings (e.g. database connection string)
- **Portal:** End-user portal settings (e.g. behaviour, banner settings, etc.)
- **Administration module:** Administration module settings (e.g. language settings)
- **Directory Sync:** Directory synchronization settings (e.g. logs, schedules)
- **Applications:** Application settings (e.g. eFormPDF field colorization)
- **Diagnostic:** File size usage and request-related errors
- **Product info:** Product installation information page

General

Database

Type

This is the type of database that WorkflowGen is using, either Microsoft SQL Server or Oracle.

Master database connection string

The database scaling feature (available in the Enterprise edition only) allows for the addition of database servers to dramatically improve server performance and response times. The additional read-only or "Slave" database server may be used as a dedicated read-only server (SELECT SQL queries). The read-only database server is replicated from the existing "Master".

To test if the master database connection string entered is valid, click the **Test** link.

SQL Server example:

> "Data Source=DB_SERVER_1;Initial Catalog=WFGEN;User ID=WFGEN_USER;Password=admin123!;"

Read-only database connection string

The read-only or "Slave" database connection string. To test if the connection string entered is valid, click the **Test** link.

SQL Server example:

> "Data Source=DB_SERVER_2;Initial Catalog=WFGEN;User ID=WFGEN_USER;Password=admin123!;"

Multi-database

Select the **Enable** checkbox to activate the database scaling feature.

Portal

If the multi-database option is enabled, the checkboxes of the different Portal components will be activated. If checked, the different components will use the read-only database. Otherwise, if left unchecked, it will use the "Master" database.

Modules

If the multi-database option is enabled, the different Portal modules will be activated. If checked, the different modules will use the Read-only database. Otherwise, if left unchecked, it will use the "Master" database.

Address

Web application URL (required)

The base URL of the web application. You can specify the protocol to use (HTTP or HTTPS), the IP or DNS name of the web server, and/or the TCP port of the website. To test if value entered is valid, click the **Test** link.

URL example: http://www.mycompany.com/

SMTP

SMTP Server (required)

The IP address or DNS name of the SMTP server. This value is used by the WorkflowGen applications to send email notifications. To test this, click the **Test** link, and an email will be sent to the address you have specified through the SMTP server (e.g. smtp.yourcompany.com).

Authentication

Mode

Select the authentication mode to be used to log into WorkflowGen:

- **IIS:** Users are authenticated by IIS through the web browser or directory.
- **Applicative:** Users are authenticated through a custom login script:
- Select **Workflowgen** to manage authentication and user passwords in WorkflowGen.
- Select **Custom** to use your own .NET authentication module.
- Select **Session** to authenticate users by using a existing session variable.

Remove domain name prefix from the username (required)

You can specify a domain to remove from the username of the users when they log in to WorkflowGen. If this value is set to "All", any domain name will be removed from the value.

Security

Web apps secure mode: Enables data encryption in the communication between WorkflowGen and the web form. This feature has been available since version 5.6.1 for the built-in form designer, as well as any web forms using the libraries **Workflowgen.My** and **WorkflowFileUpload** versions 2.3.3 and above.

An existing client who wishes to use this security feature must upgrade all of their web forms created with Visual Studio to use **WorkflowGen.My** and **WorkflowFileUpload** versions 2.3.3 or above before enabling this option.

Working days and hours

New user’s default time zone: Sets what time zone is selected by default on the user’s home page on the Portal module. This is used when creating a new user account, whether manually or by directory synchronization. Since it is used only for account creation, it will not override the current user’s selected time zone.

Weekdays off (optional): Specifies which weekdays are normally off. This is used by WorkflowGen to calculate process and action deadlines. Example: Selecting "Saturday, Sunday" will exclude these days from deadline calculations.

Working hour begin (required): Specifies at which hour the workday begins (based on the current server time zone). This value is used by WorkflowGen to calculate the process and action deadlines. It will be converted to GMT for calculations. Example: "8" specifies that deadlines are to start being calculated at 8:00 a.m. every day.

Working hour end (required): Specifies at which hour the workday ends (based on the current server time zone). This value is used by WorkflowGen to calculate the process and action deadlines. It will be converted to GMT for calculations. Example: "19" specifies that deadlines are to stop being calculated at 7:00 p.m. every day.

Working hour time zone: Specifies the time zone in which working hours begin and end.

Days off country (required): Selects the country to be used to calculate the legal public holidays. This value is used by WorkflowGen to calculate the process and action deadlines. This option is based on the current "DaysOff.en-US.resx" and "DaysOff.fr-FR.resx" in "\wfgen\App_GlobalResources". These files can be updated and new ones can be created based on their regional settings. Example: United States (English)

Special days off (d/m separated by comma (,)) (optional): This value allows you to specify your custom days off. Example: "2/1, 11/1" specifies January 2nd and January 11th as holidays.

Skin: Defines the look and feel of the UI, including colour, margins, etc. The Administrator can use the default skin or manually edit the .css files to create a different look.

Portal

Display

Application name (required): Customizes the "WorkflowGen" word that is displayed in the **User module**. Example: "Acme Flow"

Application language: Defines the Portal language. Selecting **User preference** allows the user to choose their language, but you can impose one by selecting it in the list.

Display code names: Display process and action description instead of code name (Name).

Number of records per page displayed in lists (required): Number of records displayed in different lists of the **User module**. Default: 10

Number of pages displayed in lists (required): Number of pages displayed in different lists of the **User module**. Default: 10

Maximum number of records per page displayed in lists (required): Limits the number of records displayed per page from a search or statistics (data) result list. Default: 1000

Maximum number of users in a list before filtering by name (required): You can specify the maximum limit before a filter appears in the users lists. Default: 100

Display new request in the home page: Display mode of the **New request** link on the **User module** home page. You can choose between:

- Display requests
- Display requests grouped by category
- Display categories and hide processes

When a request is launched: When a new request is launched, you can choose how WorkflowGen behaves from the following:

- Display the request follow-up form
- Start first action
- Display the follow-up form of the first action

Request launching: If this parameter is checked, the user has to confirm the launch of the new request.

When you click on an "action to do":

- Display the follow-up form of the action
- Launch the action

When an action is completed:

- Display the list of the actions to do
- Display the homepage
- Display the follow-up form of the request
- Display the homepage and expand the actions to do

Action completion mode: Specifies if the action completion treatment is processed in the background (threading). This option can sometimes improve the response time to the end user or prevent timeout issues, especially if there are large amounts of processing after a web form submission.

Maximum number of records in home page list (required): Maximum number of records in lists on the User module home page before showing pages.

Customized banner URL: URL of the banner displayed at the top of the **User module**. Example: http://www.mycompany.com/welcome.htm

Customized banner height (optional): Height of the banner (in pixels) that is displayed at the top of the User module. Example: 50

Search redirection: Specifies if the search result is redirected to the follow-up form when there is only one item found.

Advanced view: Enables process managers and supervisors to customize columns.

Enable custom column editing for standard users: Enables users to customize columns.

Number of associated data displayed in the follow-up form (required): Specifies how many lines of data are displayed before a scroll bar appears in the list of associated data into the follow-up form. Default: 25

Number of associated data displayed into the top request menu (required): Specifies how many lines are displayed before a scroll bar appears in the list of associated data into the top request menu. Default: 25

Process grouping: Specifies if the processes are grouped by category in the drop-down list box used to switch to the single process view.

Default process data column size (required): Specifies the default width (in pixels) of the columns that display the associated data when the end-user UI is switched to the single-process view. Default: 150

Quick View: Activate the Quick View: Allows you to enable/disable the quick view functionality in the **User module**.

QuickView data name: Specifies the process data value to display within the Quick View dialog box. Example: FORM_ARCHIVE

Display Quick View on mouse event: You can choose between two different events to trigger the **Quick View** dialog box to open: **Click (Default)** or **Hover** (also referred to as ‘mouseover’).

Common processes data name list: This parameter allows you to enter the same names and data types, which can then be used in a multi-process view.

For example, if you have process data such as CUSTOMER (TEXT) that are used in most of your processes, you can define these data as Portal common process data by entering them in the Common process data name list field.

Note: When entering multiple data types in this parameter, each data type must be separated by a comma.

Calling card: Display user calling cards (enabled by default).

Request

Delete the ghost requests that are older than (days) (required): Specifies the maximum number of days before deleting requests that have been launched but never assigned to a user, other than the requester. Default: 3

Maximum number of simultaneous instance creation per action (required): The maximum number of simultaneous launches of the same process action. This parameter allows you to avoid simple loops at runtime. Example: 100

Request deletion: When this is selected, managers and supervisors can delete requests even if the process status is set to active.

Request data lock timeout for concurrent applications (minutes) (required): Request data will be locked during the time period specified in order to avoid "competition" for access to the same data. Example: 5

User notification

Email notification: Activate email notification: This parameter allows you to enable/disable email notifications. This will affect all processes regardless of their status.

Default email sender (required): Sets the default email sender for email notifications. This is only used if a notification was sent by the system. Example: workflowgen@mycompany.com

Maximum number of users to notify (required): Maximum number of simultaneous email notifications that can be sent by WorkflowGen. Example: 100

Notification default language: If the user has no default or preferred language selected, this parameter is used to specify which language to use for the email notification texts.

Email notification: Activates email notification when the user is the same as the recipient. If this parameter is checked, the email notifications are sent even if the sender and recipient email addresses are the same.

Delegation

Delegation: Activate user delegation: If this parameter is checked, the end-users can delegate their tasks to other users of WorkflowGen. Otherwise, only the Administrators are able to manage the delegation rules from the **Administration module**.

Host application

This is used to specify the URL of the host application. For example, in SharePoint, you can create a webpart to display and use the WorkflowGen Portal or Admininstration module in the same way as a stand-alone web browser. This way, a user can remain in the SharePoint portal and use WorkflowGen at the same time without having to work in separate windows.

In this case, you have to specify the host URL in order for WorkflowGen to function properly inside the SharePoint webpart.

Statistics

Number of displayed users in the report (required): Number of users displayed in statistic reports. Example: 10

Number of displayed actors in the report (required): Number of actors displayed in statistic reports. Example: 10

Number of displayed requesters in the report (required): Number of requesters displayed in statistic reports. Example: 10

Export format

You can choose between two different formats when exporting the results generated from a data statistic report. The available formats are:

- **CSV (comma separated values):** This format does not support Unicode characters.
- **Unicode text:** The values are only separated by tab characters but the Unicode character range is supported.

Comments

Portal comments activation (web.config parameters): Enables or disables the Portal comments (example: <add key="PortalEnableComments" value="Y" />) and sets the maximum items for the home page comments lists. Example: <add key="PortalCommentsListSize" value="25" />

Maximum number of comments displayed in the home page: Sets the total number of comments that can be displayed on the homepage.

Auto-refresh frequency (required): Sets the follow-up form comments list auto-refresh rate in milliseconds. Use the value 0 to disable the auto-refresh feature. Default: 60000 (1 minute)

Window pop-up width (required): Sets the action runtime menu comments list window pop-up width size in pixels. Default: 376

Note: The following corresponding style widths must be updated separately in the Portal's Cascading Style Sheet ("\App_Themes\Default\portal\css\Default.css") when the pop-up width is changed:

- div.CommentsViewOpenedRightAlign
- div.CommentsViewSubOpenedRightAlign

- div.CommentsViewOpenedPopUpRightAlign
- div.CommentsViewSubOpenedPopUpRightAlign
- .CommentsListHeader .ListRow .CellOpenedRightAlign
- .CommentsList .ListRow .ListCell .Comment .Row .CellHeader
- .CommentsListInput .ListRow .ListCell .NewComment .Row .Cell .TextArea

Window pop-up height (pixels) (required): Sets the action runtime menu comments list window pop-up height size in pixels. Default: 545

Note: The following corresponding styles height must be updated separately in the Portal's Cascading Style Sheet ("\App_Themes\Default\portal\css\Default.css") when the pop-up height is changed.

- div.CommentsListBodyPopUp
- div.CommentsListBodyPopUpHidden
- div.CommentsListBodyPopUpReadOnly
- div.CommentsListBodyPopUpReadOnlyHidden

Default sort field: Sets the default comment list sort by field. Default: date

Default sort order: Sets the default comment list sort order. Default: ascending

Default display mode: Displays or hides the comment list the first time the follow-up form is displayed. Default: unchecked (hidden)

Administration module

Display

Application language: Allows you to define the application language for the **Administration module**. Selecting **User preference** allows users to choose their own language, but you can impose one by selecting a language from the list.

Number of records displayed in lists (required): Number of records displayed in lists of the **Administration module**. Default: 100

Number of pages displayed in lists (required): Number of pages displayed in lists of the **Administration module**. Default: 10

Maximum number of users in a list before filtering by name (required): You can specify a maximum limit before a filter appears in the users' lists. Default: 100

Name encoding restriction: Restrict name encoding to ANSI character set (required): If this parameter is checked, only ANSI characters are permitted in the "Name" fields. If this parameter is not checked, only special characters (**'**, **"**, **tab**, **space**, **%**, **/**, ****, *****) are discarded.

User

New user's default language: When a new user is created, the default language selected will be applied to their profile as their default language.

Windows services

Service identity (required): The Windows service identity to use in order to run the WorkflowGen services.

Others

These parameters are managed in the WorkflowGen configuration file only (\wfgen\web.config).

Enable deletion rules check: Enables the deletion rules check for users, groups and directories lists and forms. Disable this option to improve the lists' and forms' response times.

> Name: AdministrationEnableDeletionRulesCheck
> Default: Y (the deletion rules verification are enabled)

Restrict process manager permission to modify global participant: Disables the process manager right to modify a global participant's information, such as name, description, and user/group/directory associations.

> Name: AdministrationRestrictManagerToModifyGlobalParticipant
> Default: N (process managers have the right to modify a global participant)

Directory sync

Logs

Remove temporary files: If this is selected, the temporary XML files created by WorkflowGen are removed once the synchronization is complete.

Detailed report: If this is selected, the synchronization logs each action performed on the directory data.

Keep log files history for (day) (required): Number of days before deleting the log files. Example: 31

Display warnings in logs: If this is selected, warnings will be displayed in the log files.

Automatic synchronization

Weekday for the weekly synchronization: Day of the week to perform the automatic weekly synchronization.

Day of the month for the monthly synchronization: Day of the month to perform the automatic monthly synchronization.

Synchronization start hour: Hour of the day to perform the automatic monthly synchronization (in 24-hour format).

Others

These parameters are managed in the WorkflowGen configuration file only ("\wfgen\web.config").

Maximum user deletion count: Defines the maximum number of account deletions per synchronization run. This option is useful for batch account deletion in order to optimize synchronization performance.

> Name: DirectorySynchronizationMaxUserDeletionCount
> Default: 0 (Unlimited number of user account deletions)

Synchronize the group's members only if the group is used in a participant: Defines if the directory synchronization will synchronize the group's members only if the group is associated to at least one participant. This option is useful to reduce synchronization run time by skipping the group's member synchronization when the group is not used in a participant.

> Name: DirectorySynchronizationSyncGroupMembersUsedInParticipantOnly
> Default: N (Synchronize all groups and their members)

Applications

eFormPDF

Enable field colorization: Apply colorization rules to form fields: Specifies if the fields of the PDF form are automatically colored according to the selected color.

Required field strokecolor: Specifies the default stroke (border) color applied to the required fields when field colorization is selected. Default: red.

Required field fillcolor: Specifies the default fill color applied to the required fields when field colorization is selected. Default: transparent.

Updatable field strokecolor: Specifies the default stroke (border) color applied to the updatable fields when field colorization is selected. Default: blue.

Updatable field fillcolor: Specifies the default fill color applied to the updatable field when field colorization is selected. Default: transparent.

Read-only field strokecolor: Specifies the default stroke (border) color applied to the read-only fields when the field colorization is selected. Default: gray.

Read-only field fillcolor: Specifies the default fill color applied to the read-only fields when the field colorization is selected. Default: transparent.

Javascript compatibility: Enable JavaScript compatibility for Acrobat Reader 5.0.5: This parameter prevents WorkflowGen from generating JavaScript code that is not compliant with version 5.0.5 of Adobe Acrobat. Default: not selected.

Unicode encoding: Force Unicode encoding for text values: Specifies if the text values sent to the PDF forms have to be encoded in Unicode. Default: not selected .

Diagnostic

File sizes: The total size refers to the combined size of all the files on the server. The average size refers to the average size of the files on the server. The maximum size refers to the largest file on the server.

Stuck requests: This refers to a request that is open, but with no follow-up action associated with it. It is an irregular request.

Automatic actions in timeout: Displays a list of actions that have timed out.

Unexpected errors: Displays a list of errors that are not timeout errors.

Product info

License information

Version: Specifies the current version of the WorkflowGen installation.

Serial number: Specifies the activation serial number of the WorkflowGen installation and copyright information.

Assembly versions

Specifies the various library versions used by the WorkflowGen application.

User management

Overview

To participate in a process or manage processes, the user must be identified as a user in WorkflowGen and have an account (username and password) in the company directory that WorkflowGen will use for authentication.

Users can be members of one or more directory groups; however, a directory group cannot belong to another directory group.

A user may have an active or inactive status. If a user's status is set to inactive, they cannot access the application.

A user can only be truly deleted from the WorkflowGen database if they are not referenced anywhere in WorkflowGen. If they are referenced, then the user will be archived. Archiving means that the username will be renamed and will be set to archived status, and the user will no longer be able to access the application.

Several directories can be managed in WorkflowGen. This is particularly useful when the synchronization module is used. For example, one directory can be managed manually in WorkflowGen while another can be synchronized based on an existing directory (e.g. Active Directory). Even if many directories are being used, each username must be unique across the entire system. If multiple directories are being used to synchronize several Active Directory domains, domain names can be prefixed to the user name to eliminate the unique user issue (in the event that user names are identical across domains).

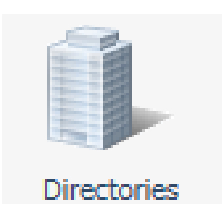
User management can only be modified by users with an Administrator profile.

By default, WorkflowGen is delivered with the WORKFLOWGEN directory and one administrative user, neither of which can be deleted.

Directories

Directory screen

To access the **Directory** screen, click **Directories** to display the **Directory list**.



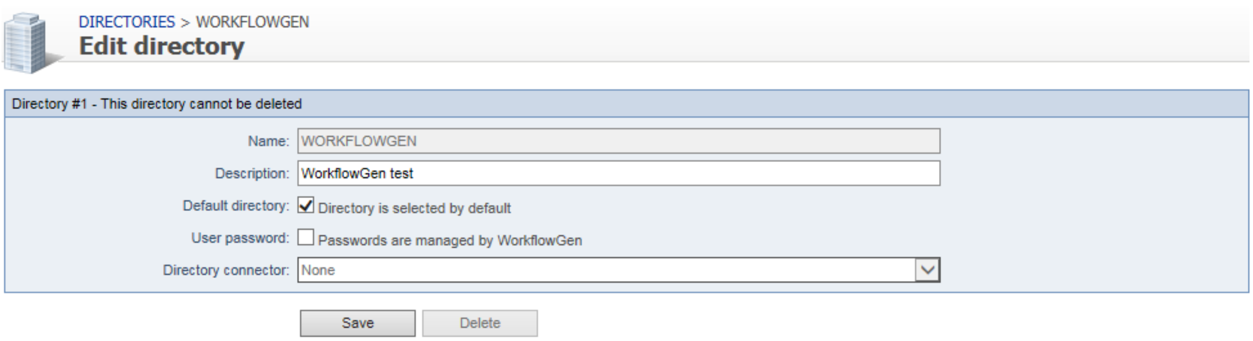
Links	Remarks
New directory	Displays a blank directory form to add a new directory
Refresh	Refreshes the directory listing

Directory list

Columns	Remarks
Name	Directory name A link displays the directory form in edit mode.
Description	Directory description
Group(s)	Number of groups associated to the directory A link displays the corresponding groups.
User(s)	Number of users associated to the directory A link displays corresponding users.

Edit directory

To edit a directory, click its name in the **Directory list**.



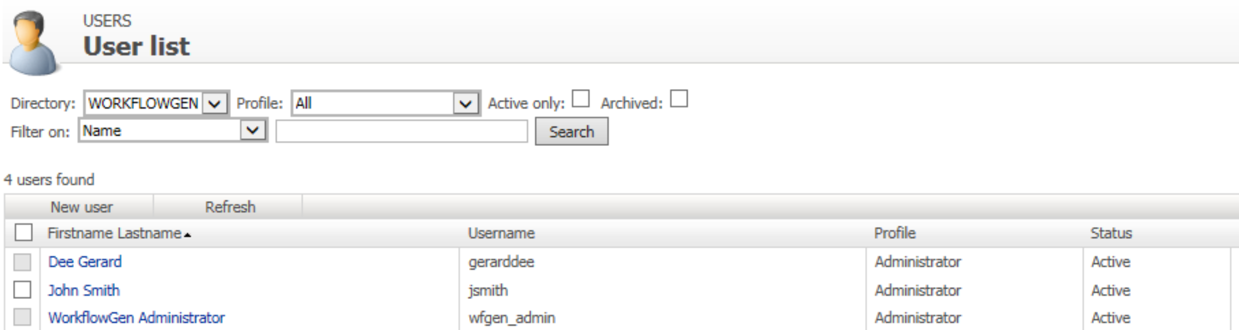
Fields	Remarks
Name	**Required field** Unique identifier for the directory; must respect nomenclature and be limited to 50 characters
Description	**Required field** Directory description limited to 255 characters
Default directory	If checked, the directory is displayed first among the directory selection lists in the administration module
User password	Check to allow WorkflowGen to manage passwords
Directory connector	Various sources that can be used for authentication management

Deleting a directory

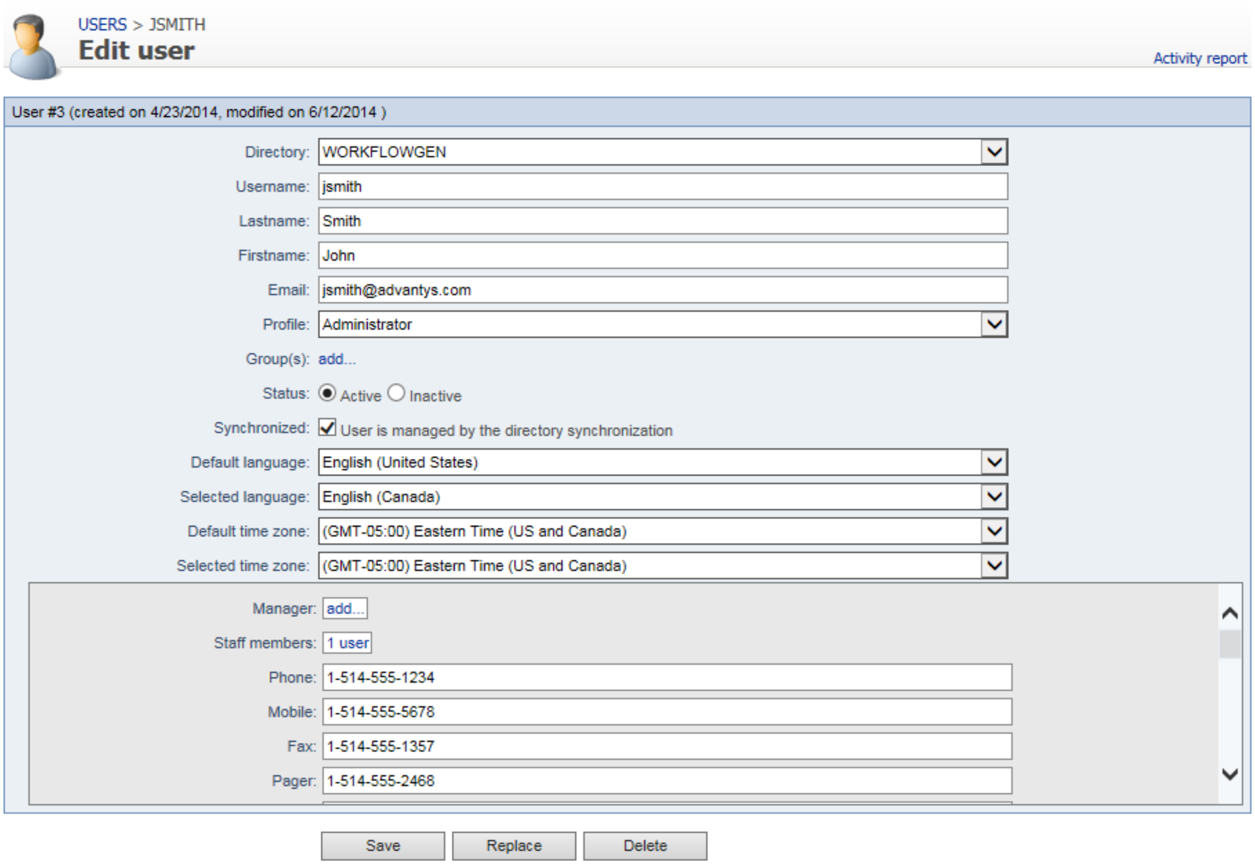
- The WORKFLOWGEN directory cannot be deleted.
- A directory containing users or groups cannot be deleted.
- A directory can only be deleted if it is an empty directory.

Users

User list



User screen



Menu banner

Links	Remarks
New user	Displays a blank user form to add a new user

Refresh	Refreshes the user list displayed

Filter

External filters	Remarks
Directory	Displays the specified user directory
Profile	Displays users with the selected profile
Active only	Displays only users with active status
Archived	Displays archived users
Filter on	Filters by specified criteria (e.g. name, username, email, etc.)
Search	Search for users by name, username, email, etc.

Filter on *	Remarks
Name	Filters by user’s name
Username	Filters by user’s username
Email	Filters by user’s email address
Department	Filters by user’s department
Company	Filters by user’s company name
Employee number	Filters by user’s employee number
Telephone	Filters by user’s telephone number
Mobile	Filters by user’s mobile phone number
Fax	Filters by user’s fax number
Pager	Filters by user’s pager number
Office	Filters by user’s office
Job Title	Filters by user’s job title
Employee type	Filters by user’s employee title
Initials	Filters by user’s initials
Personal Title	Filters by user’s title
Postal address	Filters by user’s postal address
Zip code	Filters by user’s zip code
City	Filters by user’s city
State/Area	Filters by user’s state or area
Country	Filters by user’s country
LDAP Path	Filters by user’s LDAP path
Extended attribute 1	Filters by user’s extended attribute #1
Extended attribute 2	Filters by user’s extended attribute #2
Extended attribute 3	Filters by user’s extended attribute #3
Extended attribute 4	Filters by user’s extended attribute #4
Extended attribute 5	Filters by user’s extended attribute #5
Display name	Filters by user’s displayed name

Distinctive name	Filters by user’s distinctive name
System identifier	Filters by user’s system identifier (SID)

* A filter can be applied to a part of a field

User lists

Columns	Remarks
Multi-select checkboxes	Actions: • Activate the selected users • Deactivate the selected users • Delete the selected users
Lastname Firstname	User’s last name and first name A link displays the user form in edit mode.
Username	Username of the user
Profile	Profile of the user
Status	Status of the user’s account: active or inactive
Directory	User directory **Note:** This column is only visible when you select **All** from the **Directory** drop-down list.

User form

Fields	Remarks
Directory	User directory
Username	**Required field** Unique user identifier in all directories; limited to 255 characters
Last name	**Required field** User’s last name
First name	User’s first name
Email	User’s email address
Profile	User’s profile (defines application access rights: Administrator or user)
Group(s)	Name of the directory group the user is associated A link displays the corresponding groups.
Status *	User’s account status: active/inactive
Synchronized	If checked, the user is synchronized
Default language	Language applied when the user's account was created
Selected language	Language selected by the user
Default time zone	Time zone applied when the user’s account was activated
Selected time zone	Time zone selected by the user
Manager	The user selected as manager
Staff members	Count of users who have been assigned this user as manager Clicking this allows access to the staff member list.

Telephone *	User’s telephone number
Mobile *	User’s mobile telephone number
Fax *	User’s fax number
Pager *	User’s pager number
Office *	User’s office number
Department *	User’s department number
Company	User’s company name
Job title *	User’s job title
Employee type *	Employee type the user belongs to
Initials *	User’s initials
Title *	User’s title
Employee number	User’s employee number
Postal address *	User’s postal address
Zip code *	User’s zip code
City *	User’s city
State/Area *	User’s state or area
Country *	User’s country
LDAP path *	User’s LDAP path
Display name *	User’s displayed name
Distinctive name *	User’s distinctive name
Extended attribute 1 to 5 *	User's extended attribute
System identifier *	User's SID

* Fields that can be synchronized with Active Directory. These fields are not required by the application; however, it is possible to use them through workflow macros.

Deleting/archiving

A user will be archived and not deleted if:

- The user is associated to a participant as a user.
- The user is the creator or modifier of a process.
- The user is associated to a request or an action.

A user cannot receive an inactive, deleted, or archived status if:

- The user is the only person assigned as a coordinator to a **List of persons**.
- The user is the only person in a group assigned to a **List of persons** type participant.
- The user is the only person in a **List of persons** type participant.

Replacing

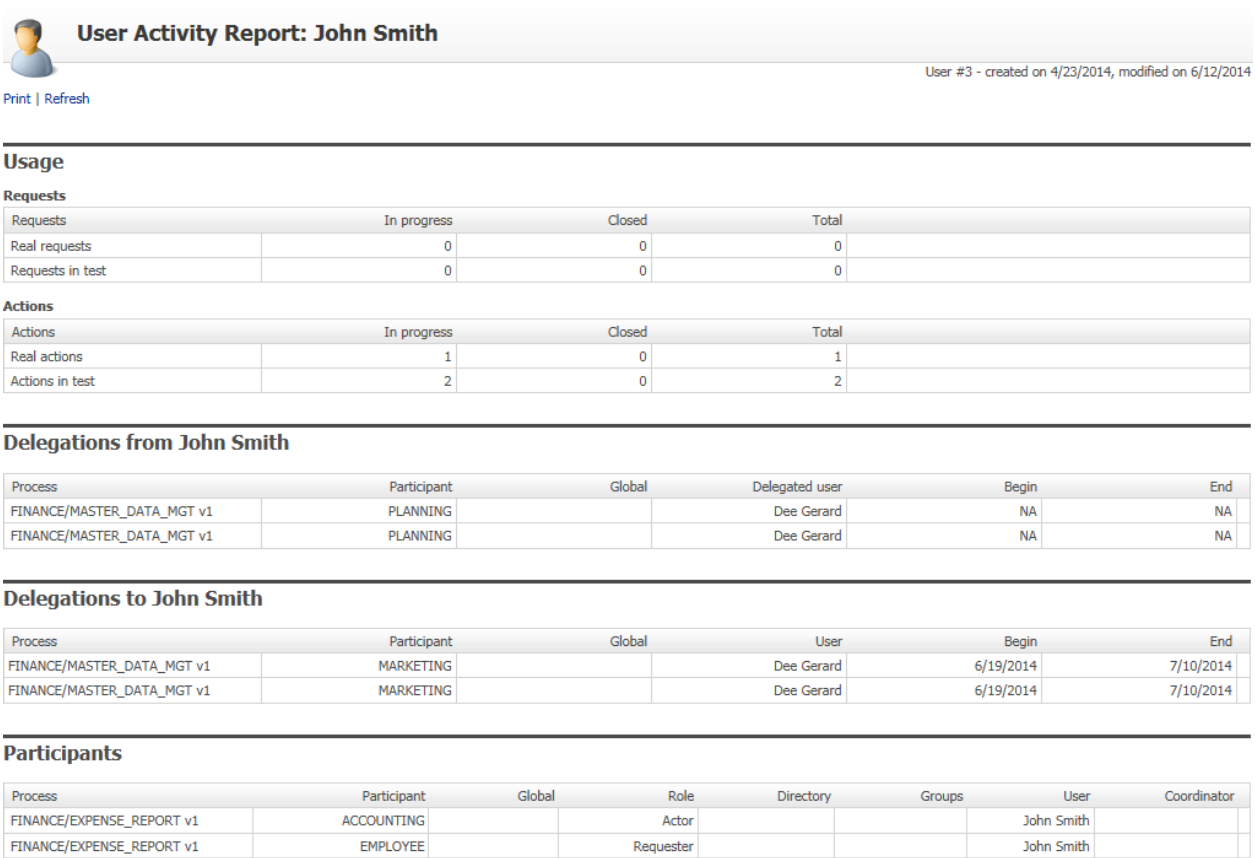
You can replace a user with another one (the user that replaces another user must belong to the same directory and to the same groups). All roles in process definitions will be reassigned to the new user.

Ongoing (open) requests will be reassigned to the new user; closed (historical) actions will maintain the correct participant who performed the action.

This function is useful when a someone leaves their position in the organization and their ongoing tasks and roles must be reassigned.

Activity report

The user activity report can be generated by selecting the **Activity report** link in the user’s profile page.



User Activity Report: John Smith

User #3 - created on 4/23/2014, modified on 6/12/2014

Print | Refresh

Usage

Requests

Requests	In progress	Closed	Total
Real requests	0	0	0
Requests in test	0	0	0

Actions

Actions	In progress	Closed	Total
Real actions	1	0	1
Actions in test	2	0	2

Delegations from John Smith

Process	Participant	Global	Delegated user	Begin	End
FINANCE/MASTER_DATA_MGT v1	PLANNING		Dee Gerard	NA	NA
FINANCE/MASTER_DATA_MGT v1	PLANNING		Dee Gerard	NA	NA

Delegations to John Smith

Process	Participant	Global	User	Begin	End
FINANCE/MASTER_DATA_MGT v1	MARKETING		Dee Gerard	6/19/2014	7/10/2014
FINANCE/MASTER_DATA_MGT v1	MARKETING		Dee Gerard	6/19/2014	7/10/2014

Participants

Process	Participant	Global	Role	Directory	Groups	User	Coordinator
FINANCE/EXPENSE_REPORT v1	ACCOUNTING		Actor			John Smith	
FINANCE/EXPENSE_REPORT v1	EMPLOYEE		Requester			John Smith	

The generated report summarizes all the activities for the selected user, such as:

Request use

- Request type
- In progress

- Closed
- Total

Action activity

- Action type
- In progress
- Closed
- Total

Delegations from someone

- Process
- Participant
- Global
- Delegated user
- Begin
- End

Delegations to someone

- Process
- Participant
- Global
- User
- Begin
- End

Participants that the user belongs to

- Process
- Participant
- Global
- Role
- Directory
- Groups

- User
- Coordinator

Folder manager

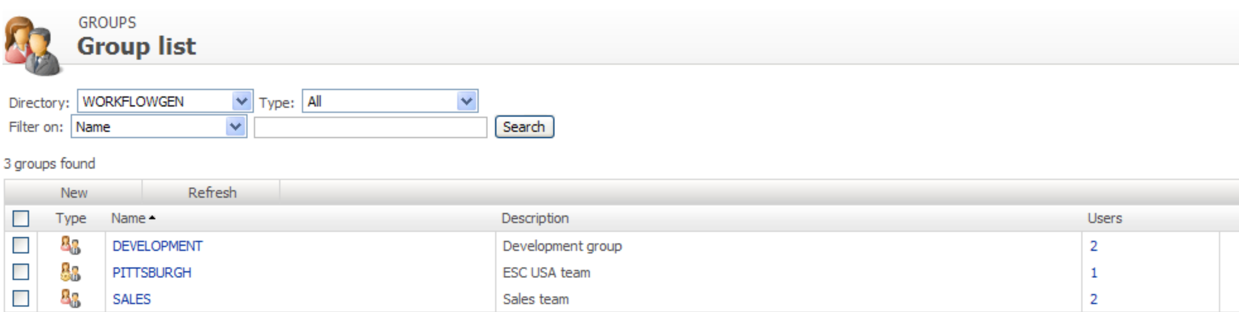
- Folder
- Participant
- Directory
- Groups
- User

Global list managers

- Participant
- Directory
- Groups
- User

Groups

Group list screen



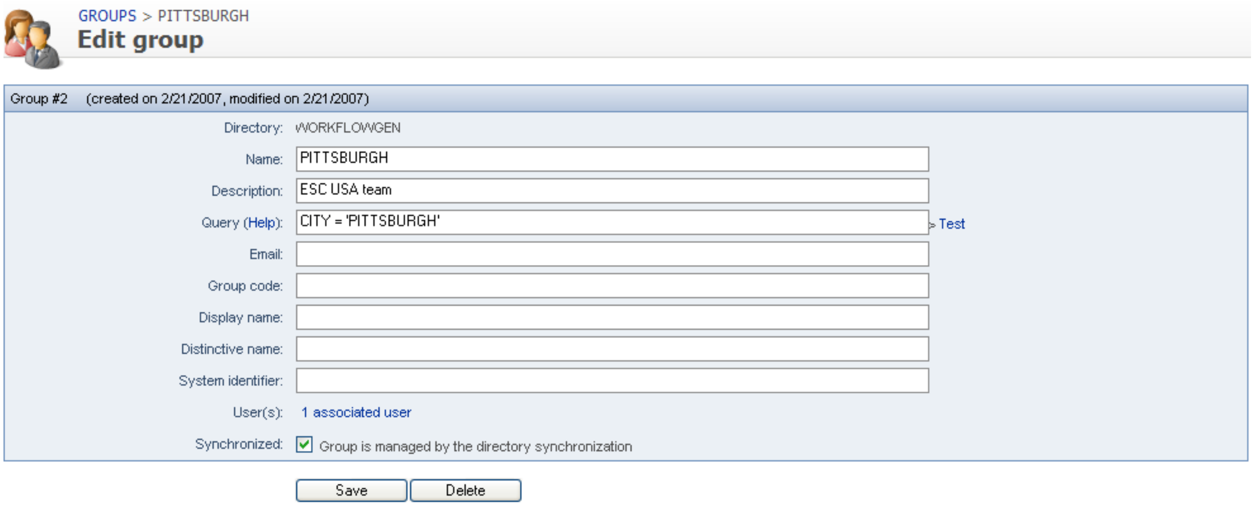
 represents a group of users from a single directory (created by a synchronization or defined within WorkflowGen).

 represents a virtual group of users from a single directory filtered by an SQL-like query (directory filter).

Associated users

Users are associated with a group only when the group is saved (at creation or when manually re-saved). If synchronized, the user list is refreshed at the time of the synchronization. If no synchronization has been defined for that directory, users in the virtual groups of that directory will not be updated automatically.

Group screen



Menu banner

Links	Remarks
New group	Displays a blank group form to add a new group
Refresh	Refreshes the group list displayed

Filters

External filters	Remarks
Directory	Displays the specified group directory
Type	All / Directory / Query

Filter on *	Remarks
Name	Filters by group's name
Description	Filters by group's description
Query	Filters by group’s query
Email	Filters by group's email address
Group code	Filters by group's code
Display name	Filters by group's displayed name
Distinctive name	Filters by group's distinctive name
System identifier	Filters by group's system identifier (SID)

* A filter can be applied to part of a field.

Group list

Columns	Remarks
Multi-select checkboxes	Actions: • Activate the selected group's members • Deactivate the selected group's members • Delete the selected groups
Name	Name of the group A link displays the group form in edit mode.
Description	Description of the group
Users	Number of users associated to the group A link displays the corresponding users.
Directory	Group directory **Note:** This column is only visible when you select "All" from the Directory dropdown list.

Group form

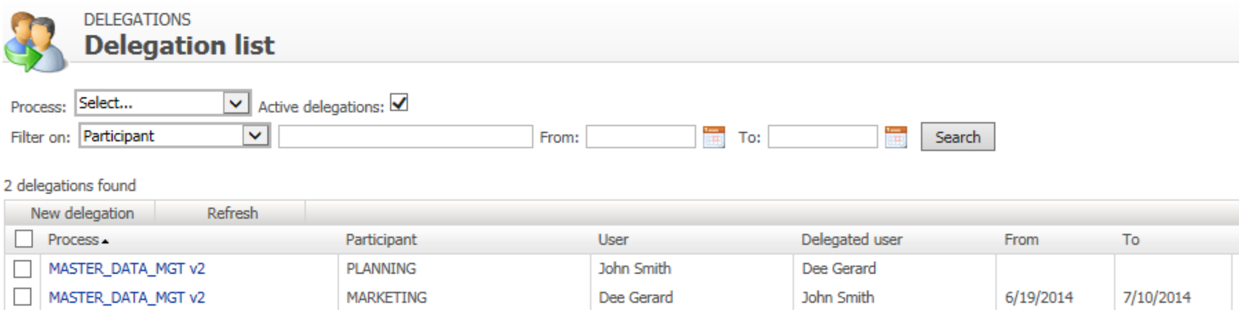
Fields	Remarks
Directory	Group directory
Name	**Required field** Unique identifier for the group in the directory
Description	**Required field** Group description
Query	Statement allowing a group definition based on query parameters (directory filter) ***Examples:*** • User of a group: {ISMEMBER(FINANCE)} • Users from a defined city: CITY = 'LOS ANGELES' • Combinations, such as: Country='USA' and {ISMEMBER (FINANCE)}
(Help)	Help on query syntax (field name list)
Test	Query syntax test and query result
Email	Group email address
Group code	Group code
Display name	Group displayed name
Distinctive name	Group distinct name
System identifier	Group SID
User(s)	Number of users associated to the group A link displays the corresponding users.
Synchronized	If checked, the group is synchronized

Deletion

Deleting a group does not delete the associated users.

Delegations

Delegation list screen



Menu banner

Links	Remarks
New delegation	Displays a blank delegations form to add a new delegation
Refresh	Refreshes the delegations list

Filters

External filters	Remarks
Process	Displays the delegations of the selected process (only active or archived processes are listed)

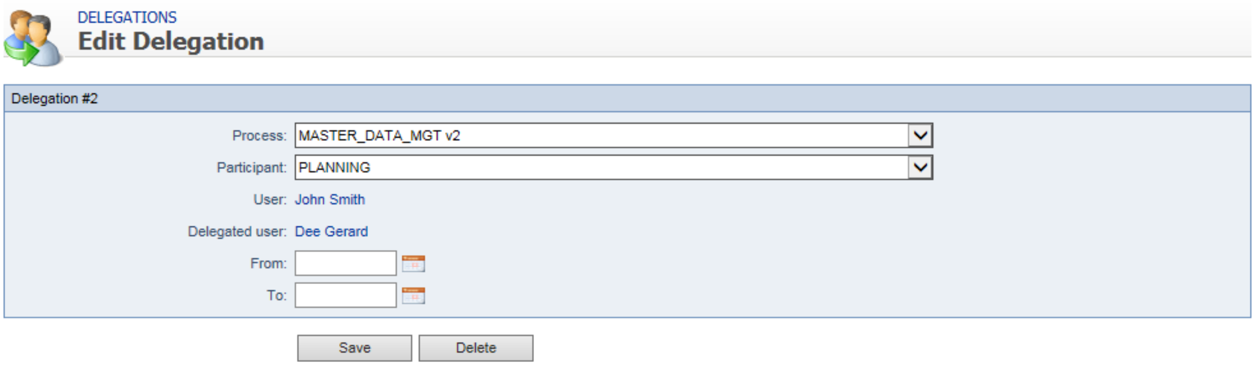
Filter on	Remarks
Participant	Filter by participant
User	Filter by user (delegator)
Delegated user	Filter by delegated user

Delegation list

Column	Remarks
Process	Process name
Participant	Participant name
User	User name (delegator)
Delegated user	Delegated user name

From …	Delegation start date (included) If not defined, the delegation is unlimited.
To …	Delegation end date (included) If not defined, the delegation is unlimited.

Delegation editing screen



Delegation editing

Fields	Remarks
Process	Lists all active processes that the user plays a role in Archived processes are listed if the **Show all processes versions** box is checked. This allows for the addition and modification of delegations defined on ongoing requests based on archived processes (previous versions). If not checked, the participant field is disabled. You can select all processes. In this case, the delegation will be based on all process functions associated with the selected user. Note that process-specific delegations override the All process delegation.
Participant	Participant of the selected process (except if "All")
User	The user associated with the selected participant (delegator) to whom a process function is to be delegated
Delegated user	The user intended to act as the delegatee on the selected process function The delegated user must be different than the delegator.
From …	Delegation start date (included) If defined, the end date is required (delegation period). If not defined, the delegation is unlimited.
To …	Delegation end date (included) If defined, the start date is required (delegation period). If not defined, the delegation is unlimited.

Addition

When adding a new delegation, you can decide whether or not to send a notification email to the delegated user via the displayed message box.

A delegation is unique based on the process, the participant, the user, and the delegated user. This means that you cannot define multiple time periods for a given delegation.

You cannot define cross-delegations on overlapping periods between the same users on the same participant.

You cannot define multi-level delegations. If user A delegated actions to user B, user B cannot then delegate user A’s actions to user C.

Deletion

Deleting a delegation does not delete the associated user.

Process versioning

Delegations are process version-specific:

- New versions of a process copy all existing delegations where possible, based on matching participant names.
- Since delegations can only be created for active processes, delegations are only carried forward when a versioned process is activated.
- A delegate can only see the delegator’s actions and requests from the version at which they were delegated the role, and going forward if copied by creating a new version and not changed subsequently.
- When a user changes a delegation in the current version, it does not affect prior delegations performed for previous versions.
- If prior version actions and requests need to be delegated also, an Administrator must use the Administrator delegation screen to add prior versions delegations.

Directory synchronization

Overview

The **Directory synchronization** module provides an efficient way to synchronize WorkflowGen users and groups with one or more existing enterprise directories.

The following are some key points about synchronization:

- The synchronization process can be manual or automatic.
- The WORKFLOWGEN built-in directory cannot be synchronized.
- A user's "username" must be unique across all WorkflowGen directories.
- You can synchronize multiple directories or multiple portions of a directory with different connectors.
- In the case of an account deletion, the user will either be archived or deactivated, depending on parameters specified. If archived, the username will then be renamed and the account disabled.

Recommendation for per-user license mode

It is recommended that you synchronize a new user account with the option **New user default status** set to **Inactive**. These new accounts can later be activated manually by the Administrator in the user/group lists, or automatically by using the self-activation feature.

General usage

Accessing the synchronization module

Access to the directory synchronization module is only granted to users that have an Administrator profile.

Description of synchronization parameters

In the WorkflowGen administration interface, it is possible to list the directory synchronizations, to consult the parameters concerning the synchronizations, or to add new ones.

When creating a new synchronization that is based on Active Directory, LDAP, or TEXT, the following fields will appear to define the method of synchronization.

Note: Once saved, it is no longer possible to change the directory connector.

Separator: For the text connector, the column separation character in the text file can be a semicolon (" **;** "), a comma (" **,** "), or a tab character.

File path: This field makes it possible to specify a path to access the files for the text connector. It takes as a value the path where the files are located, followed by the synchronization name.

Note: The synchronization name is used to name the files.

LDAP path: For an Active Directory, an LDAP path is required. Only a single LDAP path is supported per connector.

User synchronization query: For an LDAP query, an LDAP query must be specified to query user accounts.

Group synchronization query: For an LDAP query, an LDAP query must be specified to query groups.

Directory login and password: For Active Directory or LDAP connectors, a login and password may be required to provide access to the directory server.

Deep search mode: For the Active Directory connector, define if the synchronization should include only the container of the targeted OU or include all the children of the targeted OU.

Data to synchronize: With WorkflowGen, groups and users can be synchronized. User synchronization is required, but group synchronization can be activated or deactivated.

Note: With LDAP synchronization, a group query must be defined even if the group is not set to synchronize.

Users synchronization field: In order to perform synchronization, the module uses a field to identify the users, and defines the additions, deletions, or updates. The default field is "USERNAME", but it is possible to choose any field from the WorkflowGen (e.g. Ads_Path, EMPLOYEENUMBER, etc.) as long as it is processed by the connector.

Groups synchronization field: As with users, parameters can be set for the group synchronization field.

Prefix username by: To facilitate importing, and in certain cases to avoid double entries concerning user names, it is possible to prefix the user names with a character string. Example: Domain\

Prefix groupname by: To facilitate importing and to avoid, in certain cases, double entries concerning group names, it is possible to prefix the group names with a character string. Example: Domain\

User synchronization type: There are three synchronization modes: **Add only** allows new users to be imported, **Add and modify** also allows data for existing users to be updated, and **Add, modify and delete** has an additional function that enables archiving of WorkflowGen users who are not included in the Imported Directory.

Add only: During synchronization, any user that exists in the directory to be imported but does not exist in the WorkflowGen directory will be added to the latter. Data for existing users will not be modified. In order to be added, a user must at least have a user name (USERNAME) and a last name (LASTNAME). If this condition is not satisfied, an error occurs and the add is cancelled. In case of a defect with one of these values (USERNAME and LASTNAME), an alert (WARNING) is generated.

Add and modify: This type of synchronization functions the same as the preceding one with regards to additions. It also allows you to update data for users who are already present in the directory and are to be synchronized. In this way, data for a user present in the WorkflowGen directory and in the directory to be imported will be updated.

Add, modify and delete: You can delete users from a WorkflowGen directory through synchronization. In this mode, the user is deleted when they are present in the WorkflowGen directory but not in the directory to be imported.

Group synchronization type: There are three synchronization modes: **Add only** allows only new groups to be imported, **Add and modify** allows data for existing groups to be updated, and **Add, modify and delete**

has an additional function that enables archiving of WorkflowGen groups that are not included in the imported directory.

New user default status: This option defines the default status of new user accounts that are created during the synchronization. Set the status to **Active** if you want a new user account to be activated by default. Set the status to **Inactive** if you want to manage a new user account activation manually, or to enable the user self-activation feature. This is recommended for clients who are using the per-user license mode.

Self-activation: This option allows an inactive new user account to activate itself when logging into WorkflowGen for the first time. The 'Inactive' new user default status option must be selected in order to use this option.

If a user is deleted: In order to provide proper user tracking in WorkflowGen, when a deletion request is generated, users that have performed actions are not actually deleted: you have the choice to either deactivate them or archive them. Once archived, the user will retain his or her unique internal ID, but their username will be renamed with an "archive" suffix and sequence number.

Launching mode: Triggering can occur manually (using the **Synchronize** button) or automatically.

Manual: Manual synchronization makes it possible to perform synchronization on an on-demand basis only. To do this, click the **Synchronize** button on the synchronization file concerned.

Test: This mode has the same running mode as manual synchronization, except that processing is, in reality, not performed. Instead, it is only simulated in order to anticipate if synchronization will take place correctly or not. To do this, click the **Test** button. A synchronization test is logged in the same way as a real synchronization.

Automatic: Data synchronization can take place automatically. In this case, a scheduled task analyzes the configuration of all the synchronizations on a daily basis, and subsequently runs the process.

Frequency: If synchronization is performed automatically, you can choose the frequency for synchronization. This can be every day, once a week, or once a month. For automatic synchronization, see **Configuration panel** on page 24 to set specific dates and times for the operation.

Active Directory connector

Overview

The purpose of the connector is to import users and groups from Active Directory into a WorkflowGen directory. The connector operates with the LDAP protocol using ADSI (Active Directory Service Interface). Access to Active Directory is read-only.

Requirements

Read-only LDAP access to Active Directory is required for an anonymous account or for an account that has access to the AD server.

If the Active Directory server is located behind a firewall, the LDAP protocol must be open.

You can use the utility tool ADSVIEW provided in the setup package to check that your LDAP path refers to the correct container to retrieve the users and groups of your directory.

LDAP path

The connector needs an LDAP path in order to retrieve the data in Active Directory. This path consists of:

- The protocol: "LDAP://", in this case.
- The name of the server or its IP address.
- Optionally, the port separated from the name of the server with " **:** " (colon). Default: 389
- The path in the server's LDAP tree-structure.

In order to run the query that is needed to synchronize the users, the Organization (O) and the Organizational Units (OU) must be specified starting from the bottom upwards, preceding them with "DC=" and separating them with " **,** " (comma).

Example:

An Active Directory structure is as follows:

- **Top level Domain (DC):** thecompany.com
- **Organization unit (OU):** group within the domain: BusinessUnit2
- **Sub-unit (OU):** sub-group within the domain: IT Department

In order to access users and groups of "IT Department", the LDAP path would be

"LDAP://servername:port/OU=IT Department,OU=BusinessUnit2,DC=thecompany,DC=com".

The LDAP path does not support the " **.** " operator, but it does support spaces. Therefore, the ".com" is identified by the DC=com operator.

Important notes:

- CN is also supported as a container type.
- Only one branch of the directory can be associated with a given directory. If multiple OUs at the same level must be queried, then the parent of both OUs must be queried, or two directories created. For example, if the structure /Company/Department1 and /Company/Department2 and /Company/Department3 exists, and only departments 1 and 2 must be queried, then either the entire /Company OU should be specified (all three department OUs will be synchronized), or two separate synchronization directories should be created each with one OU specified.
- LDAP query filters are not supported.
- The group query is inherently the same as the user query.
- Groups and users linked to them must exist within the same LDAP path, otherwise mismatched group/user combinations will be excluded from the synchronization and appear as errors in the synchronization log. This typically occurs when AD groups are defined as CNs within an OU that point to users that are in fact defined in other OUs outside the scope in the LDAP path provided.
- For example, this situation will arise if the LDAP path is defined to link only to the /Company/Department1 OU, and within this OU the /Company/Department1/Team1 group points to

users in /Company/Department2. In this case, it is recommended to either choose an LDAP path that includes all OUs that are involved in the groups, or to use the "LDAP" connector type instead to create more refined individual user/group queries and filters.

Data to import

Synchronization is performed for users. However, it is also possible to synchronize groups, and consequently group user memberships. You can import data directly from the OU or the container that is the target path. You can retrieve data from the child containers by activating the **Deep search mode**.

Synchronization fields

The default synchronization fields are set as follows:

- **Users:** System identifier
- **Groups:** name (sn)

Retrieving Active Directory data

The information is retrieved in Active Directory using the LDAP path. As such, it provides an in-depth access to the data by targeting the OU from which the users and groups are to be retrieved.

The tables below list the correspondence between the key-entry fields for a user and the field names with Active Directory. These mappings may be edited by clicking the **Edit mapping** button in the directory editing page.

Users

Field	Active Directory default mapping
Username	sAMAccountName
Password	userPassword
Name	sn
First name	givenName
Email	mail
Default time zone	(none)
Manager	manager
Phone	telephoneNumber
Mobile	mobile
Fax	facSimileNumber
Pager	pager
Office	physicalDeliveryOfficeName
Department	department
Company	company
Job title	title
Employee type	employee Type

Initials	initials
Title	personalTitle
Employee number	employeeID
Postal address	postalAddress
Zip code	postalCode
city	l
State/Area	st
Country	co
LDAP path	ADsPath
Display name	distinguishedName
Distinctive name	cn
Extended attribute 1	extensionAttribute1
Extended attribute 2	extensionAttribute2
Extended attribute 3	extensionAttribute3
Extended attribute 4	extensionAttribute4
Extended attribute 5	extensionAttribute5
System identifier	objectSid

Groups

Field	Active Directory default mapping
Name	sAMAccountName
Description	Description
Email	mail
Group code	groupCode
LDAP path	AdsPath
Display name	cn
Distinctive name	DistinguishedName
System identifier	objectSid

LDAP connector

Overview

The purpose of the LDAP connector is to import users and groups from a generic LDAP directory (e.g. AD, Sun ONE, ADAM, etc.) into a WorkflowGen directory. The connector operates with the LDAP protocol and the connection is performed as read-only.

Requirements

Read-only LDAP access is required for an anonymous account or for an account that has access to the LDAP server. If the LDAP server is located behind a firewall, the LDAP protocol must be open.

User and group synchronization queries

The connector needs an LDAP query in order to retrieve the data in the directory. This query consists of:

- The protocol: "LDAP: //", in this case.
- The name of the server or its IP address.
- Optionally, the port separated from the name of the server with " **:** ". The default port is 389.
- The top level domain.
- The LDAP query and/or filters.

Examples:

An LDAP structure is as follows:

- **Top level Domain (DC):** thecompany.com
- **Organization unit (OU):** group within the domain: BusinessUnit2
- **Sub-unit (OU):** sub-group within the domain: IT Department

In order to access users and groups of "IT Department", the LDAP queries would be (assuming an Active Directory LDAP structure):

User

LDAP://servername:port/DC=thecompany,DC=com;(&(objectCategory=person)(objectClass=user)(|(memberOf=CN=IT Department,OU=BusinessUnit2,DC=thecompany,DC=com) (!(userAccountControl:1.2.840.113556.1.4.803:=2)));adsPath,OBJECTSID,sAMAccountName,sn,GivenName,mail,telephoneNumber,mobile,pager,facSimileTelephoneNumber,department,company,EmployeeType,EmployeeId,title,initials,postalAddress,postalCode,physicalDeliveryOfficeName,st,L,co,manager;subtree

Group

LDAP://servername:port/DC=thecompany,DC=com;(&(objectClass=group));adsPath,objectSid,sAMAccountName,Description;subtree

To use a specific CN referencing two groups, the following query filters may be used:

User

LDAP://servername:port/DC=thecompany,DC=com;(&(objectCategory=person)(objectClass=user)(memberOf=CN=TheSpecificCN,OU=LowestOU,OU=HigherOU,DC=the company,DC=com)(!(userAccountControl:1.2.840.113556.1.4.803:=2)));adsPath,OBJECTSID,sAMAccountName,sn,Give nName,mail,telephoneNumber,mobile,pager,facSimileTelephoneNumber,department,company,EmployeeType,EmployeeId,title,initials,postalAddress,postalCode,physicalDeliveryOfficeName,st,L,co,manager;subtree

Group

LDAP://intellera/dc=intellera,dc=com;(&(objectClass=group)(|(sAMaccountName=Group1)(sAMaccountName=Group2)));adsPath,objectSid,sAMAccountName,Description;subtree

Important notes:

- Only one user and group query can be associated with a given directory. If multiple OUs at the same level must be queried, then the parent of both OUs must be queried, two directories created, or a specific query filter devised that includes both OUs.

  For example, if the structure /Company/Department1 and /Company/Department2 and /Company/Department3 exists, and only departments 1 and 2 must be queried, then either the entire /Company OU should be specified (all the department OUs will be synchronized), or a specific filter must be devised that queries only those two OUs.

- Groups and users linked to them must exist within the same LDAP path, otherwise mismatched group/user combinations will be excluded from the synchronization, and appear as errors in the synchronization log. This typically occurs when AD groups are defined as CNs within an OU that point to users that are in fact defined in other OUs outside the scope in the LDAP path provided.

  For example, if the LDAP path is defined to link only to the /Company/Department1 OU, and within this OU the /Company/Department1/Team1 group points to users in /Company/Department2, this situation will arise. In this case, it is suggested to choose a user query that includes all OUs that are involved in the groups.

References

See the following web pages for additional samples of generic LDAP queries:

http:/www.petri.co.il/ldap_search_samples_for_windows_2003_and_exchange.htm

http://msdn2.microsoft.com/en-us/library/aa746475.aspx

http://technet.microsoft.com/en-us/library/aa996205.aspx

Data to import

Synchronization is performed for users. However, it is also possible to synchronize groups, and consequently, group user memberships.

You can import data directly from the OU or the container that is the target path. You can also retrieve data from the child containers by activating the Deep Search Mode.

Synchronization fields

The default synchronization fields are set as follows:

Users: System identifier
Groups: name (sn)

Retrieving Active Directory data

Below is a table of correspondence between the key-entry fields for a user and the field names with Active Directory. These mappings may be edited by selecting the **Edit mapping** button on the directory editing page.

Users

Field	LDAP default mapping
Username	sAMAccountName
Password	(none)
Name	sn
Firstname	givenName
Email	mail
Default time zone	(none)
Manager (must be a valid username)	manager
Phone	telephoneNumber
Mobile	mobile
Fax	facSimileNumber
Pager	pager
Office	physicalDeliveryOfficeName
Department	department
Company	company
Job title	title
Employee type	employee Type
Initials	initials
Title	personalTitle
Employee number	employeeID
Postal address	postalAddress
Zip code	postalCode
city	l
State/Area	st
Country	co
LDAP path	ADsPath
Display name	distinguisedName
Distinctive name	cn

Extended attribute 1	extensionAttribute1
Extended attribute 2	extensionAttribute2
Extended attribute 3	extensionAttribute3
Extended attribute 4	extensionAttribute4
Extended attribute 5	extensionAttribute5
System identifier	objectSid

Groups

Field	LDAP default mapping
Name	sAMAccountName
Description	Description
Email	mail
Group code	groupCode
LDAP path	AdsPath
Display name	cn
Distinctive name	DistinguishedName
System identifier	objectSid

Text

Overview

The purpose of the connector is to import users and groups using text files into a WorkflowGen directory.

Requirements

The TEXT connector requires three different text files:

- **User:** One text file that contains the data related to the users to synchronize.
- **Group:** One text file that contains the data related to the groups to synchronize.
- **Usergroup:** One text file that contains the relationships between the users and the groups according to the selected synchronization fields.

Data to be imported

Synchronization takes place for the users, but it can also be activated for groups. To do this, check the corresponding box in the synchronization configuration sheet.

Selecting files

Since files to be imported have a standard suffix, use Filepath and key in the path followed by the part that is common to the names of the three files.

Example:

If you decide to name your import "importWorkflowGen" and you have saved it to the "C:\Extract\" directory, you will need to have the "importWorkflowGen_USER.txt" file in this directory. If you want to perform group synchronization as well, you also need the "importWorkflowGen_GROUP.txt" and "importWorkflowGen_USERGROUP.txt" files. When setting the parameters for synchronization, once you have chosen the "Text" connector, enter "C:\Extract\importWorkflowGen" in "Filepath".

Text file names

Data import files must have suffixes as described in the following manner:

- The user file must end with "_USER.txt".
- The group file must end with "_GROUP.txt".
- The group user member file must end with "_USERGROUP.txt".

The rest of the file name must be the same for the three files.

Text file structure

Text files begin with a line listing each of the property names separated with a character that is defined as a constant in the connector file. Each line then corresponds to a record, such as a user, with the values also separated by the delimiting character. If a property is empty, it must nevertheless be delimited by the separating character. The default delimiter is " **;** ".

Note: The " **,** " (comma) separator cannot be used on a server that uses this character as a decimal separator, such as a French server.

The group user member file only has two fields: synchronization fields for groups and for users. These fields are chosen in the **Synchronization module**. As well, it is possible to prefix the names of these fields in order to avoid cases where a field name for synchronizing users is the same as that for groups. Setting these parameters takes place in the **Configuration panel** of the **Administration module** (when setting the Active Directory synchronization values).

For example, if the user synchronizing field is "Username" and the field for the groups is name, the file must contain the "GROUP_sAMAccountName" and "USER_sAMAccountName" fields.

ADS path

With text files exported from Active Directory, the connector needs the LDAP path in order to allow it to rebuild the ADSPATH property for the users.

List of properties

The following is the list of properties that are needed for synchronizing users, with their equivalents in WorkflowGen. These mappings define the column names in the text file and may be edited by selecting the **Edit mapping** button in the directory editing page.

Users

Field	Text default mapping
Username	sAMAccountName
Password	(none)
Name	sn
Firstname	givenName
Email	mail
Default time zone	(none)
Manager (must be a valid username)	manager
Phone	telephoneNumber
Mobile	mobile
Fax	facSimileNumber
Pager	pager
Office	physicalDeliveryOfficeName
Department	department
Company	company
Job title	title
Employee type	employee Type
Initials	initials
Title	personalTitle
Employee number	employeeID
Postal address	postalAddress
Zip code	postalCode
City	l
State/Area	st
Country	co
LDAP path	(none)
Display name	(none)
Distinctive name	(none)
Extended attribute 1	(none)
Extended attribute 2	(none)
Extended attribute 3	(none)
Extended attribute 4	(none)
Extended attribute 5	(none)
System identifier	(none)

Groups

Field	Active Directory default mapping
Name	sAMAccountName

Description	Description

User groups

These are the required fields for the group user member file:

- Synchronization field name for groups (e.g. GROUP_ SAMAccountName)
- Synchronization field name for users (e.g. USER_ SAMAccountName)

Active directory export text file

You can generate an export text file for user data by using the following command:

```
csvde –f file.csv –s SERVERNAME –d "OU=myOu,DC=TEST,DC=FR" –p subtree –r "
(objectClass=OrganizationalPerson)" –l
"ADsPath,cn,displayName,givenName,sn,sAMAccountName,mail,
telephoneNumber,mobile,pager,facSimileTelephoneNumber,physicalDeliveryOfficeName,department
,company, initials,title,employeeID,employeeType,postalAddress,postalCode,l,st,co,personalTitle"
```

In this case "SERVERNAME" is the name of the server hosting the directory, "file.CSV" is the name of the resulting text file, and "OU=myOu,DC=thecompany,DC=com" is the path to the container in which you want to put the list of users.

To execute this synchronization automatically, this data export process must be added to the task scheduler before the synchronization script is run. To add a task, see the Administrator documentation for the **Synchronization module**. This method does not allow groups to be synchronized.

Examples of text files

User file

```
sn;givenName;sAMAccountName;mail;
"USER1-01";"Paul Smith";"psmith";"paul.smith@mycompany.com";
"USER1-02";"John Doe";"jdoe";"john.doe@mycompany.com";
"USER1-03";"Jack Ryan";"jryan";"jack.ryan@mycompany.com";
"USER1-04";"Ted Graham";"tgraham";"ted.graham@mycompany.com";
```

Group file

```
sAMAccountName;Description
"HR";"GRP1-01"
"IT";"GRP1-02"
```

User group file

```
GROUP_sAMAccountName;USER_sAMAccountName
```

```
GROUP_sAMAccountName;USER_sAMAccountName
"HR";"psmith"
"HR";"jdoe"
"IT";"jryan"
"IT";"tgraham"
```

Synchronization logs

Overview

Each synchronization, whether manual or automatic, is logged and available to be viewed by Administrators only, in the **Synchronization logs** option in the **Directories** menu.

By default, 31 days of logs are maintained. This parameter can be changed by an Administrator in the **Configuration panel**.

Each log provides the details of each synchronization action performed, including listing all users and groups added, modified, or deleted (archived). This also includes warnings (such as a missing email) and errors (such as a missing last name). Log files can be viewed or deleted.

Location of log files

Log files can be found on the WorkflowGen server under the "/wfgen" application folder at the following location:

/wfgen/App_Data/LogFiles/Dir/Synchro

Global information

Overview

Global information relates to information that can be used by all processes:

Participants represent the company's organization in the management and execution of processes.

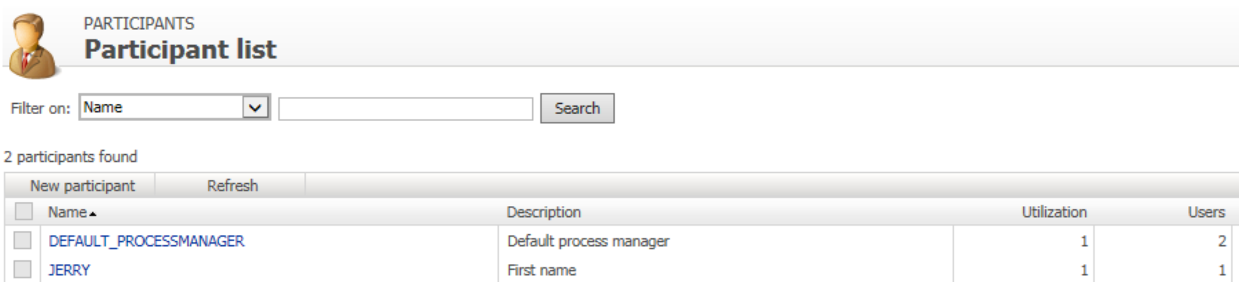
Applications are the definitions of workflow applications called by WorkflowGen to execute human or system actions.

Categories are keywords associated to processes for search and sort purposes in the user portal only.

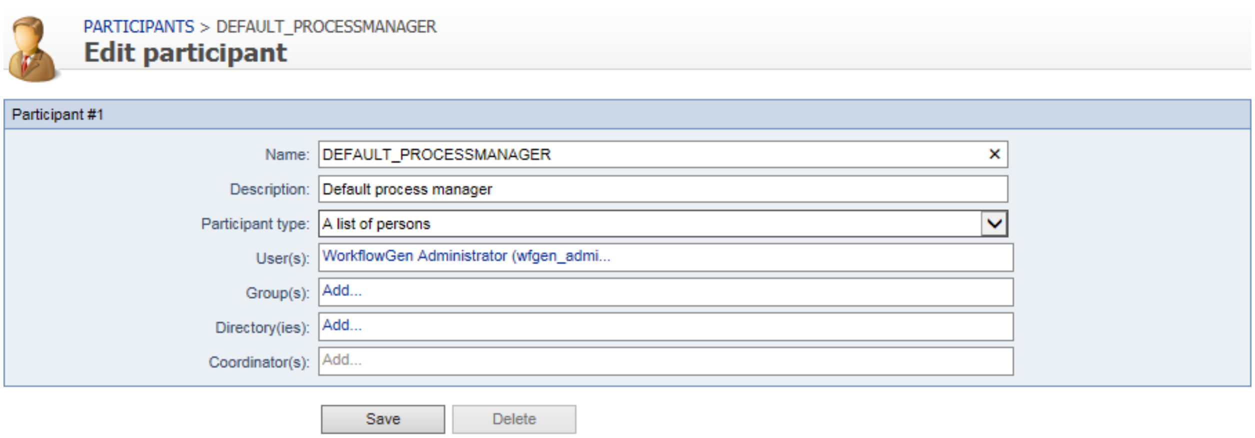
Global information can only be managed by users with a WorkflowGen Administrator profile.

Participants

Participant list



Participant screen



Menu banner

Links	Remarks
New participant	Displays a blank participants form to add a new delegation
Refresh	Refreshes the participant list displayed

Filters

Filter on *	Remarks
Name	Filters by participant name
Description	Filters by participant description

* A filter can be applied to a part of a field.

Participant list

Columns	Remarks
Name	Participant's name A link displays the participants form in edit mode.
Description	Participant description
Utilization	Number of processes the participant belongs to, added to the number of files the participant is a manager of
Users	Number of potential users of the participant

Participant form

Fields	Remarks
Name	**Required field** Unique identifier for the participant, must respect nomenclature and be limited to 30 characters
Description	**Required field** Participant description limited to 255 characters
Participant type	**Required field** Type of participant defining possible associations to the directory: • Person • List of persons • List of persons with coordinator(s)
User(s)	List of users associated to a participant A link allows associated users to be added or deleted.
Group(s)[1]	List of groups associated to a participant A link allows associated groups to be added or deleted.
Directory(ies)[1]	List of directories associated to a participant A link allows associated directories to be added or deleted.
Coordinator(s)[2]	List of coordinators associated to a participant A link allows associated coordinators to be added or deleted.

1. Accessible only to participants of the **List of persons** and **List of persons with coordinator** type.
2. Accessible only to participants of the **List of persons with coordinator** type.

Directory associations

Fields	Remarks
Name *	Filters by person’s name
Available	List of possible associations to the directory
Selected	List of existing associations to the directory

* Visible only if associated with a user or a coordinator and if the number of users in the database is higher than the limit set by the software administrator.

A **Person** type participant is associated with a single user.

A **List of persons** type participant is associated to one or more users and/or groups and/or directories.

A **List of persons with coordinator** type participant is associated with one or more coordinators, and to one or more users and/or groups and/or directories.

When adding users, groups, and directories to a participant, note that the list is ***cumulative*** in that adding 3 users, 2 groups, and 4 directories will result in a list of users that contain the sum of those users, groups, and directories.

A group or directory does not need to be specific to add users that belong to those groups or directories; adding those groups or directories will result in adding ***all*** the users that are part of those groups and directories to the participant list.

Changing the participant type

The following matrix shows the conditions allowing a change to a participant type.

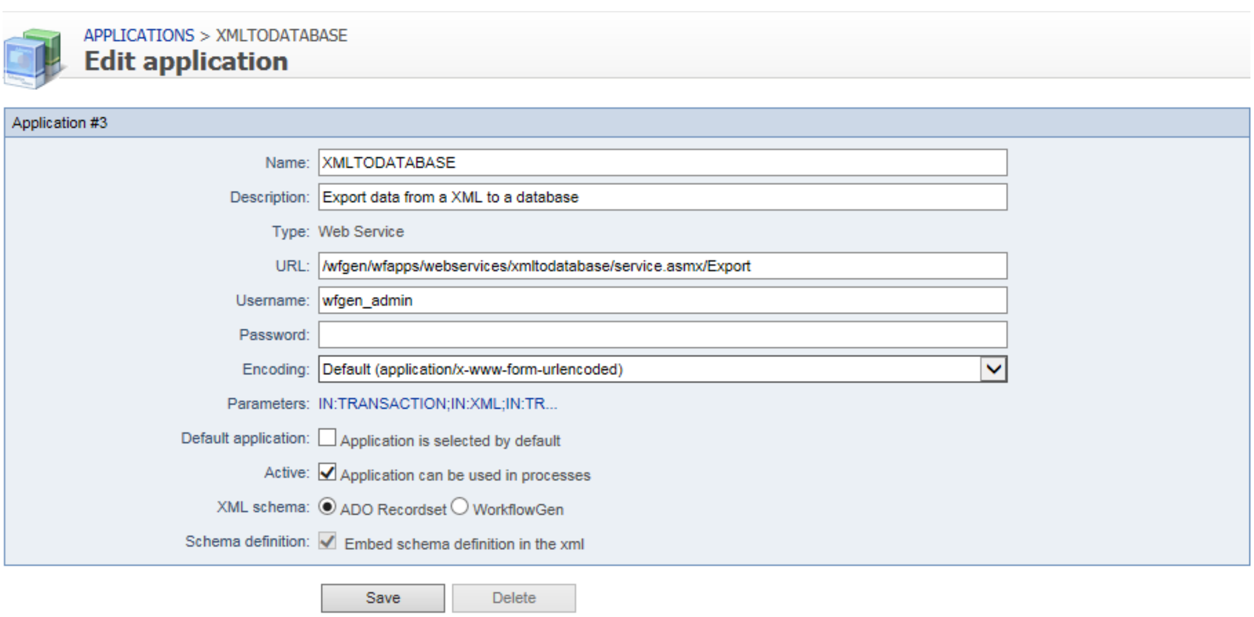
		New Type		
		Person	List of persons	List of persons with coordinator
Current Type	Person		The participant is not used in a process action	The participant is not used in a process action
Current Type	List of persons	A single user is associated with the participant The participant is not used in a process action		Add at least one coordinator
Current Type	List of persons with coordinator		The participant is not used in a process action where the assignment is made by the coordinator	

Deletion

A participant cannot be deleted if the person (or persons) is part of a process or is a process/folder manager.

Applications

Application screen



Menu banner

Links	Remarks
New application *	Displays a blank application form to add a new application
Refresh	Refreshes the displayed application list

* Only available in the Advanced and Enterprise editions.

Filters

Filter on *	Remarks
Name	Filters by application name
Description	Filters by application description

* A filter can be applied to a part of a field.

External filters	Remarks
Actives only	Displays active applications only

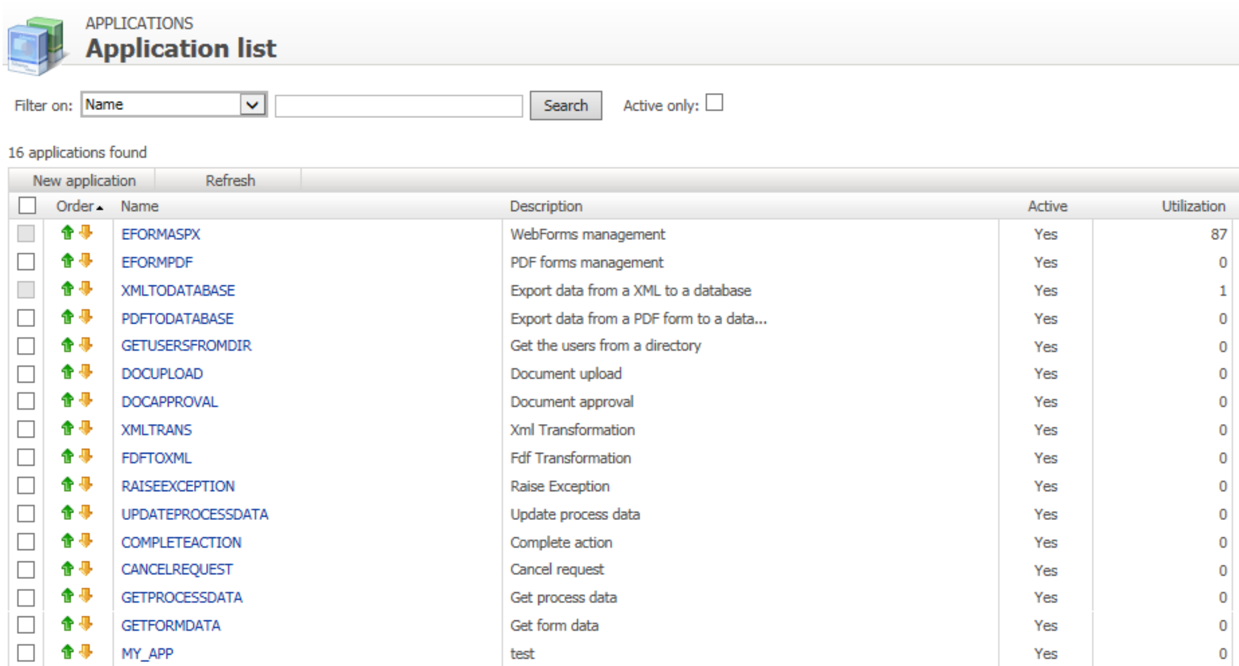
Application form

Fields	Remarks
Name	**Required field** Unique identifier for the application; must respect nomenclature and be limited to 30 characters
Description	**Required field** Application description limited to 255 characters
Type	Application type: • Assembly • Asynchronous Web Procedure • WCF Service • Web application • Web procedure • Web service
URL	**Required field** Both the relative or absolute URL of the application will work
WSDL	The WSDL URL to define a WSDL-based web service (if applicable) See **WSDL web services** on page 72 for details on WDSL-based web services.
Username *	Username to be used if an authentication is required to access the application's URL
Password *	Password to be used if an authentication is required to access the application's URL

Encoding	Type of data encoding to be used when the application returns to WorkflowGen: • Default (application/x-www-form-urlencoded) • Upload (multipart/form-data) • application/xml; charset=UTF-8
Parameters	Application parameters A link displays the parameters form in edit mode.
Default application	If checked the application is the default one
Active	If checked the application is active
XML schema	Choose between an ADO recordset or WorkflowGen schema types
Schema definition	If checked the schema will be embedded inline in the XML

* Only needed by the web procedures and the web services.

Applications list screen

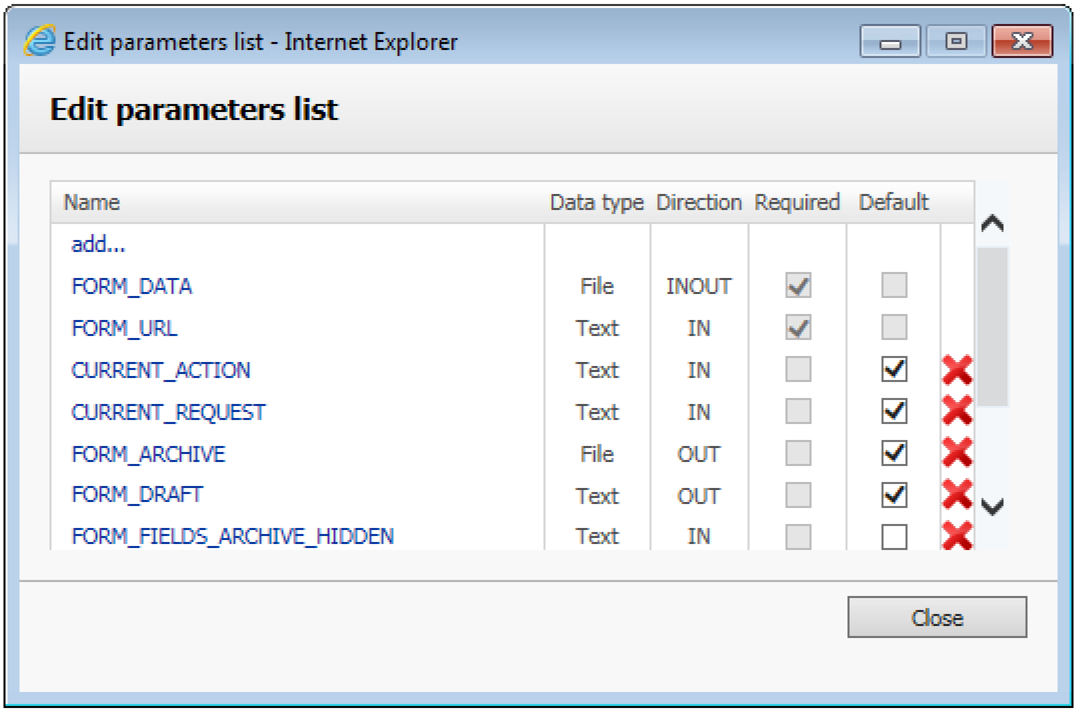


	Order	Name	Description	Active	Utilization
		EFORMASPX	WebForms management	Yes	87
		EFORMPDF	PDF forms management	Yes	0
		XMLTODATABASE	Export data from a XML to a database	Yes	1
		PDFTODATABASE	Export data from a PDF form to a data...	Yes	0
		GETUSERSFROMDIR	Get the users from a directory	Yes	0
		DOCUPLOAD	Document upload	Yes	0
		DOCAPPROVAL	Document approval	Yes	0
		XMLTRANS	Xml Transformation	Yes	0
		FDFTOXML	Fdf Transformation	Yes	0
		RAISEEXCEPTION	Raise Exception	Yes	0
		UPDATEPROCESSDATA	Update process data	Yes	0
		COMPLETEACTION	Complete action	Yes	0
		CANCELREQUEST	Cancel request	Yes	0
		GETPROCESSDATA	Get process data	Yes	0
		GETFORMDATA	Get form data	Yes	0
		MY_APP	test	Yes	0

Applications list

Columns	Remarks
Order	Display the application in order list
Name	Application name A link displays the application form in edit mode.
Description	Application description
Active	Application is active
Utilization	Number of actions in which the application is used

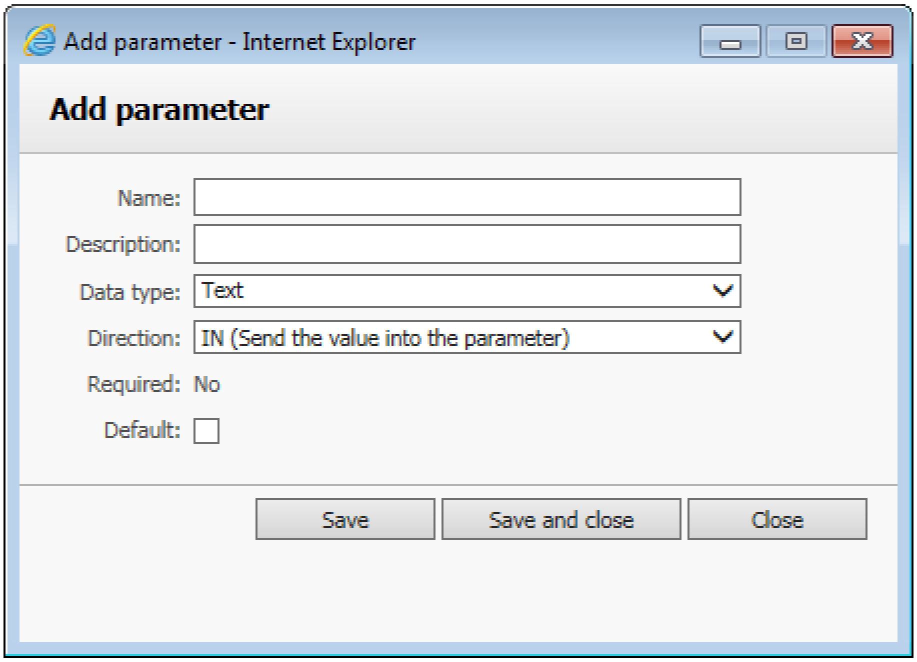
Edit parameters list screen



Columns	Remarks
Name	Application parameter name
Data type	Application parameter data type
Direction	Application parameter direction
Required	Required parameter
Default	Optional parameter; displays the parameter in the parameter list of the actions based on the current application by default
Deletion *	Link to delete the application parameter

* The delete link is identified by a red **x** visible only if the application is not used by a process action.

To add a parameter, click the **Parameters** link on the **Edit application** screen, then click **Add** on the **Edit parameters list** screen.



Add application parameters

Fields	Remarks
Name	**Required field** Application parameter name
Description	**Required field** Application parameter description
Data type	Application parameter data type: • Text • Numeric • Date/Time • File
Direction	Application parameter directions: • IN: Input • OUT: Output • INOUT: Input/Output
Required	Is this parameter required? • Yes (disables the default property) • No (enables the default property)
Default	If checked, the parameter is displayed in the parameter list of the action based on the current application

Deleting an application

An application cannot be deleted if it is used in a process.

Deleting a parameter

A parameter cannot be deleted if its application is used in a process.

Assembly application

This application allows you to declare a .NET class method as a workflow application. It is the fastest solution to develop a custom workflow application (compared to web services). The execution performance is exceptional because WorkflowGen instantiates the Assembly directly without network communication or web service authentication.

Example:

1. Copy a sample .DLL assembly into a WorkflowGen bin folder.
2. In the **Administration module**, click **Applications** and then **New application**.
3. Enter the following information in the appropriate fields:
    i. **Name:** SAMPLE_GET_STRING
    ii. **Description:** Returns a string with a **!** (exclamation point)
    iii. **Type:** Assembly
    iv. **Assembly full name or path:** WorkflowAppSample
4. Click **Save**.

    Class full name: Select "WorkflowApp.Test"
    Method: Select "GetString"

These parameters are automatically generated:

> IN message (Text)
> OUT RETURN_VALUE (Text)

You can now use this workflow application in your process.

WCF service application

This application allows you to declare a WCF service client proxy .NET class method as a workflow application.

Example:

1. In the WorkflowGen **Administration module**, click **Applications** and then **New application**.
2. Enter the following information in the appropriate fields:
    i. **Name:** WCFSERVICE_SAMPLE_GET_STRING
    ii. **Description:** Returns a string with a " **!** " (exclamation mark)

iii. **Type:** WCF service

iv. **Assembly full name or path:** WorkflowAppWCFSampleTest

4. Click **Save**.

   Class full name: Select "workflowAppWCFSampleTest.ServiceClient"
   Method: Select "GetString"

These parameters are automatically generated:

   IN message (Text)
   OUT RETURN_VALUE (Text)

You can now use this workflow application in your process.

   Name: WCFSERVICE_SAMPLE_GET_STRING

WSDL web services

Overview

WorkflowGen supports web services based on the SOAP standard. This means that web services can now be integrated into WorkflowGen to be used by process actions, without the need to program them. WorkflowGen can now use predefined web services and reference them by using their WSDL (Web Services Description Language) file.

A URL to the WSDL file defining the web service is required to display the available web methods that can be called by WorkflowGen. Once the WSDL is referenced and saved (in the WorkflowGen application definition), and one of its defined web methods are selected, the WorkflowGen application parameters are automatically generated.

The data types of the parameters are mapped to the corresponding WorkflowGen data types (numeric, text, datetime). All complex XML types are mapped to a WFG file data.

Public web services

Public web services are web services that are available for public re-use. To reference one as a WorkflowGen Application, follow the example below.

Create a WSDL web service

1. In the **Administration module**, create a new WorkflowGen application and define the following:

   i. Name

   ii. Description

   iii. Type: Web service

   iv. Username: [a valid WorkflowGen Administrator]

   v. Password: [the valid password for the username]

2. Reference a web service and WSDL: define a URL to a valid web service and to its related WSDL file and save the application.

   - URL example: http://quickstarts.asp.net/QuickStartv20/webservices/Samples/MathService/vb/Server/MathService.asmx

   - WSDL example: http://quickstarts.asp.net/QuickStartv20/webservices/Samples/MathService/vb/Server/MathService.asmx?WSDL

3. Select the web method to use. The WSDL defines which web methods are available to be used. Once you select a web method and save the application, the associated parameters are automatically mapped and the application may now be used by process actions.

Private web service example

Overview

Private web services are web services that are not available for public re-use. They generally use a secure URL that requires the proper authentication. To reference one as a WorkflowGen application, follow the example below.

Create a WSDL web service

1. In the **Administration module**, create a new WorkflowGen application and define the following:

   i. Name

   ii. Description

   iii. Type: Web service

   iv. Username: [a valid WorkflowGen Administrator]

   v. Password: [the valid password for the username]

2. Reference a web service and WSDL: define a URL to a valid web service and to its related WSDL file and save the application.

   The examples below demonstrate the use of a web service located on a SharePoint 2007 web site. In this example, the web service is called "lists.asmx". For more information, see http://msdn2.microsoft.com/en-us/library/ms445760.aspx.

   - URL example: http://myspsserver/_vti_bin/lists.asmx

   - WSDL example: http://myspsserver/_vti_bin/lists.asmx?WSDL

3. Select the web method to use.

   The WSDL defines which web methods are available to be used. Once you select a web method and save the application, the associated parameters are automatically mapped and the application can now be used by process actions.

WSDL web service action: other parameters

Overview

WorkflowGen will create some extra parameters when referencing a WSDL. Other parameters can also be used in addition to those already defined in the WSDL file.

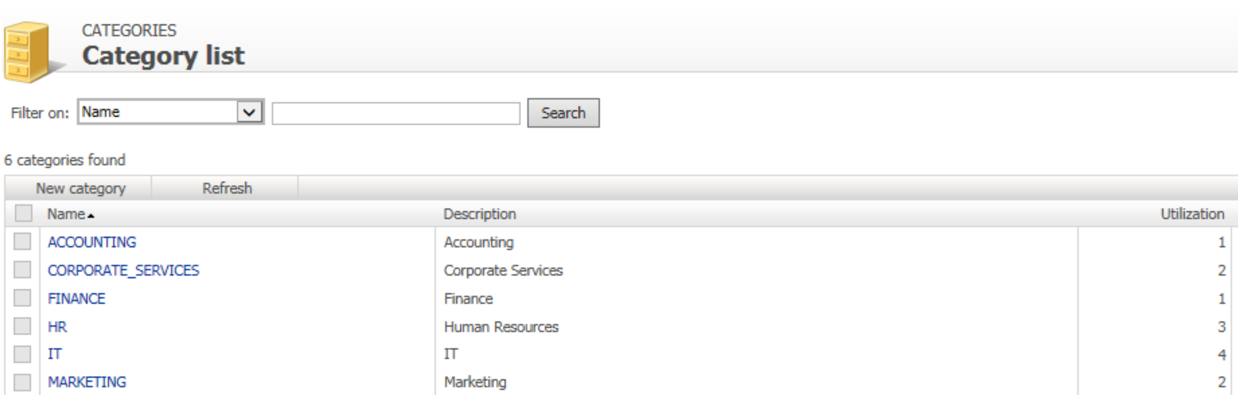
Other parameters

The other parameters that are defined by WorkflowGen are:

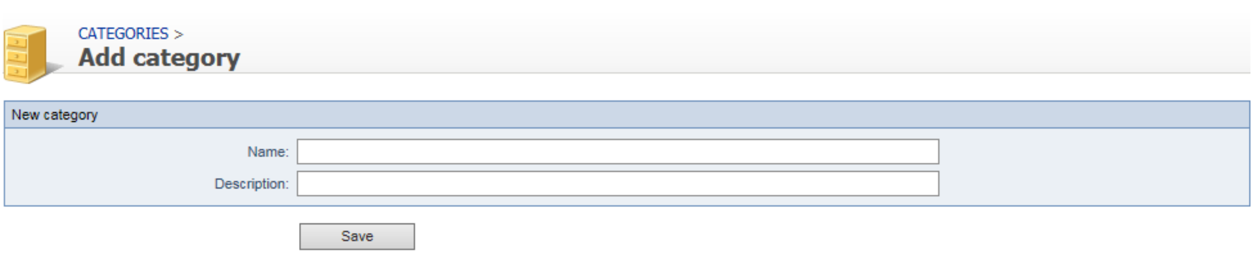
- **RETURN_VALUE:** If the web service returns a value, WorkflowGen will automatically add an OUT parameter.
- **WFG_WS_URL:** Specify a web service URL to override the predefined URL.
- **WFG_WS_USERNAME:** Specify a username to override the predefined username.
- **WFG_WS_PASSWORD:** Specify a password to override the predefined password.

Categories

Category list



Category screen



Menu banner

Links	Remarks
New category	Displays a blank categories form to add a new category
Refresh	Refreshes the displayed category list

Filters

Filter on *	Remarks
Name	Filters by category name
Description	Filters by category description

* A filter can be applied to a part of a field.

Categories list

Columns	Remarks
Name	Category name A link displays the category form in edit mode.
Description	Category description
Utilization	Number of processes listed in the category

Category form

Fields	Remarks
Name	**Required field** Unique identifier for the category; must respect nomenclature and be limited to 30 characters
Description	**Required field** Category description limited to 255 characters

Deletion

A category cannot be deleted if used by a process.

Global lists

Overview

The **Global lists** module allows authorized users to manage data lists from the administration web interface of WorkflowGen to be used with web forms.

Global lists management provides a solution to manage and centralize data to fill dropdown lists on your web forms.

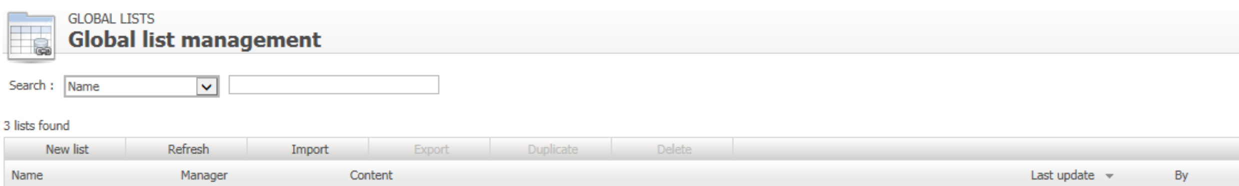
There is no limit to the number of items in a global list, which can have up to 20 columns. Good user interface performance depends on the number of cells (items × columns), and is optimized for at least 5000 cells (for example, 1000 items with 5 columns or 250 items with 20 columns).

The supported data types for columns are text, numeric, or date.

The data that populate a **Static global list** come from within the user interface.

The data that populate a **Dynamic global list** come from a database. The content of the list is updated each time the web form is executed.

Global lists screen



Menu banner

Links	Remarks
New list	Displays a blank categories form to add a new category
Refresh	Refreshes the global list
Import	Imports data from CSV or XML format into an existing list or as a new list This is useful to quickly fill data from file or copy/paste from clipboard.
Export	Exports data to CSV or XML file This is useful to export data for multiple environments (development, production, test, etc.).
Duplicate	Duplicates a global list
Delete	Delete a global list

Filters

Search	Remarks
Name	Filters on the list's name
Manager	Filters on the name of the manager of the list
Update date	Filters on the update date (period from/to)
Updated by	Filters on the last user who has updated the list (lastname or firstname).

Global lists list

Columns	Remarks
Name	Name of the list
Manager	None (no restriction) or the global participant authorized to update the list You can restrict the access to the global list to user(s) of a global participant.
Content	Number of items or a link to define the global list form
Last update	Date and time of the last update
By	Last user who has updated the list

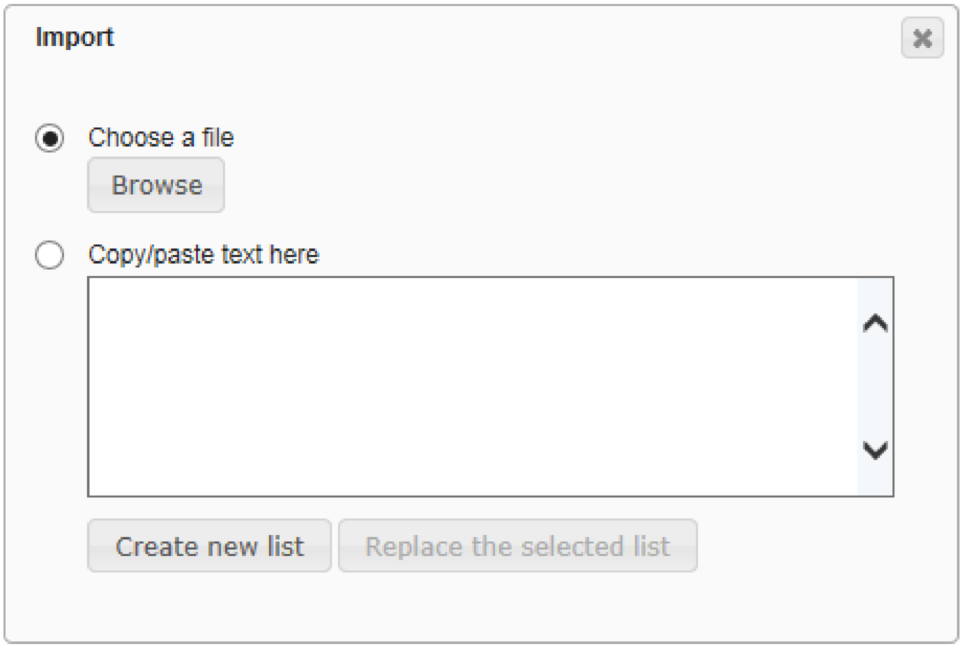
Global list form

Click the **Define** link to open the **Global list form**.

Tabs	Remarks
Items	Add static items into the list Items can be sorted by value or descriptive text. Translation languages can be chosen from a drop-down list.
Columns	Add columns (limited to 10 columns) Supported data types are: • Text • Numeric • Date By default, columns are Text (text data type) and Value (text data type).
Databind	Connection string to the bound database • Name of the connection string defined in the web.config file of WorkflowGen by the Administrator • Connection string to a database • SQL query (SELECT command) to retrieve data

Import data

You can import data into a global list from a file or a copy of your clipboard. The supported formats are WorkflowGen Global list XML or CSV.



The CSV format must be as follows:

```
COL_NAME[,...n]
["TEXT|NUMERIC|DATE"[,...n]]
VALUE[ ,...n]
```

Examples:

Importing text-only columns

By default, columns are considered as text data types; therefore, if all columns are text data types, it is not necessary to specify the data types.

```
iso,country
AD,Andorra
AE,United Arab Emirates
AF,Afghanistan
AG,Antigua and Barbuda
AI,Anguilla
```

Importing with numeric and/or date data types

In this case, the second line is used to set the columns' data types.

```
Id,iso,Country
NUMERIC,TEXT,TEXT
1,AD,Andorra
2,AE,United Arab Emirates
```

3,AF,Afghanistan
4,AG,Antigua and Barbuda
5,AI,Anguilla

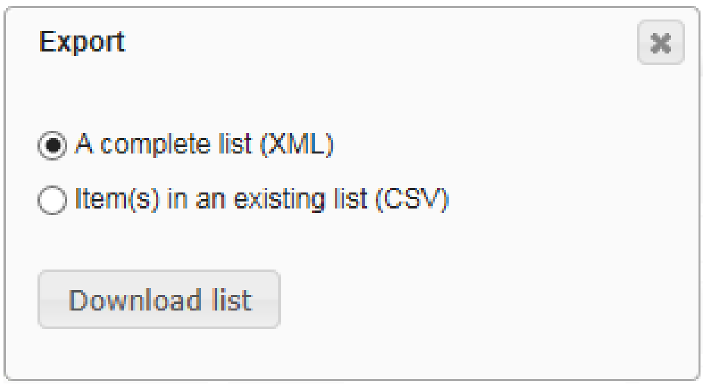
Importing with enclosed strings

To protect some data like double quotes, commas, etc., you can enclose the string with double quotes.

Id,Lastname,Firstname,Address,Birthday
NUMERIC,TEXT,TEXT,TEXT,DATE
1,DOE,John,"1111 N. Sample, Mt. Prospect, IL 60000","01/01/1980"

Export data

You can export data from a global list to a file. The supported formats are WorkflowGen Global list XML or CSV.



Process definition

Overview

Processes are organized in folders administered by managers. Only one folder level is possible in WorkflowGen.

A folder is assigned to a global participant. The persons who are part of that participant are known as folder managers or process managers. A manager may be one or more persons. However, the participant type **List of persons with a coordinator** cannot be used for the purpose of assigning folder managers.

Managers have full access to the process definition of their processes, but not to other folders or other administration features.

Users with a WorkflowGen Administrator profile have complete access to all folders and their associated processes.

A process can have several versions, but only one can be active at any one time for the purpose of launching new requests. Existing requests launched in prior versions continue to function with the older process definition until the requests are closed but the processes for those prior versions cannot, for the most part, be edited.

A process can be declared as a sub-process and then used in another process action as an independent or embedded sub-process (this is only available in the Advanced and Enterprise editions).

A process is made up of the following components:

- Participants (e.g. requester, actor)
- Relevant data (e.g. form, agreement, amount, etc,)
- Actions (e.g. find information, validate, process, wait)
- Transitions (e.g. next actions, conditions)
- Assignment method (e.g. automatic, manual, etc.)
- Notifications (e.g. assignment, closing, etc.)

The definition of a process involves building a number of rules. To simplify implementation, WorkflowGen groups process definition into several sections:

Process information

Information related to process creation (status, version, etc.) and general parameters (archiving, notification upon closing, process lead time).

Participant

Global participants selected or process specific participants that will take on the roles of either a requester, actor or process supervisor.

Data

Data that are used by the process per request and that are relevant and necessary to carrying out the process workflow.

Form

WYSIWYG built-in form designer to create the forms used by the workflow.

Workflow

Workflow definition that is made up of actions and their associated transitions, conditions, and exceptions.

Full screen / Exit full screen

Display or quit the process definition full screen mode.

Report

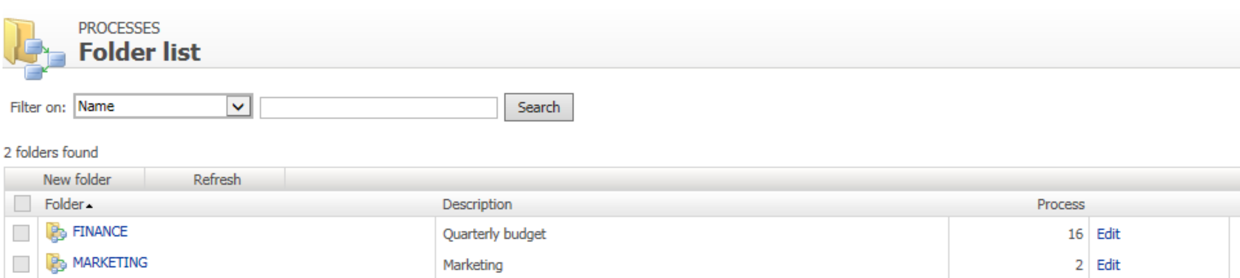
Provides both an overview and details of all parameters used in the process, and also provides a description of any workflow design errors. As well, the report shows summary usage statistics on the process.

Test

Allow testing the process if the status is set to **In test**. To be able to select the **Test** link, the process/folder manager must be one of the requesters of the process.

Folder

Folder list screen



Menu banner

Links	Remarks
New folder	Displays a blank folders form to add a new folder
Refresh	Refreshes the folder list displayed

Filters

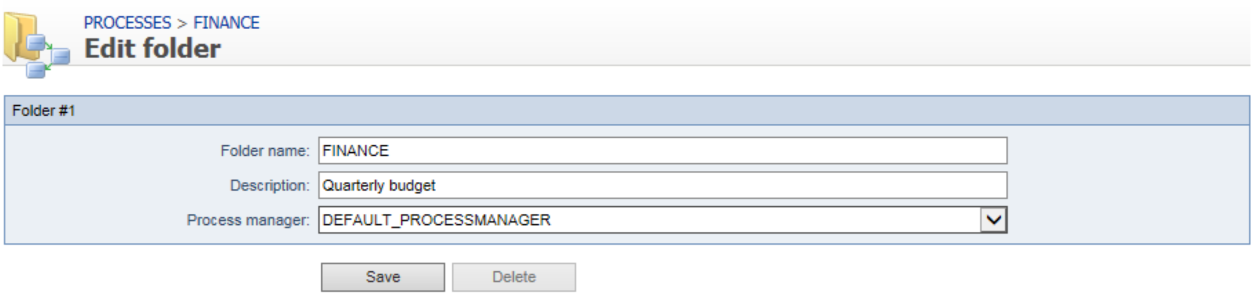
Filter on *	Remarks
Name	Filters by folder name
Description	Filters by folder description

* A filter can be applied to a part of a field.

Folders list

Columns	Remarks
Folder	Folder name A link displays the process list contained in the folder.
Description	Folder description
Process	Number of processes contained in the folder
Edit	Link to edit the folder information

Folder screen



Folder form

Fields	Remarks
Folder name	**Required field** Unique identifier for the folder; must respect nomenclature and be limited to 30 characters
Description	**Required field** Folder description limited to 255 characters
Process manager	**Required field** Name of the global participant managing the folder

Process manager

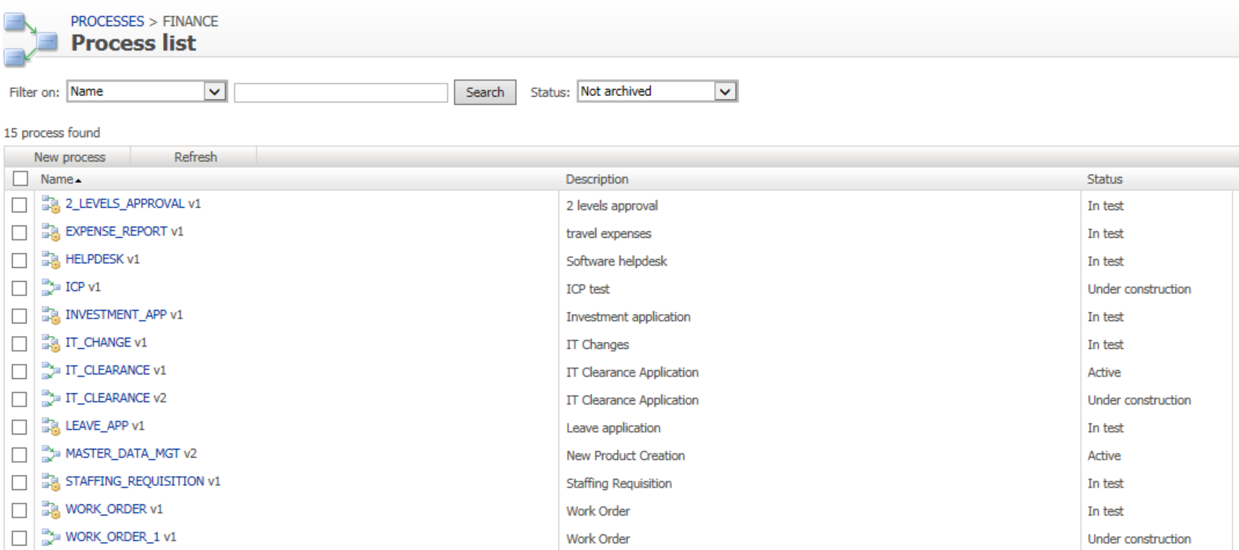
A process manager must be a **Person** or **List of persons** type global participant.

Folder deletion

A folder cannot be deleted if it contains processes.

Process list

Process list screen



Menu banner

Links	Remarks
New	Displays a blank process form to where you can add a new process
Refresh	Updates the process list
Process list	Displays process list

Filters

Filter on *	Remarks
Name	Filters by process name
Description	Filters by process description

* A filter can be applied to a part of a field.

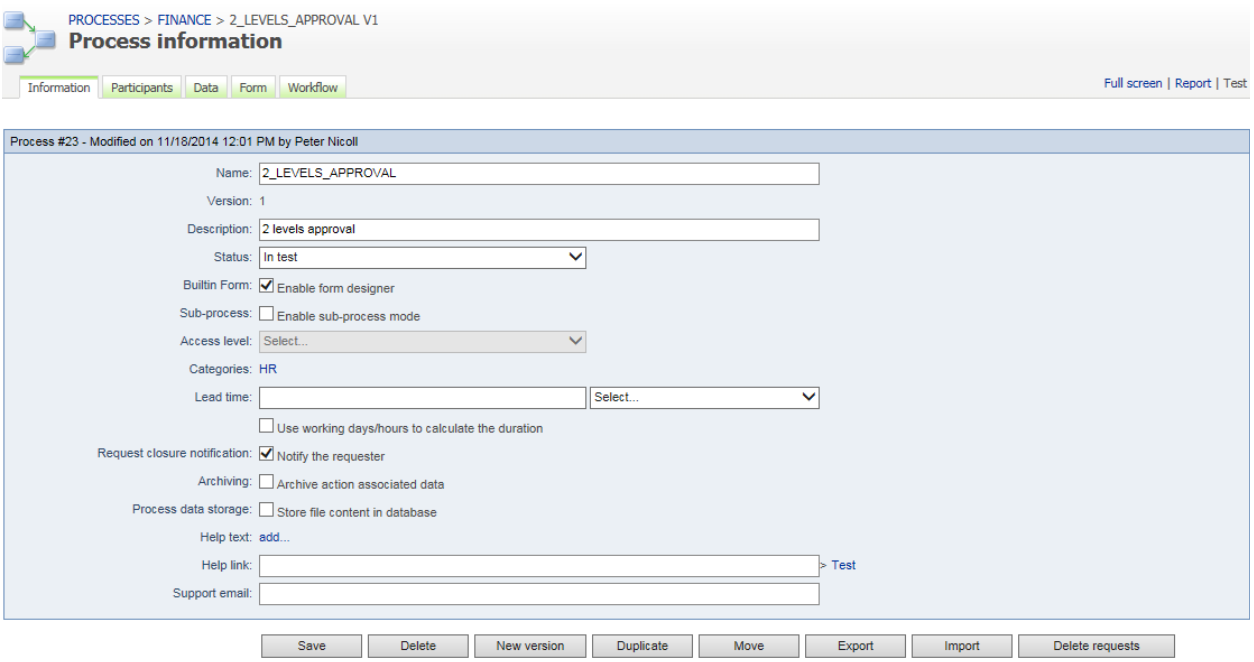
External filters	Remarks
Status	Filters by process status

Process list

Columns	Remarks
Name	Process name and version A link displays the process form in edit mode.
Description	Process description
Status	Process status

Process editing

Process information screen



Menu banner

Links	Remarks
Information	Displays the process form in edit mode
Participants	Displays process participant list
Data	Displays process data list
Form	Displays the form designer
Workflow	Displays process action list

Additional links

Links	Remarks
Full screen	Displays the contents of the different tabs in the menu bar in full screen
Report	Displays the process documentation and checks for the validity of the process definition
Test	Launches a new test request for this process

Process form

Fields	Remarks
Template	Selection of workflow template to be tested directly, customizable and usable in the "By default" list or in the "library" Default: • 2 levels approval • Parallel tasks • Simple approval • Simple request Library: • Expense report • Software helpdesk • Investment application • IT Changes • IT Clearance application • Leave application • New Product Creation • Work Order A customized workflow template can be created and deployed on the server with the following folder and file structure: \wfgen\App_Data\Templates\Processes\[language]\[folder name]\[process name]v[x].xml ***Example:*** \wfgen\App_Data\Templates\Processes \En\MyCompany\MY_PROCESSv1.xml **Note:** Only the processes with forms created with the built-in form designer can be used as workflow templates.
Name	**Required field** Unique identifier for the process; must respect nomenclature and be limited to 30 characters
Version	Process version number is read-only and automatically increments when creating new version
Description	**Required field** Process description limited to 255 characters

Status	Process status: • Active • In test • Under construction (default) • Archived
Built-in form: Enable form designer	Activate the built-in form designer
Sub-process: Enable sub-process mode[1]	Determines if the process can be used as a sub-process by another process or as a stand-alone process
Access level[1]	Required field if the sub-process option is checked If the process was declared as a sub-process, you can choose between two access levels: • Private: the process can only be instantiated by a parent process • Public: the process can be launched manually from the user module or instantiated by a parent process or an external application
Categories	Process categories list The **Add** link allows categories to be added or removed for the process.
Lead time	The amount of time before the process is considered late Units: • Years • Months • Days (takes into account the working days) • Hours (takes into account the working days and hours) • Minutes (takes into account the working days and hours) • Seconds (takes into account the working days and hours) You can choose the way the lead time will be calculated by checking (or not checking) the option **Use working days/hours to calculate the duration**.
Use working days/hours to calculate the duration	Calculate duration based on office hours
Request closure notification: Notify the requester	Send an email to the requester of the process upon closing the process (unchecked by default)
Archiving: Archive action associated with th data	Save the result of each request action at each step of the process (unchecked by default) If this option is not activated, all of the action history data and files are deleted once the request is closed and only the final data and files will be stored.
Process data storage[2]	Allow process file data (including attachments) to be stored in the database This allows you to perform online WorkflowGen data backup without interrupting service (WorkflowGen users can continue to work during the backup).
Help text	Process help text in the user module; the **Add** link allows this text to be edited
Help link	URL of an external help document on the process, visible in the user module

Test	Test the **Help** link in a new browser window
Support email	Email for process support which will be displayed in the user module

1. Only available in the Advanced and Enterprise editions.
2. Only available in the Enterprise edition.

Process actions

Functions	Remarks
New version	Creates a new version during process development This also allows the capability to create a new version from an XPDL definition file. The version number found in the XPDL will be kept if the version number was not already used for the current process; otherwise, it automatically increments.
Duplicate	Duplicates the current process definition as a new process
Move	Allows the process to be moved into a new folder
Export	Allows the process to be exported as an XPDL file
Import	Allows the process to be created from an XPDL file
Delete requests	Displays the dialog box for deleting requests

Deleting requests

Fields	Remarks
Request type	Type of requests to delete: • All • In test • Real (active)
Request status	Status of requests to delete: • All • Open • Closed • Closed – completed • Closed – cancelled
Launching period	Defines the launching period for requests to be deleted from Icons display a calendar allowing the date to be chosen.
Request number	Request numbers to delete (separated by commas)

Deleting a process

Only a process manager or an Administrator can delete a process. Deleting a process causes all of the associated requests to be deleted.

If the process has "real" (active) requests, only the Administrator can delete the process. This is allowed only if the process is not used as a sub-process by actions of another process.

Deleting process requests

Only the process/folder manager or Administrator can delete requests that are associated with a process in test mode.

Only the Administrator can delete requests that are associated with an active process.

Operational restrictions on active and archived status processes

If the process is active, modifications on it are restricted to the following:

- Modify process status
- Modify process categories
- Modify text, link, or support email of the process and actions
- Delete the process
- Create a new version of the process
- Duplicate the process
- Delete associated requests
- Modify which users are associated with the process participants from the directories
- Modify data visibility (but not security)

If the process is archived, modifications on it are restricted to the following:

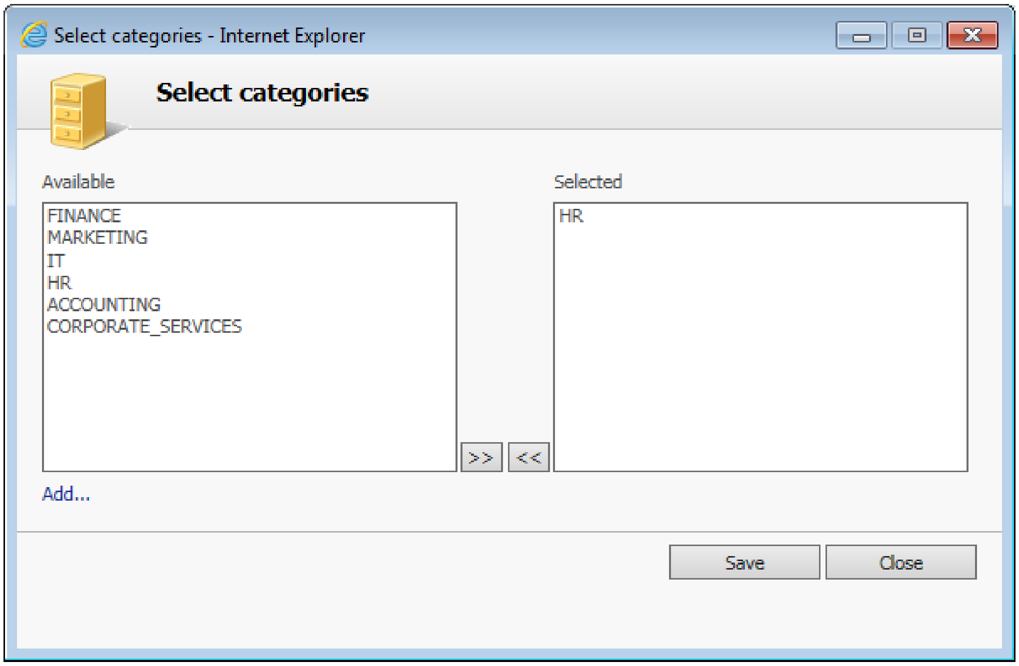
- Delete the process
- Create a new version of the process
- Duplicate the process
- Delete associated requests
- Modify which users are associated with the process participants from the directories
- Modify data visibility (but not security)

Activating a process causes a previous active version to be archived. Current/ongoing requests will continue to use the process version that was used when they were launched.

Folder changes

Only a WorkflowGen Administrator can move a process from one folder to another. This does not affect the end users, but will affect which process/folder managers may then access the process.

Process categories



Area / Actions	Remarks
Available	Available categories
Selected	Selected categories
Add …	Link to a simple add category screen
Click **>>** or double-click an item in the **Available** list	Add selected categories from the **Available** list to the **Selected** list
Click **<<** or double-click an item in the **Selected** list	Remove selected categories from the **Selected** list
Save Button	Saves updates
Close Button	Closes the window

Export and import XDPL process definition

Only a WorkflowGen Administrator or process/folder manager can export and import a process as an XPDL file.

Exported process elements

Elements	Description
Process Information	All process general information
Participants	All participants information
Data	All data information
Form	All form data
Workflow	All workflow actions information

Imported process elements

Elements	Description
Process Information	All process general information
Participants	All participants' information
Data	All data information
Form	All form data
Workflow	All workflow actions information

Note: As of version 5.1.7, any process that includes a Prior Overdue notification in an action cannot be imported into a version of WorkflowGen 5.1.6 or earlier due to incompatibilities.

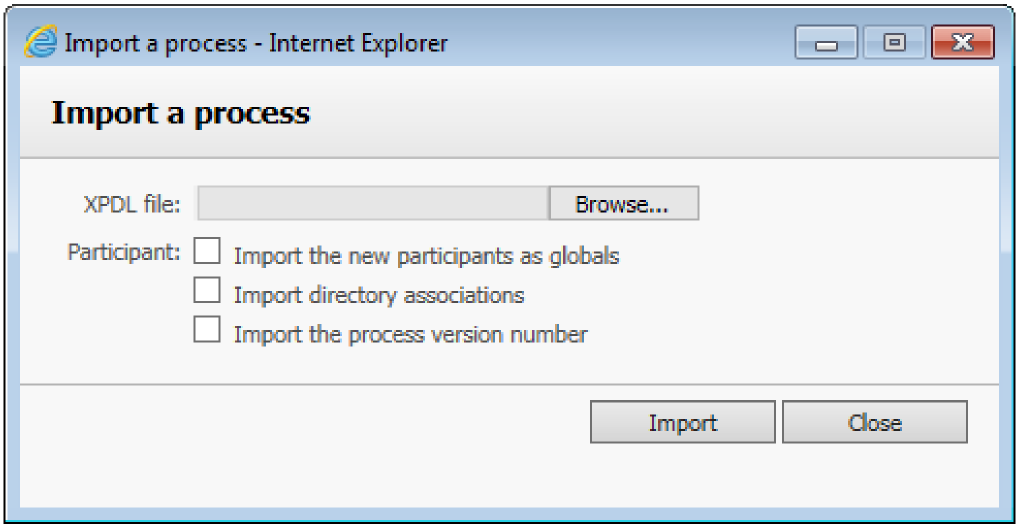
Imported rules for specific process elements

Fields	Remarks
Process version	When creating a new process by importing an XPDL, the version number of the process in the XPDL will be used. When creating a new version of a process from the WorkflowGen database, the version number of the new process will have the latest version number. When creating a new version of a process from an XPDL file, the version number of the new process will have the version number in the XPDL file if the version number of the process hasn't been already used; otherwise the latest version number will be automatically incremented for the new process.
Process category	No category will be added to the process, if the category information is missing in the XPDL file. If the category doesn't exist in WorkflowGen, it will not be added to the process.
Process notification to requester on closed	The notification will be checked if the notification value is missing in the XPDL file or the value is set to "Y". If "N" is set as value in the XPDL file then the notification is unchecked.

Participant scope	If the scope is missing in the XPDL file, the import rules will be the same as for the process participant below. **Global participant:** If the global participant doesn't exist in WorkflowGen, then the current participant will be created as a global participant; otherwise the existing global participant will be associated with the current process. If the global participant already exists in WorkflowGen and it is used for the current imported process, the existing global participant users, groups, directories and coordinators could be updated with the one from the XPDL file (only if the **Import directory associations** option is checked). **Process participant:** If the global participant doesn't exist in WorkflowGen, the current participant will be created as a global participant (only if the **Import the new participants as globals** option is checked) or as a process participant (only if **the Import the new participants as globals** option is unchecked); otherwise the existing global participant will be associated with the current process. If the global participant already exists in WorkflowGen and it is used for the current imported process, the existing global participant users, groups, directories and coordinators could be updated with the one from the XPDL file (only if the **Import directory associations** option is checked).
Participant associated user(s)	No user will be added to the participant if the user information is missing in the XPDL file. If the user doesn't exist in WorkflowGen, it will not be added to the participant.
Participant associated group(s)	No group will be added to the participant if the group information is missing in the XPDL file. If the group of a directory doesn't exist in WorkflowGen, it will not be added to the participant.
Participant associated directory(ies)	No directory will be added to the participant if the directory information is missing in the XPDL file. If the directory doesn't exist in WorkflowGen, it will not be added to the participant.
Participant associated coordinator (s)	No coordinator will be added to the participant if the coordinator information is missing in the XPDL file. If the coordinator doesn't exist in WorkflowGen, it will not be added to the participant.
Data security	In the "allow access for specific participants" case, if the user doesn't exist in WorkflowGen, it will not be added to the access list.

Import procedure

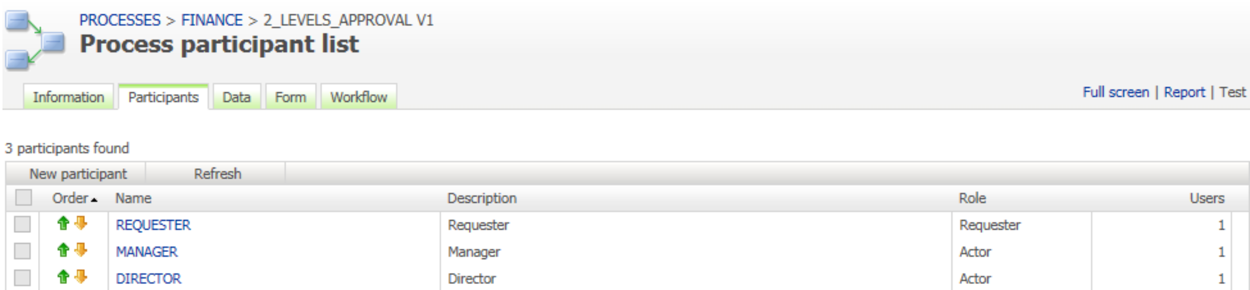
1. Click the **Import** button.



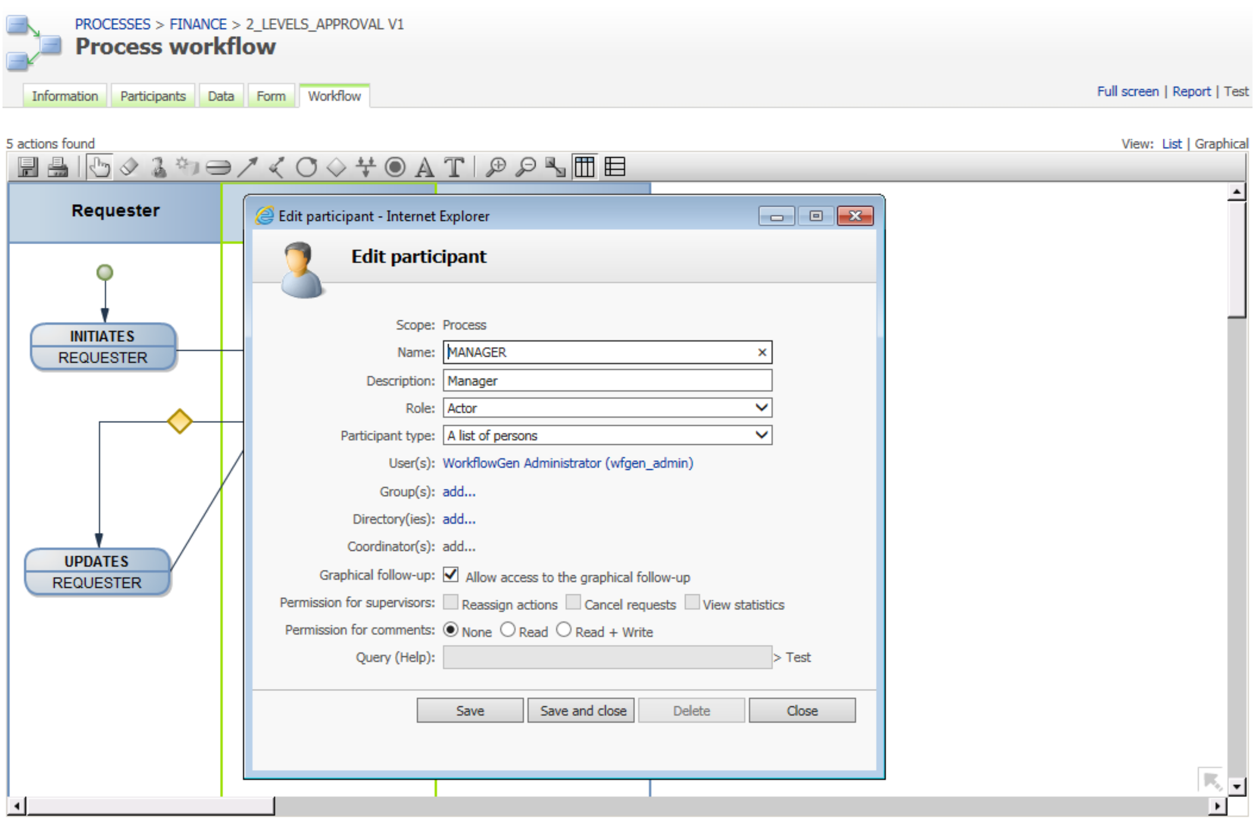
2. Browse for the XPDL file.
3. Select **Import the new participants as globals** to import the new participants as global participants:
    - If the participants of the exported process were originally global participants, they will always be imported as global participants.
    - If the participants of the exported process were originally process specific participants, selecting this option will import them as global participants. If this option is unchecked, they will be imported as process specific participants.
4. Select **Import directory associations** to import users associated to existing participants.
5. Select **Import the process version number** to import the version number.
6. Click **Import** to start the import.

Process participants

Process participant list screen



Process participant from workflow graphical view



Participant list

Columns	Remarks
Order	Use the arrows to change the display order of the participant

Name	Participant name A link displays the participant form in edit mode. Click **New participant** to associate a global participant or to create a new process specific participant.
Description	Participant description
Role	Role of the participant in the process
Users	Number of users associated to the participant

Participant form

Fields	Remarks
Scope	Scope information: process or global
Name[1]	**Required field** Unique identifier for the participant (including global ones); must respect nomenclature and be limited to 30 characters
Description[1]	**Required field** Participant description limited to 255 characters
Role[2]	Role of the participant in the process: • Requester • Actor • Process supervisor[5]
Participant type[1]	**Required field** Participant type, define possible associations to the directory: • Person • List of persons • List of persons with coordinator(s)
User(s)	List of users associated with a participant A link allows associated users to be added or deleted.
Group(s)[3]	List of groups associated with a participant A link allows associated groups to be added or deleted.
Directory(ies)[3]	List of directories associated with a participant A link allows associated directories to be added or deleted.
Coordinator(s)[4]	List of coordinators associated with a participant A link allows associated coordinators to be added or deleted.
Graphical follow-up	Allow the associated users of the participant to view the graphical follow-up of the requests and the graphical help of the process from the user module.
Permission for Supervisors	• Reassign current actions • Cancel current requests • View statistics

Permission for comments	• **None:** The comments list will be hidden to the participant's associated users. • **Read:** The participant's associated users can only view the comments list • **Read + Write:** The participant's associated users can view and post new comments **Note:** The process supervisor will always have Read + Write permission.
Query (Help)	The supervisor limited scope feature allows for dynamic filtering of requests and actions for process supervisor participants only. A test link is available to validate the syntax of the supervisor limited scope query.

1. In read-only mode if the participant is of the global type.
2. Only one requester is allowed per process.
3. Accessible only to **List of persons** and **List of persons with coordinator** type participants.
4. Accessible only to **List of persons with coordinator** type participants.
5. Supervisor's participant does not have to be associated to an action.

Association with the directory

Fields	Remarks
Name *	Filters by person's name
Available	Lists possible associations to the directory
Selected	Lists current associations to the directory

* Visible only if associated with a user or a coordinator and when the number of users in the base is greater than the limit set by the software Administrator.

A **Person** type participant can only be associated with a single user.

A **List of persons** type participant is associated to one or several users or groups or directories.

A **List of persons with coordinator** type participant is associated with one or several coordinators and to one or several users, groups or directories.

Deletion

A participant cannot be deleted if the participant is being used in a process action.

Adding a global participant

A global participant can only be associated once to a process.

Process requester

There can only be one participant in the **Requester** role in a process.

Process supervisor

There can be multiple participants with the **Supervisor** role in a process, each with different security settings and different follow-up access specified via the limited scope query.

Changing the participant type

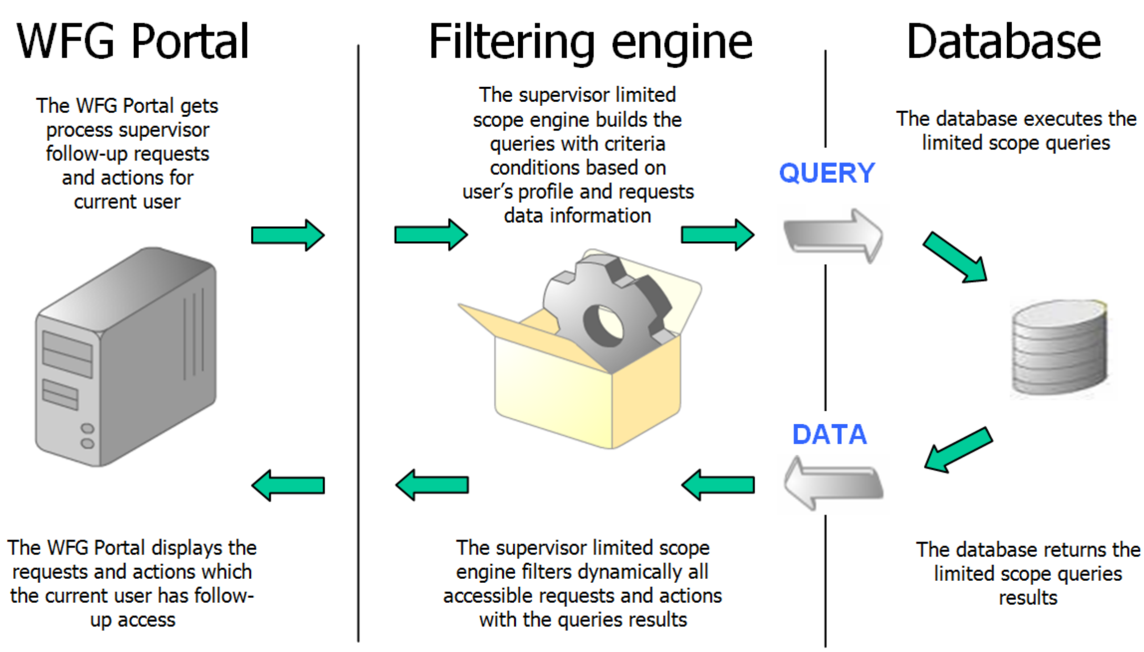
The matrix below shows the conditions allowing a participant type change:

Current Type ↓ / New Type →	Person	List of persons	List of persons with coordinator
Person		The participant is not used in a process action	The participant is not used in a process action
List of persons	A single user is associated with the participant The participant is not used in a process action		Add at least one coordinator
List of persons with coordinator		The participant is not used in a process action where the assignment is made by the coordinator	

Supervisor limited scope

Overview

The supervisor limited scope feature allows dynamic filtering of requests and action follow-up access for process supervisors. When a user is associated with a process supervisor participant with limited scope access enabled, the user's Portal homepage follow-up results, portlet RSS feeds, follow-up search results, and statistics reports will be shown only with accessible requests and actions. The supervisor limited scope is defined using criteria conditions in which the syntax is similar to SQL query criteria conditions and allows the usage of a user’s profile and requests data information as filter criteria in the query definition.

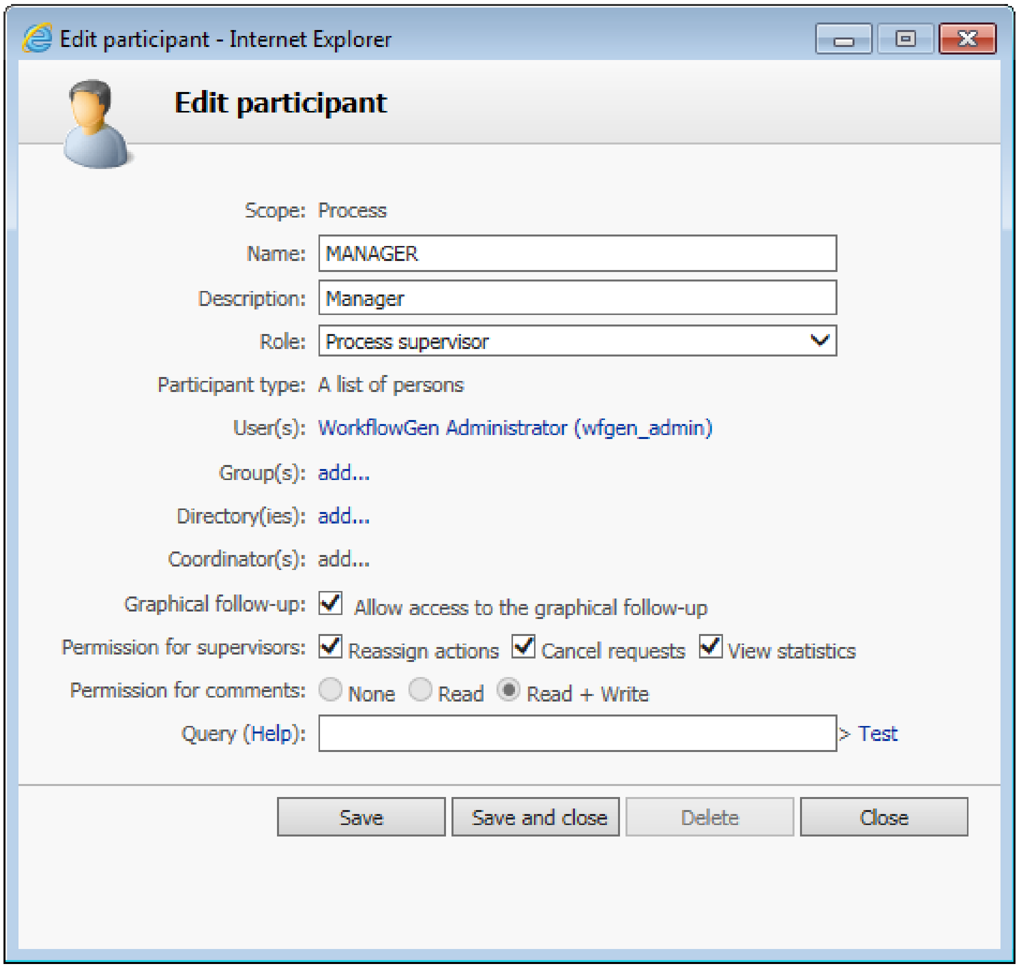


Definitions

Process participant

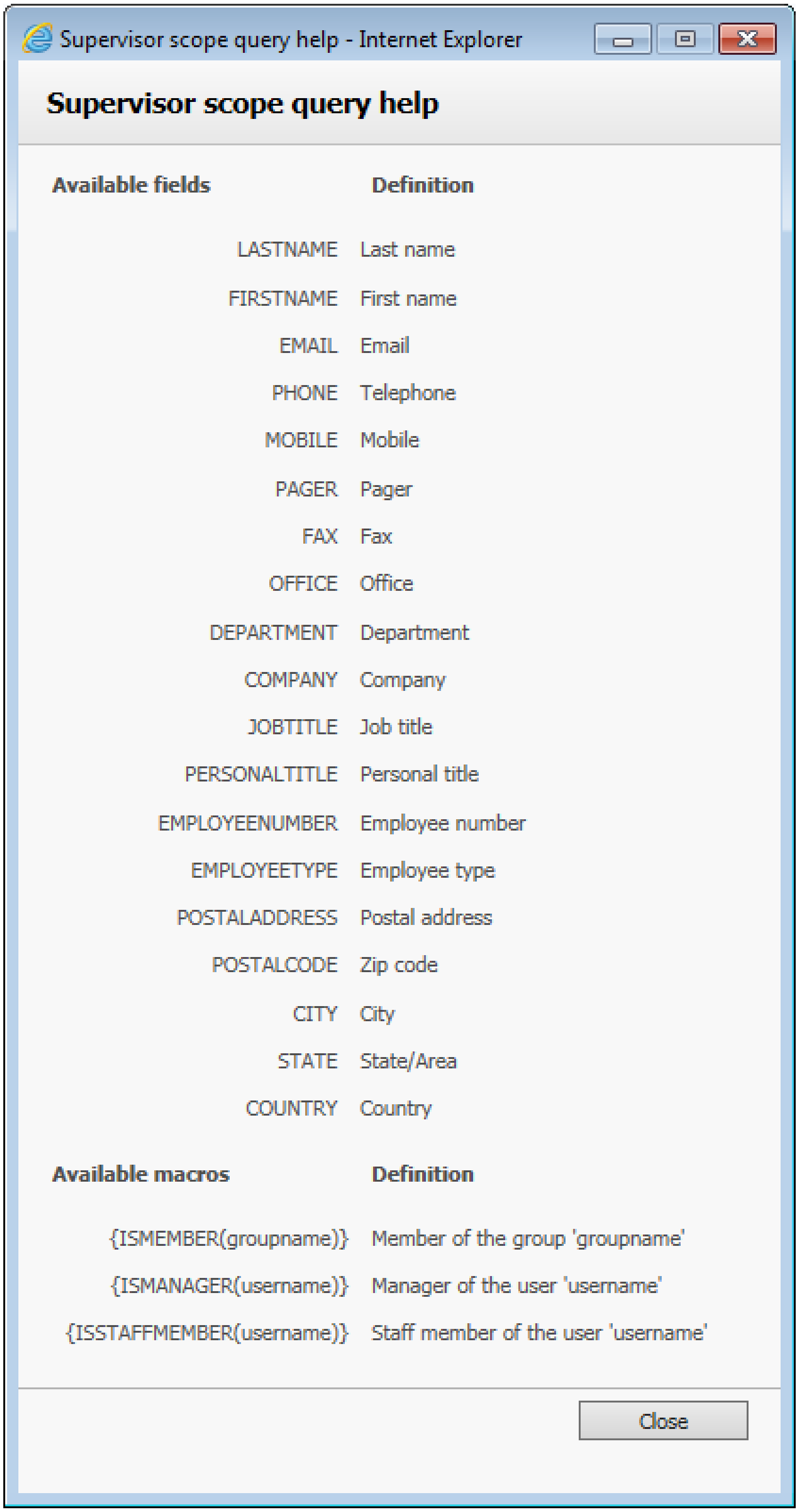
The limited scope query can be defined for process participant with the process supervisor role only. You need to add a new process or edit a process supervisor participant and define the query in order to enable the limited scope feature. The query length is limited to a maximum of 255 characters.

If the query is empty, then the process supervisor has follow-up access to all requests and actions of the specific process.



Query help

To access online supervisor limited scope query definition help, click the **Query (Help)** link.


Supervisor scope query help - Internet Explorer

Supervisor scope query help

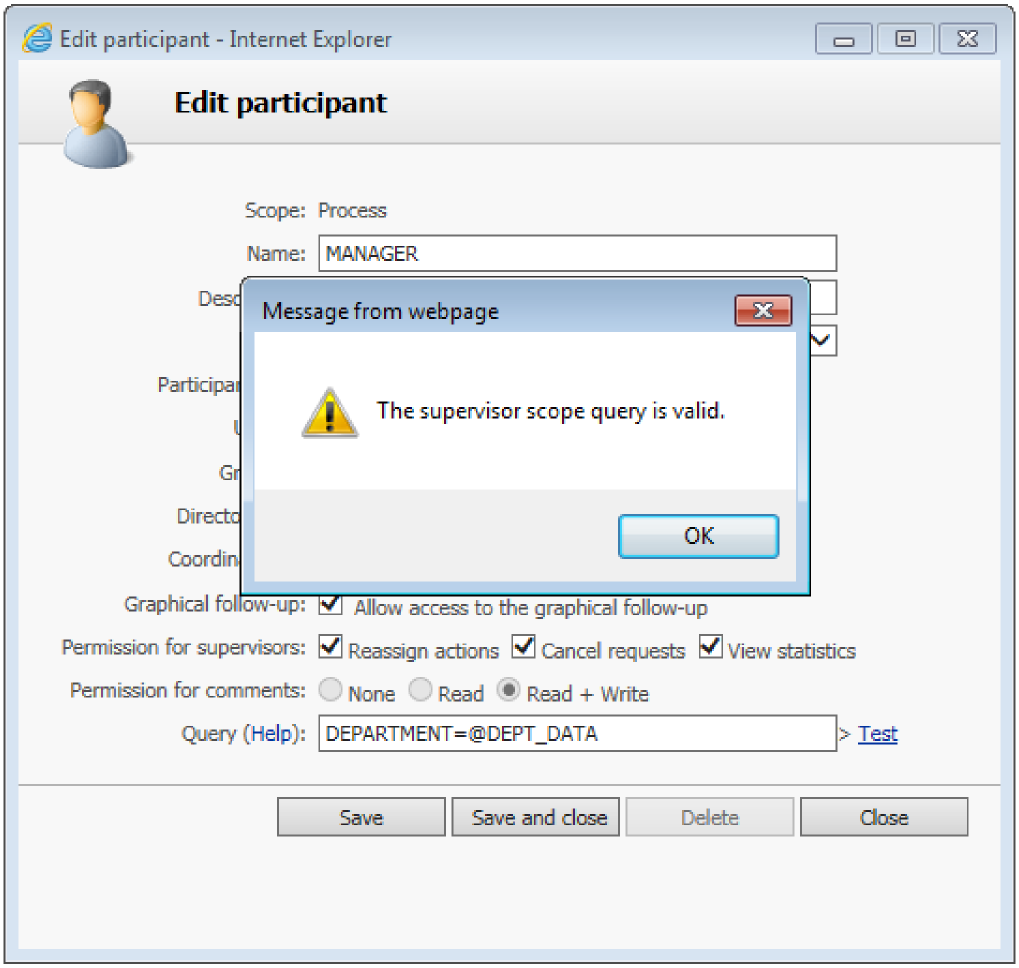
Available fields	Definition
LASTNAME	Last name
FIRSTNAME	First name
EMAIL	Email
PHONE	Telephone
MOBILE	Mobile
PAGER	Pager
FAX	Fax
OFFICE	Office
DEPARTMENT	Department
COMPANY	Company
JOBTITLE	Job title
PERSONALTITLE	Personal title
EMPLOYEENUMBER	Employee number
EMPLOYEETYPE	Employee type
POSTALADDRESS	Postal address
POSTALCODE	Zip code
CITY	City
STATE	State/Area
COUNTRY	Country

Available macros	Definition
{ISMEMBER(groupname)}	Member of the group 'groupname'
{ISMANAGER(username)}	Manager of the user 'username'
{ISSTAFFMEMBER(username)}	Staff member of the user 'username'

Close

Query syntax validation

Click the **Test** link to validate the syntax of the supervisor limited scope query. Saving an invalid syntax query is not allowed.



Available fields and macros list for query

The fields and macros available for the supervisor limited scope query are listed below. The fields refer to the user's profile information. You can also use request data as a comparison value in criteria conditions for the query to filter the results.

Examples:

This example matches requests/actions for users is in the province of Quebec:

STATE = 'QC'

This example matches requests/actions for usesr who have an email ending with "advantys.com":

EMAIL LIKE '%ADVANTYS.COM'

This example matches users in my group:

{ISMEMBER(MYGROUPNAME)}

This example matches requests/actions for users whose department is equal to the value in request data:

DEPT_DATA:
DEPARTMENT = @DEPT_DATA

This example matches requests/actions for users whose city is equal to the value in request data MY_CITY and the value of request data MY_COUNTRY is CANADA:

CITY = @MY_CITY AND 'CANADA' = @MY_COUNTRY

Available fields definition	
LASTNAME	Last name
FIRSTNAME	First name
EMAIL	Email
PHONE	Telephone
MOBILE	Mobile
PAGER	Pager
FAX	Fax
OFFICE	Office
DEPARTMENT	Department
COMPANY	Company
JOBTITLE	Job title
PERSONALTITLE	Title
EMPLOYEENUMBER	Employee number
EMPLOYEETYPE	Employee type
POSTALADDRESS	Postal address
POSTALCODE	Zip code
CITY	City
STATE	State/Area
COUNTRY	Country
EXTATT_1	Extended attribute 1
EXTATT_2	Extended attribute 2
EXTATT_3	Extended attribute 3
EXTATT_4	Extended attribute 4
EXTATT_5	Extended attribute 5
Available macros definition	
{ISMEMBER(groupname)} *	Member of the group 'groupname'
{ISMANAGER(username)} *	Manager of the user 'username'
{ISSTAFFMEMBER(username)} *	Staff member of the user 'username'

* Macros only support hardcoded static text as a parameter. Indicating a process data name is not supported. For example:

Valid: {ISMEMBER(my_group_name)}
Not valid: {ISMEMBER(@GROUP_NAME)}

Additional information

Comparison operators

You can use standard SQL comparison operators such as =, !=, <>, IS NULL, NOT IS NULL, LIKE, NOT LIKE, etc.

For better compatibility, it is recommended to use standard operators that are supported on the database hosting WorkflowGen.

Example:

This example matches requests/actions for users who are not located in Montreal:

CITY <> ‘MONTREAL’

Logical operators and parentheses

You can use standard SQL logical operators such as AND and OR to combine multiple criteria conditions to a maximum of 255 characters length in the query. When there are many criteria conditions, it is strongly recommended to use parentheses to logically enclose them.

Example:

This example matches requests/actions for users who are located in either Toronto or CITY_DATA of CANADA:

COUNTRY = ‘CANADA’ AND (CITY = ‘TORONTO’ OR CITY = @CITY_DATA)

Text values

Text value in criteria conditions must be enclosed between single quotes. Double quotes are not supported for enclosure but are valid as a value. Wildcard characters such as " **%** " (percent sign) and " **_** " (underscore) can be used with the LIKE operator.

Example:

This example matches requests/actions for users whose last name starts with ‘AN’:

LASTNAME LIKE ‘AN%’

Request data

You can use request data in criteria conditions to filter requests dynamically, since the request data value can be different from one request to another. To do this, call these request data in the criteria condition by prefixing them with the " **@** " (at) character.

Example:

This example matches requests/actions for users whose company is equal to the value of request data DATA1:

COMPANY = @DATA1

("DATA1" is an arbitrary convention; any request data name may be used.)

Note: Ensure that the requested data name used in the criteria condition has the exact name as the one defined in the WorkflowGen process data list.

Macros

You are also able to use macros in criteria conditions contained in the query. You just have to add an available macro in the criteria condition.

Example:

This example matches requests/actions for a user who is member of the Dev group, member of the WORKFLOWGEN directory and comes from Montreal:

CITY = ‘MONTREAL’ and {ISMEMBER(Dev)}

Note: It is very important to respect the syntax in the **Available macros** list.

Performance impacts

In some cases, the WorkflowGen user portal is reduced in performance or has a slower response time when the limited scope is applied for a process supervisor with filtering queries that use LIKE operators and wildcard characters (" **%** ", " **_** ") in criteria conditions. The is due to a possible large amount of information that needs to be filtered by the limited scope engine for user accessible requests and actions.

We suggest testing the supervisor-limited scope query in a development environment before releasing for production.

Process data

Process data list screen

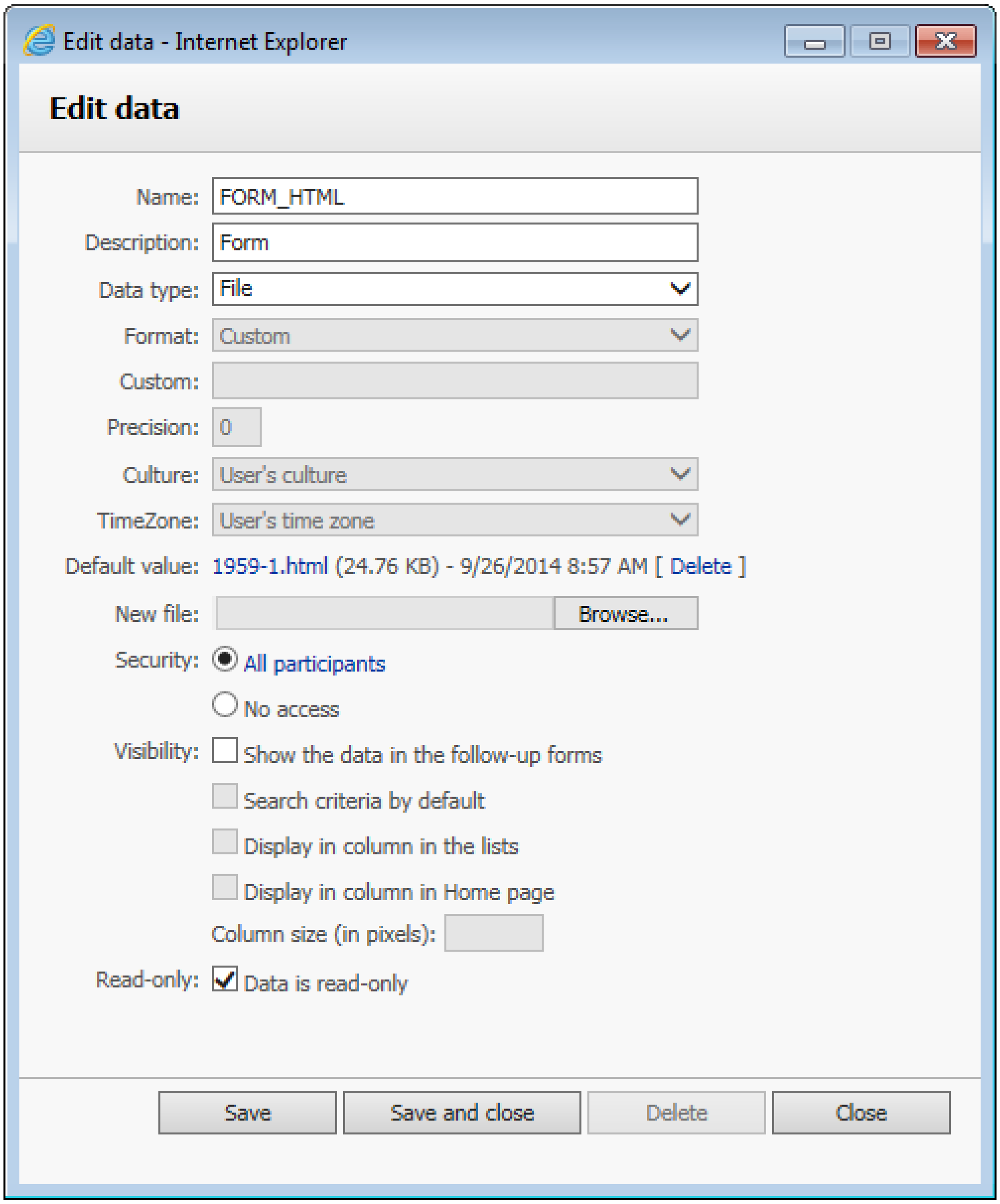
Data list

Columns	Remarks
Display order	The arrows allow the data display order to be modified. This can also be done by drag-and-drop. This affects the position of the data on the user module as well.
Name	Data name A link displays the data form in edit mode. To add new data, click **New data** to open a blank data form.
Description	Data description
Data type	Type of data
Direction *	Direction of the sub-process parameter

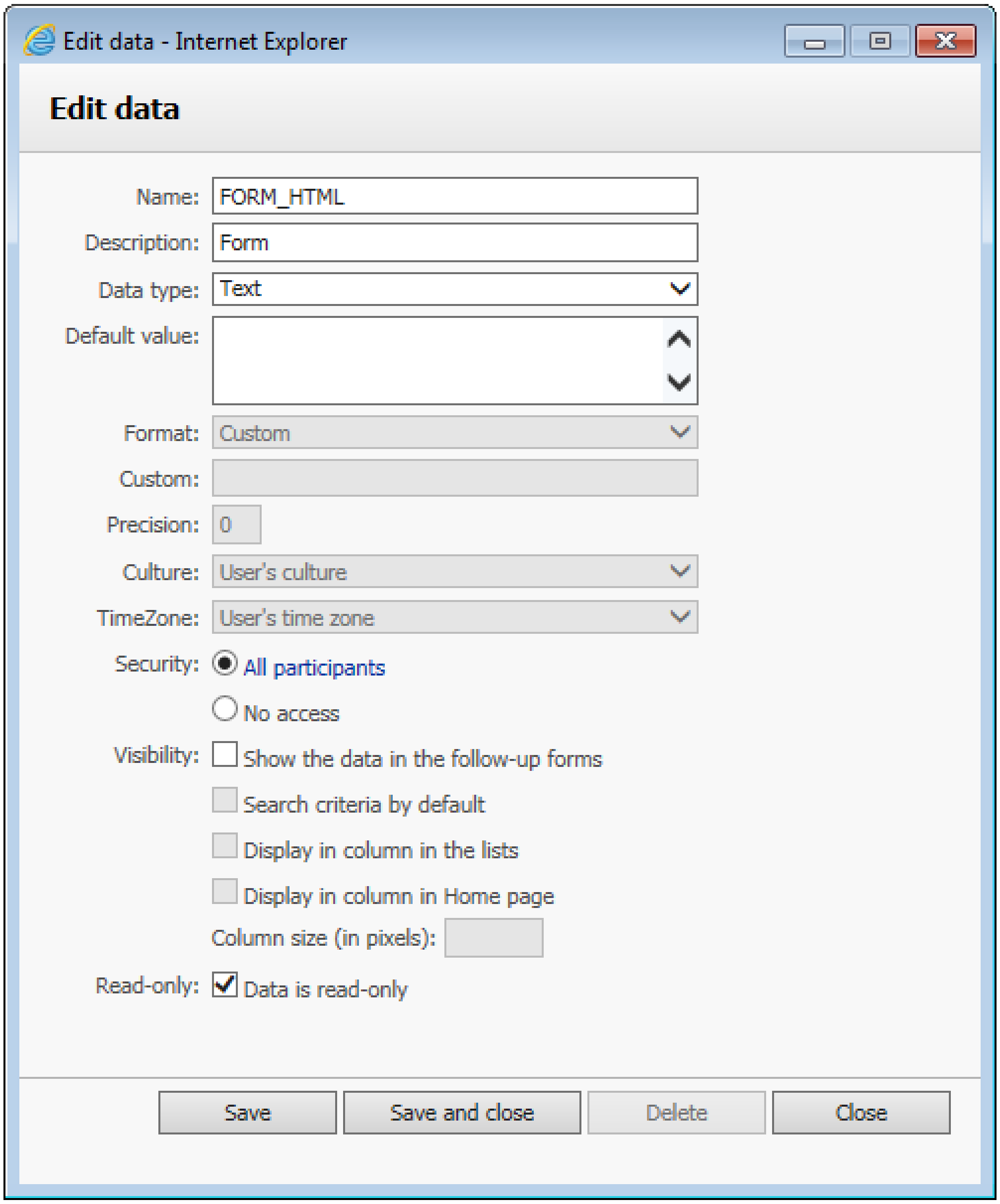
* Only displayed if the process was defined as a sub-process.

Data editing form

When **Data type** is **File**:



When **Data type** is **Text**, **Numeric**, or **Date/Time**:



Data editing

Fields	Remarks
Name	**Required field** Unique identifier for the data; must respect nomenclature and be limited to 30 characters
Browse	Lists the IDs of all the form fields created with the built-in form designer and enables it to manually select the fields with their IDs to declare as process data **Note:** This button appears on the **Add data** form.

Description	**Required field** Data description limited to 255 characters
Data type	**Required field** Type of data: • Text • Limited to 4000 characters • Includes automatic detection of URLs (http://) and email addresses and displays them as links rather than plain text • Numeric • Date/Time • File
Default value	Default value of the data A link displays the **Default value** form in edit mode.
Format	Only applicable to 'Numeric' and 'Date/Time' type data. Upon saving the data, the **Format** drop-down will be populated with the following formats: **Numeric formats:** • Custom (user-defined) • Currency ({0:C}) • Decimal ({0:D}) • Scientific ({0:E}) • Fixed-point ({0:F}) • General ({0:G}) • Number ({0:N}) • Percent ({0:P}) • Round-trip (float) ({0:R}) • Hexadecimal ({0:X}) **Date/Time formats:** • Custom (user-defined) • Short date • Long date • Full date/time (short time) • Full date/time (long time) • General date/time (short time) • General date/time (long time) • Month day • Round-trip date/time • RFC 1123 date/time • Sortable date/time (ISO 8601) • Short time • Long time • Universal sortable date/time • Universal full date/time • Year month
Custom	Displays associated format Allows for custom formats to be specified if ‘Custom’ formatting is specified above.
Precision	Number of decimal places displayed (for applicable formats)

<table>
<tr><td>Culture</td><td>Force data to display using the selected culture (language format)
Default value is the current user’s culture.</td></tr>
<tr><td>Time zone</td><td>Applicable only to data of type ‘Date/Time’. Specifying a specific time zone will force data to display using the selected time zone. The default value is the current user’s time zone.</td></tr>
<tr><td>New file[1]</td><td>File to update/add</td></tr>
<tr><td>Choose file</td><td>Displays a file browser in a pop-up window</td></tr>
<tr><td>Sub-process parameter[2]</td><td>Direction of the data when used as parameter by a parent process</td></tr>
<tr><td>Security</td><td>Defines participants who have access to the data
A link allows data access to be restricted to certain participants or processes.

Note: You can only select from Participants with roles of Requester or Actor.</td></tr>
<tr><td>Visibility</td><td>Allow the definition of visibility options

Note: Data visibility is still updatable on active or archived processes.

Option 1: Show the data into the follow-up forms (checked by default)

The selected data will be visible in the following places:
Request and Action follow-up forms
Default notification messages (e-mails
eFormPDF data popup window
Search criteria list
Note: Unchecking this option disables and unchecks the three other options.

Option 2: Search criteria by default (unchecked by default):

The selected data will appear in every search screen as selected criteria without search parameters.

Note: You can only filter by the data defined in the active process version or the latest process version if none are active.

Option 3: Display in column in the lists (unchecked by default):

The selected data will appear in every action or request list in a column when a single process is selected (single-process mode).

Option 4: Display in column in home page (unchecked by default):

The selected data will appear in the home page in a column when a single process is selected (single-process mode).</td></tr>
<tr><td>Column size (in pixels)</td><td>Define the data column size in the lists and home page
Enabled when visibility option 3 or visibility option 4 are checked.</td></tr>
</table>

Read-only	Define data as read-only This saves disk space when used on file process data associated with the required parameter TEMPLATE of an eFormPDF action. This is performed by associating a single copy of the PDF per process for all closed actions and closed requests. **Note:** An action's OUT and INOUT parameters using data declared as "read-only" will not be updated. **Caution:** When using an electronic signature feature for PDF Forms, do not define the PDF form template as read-only. As well, in general do not define FORM_DATA elements of eForm applications (which contain the data of a form) as read-only.

1. Only displayed if the process data is a file.
2. Only displayed if the process was defined as a sub-process.

Change the data type

The type of data can only be changed if the data is not used:

- By the parameters of the actions of the process
- In the dynamic assignment of an action of the process
- In the transition or notification conditions
- If the data is not a parameter of a sub-process that is in use

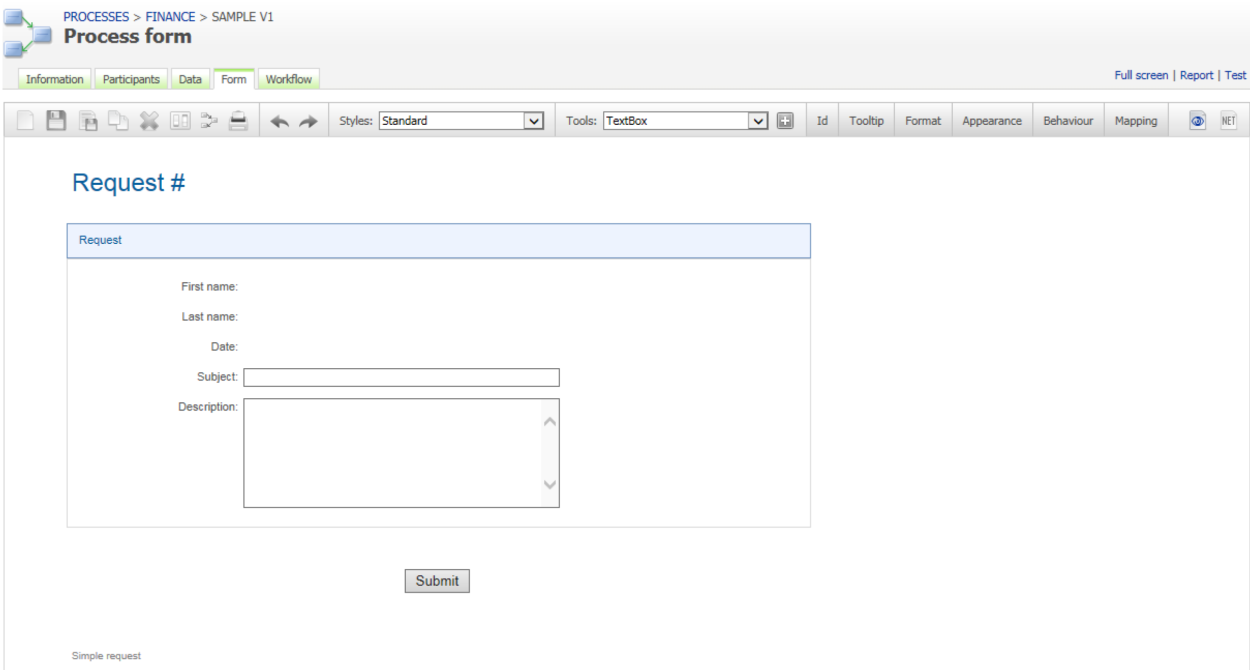
Deletion

Data cannot be deleted if it is involved in the workflow of the process (as a parameter or in the transition conditions). Data cannot be deleted if it is set as a sub-process parameter and used by a parent process.

Form

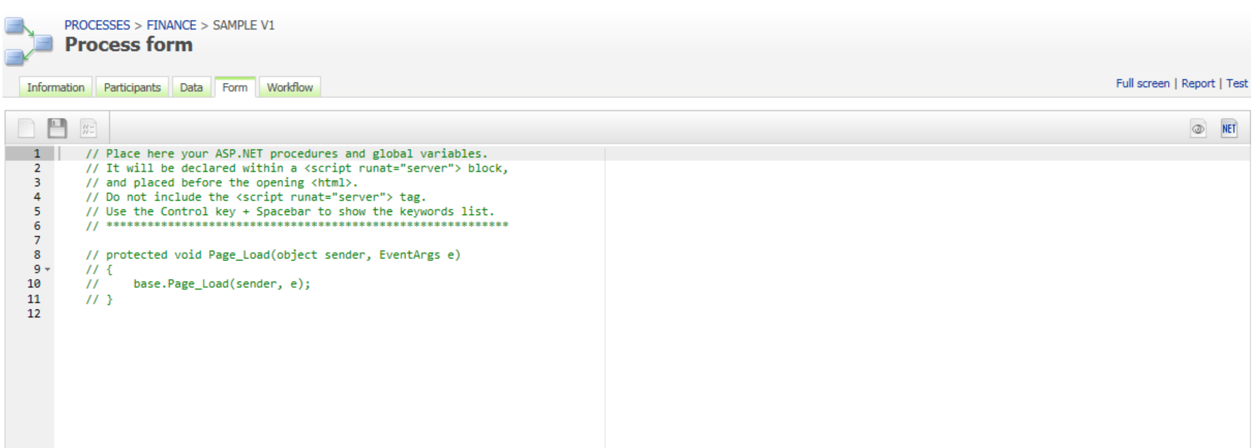
Process form screen

Design mode



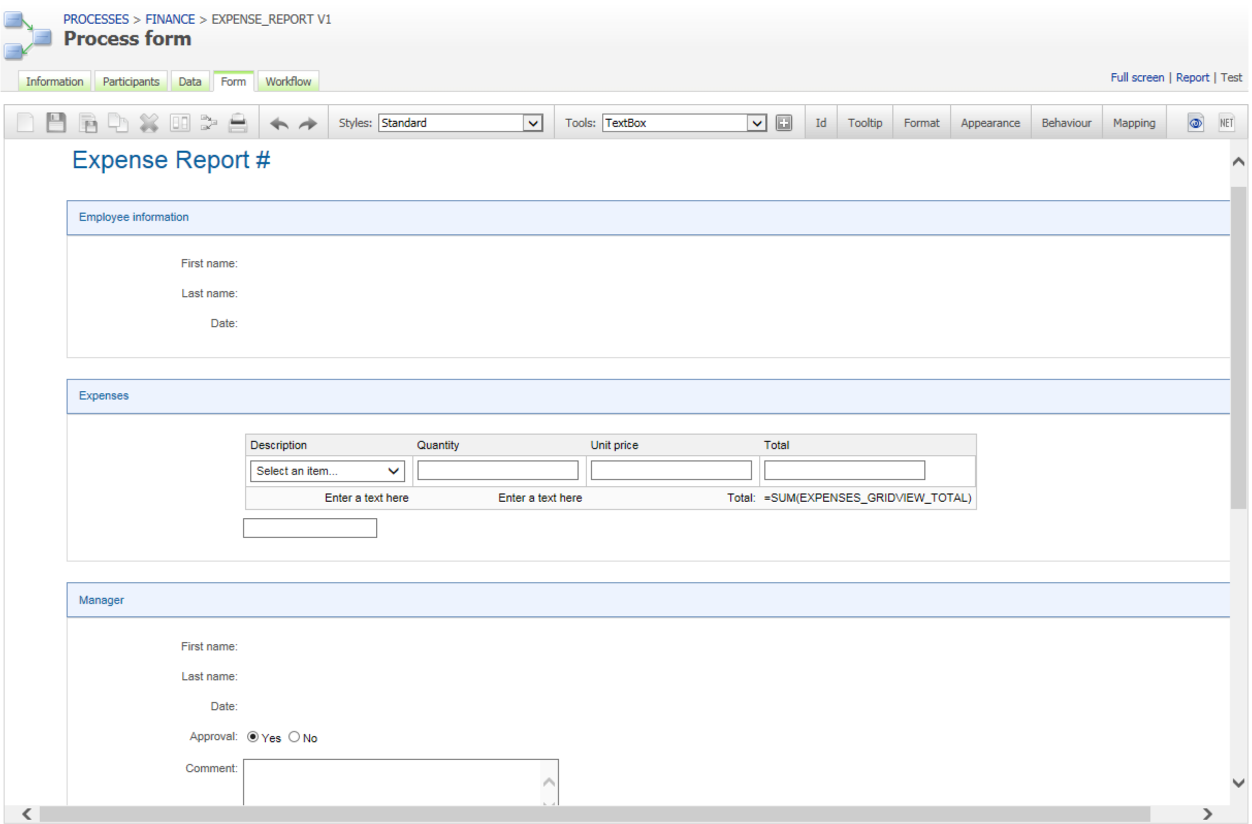
Process form screen (ASP.NET mode)

Click the .NET icon at the far right of the toolbar to open the ASP.NET code editor, which can be used to define server-side procedures, events, and global variables to handle any specific custom tasks. This feature is mainly intended for ASP.NET developers.



Form structure, appearance, and management

A form created with the built-in form designer has one header, one or several sections, one or several fields per section, a **Submit** button, an optional **Save-as-draft** button, and one footer.



Note: The attributes you set in the **General** section in the form configuration window will be applied to all sections. The **Appearance editor** offers these and further style options (such as font and size, text and background colours, border styles and colours, etc.) that you can customize for individual form items; see **Appearance editor** on page 142

Header

- The header contains a title, a label, and an optional image.
- The title can be used to display the process name. Its text can be edited directly on the form.
- The label is used to display the current request number. Its default identifier is CURRENT_REQUEST and can be referenced in an action parameter to receive the Request.Id macro.
- The image is used to display a logo. It can be resized or realigned.
- A fixed width and height can be set for the header in the form configuration window.

Section

- The section has a title to display the section name. Its text can be edited directly on the form.
- It can have one or several fields.
- Each section must have a unique identifier.
- Sections can only be aligned vertically and reordered using the mouse drag-and-drop action.
- When inserting a section tool into the form, the new section will be placed in the last position.
- Section width will be resized automatically based on the widest field in the form whenever there is a field width change.
- A fixed width can be set for all sections.
- The section’s settings can be edited by clicking the pencil icon on the right side of the section name.

See **Tools** on page 122 for the different types of default section.

Field

- The field has a label and an input control.
- The label is used to display the name of the field. Its text can be edited directly on the form. It can be resized and realigned.
- A fixed width can be set for all labels (**General / Labels**).
- The input control is where a value is captured in the form. It can be resized and realigned.
- Each field must have a unique identifier.
- Fields within the same section are prefixed with the section’s identifier following an underscore character.
- Fields within a section can be reordered vertically using the mouse drag-and-drop action.
- A field can be moved from one section to another section using the mouse drag-and-drop action.
- When inserting a field tool into the form, the new field will be placed in the last position of the selected section or the first section if no section is selected.
- By default, fields are aligned vertically on the same column.
- Two fields can be aligned horizontally on the same row using the **Remove line break** button (**left arrow**) on the right side of the first field.
- Two fields can be aligned vertically on the same column using the **Line break** button (**right arrow**) on the right side of the first field.
- The field’s settings can be edited edited by clicking the pencil icon on the right side of the field.

See **Tools** on page 122 for the different types of default field.

Button

- The **Submit** and **Save as draft** buttons can be renamed in the form configuration window (**General / Buttons**) or in the **Appearance editor** (see Appearance editor on page 142).
- The **Save as draft** button can be enabled or disabled as well.
- Their identifiers are submitButton and saveAsDraftButton, respectively.

Footer

- The footer contains a title and an optional image.
- The title can be used to display a note. Its text can be edited directly on the form.
- The image is used to display a logo. It can be resized or realigned in the form configuration window (**General / Footer**) or in the **Appearance editor** (see Appearance editor on page 142).
- A fixed width and height can be set for the footer.

Note: You can also change the web form style sheet and other attributes (header image, footer, text, etc.) at runtime by adding the following .NET code to your form:

```
protected void Page_Load(object sender, EventArgs e)
{
        base.Page_Load(sender, e);
        String stylePath=HttpContext.Current.Request.PhysicalApplicationPath.Replace
        ("WfApps\\WebForms\\","App_Data\\Templates\\Forms\\En\\Default\\css");
        Page.Header.Controls.Remove(this.FindControl("StyleSheet"));
        Page.Header.Controls.Add(
                new LiteralControl(
                        System.IO.File.ReadAllText(stylePath + "\\" + "metal.css")
                )
        );
        string imageUrl="http://mywebsite/mylogo.jpg"
        HeaderImage.Style["background-image"] = "url('" + imageUrl+ "')";
        HeaderTitleLabel.Text="My Title #";
        FooterTitleLabel.Text="My footer";
        imageUrl="http://mywebsite/myfooter.jpg";
        FooterImage.Style["background-image"] = "url('" + imageUrl+ "')";
protected void Page_Load(object sender, EventArgs e)
{
        base.Page_Load(sender, e);
        String stylePath=HttpContext.Current.Request.PhysicalApplicationPath.Replace
        ("WfApps\\WebForms\\","App_Data\\Templates\\Forms\\En\\Default\\css");
        Page.Header.Controls.Remove(this.FindControl("StyleSheet"));
        Page.Header.Controls.Add(
        new LiteralControl(
                        System.IO.File.ReadAllText(stylePath + "\\" + "metal.css")
                 )
        );
        string imageUrl="http://mywebsite/mylogo.jpg";
        HeaderImage.Style["background-image"] = "url('" + imageUrl+ "')";
        HeaderTitleLabel.Text="My Title #";
        FooterTitleLabel.Text="My footer";
```

```
    imageUrl="http://mywebsite/myfooter.jpg";
    FooterImage.Style["background-image"] = "url('" + imageUrl+ "')";
}
```

This replaces:

- The current style sheet with the "metal.css" template
- The header title label
- The header image
- The footer title label
- The footer image

Note: You should define the width and height of the images in the form configuration in the .NET code.

Example:

```
    FooterImage.Style["width"] = "200px";
    FooterImage.Style["height"] = "100px";
```

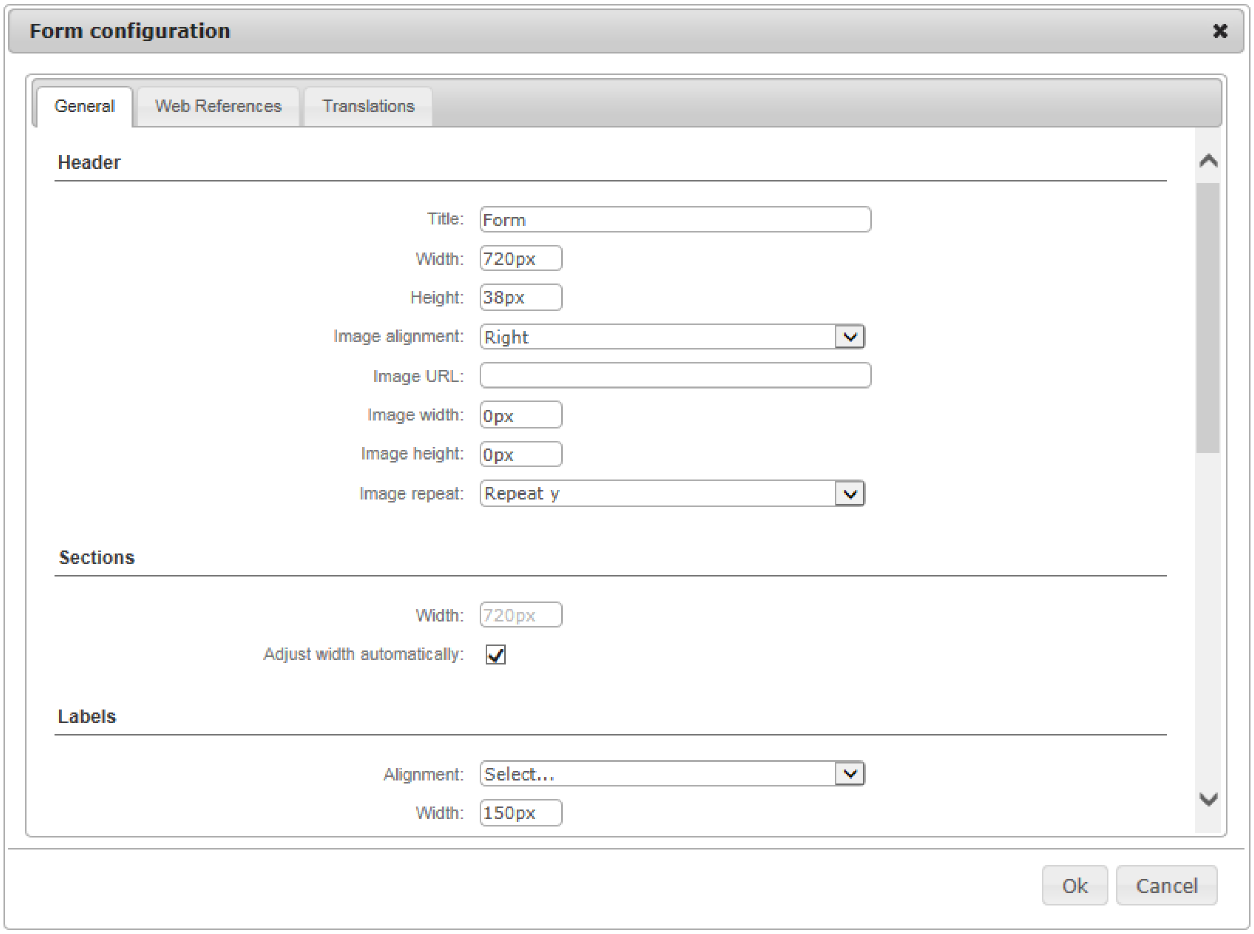
An absolute URL is recommended because the generated Form Archive (Html) could be opened in the mail notification.

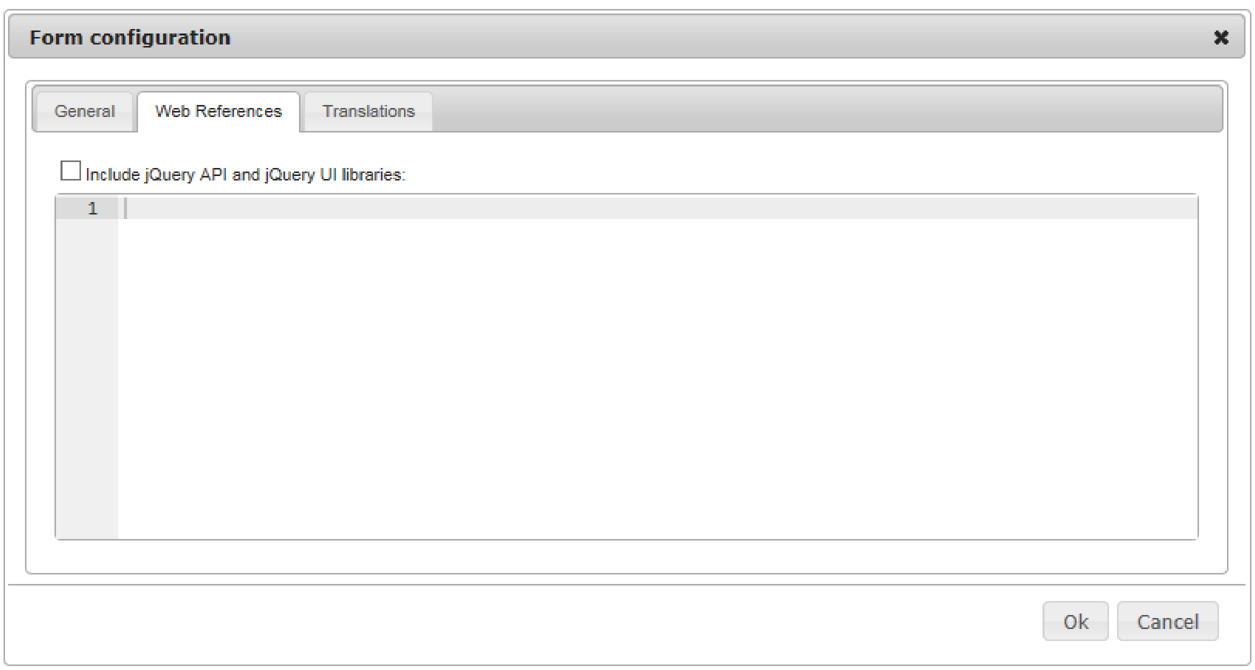
Toolbar

Icon	Name	Description
Design mode		
	New form	Creates a new form or replaces the current form
	Save the form	Saves the current form
	Save a section or field as tool	Saves the selected section or field as a custom tool
	Duplicate a section or field	Makes a copy of the selected section or field and inserts it in the form. The duplicate section or field will appear below the selected section or field.
	Delete a section or field	Deletes the selected section or field from the form
	Form configuration	Opens the **Form configuration** window
	Workflow view	Displays the interactive workflow view
	Print the form	Prints the current form
	Undo/redo	Undoes or redoes the most recent changes made to the form
Styles:	Select a style	List of default and custom styles Select an item to change the style of the current form.

Tools:	Select a tool	List of default and custom tools Select an item in order to add the tool to the form using the Insert button.
	Insert the selected tool	Inserts the selected tool in the form
Id	Edit field ID	Edit the identifier of the sections and fields
Tooltip	Edit field tooltip	Edit the tooltip of the sections and fields
Format	Edit field format	Edit the format of the fields
Appearance	Edit appearance	Edit the appearance of headers, footers, labels, and fields
Behaviour	Edit field’s action behaviour	Displays the interactive view of the workflow, activates the clickable options **Required**, **Read-only**, and **Hidden** for each form field, and sets the behaviour of sections and form fields for each action
Mapping	Edit field’s action data mapping	Displays the interactive view of the workflow, activates clickable options **Retrieve the value** and **Send the value** for each form field and defines the data input and output for each action
	Design	Displays the WYSIWYG form designer
	ASP.NET	Displays the ASP.NET server-side code editor
ASP.NET mode		
	New	Clears the ASP.NET code
	Save	Saves the ASP.NET code

Form configuration





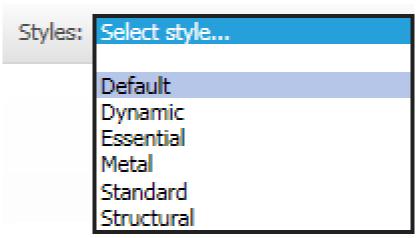
Name	Description
General	
Header	
Title	The title of the form
Width	The width of the form header Numeric value with or without the unit of measure (px, pt, in, cm, mm, pc, em, ex, %), e.g. 720px
Height	The height of the form header Numeric value with or without the unit of measure (px, pt, in, cm, mm, pc, em, ex, %), e.g. 38px
Image alignment	The alignment for the header image: • **Right:** The image will be aligned to the right. • **Left:** The image will be aligned to the left. • **None:** No alignment.
Image URL	The URL of the image to be shown
Image width	The width of the image
Image height	The height of the image
Image repeat	Sets if and how the image will be repeated: • **No-repeat:** the image will not be repeated • **Repeat:** the image will be repeated both vertically and horizontally (this is the default setting) • **Repeat x:** the image will be repeated only horizontally • **Repeat y:** the image will be repeated only vertically
Sections	
Width	The width for all sections: Numeric value with or without the unit of measure (px, pt, in, cm, mm, pc, em, ex, %), e.g. 720px
Adjust width automatically	Check to apply adjusted width to all sections
Labels	
Alignment	The alignment for all field labels: • **Right:** the label will be aligned to the right of the field • **Left:** the label will be aligned to the left of the field • **Top:** the label will be aligned on top of the field
Width	The width for all field labels: Numeric value with or without the unit of measure (px, pt, in, cm, mm, pc, em, ex, %), e.g. 150px
Apply the width	Check to apply the width to all field labels
Buttons	
Submit label	The label for the submit button
Save-as-draft label	The label for the save as draft button
Enable save-as-draft	Check to enable and display the save as draft button
Footer	

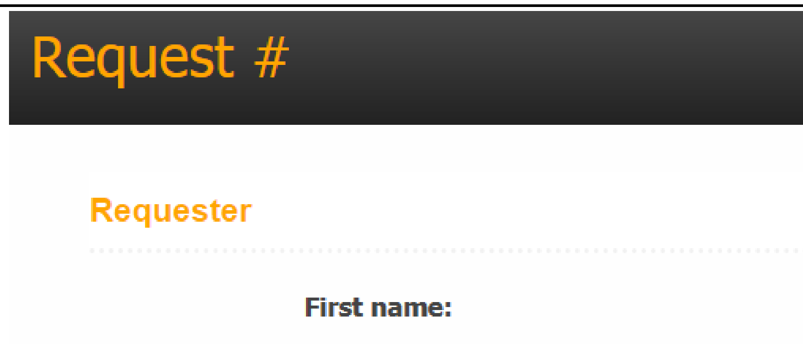
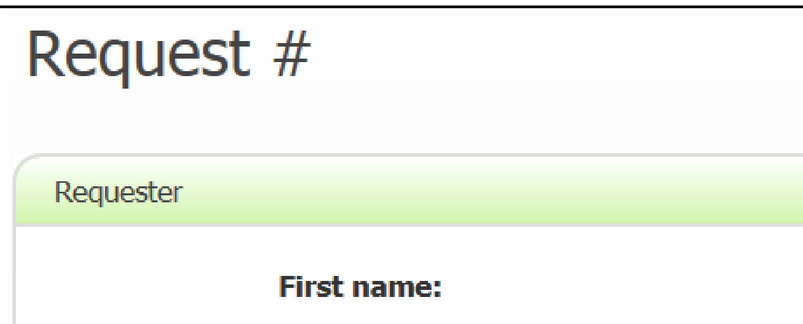
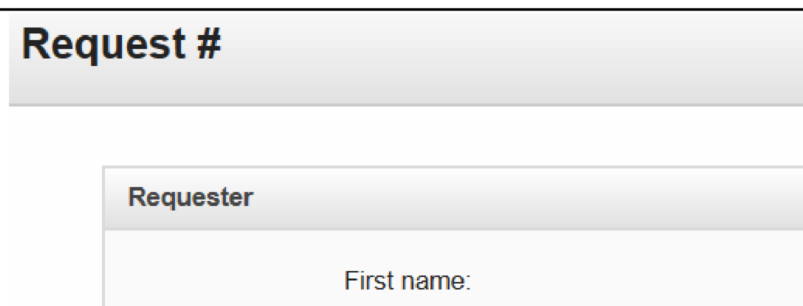
Width	The width of the form footer: Numeric value with or without the unit of measure (px, pt, in, cm, mm, pc, em, ex, %), e.g. 720px
Height	The height of the form header: Numeric value with or without the unit of measure (px, pt, in, cm, mm, pc, em, ex, %), e.g. 22px
Image alignment	The alignment for the footer image: • **Right:** the image will be aligned to the right side • **Left:** the image will be aligned to the left side • **None:** no alignment
Image URL	The URL of the image to be shown
Image width	The width of the image
Image height	The height of the image
Image repeat	Sets if and how the image will be repeated: • **No repeat:** the image will not be repeated • **Repeat:** the image will be repeated both vertically and horizontally (this is the default setting) • **Repeat-x:** the image will be repeated only horizontally • **Repeat-y:** the image will be repeated only vertically
Security	
Enable XML Signature	Check to enable the use of XML signature in the form data Digital signatures are used to certify that a document has not been modified by the system or by someone who gained unauthorized access to the system. The XML signature is a W3C standard that defines the syntax and processing rules for creating and representing digital signatures. This is a method of associating a key with referenced data to insure the integrity of this data.
Misc.	
Display a confirmation message for quick deletion	Check to prompt a confirmation message prior to deletion
Web references	
Include jQuerPI and jQuery UI libraries	Check to include the jQuery API (v 1.7.2) and jQuery UI (v 1.8.20) libraries in the run-time mode (execution of the form) By default, these libraries are available in design mode.

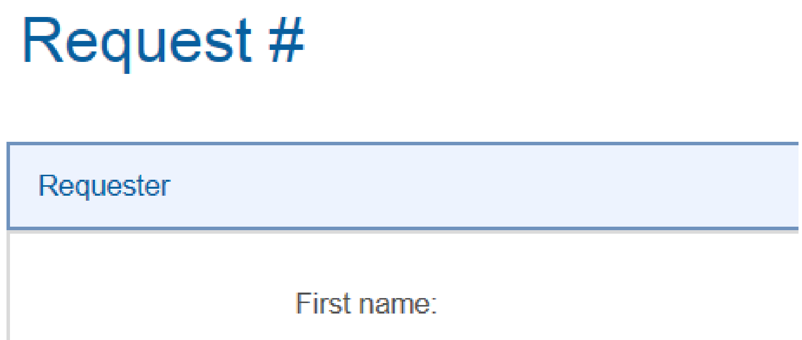
Free text	Custom web references to be included in the HTML head that will be available in both design and run-time modes. Only <script>, <meta>, <link>, and <style> tags are supported. When you enter a tag, the free text editor automatically inserts its closing tag. ***Example:*** <link rel="stylesheet" type="text/css" href="mystyle.css" /> <style type="text/css"> body {background-color:yellow} p {color:blue} </style> <meta name="description" content="my content" /> <script type="text/javascript"> alert("Hello World!"); </script> <script type="text/javascript" src="myscript.js"> </script> To fold a code block, click the down arrow next to the line number, which will insert a double-arrow icon in place of the code. To unfold the code block, click the right arrow. Press **Ctrl+Space** to show the **IntelliSense** drop-down menu, which displays the available variables and keywords.
Translations	
Select a language	The Form designer allows you to translate form labels and error messages to the languages available in WorkflowGen. Select a language for translation from the languages available in the drop-down list. **Note:** Generic language selections such as English, French, Spanish, etc., correspond to the version of the language that the Administrator initially used to create a form. For example, if the Administrator used **English (United States)** to create a form, then in this instance the selections **English (United States)** and **English** would be one and the same.
Free text	Write translated text that corresponds to the selected language. If a field is left empty, then the language will defer in the following order: **Country-specific language > Generic language > Default language**.

Styles

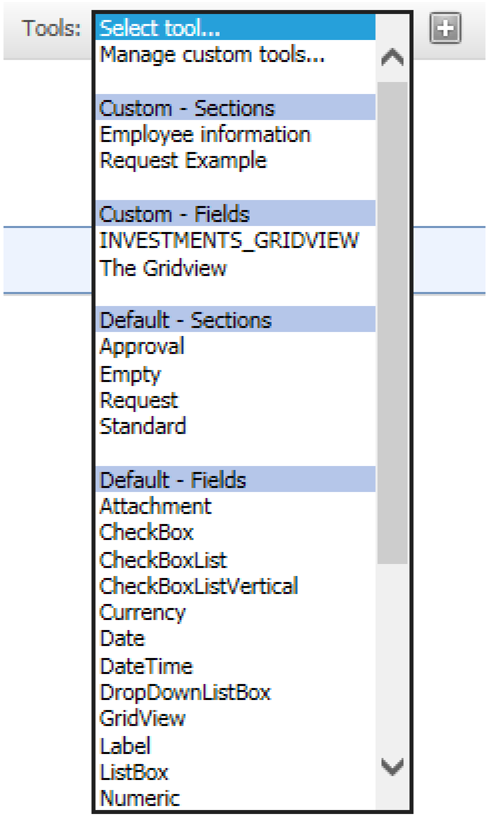
The built-in style templates contain additional CSS that will automatically format and optimize a web form to display on smartphone and tablet devices, based on their screen resolution.



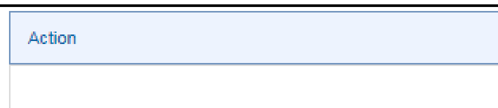
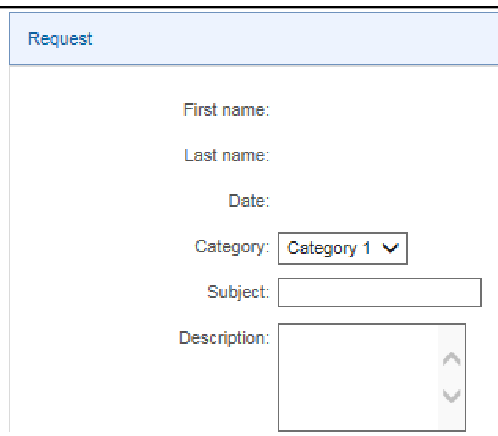
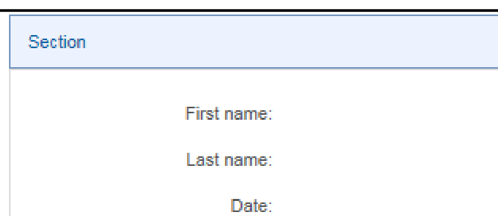
Name	Description
Default styles	
Dynamic	
Essential	
Metal	

Standard	
Structural	
Custom styles	
Custom style name	A custom style can be created and deployed on the server with the following folder and file structures: \wfgen\App_Data\Templates\Forms\[language]\[folder name]\css\[style name].css ***Example:*** \wfgen\App_Data\Templates\Forms\En\MyCompany\css\MyStyle.css

Tools



Name	Description
Manage custom tools…	Opens the **Manage custom tools** window
Custom – sections	List of custom section templates A custom section template can be created by using the **Save a section or field as tool** feature or by manually deploying it on the server with the following folder and file structures: \wfgen\App_Data\Templates\Forms\[language]\[folder name]\sections\[section name].txt ***Example:*** \wfgen\App_Data\Templates\Forms\En\MyCompany\sections\MySection.txt **Note:** A custom section template must comply with the content structures and rules used and known by the form designer. This is aimed at advanced users.

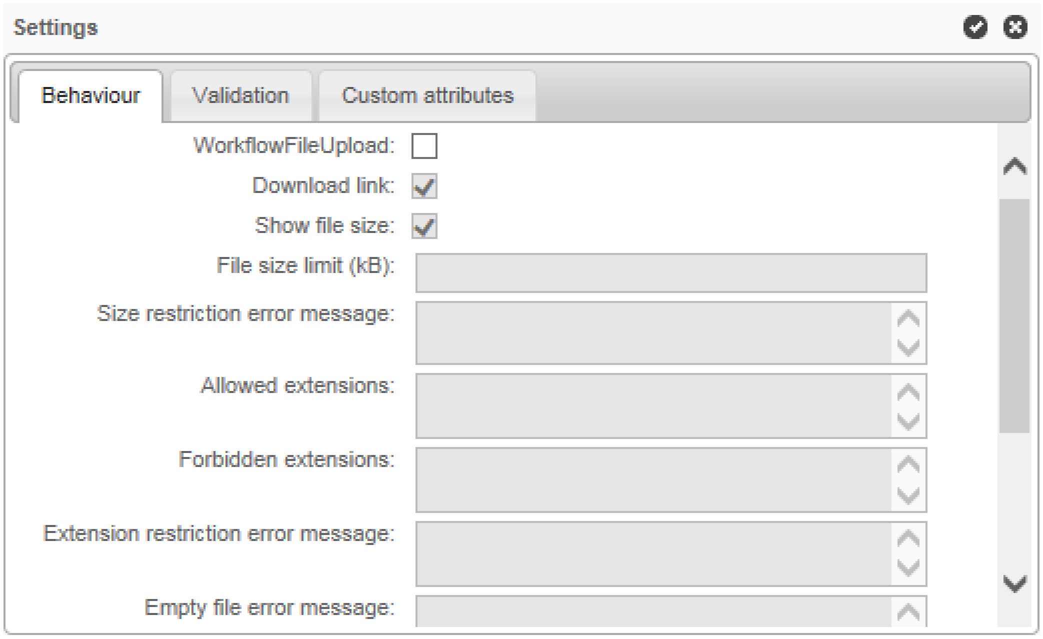
Custom – field	List of custom field templates A custom field template can be created by using the **Save a section or field as tool** feature or by manually deploying it on the server with the following folder and file structures: \wfgen\App_Data\Templates\Forms\[language]\[folder name]\fields\[field name].txt ***Example:*** \wfgen\App_Data\Templates\Forms\En\MyCompany\fields\MyField.txt **Note:** A custom field template must comply with the content structures and rules used and known by the form designer. This is intended for advanced users.	
Default sections		
Approval		A section that contains first name, last name, and date fields in read-only; also an approval radio button list and comment multiline textbox
Empty		A section that has no fields
Request		A section that contains first name, last name, and date fields in read-only; also a category dropdown list, subject textbox, and description multiline textbox
Standard		A section that contains first name, last name, and date fields in read-only

Default fields		
Attachment	Attachment: Browse...	Attach one file
CheckBox	CheckBox: ☐ Option	Single checkbox
CheckBoxList	CheckBoxList: ☐ Option 1 ☐ Option 2	Multiple checkboxes in horizontal alignment
CheckBoxListVertical	CheckBoxList: ☐ Option 1 ☐ Option 2	Multiple checkboxes in vertical alignment
Currency	Currency:	Input for currency value
Date	Date:	Input for date value
DateTime	Datetime:	Input for date time value
DropDownListBox	DropDownListBox Select an item	List of items for a single choice selection
GridView	Gridview: Title Description Price Enter a text here Total: =SUM	Dynamic table of multiple input fields; each column represents a field and each row represents a record
Label	Label: Label	Text displayed in read-only
ListBox	ListBox: Select an item... Item 1 Item 2 Item 3	List of items for a multiple choice selection
Numeric	Numeric:	Input for numeric value
Password	Password:	Input for password value (the entered text will be masked)
RadioButton	RadioButton: ○ Yes	Single radio button
RadioButtonList	RadioButtonList: ○ Yes ○ No	Multiple radio buttons in horizontal alignment
RadioButtonListVertical	RadioButtonList: ○ Yes ○ No	Multiple radio buttons in vertical alignment
ReadOnlyCurrency	Readonly Currency:	Read-only currency value
ReadOnlyDate	Readonly Date:	Read-only date value
ReadOnlyDateTime	Readonly Datetime:	Read-only date time value
ReadOnlyNumeric	Readonly Numeric:	Read-only numeric value
ReadOnlyText	Readonly Text:	Read-only text value
TextArea	TextArea:	Multiline textbox
TextBox	TextBox:	Single line textbox

Section settings

Name / Icon	Description
	Close and apply the changes to the section
	Close and cancel the changes
Validation	
Behaviour **Note:** To simplify the capture of a condition, the form fields and operators are listed in the **Select a field…** and **Select an operator…** drop-down menus. You can also press **Ctrl+Space** to show the IntelliSense drop-down menu, which displays the available variables and keywords.	
Required	Sets the section fields to be required
Condition	The section fields are required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Read-only	Sets the section’s fields to read-only
Condition	The section fields are read-only based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Hidden	Sets the section fields to be hidden
Condition	The section fields are hidden based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"

File attachment field settings

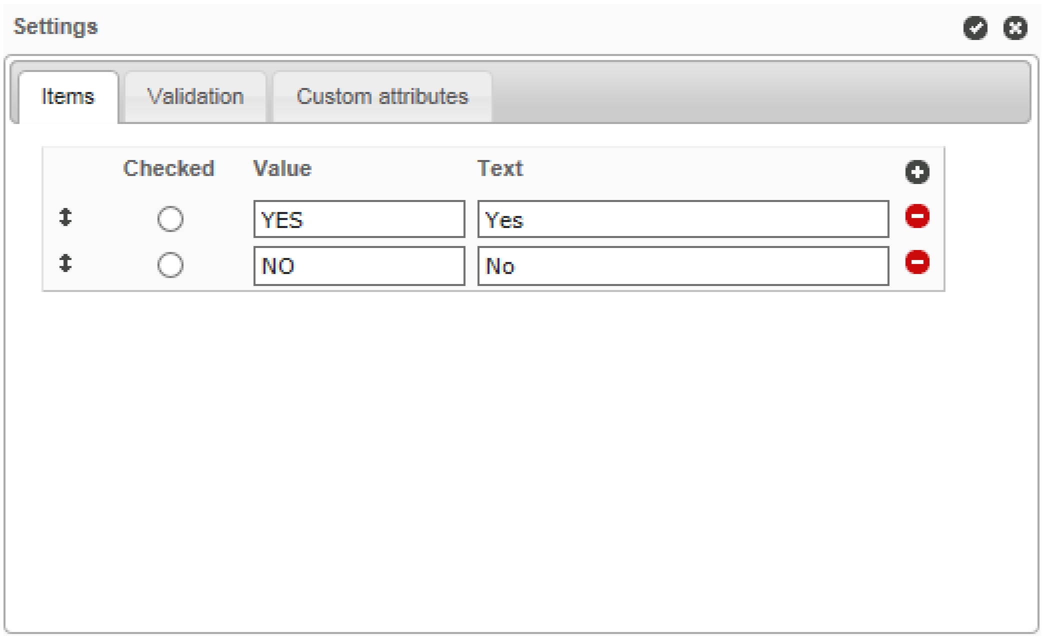


Name / Icon	Description
	Close and apply the changes to the field
	Close and cancel the changes
Behaviour	
WorkflowFileUpload	Check to enable the use of the WorkflowFileUpload control. Otherwise, the FileUpload .NET component v2.0 is used by default.
Download link	Check if you want to enable the link to open file
Show file size	Displays the size of the uploaded file beside the download link
File size limit (kB)	Defines the maximum size of the uploaded file in kilobytes
Size restriction error message	Write error that will appear if file exceeds the file size limit
Allowed extensions	Restricts the allowed file type by extension e.g. .txt, .doc, .html, .xml, .png
Forbidden extensions	List file extension which are not allowed for links
Extension restriction error message	Write error message that will be displayed when file extension error occurs
Empty file error message	Write error message that will display when there is no file to link to
Add button label	Display text for the add button
Update button label	Display text for update button
Delete button label	Display text for delete button
Overwrite button label	Alllows you to choose a new file
Cancel button label	Allows you to cancel request for a new file

Display mode	Sets the default display mode • **Display:** the field is in read-only • **Edit:** the field can be edited
Download link	Check to display a link to download the uploaded file
Validation	
Behaviour **Note:** To simplify the capture of a condition, the form fields and operators are listed in the **Select a field…** and **Select an operator…** drop-down menus. You can also press **Ctrl+Space** to show the IntelliSense drop-down menu, which displays the available variables and keywords.	
Required	Sets the field to be required
Condition	The field is required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. To help with the capture of the condition, the list of form fields and a list of operators are displayed. e.g. MyTextBox.Text == "Hello World"
Read-only	Sets the field to be read-only
Condition	The field is read-only based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. To help with the capture of the condition, the list of form fields and a list of operators are displayed. e.g. MyTextBox.Text == "Hello World"
Hidden	Sets the field to be hidden
Condition	The field is hidden based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. To help with the capture of the condition, the list of form fields and a list of operators are displayed. e.g. MyTextBox.Text == "Hello World"
Custom attributes	
Name	Any name that is not in the list of standard reserved attribute names (id, name, class, style, title, multiple, type, value, checked, runat) Additional reserved attribute names specific to **File attachment / Behaviour**: workflowfileupload, addtext, deletetext, updatetext, allowedextensions, displaymode, downloadlink, filesizelimit, showfilesize A list of examples of custom attributes is displayed at the beginning of the tab; you can choose one or enter a specific name.
Value	Any value
	Add a new attribute
	Remove the current attribute

CheckBox/RadioButton field settings

These settings apply to CheckBoxList, CheckBoxListVertical, RadioButtonList and RadioButtonListVertical fields as well.

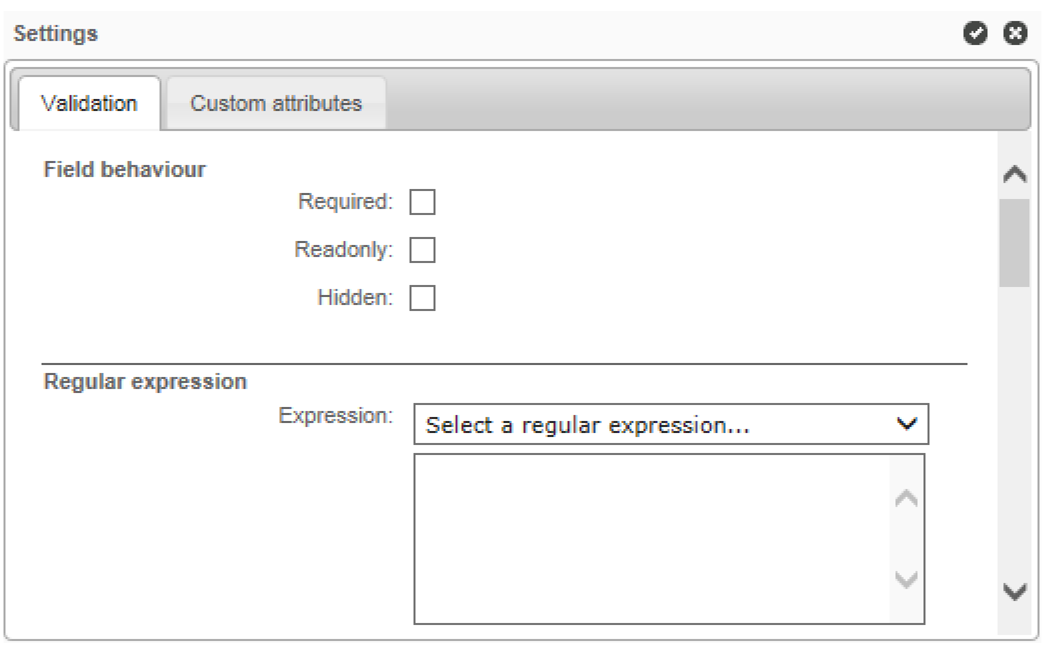


Name / Icon	Description
	Close and apply the changes to the field
	Close and cancel the changes
Items	
	Drag-and-drop to change the order of the items
Checked	Check the default selected items in the field. The radio button field supports single selection whereas the checkbox field supports multiple selections.
Value	Value of the checkbox/radio button
Text	Display text of the checkbox/radio button
	Add a new checkbox/radio button
	Delete the current checkbox/radio button
Validation	
Behaviour **Note:** To simplify the capture of a condition, the form fields and operators are listed in the **Select a field…** and **Select an operator…** drop-down menus. You can also press **Ctrl+Space** to show the IntelliSense drop-down menu, which displays the available variables and keywords.	
Required	Sets the field to be required

Condition	The field is required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World" **Note:** The checkbox fields (list or single) and single radio button are not supported by this behaviour.
Read-only	Sets the field to be read-only
Condition	The field is required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Hidden	Sets the field to be hidden
Condition	The field is required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Custom attributes	
As list	This property allows a radiobutton and checkbox field with one item to be converted as a list control (RadioButtonList / CheckBoxList) instead of a RadioButton / CheckBox control in the web form. Accepted Boolean value: true or false

Textbox field settings

These settings apply to Currency, Date, DateTime, Numeric, Password, and TextArea fields.



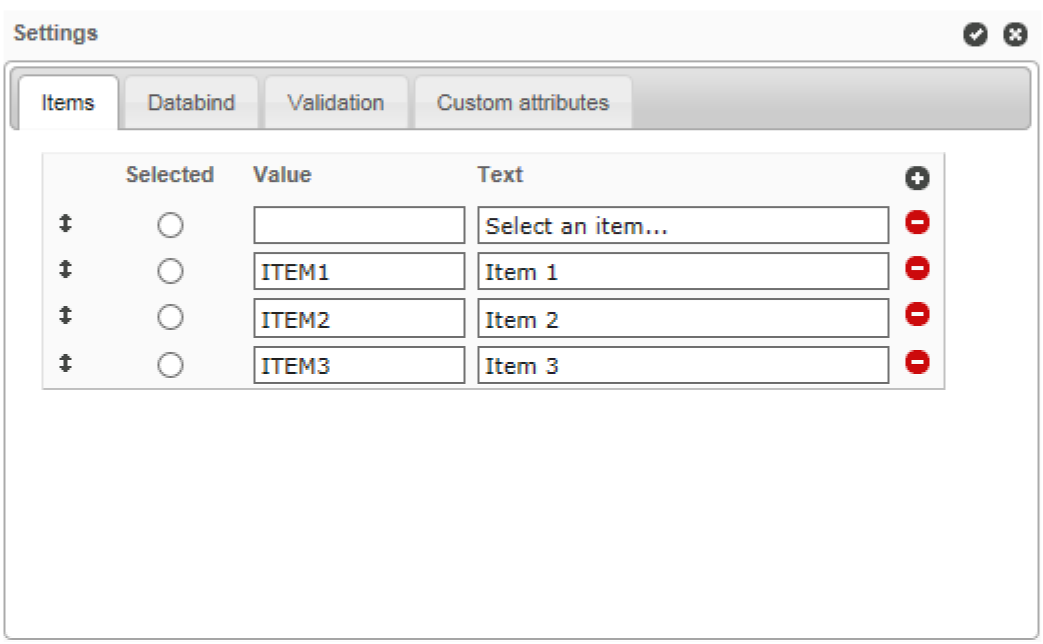
Name / Icon	Description
	Close and apply the changes to the field
	Close and cancel the changes
Validation	
Behaviour **Note:** To simplify the capture of a condition, the form fields and operators are listed in the **Select a field…** and **Select an operator…** drop-down menus. You can also press **Ctrl+Space** to show the IntelliSense drop-down menu, which displays the available variables and keywords.	
Maximum length	The maximum number of characters that can be entered **Note:** Not available for TextArea field.
Required	Sets the field to be required
Condition	The field is required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Read-only	Sets the field to be read-only
Condition	The field is read-only based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Hidden	Sets the field to be hidden
Condition	The field is hidden based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"

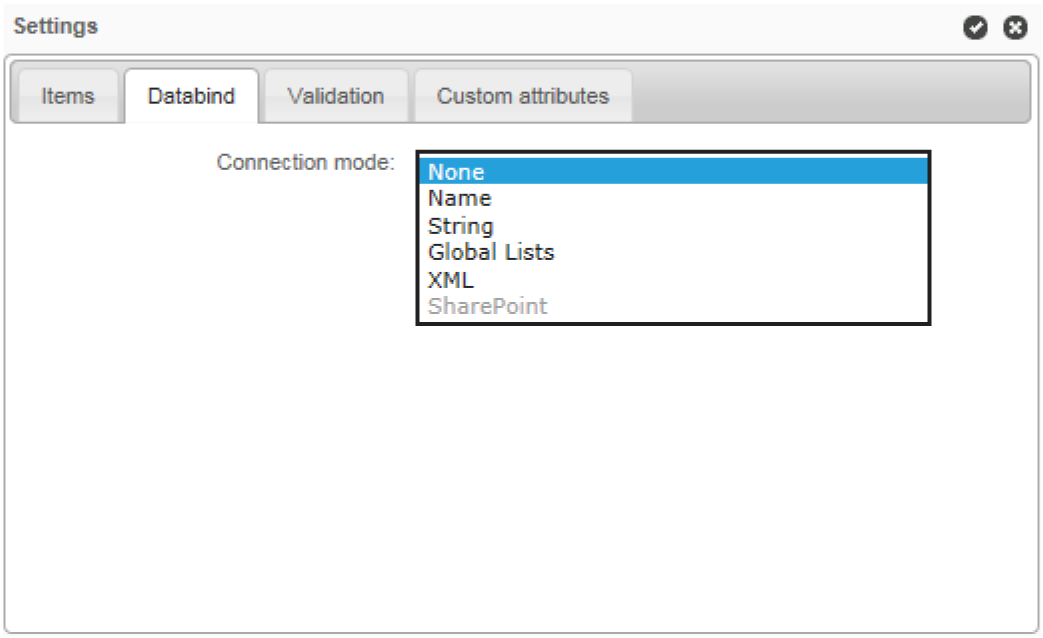
Regular expression	
Expression	A regular expression to determine validity. e.g. email address: \b[A-Za-z0-9._%+-]+@[A-Za-z0-9.-]+\.[A-Za-z]{2,4}\b A regular expression can be entered freely into the designated area. It is also possible to use regular expressions in the **Select a regular expression** list Example of regular expressions provided by default: Email address Internet URL French phone number American/Canadian phone number French INSEE code American social security number Canadian social insurance number French postal code American zip code Canadian postal code Date (dd-MM-yyyy) Date (MM-dd-yyyy) Date (yyyy-MM-dd) Time (00:00 to 23:59) Dollar ($999.99) Percentage (%999.99) Decimal Visa MasterCard American Express
Error message	Message to display when the validated field is invalid
Range	
Minimum value	Minimum value for the field being validated
Maximum value	Maximum value for the field being validated
Error message	Message to display when the validated field is invalid
Custom	
OnServerValidate	Server-side C# syntax validation code; must return a Boolean value (true or false)
Validate empty text	Whether the validator validates the control when the text of the control is empty
Error message	Message to display when the validated field is invalid
Compare	
Value to compare	Value to compare against
Control to compare	Select another field in the current form to compare against
Operator	Comparison operation to apply to values: • Equal • Greater than • Greater than equal • Less than • Less than equal • Not equal
Error message	Message to display when the validated field is invalid

Custom attributes	
timezoneconversion	Applicable to Date and DateTime Textbox fields only This property allows the disabling of the default user time zone conversion behavior when the form field is in the Date or DateTime format. This option is useful if you want to capture and maintain a consistent date-only value in the form field and process data without applying the time zone conversion that sometimes changes the date value depending on the original and current user time zones. Accepted Boolean value: true or false
Additional reserved attribute names specific to validation: maxlength, requiredcondition, readonlycondition, hiddencondition, validationexpression, regularexpressionerrormessage, minimumvalue, maximumvalue, rangeerrormessage, onservervalidate, validateemptytext, customerrormessage, valuetocompare, controltocompare, operator, compareerrormessage.	

ListBox/DropDownListBox field settings

These settings (except **Items**) apply to Label, ReadOnlyCurrency, ReadOnlyDate, ReadOnlyDateTime, ReadOnlyNumeric, and ReadOnlyText fields as well.





Name / Icon	Description
	Close and apply the changes to the field
	Close and cancel the changes
Items	
	Drag-and-drop to change the order of the items
Selected	Check the default selected items in the field The DropdownListBox field supports single selection whereas the ListBox field supports multiple selections.
Value	Value of the item
Text	Displays text of the item
	Add a new item
	Delete the current item
Databind	
Connection mode	Select the type of connection for data binding: • Name • String • Global lists • XML • SharePoint
Connection by name	
Connection name	List of connection names defined in the WorkflowGen web configuration file (<connectionStrings>)
Select command	SQL select query e.g. select column_id, column_text from table_name;

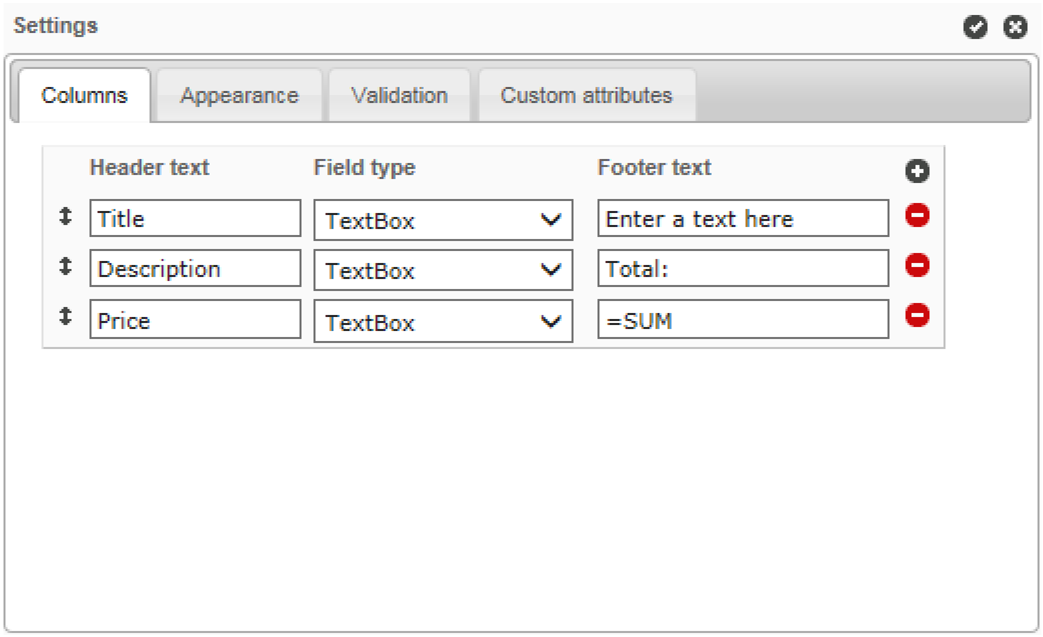
Data value field	The data field that provides the item value e.g. column_id
Data text field	The data field that provides the item text e.g. column_text
Append data bound items	Check to append the data bound items to the list. Otherwise, the data bound items will replace all the existing items in the list.
Parameters	
Name	Specifies the parameter name if the Select command uses a filter with a dynamic value from a parameter in the select query. e.g. Name=PARAM; Select command=select column_id, column_text from table_name where column_id > @PARAM
Data type	Specifies the data type of the parameter: • Boolean • Byte • Char • DateTime • DBNull • Decimal • Double • Empty • Int16 • Int32 • Int64 • Object • SByte • Single • String • UInt16 • UInt32 • UInt64
Filter by field	Specifies another field in the current form where the dynamic value will be retrieved
Default filter value	Specifies the default value if the parameter field has an empty value or no value
If the value is empty	Select from one of the following: • Do nothing • Remove all items • Filter on empty value
Connection by string	
Connection String	Specifies the connection string e.g. Data Source=sqlserver_name;Initial Catalog=wfgen;User ID=wfgen_user;Password=abc123!;

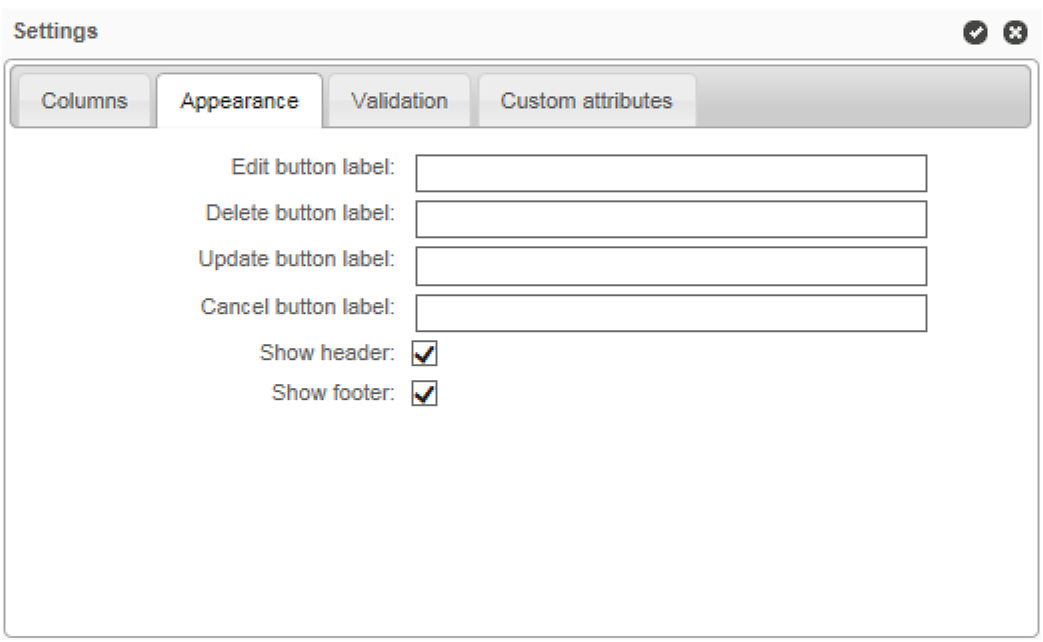
Provider name	List of provider names defined in the WorkflowGen web configuration file (AdministrationFormDataProviderName). It also supports custom defined third-party .NET data providers. • System.Data.SqlClient (.NET FWK Data Provider for SQL Server) • System.Data.OleDb (.NET FWK Data Provider for OLE DB) • System.Data.Odbc (.NET FWK Data Provider for ODBC) • System.Data.OracleClient (.NET FWK Data Provider for Oracle)
Select command, Data value field, Data text field, Append data bound items, Parameters (Name, Field, Default value and Data type)	Same as **Connection by name**
Connection by global lists	
List name	Specifies the list name
Data value column	Select the column used for item’s value
Data text column	Select the column used for item’s label
Sort column	Select the column used to sort the list
Append data bound items	Check to append the data bound items to the list. Otherwise, the data bound items will replace all the existing items in the list.
Filter	
Column	Specifies the column name used to filter data
Comparison operator	• Equal (=) • Not equal (<>) • Greater than (>) • Greater than or equal to (>=) • Less than (<) • Less than or equal to (<=) • Contains • Begins with • Ends with • Is null • Is not null • In • Not In • Between
Filter by field	Select the form field that contains the filter’s value
Default filter value	The default value if the field is empty
If the value is empty	Set the behaviour of the filter if the value is empty

Connection by XML	
URL	Specifies the file name of an XML file for data binding e.g. c:\myfile.xml e.g. http://server_name/myfile.xml e.g. http://server_name/service.asmx/getmyfilexml The XML file must be structured so that the properties of each element are expressed as attributes. If you have an XML file in which property values are expressed in a format other than attributes, you must: • Create a transformation file (.xslt) that can dynamically reformat the .xml file so that it is compatible with the XmlDataSource control. • Specify the path of your XSLT file in the "XSL transform file" parameter (see below).
XPath	Specifies an XPath expression to be applied to the XML data contained by the XML file, e.g. rss/channel/item
XSL transform file	Specifies the file name of an Extensible Stylesheet Language (XSL) file (.xsl) that defines an XSLT transformation to be performed on the XML file e.g. c:\myfile.xsl
Data value field, Data text field, Append data bound items	Same as **Connection by Name**
Connection by SharePoint 2007 and 2010 **Note:** The settings in the config file have to be set to detect SharePoint for this option to be active .	
URL	URL of the SharePoint list e.g. http://www.mysitesps.com/mylists
Name of the list	Name of the SharePoint list e.g. Country
Data field value	Name of the column containing the value of the item e.g. Id_Country
Data text field	Name of the column containing the text of the item e.g. Description
Validation	
Behaviour	
Note: To simplify the capture of a condition, the form fields and operators are listed in the **Select a field…** and **Select an operator…** drop-down menus. You can also press **Ctrl+Space** to show the IntelliSense drop-down menu, which displays the available variables and keywords.	
Maximum length	The maximum number of characters that can be entered **Note:** Not available for TextArea field.
Required	Sets the field to be required

Condition	The field is required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Read-only	Sets the field to be read-only
Condition	The field is read-only based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Hidden	Sets the field to be hidden
Condition	The field is hidden based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Custom attributes	
timezoneconversion	Applicable to Date and DateTime Label fields only This property allows for the disabling of the the default user time zone conversion behavior when the form field is in Date or DateTime format. This option is useful if you want to capture and maintain a consistent date-only value in the form field and process data without applying the time zone conversion that sometimes changes the date value depending on the original and current user time zones. Accepted Boolean value: true or false
Additional reserved attribute names specific to Databind: connectionname, connectionstring, providername, xmldatasource, xpath, transformfile, selectcommand, parametername, parametercontrolid, parameterdefaultvalue, parametertype, datavaluefield, datatextfield, appenddatabounditems, spsdatasource, spsdatalist, spsdatavaluefield, spsdatatextfield.	

GridView field settings





Name / Icon	Description
	Close and apply the changes to the field
	Close and cancel the changes
Columns	
	Drag-and-drop to change the order of the columns
Header text	Display text on the column's header

Field type	List of field types supported in the GridView: • DropDownListBox • ListBox • Label • TextArea • TextBox **Notes:** • TextBox and TextArea fields in the GridView do not support the validation settings. • The Label field in the GridView does not support the databind settings.
Footer text	Display text of the column’s footer The column’s footer text can be plain text or an expression used to filter rows, calculate the values in a column, or create an aggregate column (e.g. to calculate a summary from all the row values of the same column: =SUM). For more information, refer to DataColumn.Expression at http://msdn.microsoft.com/en-us/library/system.data.datacolumn.expression(v=VS.80).aspx
	Add a new column
	Delete the current column
Appearance	
Edit button label	Display text for the edit button
Delete button label	Display text for the delete button
Update button label	Display text for the update button
Cancel button label	Display text for the cancel button
Show header	Check to display the header
Show footer	Check to display the footer
Note: To simplify the capture of a condition, the form fields and operators are listed in the **Select a field…** and **Select an operator…** drop-down menus. You can also press **Ctrl+Space** to show the IntelliSense drop-down menu, which displays the available variables and keywords.	
Required	Sets the field to be required
Condition	The field is required based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Read-only	Sets the field to be read-only
Condition	The field is read-only based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Hidden	Sets the field to be hidden

Condition	The field is hidden based on a custom condition. If the condition is empty then it will be true. The custom condition must be server-side C# syntax code. e.g. MyTextBox.Text == "Hello World"
Additional reserved attribute name specific to **GridView / Appearance**: edittext, deletetext, updatetext, showheader, showfooter	

ASP.NET User Control field tool

The **Form designer** supports a custom field tool that is an ASP.NET user control. You can create this tool and manually deploy it on the server. It must have the following elements, folder and file structures:

The user control field template: \wfgen\App_Data\Templates\Forms\[language]\[folder name]\fields\[user control name].txt

The user control sources:

- ASCX: \wfgen\WfApps\WebForms\[user control name].ascx
- Code-behind: \wfgen\WfApps\WebForms\[user control name].ascx.cs

When you enter a tag, the user control field automatically inserts its closing tag. To collapse a code block, click the down arrow next to the line number, which will insert a double-arrow icon in place of the code. To expand the code block, click the right arrow. Press **Ctrl+Space** to show the **IntelliSense** drop-down menu, which displays the available variables and keywords.

The user control field supports the Custom attributes settings; see **File attachment field settings** on page 126.

ID editing

The **ID menu** in the toolbar will active the field's identifier edit mode. You can change the identifier of the header label, sections and fields. Identifiers are normally used to identify a form element such as a section or a field in WorkflowGen's action parameters (e.g. FORM_FIELDS_REQUIRED) or in the form's ASP.NET code-behind.

Rules

- Each identifier must be unique.
- It must start with a letter.
- It can only contain alphanumeric and the underscore characters.
- It is case-sensitive.
- Each field within a section will be automatically prefixed with the section's identifier following an underscore character. e.g. section id=ACTION1; field id=ACTION1_MYFIELD1
- Each field within a GridView field will be automatically prefixed with the GridView's identifier following the underscore character. e.g. "gridview id=ACTION1_MYGRIDVIEW1; field id=ACTION1_MYGRIDVIEW1_TITLE1".

- If the field is moved from one section to another section, then the field's identifier will be automatically prefixed with the new section's identifier.
- If the section's identifier is changed then all the fields within the section will be automatically prefixed with the new section's identifier.

Note:A tooltip with the full/real identifier of the element will be displayed when you mouseover the identifier input field.

Tooltip editing

The **Tooltip menu** in the toolbar will activate the field's tooltip edit mode. You can change the tooltip for the form fields only. Tooltips are normally used to display more information about the field when the user moves the mouse pointer over it.

Format editing

The **Format** menu in the toolbar will activate the field's format edit mode. You can change the format of TextBox, Currency, Date, DateTime, Numeric, Label, ReadOnlyCurrency, ReadOnlyDate, ReadOnlyDateTime, ReadOnlyNumeric and ReadOnlyText fields. Formats are normally used to specify the way to capture and display a specific type of value based on the user's language and culture.

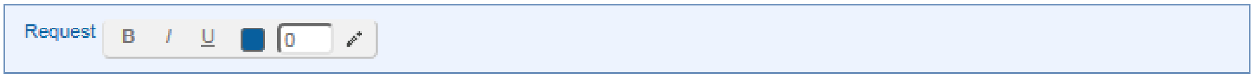
Format types	Description
Numeric	The value is numeric
Currency	The value is a currency
Date Time (system)	WorkflowGen's default date time
Short date	6/15/2009 1:45:30 PM → 6/15/2009 (en-US)
Long date	6/15/2009 1:45:30 PM → Monday, June 15, 2009 (en-US)
Short time	6/15/2009 1:45:30 PM → 1:45 PM (en-US)
Long time	6/15/2009 1:45:30 PM → 1:45:30 PM (en-US)
Full date/time (short time)	6/15/2009 1:45:30 PM → Monday, June 15, 2009 1:45 PM (en-US)
Full date/time (long time)	6/15/2009 1:45:30 PM → Monday, June 15, 2009 1:45:30 PM (en-US)
General date/time (short time)	6/15/2009 1:45:30 PM → 6/15/2009 1:45 PM (en-US)
General date/time (long time)	6/15/2009 1:45:30 PM → 6/15/2009 1:45:30 PM (en-US)
Month/day	6/15/2009 1:45:30 PM → June 15 (en-US)
Round-trip date/time	6/15/2009 1:45:30 PM → 2009-06-15T13:45:30.0900000
RFC1123	6/15/2009 1:45:30 PM → Mon, 15 Jun 2009 20:45:30 GMT
Sortable date/time	6/15/2009 1:45:30 PM → 2009-06-15T13:45:30
Universal sortable date/time	6/15/2009 1:45:30 PM → 2009-06-15 20:45:30Z
Universal full date/time	6/15/2009 1:45:30 PM → Monday, June 15, 2009 8:45:30 PM (en-US)
Year/month	6/15/2009 1:45:30 PM → June, 2009 (en-US)

Appearance editor

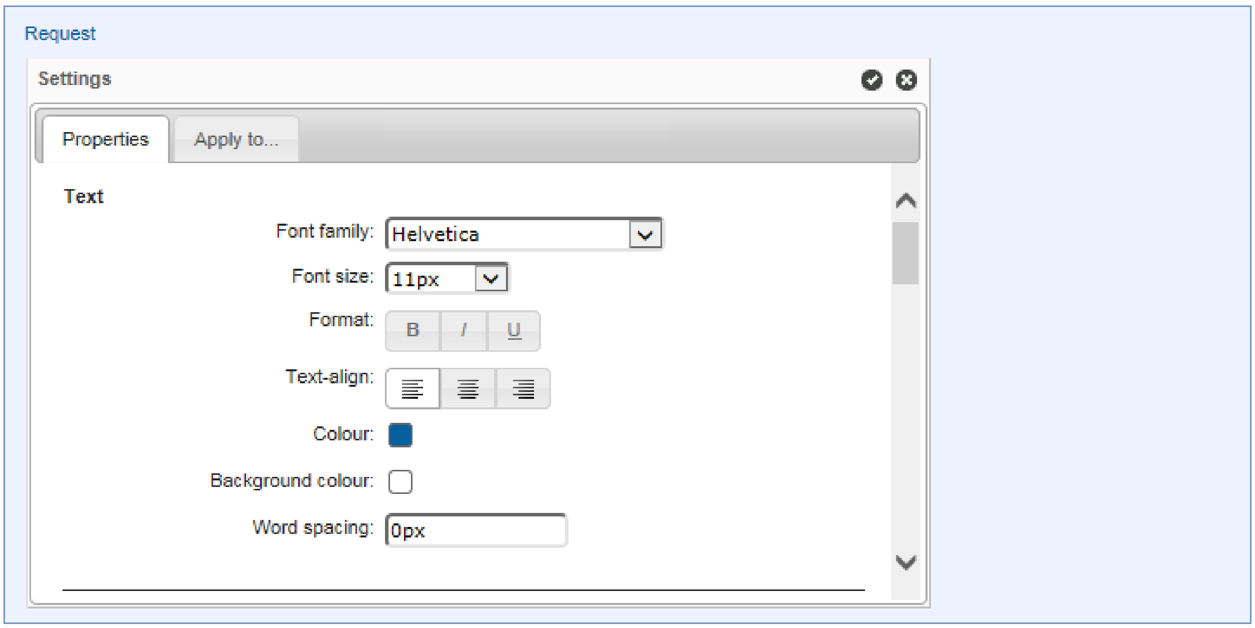
While the **General** panel applies attributes to the entire form, the **Appearance editor** lets you customize the appearance of individual form items and provides further options. You can change the appearance of headers and footers, fields and their labels, radio buttons, checkboxes, the **Submit** button, and the optional **Save-as-draft** button. Click the **Appearance** tab to open the **Appearance editor**.

You can use the **Appearance editor** in **Express** or **Advanced** modes.

To use **Express** mode, mouseover the item you want to customize and a toolbar will appear that lets you change the appearance of text and the size of the top margin. (If the item contains several fields, toolbars will appear in the corresponding positions.) You can also change the width of labels and fields. To display the **Express** mode toolbars for all of the items on the form, press **Ctrl+Shift+A**.



Advanced mode provides extended customization options. To show the **Advanced** mode menu, mouseover the item to display the **Express** mode toolbar, then click the pencil icon at the right.



Text lets you set the text appearance, alignment, and word spacing. **Layout** sets the width and padding of the item. **Borders** adds and customizes the appearance of borders. **Field** sets the top, left, and right margins of the field.

You can also add images to section headers and bodies:

- The **Image URL** field contains the URL of the image to display.
- **Image repeat** sets if and how the image will be repeated:
  - **No repeat:** the image will not be repeated
  - **Repeat:** the image will be repeated both vertically and horizontally (this is the default setting)

- **Repeat x:** the image will be repeated horizontally only
- **Repeat y:** the image will be repeated vertically only

- **Image position "x"** aligns the image to the left, horizontal center, or right.
- **Image position "y"** aligns the image to the top, vertical center, or bottom.

On the **Apply to…** tab, you can choose the items to which you want to apply the customized appearance settings using the checkboxes.

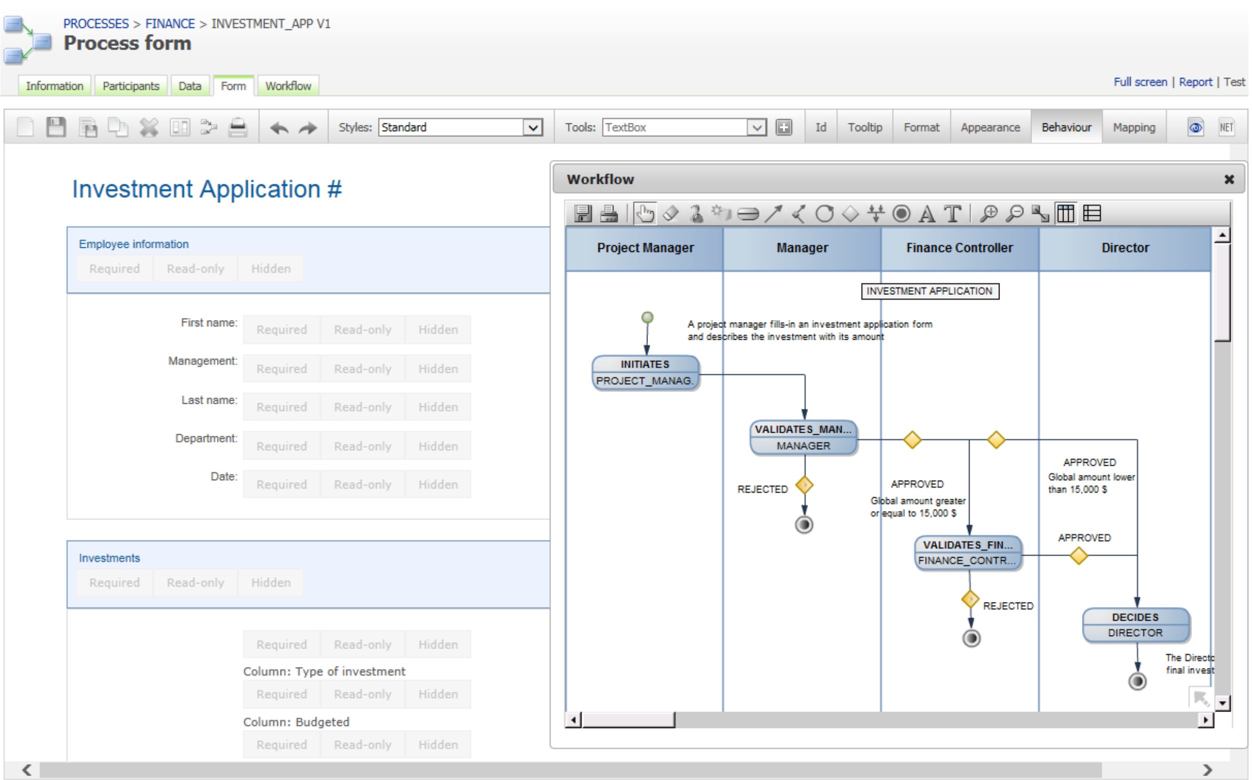
To apply your customized appearance and exit the Advanced mode menu, click the checkbox icon at the top right of the panel. To cancel changes and exit, click the **x** icon.

Define the behaviour

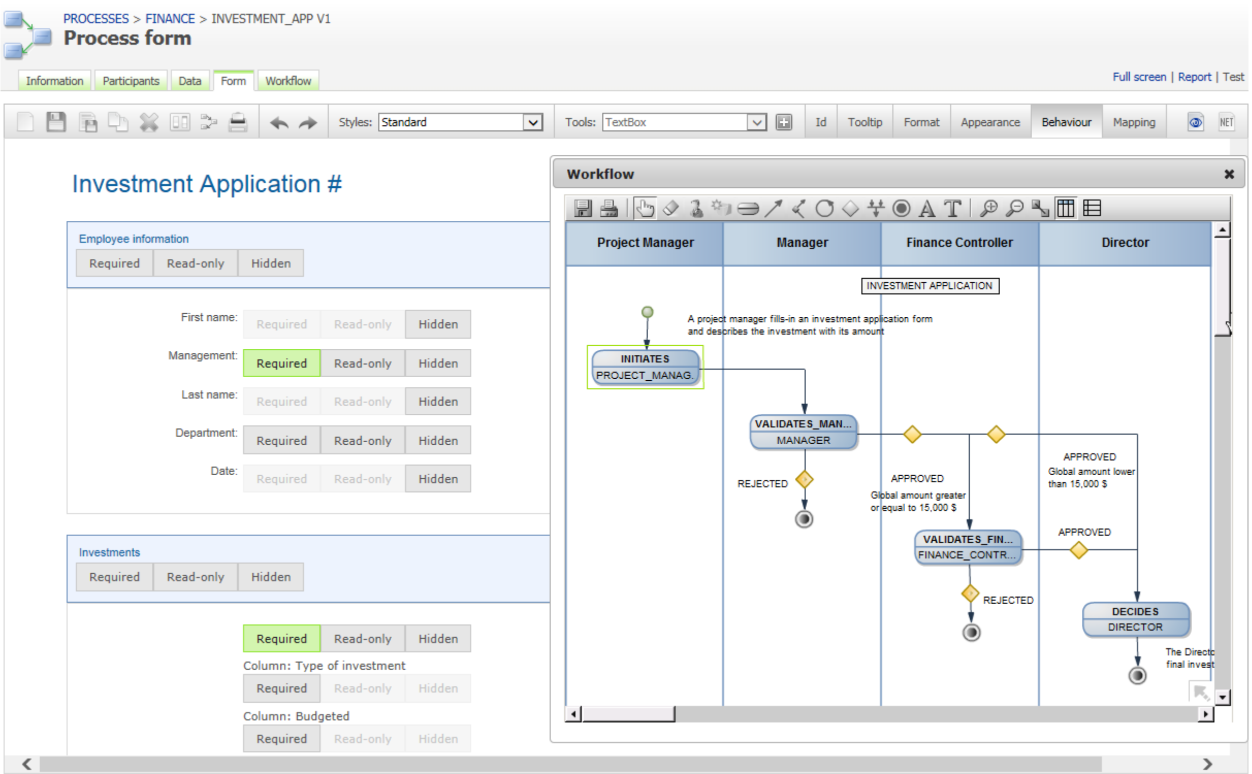
The **Behaviour** section is used to visually define the behaviour of sections of the form fields for each action of the workflow.

To activate the interactive workflow view and define the behaviour of the form, click **Behaviour** on the toolbar.

To define the behaviour of sections and fields of the form at the action level, click the desired action in the interactive view of the workflow. Once the action is selected, the **Required**, **Read-only**, and **Hidden** settings are activated as clickable buttons for each section and the form field.



To activate the **Required**, **Read-only**, and **Hidden** settings of each section and form field, click the button related to the section or field for which you want to manage the behaviour.



To define the behaviour of the form for the other actions of the workflow, click another action via the interactive view and repeat the above operation according to the desired behaviour.

Table of supported behaviours for a section

Sections	Required	Read-only	Hidden
All sections	x	x	x

Table of supported behaviours per field type

Default – Fields	Required	Read-only	Hidden
File attachment (Standard .NET FileUpload control)	x	x	x
File attachment (WorkflowFileUpload control)		x	x
CheckBox		x	x
CheckBoxList		x	x
CheckBoxListVertical		x	x
Currency	x	x	x
Date	x	x	x
DateTime	x	x	x
DropdownListBox	x	x	x
Gridview	x*	x	x
Gridview - Column	x*		
Label			x

ListBox	**x**	**x**	**x**
Numeric	**x**	**x**	**x**
Password	**x**	**x**	**x**
RadioButton		**x**	**x**
RadioButtonList	**x**	**x**	**x**
RadioButtonList Vertical	**x**	**x**	**x**
ReadOnlyCurrency			**x**
ReadOnlyDate			**x**
ReadOnlyDateTime			**x**
ReadOnlyNumeric			**x**
ReadOnlyText			**x**
TextArea	**x**	**x**	**x**
Text	**x**	**x**	**x**

* Not supported in field conditions.

Manage the mapping

The **Mapping menu** enables you to visually define the default values (input data) and/or data to be stored by the workflow (data out) of the form fields for each action of the workflow.

Default value (data in)

A default value will automatically populate a field when displaying the form following the launch of an action. These default values can be of several types:

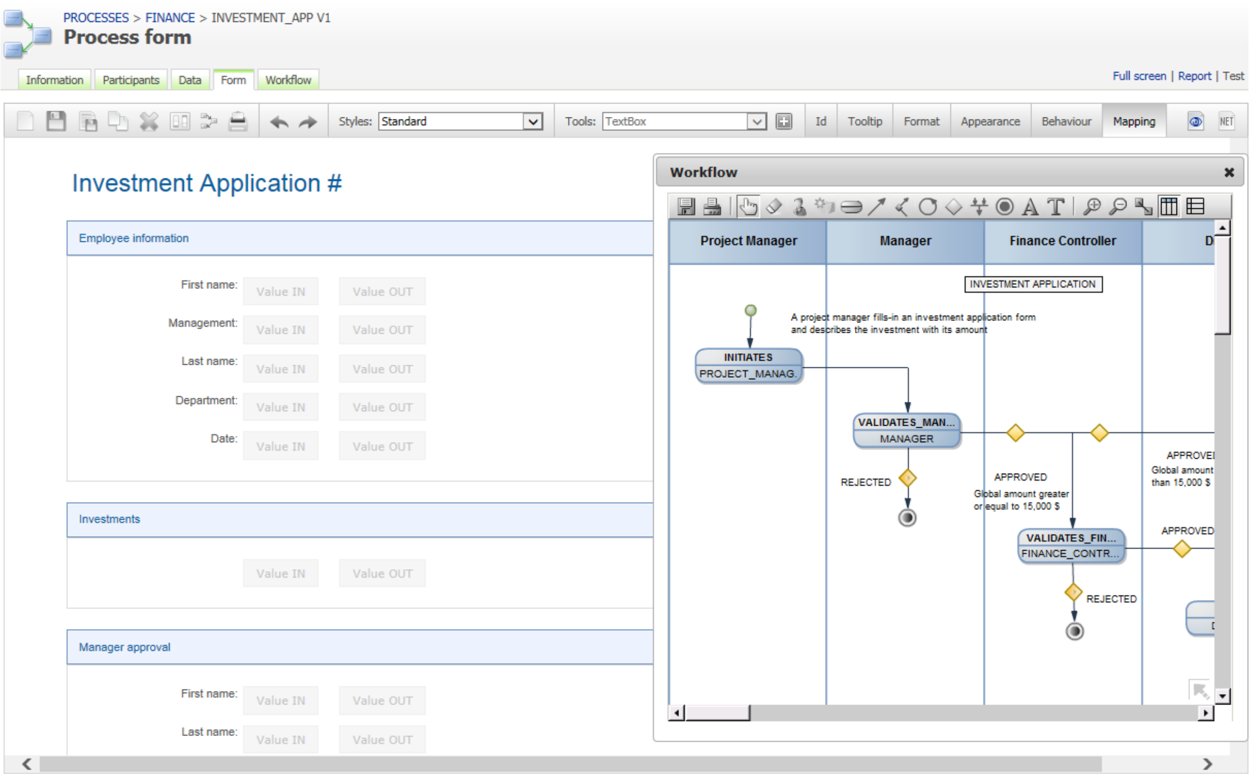
- Manually-entered text
- A macro selected from the list of available macros
- Workflow data selected in the data list

Data stored by the workflow (data out)

Data stored by the workflow corresponds to the value of form fields that will be retrieved by the workflow as a result of an action, and that can be used for the following purposes:

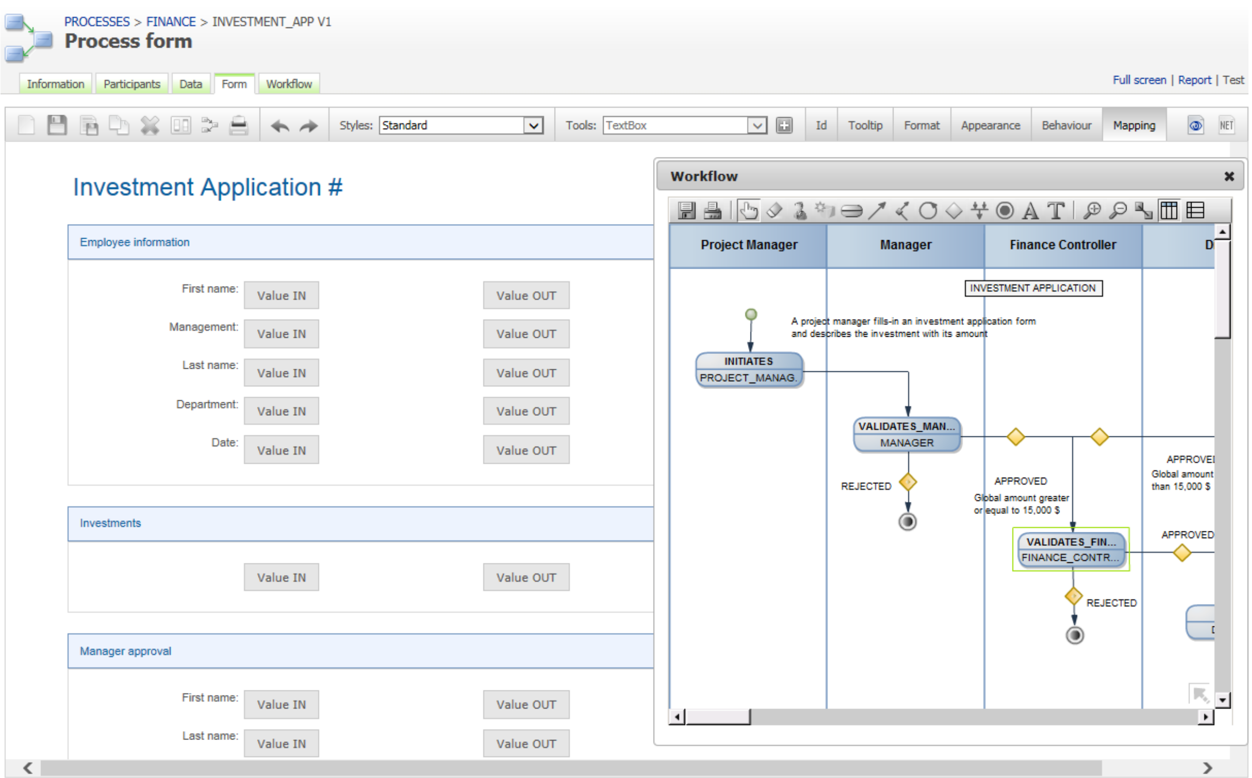
- As conditions of workflows
- In the assignment of an action, setting the time for action and content of notifications
- Through the tracking features and/or statistics (reporting)

To activate the interactive workflow view and manage the mapping of the form, click **Mapping** on the toolbar.

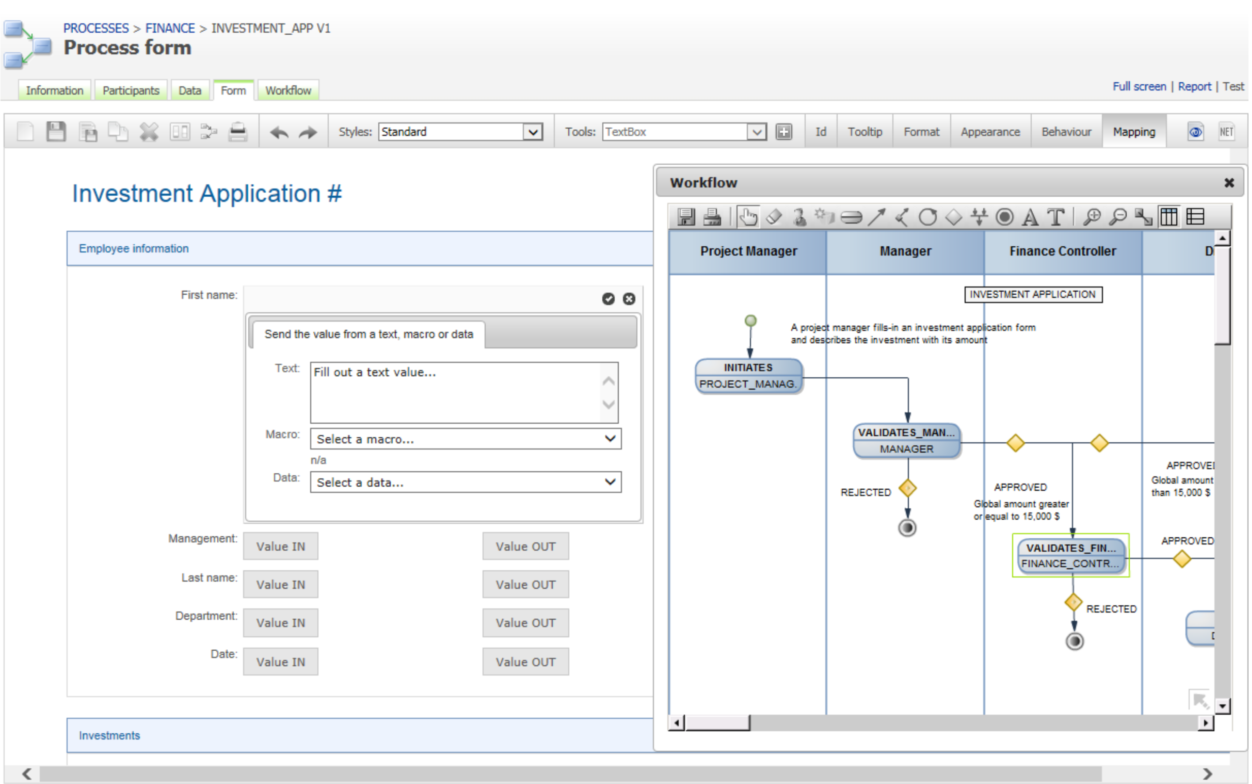


To set the default values of form fields at the action level, click the desired action in the interactive view of the workflow.

Once the action is selected, the **Value IN** and **Value OUT** buttons are activated in each form field.



To set the default value of a field at the action level, click the **Value IN** button to the right of the field concerned.



In the dialog box that appears, set the default value of the field by entering text in the **Text** section, by selecting a macro from the drop-down **Macro** list, or by selecting process data in the **Data** combo box. Click the check mark at the top right to save.

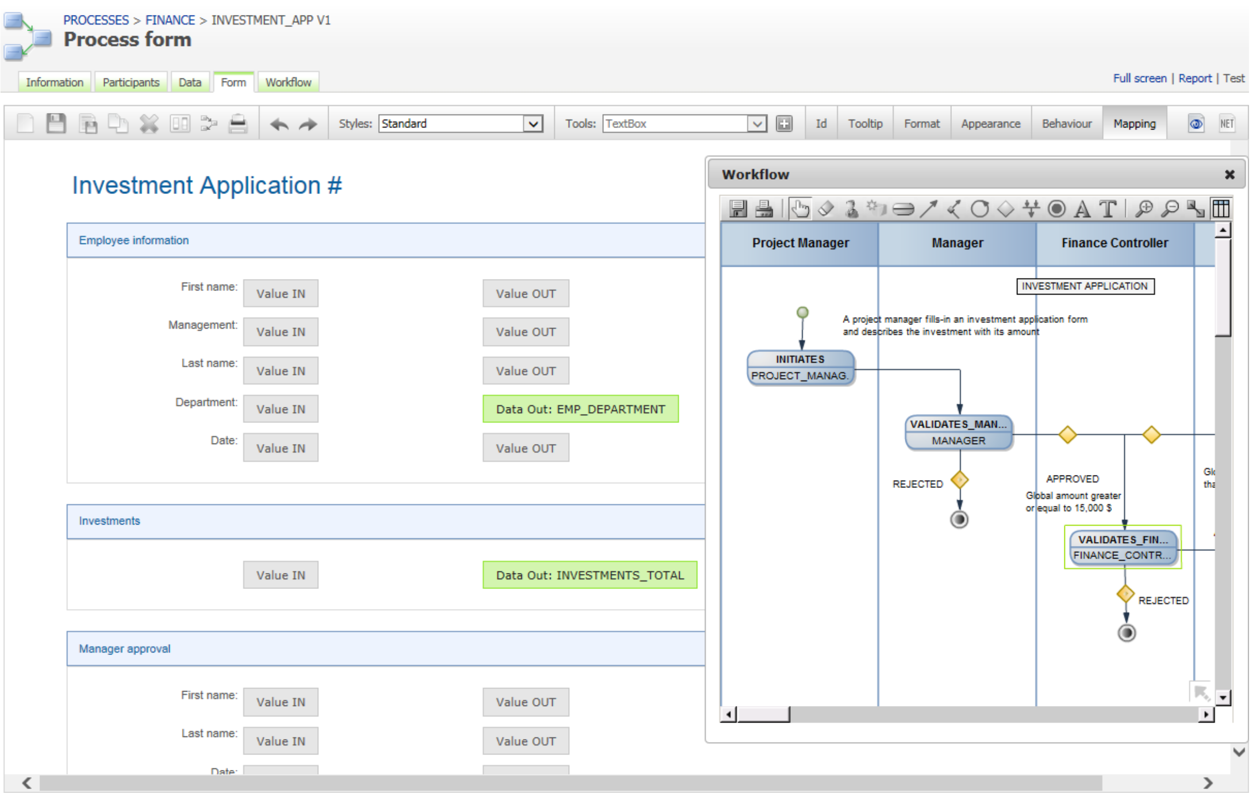
To set the default values of other form fields for each of the actions of the workflow, click another action via the interactive view and repeat the previous operation.

To set the form data to be stored for an action, click the desired action in the interactive view of the workflow.

To send the value of a form field and therefore store it as process data, click **Value OUT** to the right of each field in question.

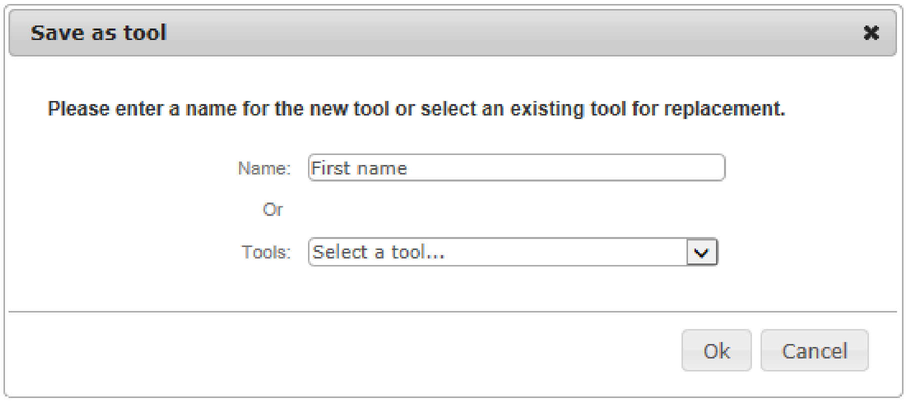
Fields whose values have been sent are automatically declared in the **Data** tab of the process definition and will be usable as workflow transitions, as tracking features and statistics (reporting), etc.

To define the data stored for each of the actions of the workflow, click another action via the interactive view and repeat the previous operation.



Save a section or field as tool

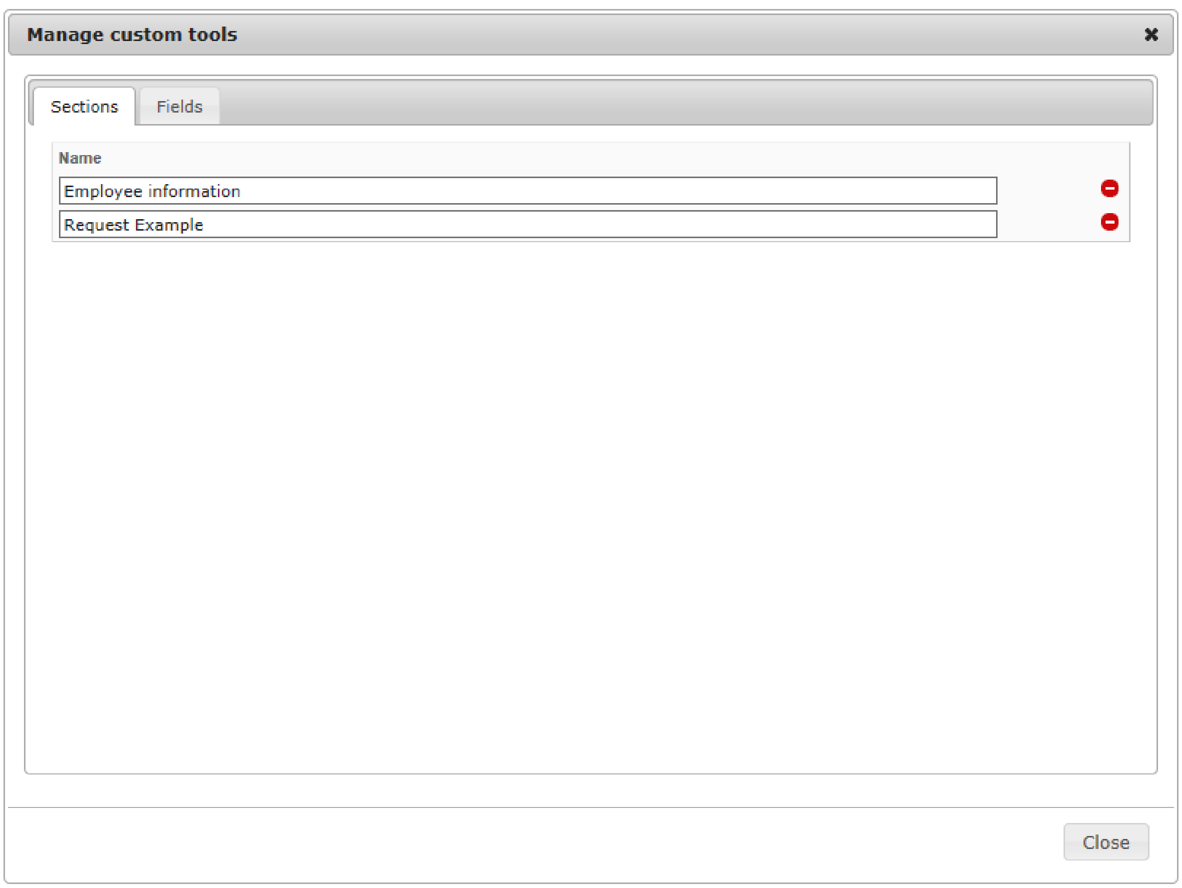
This feature allows a form designer to save an existing section or field in the current form as a custom tool template in order to be reused in other forms. First, select a section or field then click the **Save a section or field as tool** icon on the toolbar (see **Toolbar** on page 114).

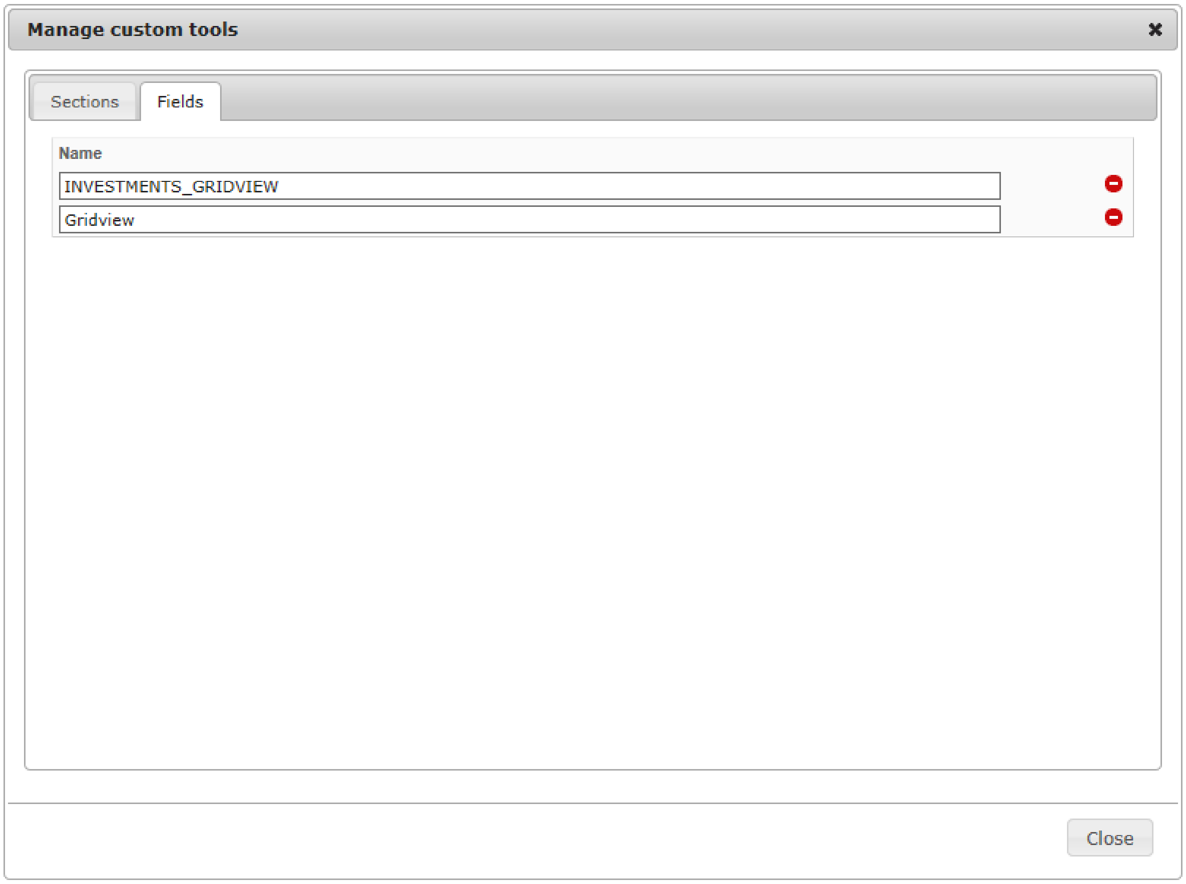


Fields	Description
Save as tool	
Name	Enter a unique name for the custom tool
Tools	Select an existing tool in the dropdown list for replacement

Manage custom tools

To open this window, click the **Tools** drop-down menu and select **Manage custom tools**, which allows you to delete custom tools.





Name / Icon	Description
Sections	
Name	Name of the custom section tool
	Delete the current custom section tool
Fields	
Name	Name of the custom field tool
	Delete the current custom field tool

Process form lifecycle

The built-in form designer creates a web form (aspx and code-behind) that is based mainly on both ASP.NET Framework and WorkflowGen.My libraries.

This gives you the advantage of many possibilities for customizing and integrating the web form to your specific needs, especially in an advanced and integrated development environment such as Visual Studio.

An example of the process lifecycle begins with the creation of a first version, which is done quickly and easily using the built-in form designer. The end-users will then test the first version as proof of concept. Later, the process can be deployed for production if it meets the business's and end-users' expectations. If there are custom or advanced functionalities required in a new version that are not available in the built-in form designer, then the process can be migrated to the web form development.

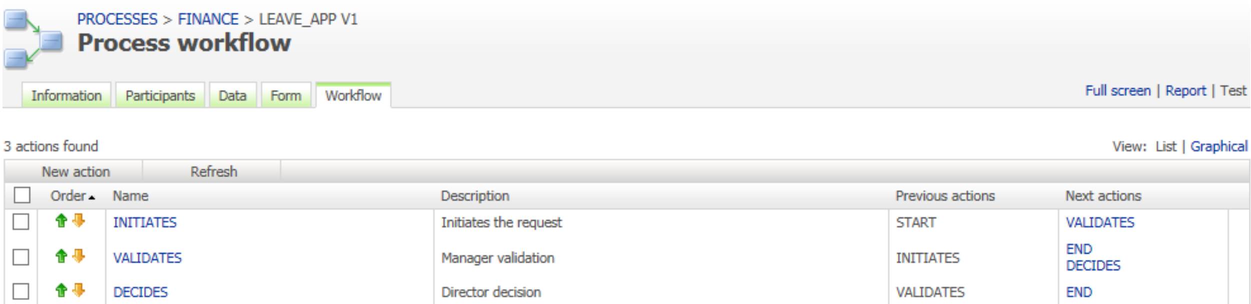
In order to migrate a process with a built-in form to a process web form, follow these steps:

1. Make a new version or duplicate the process with the built-in form.
2. Uncheck the **Built-in form designer** option in the **New process** information tab.
3. In Visual Studio, open the web form website with the folder path (\wfgen\wfapps\webforms\[process name]\V[version number]) and start your development.
4. You can choose to leave your web form folder ([process name]\V[version number]) as a sub-folder within the webforms web application (\wfgen\wfapps\webforms) or transform this folder into a web application in IIS.
   - The former case will make your web form dependent and uses the web forms web application resources (e.g. \bin, \App_Data, \App_Resource, App_Themes, etc.) as it did prior to migration.
   - The latter case will make your web form as an independent web application. In this case, you will need to copy the webforms's bin sub-folder to your web form's folder and refresh the opened project in Visual Studio, if needed.

For more information on web form development, refer to the web form developer guide: http://community.workflowgen.com/downloads/documentation/workflowgen-5x-developer-guides/Developer-guide-en.pdf.

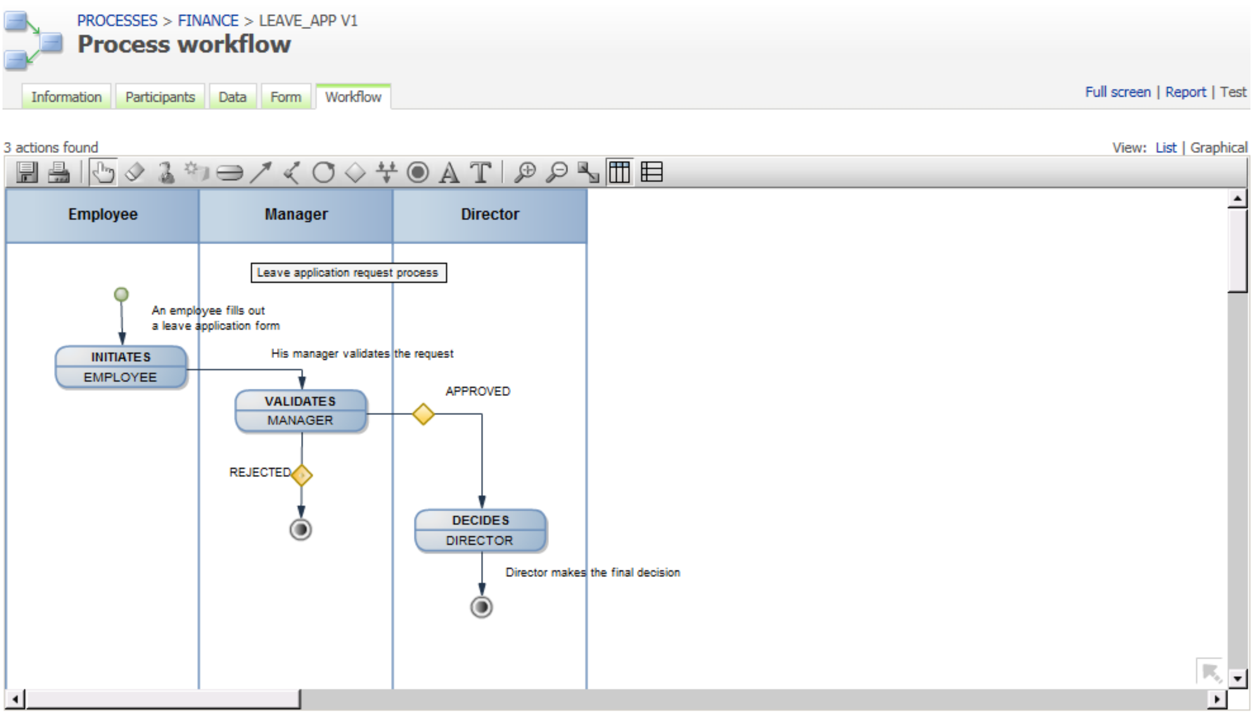
Workflow

Process workflow screen (list view)

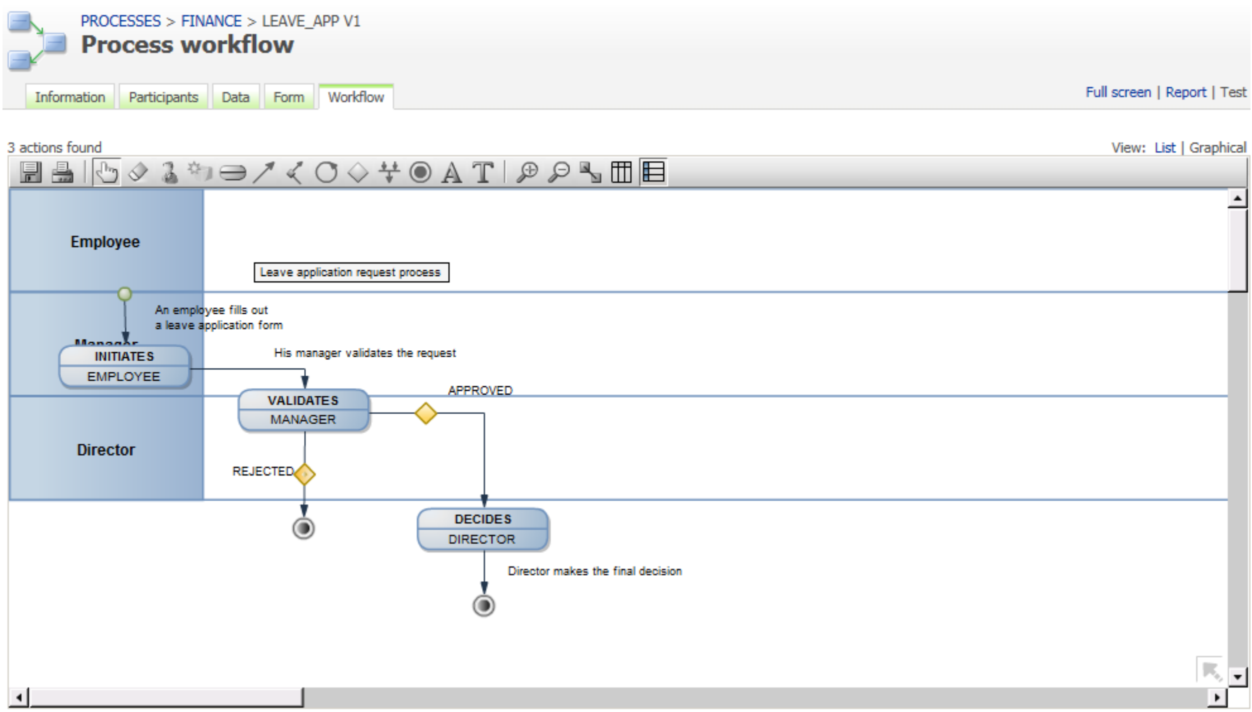


Process workflow screen (graphical view)

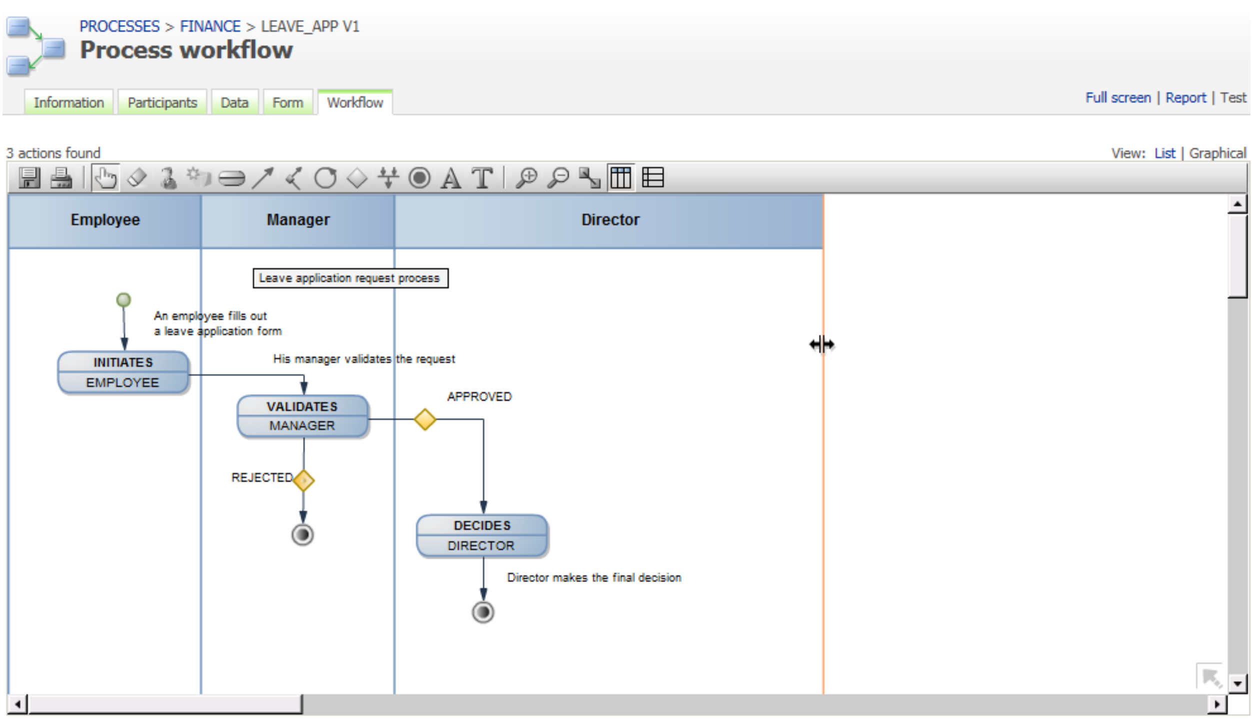
With vertical swim lanes



With horizontal swim lanes



With resized vertical swim lanes



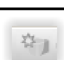
Actions list view

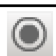
Click on the **List** link to see this view.

Columns	Remarks
New action	Opens the **Select an action type** window and then the **Add action** form
Refresh	Updates the action list
Display order	The arrows allow the action display order to be modified within the process workflow
Name	Action name A link displays the action form in edit mode. The **Add** link on the Edit action screen displays a blank action form to add new Help data.
Description	Action description
Previous actions	Lists actions preceding the current action within the workflow
Next actions	Lists actions following the current action within the workflow A link displays the **Edit action** form, which lists actions that following the current one. The **Add** link on the **Edit action** form displays the action form in edit mode for each following action.

Actions graphical view

Click on the **Graphical** link to see this view.

Icon	Tools	Remarks
	Save the layout	Save the current layout of the workflow diagram
	Print the diagram	Print the current diagram
	Select objects	Selection tool
	Delete objects	Delete tool
	Add participant	Add a new participant to the process
	Add data	Add new data to the process
	Add action	Add a new action to the process
	Add transition	Add a new transition between two actions
	Add break points	Add break points to transitions

	Add loop	Add a loop transition to an action
	Add condition	Add a condition to a transition
	Add synchronization	Add a synchronization action to the process
	Add end	Add an end point to the process
	Add comment	Add a comment to the process
	Add text	Add text to the process
	Increase zoom	Clicking this button increases the zoom scale by 15%. Holding down this button will increase the zoom scale progressively.
	Decrease zoom	Clicking this button decreases the zoom scale by 15%. Holding down this button will decrease the zoom scale progressively.
	Auto positioning mode	Switch between auto and manual positioning mode for the transitions anchors
	Vertical swim lane mode	Add a vertical swim lane overlay on the graphical view with the actions organized under the participant columns
	Horizontal swim lane mode	Add a horizontal swim lane overlay on the graphical view with the actions organized under the participant columns

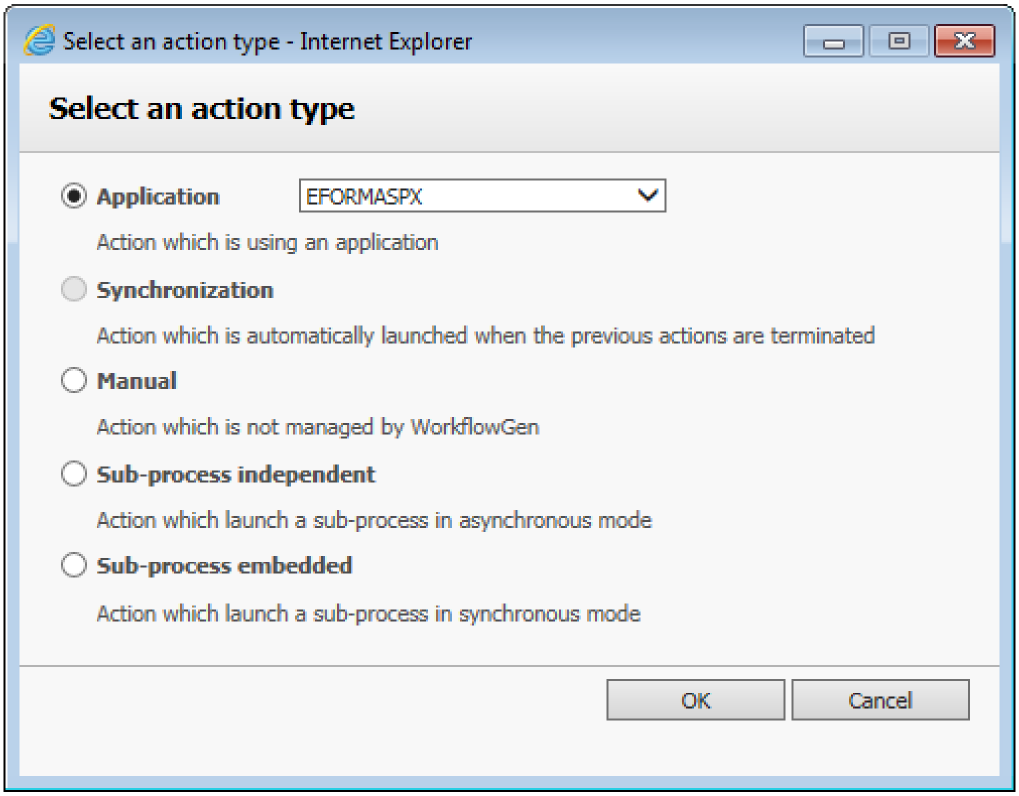
Caution: You must disable any popup blocker on the browser because the graphical module uses JavaScript events when you close a window.

Tips:

- To resize a swim lane, click on a swim lane line and move it.
- To navigate around the graphical view, you can drag the entire process workflow graphical view by clicking on an empty space and moving the mouse.
- To decrease or increase the zoom scale progressively, use the **+** and **–** keys.

Adding an action

Click the **Add action** icon to open the **Select an action type** screen.

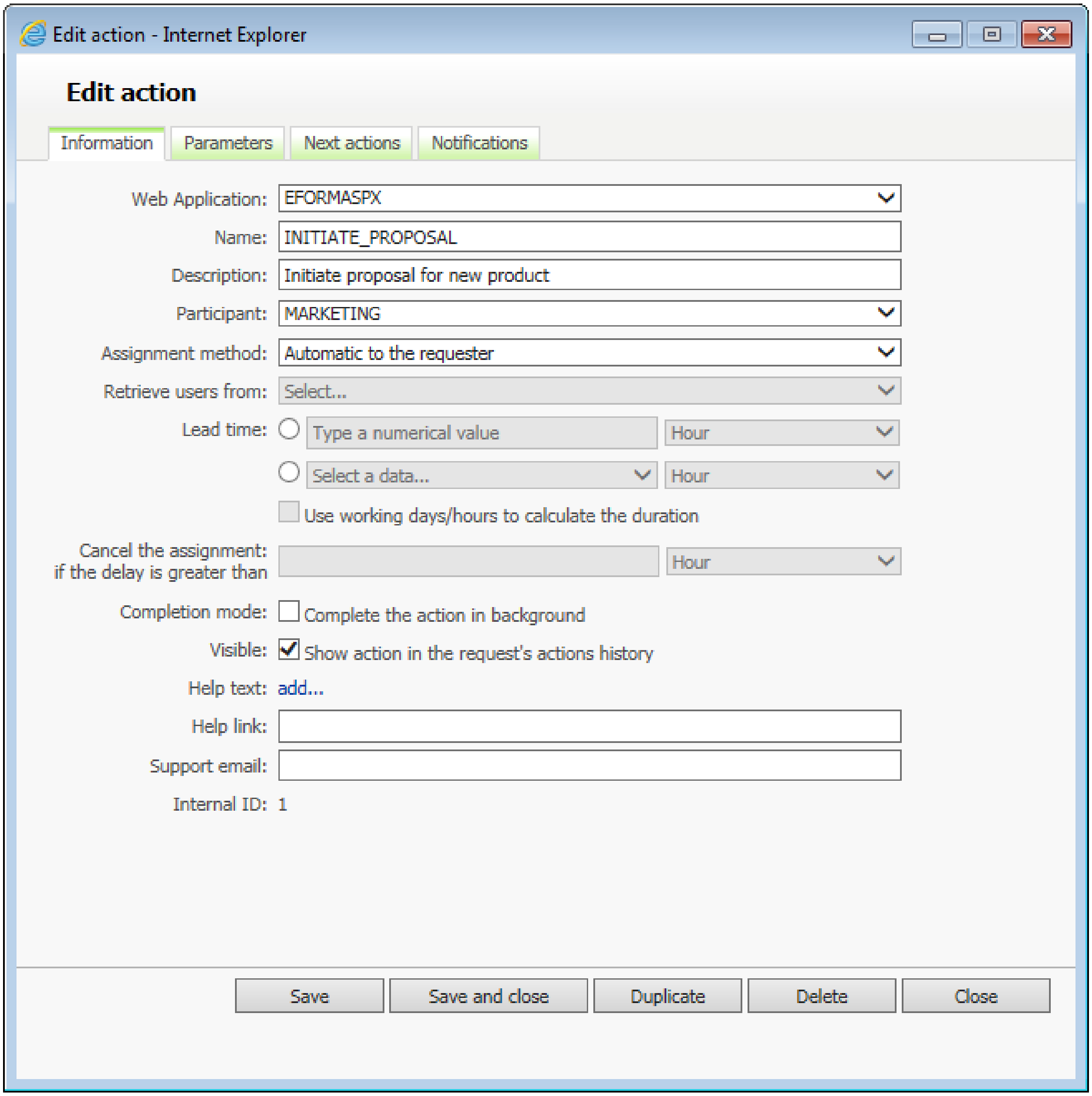


Fields	Remarks
Application	Allows an action to be created based on the selected application
Synchronization	Allows a synchronization type action to be created (synchronization bar)
Manual	Allows a manual type action to be created (an action that is not associated with a form)
Sub-process independent *	Allows an independent sub-process type action to be created
Sub-process embedded *	Allows an embedded sub-process type action to be created

* Only available in the Advanced edition.

Actions

Action editing screen



Menu banner

Links	Remarks
Information	A link displays the action form in edit mode
Parameters	Displays the list of required and additional parameters of an application type action

Next actions	Displays the list of actions following the current action in the workflow process
Notifications	Displays the automatic and additional notification lists for the action

Editing an action

Fields	Remarks
Application or action type	Type of action or application used by the action
Name	**Required field** Unique identifier for the action; must respect nomenclature and be limited to 30 characters
Description	**Required field** Action description limited to 255 characters
Participant	**Required field**[1] Participant involved in the action
Process	**Required field**[1] Sub-process associated to the action The list of available sub-processes is built according to the process status: • If the process is active you can choose only active or archived sub-processes • If the process is in test or under construction, you can choose in test, active or archived sub-processes.
Assignment method	**Required field**[2] Method of assigning the action to a participant
Sub flow requester	**Required field**[1] Process users automatically defined as the requester of the sub-process
Retrieve users from	**Required field**[3] Process data containing a list of usernames (separated by a comma) of the persons to whom the action will be assigned
Lead time[4]	Amount and unit of time before the action is considered late The value can be specified by a fixed value or retrieved at runtime from a data value. Units: • Years • Months • Days (takes into account the working days) • Hours (takes into account the working days and hours) • Minutes (takes into account the working days and hours) • Seconds (takes into account the working days and hours) You can choose the way the lead time will be calculated by checking (or not checking) the **Use working days/hours to calculate the duration** option.

Cancel the assignment if the delay is greater than[5]	The action assignment can be automatically cancelled if the delay is greater than this specified value. You must specify a duration unit for this field.
Completion mode	Indicates if the action must be completed by the workflow engine in background This option is useful when the completion takes a long time (a lot of notifications, the action is followed by a web service or a web process, etc.). In this case, the user doesn't have to wait for the action completion to be redirected to the request follow-up form or the portal home page (according to the redirection setting defined in the configuration panel by the Administrator).
Visible	Indicates if the action is displayed in the actions history of the request follow-up form of the user module
Help text	Help text for the action, visible in the user module A link allows this text to be edited.
Help link	URL of an external help document relating to the action, visible in the user module
Support email	Email address for support on the action, visible in the user mode
Internal Id	Action’s ID
Icon size	The action icon size for the process workflow graphical view; all actions can be changed at once. Only available in graphical view.

1. If the action is a sub-process.
2. If the action is an application
3. Available for assignment methods: automatic assignment to the person and manuals.
4. Enabled if the assignment method is manual.
5. Enabled if a lead time is specified.

Action deleting

Only a process/folder manager or an Administrator can delete an action. If the process is active or archived, the action cannot be deleted.

Assignment methods

Automatic methods	Remarks
Automatic to the requester	The action is assigned to the user who initiates the request (e.g. first action of the process is assigned to the requester).
Automatic to the action initiator[1]	The action is assigned to the user who handled the previous action (e.g. launch of several actions one after the other by the same person).

Automatic to the person[2]	If the type of participant is **Person**, the action is assigned to the user associated with the participant. If the type of participant is **List of persons**, the action can be assigned to the user whose username is found in the chosen process data. If the process data contains a list of usernames (separated by a comma) then one instance of the activity is created and assigned to each user of the list. In this case an assignment error may occur if the assigned user is not associated with the participant.
Automatic to the person who handled … (an action)	The action is assigned to the user who handled the selected action (e.g. the final approval must be done by the same user who approved first.). The list of available actions to select (in the second drop-down) will be the ones to which the selected participant has previously been associated.
Automatic to the manager of the requester	The action is assigned to the manager of the user who initiates the request. An assignment error may occur if no manager is associated with the requester.
Automatic to the manager of the action initiator	The action is assigned to the manager of the user who handled the previous action. An assignment error may occur if no manager is associated with the action initiator.
Automatic to the manager of the person who handled … (an action)	The action is assigned to the manager of the user who handled the selected action. An assignment error may occur if no manager is associated with the user who handled the selected action. The list of available actions to select (in the second drop-down) will be the ones that the selected participant has previously been associated to.
Automatic to the system	Used for a synchronization related application or an automatic application (WebProcAsync, WebProc, Web Service).
Manual methods	
Manual by the action initiator	The user who handled the previous action selects the user to receive the next action assignment in the participant user list.
Manual by the person who handled … (an action)	The user who handled the selected action chooses the user who will receive the next action assignment in the participant user list. The list of available actions to select (in the second dropdown) will be the ones to which the selected participant has previously been associated. For processes which contain sub-processes or automatic applications, this method may replace the 'By the action initiator' when the previous action has been handled by the system.
Manual by the coordinator	(Dispatching) One of the coordinators (of the selected participant) assigns the action to a user associated with the action participant.
Self service	The first user associated with the participant who decides to handle the action receives the action assignment (at that time others are not able to handle the action anymore).

1. Automatic to the action initiator; available if the participant of the previous action is the same as the participant of the current action.
2. Automatic to the person; if this method is selected, the **Retrieve the user from the data** field must be filled in.

The following table shows the available assignment methods depending on the action type and the action application type:

			Action Type			
			Synchronization	Application		Sub-process
				Application Type		
				Web Procedure Web Service Asynchronous WebProc.	Web Application	
Available Assignment Method	**Automatic**	Automatic to the requester			See next table	**x**
		Automatic to the action initiator[1]			**x**	**x**
		Automatic to the person[2]			**x**	**x**
		Automatic to the person who handled…			See next table	**x**
		Automatic to the manager of the requester			See next table	**x**
		Automatic to the manager of the action initiator			See next table	**x**
		Automatic to the manager of the person who handled…			See next table	**x**
		Automatic to the system	**x**	**x**	See next table	**x**
	Manual	Manual by the action initiator			See next table	
		Manual by the person who handled…			See next table	
		Manual by the coordinator			See next table	
		Self-service			See next table	

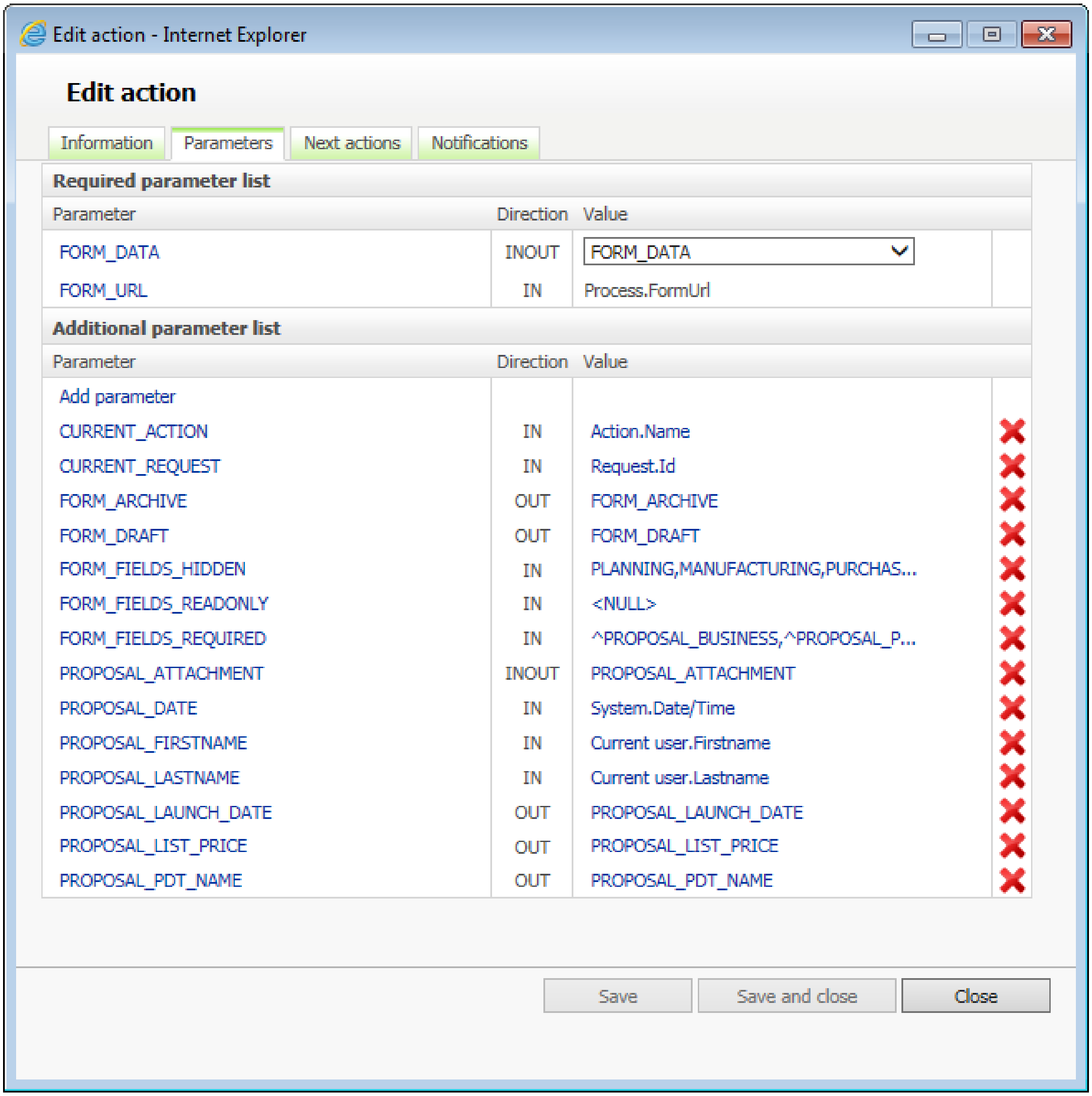
1. Automatic to the action initiator; available if the participant of the previous action is the same as the participant of the current action.
2. Automatic to the person; if this method is selected, the **Retrieve the user from the data** field must be filled in.

The following table shows the available assignment methods when selecting an **Application** action type and a "Web application" action application type depending on the associated participant type and participant role:

			Action Type			
				Application		
				Application Type		
			Synchronization	Web Procedure Web Service Asynchronous WebProc.	Web Application	Sub-process
Available Assignment Method	**Automatic**	Automatic to the requester			See next table	**x**
		Automatic to the action initiator[1]			**x**	**x**
		Automatic to the person[2]			**x**	**x**
		Automatic to the person who handled…			See next table	**x**
		Automatic to the manager of the requester			See next table	**x**
		Automatic to the manager of the action initiator			See next table	**x**
		Automatic to the manager of the person who handled…			See next table	**x**
		Automatic to the system	**x**	**x**	See next table	**x**
	Manual	Manual by the action initiator			See next table	
		Manual by the person who handled…			See next table	
		Manual by the coordinator			See next table	
		Self-service			See next table	

1. Automatic to the action initiator; available if the participant of the previous action is the same as the participants of the current action.
2. Automatic to the person; if this method is selected, the **Retrieve the user from the data** field must be filled in.

Parameters list screen



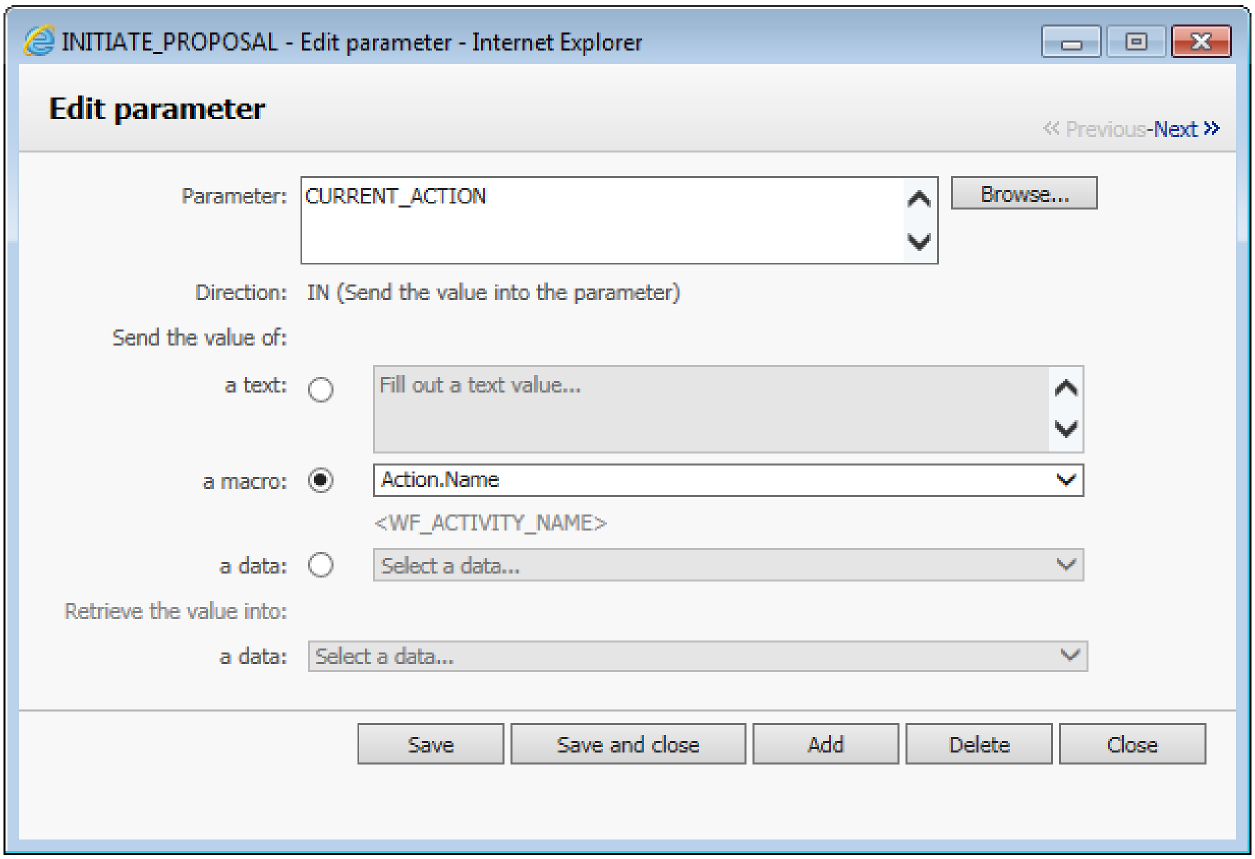
Required list parameters

Columns	Remarks
Parameter	Name of the application or sub-process parameter required by the action A link displays the parameter form in edit mode.
Direction	Parameter direction
Value	Process data associated to the parameter A link displays the parameter form in edit mode.

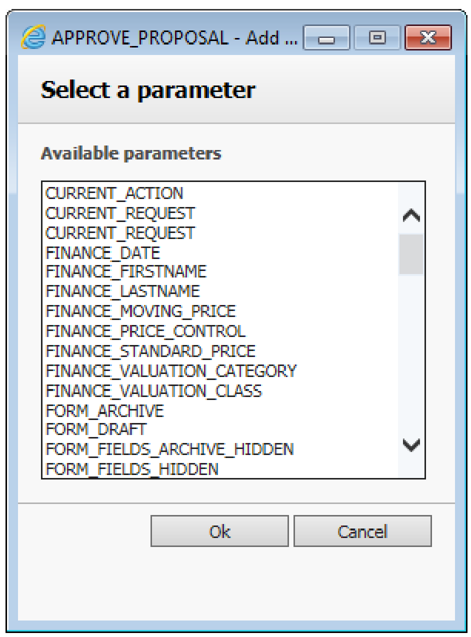
Additional parameter list

Columns	Remarks
Parameter	Parameter name A link displays the parameter form in edit mode. The **Add** link displays a blank parameter form to add new data.
Direction	Parameter direction
Value	Data associated to the parameter
Deletion	The red x allows the parameter to be deleted

Parameter editing screen

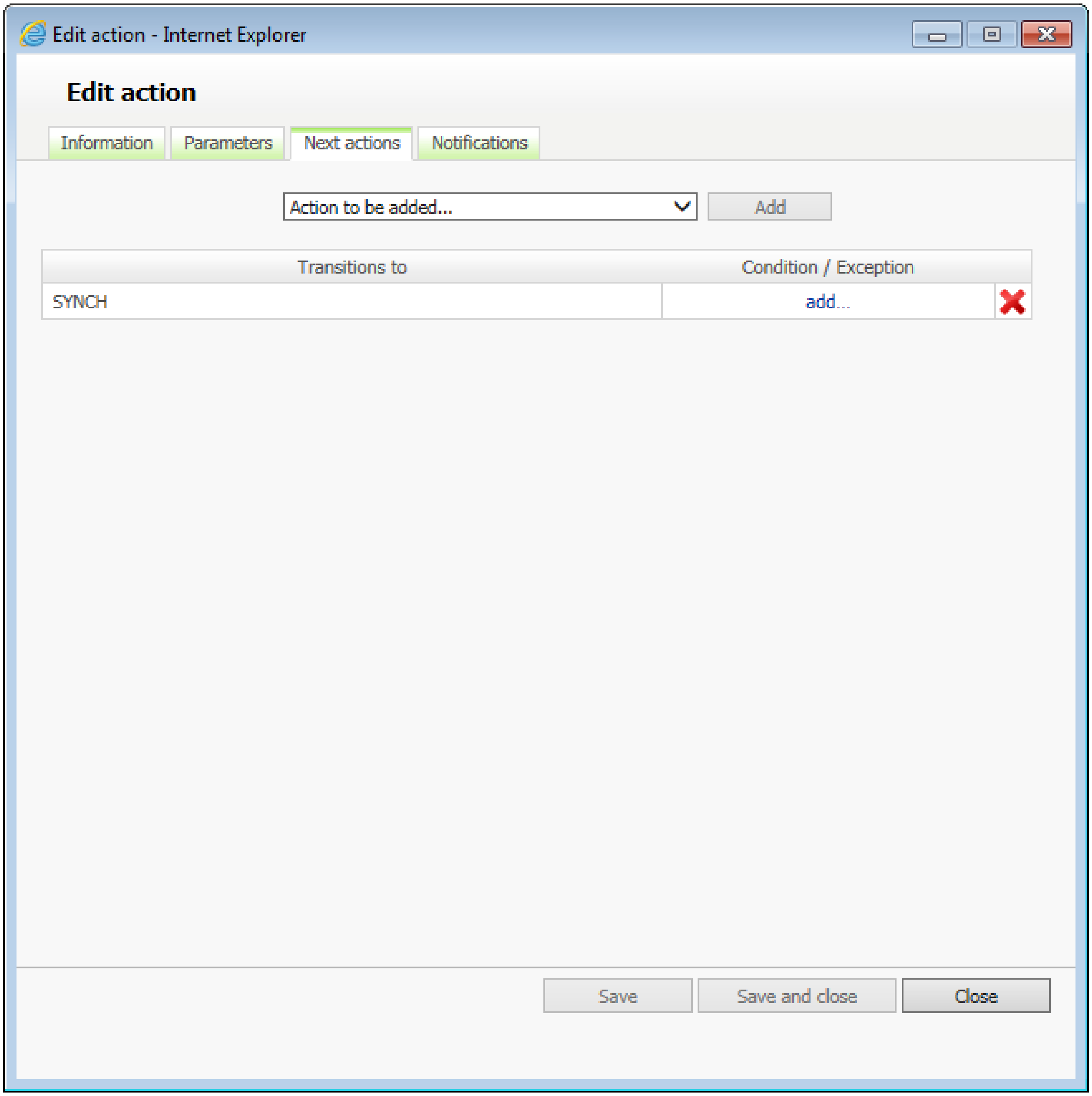


Editing parameters

Fields	Remarks
Parameter	**Required field** Unique identifier for the parameter; must respect nomenclature and be limited to 30 characters Application parameters like "FORM_FIELDS_READONLY" are available through the browse button "Other parameters". This is commonly associated with the name/ID of the form field.
Browse	This button is only visible for the actions compliant with at least one of the following business rules: • The action is based on eFormPDF and the TEMPLATE parameter is associated to data containing a PDF file as default value • The action has at least one default application parameter defined (Other parameters) ***Example:*** This lists all the fields of the PDF file associated with the action. 
Direction	Parameter direction: • **IN:** When the action is instantiated, the value of the parameter is initialized with a text, or the value of a macro or process data. • **OUT:** When the action is being closed, the value of the parameter is stored in a process data value. • **INOUT:** When the action is instantiated, the value of the parameter is initialized with a text, or the value of a macro or process data, and then, when the action is being closed, the value of the parameter is stored in a process data value.

Send the value of	The **IN** value to send to the parameter Depending on the type of data to be associated, this value can be process data, a macro or a freeform text value. It's possible to uncheck a checked radio button.
Receive the value into	The process data where the **OUT** value of the parameter is stored
Save button	Save changes
Save and close button	Save changes and close the screen
Add button	Save the current parameter and display a blank form to add a new parameter
Delete button	Allow the deletion of the current parameter
Close button	Close the screen without saving

Next actions screen



Next actions

Fields	Remarks
Action to be added *	Process action to add as the action following the current action

* An action can only be used once as the "next action" in the transition from the current action.

Columns	Remarks
Next action	Name of the next action
Transitions to	List of possible actions to follow
Condition/Exception	A link displays the transition's condition form in edit mode
Deletion	The red x allows the transition to the next action to be deleted

Adding a loop on the first action

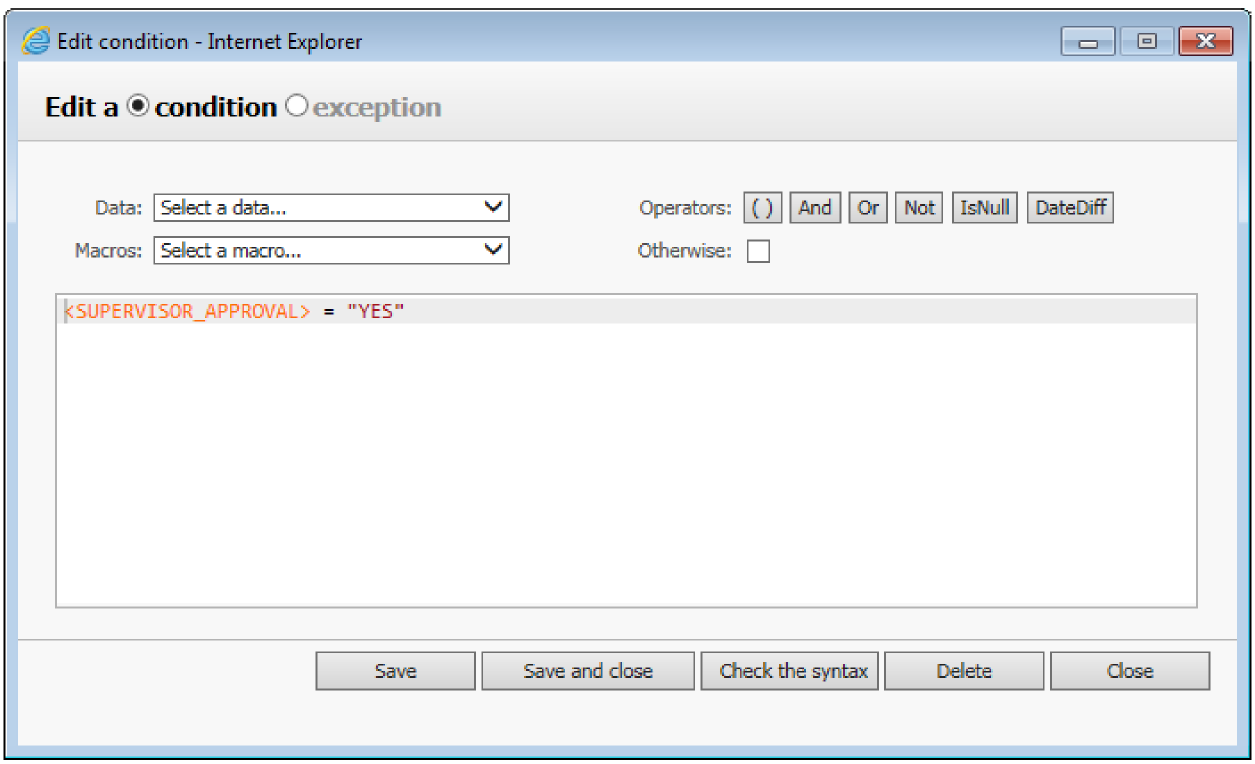
It is not possible to create a transition leading back to the first action of a process (this is not the same as a loop transition, which is permitted). You must add a new action which will be assigned automatically to the requester and create a loop with it.

Example:

Here the action "UPDATES" is added:

- INITIATES > VALIDATES > UPDATES > VALIDATES > UPDATES > VALIDATES > ...

Condition editing screen



Transition condition editing

This window allows a condition (evaluated during the transition to the next action) to be modified. The banner located above the input area allows the condition's expression syntax to be edited quickly and reliably. Any

VBScript expression with a correct syntax can be used as a condition. The VBScript syntax is validated upon saving the condition or by clicking the **Check the syntax** button.

Fields	Remarks
Data	List of process data that can be used in the condition
Macros	List of WorkflowGen macros that can be used in the condition
( )	Enclose the selected text between parentheses
And	Inserts the logical operator AND
Or	Inserts the logical operator OR
Not	Inserts the logical operator NOT
IsNull	Test Function to find out if the data contains no value.
DateDiff	Inserts blank DateDiff condition syntax to set values (see **Overdue actions notification hierarchy** on page 173 and **Prior overdue actions notification hierarchy** on page 173)
Otherwise	Inserts the keyword OTHERWISE

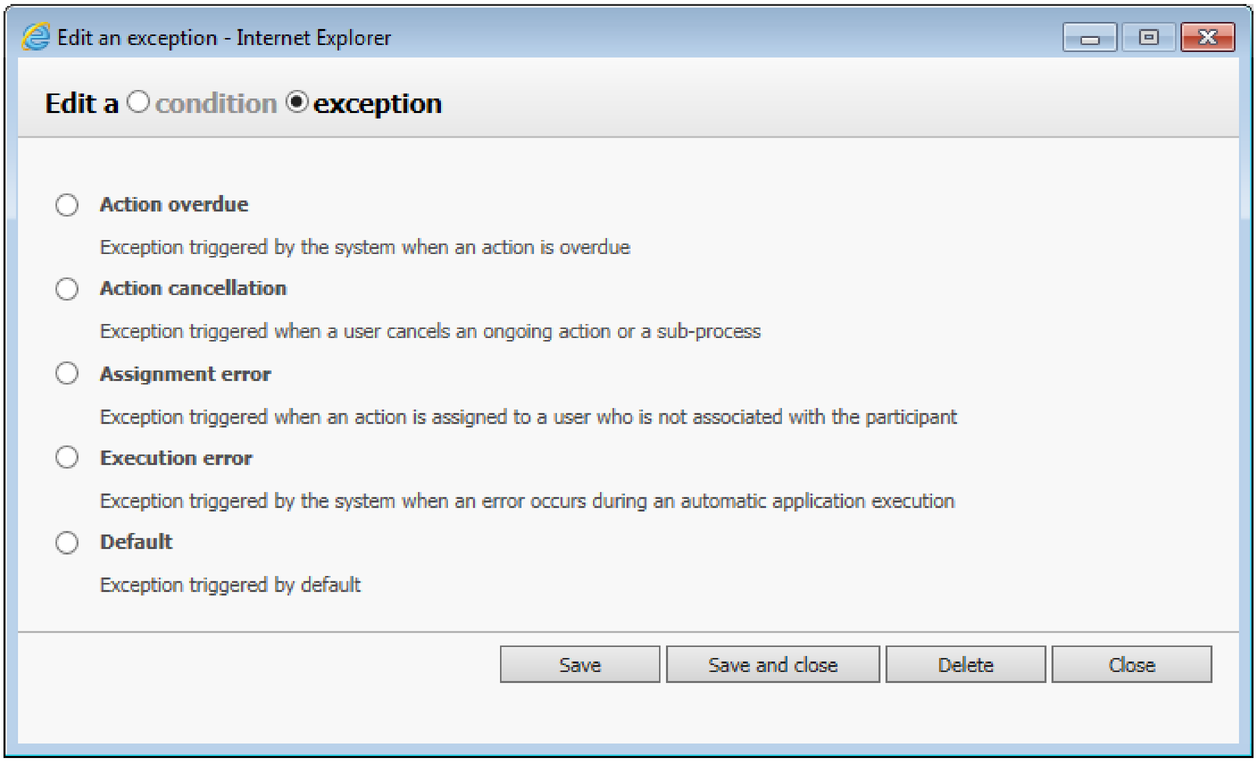
Transition condition actions

Functions	Remarks
Check the syntax	Link that allows the syntax of the expression entered to be validated to ensure it will be correctly interpreted during the conditions evaluation by the transition

Adding a condition

- You can add more than one condition on the same transition.
- Conditions can be combined with exceptions on the same transition.
- These combined conditions are evaluated as "OR" (Condition 1 OR Condition 2 OR Exception 3, and so on).

Exception screen



Exception type

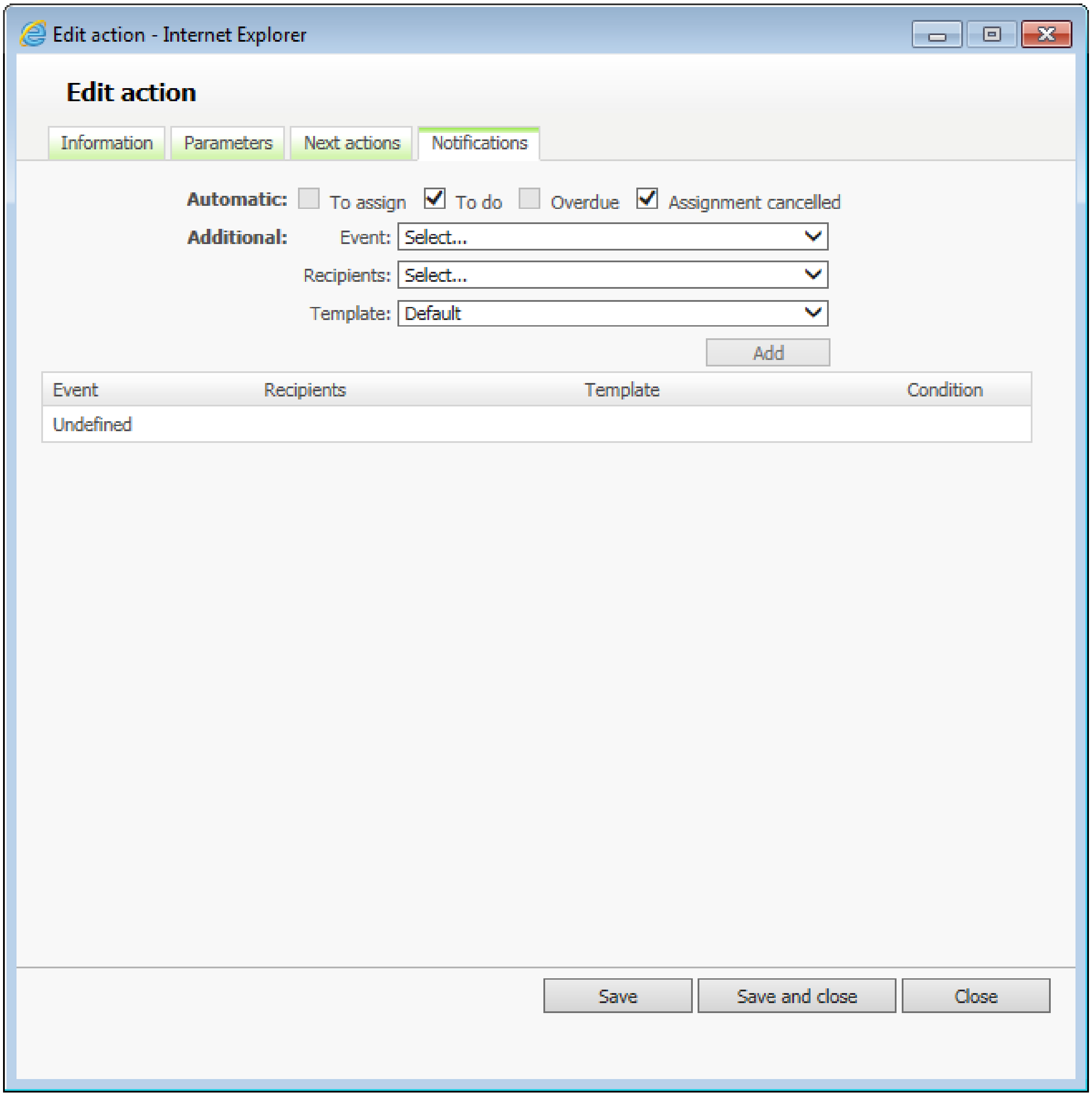
Exception type	Remarks
Action overdue	Exception thrown by the system when an action is overdue
Action cancellation	Exception thrown when a user cancels an ongoing action or sub-process
Assignment error	Exception thrown when an action is assigned to a user which is not associated with the participant
Execution error	Exception thrown by the system when an error occurs during an automatic application execution (a system action)
Default	Exception thrown by default

Exception rules

- You can add more than one exception of different types on the same transition.
- Exceptions can be combined with conditions on the same transition (these are evaluated as a logical "OR" operation).
- When an exception occurs at runtime, the default exception is assumed if no specific exception path corresponding to the exception type was defined in the process definition.

- If an exception path is linked to the end of the process and the exception occurs at runtime, all the ongoing actions are cancelled and the request is closed with the status **Closed – Cancelled**.

Notification screen

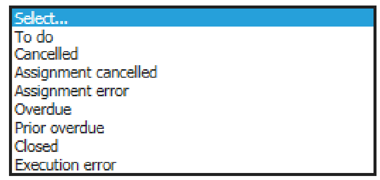
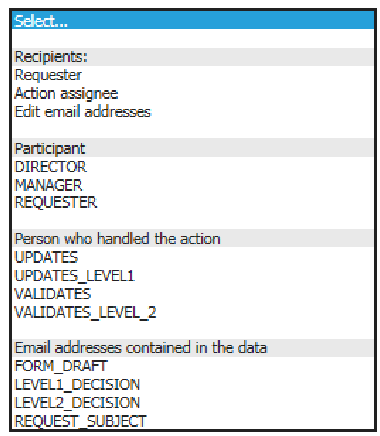
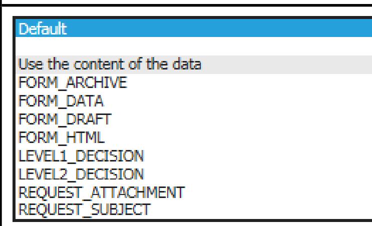


Automatic notifications

Fields	Remarks
To assign	Specifies if an email is automatically sent to the user who has to assign the action

To do	Specifies if an email is automatically sent to the user who has to handle the action
Overdue	Specifies if an email is automatically sent to the user who has to handle an overdue action
Assignment cancelled	Specifies if an email is automatically sent when an action assignment has been automatically or manually cancelled

Additional notifications

Fields	Remarks	Screenshot
Event	Type of event notifications: • To do • Cancelled • Assignment cancelled • Assignment error • Overdue • Prior overdue * • Closed • Execution error	
Recipient	Recipient(s) of the notification: • The requester • The action initiator if the assignment (method is manual) • The action assignee • Freeform email addresses (comma or semicolon separated) • The users associated to a participant • The user who has handled the action … (action name) • Email addresses contained in the data … (selected from the list below). Use " , " (comma) or " ; " (semicolon) as email separator.	
Template	Email message templates: • Default (uses the standard email template located in /App_Data/Templates/Emails). • Use the content of the data (select one in the list below). The list is filled in with text and file process data. While defining your own template in data or a file you can use: • The reserved keyword "SUBJECT" to define an email custom subject line • Macros (see **Macros**) • See **Custom notification templates** on page 239 for a step-by-step explanation on creating custom email templates.	

* The Prior overdue notification feature is available in WorkflowGen 5.1.7 and higher. A process XPDL using this feature will not be compatible with previous versions of WorkflowGen including release 5.1.6. An error will be raised when trying to import the new XPDL into those versions.

Columns	Remarks
Event	The type of event notification
Recipient	Recipient(s) of the email
Template	The selected template of the message to be sent
Condition	A link displays the notifications condition form in edit mode
Deletion	The red **x** allows the notification to be deleted

Overdue actions notification hierarchy

You can define a hierarchy to handle overdue action notifications by specifying additional notification conditions based on VBScript date/time calculation functions.

Examples:

In a process action, if you want to notify the requester that the action is late within one day, and also notify the process supervisor should the action continue to be late after two days, you have to add the two additional notifications on the action with the following settings:

Notify the requester if the action is late within 1 day:

> Type: Overdue
> Recipient: Requester

Condition 1:

> DateDiff("h",<WF_ACTIVITY_INST_LIMIT_DATETIME>,<WF_SYSTEM_DATETIME>) < 24

Notify the process supervisor if the action is late by 2 days:

> Type: Overdue
> Recipient: the supervisor participant

Condition 1:

> DateDiff("h",<WF_ACTIVITY_INST_LIMIT_DATETIME>,<WF_SYSTEM_DATETIME>) >= 48

Prior overdue actions notification hierarchy

You can define a hierarchy to handle prior overdue notifications by specifying additional notification conditions based on VBScript date/time calculation functions.

In a process action, if you want to notify a user that an action will become late in advanced of a due date, you have to add an additional notification on the action using the "Prior overdue" event.

To add a new prior overdue notification to an action:

1. In a process action notification tab, under the "Additional" section, select the "Prior overdue" event.
2. Select the recipient(s).
3. Select the "Default" template or a custom template previously created.
4. Click **Add**.
5. Enter the condition (see below for examples).

Examples:

Notification is sent within 3 days prior to being overdue:

DateDiff("d", <WF_SYSTEM_DATETIME> , <WF_ACTIVITY_INST_LIMIT_DATETIME>) <= 3

Notification is sent within 15 minutes prior to being overdue:

DateDiff("n", <WF_SYSTEM_DATETIME> , <WF_ACTIVITY_INST_LIMIT_DATETIME>) <= 15

Alternatively, you can use the following syntaxes for examples 1 and 2 above:

DateDiff("d", <WF_ACTIVITY_INST_LIMIT_DATETIME> , <WF_SYSTEM_DATETIME>) >= -3

DateDiff("n", <WF_ACTIVITY_INST_LIMIT_DATETIME> , <WF_SYSTEM_DATETIME>) >= -15

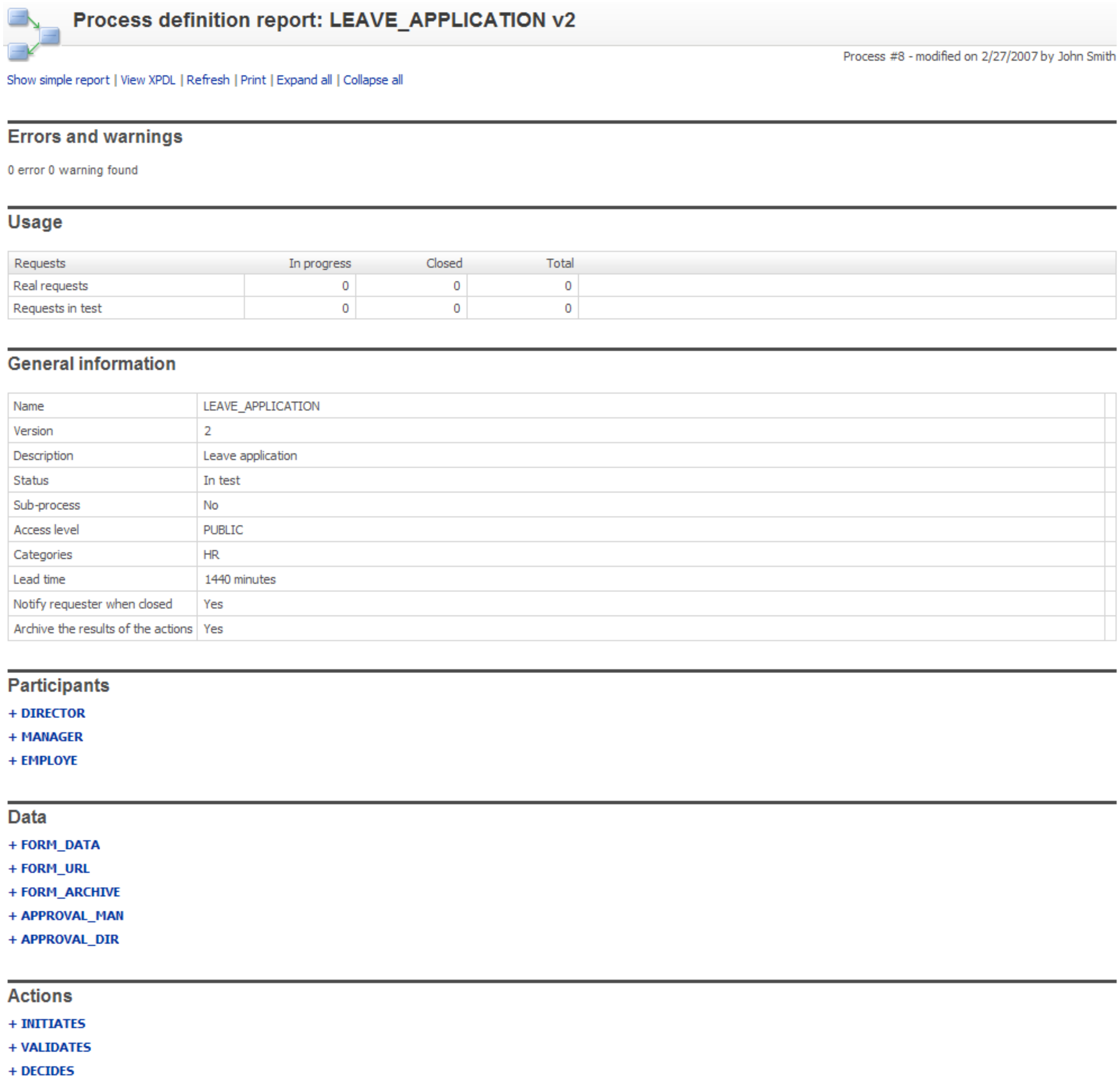
There is no limit to the number of additional prior overdue notifications that can be added to an action (e.g. 2 days, 1 day, 1 hour, 30 minutes, etc.).

Notes:

- If you do not specify a condition, the prior to overdue notification will be sent whenever an action is created with a lead time and the Windows Engine service is run. It is best practice to add a condition as per the above examples to control when the prior overdue notification is sent.
- As of version 5.1.7, any process that includes a prior overdue notification in an action cannot be imported in a version of WorkflowGen 5.1.6 or earlier due to incompatibilities.

Report

Process report screen



Process definition report: LEAVE_APPLICATION v2

Process #8 - modified on 2/27/2007 by John Smith

Show simple report | View XPDL | Refresh | Print | Expand all | Collapse all

Errors and warnings

0 error 0 warning found

Usage

Requests	In progress	Closed	Total
Real requests	0	0	0
Requests in test	0	0	0

General information

Name	LEAVE_APPLICATION
Version	2
Description	Leave application
Status	In test
Sub-process	No
Access level	PUBLIC
Categories	HR
Lead time	1440 minutes
Notify requester when closed	Yes
Archive the results of the actions	Yes

Participants

+ DIRECTOR
+ MANAGER
+ EMPLOYE

Data

+ FORM_DATA
+ FORM_URL
+ FORM_ARCHIVE
+ APPROVAL_MAN
+ APPROVAL_DIR

Actions

+ INITIATES
+ VALIDATES
+ DECIDES

Errors and warnings

Errors (prevent the workflow from running)

General validations performed by the report generator:

- A process must have at least a beginning and an end.
- A process must have one single participant in the role of requester.
- There can only be one "otherwise" condition in the transitions of an action.
- If more than one transition exists between two actions, all of the transitions must be conditions.
- All process data must be used in the action parameters or in the transition conditions.
- Data used in a condition must be associated to an OUT or INOUT direction action parameter if no default value is set.

Action validations performed by the report generator:

- All actions must have at least one next action or END.
- If an action has a transition to an end of a process, the transition of the next actions must have a condition.
- An action that loops must have a condition.
- For an application or a sub-process, all the required parameters of an action must be defined.
- Actions that include a transition with an "otherwise condition" must have another transition with a condition that is not an "otherwise condition".
- If the action comes from a synchronization, assignment "By the action initiator" is not possible.
- If the action can be launched after an exception transition, assignment "By the action initiator" is not possible.
- Automatic to the action initiator assignment is not allowed ***if*** the participant is not a requester and ***if*** the participant of the previous action is different.
- By the action initiator assignment not allowed ***if*** the action is called after an exception.
- Ensure that all required application parameters for an action are defined.
- Ensure that all the required action parameters for a sub process are defined

Warnings (do not prevent the workflow from running)

Action validations done by the report generator:

- It is advised to use an exception transition if actions use the following assignment methods and if the username is retrieved from process data:
  - Automatic to the person who handled…
  - Manual by the person who handled…
  - Automatic to the person
- It is advised to use an exception transition if actions use an automatic application (Web proc, Web service or asynchronous Web proc).

- It is advised to use an exception transition if actions use a sub-process.
- All process data must be used.
- Ensure that default and additional parameters used as OUT types are linked with data.
- Automatic applications must use an exception.

Usage

Fields	Remarks
Requests	Request environment
In progress	Number of requests in progress
Closed	Number of requests closed
Total	Total requests launched

General information

Fields	Remarks
Name	Process name
Version	Process version
Description	Process description
Status	Process status
Sub-process	Is this a sub-process?
Access level	Public or private access level
Category(ies)	List of categories with which the process is associated
Lead time	Process lead time
Use working days/hours in duration calculation	Uses only office hours to calculate time schedule
Notify the requester when closed	Notification is sent to the requester when the request is closed
Archive the results of the actions	Saves the result of each process action at each step of the process

Participants

Fields	Remarks
Description	Participant description
Scope	The participant is defined in the global information
Role	Participant role in the process
Participant type	Type of association to the directory
Users	List of users associated with this participant
Groups	List of groups associated with this participant
Directories	List of directories associated with this participant
Coordinators	List of coordinator users for this participant

Graphical follow-up	Visible in the graphical follow-up
Permission for supervisors	Special permissions for supervisors
Permission for comments	None, Read, or Read and Write permissions
Query	Supervisor limited scope query
Used in actions	Actions in which this participant is used

Data

Fields	Remarks
Description	Data description
Data type	Type of data
Default value	Default value of the data
Security	List of participants with access to the data
Show the data in the follow-up forms	The selected data will be visible in the following places: • Request and Action Follow-up forms • Default notification messages (e-mails) • eFormPDF data popup window • Search criteria list **Note:** Unchecking this option disables and unchecks the three other options.
Search criteria by default	The selected data will appear in every search screen as selected criteria without search parameters
Display in columns in the lists	The selected data will appear in the home page in a column when a single process is selected (single-process mode)
Display in column in homepage	List of coordinator users for this participant
Read-only	**Usage:** Saves disk space when used on file process data associated with the required parameter TEMPLATE of an eFormPDF action. This is performed by associating a single copy of the PDF per process for all closed actions and closed requests. **Note:** An action's OUT and INOUT parameters using data declared as "read-only" will not be updated. **Caution:** When using an electronic signature feature for PDF Forms, do not define the PDF form template as read only. As well, in general do not define FORM_DATA elements of eForm applications (which contain the data of a form) as read-only.
Used in actions	List of actions in which the data is used
Used in conditions	List of process transitions in which the data is used

Actions

Actions

- INITIATES

+ General

- Required parameter

FORM_ARCHIVE

Direction	OUT
Data	FORM_ARCHIVE

FORM_DATA

Direction	INOUT
Data	FORM_DATA

FORM_URL

Direction	IN
Data	FORM_URL

+ Additional parameter

+ Previous action

+ Next action

+ Notifications

+ Additional notifications

+ VALIDATES

+ DECIDES

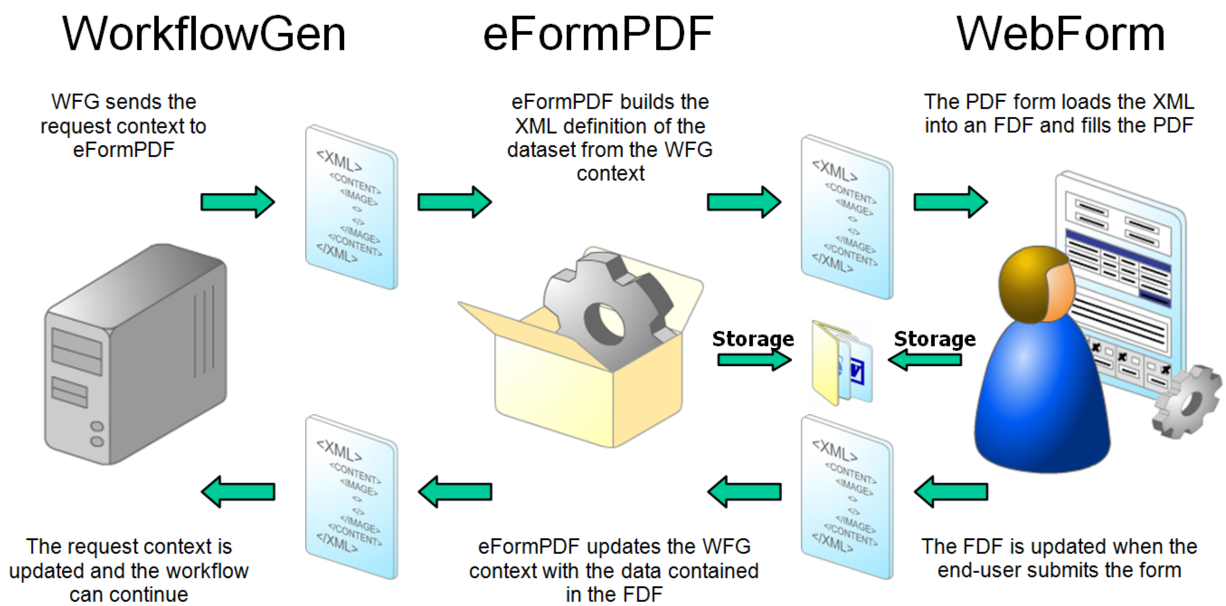
Action sections have sub-sections that provide information about the following:

- General
- Required parameter
- Additional parameter
- Previous action
- Next action
- Notifications
- Additional notifications

eFormPDF workflow application

Overview

The eFormPDF WorkflowGen application allows you to display and fill out the different fields of your electronic forms through an Adobe PDF form.



Required parameters

The eFormPDF application uses two required parameters, both of which are data of type FILE, to display the PDF form, which the users complete during the process execution or whose fields are populated with default values defined during the process development.

The two required parameters of the eFormPDF application are:

TEMPLATE (data direction INOUT)

- This should contain a blank PDF form which may be stored in process data or associated directly to this parameter.

DATA (data direction INOUT)

- This contains the data of the PDF form.
- WorkflowGen generates this file at every form submit and no default value needs to be defined. WorkflowGen will create and update this file automatically.

Using additional parameters

Fields initialization

You can pre-populate the fields of the PDF form by specifying which values are to populate which form fields. This is done by providing the field name to an action parameter as an IN (or INOUT) parameter and by sending the value of a freeform text, a WorkflowGen Macro, or a process data.

Example:

> Rule: Display the requesters name in the PDF form field called "REQ_NAME" when the form loads.
> Method: Associate the form field name with the macro "Requester.Name".

Retrieving field values

You can store the various PDF form field values in the process data by specifying which field values are to be stored to which process data. This is done by providing a field name to an action parameter as an OUT (or INOUT) parameter and by retrieving that field value to a specified process data.

Notes:

- Process data may only be used to store one and only one field value per action.
- Process data of type TEXT may only contain a maximum of 4,000 characters.

Example:

> Rule: Retrieve the manager’s answer/decision in process data called "MGR_DECISION".
> Method: Associate the form field name with pre-defined process data.

Additional parameters to change the form field properties

Overview

You can control the required, read-only, and hidden PDF form field properties through the action parameters without developing any PDF JavaScript. The value of the parameter has to be set to a list of form fields to set (or not set) separated by a comma or a semicolon. This list supports the generic wildcard character " ***** " (asterisk) and exclusion character " **^** " (caret). A standardized field name naming convention makes it easy to set the various field properties per action.

List of available parameters

- List of read-only fields: FORM_FIELDS_READONLY
- List of required fields: FORM_FIELDS_REQUIRED
- List of hidden fields: FORM_FIELDS_HIDDEN

Example of use

Rule: The fields EMP_NAME and EMP_DATE are required
Method: FORM_FIELDS_REQUIRED = EMP_NAME, EMP_DATE

Rule: ***All*** of the fields are set to read-only ***except*** the fields with names that begin with "EMP_"
Method: FORM_FIELDS_READONLY = *, ^EMP_*

Rule: ***All*** of the fields are set to visible ***except*** the field DATE ***and*** the fields with names that begin with "SUP_" ***and*** end with "_APP".
Method: FORM_FIELDS_HIDDEN = ^*, DATE, SUP_*_APP

Additional parameters to launch JavaScript functions before or after the fields are populated

Overview

You can launch PDF JavaScript functions from WorkflowGen. These JavaScript functions must be included at the global (form) level in the PDF form and will be called before or after the FDF values are applied to the PDF template. This depends on which of the two additional action parameters (shown below) you use to call the JS functions.

List of available parameters

- Functions to call before loading the form field’s values: FORM_ONIMPORT_BEFORE
- Functions to call after loading the form field’s values: FORM_ONIMPORT_AFTER

You must separate the JavaScript functions with semicolons (" **;** ").

Example of use

Assuming you have created a global function in the PDF template called *myFunction* which sets the value of the field *myField1* to a value of a parameter passed to the function.

PDF Global/Form Function definition:

```
myFunction(strVal) {
getField("myField1").value = strVal;
```

To set the value of the field *myField1* to the value of the field in *myField2* by using the function *myFunction* once the form field’s values are populated through the PDF fields:

WorkflowGen parameter:

```
FORM_ONIMPORT_AFTER=myFunction(getField("myField2").value)
```

Electronic signatures and annotations support requirements

The electronic signature and annotation features are only available with:

- Adobe Acrobat Standard 7
- Adobe Acrobat Professional 7
- Adobe Acrobat Standard 6
- Adobe Acrobat Professional 6
- Adobe Acrobat Reader 5 or 6 (but only with PDF forms activated with Adobe Document Server)
- Adobe Acrobat Approval 5

You will also need to add an additional parameter called FDFAPPEND with the value set to "Y" for the process actions that deal with these features.

Upload a file directly from the PDF form

In the PDF

You must add a text box field (with the **Field is used for file selection** option checked) to the PDF form and an associated button for each file you want to upload.

Assuming "FILE1" is the name of the text box field, in the associated button's "Action" property you must add the following line of JavaScript code to the "On Mouse Up" event:

```
this.getField("FILE1").browseForFileToSubmit();
```

In the WorkflowGen process actions

Add a new OUT file parameter in the action parameters.

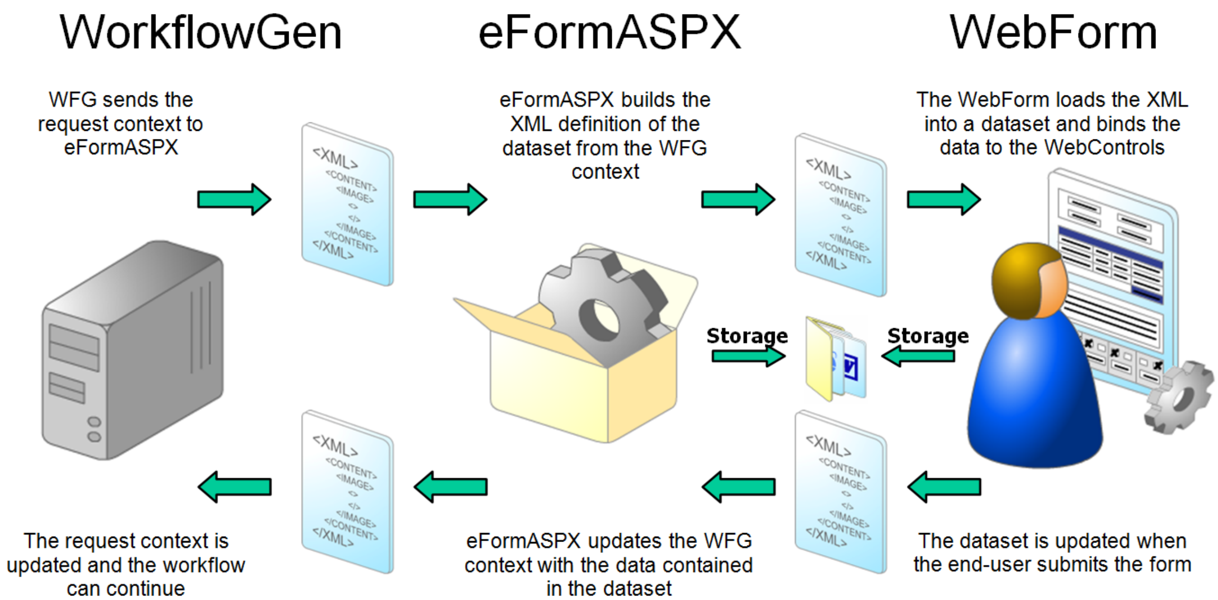
Example:

Parameter name	Direction	Process Data
FILE1 (field name)	OUT	FILE1 (a process data of type FILE)

eFormASPX workflow application

Overview

The eFormASPX WorkflowGen application allows you to display and fill out the different fields of your electronic forms through a WebForm. A WebForm is the ASP.NET equivalent of an MS Windows Form and has similar programming characteristics.



Required parameters

The eFormASPX application uses two required parameters: one is data of type FILE called "FORM_DATA"; the other is data of type "TEXT" called "FORM_URL". FORM_URL is used to display the ASP.NET form, which the users complete during the process execution or whose fields are populated with default values defined during the process development.

The two required parameters of the eFormASPX application are:

FORM_URL (data of direction IN)

- This should contain the path/location of the blank form which may be stored in the process data or associated directly to this parameter and can be an absolute or relative path.

FORM_DATA (data of direction INOUT)

- This contains the data of the form: the dataset in .NET to store the data to/from the WorkflowGen XML file (see below for an example of this file).

- WorkflowGen generates this file at every form submit and no default value is needed to be defined. WorkflowGen will create and update this file automatically.

Example of an empty FORM_DATA file:

An XML file formData.xml containing:

```
<?xml version="1.0" encoding="UTF-8" ?>
<NewDataSet>
<Table1 />
</NewDataSet>
```

Example of a FORM_URL:

"/wfgen/WfApps/WebForms/MyFirstWebForm/v1/Form.aspx"

Using additional parameters

Fields initialization

You can pre-populate the fields of the WebForm form by specifying which values are to populate which form fields. This is done by providing the field name to an action parameter as an IN (or INOUT) parameter and by sending the value of a freeform text, a WorkflowGen macro, or a process data.

Example:

Rule: Display the requesters name in the WebForm form field called "REQ_NAME" when the form loads.
Method: Associate the form field name with the macro "Requester.Name"

Retrieving field values

You can store the various WebForm form field values in the process data by specifying which field values are to be stored to which process data. This is done by providing a field name to an action parameter as an OUT (or INOUT) parameter and by retrieving that field value to a specified process data.

Notes:

- Process data may only be used to store one and only one field value per action.
- Process data of type TEXT may only contain a maximum of 4,000 characters.

Example:

Rule: Retrieve the Manager's answer/decision in process data called "MGR_DECISION"
Method: Associate the form field name with pre-defined process data

Additional parameters to change the form field properties

Overview

You can control the required, read-only, and hidden ASPX form field properties through the action parameters without developing any .NET code. The value of the parameter has to be set to a list of fields to set (or not) separated by a comma or a semicolon. This list supports the generic wildcard character " ***** " (asterisk) and the exclusion character " **^** " (caret). With a standardized field name naming convention, it will be easy to set the various field properties per action.

List of available parameters

- List of read-only fields (IN): FORM_FIELDS_READONLY
- List of required fields (IN): FORM_FIELDS_REQUIRED
- List of hidden fields (IN): FORM_FIELDS_HIDDEN

Examples of use

Rule: The fields "EMP_NAME" and "EMP_DATE" are required
Method: FORM_FIELDS_REQUIRED = EMP_NAME, EMP_DATE

Rule: All the fields are set to read-only except the fields with a name that begins by "EMP_"
Method: FORM_FIELDS_READONLY = *, ^EMP_*

Rule: All the fields are set to visible except the field DATE and the fields with a name that begins by "SUP_" and ends by "_APP"
Method: FORM_FIELDS_HIDDEN = ^*, DATE, SUP_*_APP

The FORM_ARCHIVE additional parameter

Overview

This is a way to have a static copy of the form, so that the copy can be viewed, printed, or sent by email without having to create any additional WebForm code.

Parameter

HTML static copy of the ASP.NET form (OUT): FORM_ARCHIVE

The value of the filename has to be set in the initial XML file:

<FORM_ARCHIVE>form_archive.htm</FORM_ARCHIVE>

As well, the dataset must have a field named FORM_ARCHIVE.

WorkflowGen handles this, so no extra work by the process or form developers is needed.

How it works

When the WebForm is submitted by the end-user, the eFormASPX application will create a static copy of the form and store it within the WorkflowGen directory. WorkflowGen will then be able to link this static copy to the FORM_ARCHIVE parameter.

The only things that the process developer needs to do are:

- Create a process data to store the static form (generated by WorkflowGen).
- Associate it to the actions parameter "FORM_ARCHIVE".

DocApproval workflow application

Overview

The DocApproval WorkflowGen application enables the user to approve, reject or forward a document during a WorkflowGen process and to add comments and attach files to the document approval request.

Required parameters

The DocApproval application uses two required data parameters: the file to approve, and the result of the approval decision. These two parameters have the following attributes:

The file to approve:

> Name: DOC
> Data type: File
> Direction: IN

The result of the approval:

> Name: RESULT
> Data type: Text
> Direction: OUT

Using additional parameters

You can set the following additional parameters in the process action that is using the DocApproval application:

Description field (free form text, date, numeric, or file based on the data type)

> Name: FIELD_DESC
> Data type: Text or date or numeric or file (based on the received process data
> Direction: OUT

Minimum length of the output value

> Name: FIELD_MINLENGTH
> Data type: Numeric
> Direction: IN

Number of rows of the description field (used for text field only)

> Name: FIELD_ROWS
> Data type: Numeric
> Direction: IN

A custom title

Name: FORM_TITLE
Data type: Text
Direction: IN

Example: "My custom title"

A custom subtitle

Name: FORM_SUBTITLE
Data type: Text
Direction: IN

Example: "My custom subtitle"

Possible answers for Answers

Name: FORM_ACTIONS
Data type: Text
Values: YES, NO, FORWARD, UPDATE (Review) or any other free value separated by commas
Direction: IN

Example: "YES", "NO", "FORWARD", "UPDATE"

Display layout for Answers

Name: FORM_ACTIONS_LAYOUT
Data type: Text
Direction: IN

Example: COLUMN or ROWS (default value is ROWS if not specified or defined)

Descriptions for Answers

Name: FORM_ACTIONS_DESC
Data type: Text
Direction: IN

Example: "YES", "NO"

Show the document in the web form or display a link to download it

Name: FORM_VIEWDOC
Data type: Text
Value: YES (default), NO or the list of extensions (separated by commas) of the files to show in the web form
Direction: IN

Example: "YES"

Show descriptions for attached documents

Name: FORM_VIEWDOC_DESC
Data type: Text
Direction: IN

Example: "YES", "NO"

DocUpload workflow application

Overview

The DocUpload application enables the user to upload a file during a WorkflowGen process.

Additional parameters

You can set the following additional parameters in a process action which is using the DocUpload application:

A custom title

Name: FORM_TITLE
Data type: Text
Direction: IN

Example: "My custom title"

A custom subtitle

Name: FORM_SUBTITLE
Data type: Text
Direction: IN

Example: "My custom subtitle"

List of files to transfer

You can upload one or more files to the server. If you want to upload more than one file, all of the following parameter names must be prefixed with an incremental number as follows: FILE1_<parameter>, FILE2_<parameter>, FILE3_<parameter>, and so on.

File description

Name: FILE_DESC
Data type: Text
Direction: IN

Example: "Select a file"

File extensions list allowed (separated by commas)

Name: FILE_EXT
Data type: Text
Direction: IN

Example: "txt, pdf, doc, xls"

File max size (in KB)

Name: FILE_SIZE
Data type: Numeric
Direction: IN

Example: "100"

File required

[Y|N]. If set to "Y" the file will be required and a warning message with be shown if the file is missing; if set to "N" an empty file is stored in the process data.

Name: FILE_REQUIRED
Data type: Text
Direction: IN

Example: "Y"

File to store

Name: FILE_DOC
Data type: File
Direction: OUT

File comment that is associated with the upload

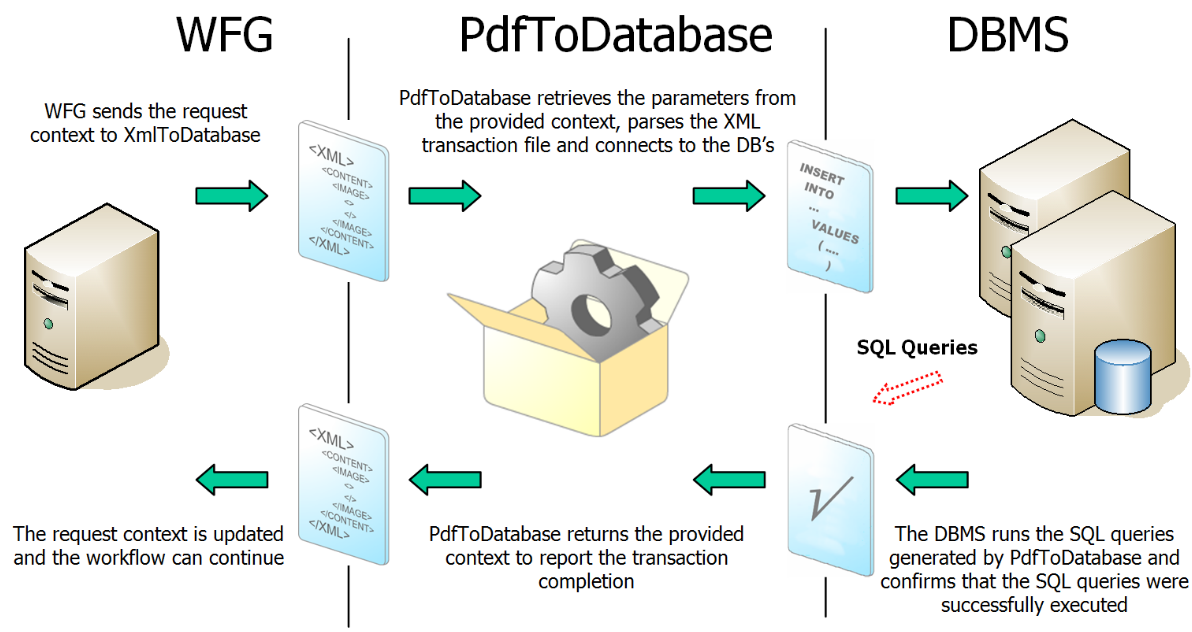
Name: FILE_COMMENT
Data type: Text
Direction: OUT

Example: "This comment is related to this file"

PdfToDatabase workflow application

Overview

The PdfToDatabase WorkflowGen application enables you to export data from a PDF form to one or several databases. It is a synchronous system application that does not require the user to take action. The configuration of the SQL transactions is done via an XML file stored on the web server that enables SQL queries to be performed on ODBC, OLEDB or other custom data sources.



Description of the XML file

Overview

An XML transaction file named "transactions.xml" must be placed in the following folder:

/wfgen/WfApps/WebServices/PdfToDatabase/App_data/

It specifies the list of available transactions (SQL commands that will be executed on the database sources). All transactions must be placed in this one file based on the XML schema defined below.

Structure

The typical structure of an XML transaction file is as follows:

```
<transactions>
	<transaction>
		<databases>
			<database>
				<command>SQL Command</command>
				<command>SQL Command</command>
			</database>
		</databases>
	</transaction>
</transactions>
```

Attributes

Transaction node

- name: Name (or ID) of the transaction

Database node

- name: Name (or ID) of the database
- connectionstring: ODBC, OLEDB or other connection string to the databases (for a Microsoft Access database, you can define a relative path to the database)
- transaction (yes | no): Execute the commands in a transaction

Command node

- type: Type of SQL command
- loop (yes | no): Repeats the command as many times as there are fields in the FDF file (this is useful for writing to tables with a header/detail structure)

Commands

The following SQL commands can be used in the <command> nodes.

Command	Function	Syntax
DELETE	Delete data	DELETE FROM <TABLE> WHERE ...
INSERT	Insert records	INSERT INTO <TABLE> (VALUES | SELECT) ...
UPDATE	Update data	UPDATE <TABLE> SET ...
PROCEDURE	Call a stored procedure	{CALL <PROCEDURE>(<PARAMETERS>)}

Fields

The following fields can be inserted in the SQL commands and will be replaced by their value when the transaction is executed.

Field	Value
{PARAM:<Name>}	Additional parameter of the process (e.g. {PARAM:MY_PARAM})
{FDF:<Name>}	Field of the FDF file (e.g. {FDF:MY_FIELD})
{FDF.<FIELDNAME>}	Name of the field of the FDF file (to be used only in a command with the loop attribute set to 'yes') (e.g. {FDF:MY_FIELD_NAME})
{FDF.<FIELDVALUE>}	Value of the field of the FDF file (to be used only in a command with the loop attribute set to 'yes') (e.g. {FDF:MY_FIELD_VALUE})

Date and numeric field formats

As parameters for actions using the PdfToDatabse application, you can specify which fields have to be formatted as date or numeric values with the following additional parameters:

- FDF_FIELDS_DATE: list of fields of type DATE
- FDF_FIELDS_NUMERIC: list of fields of type NUMERIC
- FDF_LOCALE: culture code to use to format the date and numeric values (e.g. en-GB or en-US)

The two parameters FDF_FIELDS_DATE and FDF_FIELDS_NUMERIC can contain a list of fields separated by a " **,** " (comma). It is also possible to use the wildcard/include character " ***** " (asterisk) or the exclude character " **^** " (caret).

Note: The list of fields to exclude has to be placed after the list of fields to include.

Date format generated into the SQL queries

The fields of type DATE are formatted as follows: yyyy-mm-dd hh:MM:ss

Numeric format generated into the SQL queries

The numerical fields are formatted as follows: XXXX.XX

Example:

Rule: All fields ending with "_DATE" are declared as type DATE ***except*** the field called "EMP_DATE"
Method: FDF_FIELDS_DATE = *_DATE, ^EMP_DATE

DBMS date format functions

The following is the SQL query syntax for the leading DBMSs to correctly format the DATE fields.

MS Access

The field value has to be enclosed by a " **'** " (apostrophe) character (e.g. '{FDF:REQUEST_DATE}').

MS SQL Server

You must use the CONVERT function associated with the ODBC canonical format (e.g. CONVERT (datetime,'{FDF:REQUEST_DATE}',120)).

Oracle

You must use the TO_DATE function with the correct pattern (e.g. TO_DATE('{FDF:REQUEST_DATE}','YYYY-MM-DD HH24:MI:SS')).

Details of the execution of transactions

The SQL commands can be launched in transactions. If errors occur, a rollback is launched and the initial state of the database is restored. The value of the transaction attribute to the database node must be set to "yes".

If the transaction handles many databases, the execution of the commands will be multi-transactional: if an error occurs in a command in one of the databases, a general rollback on all databases will be launched associated withthe failed transaction.

Test mode

The transactions can be tested before being executed on the database. The value of the constant PdfToDatabaseTestMode in the configuration file must be set to "Y".

Note: If this constant is set to "yes" and you have specified to use transactions on the database nodes, the transactions will not be committed at the end of the execution.

Possible execution errors

The following errors can occur during the execution of the transactions. The error details can be checked in the log file if the action trace has been activated.

Error	Cause
No FDF file found	The required FDF parameter has a null value or is not complete.
Error during the launch of FDF file	The FDF file used as a parameter is not valid. It is either not accessible or not a FDF file.
No transaction found	The required TRANSACTION parameter has a null value or is not complete.
The definition of the transaction has not been found	The transactions.xml file has no transaction with the name attribute corresponding to the value of the TRANSACTION parameter.
SQL instruction not valid: the parameter has not been found	The PARAM or FDF parameters have not been found in either the process or in the FDF file. Check that the parameter is not an extra IN parameter in the action’s process or that the fields exist in the FDF file.
The tags {FDF.<FIELDNAME>} & {FDF.<FIELDVALUE>} can only be called in a loop	The tags {FDF.<FIELDNAME>} & {FDF.<FIELDVALUE>} are related to the fields of the FDF file in a sequential parsing. You must set the value of the loop attribute of the related command to "yes".

Database connection error	The connection to the data base cannot be established. Check the validity of the connection string contained in the *connectionstring* attribute of the *database* node.
Error during the execution of the SQL command	The execution of the SQL command failed. Check the syntax of the related SQL command .

Export example in column mode

Overview

The following transaction inserts the values of the fields of an FDF file into an SQL Server database in a column mode structure. Each field is related to a column of a sample EFORM_DATA table.

Structure of databases

The database must have a structure similar to the following (* represents the primary key):

EFORM_DATA
* ID_EFORM: ID
EFORMNAME: text
NUM_EMP: number
LASTNAME_EMP: text
FIRSTNAME_EMP: text

PDF file fields

The preceding example illustrates how the PDF file related to the exported FDF file includes the fields NUM_EMP, LASTNAME_EMP, and FIRSTNAME_EMP.

Details of the transactions.xml file

The transactions.xml file contained in the folder "../wfgen/WfApps/WebServices/PdfToDatabase/App_Data/" should follow the structure:

```
<?xml version="1.0"?>
    <transactions>
        <transaction name="TRANSAC_TEST">
            <databases>
                <database name="SQLSVR" transaction="yes"
                connectionstring="Provider=SQLOLEDB;Data Source=SERVEUR;
                INITIAL CATALOG=WFGEN_SQL;USER ID=TEST">
                  <command type="INSERT">
                     INSERT INTO EFORM_DATA(
                     EFORMNAME,
                     NUM_EMP,
                     LASTNAME_EMP,
                     FIRSTNAME_EMP)
                     VALUES(
                      '{PARAM:EFORMNAME}',
                 {FDF:NUM_EMP},
```

```
                              '{FDF:LASTNAME_EMP}',
                                 '{FDF:FIRSTNAME_EMP}')
                               </command>
                              </database>
                        </databases>
                  </transaction>
            </transactions>
```

Using the PdfToDatabase application in a WorkflowGen process action

In a WorkflowGen process, the actions that are using the PdfToDatabase application need two required parameters:

- FDF: the FDF file associated to the PDF form (i.e.: FORM_DATA)
- TRANSACTION: the name of the transaction to execute

In the preceding example, a custom additional IN parameter (TEXT type) named EFORMNAME was defined which enables the insertion of the name of the eForm.

Example:

EFORMNAME: IN: Name of the eForm (Free text or Data).

XmlToDatabase workflow application

Overview

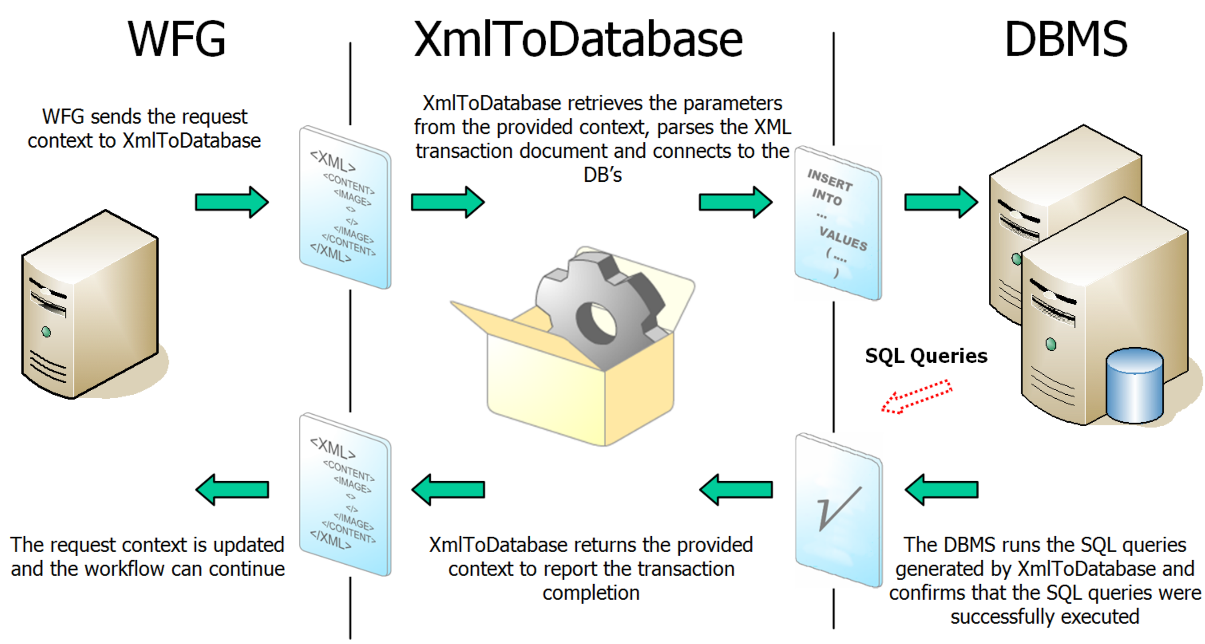
The XmlToDatabase WorkflowGen application enables you to export data from any XML documents to one or several databases. It is a synchronous system application that does not require the user to take action. The configuration of the SQL transaction is done via an XML document that enables SQL queries to be performed on ODBC, OLEDB, or other custom data sources.

How it works

The WorkflowGen engine calls the XmlToDatabase application with the context and the parameters. XmlToDatabase uses the context and the parameters to get the following:

- The XML data document to export
- The transaction document, which contains:
  - Information on how to connect to the database
  - Information on where the data should be taken in the XML data document (using XPaths)

After XmlToDatabase has gathered all of the above information, it is ready to perform the export. Once the export is complete, it returns the context to WorkflowGen so that the workflow may continue.



Description of the XML transactions document

Overview

The XML transactions document specifies the SQL commands that will be executed on the databases. It is used for two main functions: connecting to the database, and mapping the fields of the query to the fields of the XML data document. Remember that the XML data document (generally named FORM_DATA) can be constructed in many ways. For this reason, XPaths are used to map the DB fields to the XML fields.

Structure

Any one XmlToDatabase activity can have an unlimited number of databases and an unlimited number of commands per database. This means that the export can be done to several databases, and each database can have more than one command.

The following is an example of an XML transactions document:

```
<transactions>
	<transaction name="">
		<databases>
			<database name="" connectionstring="" provider="" transaction="">
				<command type="" loop="" xpath="">
				[QUERY HERE]
				</command>
			</database>
		</databases>
	</transaction>
</transactions>
```

Location of the XML transactions document

There are four ways to define an XML transaction for an XmlToDatabase action. In all of the following cases, the transaction document is defined as follows:

```
<transactions>
	<transaction name="MY_TRANSACTION">
		...
	</transaction>
</transactions>
```

1. XmlToDatabase first looks for a TRANSACTIONS_TEXT parameter.
2. If this parameter is not found, it then looks for a TRANSACTIONS_FILE parameter.
3. If this parameter is not found either, it then looks for a file with your transaction’s name.
4. If this file is not not found either, it then parses the Transactions.xml file to find a node with your transaction’s name.

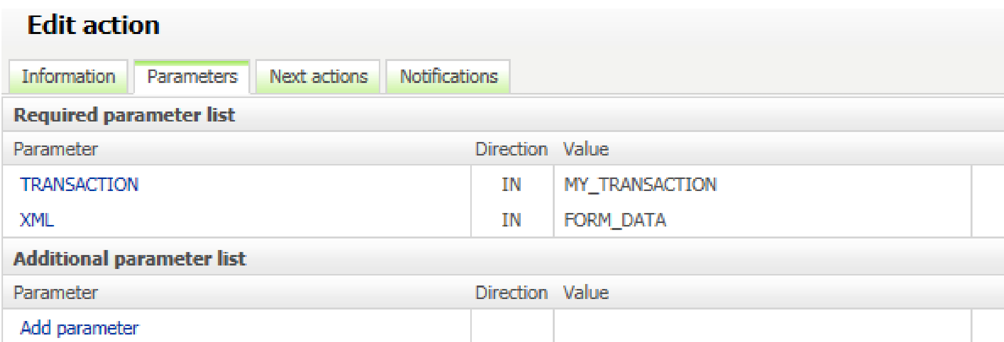
The priority order, then, is as follows:

1. TRANSACTIONS_TEXT parameter.
2. TRANSACTIONS_FILE parameter.
3. ../App_data/MyTransaction.xml file.
4. ../App_data/Transactions.xml file.

In the common file

In this case, the transaction file is located in the folder /wfgen/WfApps/WebServices/XmlToDatabase/App_Data, and named "Transactions.xml". The XmlToDatabase application parses this file to find your transaction.

The XmlToDatabase action contains the following parameters:



Edit action

Information | Parameters | Next actions | Notifications

Required parameter list

Parameter	Direction	Value
TRANSACTION	IN	MY_TRANSACTION
XML	IN	FORM_DATA

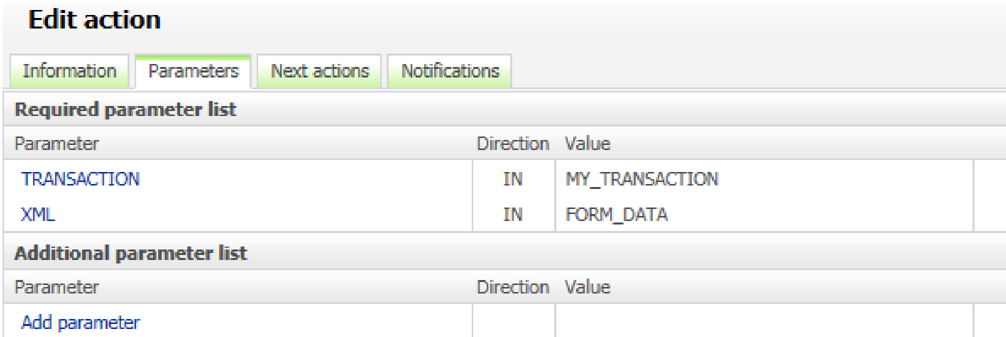
Additional parameter list

Parameter	Direction	Value
Add parameter		

In a specific file

If your transaction is not found inside the "Transactions.xml" file, the XmlToDatabase application looks for an .xml file with the same name as your transaction. The transaction document should be created in the "MY_TRANSACTION.xml" file:

The XmlToDatabase action contains the following parameters:

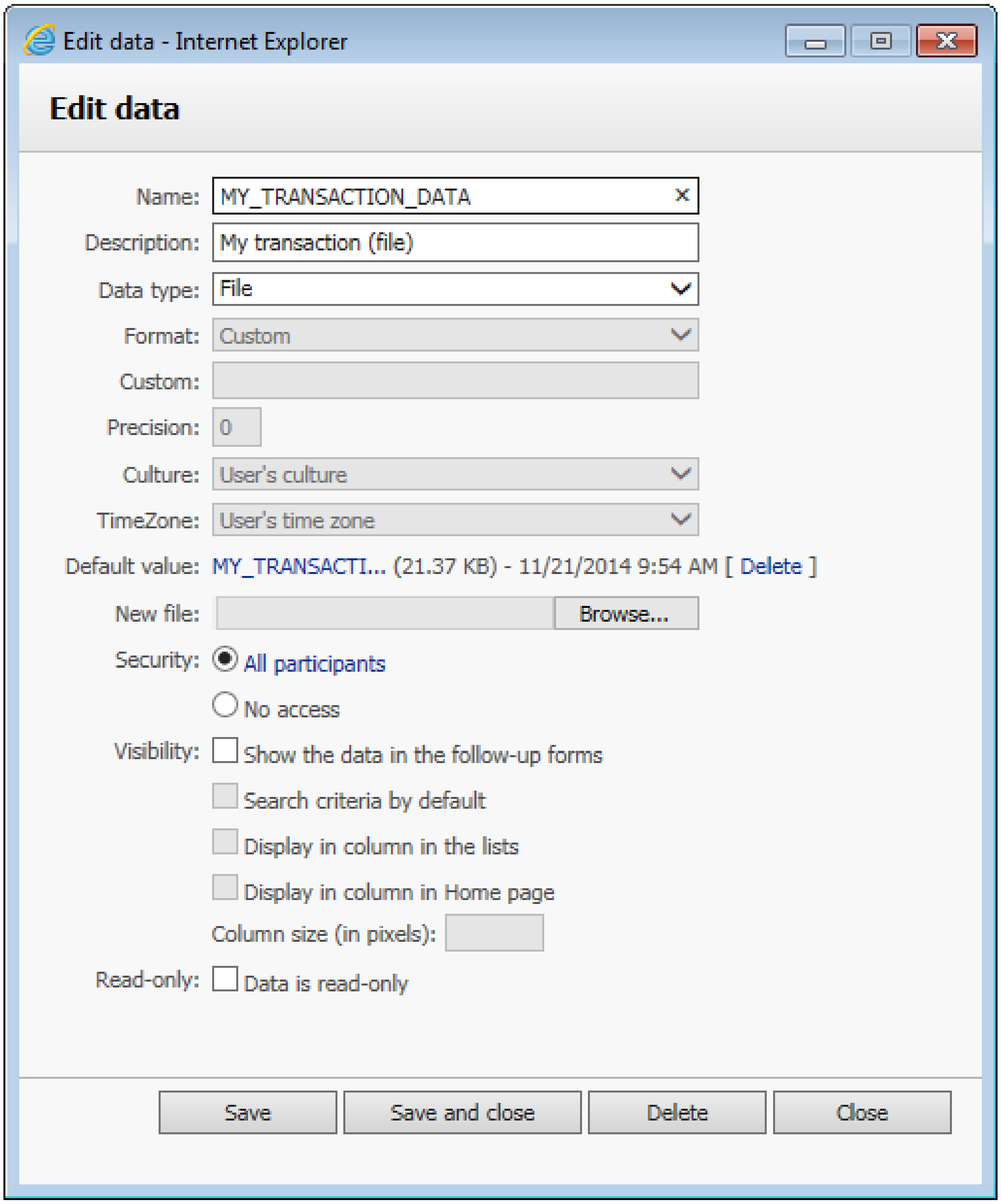


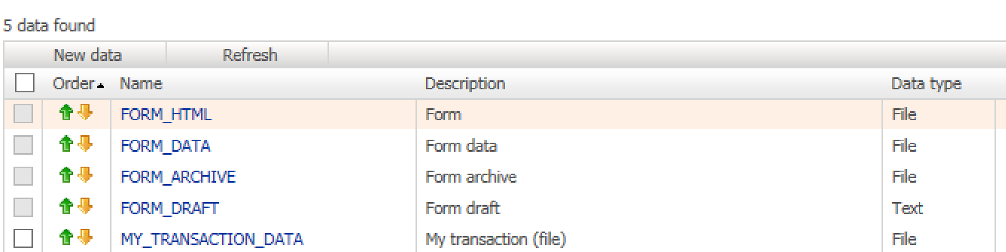
Note: You can change from the common transaction file to a specific transaction file without updating your process definition by removing the transaction from the "Transactions.xml" file and adding it in a file named with your transaction’s name.

In a process file data type

If you can’t access the "App_Data" folder of the web server, or if you want to include your transaction in your process definition (to be exported and shared by an XPDL file), you can upload your transaction file in a process file data type.

First, create a process file data type and upload your "MY_TRANSACTION.xml" file:

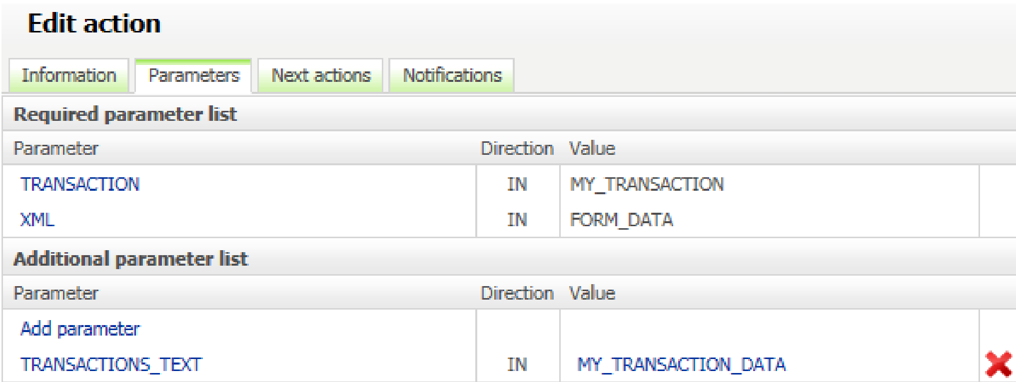



5 data found

New data | Refresh

Order	Name	Description	Data type
	FORM_HTML	Form	File
	FORM_DATA	Form data	File
	FORM_ARCHIVE	Form archive	File
	FORM_DRAFT	Form draft	Text
	MY_TRANSACTION_DATA	My transaction (file)	File

Then, edit your **XmlToDatabase** action, add a new parameter named "TRANSACTIONS_FILE", and send the value of your process data:

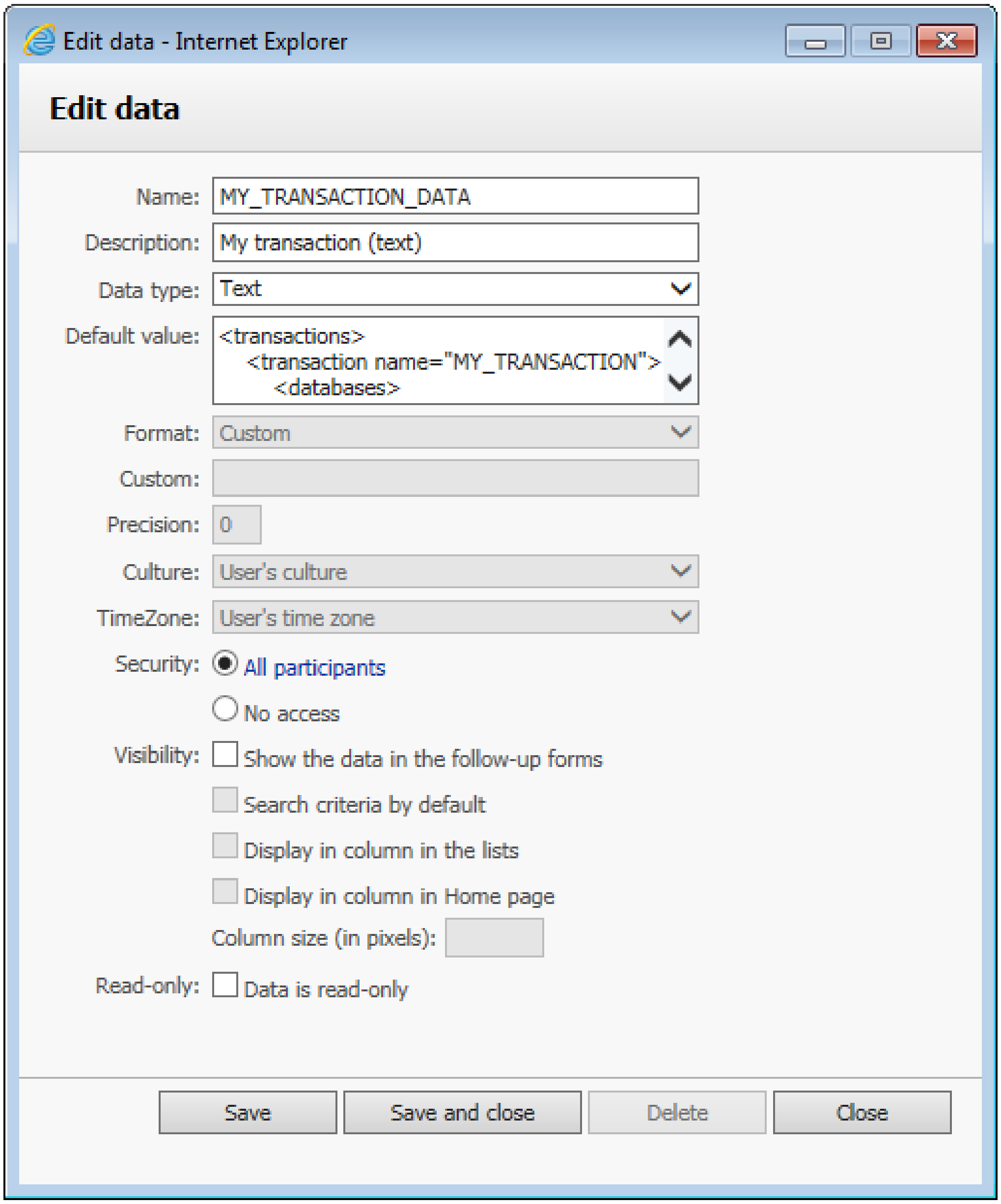


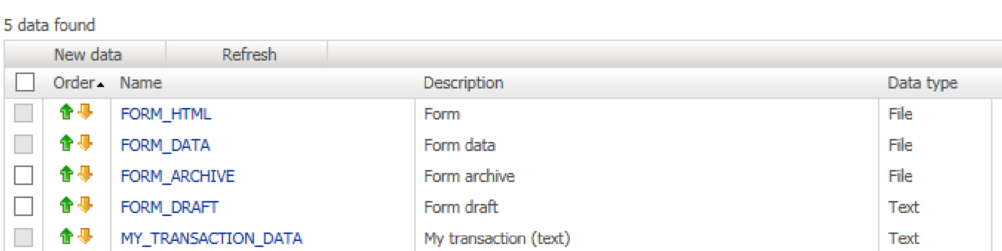
In a process text data type

If you can’t access the "App_Data" folder of the web server, or if you want to include your transaction in your process definition (to be exported and shared by an XPDL file), you can write your transaction within a process text data type.

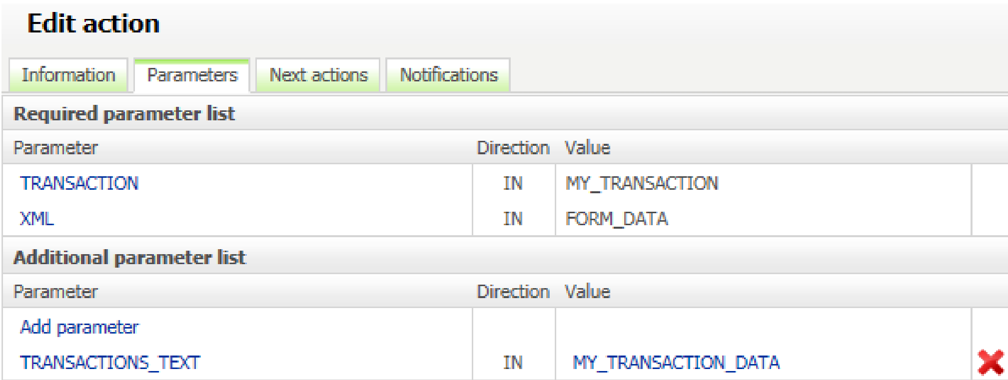
Note: In this case your XML transaction cannot exceed 4000 characters.

First, create a process text data type and write your transaction as a default value:

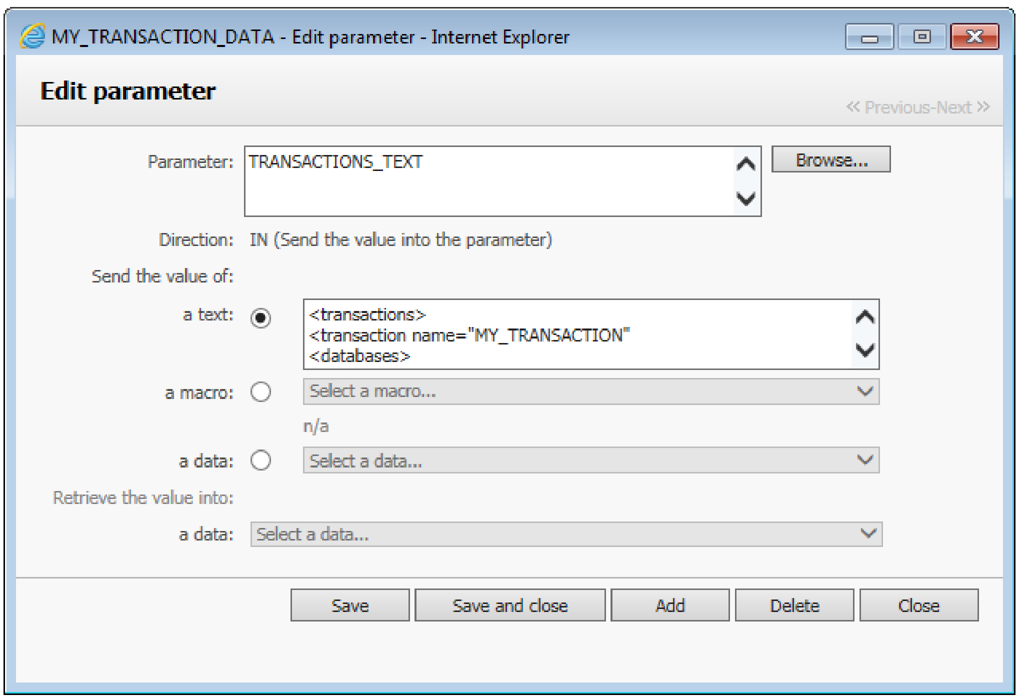

Edit data - Internet Explorer
Edit data
Name: MY_TRANSACTION_DATA
Description: My transaction (text)
Data type: Text
Default value: <transactions>
<transaction name="MY_TRANSACTION">
<databases>
Format: Custom
Custom:
Precision: 0
Culture: User's culture
TimeZone: User's time zone
Security: All participants
No access
Visibility: Show the data in the follow-up forms
Search criteria by default
Display in column in the lists
Display in column in Home page
Column size (in pixels):
Read-only: Data is read-only
Save
Save and close
Delete
Close


5 data found
New data
Refresh
Order
Name
Description
Data type
FORM_HTML
Form
File
FORM_DATA
Form data
File
FORM_ARCHIVE
Form archive
File
FORM_DRAFT
Form draft
Text
MY_TRANSACTION_DATA
My transaction (text)
Text

Then, edit your XmlToDatabase action, add a new parameter named "TRANSACTIONS_TEXT", and send the value of your process data:



Note: It is not necessary to create process data. You can send the value of your XML transaction within the TRANSACTION_TEXT parameter.



Attributes

- The "**transaction name**" attribute is used to map the transaction to the XmlToDatabase activity/action. In WorkflowGen, a TRANSACTION parameter (TEXT type data) must be defined for every XmlToDatabase activity/action. The text entered in the parameter must match the transaction name attribute in order to use the right transaction for the right activity.
- The "**database name**" attribute is the name of the database used for the transaction.
- The "**database connectionstring**" attribute should contain the ConnectionString to connect to the DB.

- The "**database provider**" attribute is used to inform XmlToDatabase which namespace should be used to create the access to the DB (System.Data.OleDb or System.Data.Odbc).
- The "**database transaction**" attribute is used to inform XmlToDatabase whether to use a DB transaction for the exportation (values: "yes" or "no").
- The "**command type**" attribute is used to inform XmlToDatabase what kind of command is being performed; the possible values can be any valid SQL command, except if it is calling a stored procedure. In this case, the type must be "PROCEDURE".
- The "**command loop**" attribute can have the values "yes" or "no". It is used to perform a batch of commands using all of the values returned by each xpath in the query. For example, if the loop attribute is set to "yes", and if one Xpath in the query returns 10 results and the others return only five, the command will be executed 10 times and the last five ones will have null values. If the loop attribute is set to "no", the command will be executed only once with the first node returned by each Xpath contained in the query.
- The "**command xpath**" attribute will be used to specify a part of the xpaths used in the query.
- The "**connectionstringname**" is used in the XmlToDatabase transaction file to specify the connection string name to use to define the "**database**" xml node.

```
XmlToDatabase Transaction file:
…
<database name="MYDB" connectionstringname="MYDBSOURCE">
..
web.config:
..
<connectionStrings>
        <add name="MYDBSOURCE" connectionString="Data Source="Data
        Source=MYSQLSERVER;Initial Catalog=MYDB;User ID=user;password=pwd;"
        providerName="System.Data.SqlClient"/>
<connectionString>
…
```

Date and numeric field formatting

You can specify which fields must be formatted as date or numeric values using the following parameters:

- XML_FIELDS_DATE: list of fields of type date
- XML_FIELDS_NUMERIC: list of fields of type numeric
- XML_LOCALE: culture code to use to format the date and numeric values (e.g. en-GB or en-US)

The two parameters XML_FIELDS_DATE and XML_FIELDS_NUMERIC must contain a list of xpath expressions separated by " **,** " (comma) characters.

Date format generated into the SQL queries

Fields of type DATE are formatted as follows: yyyy-mm-dd hh:MM:ss

Numerical format generated into the SQL queries

Numeric fields are formatted as follows: XXXX.XX

Example:

Rule: All the nodes found in the XML document with the name "REQUEST_DATE" and the specific node situated at /MyData/MyExample/Date_Field will be formatted as date
Method: XML_FIELDS_DATE = //*/REsQUEST_DATE, /MyData/MyExample/Date_Field

Details of the transaction execution

The SQL commands can be launched as transactions. If errors occur, a rollback is launched and the initial state of the database is restored. The value of the transaction attribute of the database node must be set to "yes".

If the transaction handles many databases, the execution of the commands will be multi-transactional, meaning if an error occurs in a command in one of the databases, a rollback on all database transactions performed will be launched.

Test mode

The transactions can be tested before being executed on the database. The value of the constant XmlToDatabaseTestMode in the configuration file must be set to "Y".

Note: If this constant is set to ‘yes’ and you have specified using transactions on the database nodes, the transactions will not be committed at the end of the execution.

Description of the log file

If the XmlToDatabaseEnableTrace parameter in the configuration file of the web service is set to "Y", a log file will be created in the "/wfgen/WfApps/WebServices/XmlToDatabase/App_Data/LogFiles" directory.

The log entries are in the following format:

"Date; [Database name;] Transaction name; SQL query; Execution result"

"Execution result" values are:

- If the query was run successfully: "OK".
- If an error occurred: "ERROR: Error code - Error description".

Examples:

12/14/2005 4:51:23 PM; ACCESS; TEST_TRANS; INSERT INTO DATA …; OK

12/14/2005 4:51:24 PM; ACCESS; TEST_TRANS; DELETE FROM DATA2; ERROR: 1234-Table was not found

Possible execution errors

The following errors can occur during the execution of the transactions:

Error	Cause
The XML file parameter is missing	The required XML parameter has a null value or is not completed.
The XML context cannot be empty	XmlToDatabase application must receive a context from WorkflowGen; it cannot be used without being part of a WorkflowGen process.
XML parsing error (1)	The XML parameter is pointing to an invalid XML file.
XML parsing error (2)	The XML transaction file is an invalid XML file.
XML parsing error. The provider attribute is required	The provider attribute of the database node is not present in the transaction.
Unable to commit transactions	The commit operation has not succeeded.
Error while opening log file	The log file cannot be opened.
The TRANSACTION parameter is missing	The required TRANSACTION parameter has a null value or is not completed.
The definition of the transaction has not been found	The transactions.xml file has no transaction with the name attribute corresponding to the value of the TRANSACTION parameter.
SQL Instruction not valid: the parameter has not been found	The PARAM {parameter name} has not been found.
XML parsing error. The *connectionstring* attribute is required	The *connectionstring* attribute has not been specified in the database node.
The XML field was expected to be date, but its value is not valid	One of the xpaths in the XML_FIELDS_DATE that was passed refers to a field that is not a date field.
The XML field was expected to be numeric, but its value is not valid	One of the xpaths in the XML_FIELDS_NUMERIC that was passed refers to a field that is not a numeric field.
The Xpath is not a valid xpath expression	One of the xpaths in your transaction file is not a valid xpath expression.
The XPath passed as a parameter is not a valid xpath expression	One of the xpath in your XML_FIELDS_DATE or XML_FIELDS_NUMERIC parameters is not a valid xpath expression.
Error while loading the XML file: File was not found	The XML parameter is not pointing to an XML file.
Database connection error	The connection to the data base cannot be established. Check the validity of the connection string contained in the *connectionstring* attribute of the *database* node.
Error during the execution of the SQL command	The execution of the SQL command failed. Check the syntax of the related SQL command.
Error during the execution of the SQL loop command	The execution of the SQL command failed. Check the syntax of the related SQL command.
SQL instruction not valid: the XML field has not been found.	One of the xpaths expressions you have used in your parameters of the command returned no fields. Check the syntax of your xpaths expressions.

The culture code for the XML file in the param XML_LOCALE is not valid.	Check that the XML_LOCALE parameter is in the right format (e.g. "en-US" or "fr-CA").

Export examples

Example 1:

XML file structure:

```
<data>
	<request_number>1</request_number>
	<request_first_name>John</request_first_name>
	<request_last_name>Smith</request_last_name>
</data>
```

The command node could look like this:

```
<command type="INSERT" loop="no" xpath="/data/">
	INSERT INTO EXAMPLE (request_number, request_first_name, request_last_name, request_date)
	VALUES (
		{XPATH:request_number},
		{‘XPATH:request_first_name’},
		{‘XPATH:request_last_name’},
		{‘PARAM:REQUEST_DATE’})
</command>
```

The "XPATH:" tag in the query will all be replaced by "/data/" which is the xpath attribute value.

The "PARAM:" tag is used to identify a WorkflowGen parameter instead of using an XML field.

Warning: XPaths that return no nodes will use "null" values.

Note: It is possible to NOT use the qualified xpath by using "**XPATH::**" instead of "**XPATH:**".

Example 2:

The following is a more complex example using the loop property:

XML file structure:

```
<Library>
	<publishers>
		<publisher>Grasset</publisher>
	</publishers>
	<AUTHORS>
		<author id="100">
			<name>Stephen King</name>
			<description>Horror book author</description>
			<birth_date>1947-09-21</birth_date>
		</author>
		<author id="200">
			<name>John Smith</name>
```

```
                    <description>Description of the author</description>
                    <birth_date>1972-06-06</birth_date>
            </author>
      </AUTHORS>
      <BOOKS>
            <book id="38">
                    <title>Title of the book #38</title>
                    <description>Description of the book #38</description>
                    <author id="100"/>
            </book>
            <book id="39">
                    <title>Title of the book #39</title>
                    <description>Description of the book #39</description>
                    <author id="200"/>
            </book>
            <book id="40">
                    <title>Title of the book #40</title>
                    <description />    // Will insert a NULL value automatically
                    <author id=""/>  // Will insert a NULL value automatically
            </book>
       </BOOKS>
</Library>
```

The command nodes could look like this:

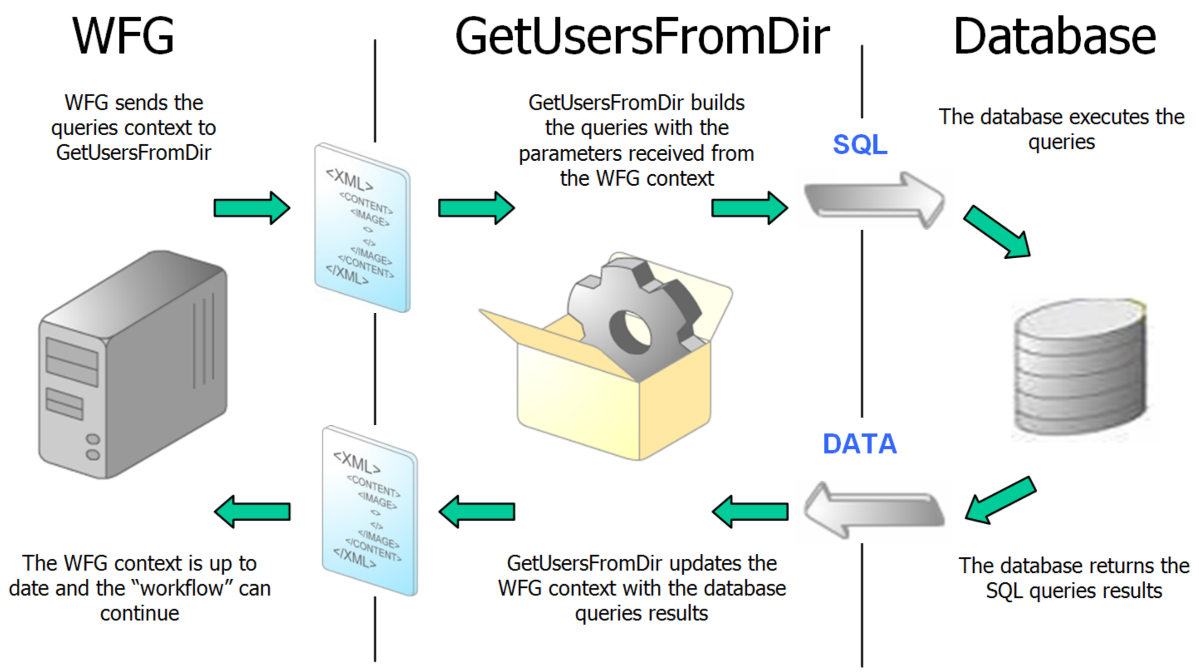
```
<command loop="yes" type="INSERT" xpath="/Library/AUTHORS/">
      INSERT INTO AUTHORS
            ([AUTHOR_ID],[AUTHOR_NAME],[AUTHOR_DESC],[AUTHOR_PUBLISHER])
      VALUES ({XPATH:author/@id},
            '{XPATH:author/name}',
            '{XPATH:author/description}',
            '{XPATH::/Library/publishers/publisher}' )
</command>
<command loop="yes" type="INSERT" xpath="/Library/BOOKS/">
      INSERT INTO BOOKS
            ([BOOK_ID],[BOOK_TITLE],[BOOK_DESCRIPTION],[BOOK_AUTHOR_ID])
      VALUES ({XPATH:book/@id},
            '{XPATH:book/title}',
            '{XPATH:book/description}',
            '{XPATH:book/author/@id}')
</command>
```

Note: In the **XPATH::** shown in bold above, you must use two " **:** " (colon) characters when you don’t want to use the qualified xpath in the command node.

GetUsersFromDir workflow application

Overview

The **GetUsersFromDir** application allows retrieval of a username list, a user email list, or a user ID list. These lists are obtained from a WorkflowGen automatic system action that executes SQL queries on the WorkflowGen database. They can either be used for automatic notifications or to define the users of an action in a WorkflowGen process (by storing the output of GetUsersFromDir as a data element and using the resulting data element to specify the users in the notification or action assignment).



Definitions

- **The "x" character:** The "x" character in some parameter names means that there can be more than one instance of the parameter. For example, QUERYx_CMD means there can be QUERY1_CMD, QUERY2_CMD, QUERY3_CMD, etc.
- **Action:** You must create a WorkflowGen action of type GetUsersFromDir to use this application.

List of available fields and macros for queries

Listed below are the fields and macros available for the queries created in the QUERYx_CMD parameters. They can be used in the conditions for these queries to filter their results.

Examples:

This example returns a username list of the users in the province of Quebec:

QUERY1_CMD: STATE = 'QC'
RESULT_LIST

This example returns a username list of users that have email addresses ending with "advantys.com":

QUERY1_CMD: EMAIL LIKE '%ADVANTYS.COM'
RESULT_LIST

This example returns a username list of users in my group:

QUERY1_CMD: {ISMEMBER(MYGROUPNAME)}
RESULT_LIST

Available fields definition	
LASTNAME	Last name
FIRSTNAME	First name
EMAIL	Email
PHONE	Telephone
MOBILE	Mobile
PAGER	Pager
FAX	Fax
OFFICE	Office
DEPARTMENT	Department
COMPANY	Company
JOBTITLE	Job Title
PERSONALTITLE	Title
EMPLOYEENUMBER	Employee number
EMPLOYEETYPE	Employee type
POSTALADDRESS	Postal address
POSTALCODE	Zip code
CITY	City
STATE	State/Area
COUNTRY	Country
EXTATT_1	Extended attribute 1
EXTATT_2	Extended attribute 2
EXTATT_3	Extended attribute 3

EXTATT_4	Extended attribute 4
EXTATT_5	Extended attribute 5
Available macros definition	
{ISMEMBER(groupname)}	Get the group's members

Using additional parameters

QUERY1_CMD: Executing an SQL query

Description

To execute an SQL query, you must add the IN parameter QUERY1_CMD to the action. If the parameter is empty or nonexistent then no operation will be performed.

Example:

This example returns the Montreal username list in the RESULT_LIST parameter:

QUERY1_CMD: CITY = 'MONTREAL'
RESULT_LIST

RESULT_LIST / QUERYx_RESULT_LIST: Retrieving queries results

Description

To get the result of all the queries (username list in string format), you must add the OUT parameter RESULT_LIST to the action. To retrieve the result by query, you have to add the OUT parameter QUERYx_RESULT_LIST for each query (associated to their process data).

Example:

This example returns the username list of Montreal, Toronto, and New York in the RESULT_LIST parameter. QUERY1_RESULT_LIST contains the username list of Montreal, QUERY2_RESULT_LIST contains the username list of Toronto, and QUERY3_RESULT_LIST contains the username list of New York. RESULT_LIST contains the usernames of all 3 QUERYx_CMDs.

QUERY1_CMD: CITY = 'MONTREAL'
QUERY2_CMD: CITY = 'TORONTO'
QUERY3_CMD: CITY = 'NEW YORK'
QUERY1_RESULT_LIST
QUERY2_RESULT_LIST
QUERY3_RESULT_LIST
RESULT_LIST

Note: A maximum of 4000 characters can be stored as the result of a query.

QUERY1_DIR: Directory specification

Description

You can specify the user directory on which the query will be executed. You have to add the IN parameter QUERY1_DIR in the action. If this parameter has NULL value or does not exist, the default directory is WORKFLOWGEN (or the directory specified as the default by an Administrator).

Example:

This example returns the username list of users in Montreal from the YourCompany directory into the RESULT_LIST parameter:

> QUERY1_CMD: CITY = ‘MONTREAL’
> QUERY1_DIR: YourCompany
> RESULT_LIST

Note: If you manage users in WorkflowGen with multiple directories, you must use this parameter to specify the directory to search, and may need to use more than one query of a similar nature to specify all possible directory users (one query per directory).

QUERYx_CMD: Using more than one query

Description

You can add queries in the same WorkflowGen action and retrieve all of the results in one complete list or in one list per query. You must add the IN parameters QUERYx_CMD, where ‘x’ is the number of the query. To get the result of each query, you have to add the OUT parameters QUERYx_RESULT_LIST.

Example:

This example returns the username list of users from Montreal in the WORKFLOWGEN directory into the QUERY1_RESULT_LIST parameter, the username list of users from Montreal in the INTRANET directory into the QUERY2_RESULT_LIST parameter, and the complete username list from the two queries into the RESULT_LIST parameter:

> QUERY1_CMD: CITY = ‘MONTREAL’
> QUERY1_DIR: WORKFLOWGEN
> QUERY2_CMD: CITY = ‘MONTREAL’
> QUERY2_DIR: INTRANET
> QUERY1_RESULT_LIST
> QUERY2_RESULT_LIST
> RESULT_LIST

QUERYx_TOP: Specify results maximum

Description

You can specify the maximum number of records returned by your queries by adding the QUERYx_TOP as an IN parameter of the action. The query will not be able to return more results than the number specified in this parameter.

Examples:

This example returns only the first two usernames of the query:

QUERY1_CMD: CITY = ‘MONTREAL’
QUERY1_TOP: 2
RESULT_LIST

This example returns all usernames from this query:

QUERY1_CMD: CITY = ‘MONTREAL’
RESULT_LIST

QUERYx_DEFAULT_VALUE: Specify a default value

Description

You can specify a default value to be returned for queries that return no values. You must add the IN parameter QUERYx_DEFAULT_VALUE in the action.

Example:

In this example, the query returns no value because the company entered does not exist, so the RESULT_LIST parameter will contain "default1":

QUERY1_CMD: COMPANY = ‘COMPANY_DOES_NOT_EXIST’
QUERY1_DEFAULT_VALUE = default1
RESULT_LIST

RESULT_SEPARATOR: Separator specification

Description

You can specify the character that will separate the result in the returned list by adding the IN parameter RESULT_SEPARATOR. The default separator is " **,** " (comma).

Example:

For this example, the RESULT_LIST parameter value is: name1***name2***name3:

QUERY1_CMD: CITY = ‘MONTREAL’
RESULT_SEPARATOR: ***
RESULT_LIST

This example returns the value: name1, name2, name3:

QUERY1_CMD: CITY = ‘MONTREAL’
RESULT_LIST

RESULT_COUNT / QUERYx_RESULT_COUNT: Number of records returned

Description

You can retrieve the number of records returned for each query or for all queries. For the total number of records returned for all queries, you must add the OUT parameter RESULT_COUNT to the action. For the number of records per query, you must add the OUT parameters QUERYx_RESULT_COUNT to the action.

Example:

The following example returns the total number of records in the RESULT_COUNT parameter and the number of records of each query (QUERY1 and QUERY2) in the parameters QUERY1_RESULT_COUNT and QUERY2_RESULT_COUNT:

QUERY1_CMD: CITY = ‘NY’
QUERY1_DIR: WORKFLOWGEN
QUERY2_CMD: CITY = ‘NY’
QUERY2_DIR: INTRANET
RESULT_LIST
RESULT_COUNT
QUERY1_RESULT_COUNT
QUERY2_RESULT_COUNT

Using parameter conditions in SQL queries

Description

You can also use parameters in the SQL conditions contained in the QUERYx_CMD parameter. You must add IN parameters with different names for the following reserved parameters:

QUERYx_CMD, QUERYx_DIR, QUERYx_TOP, QUERYx_RESULT_COUNT, QUERYx_RESULT_LIST, RESULT_LIST, RESULT_COUNT or RESULT_SEPARATOR.

You can then call these parameters in the condition by prefixing them with the " **@** " (at) character.

Example:

This example returns the username list from Montreal in the WORKFLOWGEN directory:

QUERY1_CMD: CITY = @PARAM1
PARAM1: MONTREAL
RESULT_LIST

Remember that the parameter name used in the condition must have the same name as the one defined in the WorkflowGen action.

Note: "PARAM1" is an arbitrary convention; any parameter name may be used.

QUERYx_CMD: Using macros in SQL query conditions

Description

You are also able to use macros in the SQL conditions contained in the QUERYx_CMD by adding an available macro in the condition.

Example:

The following example returns the username list of users which are members of the Dev group, members of the WORKFLOWGEN directory and come from Montreal:

QUERY1_CMD: CITY = 'MONTREAL' and {ISMEMBER(Dev)}
RESULT_LIST

Important: You must respect the syntax in the **Available macros** list.

RESULT_LIST_EMAIL / QUERYx_RESULT_LIST_EMAIL: Retrieving the queries result in an email list format

Description

If you want to retrieve the emails of the usernames returned by the queries, you must add the OUT parameter RESULT_LIST_EMAIL to the action. If you want to retrieve the emails by query, you must add the OUT parameter QUERYx_RESULT_LIST_EMAIL for each query.

Example:

This example returns the email list of Montreal and Toronto in the RESULT_LIST_EMAIL parameter. QUERY1_RESULT_LIST_EMAIL contains the email list of Montreal and QUERY2_RESULT_LIST_EMAIL contains the email list of Toronto:

QUERY1_CMD: CITY = 'MONTREAL'
QUERY2_CMD: CITY = 'TORONTO'
QUERY1_RESULT_LIST_EMAIL
QUERY2_RESULT_LIST_EMAIL
RESULT_LIST_EMAIL

Error management in WorkflowGen

To manage execution errors, you must add a corrective (debug) action linked to the GetUsersFromDir action. This corrective action is a manual action and is executed upon an execution error. You must add this exception on the transition between the two actions. The following table lists the most frequent errors returned by the application.

Error message	Solution
This directory does not exist	Check if the directory typed in the query is valid.
XML context is empty or incorrect	Verify if the application has been launched by WorkflowGen.

Database connection error	Check if the database connection string in the config.inc file is valid.
Query error	Check if the fields or macros used in the QUERYx_ CMD parameter are valid.
The queries return too many values	Add conditions in the QUERYx_CMD parameter to filter the results.
The parameter "parameter name" has the same name as a WFG reserved parameter. You must change the name.	Change the name of this parameter for a name other than the reserved parameters' names.
The queries return too many records	Add conditions in the QUERYx_CMD parameters to filter the results.
The parameter "parameter name" must have a value	Check in the WorkflowGen action if the parameter is empty.
"Parameter name" parameter is required	Add this parameter to the WFG action.

Maximum returned records number

The GetUsersFromDirMaxResultNb constant exists in the "web.config" file, which contains the maximum number of records that can be returned by a query.

This limit reduces the risk of a time limit expiration error that may occur when query results are too large. If the number of returned records is higher than this constant value, an error message stating "the queries returned too many records" will be displayed.

FdfToXml workflow application

Overview

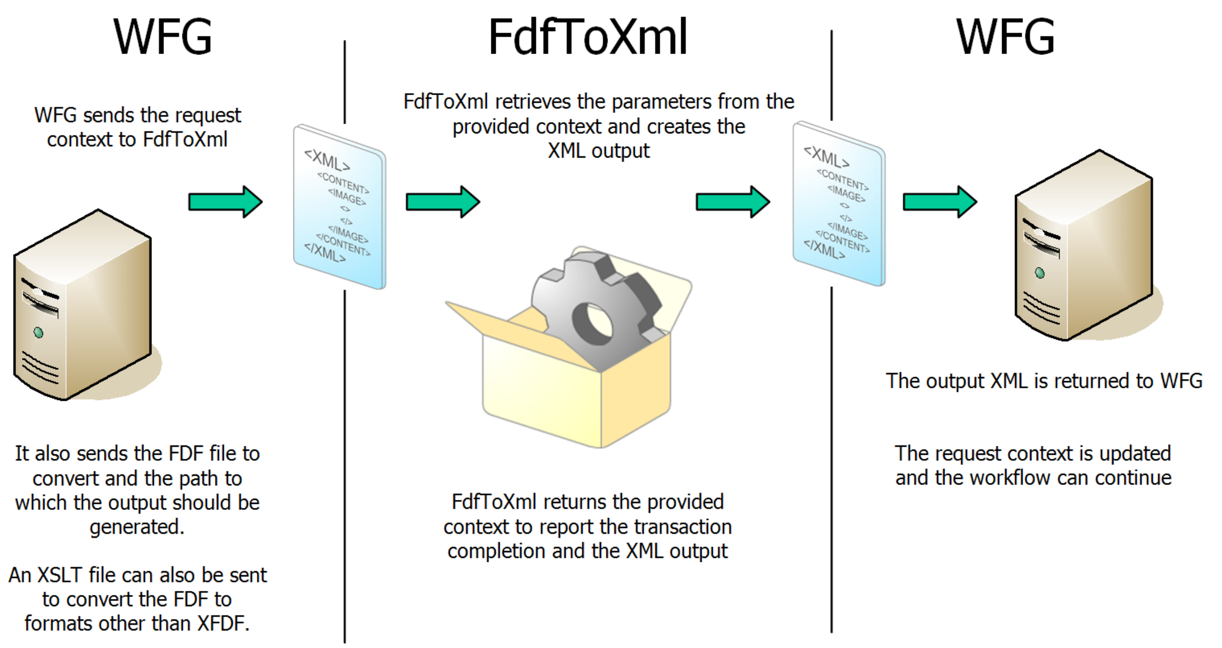
FdfToXml can export FDF documents to any kind of XML format using an XSLT sheet or to a standard XFDF format.

How it works

The WorkflowGen engine calls the FdfToXml web service with the context and the parameters. FdfToXml uses the context and the given parameters to get the following:

- The FDF file to convert
- An XSLT file to convert the XFDF file to any kind of output (optional)

After FdfToXml receives the information, it is ready to perform the export. Once it has completed the export, it returns the context to WorkflowGen so that the workflow can continue.



Possible execution errors

The following errors can occur during the execution of the transactions:

Code	Description
1	The required field FDF is missing.
2	The required field RESULT is missing.
3	It is impossible to provide a FORMAT and a XSLT parameter in the same action.
4	The FDF file was not valid.
5	The XSLT file was not found.
6	The FORMAT specified does not exist.
7	The FDF file was not found.
8	Can’t write the output to the RESULT parameter. Verify that the folder security settings are correct.
9	Can’t read the FDF file. Verify that the folder security settings are correct.
10	Can’t read the XSLT file. Verify that the folder security settings are correct.
11	The XSLT file is not a valid XSLT transformation style sheet.
12	The context cannot be empty.
13	If RESULT_FILEEXT parameter is given, the RESULT_MIMETYPE parameter must be given too.
14	If RESULT_ MIMETYPE parameter is given, the RESULT_ FILEEXT parameter must be given too.

XmlTrans workflow application

Overview

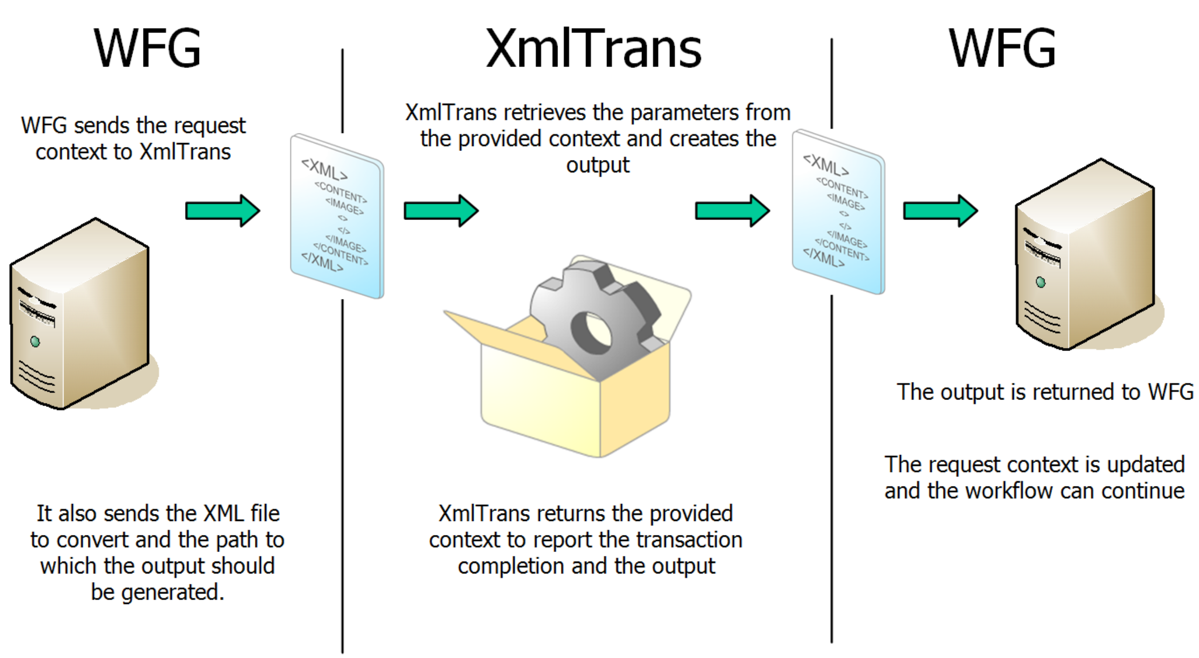
The **XmlTrans** application transforms any XML document to any kind of other format using an XSLT sheet.

How it works

The WorkflowGen engine calls the XmlTrans application with the context and the parameters. XmlTrans uses the context and the parameters to get the following:

- An XML file to convert
- An XSLT file to convert the XML file to any kind of output
- A RESULT parameter to receive the output
- A RESULT_FILEEXT parameter to know the extension of the output
- A RESULT_MIMETYPE parameter to know the MIME type of the output

After XmlTrans gathers this information, it's ready to make the transformation, and then returns the context to WorkflowGen so that the workflow can continue.



Possible execution errors

The following errors can occur during the execution of the transactions:

Code	Description
1	The required field XML is missing
2	The required field RESULT is missing
3	The required field XSLT is missing
4	The XML file was not a valid Xml document
5	The XSLT file has not been found
6	The XML file was not found
7	Can’t write the output to the RESULT parameter. Verify that the folder security settings are correct.
8	Can’t read the XML file. Verify that the folder security settings are correct.
9	The XSLT file is not a valid XSLT transformation style sheet
10	The received context was not valid
11	If RESULT_FILEEXT or RESULT_MIMETYPE is given, the other one must be given too

RaiseException workflow application

Overview

The **RaiseException** application is able to raise the cancel exceptions on specified actions, as controlled by the workflow exception "action cancellation" in the conditions definition panel. Thus, this workflow application can be called by an action to cancel one or several other actions in a running request. The application is converted as an assembly workflow to simplify the configuration and improve the performance.

Note: The RaiseException web app in IIS and the file system folder (\wfgen\WfApps\WebServices\RaiseException) can be disabled and removed. Authentication settings at the application level are no longer required.

This feature is useful when one or more actions need to be cancelled after a certain point in the workflow has been reached, even though those actions have already been activated. For example, if three parallel actions are ongoing, but one of the parallel actions is concluded ahead of the others and your workflow rules have determined that the two other actions are no longer required, you could activate RaiseException to cancel the other two actions and allow the workflow to move forward.

Additionally, you can:

- Use default parameters to cancel all open actions in a specific request.
- Use optional parameters to cancel a list of action instantiations in a list of requests or to cancel on behalf of a specific user.
- Use additional parameters to define multiple pairs of action references.

Using default parameters

Request identifier

This parameter indicates the ID of the request where the action will be cancelled.

Name: REQUEST_ID
Data type: Numeric
Direction: IN

Activity name

This parameter indicates the name of the action that will be cancelled.

Name: ACTIVITY_NAME
Data type: TEXT
Direction: IN

Example:

In this example, the application will cancel all instances of the PENDING_ACTION action in request #455:

REQUEST_ID = 455
ACTIVITY_NAME = "PENDING_ACTION"

Using optional parameters

List of request identifiers

This parameter indicates a list of request IDs where the action will be cancelled.

Name: REQUEST_ID_LIST
Data type: TEXT
Direction: IN

List of activity names

This parameter indicates a list of action names that will be cancelled.

Name: ACTIVITY_NAME_LIST
Data type: TEXT
Direction: IN

Username

This parameter is used to set the username used to cancel the action. The username used must be part of a participant of the process.

Name: USERNAME
Data type: TEXT
Direction: IN

Note: If this parameter is not specified then the account used is the account specified in the configuration file of the application using the following application setting's parameters:

```
<add key="DefaultIdentityUsername" value=""/>
<add key="DefaultIdentityPassword" value=""/>
<add key="DefaultIdentityUserDomain" value=""/>
```

Password

This parameter is used to set the password corresponding to the username used to cancel the action.

Name: PASSWORD
Data type: TEXT
Direction: IN

EXCEPTION_NAME

Possible values for this parameter are:

- CANCEL
- ERROR
- TIMEOUT
- ASSIGNMENT_ERROR

The corresponding exception will be triggered on the action.

EXCEPTION_MESSAGE

This parameter is used with the "ERROR" exception name to provide more details about the error in the follow-up action.

Examples:

In this example, the application will cancel all the instances of the actions PENDING_ACTION1 and PENDING_ACTION2 in each of requests #445, #446, and #447:

> REQUEST_ID_LIST = "455, 456, 457"
> ACTIVITY_NAME_LIST = "PENDING_ACTION1, PENDING_ACTION2"

In this example, the application will cancel all the instances of the action named PENDING_ACTION in request #445 on behalf of John DOE:

> REQUEST_ID = "455"
> ACTIVITY_NAME = "PENDING_ACTION"
> USERNAME = "jdoe"
> PASSWORD = "1234"

Using additional parameters

Request identifier

This parameter indicates the ID of the request where the action will be cancelled for the pair specified by the " **?** " (question mark).

> Name: EX?_REQUEST_ID
> Data type: Numeric
> Direction: IN

Activity name

This parameter indicates the name of the action that will be cancelled for the pair specified by the " **?** " (question mark).

Name: EX?_ACTIVITY_NAME
Data type: TEXT
Direction: IN

Ignore "Nothing to do" error

By default, RAISE_EXCEPTION returns an error if you try to cancel an action that doesn't have any open instantiation. If you set this parameter value to "Y", the application will ignore this type of error.

Name: IGNORE_NOTHINGTODO_ERROR
Data type: TEXT
Direction: IN

Example:

In this example, the application will cancel all instances of the PENDING_ACTION1 action in request #455 and all instantiations of the PENDING_ACTION2 action in request #456. If actions 455 and 456 have no instance then no error is raised.

EX1_REQUEST_ID = 455
EX1_ACTIVITY_NAME = "PENDING_ACTION1"
EX2_REQUEST_ID = 456
EX2_ACTIVITY_NAME = "PENDING_ACTION2"
IGNORE_NOTHINGTODO_ERROR = "Y"

Possible execution errors

The following errors can occur during the execution of the transactions:

Error	Cause	Solution
RaiseException error: WorkflowGen Context is empty	All the RAISE_EXCEPTION parameters are empty	Check the RAISE_EXCEPTION parameters.
RaiseException error: Application parameters are not correctly entered	The RAISE_EXCEPTION parameters are not correctly filled	Check the RAISE_EXCEPTION parameters.
(WorkflowGen Web Exception) HTTP Status: … Response error: …or The FUNCTION_NAME parameter was not found	An error occurred while trying to send the HTTP request to WorkflowGen	Check the HTTP status: 401: security error Check your authenticating parameters. 404: unable to connect to the URL 500: internal server error Check for indications in the returned error message.
RaiseException error: Error while trying to connect to WorkflowGen Database Error message : …	An error occurred while trying to connect to the WorkflowGen Database	Check your connection string in the configuration file. Check for indications in the returned error message

(RaiseException Error) Parameters: <Request Id parameter name>/<Activity Name parameter name>, Error: WorkflowGen has raised a security exception.	The user defined by the IDENTITY parameters is not a participant of the process	Check IDENTITY_USERNAME and IDENTITY_PASSWORD parameters. Identify the request with parameters names returned in the error message.
(RaiseException error) Parameters <Request Id parameter name>/<Activity Name parameter name>, Error: The activity name <Activity Name> doesn’t exist in the request <Request Identifier>.	One of the Activity Names defined in the RAISE_ EXCEPTION parameters doesn’t exist.	Check the RAISE_EXCEPTION parameters. Check for indications in the returned message.
(RaiseException error) Parameters <Request Id parameter name>/<Activity Name parameter name>, Error: The action <Activity Name> doesn’t have any open instantiation in the request <Request Identifier>".	One of the actions to cancel is not open	Check the RAISE_EXCEPTION parameters. Check for indications in the returned message. To ignore this error, set IGNORE_ NOTHINGTODO_ERROR parameter to "Y".

UPDATEPROCESSDATA usage workflow application

Overview

This application allows you to update process data associated with a request. It provides a simple solution for inter-process communications.

Using default and other parameters

Request

The required parameter is REQUEST_ID: IN parameter, numeric value. This parameter must contain a valid request ID.

Activity

The optional parameters are the process data to update (the parameter name in the processing data name). You must define those parameters on the corresponding action parameters.

To create a workflow action using UPDATEPROCESSDATA, use the following parameters:

REQUEST_ID send value of: Data: REQUEST_ID _UPDATE

AMOUNT send value of: Data: AMOUNT_UPDATE

Note: You may have to add an exception management to handle possible errors (e.g. invalid request ID).

Example:

If you want to update the "AMOUNT" with the value of the process data "AMOUNT_UPDATE", the request ID to update is stored in a "REQUEST_ID_UPDATE" process data.

COMPLETEACTION usage workflow application

Overview

This application allows you to complete an ongoing action with the corresponding parameters. It provides a simple solution for inter-process communications and synchronization.

Using default and other parameters

Request

The required parameter is REQUEST_ID (IN numeric value): the request ID of the action to be completed.

Activity

The other parameters are:

- Parameter name: ACTION_NAME (IN parameter, text value): the action name to be completed. The first instance found will be completed.
- Parameter name: ACTION_ID (IN parameter, numeric value): the action instance ID to be completed.
- Parameter name: IMPERSONATE_USERNAME

The optional parameters are the parameters of the action to be completed. You will have to define those parameters in the corresponding action parameters.

Example:

If you want to complete an ASYNCHRONOUS Web procedure action called "MYASYNCACTION", which has the following parameters:

AMOUNT recieve the data into: Data: TOTAL (you have to create this process data).

then in your process, you have to add an action using COMPLETEACTION application with the following parameters:

REQUEST_ID: IN send value of: Data: MY_REQUEST_ID (a numeric process data containing the request ID of the action to complete, e.g. 1320)

ACTION_ID: IN send value of: Data: MY_ACTION_ID (a numeric process data containing the ID of the action to complete, e.g. 2)

AMOUNT: IN send value of: Data: MY_AMOUNT (a numeric process data containing a value for the amount, e.g. 1234.56)

GETPROCESSDATA usage workflow application

Overview

This application allows you to retrieve process data values for a specified request. It is very useful for inter-process communications.

As an initial sub-process action, GETPROCESSDATA provides a flexible alternative to the sub-process parameters, since it involves no versioning management constraints with the parent process.

GETPROCESSDATA usage workflow application

Overview

This application allows you to retrieve process data values for a specified request. It is very useful for inter-process communications.

As an initial sub-process action, GETPROCESSDATA provides a flexible alternative to the sub-process parameters, since it involves no versioning management constraints with the parent process.

Using default and other parameters

Request

The required parameter request is REQUEST_ID (IN numeric): the request ID which contains the process data to retrieve.

Activity

The other parameters are defined in the workflow action according to your needs.

> Parameter name: the name of the remote process data to retrieve.
> Receive value into: the process data to update.

Example:

To retrieve the value of the process data COMPANY into the process data CUSTOMER_COMPANY:

> Parameter name: COMPANY
> Receive value into: CUSTOMER_COMPANY

The process data types must be the same. You can add an exception management to handle possible errors (e.g. invalid request ID).

GETFORMDATA usage workflow application

Overview

This application allows you to retrieve form field values for a specified request. It is useful when you need to retrieve form data which is not mapped to process data.

Using default and other parameters

Request

The required parameter request is REQUEST_ID (IN numeric), the request ID that contains the process data to retrieve.

Activity

The required parameter is REQUEST_ID (IN_numeric), the request ID that contains the process data to retrieve.

The optional parameter is FORM_DATA_NAME (IN text), the process data name that contains the form data to query. By default, GETFORMDATA uses the "FORM_DATA" process name.

The other parameters are defined in the workflow action according to your needs:

Parameter name: the form field full ID (e.g. REQUEST_AMOUNT)
Receive value into: the process data to update

Example:

To retrieve the value of the form field REQUEST_COMPANY into the process data CUSTOMER_COMPANY, the process data and the field data types must be the same. You may have to add an exception management to handle possible errors (e.g. invalid request ID).

CANCELREQUEST usage workflow application

Overview

This application lets you to cancel an ongoing request.

Using default and other parameters

Request

The required parameter request is REQUEST_ID (IN_numeric), the request ID to cancel.

The optional parameter is NOTIFY_PARTICIPANT (IN_text), with the possible values "Y" or "N" ("N" being the default). If the selected value is "Y", the participants of the request will be notified of the cancellation.

Macros

The following macros can be used in transition conditions or in the additional parameters of application type actions. They will be replaced by their associated value during process execution.

Macro	Tag	Value
Current user.field	<WF_USER_field> *	User information
Assigned user.field *	<WF_ASSIGNEE_field> *	Assignee user information
Requester.field *	<WF_REQUESTER_field> *	Requester information
Action initiator.field *	<WF_INITIATOR_field> *	Action initiator information
Process.Id	<WF_PROCESS_ID>	Process identifier
Process.Name	<WF_PROCESS_NAME>	Process name
Process.Description	<WF_PROCESS_DESC>	Process description
Process.Status	<WF_PROCESS_STATUS>	Process status
Process.FormUrl	<WF_PROCESS_FORM_URL>	Process form URL
Process.Version	<WF_PROCESS_VERSION>	Process version
Action.Id	<WF_ACTIVITY_ID>	Action identifier
Action.Name	<WF_ACTIVITY_NAME>	Action name
Action.Description	<WF_ACTIVITY_DESC>	Action description
Current action.Id	<WF_ACTIVITY_INST_ID>	Action instance identifier
Current action.Name	<WF_ACTIVITY_INST_NAME>	Action instance name
Current action.Creation date	<WF_ACTIVITY_INST_ CREATION_DATETIME>	Action creation date
Current action.Deadline	<WF_ACTIVITY_INST_LIMIT_ DATETIME>	Action deadline
Current action.Count	<WF_ACTIVITY_INST_ COUNT>	Number of completed instances for the current action
Request.Id	<WF_PROCESS_INST_ID>	Request identifier (process instance)
Request.Relative Id	<WF_PROCESS_INST_ RELATIVE_ID>	Request relative identifier
Request.Month relative Id	<WF_PROCESS_INST_ MONTH_RELATIVE_ID>	Request month relative identifier
Request.Year relative Id	<WF_PROCESS_INST_YEAR_ RELATIVE_ID>	Request year relative identifier
Request.Name	<WF_PROCESS_INST_NAME>	Request name (process instance)
Request.Creation date	<WF_PROCESS_INST_ CREATION_DATETIME>	Request creation date (process instance)
Request.Deadline	<WF_PROCESS_INST_LIMIT_ DATETIME>	Request deadline (process instance)
Action.Participant.Name	<WF_PARTICIPANT_NAME>	Action participant name

System.Date	<WF_SYSTEM_DATE>	System date
System.Date/time	<WF_SYSTEM_DATETIME>	System date/time
System.Time	<WF_SYSTEM_TIME>	System time
System.Language	<WF_SYSTEM_LANGUAGE>	User system language
System.Null	<WF_SYSTEM_NULL>	Enable process designer to reinitialize a PDF form field value to Null

* Field: see the followingtable.

Users macros suffixes

Field	Description
LASTNAME	Last name
FIRSTNAME	First name
USERNAME	Name of the user
MANAGER	Manager name
EMAIL	Email address
PHONE	Telephone number
MOBILE	Mobile telephone number
PAGER	Pager number
FAX	Fax number
OFFICE	Office number
DEPARTMENT	Department number
COMPANY	Company
JOBTITLE	Title
INITIALS	Initials
TITLE	Civic status
EMPLOYEENUMBER	Employee number
EMPLOYEETYPE	Type of employee
POSTALADDRESS	Postal address
ZIPCODE	Zip code
CITY	City
STATE	State
COUNTRY	Country
OBJECTSID	SID
EXTATT1	Extended attribute 1
EXTATT2	Extended attribute 2
EXTATT3	Extended attribute 3
EXTATT4	Extended attribute 4
EXTATT5	Extended attribute 5

Using macros

You can use macros in the transitions and additional notification conditions or in the actions parameters to send the value of the macro to the parameter value by choosing one macro from the list or by concatenating several macro codes as a text value.

Example 1:

If you want to send the username of the requester in the field REQUESTER_USERNAME of the action, you have to add an additional parameter with the following settings:

> Parameter name: REQUESTER_USERNAME
> Send the value of a macro: Requester.Username

Example 2:

If you want to send the firstname and the lastname of the requester in the field REQUESTER_NAME of the action with a space in between the two, you have to add an additional parameter with the following settings:

> Parameter name: REQUESTER_NAME
> Send the value of a text: <WF_REQUESTER_FIRSTNAME> <WF_REQUESTER_LASTNAME>

File data macros

Access to the file properties

In the transition or notification conditions, you can use the following macros on the process data of FILE data type to access the file properties.

Field	Description	Data type
FILENAME	File name	Text
SIZE	File size in KB	Number
CONTENTTYPE	File content type	Text
DESCRIPTION	File description	Text
DATELASTMODIFIED	Date of last modification of the file	Date/Time

Syntax examples

The following examples assume you have data called MY_FILE of data type FILE.

Example 1:

> Rule: Check if the file name contains the keyword "report":
> Method: InStr(1,<MY_FILE.FILENAME>,"report",1) <> 0

Example 2:

Rule: Check if the file size is lower than 1MB:
Method: <MY_FILE.SIZE> < 1024

Example 3:

Rule: Check if the file is a Microsoft Word document:
Method: <MY_FILE.CONTENTTYPE> = "application/msword"

Example 4:

Rule: Check if the file was modified today:
Method: <MY_FILE.DATELASTMODIFIED> > [Date]

Check if a file exists

You can also use the name of the data to check if the file exists in the process by using the function IsNull().

Example:

Assuming that you have data called MY_FILE of data type FILE, you can use the syntax below in a condition to check if the file exists.

IsNull(<MY_FILE>)

Custom notification templates

Overview

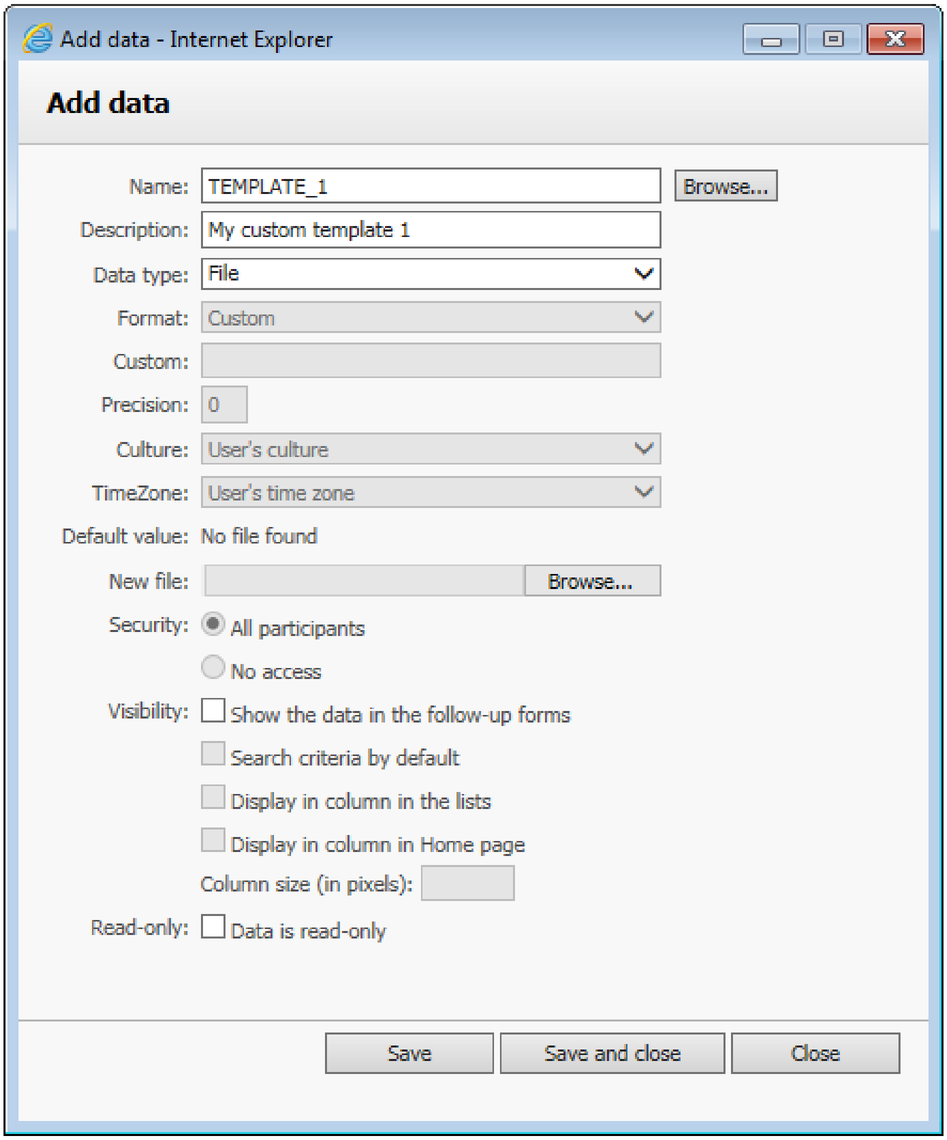
Custom notification templates may be used instead of the default WorkflowGen notification templates. These templates can be created in HTML or as plain text and can also use many regular WorkflowGen macros to display process-specific information.

Process

Process data

For WorkflowGen to use the custom notifications, they must be added to the process data as type FILE.

To do this, first create new process data for each template to be used, then browse to and attach the custom template to be used.



Action notifications

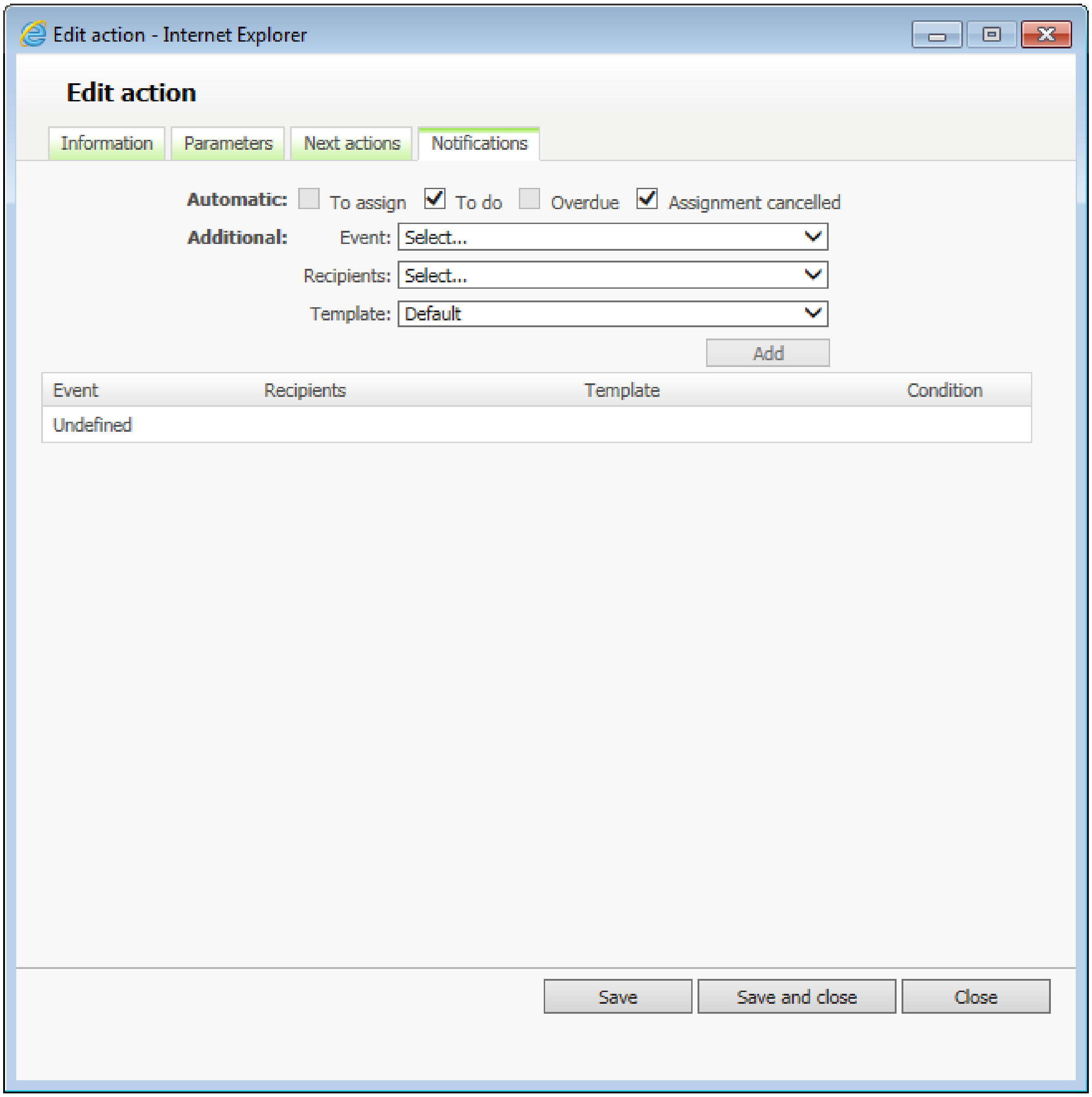
WorkflowGen can use an unlimited number of custom notifications per action. To add a custom notification, follow the steps below.

On the **Notifications** tab, in the **Additional** section:

1. Select the event that will cause the notification.

2. Select the recipient of the notification.

3. Select the process data that contains the attached notification template. You can choose the custom template created or use the default WorkflowGen template.



Templates

To create a template, use a text editor to create a file as follows:

Subject

To create a custom subject line for the templates, the first line in the HTML template must be "SUBJECT:" followed by the subject line to display. Macros may also be used here.

HTML

Create an HTML page that will act as a template for the email. In order to support Unicode, we recommend saving the file using UTF-8 encoding and adding a UTF-8 character set in the header of the HTML page, as shown below. CSS styles can also be applied within the HTML page.

Embedded images

Add images to standard notification templates (custom or built-in e.g. \wfgen\App_Data\Templates\Emails). Image tags whose source (src="") begin with "Http" are not included in the email and simply related. Image tags whose source begins with a drive letter (e.g. "C:\" will be included in the email and result in a larger size email. However a connection to the server is not required.

Examples:

The image is included in the message:

```
<img src="C:\inetpub\wwwroot\wfgen\App_Themes\Default\portal\images\ activity_s.gif">
```

The image is not included in the message:

```
<img src="http://localhost/wfgen/App_Themes/Default/portal/images/ activity_s.gif">
```

Sample HTML template

SUBJECT: My Custom Subject line

```
<html>
<head>
	<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
	<title>My Title</title>
	<style type="text/css">
		body
		{
			font-family:Arial;
		}
	</style>
</head>
<body>
	<table width="90%">
	<tr>
		<td>
			<img src="C:\inetpub\wwwroot\wfgen\App_Themes\Default\portal\images\activity_
			s.gif"> <WF_PROCESS_INST_NAME>
		</td>
	</tr>
	<tr>
		<td>
			Manager Decision
		</td>
		<td>
			<WF_PROCESS_INST_RELDATA_VALUE.MGR_DEC>
		</td>
	</tr>
	<tr>
		<td>
			Date
		</td>
		<td>
			<WF_SYSTEM_DATE>
```

```
        </td>
    </tr>
    <tr>
        <td>
            Launch the Action
        </td>
        <td>
            <a href="<WF_LINK_ACTIVITY_INST_LAUNCH>">link 1</a>
        </td>
    </tr>
    <tr>
        <td>
            Go To Action Follow-Up Form
        </td>
        <td>
            <a href="<WF_LINK_ACTIVITY_INST_FORM>">link 2</a>
        </td>
    </tr>
    <tr>
        <td>
            Go To Request Follow-Up Form</td>
        <td>
            <a href=" <WF_LINK_ACTIVITY_INST_FORM> ">link 2</a>
        </td>
    </tr>
    <tr>
        <td>
            Go To Request Follow Up Form
        </td>
        <td>
            <a href="http://YOURSITE/wfgen/Show.aspx?QUERY=PROCESS_INSTANCE_
            FORM&ID_PROCESS_INST=<WF_PROCESS_INST_ID>">Request Link</a>
        </td>
    </tr>
    </table>
</body>
</html>
```

Text

A non-Unicode text notification template can be created using a text editor such as Notepad and must be saved as a *.txt file.

Sample text template

```
SUBJECT: My Custom Subject line

Manager Decision: <WF_PROCESS_INST_RELDATA_VALUE.MGR_DEC>

Date: <WF_SYSTEM_DATE>

Launch the Action: <WF_LINK_ACTIVITY_INST_LAUNCH>

Go To Action Follow-Up Form: <WF_LINK_ACTIVITY_INST_FORM>
```

Go To Request Follow Up Form: http://YOURSITE/wfgen/Show.aspx?QUERY=PROCESS_INSTANCE_FORM&ID_PROCESS_INST=<WF_PROCESS_INST_ID>

Macros

In addition to the regular macros that are available, the following macros may also be used in the custom notification templates.

Columns	Remarks
<WF_PROCESS_INST_RELDATA_VALUE.DATANAME>	A process data value where DATANAME is the name of the data whose value you want to display
<WF_LINK_ACTIVITY_INST_LAUNCH>	A link will be displayed to launch the action directly from the notification
<WF_LINK_ACTIVITY_INST_FORM>	A link will be displayed to view the action follow-up form directly from the notification
<WF_PROCESS_INST_RELDATA_FILE.DATANAME>	A process data value where DATANAME is the name of the data whose value you want to add as an attachment to the email

WorkflowGen URLs

Overview

The main modules of WorkflowGen can be accessed directly from the address bar of your browser by providing the URLs for each.

User module

If the website is configured to use a default document, specifying the name of the document is not required:

http://YOURSITE/wfgen/default.aspx

Administration module

If the website is configured to use a default document, specifying the name of the document is not required:

http://YOURSITE/wfgen/admin/default.aspx

Configuration module

To access the configuration panel directly, use the following URL:

http://YOURSITE/wfgen/admin/Config.aspx

Integration using WorkflowGen URLs

Overview

Integrations to external systems using WorkflowGen are possible through the use of WorkflowGen applications, RSS feeds, and the WorkflowGen Web Service API. Furthermore, integrations with WorkflowGen can be performed through the use of URLs to perform the following types of functions:

- Request and action launches from any external site, with or without WorkflowGen frames and menus.
- Launching an action in a non-WorkflowGen window and redirecting to another (non-WorkflowGen) website.
- Viewing a follow-up form disconnected from the WorkflowGen portal.
- Viewing a graphical follow-up disconnected from the WorkflowGen portal.

Use cases would include permitting the integration of WorkflowGen seamlessly into an external portal, such as Microsoft SharePoint, SAP Portal, DotNetNuke, or other web-based portals. Filling out and submitting web forms as well as following up activities could then be performed without the use of the default WorkflowGen web portal if so desired.

To enforce the appropriate security in WorkflowGen, these URL launches require users to authenticate themselves and therefore work best with Integrated Authentication.

Launching a process from a URL

- This starts a new request and launches the first action.
- Participant security is enforced.
- WorkflowGen menus and banners are visible.

To launch a process directly from a link or URL, use the example below. The parameters the URL uses are as follows:

Parameter	Description
YOURSITE	The site where WorkflowGen is installed
QUERY	The task WorkflowGen will attempt to run e.g. START
P	The process name that WorkflowGen will attempt to run e.g. CLUB_CS_LEAVE

Example:

http://YOURSITE/wfgen/show.aspx?QUERY=START&P=CLUB_CS_LEAVE

Launching the first action of a process from another web site

- This starts a new request and launches the first action.
- Participant security is enforced.
- WorkflowGen menus and banners are visible.
- Redirection will be performed upon form submit.

To launch a process directly from a link or URL and redirect back to a website other than WorkflowGen, use the following example:

Parameter	Description
YOURSITE	The site where WorkflowGen is installed
QUERY	The task WorkflowGen will attempt to run e.g. START
P	The process name that WorkflowGen will attempt to run e.g. CLUB_CS_LEAVE
BACKURL_SUBMIT	The URL that the user will be returned to when submitting the completed form e.g. http://www.advantys.fr
BACKURL_CANCEL	The URL that the user will be returned to when selecting the "Back" link generated on the top left of the form page e.g. http://www.workflowgen.com
FORM_BGCOLOR	The background color to use when displaying the forms border e.g. white

Example:

> http://YOURSITE/wfgen/show.aspx?QUERY=START&P=CLUB_CS_LEAVE&BACKURL_SUBMIT=http://www.advantys.fr&BACKURL_CANCEL=http://www.workflowgen.com&FORM_BGCOLOR=white

Start an action without the WorkflowGen portal

- This launches an action that is the second or later action of a workflow.
- Participant security is enforced.
- WorkflowGen menus and banner are hidden.

To launch an action (second or later) directly from a link or URL, use the example below. The parameters the URL uses are as follows:

Parameter	Description
YOURSITE	The site where WorkflowGen is installed

QUERY	The task WorkflowGen will attempt to run e.g. APPLICATION_START
ID_PROCESS_INST	The process instance id that WorkflowGen will attempt to run e.g. 192
ID_ACTIVITY_INST	The activity ID that WorkflowGen will attempt to run e.g. 2
ID_APPLICATION	The WorkflowGen Application used by the activity to run (note that EFORMASPX represents ID_APPLICATION 1) e.g. 1
BACKURL_SUBMIT	The URL that the user will be returned to when submitting the completed form e.g. http://www.advantys.fr **Note:** If no BACKURL_SUBMIT is defined, WorkflowGen will use the selected redirection behavior from the Configuration panel (e.g. return to home page, show follow-up form, etc.).

Example:

http://YOURSITE/wfgen/show.aspx?QUERY=APPLICATION_START&ID_PROCESS_INST=192&ID_ACTIVITY_INST=2&ID_APPLICATION=1&BACKURL_SUBMIT=http://www.advantys.fr

Start an action within the WorkflowGen portal

- This launches an action that is the second or later action of a workflow.
- Participant security is enforced.
- WorkflowGen menus, banner, and action follow up form are visible.

To launch an action (second or later) directly from a link or URL with visible menus, use the example below. The parameters the URL uses are as follows:

Parameter	Description
YOURSITE	The site where WorkflowGen is installed
QUERY	The task WorkflowGen will attempt to run e.g. CONTEXT
NO_REDIR	Ensure no redirection after form submit e.g. Y
ID_PROCESS_INST	The process instance id that WorkflowGen will attempt to run e.g. 192
ID_ACTIVITY_INST	The activity id that WorkflowGen will attempt to run e.g. 2
ID_APPLICATION	The WorkflowGen Application used by the activity to run (note that EFORMASPX represents ID_APPLICATION 1) e.g. 1

REQUEST_QUERY	The parameter to control the request method, in this case to start the application e.g. APPLICATION_START

Example:

http://YOURSITE/wfgen/show.aspx?QUERY=CONTEXT&NO_REDIR=Y&ID_PROCESS_INST=192&ID_ACTIVITY_INST=2&ID_APPLICATION=1&REQUEST_QUERY=APPLICATION_START

Launch a request follow-up form without the WorkflowGen portal

- This launches the request follow-up form disconnected from the WorkflowGen portal.
- Participant security is enforced.
- WorkflowGen menus and banner are hidden.

To launch the disconnected request follow-up form, use the example below. The parameters the URL uses are as follows:

Parameter	Description
YOURSITE	The site where WorkflowGen is installed.
QUERY	The task WorkflowGen will attempt to run. e.g. PROCESS_INSTANCE_FORM
ID_PROCESS_INST	The process instance id that WorkflowGen will attempt to run. e.g. 192
SUPERUSER	The security mode for accessing the follow-up form. • USER mode (Omit SUPERUSER parameter): rserved for active participants in a request • ADMIN mode (SUPERUSER=Y): reserved for supervisor, process manager and Administrator access

Example:

http://YOURSITE/wfgen/show.aspx?QUERY=PROCESS_INSTANCE_FORM&ID_PROCESS_INST=192&SUPERUSER=Y

Launch an action follow-up form without the WorkflowGen portal

- This launches the action follow-up form disconnected from the WorkflowGen portal.
- Participant security is enforced.

- WorkflowGen menus and banner are hidden.

To launch the disconnected action follow-up form, use the example below. The parameters the URL uses are as follows:

Parameter	Description
YOURSITE	The site where WorkflowGen is installed
QUERY	The task WorkflowGen will attempt to run e.g. ACTIVITY_INSTANCE_FORM
ID_PROCESS_INST	The process instance ID that WorkflowGen will attempt to run e.g. 192
ID_ACTIVITY_INST	The activity id that WorkflowGen will attempt to run e.g. 2

Example:

> http://YOURSITE/wfgen/show.aspx?QUERY=ACTIVITY_INSTANCE_FORM&ID_PROCESS_INST=192&ID_ACTIVITY_INST=2

Launch a graphical follow-up form without the WorkflowGen portal

- This launches the graphical follow-up form disconnected from the WorkflowGen portal.
- Participant security is enforced.
- WorkflowGen menus and banner are hidden.
- Drill-down to activities is disabled.

To launch the disconnected graphical follow-up form, use the example below. The parameters the URL uses are as follows:

Parameter	Description
YOURSITE	The site where WorkflowGen is installed
QUERY	The task WorkflowGen will attempt to run e.g. WFCANVAS_PROCESS_INSTANCE
ID_PROCESS_INST	The process instance id that WorkflowGen will attempt to run e.g. 192

Example:

> http://YOURSITE/wfgen/show.aspx?QUERY=WFCANVAS_PROCESS_INSTANCE&ID_PROCESS_INST=192

Possible errors

Title	Description
Invalid request: Process NAME or ID is required	The name or the identifier of the process was not found. The parameter ID_PROCESS or PROCESS.
DbConnect	The database is not available.
GetUserInfos	Unable to retrieve the information about the user specified by the parameter REQUESTER_USERNAME.
Invalid user: user not found	The username passed through the parameter REQUESTER_ USERNAME does not correspond to a WorkflowGen user.
Incorrect request: The request cannot be found	The specified process was not found or its status does not allow the system to instantiate it.
Incorrect request: The action cannot be found	The specified action was not found of its status does not allow the system to instantiate it.
This process cannot be launched by an external application	The process was not declared as a public sub-process.
Security: You are not authorized to launch this request	The specified requester is not associated to the requester participant of the process.
CONTEXT Invalid XML	The XML content is not a valid XML string.
CONTEXT Invalid recordset	The XML content does not represent a valid ADODB recordset object.

Custom menus

Administration module

Overview

To create custom menus in the administration module, you must create and modify an XML called "admin.xml" file in the CustomMenu folder located in the directory "\wwwroot\wfgen\App_ Data\customMenus\".

These custom menus will then be available as an extra **Menu** option of the **Administration module** and/or on the home page of the **Administration module**. WorkflowGen supports two levels of custom menu items.

Menu items can be secured by user profile.

XML content

Menu item/node properties

Title

Specify the title of node. The title of the "menuItem" node will be the name used for the menu item on the Administration Module Home Page.

Profile

Specify if the link will be visible to users with an "Administrator" or "user" profile. If "user" is specified, it does not grant access to all users but only to those that have access to the Administration Module (for example, folder managers).

> Parameter values: user | admin

URL

Specify the URL to add as a custom link. Example: http://www.workflowgen.com/

Description

Specify a description for the custom link. Example: Visit the WorkflowGen website!

Target

Specify if the custom link will be opened within the WorkflowGen page (default) or in a new browser.

> Parameter values: _new | "" (two double-quotes)

showInHomepage

Specify if the custom link will be displayed in the new menu item or also on the **Administration module** home page (default).

Parameter values: true | false

Icon

Specify the path to a custom icon to be displayed instead of the default "Earth" icon.

You can also use images in a custom theme. To do this, create a new Theme package for WorkflowGen and direct the icon path to its location in the folder "wfgen\App_Themes\MYTHEME\admin\images\".

The default path is "wfgen\App_Themes\Default\admin\images\". You can also add your custom images to this folder and use them from the Default theme folder (see example below).

Sample admin.xml file

```
<?xml version="1.0" encoding="utf-8" ?>
<menu>
    <menuItem title="My links..." profile="user">
        <menuItem title="Advantys" url="http://www.advantys.com/" target="_new"
        description="Advantys Web Site" profile="user" showInHomepage="true"  />
        <menuItem title="WorkflowGen" url="http://www.workflowgen.com/" target=""
        description="WorkflowGen Web Site" profile="admin" icon="myicon.gif"
        showInHomepage="false"  />
    </menuItem>
</menu>
```

User module

Overview

To create custom menus in the user module, you must create and modify an XML file called "portal.xml" in the CustomMenu folder located in the directory "\wwwroot\wfgen\App_Data\customMenus\".

These custom menus will then be available as an extra **Menu** option of the home page of the **User module**.

Menu items can be secured by user profile.

XML content

Menu item/node properties

Title

Specify the title of node. The title of the "menuItem" node will be the name used for the menu item on the **User module** home page.

Profile

Specify if the link will be visible to users with a "user", "supervisor", "manager", or "admin" profile.

Parameter values: user | supervisor | manager | admin

URL

Specify the URL to add as a custom link. Example: http://www.workflowgen.com/

Description

Specify a description for the custom link. Example: Visit the WorkflowGen web site!

Target

Specify if the custom link will be opened within the WorkflowGen page (default) or in a new browser.

Parameter values: _new | "" (two double-quotes)

Icon

Specify the path to a custom icon to be displayed instead of the default "Earth" icon.

You may also use images in a custom theme. To do so, create a new Theme package for WorkflowGen and direct the icon path to its location in the folder "wfgen\App_Themes\MYTHEME\portal\images\".

The default path is "wfgen\App_Themes\Default\portal\images\". You can also add your custom images to this folder and use them from the Default theme folder (see example below).

Sample portal.xml file

```
<?xml version="1.0" encoding="utf-8" ?>
<menu>
    <menuItem title="WorkflowGen – BPM Resource Center" profile="user"
    url="http://community.workflowgen.com/" description="Open the WorklfowGen BPM Resource Center
    web site" target="_new" icon="" />
    <menuItem title="WorkflowGen" profile="supervisor" url="http://www.workflowgen.com/"
    description="Open the WorklfowGen web site" target="_blank" icon="" />
    <menuItem title="Advantys" profile="manager" url="http://www.advantys.com/" description="Open
    the Advantys web site" target="_self" icon="" />
    <menuItem title="Google Search" profile="admin" url="http://www.google.com/" description="Open
    the Google Search" target="_parent" icon="search_l.gif" />
    <menuItem title="Yahoo!" profile="user" url="http://www.yahoo.com/" description="Open the Yahoo!
    web site" target="_top" icon="" />
    <menuItem title="New Leave Application" profile="user"
    url="/wfgen/show.aspx?QUERY=START&amp;P=LEAVE_APPLICATION" description="Launch a
    new leave application" target="_new" icon="http://dev4/wfgen/App_
    Themes/Default/portal/images/request_followup_form_l.gif" />
</menu>
```

Portlet

Overview

The portlet allows you to retrieve information from the WorkflowGen portal homepage of the user module.

The results received from HTTP are stored into XML RSS format and classified by category. This format allows the processing and the presentation of the data with any language able to read and parse XML content.

Note: The portlet module is only available with the Advanced and Enterprise editions of WorkflowGen.

URL and HTTP parameters

URL

You can reach the content generated by the portlet module with the following URL:
http://yoursite/wfgen/show.aspx?QUERY=SHOW_RSS

Parameters

Parameter	Description	Example
USERNAME	Retrieve data for this user. The current login is assumed if this parameter is missing.	wfgen_admin
CATEGORY	List of categories to retrieve separated by " **;** " (semicolon). If this parameter is missing, all the available categories are returned.	REQUEST_RUNNING_ NB;ACTION_TODO_NB
PROCESS	Allows content to be filtered by some specific processes. Specify the name of the processes separated by " **;** " (semicolon).	LEAVE_APPLICATION
PROCESS_CATEGORY	Allows content to be filtered by some specific process categories. Specify the name of the categories separated by " **;** " (semicolon).	HR
SHOW_NEW_ REQUEST	Retrieve the list of processes that the current user can launch.	Y
XSL	Path of the XSL sheet used to transform the RSS content.	http://yoursite/portlet.xsl

Examples:

Retrieve all categories for the user whose username is "johnd":

http://yoursite/wfgen/show.aspx?QUERY=SHOW_RSS&USERNAME=johnd

Retrieve the actions to do (normal & overdue) for the user whose username is "johnd":

http://yoursite/wfgen/show.aspx?QUERY=SHOW_RSS&USERNAME=johnd&CATEGORY=ACTION_TODO_NB;ACTION_TODO_OVERDUE_NB

Retrieve information relative to the HR category for the current user:

http://yoursite/wfgen/show.aspx?QUERY=SHOW_RSS&PROCESS_CATEGORY=HR

Security

Authentication

To connect to the portlet module, you have to use an account that has access to the user module of the WorkflowGen application (e.g. wfgen_admin).

Username with or without a domain name

You must remove the domain name from the username when calling the portlet module if the usernames are prefixed by the name of the domain in the user's management module.

RSS format specification

Official specification

Official information about the RSS 2.0 standard is available at http://blogs.law.harvard.edu/tech/rss.

Content example

```
<?xml version="1.0" encoding="UTF-8" ?>
<rss version="2.0">
	<channel>
		<title>WorkFlowGen</title>
		<description>WorkFlowGen</description>
		<pubdate>Fri, 24 Oct 2011 15:19:42 GMT</pubdate>
		<language>en-US</language>
		<item>
			<title>Ongoing requests</title>
			<link>http://yoursite/wfgen/…</link>
			<description>15</description>
			<category>REQUEST_RUNNING_NB</category>
		</item>
		<item>
			<title>Actions to do</title>
			<link>http://yoursite/wfgen/…</link>
			<description>10</description>
			<category>ACTION_TODO_NB</category>
		</item>
	</channel>
</rss>
```

XML RSS nodes description

Name	Path	Description	Example
channel	rss	Root node	
title	rss/channel	Channel title	WorkflowGen
description	rss/channel	Channel description	WorkflowGen
pubdate	rss/channel		
language	rss/channel		
item	rss/channel	Categories container node	
title	rss/channel/item	Category title	
link	rss/channel/item	Contextual link of the category in WorkflowGen	
description	rss/channel/item	Category value	
category	rss/channel/item	Category name	

List of available categories

The available categories are described below:

Name	Description
REQUEST_RUNNING_NB	Number of ongoing requests
REQUEST_RUNNING_OVERDUE_NB	Number of overdue ongoing requests
ACTION_TODO_NB	Number of actions to do
ACTION_TODO_OVERDUE_NB	Number of overdue actions to do
ACTION_TEAM_NB	Number of team actions to do
ACTION_TEAM_OVERDUE_NB	Number of overdue team actions to do
ACTION_TOASSIGN_NB	Number of actions to assign
ACTION_TOASSIGN_OVERDUE_NB	Number of overdue actions to assign
REQUEST_CLOSED_NB	Number of requests closed since my last visit
REQUEST_CLOSED_OVERDUE_NB	Number of overdue requests closed since my last visit
REQUEST_TOFOLLOW_NB	Number of requests to follow
REQUEST_TOFOLLOW_OVERDUE_NB	Number of overdue requests to follow
ACTION_TOFOLLOW_NB	Number of actions to follow
ACTION_TOFOLLOW_OVERDUE_NB	Number of overdue actions to follow
NEW_REQUEST	List of available processes that the user can launch

Note: If a category is empty at runtime, it is not added to the RSS content.

Possible errors

When an error occurs, the HTTP status of the page is modified and a runtime error will be displayed with a custom number.

The following errors can occur during the execution of the script:

Title	Description	Number	HTTP status
Unable to connect to the database	The database is unavailable.	100	500
Unknown user	The username passed through the parameter (USERNAME) does not correspond to an existing user of WorkflowGen.	101	500
Error during the execution of the request <CATEGORY>	An error occurred during the execution of the SQL request corresponding to the category <CATEGORY>.	102	500

Error messages

License

Error	Cause
Your license has expired	Your trial period has expired. You must enter a valid serial number to activate your version.
A valid license cannot be found	The license file doesn’t match your serial number.
License error	This operation is not allowed with your license.

Security

Error	Cause
You are not authorized to view this page.	The user must be a WorkflowGen user or Administrator to access the application.
You are not authorized to access this file.	If downloading is secured, only an Administrator, a process manager, or a participant with sufficient read rights may access the request files.