Efecte Platform

Description

efecte

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1 OVERVIEW

The Efecte Platform is a cloud-based technology which provides the core capabilities for enterprise service management. The Efecte Platform can be configured to implement one or several solutions depending on the needs of each customer.

The following solutions have been built on top of the Efecte Platform:

In addition, many other business applications have been designed by customers for various purposes utilizing the core benefits of the Efecte Platform:

- Creating transparency of business performance through managing data in a single point of record
- Increasing efficiency through the centralization and distribution of tasks
- Freeing valuable resources by automating routine tasks through visual workflow automation

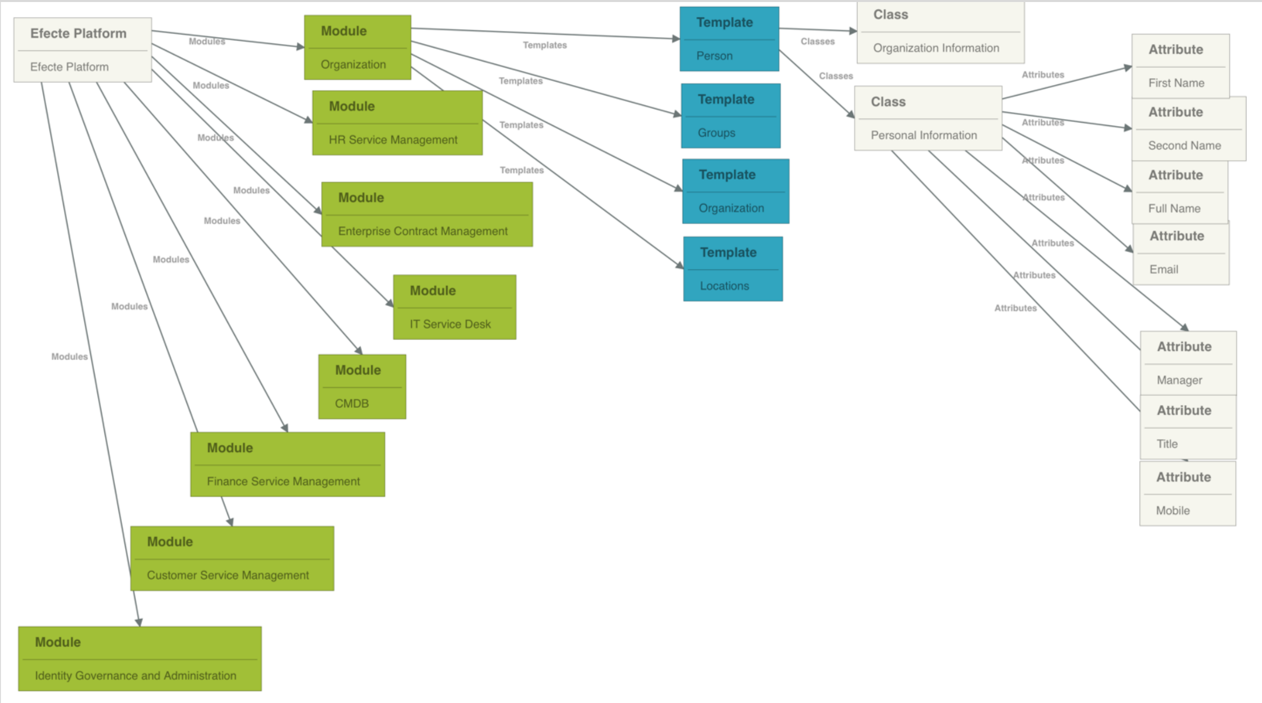
This document describes all the functionality of the Efecte platform.

The capabilities of the service management tool and the self-service portal are described in dedicated sections of this document.

2 SERVICE MANAGEMENT TOOL

The service management tool is main engine to run enterprise services. The data model of the service management tool relies on attributes, which are grouped in classes, which are grouped in templates, which again are grouped in modules for each enterprise service.

2.1 Efecte's Data Model

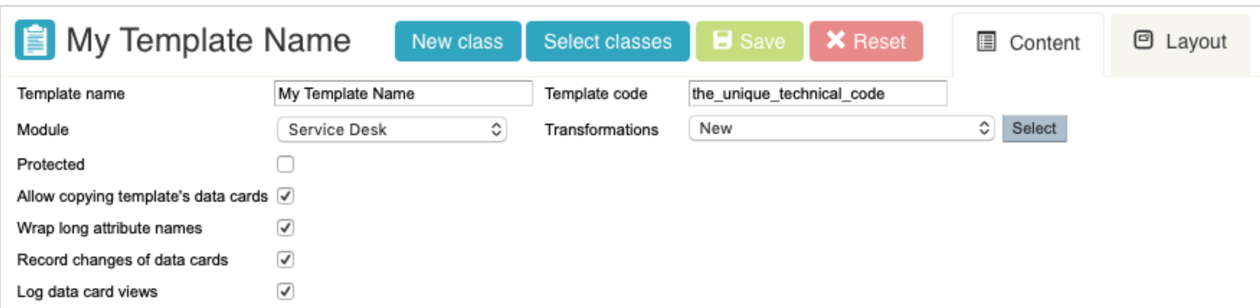


In combination with the above mentioned data model, a hierachical folder structure for data from one to many templates of the same module enables a virtually endless amount of configuration options for fine-grained access management.

2.2 Templates

A template is the main structure to organize data required for a particular business process in the service management tool. A template defines which data is stored in which types and in which order.

The Efecte Platform allows administrators to create as many templates as necessary. Templates can be considered a structure in which data is logically entered and edited. Templates are displayed to users as form in the Workspace UI. A template includes one to many attributes consolidated in one to many classes. Each template has a display name, a symbolic icon, and a technical code.



The following features can be enabled or disabled for each template:

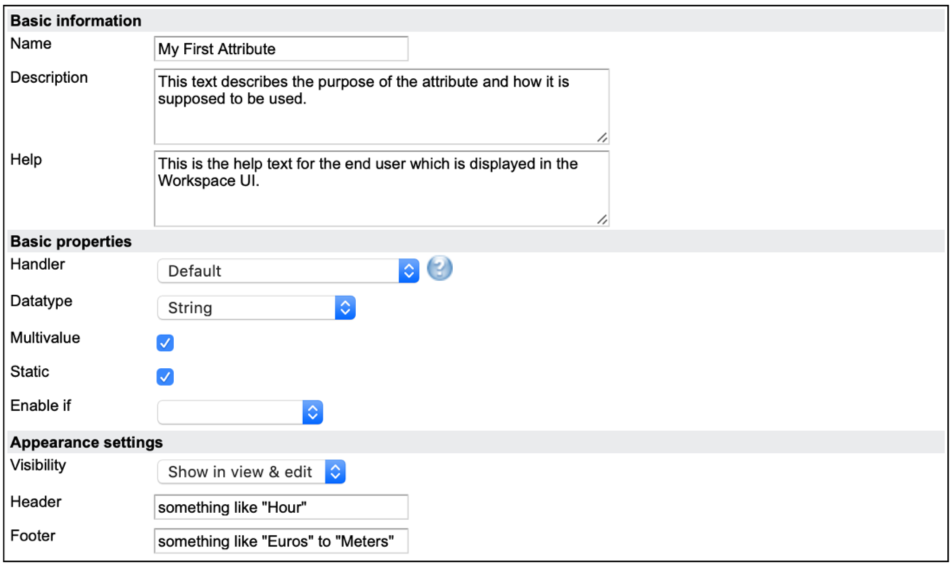
- Locking down the template configuration to root users
- Copying of data cards in Workspace UI
- Wrapping of long attribute (field) names to multiple rows
- Recording changes (editing) of data cards
- Recording the viewing of data cards

2.2.1 Attributes

Attributes are the main mechanism to store a single value in the Efecte Platform. Any number of attributes can be added to templates. Attributes can be added and modified during live operations without service interruptions.

Every attribute consists at least of a name and datatype that must be selected. The following datatypes are available:

- String with up to 450 characters
- Text
- Integer numbers
- Decimal numbers
- Dates
- Dates and time
- Reference (the attribute gets its value through a relationship to an attribute in another template)
- Backreference (the attribute value is “stored” also as a value in another related template)
- Embedded references (referred data may be found in the referring data card only)
- External reference (a link to a web site or a file stored on a file server)



An attribute can be configured to hold always only one value or hold multiple values. It is possible to define a fixed set of selectable values for an attribute.

It is possible to enable attributes only when a certain condition is met and, therefore, create a dynamic template content. For example, it is possible to enable an attribute only when another attribute has a specific static value. These condition attributes must be of data type String with static values.

The visibility of the attribute in the Workspace UI can be configured. It can be hidden, visible only in edit mode, visible only in view mode, or always visible.

2.2.2 Handlers

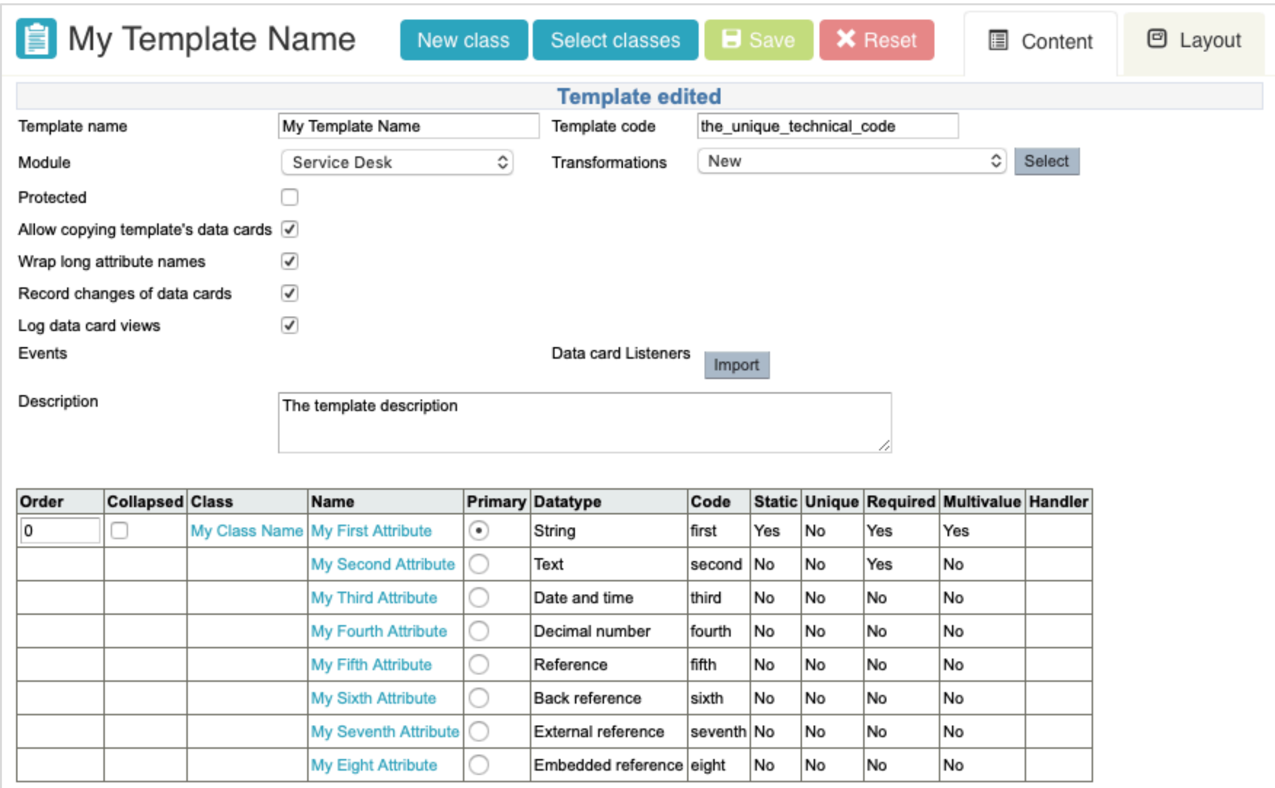
Handlers are functions that are executed on a particular attribute implementing a specific behavior. Handlers implement a specific function such as hiding an issue at a certain state, combining two string attributes to one or calculating the service level performance. The following handlers are supported:

- AttributeCombiner - generates a value automatically by combining values of two or more existing attributes.
- AutoMailSender - generates and sends an automatic email message comprising the information you define in the parent attribute's metadata.
- Average - calculates the average of values which are sent to the attribute via API.
- BusinessTimeBetween - calculates the elapsed time between two date (and time) fields in a data card.
- CaseChange - forces an attribute value to be uppercase or lowercase.
- ChangeStamp - generates automatically a new value in a target attribute. The handler responds to the change of the parent attribute's value with stamping the target attribute with a new value.
- Count - executes mathematical calculations on the value of an attribute, which are updated through the API.
- CreationStamp - creates a timestamp indicating the date/time when the data card was created.
- CreatorStamp - generates an attribute value indicating who has created the data card.
- DataCardPrint - converts the data card into a printable form.
- DatacardHiddenState – hiddes the data card when the value of handler's attribute matches the value(s) configured in its metadata.
- DateFieldWithResetButton - creates a Reset command button next to the attribute data field. The button returns the previous saved value.
- DirectLinkGenerator - generates a link to the data card where it is used.
- Encryption - allows attributes to be saved in an encrypted form. Algorithm used for two-way encryption is 3DES and for one-way SHA-512.
- EntityStateMail - generates the user interface for viewing and sending e-mail.
- Expression - uses a Python expression in generating a value for the parent attribute. The handler evaluates the expression and returns the result automatically in the parent attribute's field after the data card is saved.
- ExternalLinkParameters - automatically generates a link to a URL denoted in the attribute metadata. The link opens the default browser and accesses the defined URL.
- FileUpload - creates a widget for selecting files for uploading them to a data card. User is able to select files in dialog or he can push those using drag and drop.
- IDGenerator - generates an unique ID with a freely configurable prefix such as “INC-“ for the attribute.
- IPAddress - generates a Search button next to the parent attribute's data field for selecting a free IP address from referred subnets. Clicking the button opens a pop-up window that provides a list of free addresses, from which a suitable address can be selected and consequently reserved.
- MailTo - creates a *mailto:* link that addresses an e-mail message to the address specified in the attribute field.
- MonitoringStamp - listens a monitored attribute and sets its own value, if the value of the monitored attribute changes to a defined one. The value of this attribute can be cleared also, when the value of the monitored attribute changes to the defined value. It is also definable, whether the attribute is updated or not once the value is set.
- ReferenceCopy - creates a Search command button next to the attribute data field for locating and retrieving data from the referred data card to the referrer data card.
- ReferenceDataCopy - copies data from target data card in addition to creating a link to that data card when the datacard is saved.
- ReferenceTargetCopy - copies target data cards from the configured reference and sets its attribute to refer to the copies.

- ReferrerCounter - is used to count the amount of data cards that refer to the same parent data card. It shows the total number of referrers in the parent attribute's data field.
- SLADeadline - *SLADeadline* handler calculates the deadline of an issue by selecting the strictest deadline attached to the issue.
- SLAFinder - tries to find the strictest deadline of SLA cards defined by metadata. Multiple paths can be configured.
- TargetDeleter - deletes the target data card when the reference is removed.
- TicketReservation - allows a support person to reserve an issue to oneself. The reserve-button created by this handler is in use in both view and edit mode of data card.
- TimeZone - generates a dropdown list for user to select a value from available time zones.
- Validator - uses a Python expression in validating a value in the parent attribute. The handler evaluates the expression and displays an error if the expression returns a *false* value.
- ValueChangeMonitor - monitors value changes of a target attribute. It stores data about the value, when it has been changed, who has made the change, and for how long the value has been same. The values are hidden, but when a user clicks the *Show* link in the data card view, the values become visible.
- Worklog - allows attributes to be saved as multi-value data and present the data as separate comment items in the UI. Each comment item contains the comment's author, created time and content. A comment cannot be deleted.

2.2.3 Classes

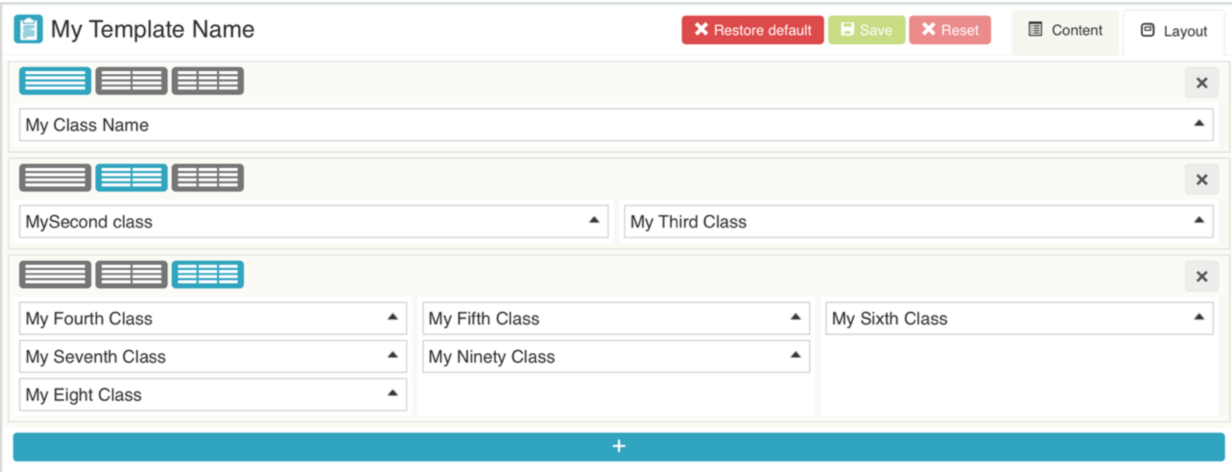
Classes create groups of attributes. Each attribute belongs to one class. One to many attributes can be created in a class. Attributes will be displayed in the Workspace UI in a visual element within the class. The order of attributes inside of a class can be changed at any time.



Classes can be shared among different templates in order to reuse the configuration of such.

2.2.4 Layout

The layout of each template can be designed in a simple configurator by dragging and dropping classes of the template into the corresponding structure. Classes can be displayed in up to three columns beside each other with the responsive UI adjusting the content automatically to fit it based on the browser window size rearranging columns below each other if not enough space is available.



2.2.5 Listeners

Data card listeners are a way to create additional business logic in the service management platform if Visual Workflow Automation is not enough. They are configured by creating an appropriate XML configuration.

Each template may have one or more listeners. When the data card of a given template is saved, the listener which has registered itself on the template will be notified about the event.

A listener knows if it's interested in the event caused by the trigger. The trigger is a setting in the listener, either “pre-save” or “post-save”. If the listener is interested in the event, the listener will check if source data card (i.e. the saved data card) matches the defined source conditions.

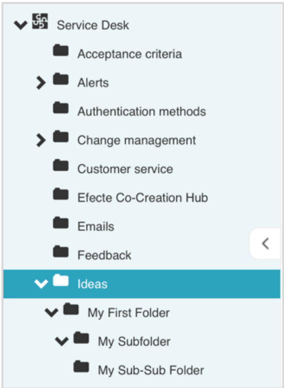
There are two types of listeners

- Pre-save listeners modify the <u>source data card only</u>.
- Post-save listeners modify <u>only other data cards</u>.

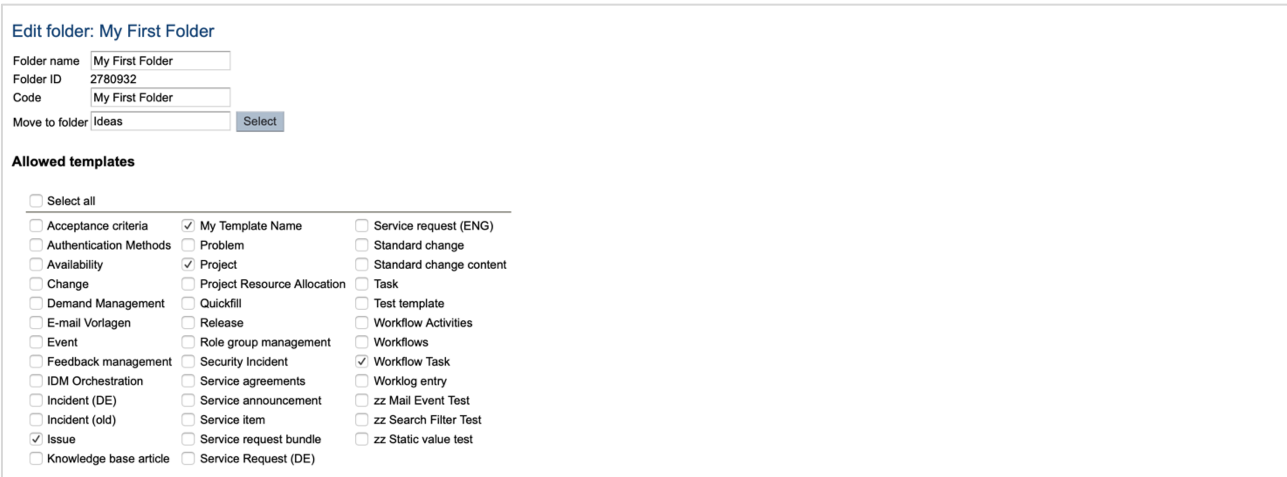
Listeners should only be created and edited by certified, advanced administrators due to the power of those in manipulating any data in service management tool.

2.3 Folders

Data can be stored in a hierarchical folder structure in the service management tool. This can be done in order to organize data in logical groups or to limit access to certain data to particular users.



A folder hierarchy can be designed for each template. Every template can have a different folder hierarchy. However, also data from one to many templates can be stored in the same folder.



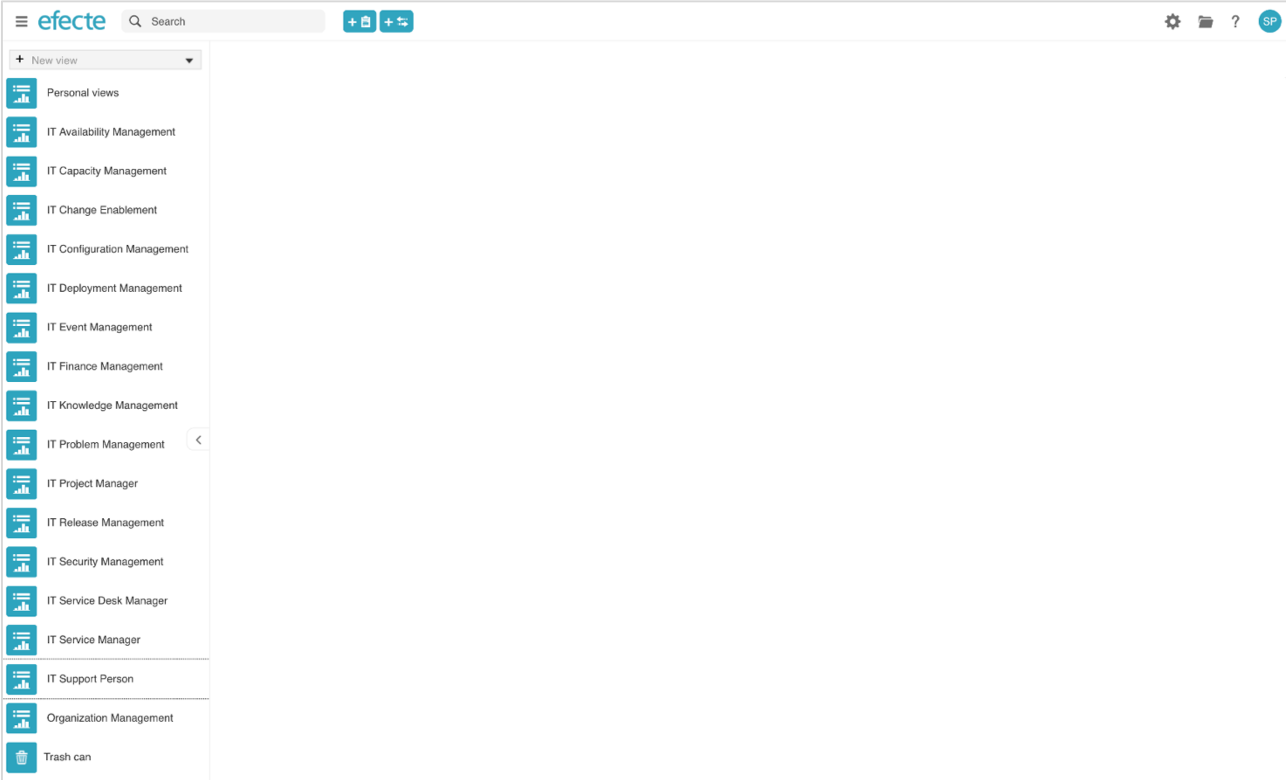
2.4 User Interface

The user interface of the service management tool has three main different spaces for different purposes:

- The Working space: this is were most of the daily action happens
- The Background data: this space is often hidden from common users and where data can be manipulated organized by templates
- The Administration space: this is were administrators set up and configure the service management tool

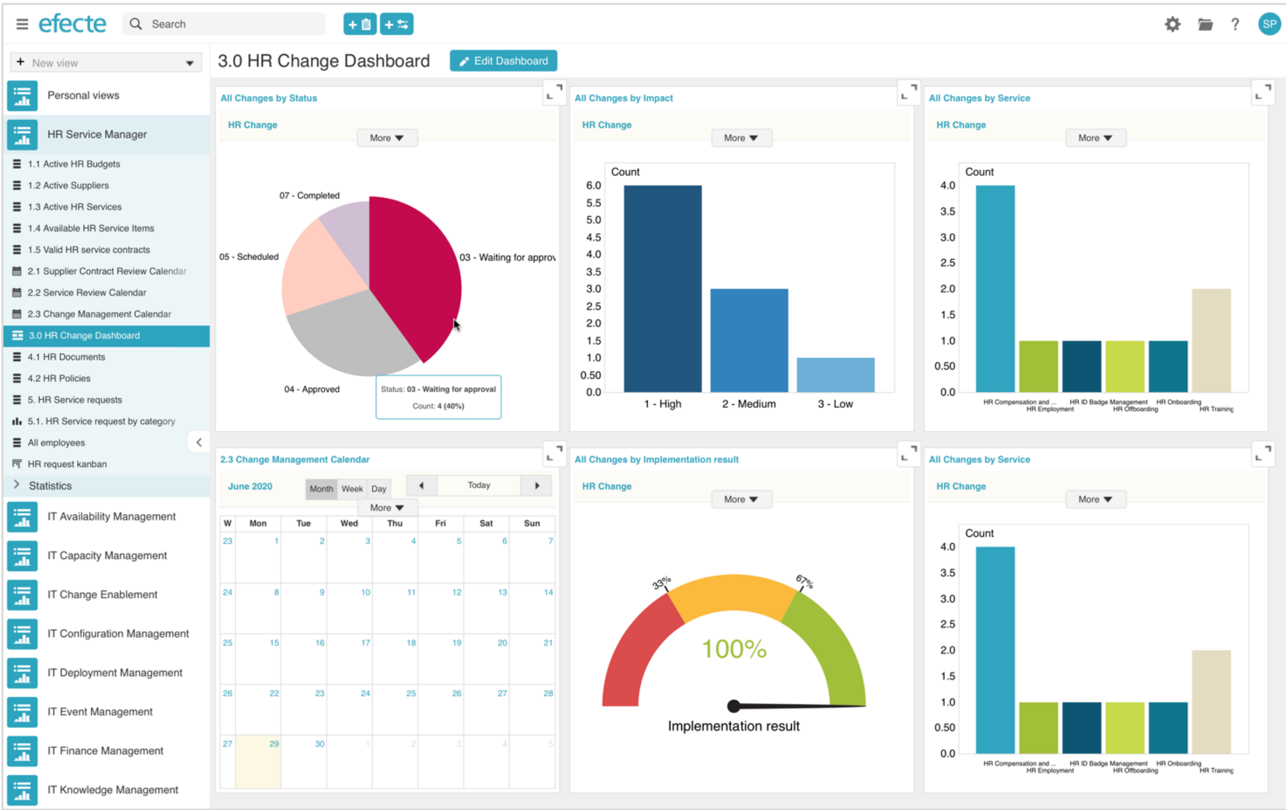
The Working space has three main areas:

- top bar with access to global search, the Create New buttons, and the user profile settings
- the navigation panel on the left from which views can be accessed
- the main content area where the actual data is displayed



2.5 Views

Views are the fastest way to read data in Efecte. Views are essentially bookmarks to online reports.



The solution offers comprehensive reporting on all data in the platform. The reporting functionality covers tabular, chart, calendar and Kanban ways of displaying data. Multiple settings such as grouping, sorting, and filtering can be used to format the online reports. It is possible to define a refresh interval for views which reloads the content automatically.

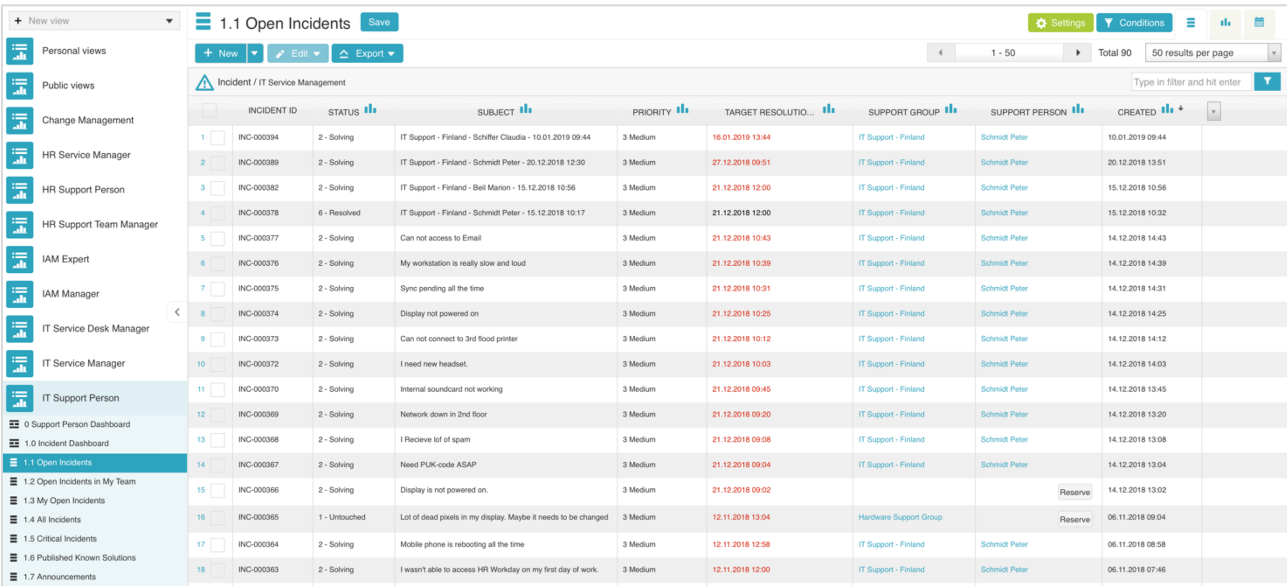
Views can be accessed directly from the navigation panel on the left-hand side of the user interface. The navigation panel can be collapsed with a single click to make more space for content. The views can be organized in a hierarchical folder structure on the navigation panel for improved usability. The type of view is indicated with an icon. Deleting of views, if permissions allow, is possible directly from the navigation panel.

The following kind of views can be created for any template:

2.5.1 List Views

List views is the representation of data cards in tabular form. Users can create any layout of a table. Columns can be added and removed freely. Columns can be dragged and dropped to a new position in one swift move.

The data cards can be sorted in ascending or descending order by a single click in the table's title row. It is possible to create a new graphical illustration directly from the column that shall serve as main indicator in a chart.



Users can create new data cards of the same template directly from the list view. Multiple data cards can be selected in this view and can then be either edited, copied, moved to another folder, or deleted in one swift operation. The content of the list view can be exported in Microsoft Excel format. A data card can be opened in a detail view by clicking on the corresponding row.

Users can filter the content by a string in addition the general view settings and the filter conditions applied already. The list view filter searches data with the string you type in. Search focuses on the data of the displayed columns of the selected template. The list view filter is not included when saving the view.

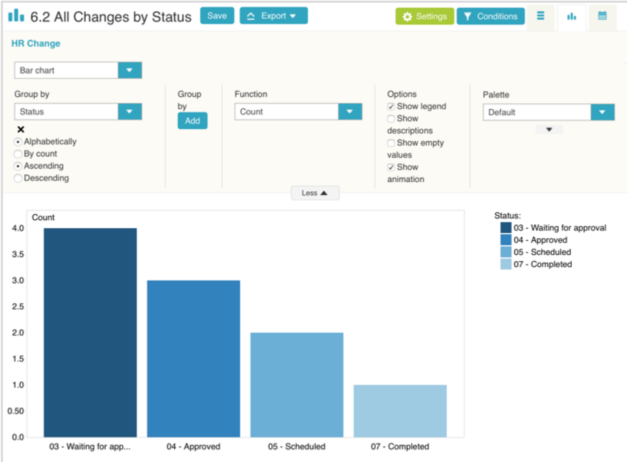
Selected fields might be highlighted in orange or red color if the Service Level Agreement (SLA) handler is used to indicate the risk of missing a deadline or missing a deadline. Reserve buttons for an issue are also displayed in the list view for a faster processing of issues.

Additional information will be displayed when hovering over a reference in the list view. It is also possible to go directly to the details of a reference by clicking it from the list view.

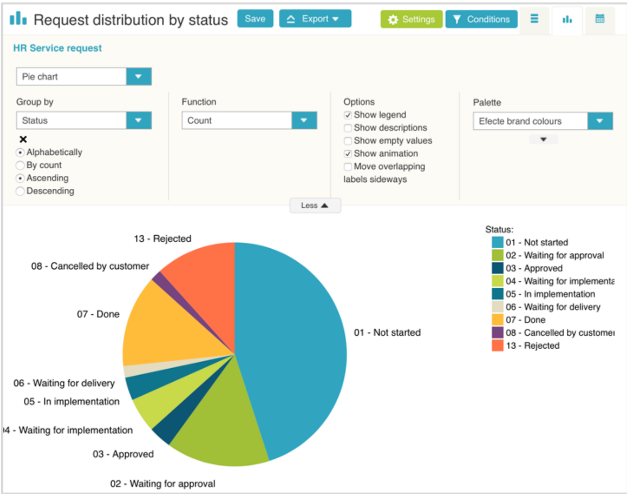
2.5.2 Graphical Views

The following types of graphs and indicators are currently available in the solution:

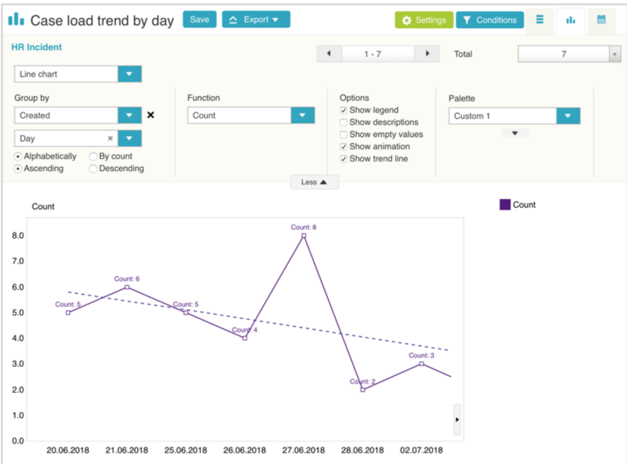
- Bar chart



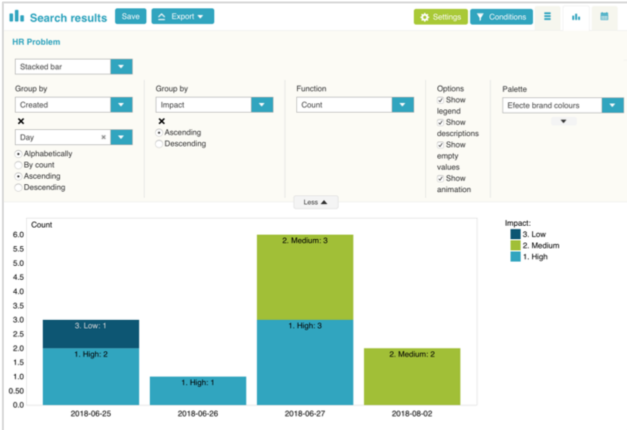
- Pie chart



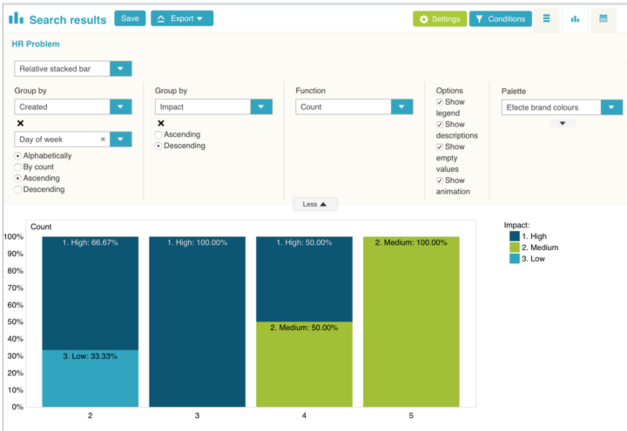
- Line chart with trend line



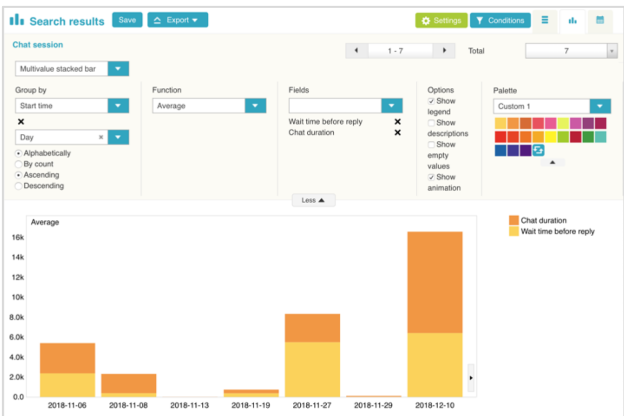
- Stacked bar chart



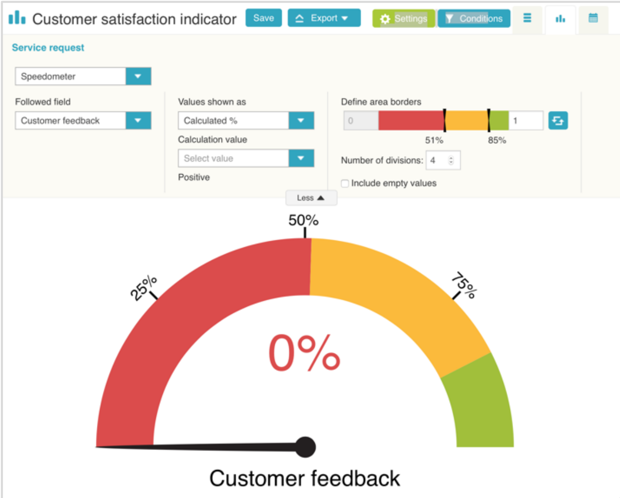
- Relative stacked bar chart



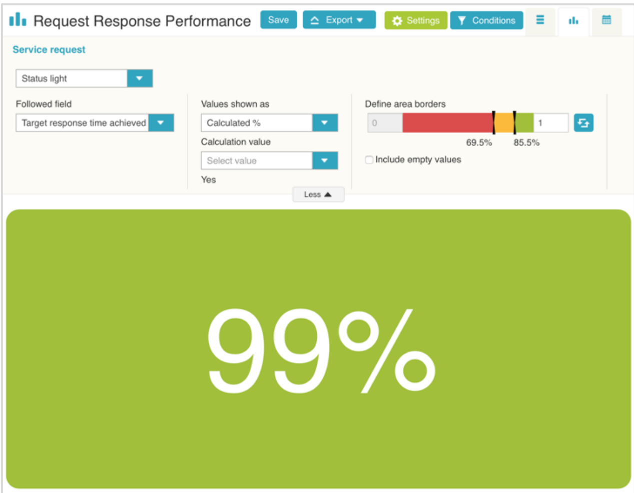
- Multi-field stacked bar chart



- Speedometer



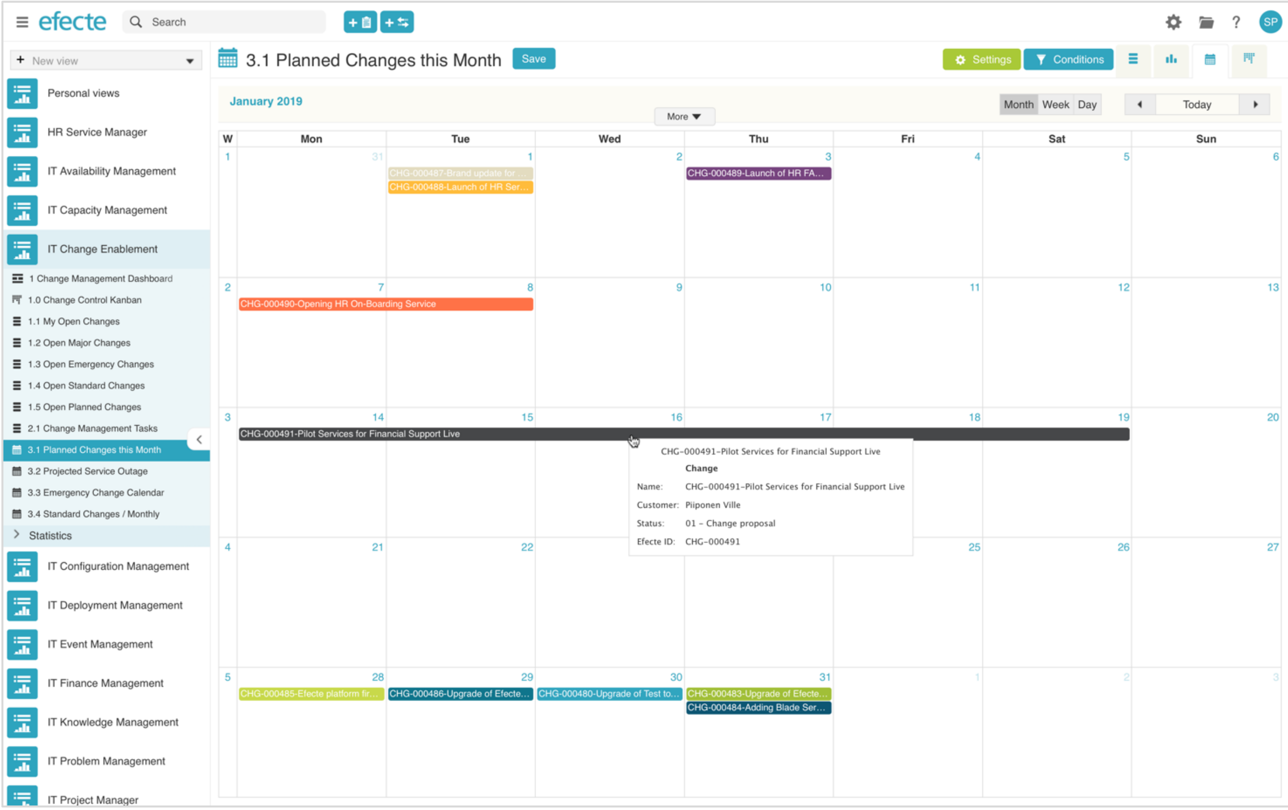
- Status light



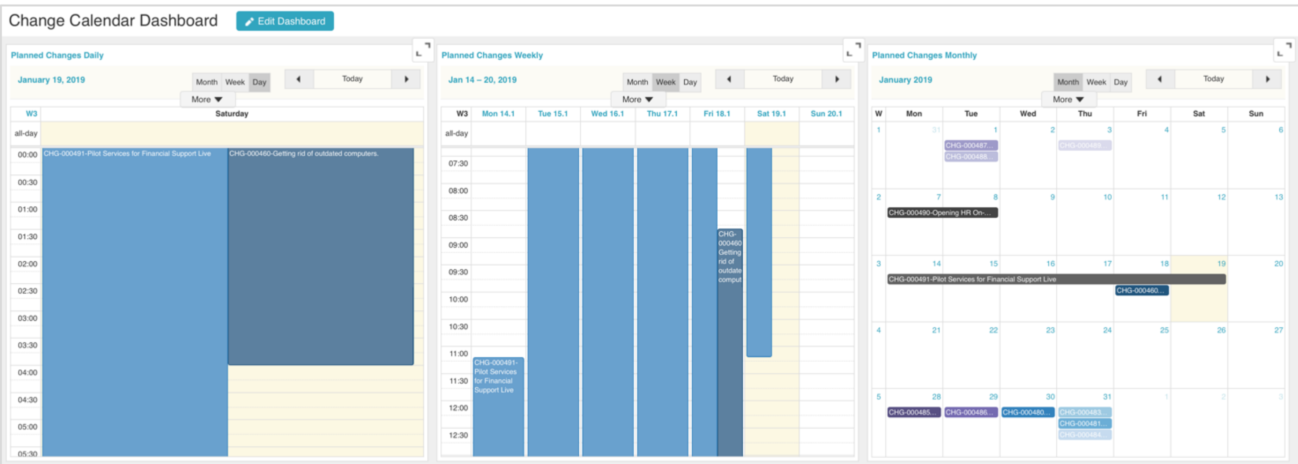
The user can drill down to a list view of the visualized data by simply clicking on the corresponding element of the graph such as a slice of pie chart or a single bar of a bar chart.

2.5.3 Calendar Views

Any data in any template with dates can be visualized in a monthly, weekly or daily calendar view.



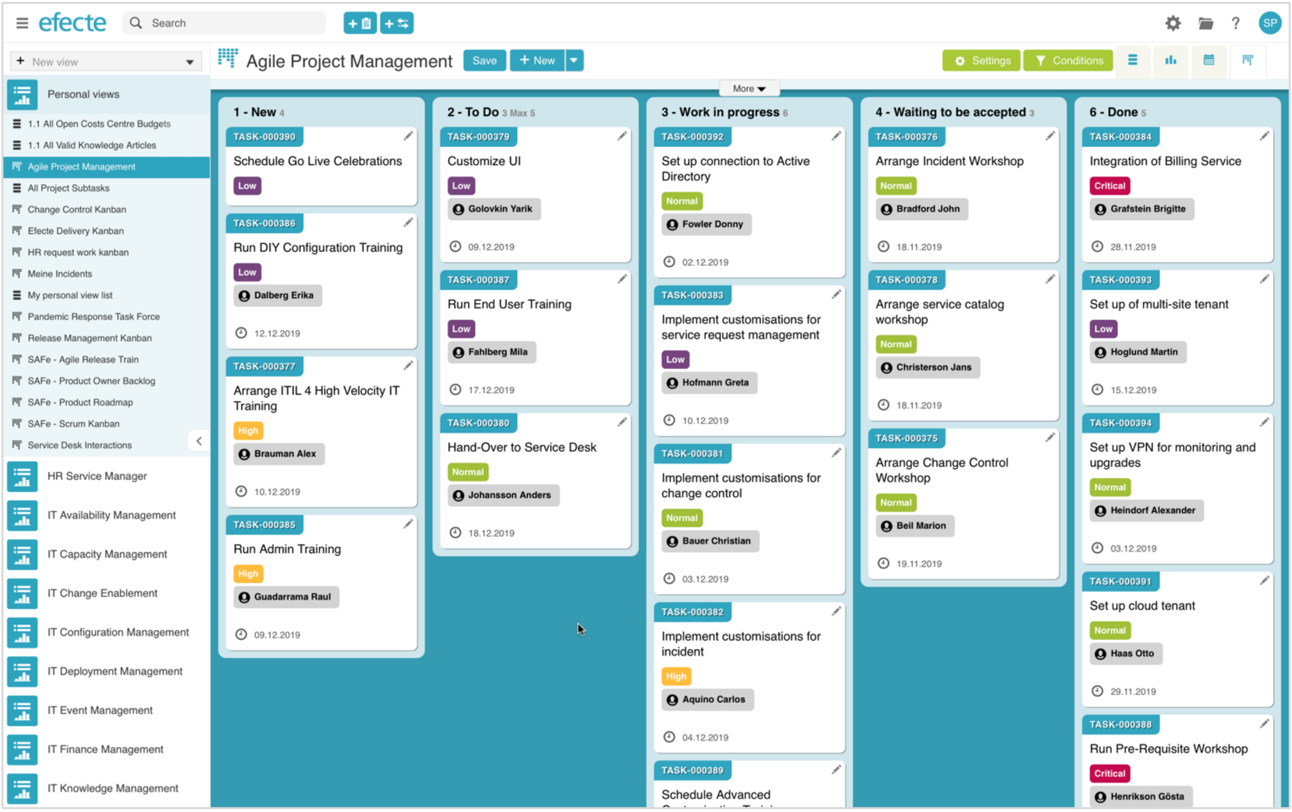
The start and end date for events can be defined and the maximum number of events per day will be displayed with a possibility to open up a window which shows all events on the selected day. Hovering over an event will show the details of the event. With a single click on the event, the user can open the issue in a detail view to enhance or modify the issue. Calendar views can be added to Dashboards.



2.5.4 Kanban Boards

The Kanban creates transparency on what needs to be done in which order. The self-organizing team can see who is working on what issue how long. Any user can participate in the agile team by viewing and moving issues in a Kanban view while they are being processed. Efecte's Kanban view can be used to implement agility according to the agile methodology and the Scaled Agile Framework (SAFe).

Kanban views can be created for any template in Efecte's service management tool. One or many Kanban views can be created for the same process and stored either as role-based view or as a personal view. If multiple Kanban views are created for the same template, then the current rankling of each issue is automatically applied for all subsequently created views.



Combine Human Interaction and Workflow Automation

Efecte's Kanban view works seamlessly with any automation implemented in the Efecte platform. If a value of an issue impacting the Kanban position changes through a workflow automation, then the change will be automatically applied to the Kanban view and the user will be notified. Equally important, any change of value triggered by dragging & dropping a card in the Kanban view will be immediately recognized by automations in the Efecte platform. Therefore, it might be that a user is moving a card from one Kanban lane to another and the workflow engine moves it to yet another lane when the workflow conditions are met. The user will be notified of such a follow-up transition.

The Kanban view will prevent illegal transactions such as editing an issue while another user is editing it. If a card that is dragged to another lane while it is being edited by another user, then it will automatically return to its original position. Also, if lane changes will create a state that field validations are not met, then the Kanban view will prevent such actions, notify the user what needs to be done, and open the datacard to be edited immediately to complete the mandatory fields.

Drag & Drop Issues Where You Want

Using the latest UI technologies in the implementation of the Kanban view ensures that users can experience a tool every day that is not only effective but also fun to use. The drag & drop functionality allows users to re-rank issues inside a lane from the top all the way to the bottom in a single interaction. Users can move cards from one lane to another and place them in the ranking they need instead of first moving it to a new lane and then ranking it in a second user interaction.

Apply Filtering and Conditions to Kanban Views for Effectiveness

The flexibility of the Efecte platform in applying settings and conditions to views is also available for Kanban views allowing administrators and users to create an almost infinitive amount of different views on the same data. Users can apply settings to the Kanban view to filter out issues from selected folders. A flexible set of conditions comparing any field value with target values, both static and dynamic, enable a fine-grained filtering mechanism for Kanban views.

Limiting the Number of Issues in Work In Progress (WIP)

A Kanban Board is not a real Kanban Board if it cannot manage the maximum amount of issues in a particular work phase in the spirit of the inventors of the Kanban Board according to the Toyota Way of Working. Efecte's Kanban Board allows users with permissions to edit the view to set a maximum number of issues per lane for each lane. If a user attempts to move an issue to a lane which is already at the maximum, then the Kanban Board will prevent such move and notify the user. If a workflow automation is doing the change, then the surpassing of the maximum will be indicated visually in the Kanban Board.

All Relevant Information at a Glance

Crucial information about an issue such as who is working on it, how long it has been processed, the unique issue ID and a short description are displayed as part of each card.

Labels can be assigned to group Kanban cards to a certain topic. Labels can be anything from service categories, software development epics or agile release trains, and asset or access right lifecycle statuses. Labels will displayed according to a customizable color palette in each Kanban card. Labels can be set both manually or by any of Efecte's workflow automations.

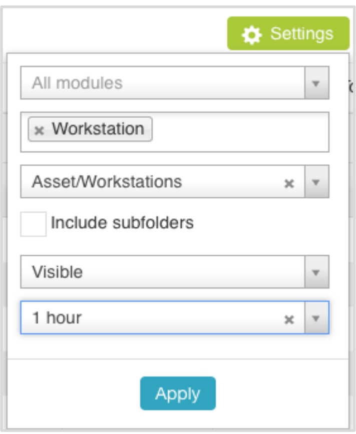
The Kanban Board can display which person(s) have been assigned to the issue. The Kanban Board can also display a due time for the issue. If the due time attribute has a so-called Service Level Agreement (SLA) handler assigned to it and the current date and time is past the due time, then the due time will be marked in red colour.

Kanban Boards cannot be added to Dashboards or be used in mobile devices due to the limited screen estate available to enjoy a great user experience.

2.5.5 Settings and Conditions

The content of every kind of view can be refined by settings and conditions. Settings and conditions will be saved with the view and can be reused at a later stage. Settings and conditions can also be stored as a favorite filter to be applied for new views.

Filtering Views with Settings

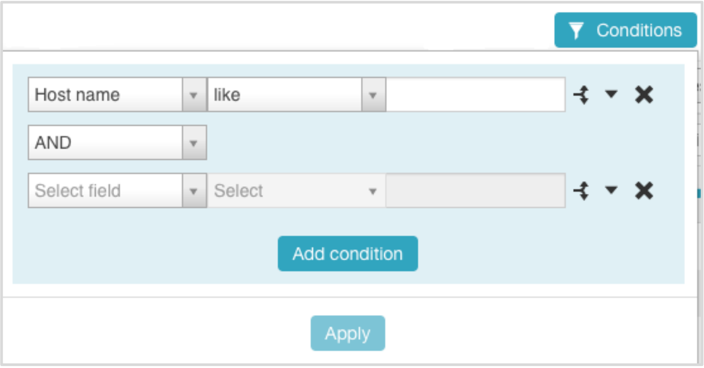


Settings for views are used for defining which module, templates and folder are included in the search. Only visible data cards are searched by default. Hidden data cards can be included in the view.

A refresh interval can be set from a dropdown list for getting automatic refreshed views. An auto refresh interval can be selected separately for each view. It is turned off by default.

Filtering Views with Conditions

In addition to settings, it is possible to define conditions to filter the content of any view.



The following conditions can be freely used and combined with AND and OR operators:

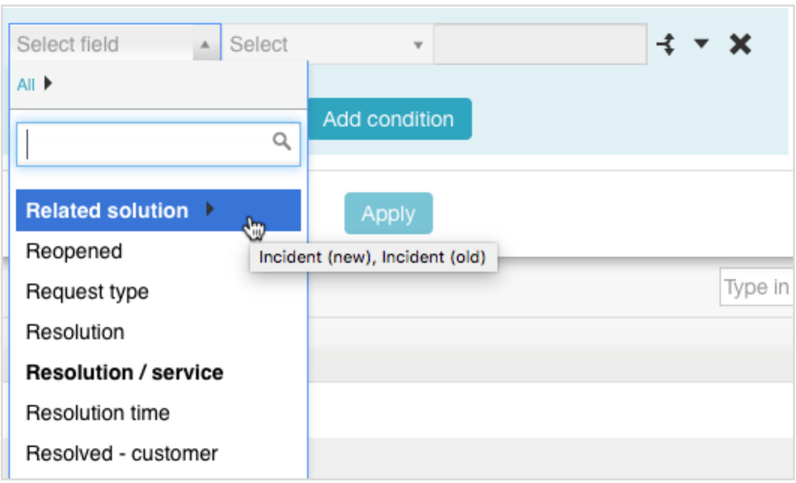
- **like** — value includes the search criterion, wildcards available. Use this with user macros.
- **not like** — value does not include the search criterion, wildcards available.
- **equal to** — value is the same as the search criterion. Static and referenced attributes provide a dropdown list with the existing values.
- **not equal to** — value is not the same as the search criterion. Static and referenced attributes provide a dropdown list with the existing values.
- **greater than** — value is greater than search criterion.
- **greater or equal**— value is greater or equal to the search criterion.
- **less than** — value is less than the search criterion.
- **less or equal** — value is less than or equal to the search criterion.
- **exists** — field has a value.
- **not exists** — field does not have a value.
- **between** — value is between the search criteria supplied.

It is possible to use date macros to make conditions match a certain time, date, or interval.

Views Covering Multiple Templates

Any list view can be modified to cover two or more templates by adding more templates in the Settings filter.

The search results can be filtered according to conditions as described earlier. It is possible to filter by fields that are only in one of the templates or by fields that are shared in different templates. Fields that are shared across multiple templates are highlighted with bold font. When hovering over a field name with the cursor, then it will be displayed to which templates a shared field belongs to.



2.5.6 Role-based Views

Role-based views is the most common way to organize reports. Views are organized by roles for a set of people that need the same kind of views and have the same access privileges. Any number of roles can be created in the Efecte platform by the administrator. The users are either assigned manually to the roles by the administrator or automatically through the Active Directory group if SAML2-based authentication is used.

It can be defined for each user whether the person can or cannot create and edit views for others in the same role.

2.5.7 Personal Views

Any user of the service management tool can create as many of her/his own views as they wish fitting to their personal needs. View settings and filters will be saved in the personal view. A personal view can be created from scratch or as modified copy of a role-based view.

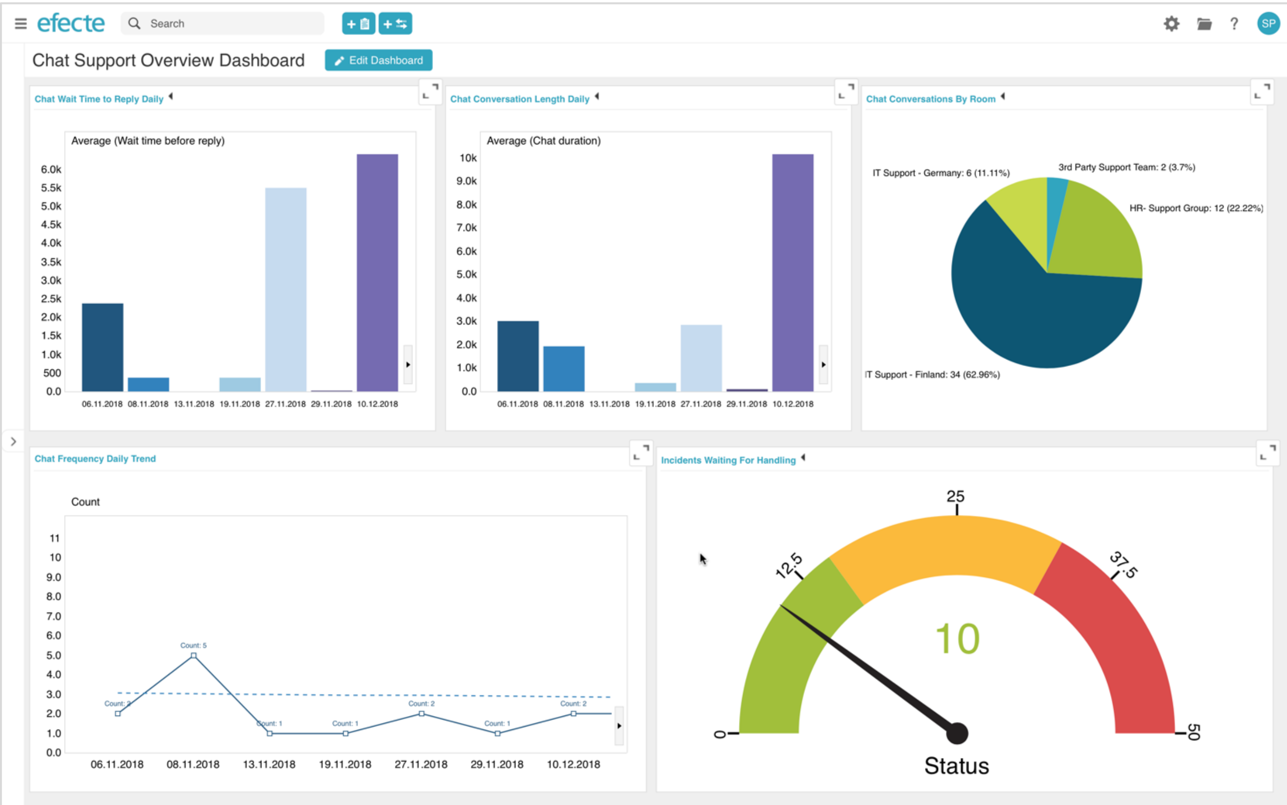
2.5.8 Public Views

Selected views can also be shared to users without licenses to the Efecte platform. A dedicated Public View folder collects all views that are available to any user which are identified in the user database of the solution independent of whether the person has a license to the solution or not. Dashboards cannot not be shared publicly.

2.5.9 Dashboards

Any user can create dashboards, either for personal or role-specific use. A dashboard is designed with simple drag and drop functionality of views. Up to 3 x 3 views can be combined to a dashboard.

Any type of view can be added to a Dashboard: List Views, Graphs and Indicators, and Calendar Views. Dashboards are not supported on mobile devices due to space limitations of the narrow displays.



2.6 Authentication Layer

An authentication layer secures the Efecte Platform. The authentication layer provides facilitates to identity users, provision user information to the platform, and enable single sign-on.

2.6.1 Single Sign-On

The Efecte Platform enables the identification and authentication of users managed in external master data management systems such as an Active Directory.

Single Sign-On to the self-service portal and the service management tool is fully automated using SAML2-based authentication.

The Efecte platform also supports the authentication by other federated authentication systems. In such case, the authentication will be done using common protocols such as SAML2 or OAuth. The user’s organization data must be provisioned also in this case to the Efecte Platform but the authentication is done by an external trusted Identity Provider.

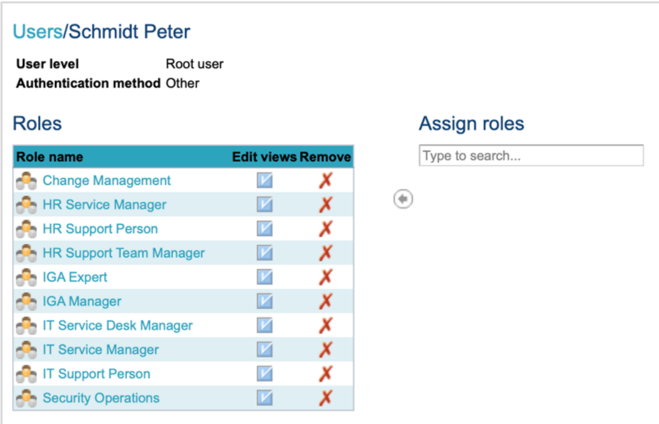
2.6.2 Local Password Authentication

Users can be managed locally in the Efecte platform. Even if users are managed locally instead of the organization’s master data management system, they still can enjoy the benefit of Single Sign-On to the service management tool as well to the self-service portal.

2.7 Permissions

The service management tool is using a role-based access control mechanism. Users must always be assigned to roles.

Any users' permissions are assigned according to their roles. A role is typically associated to the type of job the person has in the organization. Each user belongs to at least one role. The user's permissions to access information are determined by these roles.



Permissions are divided into module, template, attribute, folder, and administrator permissions. Module permissions determine to which solutions the user can access. Administrator permissions give the user the rights necessary to perform operations needed to administer the service management tool.

Template, and folder permissions control the user's access to data cards. The user can see the data cards that are created from templates and folders to which said user has access. In addition, attribute permissions control what the user can see on a data card.

Folder permissions control which sections of the folder structure the user can access. The folder permissions overlap partly with the template permissions. If the user does not have permission to a folder, the user cannot see it at all, nor can the user see the data cards in the folder. However, the user can have permission to access the templates for the data cards. If the user has permission for a folder, the user can see those data cards created from templates that the user has permission to access.

2.7.1 Module-based Permissions

Module Permissions limit the users access to a particular solution such as IT Service Management, Enterprise Contract Management, or Identity Governance and Administration, and so on. Only those modules can be assigned to users to which a customer has acquired the corresponding license from Efecte.

Some common modules such as the Organization module are always licensed and administrators can decide which users need access to such organizational data.

2.7.2 Template Permissions

Template Permissions limit the access of a role to a particular template.

IT Service Management	Read	Create	Update	Delete		
Template	☐	☐	☐	☐	All	Clear
Category	☑	☑	☑	☐	All	Clear
Change	☑	☑	☑	☐	All	Clear
Demand	☑	☑	☑	☐	All	Clear
E-mail	☐	☐	☐	☐	All	Clear
Incident	☑	☑	☑	☐	All	Clear
IT Event	☐	☐	☐	☐	All	Clear
Problem	☑	☑	☑	☐	All	Clear
Quickfill	☑	☑	☑	☐	All	Clear
Release	☑	☑	☑	☐	All	Clear
Risk	☑	☑	☑	☐	All	Clear
Security Incident	☑	☐	☐	☐	All	Clear
Self-Service Category	☐	☐	☐	☐	All	Clear
Service level	☑	☑	☑	☐	All	Clear
Service request	☑	☑	☑	☐	All	Clear
Service request bundle	☑	☑	☑	☐	All	Clear
Standard change	☑	☑	☑	☐	All	Clear

2.7.3 Attribute Permissions

Attribute permissions limit the access of a role to a particular field. Attribute permissions work the following way:

Read permission: The user has permission to see the value(s) and the attribute.

Create permission:

- The user has permission to add value to an empty field but not to change an existing value in the field. Functionality is the same with multi value and single value fields.
- In back references the user can set the value only if there is no value in the field, so no references are linked to the data card, which are specified in the attribute settings.
- User will have automatically *read* permission when *create* permission is added.

Update permission:

- The user has permission to update the value in the field and clear the field values.
- Update means that the user updates the value in the field and/or removes or adds the value(s) to the field.
- In back-references the user is able to update the value in the field.
- User will have automatically *read* and *create* permission when update permission is added.

Once the administrator adds an attribute to a new class, each role has full rights to read and update that attribute by default.

2.7.4 Folder Permissions

Administrators can create and modify role permissions to a particular folder. Administrators can freely grant and deny the various roles permissions to that folder by selecting the *Create*, *Read*, *Update*, and *Delete* checkboxes. Folder permissions give rights to read, create, update, and delete data cards in the folder.

HR Service Management	Read	Create	Update	Delete	
Template	☐	☐	☐	☐	All Clear
HR Budget	✓	✓	☐	☐	All Clear
HR Case	✓	✓	✓	☐	All Clear
HR Category	✓	✓	☐	☐	All Clear
HR Change	✓	✓	☐	☐	All Clear
HR Problem	✓	✓	☐	☐	All Clear
HR Quickfill	✓	✓	☐	☐	All Clear
HR Release	✓	✓	☐	☐	All Clear
HR Risk	✓	✓	☐	☐	All Clear
HR Service level	✓	✓	☐	☐	All Clear
HR Service request	✓	✓	✓	☐	All Clear
HR Service request bundle	✓	✓	☐	☐	All Clear
HR Standard change	✓	✓	☐	☐	All Clear
HR Standard change content	✓	✓	☐	☐	All Clear
HR Task	✓	✓	☐	☐	All Clear
HR Workflow Task	✓	✓	☐	☐	All Clear
Organization	**Read**	**Create**	**Update**	**Delete**	
Template	☐	☐	☐	☐	All Clear
Approval	✓	✓	✓	☐	All Clear
Business hours	✓	☐	☐	☐	All Clear
Cost center	✓	☐	☐	☐	All Clear
Exceptional date (occurs every year)	✓	✓	✓	☐	All Clear
Exceptional day (occurs only once)	✓	✓	✓	☐	All Clear
Feedback	✓	☐	☐	☐	All Clear

The permissions do not give the user the right to create subfolders or edit and delete the folder itself. These permissions are managed separately as administrative permissions.

2.7.5 Administrative Permissions

While administrators with user type Root are able to execute any administrative task, users can be granted limited rights to perform administrative tasks.

Administrative permissions	
Users	✓
Edit static values	✓
Edit templates	✓
Edit folders	✓
Import data cards	✓
Background data	✓
User can edit reports in public views	✓

When administrators create a new role, you specify its rights to conduct administrative actions. The following administration rights can be granted:

- **Edit users** – Permission to edit users and roles. For viewing of the data cards stored in the *Users* folders, you need to grant the user role rights to the folders, the templates, and the template attributes.
- **Edit static values** – Permission to edit static values for an attribute whose data type is static.
- **Edit templates** – Permission to edit all templates of the service management tool. This permission also includes rights to modify template classes and attributes. Even if a user role with this permission can edit and see all templates, the user role might not see all of the data cards.
- **Edit folders** – Permission to edit folders includes rights to modify folders and user role permissions in different modules and in the folders. The folder permissions for each single folder limit the permission. In other words, a role is allowed to edit folders that it has

permission to view. A user with permission to edit folders can create new folders under the visible folders and modify and delete folders visible to said user.

- **Import data cards** – Permission to import data cards in XML form.

By default, a new role has no administrative permissions to e.g. access any of the modules or to conduct administrative actions. When creating the role, administrators must manually select the administrative rights.

2.7.6 Elevated User Permissions

Elevated user permissions (EUP) are data card-specific permissions: they are a way to grant users additional permissions for certain data cards based on the value of certain reference attributes on the data cards. For example, it might be required to grant a system expert the permission to access a particular service request. Usually, the system expert is not supposed to have access to service requests, however if the system expert is assigned to the service request, then s/he should have access to only this particular service request data card. This use case can be achieved with elevated user permissions.

Elevated user permissions can be configured separately for each template.

2.8 Scheduled Tasks

Efecte's service management tool allows to perform a series of scheduled tasks for different purposes. Administrators can set scheduled tasks to import, export, and archive data from and to different external systems. It is also possible to trigger internal events periodically such as clearing the email queue, changing a value in a data card, calculation of budgets, or checking the validity of service announcements.

A graphical user interface in the Administration UI makes integration to external systems codeless. Administrators can configure any of the following parameter for any scheduled task:

All schedulable tasks need to have the following information specified:

- **Description** –a description for the task, which is displayed in the *Edit schedulable tasks* view.
- **User** – Select the user whose permissions the task is running with.
- **Scheduling** – Activate the task by setting the Scheduling *On*.
- **Run** – Define when the task is executed:
    - **Every day:** Select every x minutes or hours the task is executed. *Starting from* lets you decide the starting time and also schedule different tasks to be run on different times so that they don't overlap or at least mostly are run on a different time if you wish.
    - **Every week:** Select which weekdays the task is executed on. The time (@hh:mm) lets you decide the starting time and also schedule different tasks to be run on different times so that they don't overlap or at least mostly are run on a different time if you wish.
    - **Every month:** Select the day of the month the task is executed on. The time (@hh:mm) lets you decide the starting time and also schedule different tasks to be run on different times so that they don't overlap or at least mostly are run on a different time if you wish.
    - **Every quarter:** Select which months of the quarter (1,2,3) and which day of that month the month the task is executed on. The time (@hh:mm) lets you decide the starting time and also schedule different tasks to be run on different times so that they don't overlap or at least mostly are run on a different time if you wish.

The following scheduled tasks are supported in the Efecte Platform:

CSVImportTask

CSV connector for importing data from external systems.

CSV file can be fetched from a local disk or from an SFTP server. The file must be compliant with RFC 4180 standard. Supports SFTP with public key authentication and password authentication.

ChatIntegration Scheduled Task

Use this tasks in combination with Efecte Multi-Room Chat add-on powered by Giosg Live platform.

All chat conversation records can be fetched from the Giosg Live platform to the Efecte platform for reporting and audit purposes. This scheduled task takes care of requesting and storing the data. Fetching the information from the previous business day will take some time to be imported and therefore running it more often will impact performance of the overall solution negatively.

DateCheckerTask

With the DateCheckerTask task, you can get scheduled e-mail reports or files concerning data cards whose date fields match the criteria set.

EventCheckerTask

The EventCheckerTask can be used to find data cards and change their data and their folder.

EventTask

For executing events. Events can be enabled and disabled by configuring this task.

MessageQueueTask

For executing the message queue's message sending. If there are any messages in the queue, this task triggers sending of the messages.

LicenseMonitoringTask

A software asset management task for tracking free and used software licenses of a company. It sends an e-mail report of software license violations, i.e. installed software without license and software with more installations than license permits. This requires a license for IT Service Management.

The LicenseMonitoringTask generates a report of all the Monitored Software Installations that do not have a License Pool. A Monitored Software Installation data card does not have a License Pool, if the data card's attribute LicenseManagementLicenseReference does not refer to a License Pool. The report also states which the computer has this software installed on. The generated report also informs which of the License Pools have too many installations. This functionality does not work with Efecte's software licenses.

MailTask

MailTask is meant for creating data cards from e-mail messages. It reads mail from an inbox, imports them to ESM and attaches the mail to a data card.

DataCardsArchiverTask

DataCardsArchiverTask is meant for exporting data cards to the file system or directly to an external system by using https request method. Both methods (file and https request) uses Efecte XML-format, which might need to be converted to target system data model format.

Only administrators can save list views to an archive section of working space. List reports that are saved in the Archive section can be archived by using DataCardsArchiverTask scheduled task.

Archiving task does not archive file attachments or emails that are linked to the data card. Even data cards are deleted, the files (emails and file attachments) of deleted data cards will remain in the file system. Please note also, the https request neither file archiving types does not send file attachments nor emails to the third-party system or defined folder structure.

2.9 Global Search

The solution has an advanced search functionality in the Workspace UI that has been optimized for the use in enterprise service management. The search algorithm is the same for global search, list filters, and searches for referenced values when entering or editing data.

The following description applies for solutions that are delivered as one of Efecte's cloud deployment options i.e. which are using PostgreSQL as database technology. In addition, customized platform settings might affect to search results.

The core algorithm is built around the concept of word-based search. You can search for one or many words, separated by a "blank", at the same time.

If you use the character "|" between two words, then this will be interpreted as OR condition i.e. records that include one of these words.

The search algorithm removes special characters such as "$ € # ; ? _" from the search term in most use cases.

Example: search for test$system or test?system will be interpreted as search for "test system".

However, the character "." and "-" will not be removed. The "." is indicating to the search algorithm that you might be looking for an email address or an URL see exceptions below). The "-" is interpreted as natural part of a word such as "test-system".

Use of wildcards

Searches can use the wildcard "*" at the end of a word or several words, but not within or at the beginning.

Searching for email addresses

The solution is optimized when searching for emails. Due to the special structure of email addresses, wildcards do not work like for other data types. Users should search always for the complete email address such as forename.surname@company.com.

Searching for URLs

URLs are treated as special type. The system will search for URLs such as www.efecte.com. The system will not search correctly if the search word includes http:// or https://.

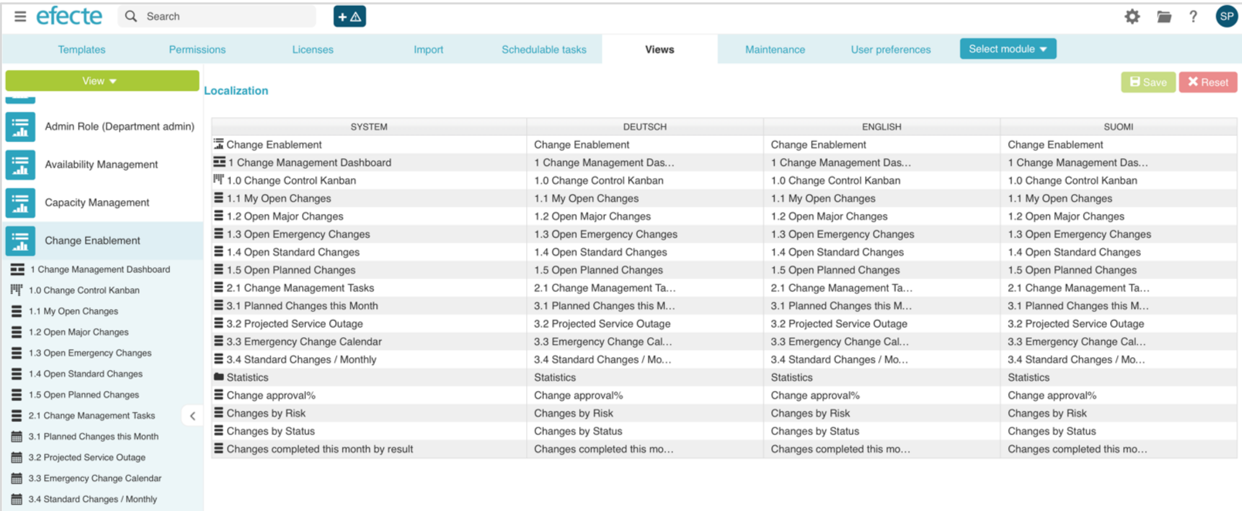
Searching in date and time fields

Date and time fields are treated as special type in the search algorithm. Thus, the user needs to enter always a complete date (or date and time) to search for the corresponding records.

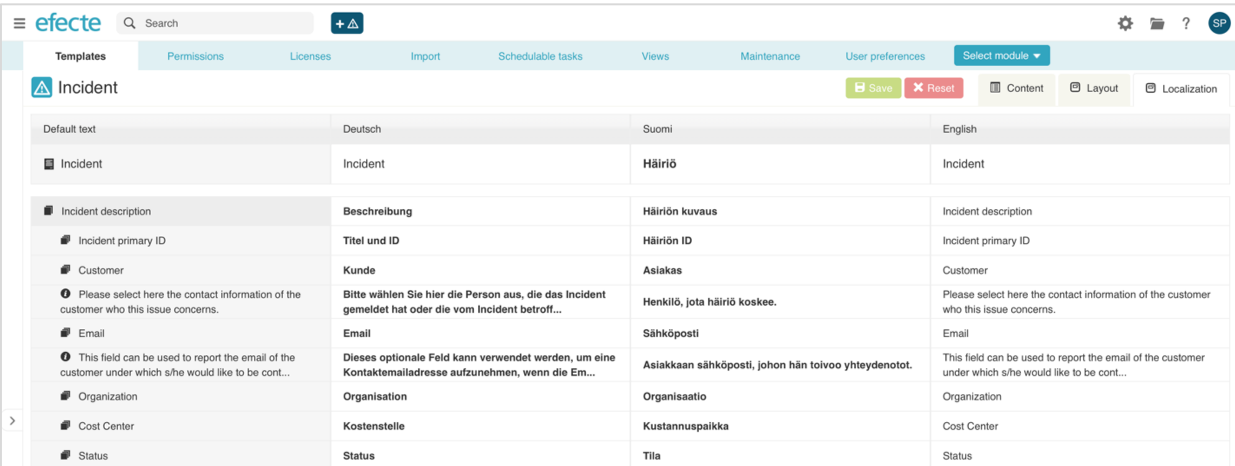
2.10 Localization

UI presentation texts such as buttons and controls of the service management tool have been localized by Efecte. These presentation texts can be modified by the administrator in the user interface under platform settings. The administrator can decide which presentation text languages shall be active. Presentation texts can be exported and imported in XML format.

The name of Views can be localized in a tabular format.



Configuration texts such as field names, help texts, headers and footers can be localized inside of the Service Management Tool. Alternatively, configuration texts can be exported and imported for translations by external agencies in XML format.



The embedded user guide is available in the following languages:

- English
- German
- Finnish
- French
- Polish

2.11 Keyboard Shortcuts

The user interface includes several keyboard short-cuts which increases the speed of completing frequent tasks.

The keyboard shortcuts are enabled by default for new users. The keyboard shortcuts can be disabled in the user's profile settings. The ALT key is by default the modifier key for shortcuts, but the user can choose another special key such as "CTRL" if necessary, from the user's profile settings (Note: some operating system might have other actions pre-set for some of these key combinations).

Moving forward in the content is possible through Tab navigation.

The following shortcuts are supported:

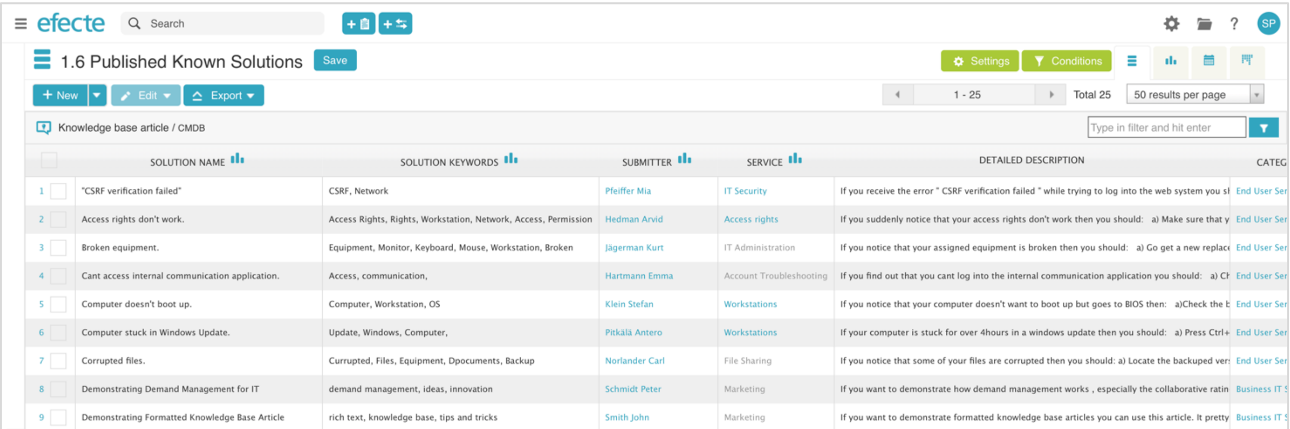
Shortcut	**Action**	**Note**
ALT + S	Save	works in detail view
ALT + E	Edit all	works in detail view
ALT + N	Create new issue	works in detail and list view
ALT + C	Collapse / Expand All	works in detail view
ALT + H	Go to Homepage	
ALT + F	Moves cursor to global search field	
ALT + O	Confirm input (OK button)	
ALT + E	Edit selected issue	works in list view
ALT + A	Select all issues	works in list view
ALT + W	Opens current page in new window/tab	works everywhere except in data card edit view, search conditions are not transferred to new window
ESC	Cancel	works in detail view, help texts and pop-up windows

2.12 Personalization

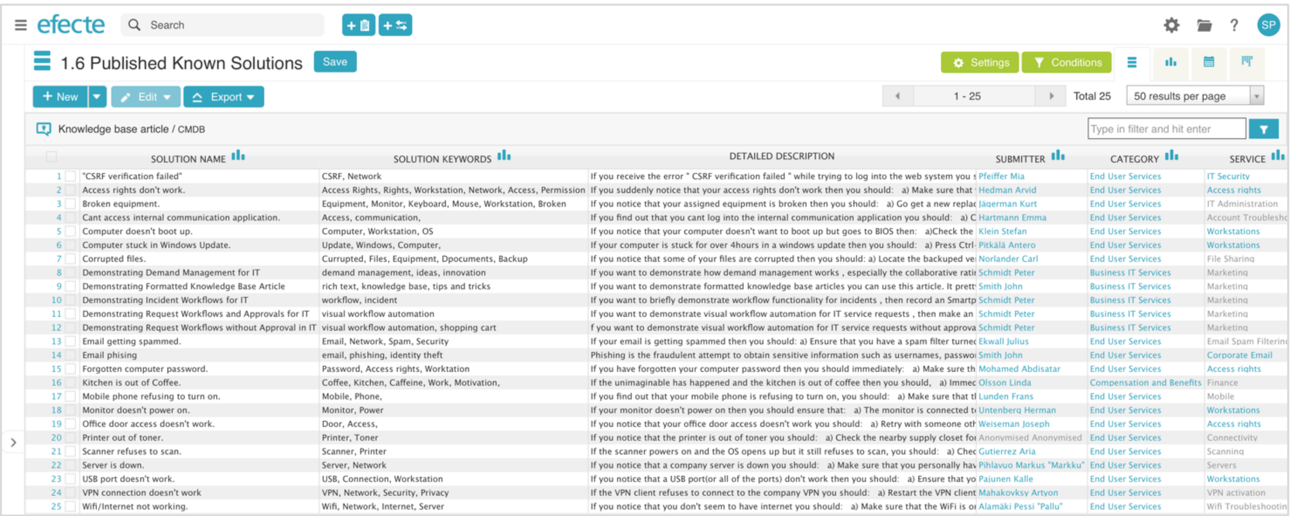
Users can personalize the Workspace UI according to their preferences. The following settings are available to all users (some of them such as time zones and folder visibility can be enabled or disabled by the administrator):

Default or Compact Application Layout

The default view displays the content in a convenient layout.



The compact layout presents significantly more content, both in the list and detail view of a data card, by removing white spaces between rows. However, the compact view makes some compromises in terms of readability which may not suite all users. Below is the same content shown above in compact layout.



Users can select which layout they prefer.

Create-New Button Function

Users can enable up to five Create-New buttons which are displayed always in the top of the Workspace UI and therefore can be used anywhere independent of where the user is currently in the user interface. The Create-New functionality generates a new data card of the template that the user chooses. This functionality allows to trigger the most frequently used actions from anywhere in the user interface. These buttons can either be configured that they always create a data card of a specific template.

Language

In multi-language environments, the user interface language can be changed. Administrators define the supported languages. These language settings do change language of the texts of the user interface.

Keyboard Short-Cuts Settings

Users can select which keyboard combination activates the keyboard short-cuts.

Show Folders Settings

The *Show folders in a Workspace* option allows users to select whether to display folders before or after view navigation. Alternatively, users may select to hide folders all together from the Workspace.

Time zone

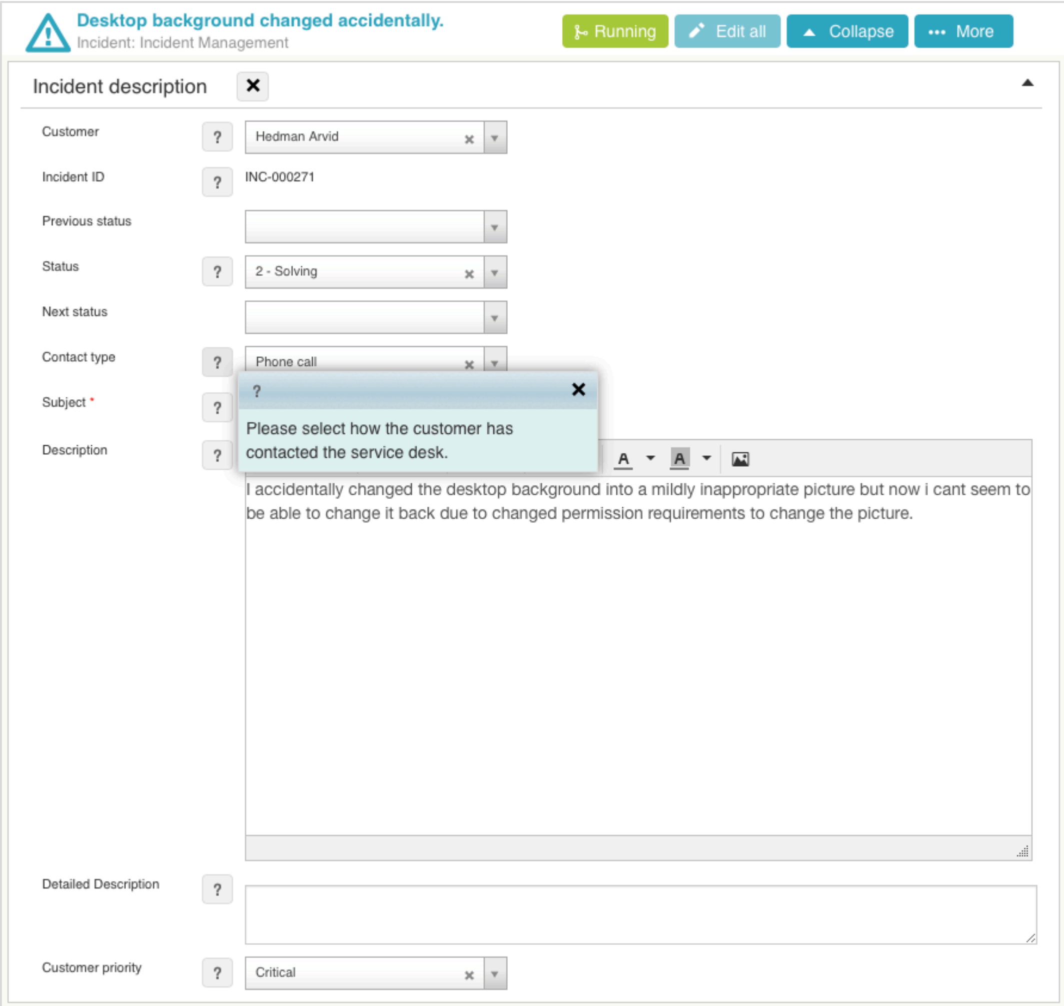
The user can set in which time zone s/he operates.

Startup Screen

The user can set the preferred startup screen. The start screen can be selected from any view or dashboard the user has access to. By clicking on the logo in the upper left corner, the user will always return to the start screen. Start Screens which are supported on mobile devices such as List Views and Graphs will be shown on mobile devices.

2.13 Editing of Data Cards

Any data card can be edited in a dedicated layout that supports the user by indicating mandatory fields as well by providing means for supporting help texts for each attribute.

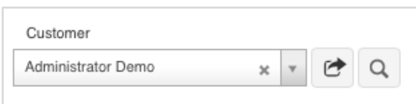


Mandatory fields are marked with a red star and if trying to save a data card without all mandatory fields being completed then a red line around the field will highlight the field.

If the processing of the data card is automated with Visual Workflows, then an indicator at the top of the page will outline the current status of the workflow automation.

Administrators can decide whether classes are collapsed or extended when a user opens the detail view of a data card in order to improve the user experience. Users can collapse or extend classes at any time.

If a field value is to be selected from values of a referenced template, then it is possible to filter the possible choices with a filter that is defined in the metadata of the attribute. The filter is activated when the user clicks on button with the magnifying glass.

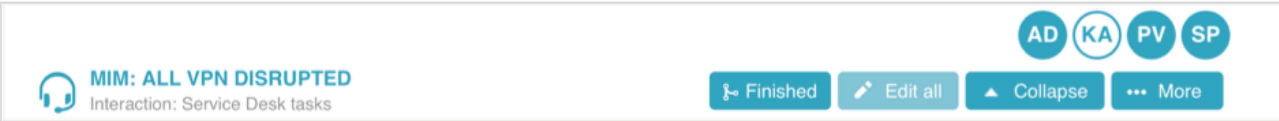


The filter can be configured using the so-called Efecte Query Language (EQL). EQL is a query language similar to SQL used in traditional relational databases. With the help of EQL editor, editing EQL queries is possible without deep knowledge of the inner workings of the language and its notations.

The administrator can define whether the user can open a selected reference in a dedicated separate window to get more information about the referenced data card. The user can open the referenced data card by pressing the above shown button with the “extend to other window” icon.

2.14 Agile Swarming – Data Card Collaboration

It is possible to enable a mode of operation that allows several users to “work” on a single data card at the same time. Users can see in this mode all other users that are viewing the data card currently as abbreviation of their first name and second name. The user editing the data card can also be recognized through the inverted colors. If the value of the data card changes, through action from the user editing the data card, then the content will be automatically updated in the browser windows of the other users in the time interval set by the administrator. The other users viewing the data card will also see a notification. Stealing the edit right from another user is possible.



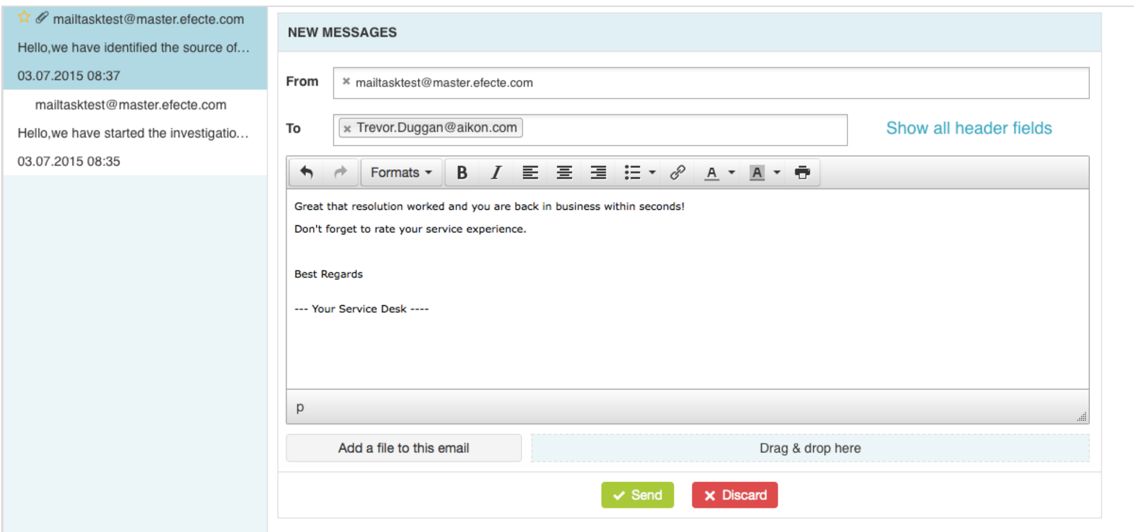
It is possible to write comments and send emails even if another user is editing the data card. The administrator can enable the posting of comments by changing the settings of the corresponding attribute.

2.15 Printing of Data Cards

Any user can print data cards the s/he has access to. Before starting the print job, the user can select whether attributes with no values are included or not.

2.16 Embedded Email Communication

The Efecte Platform includes an embedded email user interface for communication with end users. All emails are automatically recorded as part of the corresponding attribute. The emails can be sent within the detail data card view or in a dedicated email communication window.

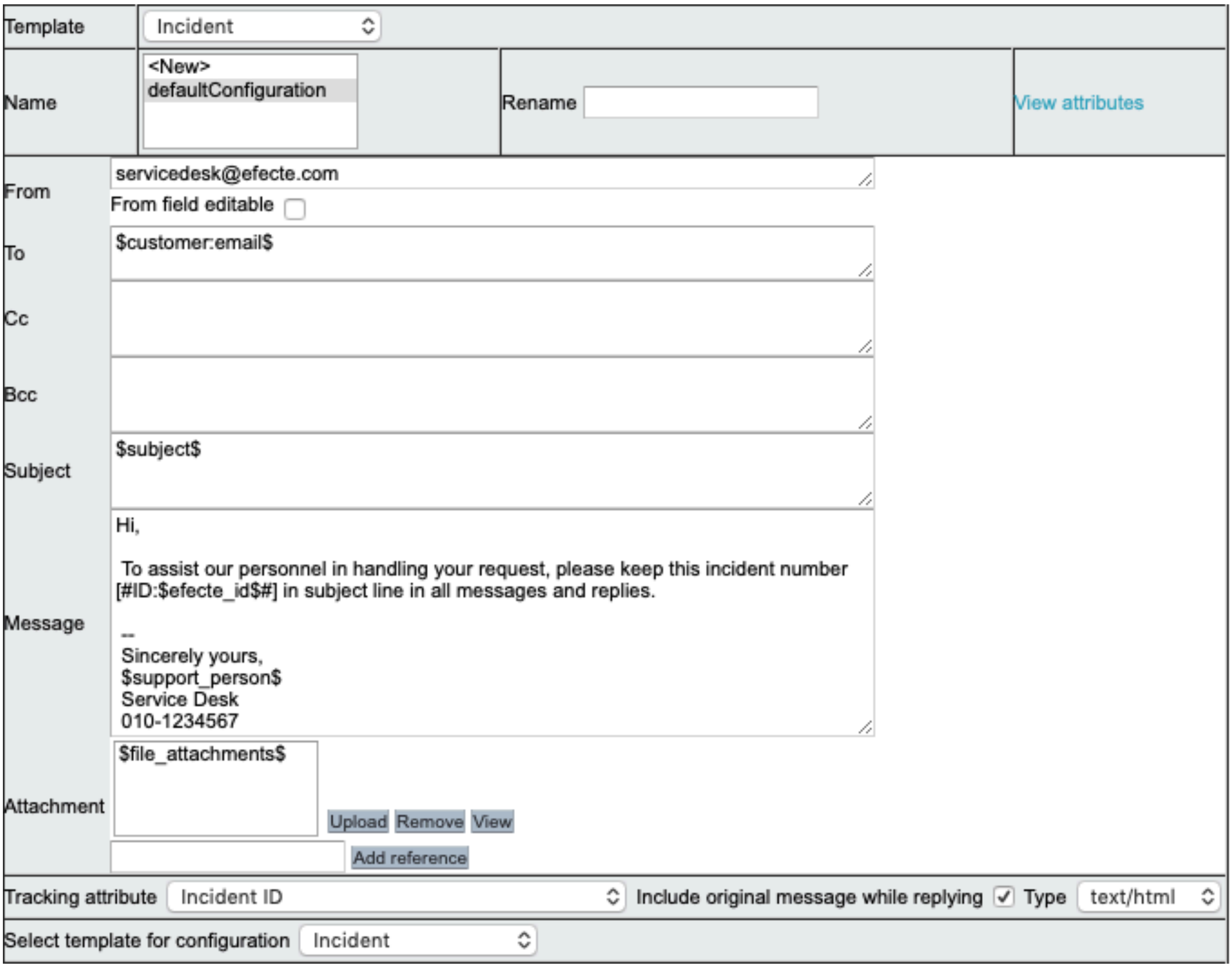


It is possible to send either plain text or HTML formatted emails. Images can be either copied directly from the clipboard to the email body message or added as separate attachment. Images from previous messages in the conversation will not be added to replied or forwarded emails due to performance optimization.

2.16.1 Email Templates

Administrators can define email templates that are available to users when the Handler MailTask is used. One to many email templates can be defined for each template. If more than one email template is available, then user can select which email template to use to reply to the end user.

Values from the data card can be dynamically added to the email message both in the subject and the email body. The email template can be formatted in plain text or HTML format. The tracking ID for the email conversation, typically an identification number, can be added to the subject.



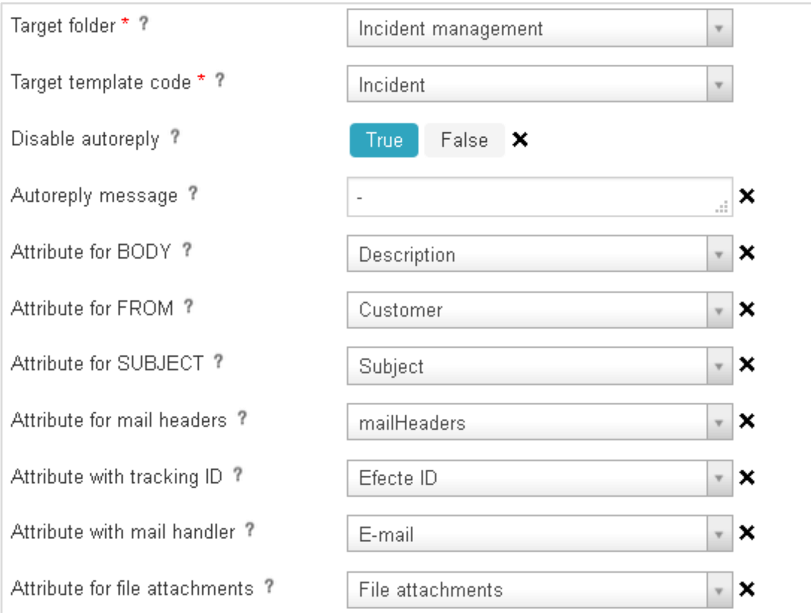
2.16.2 Mail Content Search

It's possible to enable full mail content search in ESM. When the feature is enabled, ESM stores content of all incoming and outgoing mails (excluding automatically sent notifications) to hidden text attributes. Search functionalities then find for example an incident also based on the text in the email content.

2.16.3 Using Incoming Mail Headers in Business Logic

It's possible to use the mail headers of incoming mail in business logic in order to:

- Move the incoming email in a particular folder
- Move the incoming email in a particular template
- Send a reply automatically



2.17 Transformations

Transformation allow users to create a new data card of one template from another data card of another template. That allows to create a change request - for example – from an issue reported as a problem. Values from the source data card can be copied to the target data card. It is possible to create automatically a relationship from the target to the source data card for traceability and other purposes.

To transform values from a source attribute into a target attribute, the attributes' data types must be compatible. Although static attributes can be transformed even when the attributes are not the same. In that case transformation is done using the string values of the attributes. If target attribute doesn't have matching string value, it will be left blank. Attributes where the Worklog -handler is used are not supported in transformations.

One template can have several transformations to different templates. For example, you could transform a helpdesk ticket into a solution data card and into a software/hardware order.

With multiple data card transformation functionality, a user can create multiple copies of single data card only by using single transform action. During the transformation phase, the user can define the amount of the created data cards (max 99).

2.18 Manual Data Export

Any user can export data from any list view in Microsoft Excel format by the click of a button. This manual export will store the information that is shown on the list view taking into account all settings, filters, and column selections in a file that can be stored on the user’s workstation.

2.19 Anonymization of Identity Information

It is possible to anonymize issues recorded in the Efecte platform in order to meet legislative requirements such as the European GDPR legislation.

Users can select a person record and choose to anonymize the person data card and therefore all the issues where the person is referenced to. The Efecte platform will replace the person’s name and email address with a generic value such as “Anonymized” in all data cards. The action is permanent and cannot be undone. This functionality works in the data cards where the person’s information is linked as reference. The functionality will not impact text or string fields where the name of the person has been added manually.

Anonymization of the data cards can be activated for multiple templates. History logging data is not anonymized and therefore it’s advised to deactivate collecting history data of the templates, where anonymization is enabled.

2.20 Visual Workflow Automation

Visual Workflow Automation facilitates agile team collaboration, removes the need for additional business modelling tools, and increases in-house services automation.

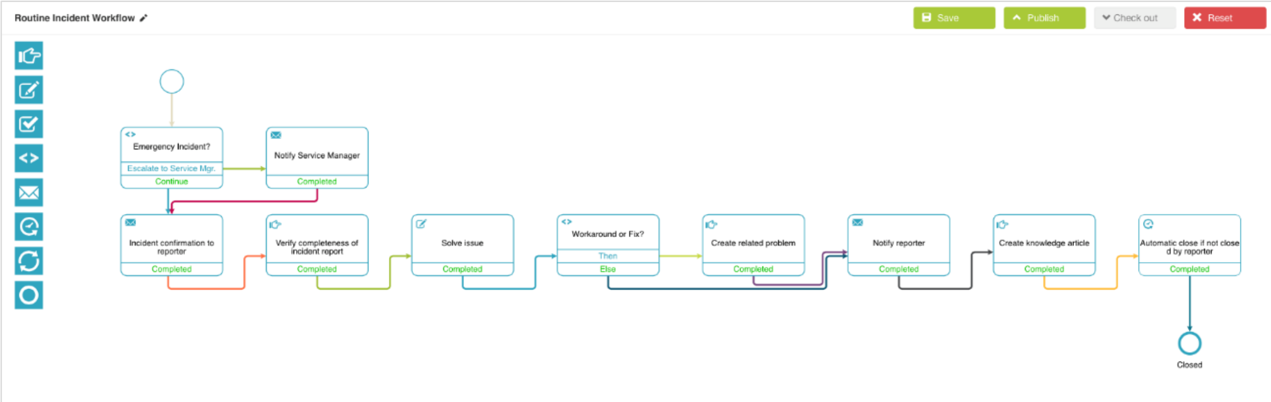


Image: Visual Workflow Automation

Visualizing Enterprise Services

Business process modelling is the art of visualizing the way a business service is implemented and the scope of the work. In the past, the visualization of business processes has been done independently in dedicated business process modelling tools. With Visual Workflow Automation, processes, tasks, and roles can be visualized as part of the automation inside of the service management tool. Process design and implementation go hand in hand. Documentation of enterprise service processes is as easy as exporting the workflow diagram to a PDF document.

Enabling Codeless In-House Automation

Efecte's Visual Workflow Automation enables enterprises to customize out-of-the-box processes in-house with visual building elements in a modern user interface. Routine tasks and conditions that had to be done and verified in the past manually can be automated and therefore accelerated. Workflows can be modified during service operations and published into service online by administrators themselves without a second of interruption.

Visual Workflow Automation comes with a wide range of automation options ranging from simple manipulation of values to resolving complex conditions representing business policies. No coding skills are necessary to automate business processes. Everything can be done with pre-built workflow nodes and configuring them on the graphical user interface.

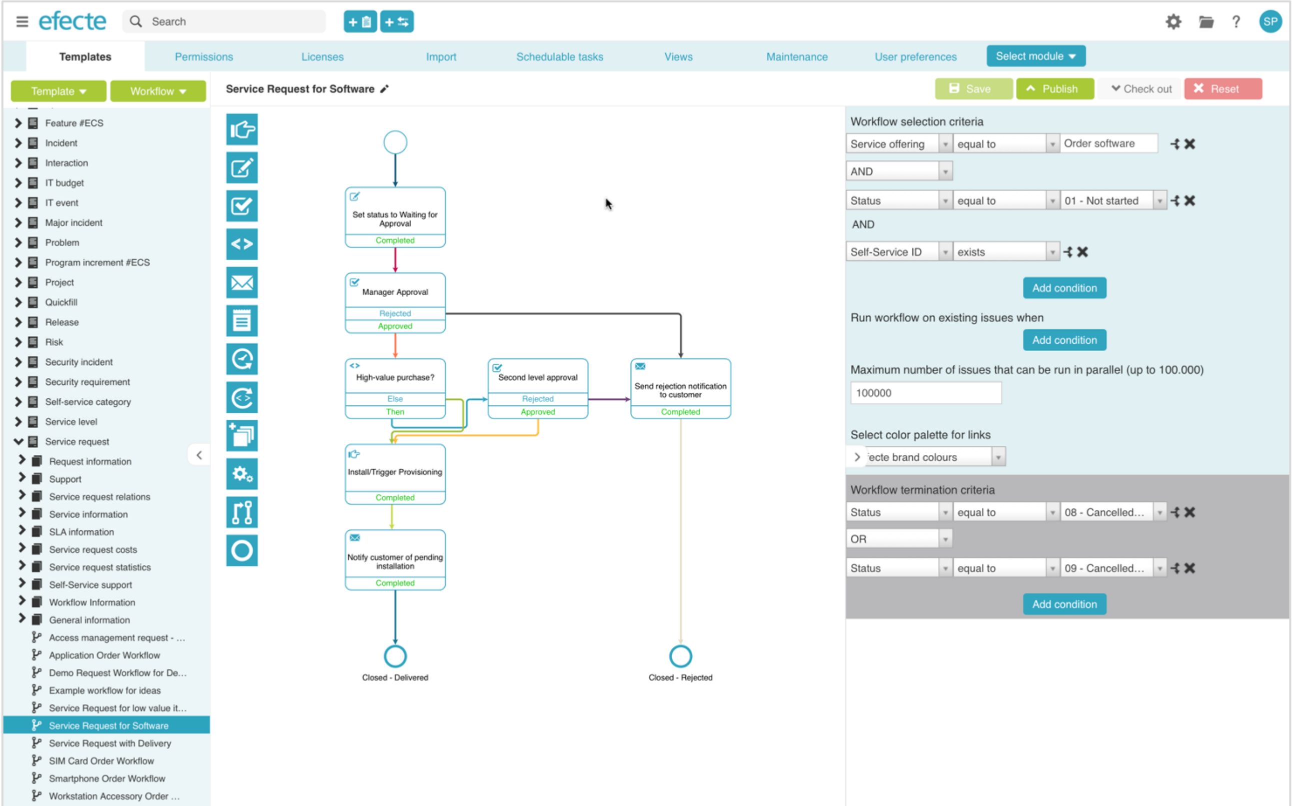


Image: Workflow selection configuration of comprehensive service request workflow

Workflows are selected based on simple conditions such as “run workflow when status equals untouched” or complex AND/OR-based conditions such as “run workflow when status is solving AND price is greater than 500 Euro OR when user category is VIP”. Several workflows can be defined for the same process. For example, it is possible to create tens of workflows for service requests for each different category of the service catalogue.

2.20.1 Transit-Map Design

Efecte’s Visual Workflow Automation introduces a unique transit-map design for visualizing workflows. The new design excels in clarity and simplicity setting a new bar for readability of workflows in the industry.

Transit Map Design

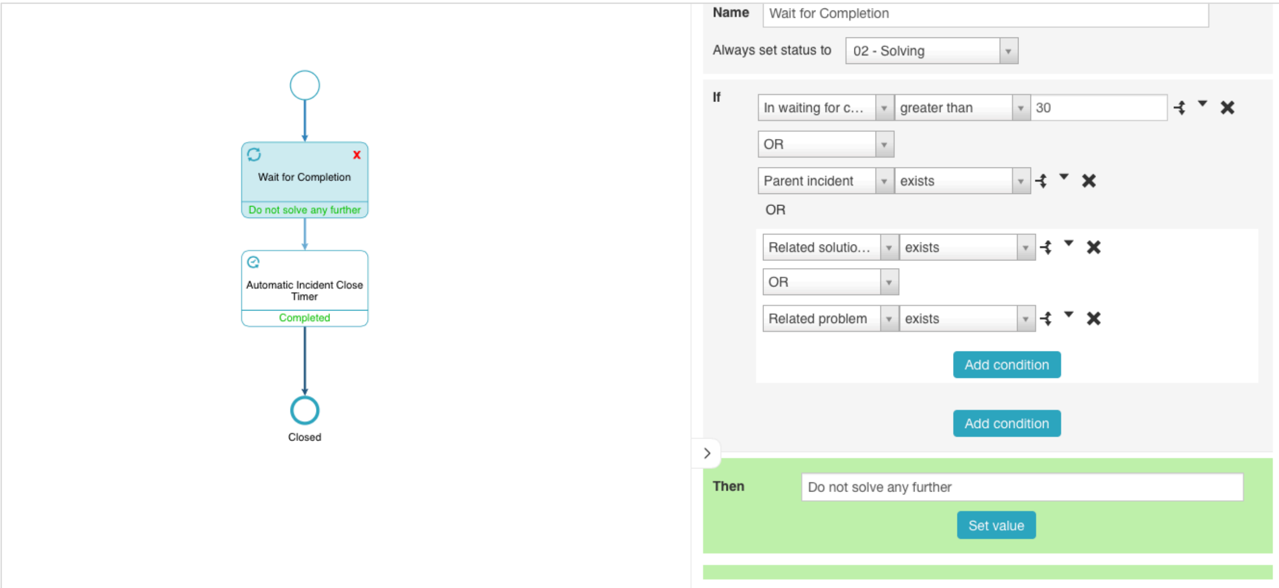
The transit map design is based on an invisible grid onto which all graphical elements snap. Parallel transitions are drawn automatically in separate tracks along the grid. The workflow editor identifies the ideal path for transitions and attempts to avoid unnecessary crossings. The workflow designer can configure which colors shall be used when drawing the workflow sequence. New visual elements can be dragged and dropped onto the grid in the responsive UI design.

2.20.2 If/Then Conditions

If/Then conditions branch the workflow sequence to two individual new branches based on a single condition or a combination of multiple conditions. If/Then conditions are ideal to model different process behaviors under different conditions. When the If/Then condition element becomes active the condition is immediately checked and a decision is made based on the current values in the database.

2.20.3 Wait-For Conditions

The Wait-For conditions capability enables to hold the workflow until one or many conditions have been met. While the If/Then Condition node checks immediately when active whether a condition is met or not and moves forward accordingly, the Wait-For condition node waits until a condition is met and only moves forward then. This allows to hold processes until certain crucial business conditions are met.



2.20.4 Timers

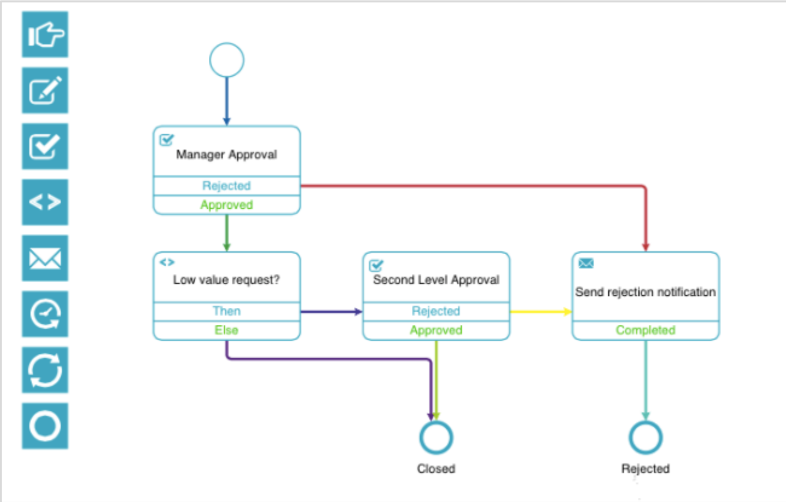
Timers in the workflow engine create delays in order to synch with business activities. Visual Workflow Automation supports two kinds of timers: one that holds the workflow for an absolute amount of time and another one that holds the workflow until a fixed, recurring point of time such as every Monday morning. The workflow engine moves only forward to the next step once the timers is up.

2.20.5 Approvals

The Approvals node enables to make business decisions and arrange reviews with stakeholders of an issue. The purpose of the Approvals node is to decide whether the issue processed by the workflow is approved or rejected. Approvals can be stacked or be based only conditions such as the value of a service request allowing organizations to create multi-level approvals from manager to manager’s manager and so on.

Designers of workflows can choose to send approvals to:

- Managers, the superior according to the person data card of the requester
- Dedicated, fixed approvers
- Dynamically selected approvers such as manager’s managers or cost center managers



Users with the necessary permissions can review the status of approvals. The approvals with the time stamp are read only for normal users. Users with administration rights can change approval decision manually. This will create an entry in the security log for audit purposes.

Approvals can be done inside of the service management tool by any registered user or through the self-Service portal by any user. In case of approvals within the service management tool, an approval notification will be sent to the approvers, which can follow an embedded link to get directly to the approval view of the related issue.

In case of use of the self-service portal, the approval request will be sent to the enterprise portal for processing. The self-service portal will then verify whether there is currently an active delegate (substitute) for the approver and will send an email notification to the approver or its delegate. Visual Workflow Automation will create an approval stamp for the decision once it has been informed on the decision and continue the workflow.

2.20.6 Email Notifications

The email notification node enables the communication with all stakeholders while executing a workflow. Email notifications can be added at any place of the workflow. Workflow designers can define whether emails are sent in HTML format or in plain text format. It can also be configured when the workflow shall move forward to the next node depending on the desired behavior.

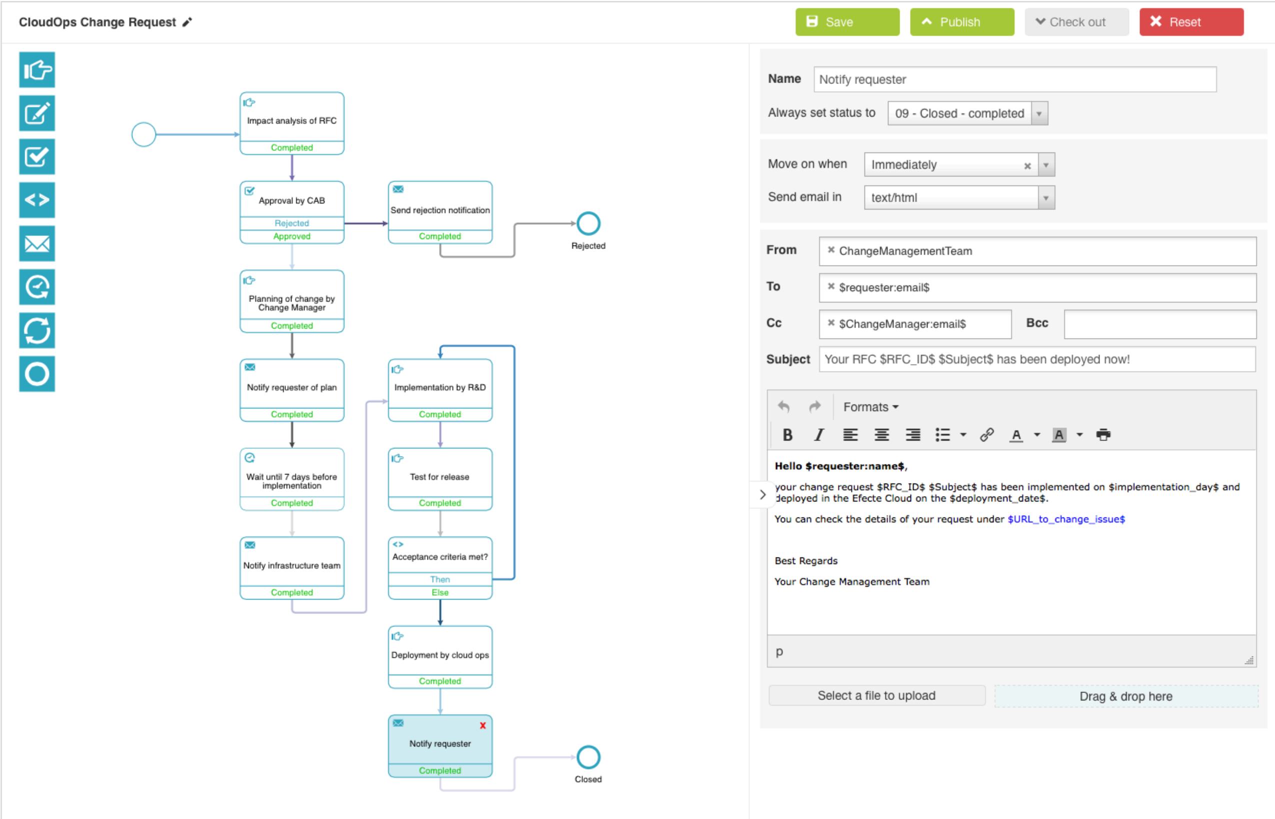
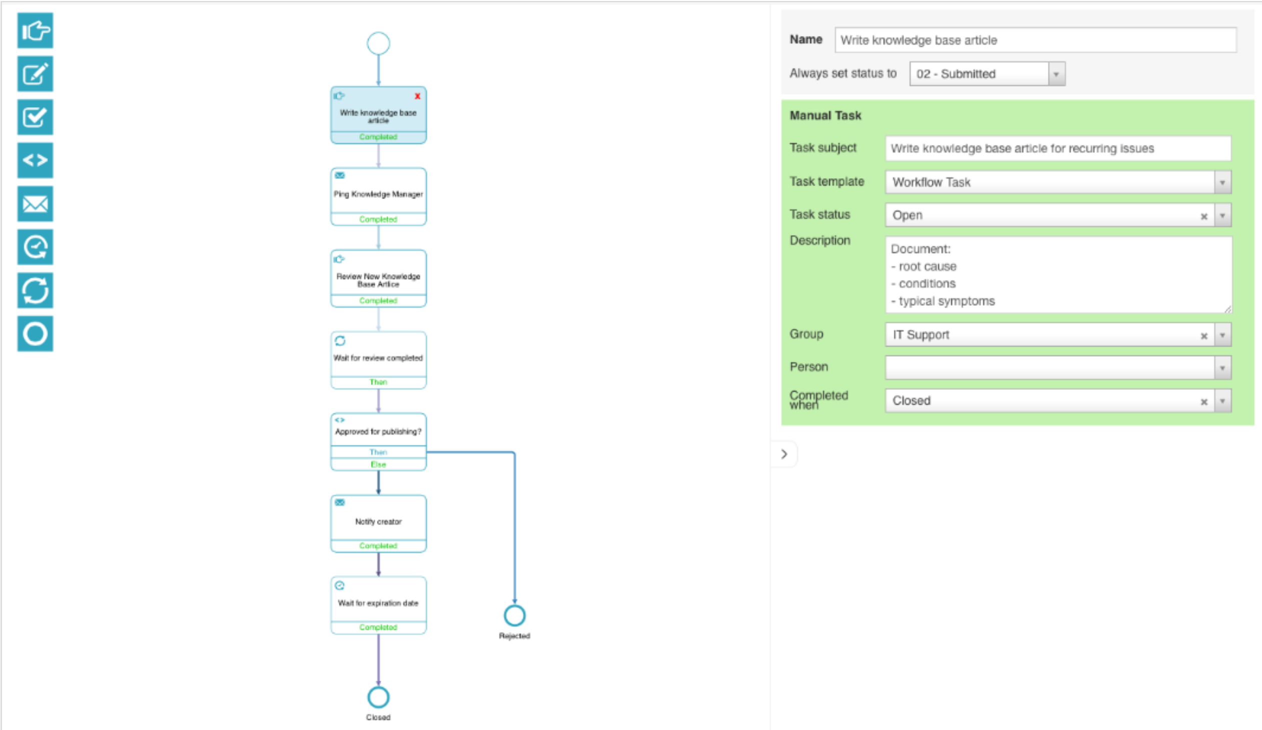


Image: Change management workflow with email notification

The subject and the body message of the email can include dynamically added values of the issue in order to make the message content contextually relevant. Administrators can check from the messaging queue whether and when emails have been sent.

2.20.7 Manual Task Generation

Visual Workflow Automation can create manual tasks to be completed by groups or individuals. Tasks can be distributed to a group and a member of the group who then assign the task to themselves. Alternatively, a manual task can be assigned always to a known user. A new issue will be created for each task during the execution of the workflow.



2.20.8 Script Execution

Python scripts in Visual Workflow Automation can manipulate values of the attributes of an template the workflow is running on, but not values of any other templates. The script allows workflow designers to do mathematical computations using operands such as +, -, / and * as well as brackets. Scripts can also generate random numbers, calculate the difference between two dates/times, or compute sums or averages of multiple values.

2.20.9 New Issue Creation

The Visual Workflow Automation can create entirely new issues while processing one issue. This is commonly useful when issues are related, or one issue needs to trigger another issue automatically. In some processes, it is for example typical to create a new change request or problem issue if the incident cannot be resolved easily. Fields of the new issue can easily be set to a new value through configuration or can be mapped to values of the issue that is triggering the creation of the new issue.

2.20.10 Efecte Identity Management Orchestration

The Visual Workflow Engine can orchestrate actions in the Active Directory. Currently, it is possible to orchestrate the following activities via Efecte Identity Management:

- Activate/deactivate user account
- Assign/remove a role (or AD group) to a user
- Assign/remove a role from a role group

2.20.11 Efecte Provisioning Engine Orchestration

The Efecte Provisioning Engine provides capabilities that allows orchestration activities to the Active Directory when using the Visual Workflow Automation. Currently, it is possible to orchestrate the following activities:

- Activate / Deactivate user
- Add user to a group
- Remove user from group
- Verify user in AD
- Create user
- Update user

- Delete user
- Reset password
- Unlock user account
- Update proxy addresses

2.20.12 Rollback

The rollback capability allows workflow designers to jump back to a previous activity in the workflow sequence if a specific condition is met. The rollback functionality resets many of the activities to their initial condition that are between the rollback node and the activity to which the workflow jumps back. Rollback cannot reset or make undone activities from nodes such orchestration activities, email notifications or New Issue Creation node.

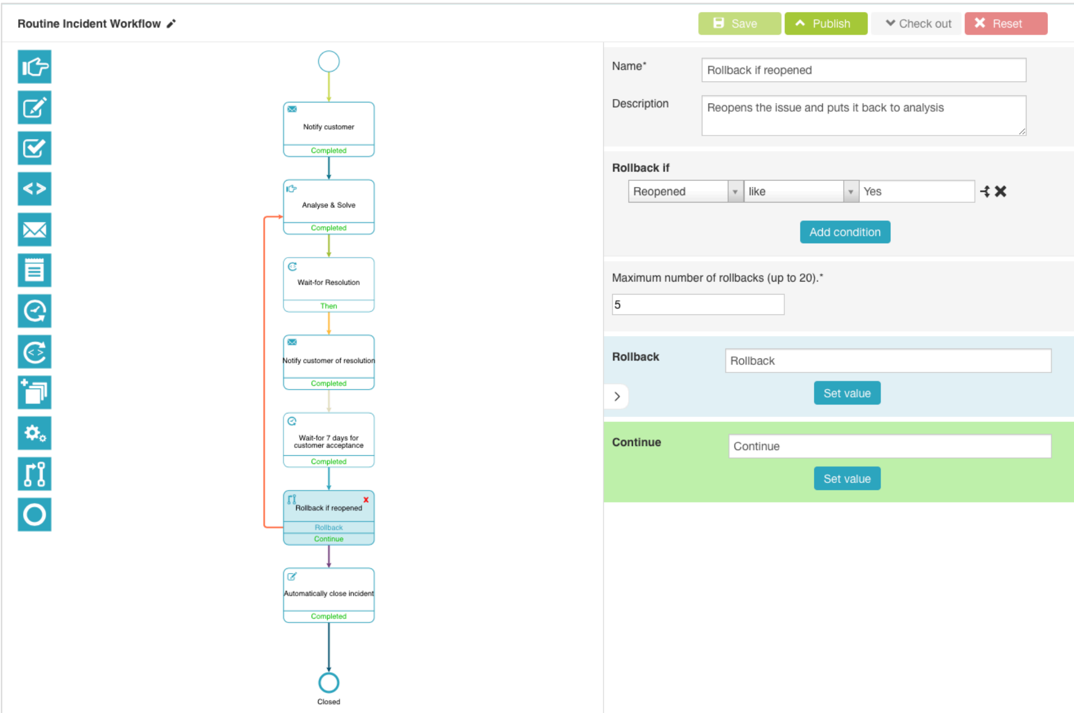


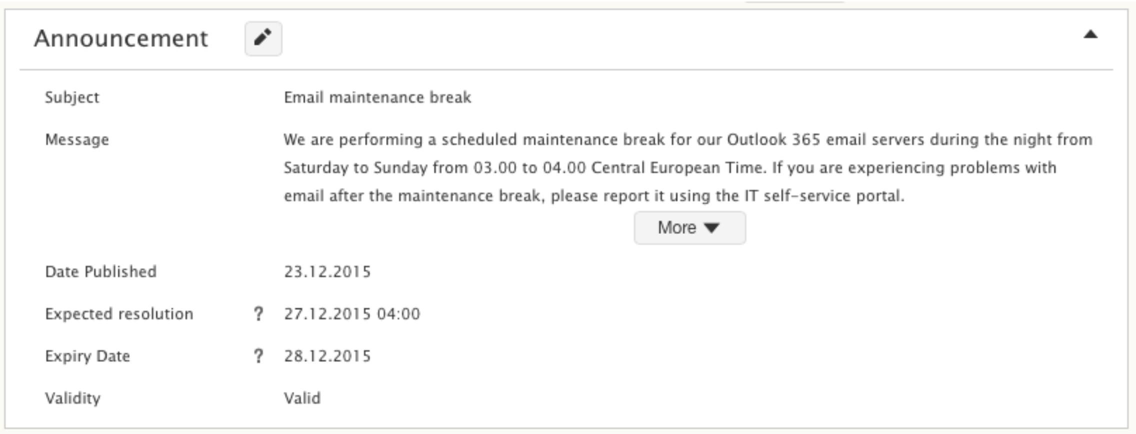
Image: Rollback example in simple incident management workflow

2.20.13 Embedded Lifecycle Management

The Efecte Platform controls the lifecycle of workflows. Each version of the workflow is maintained in the database. Two versions of a workflow are maintained actively by Visual Workflow Automation: the latest draft version in the workflow editor and the published version in active service. It is possible to check-out workflows and therefore remove them from active service. Workflows cannot be deleted as long there are open issues being processed. It is also possible to process issues that have been created while a workflow had been checked-out for maintenance as bulk process once the workflow is republished. All lifecycle events and the actors are logged for audit purposes. Workflow configurations can be exported and imported in order to move them conveniently from test to training and production systems.

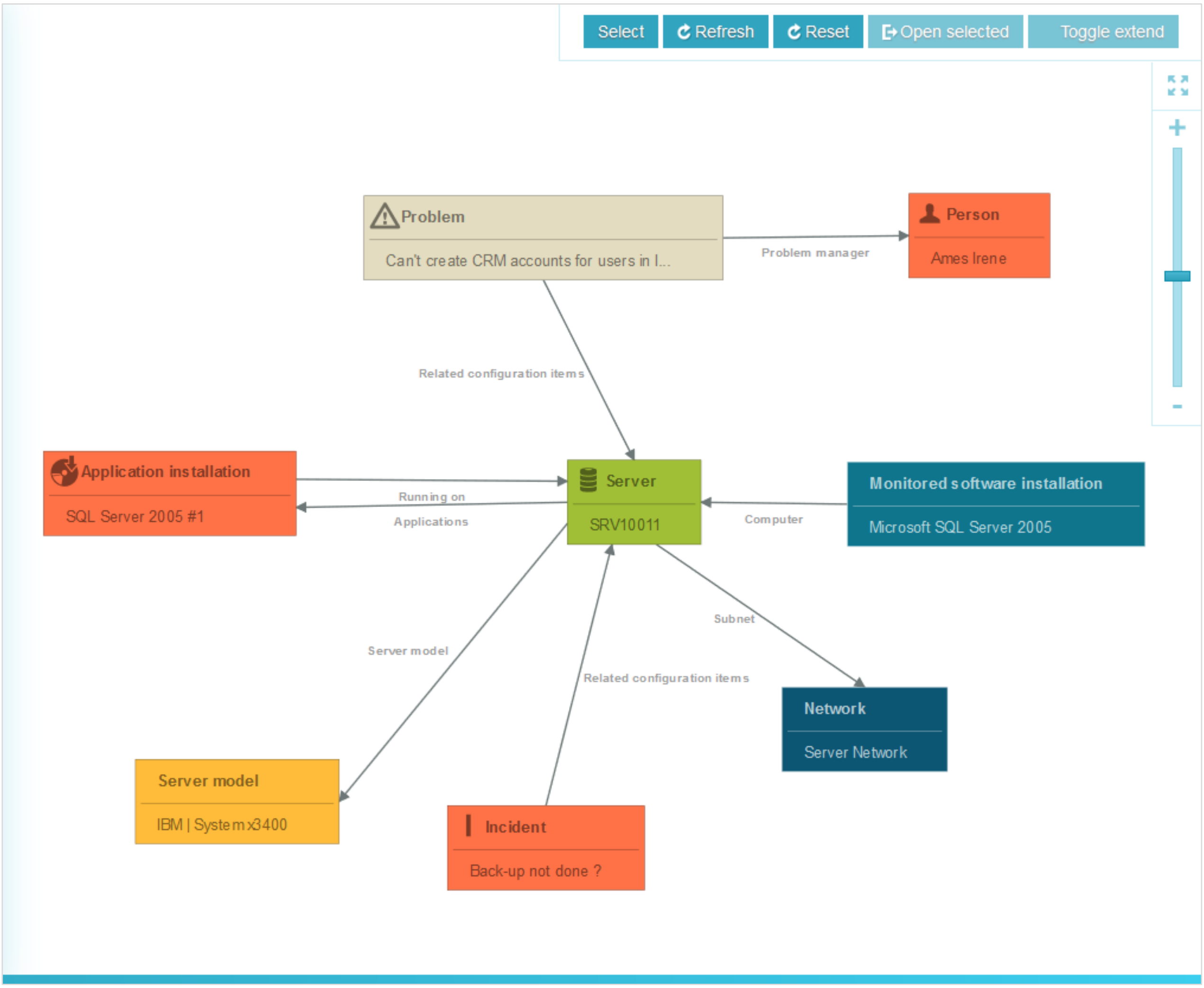
2.21 Online Service Announcements

Whenever service disruptions occur that impact a large part of the organization, both scheduled as well unplanned ones, the service desk can publish service announcements in the self-service portal informing end users of changes impacting the service availability or capacity. End users checking the self-service portal are aware of planned maintenance breaks or unscheduled outages. Informing end users with service announcements helps to reduce the number of repetitive incident reports and increases end user satisfaction.



2.22 Visual Analyzer

Service management tool users can visualize the relationship of any data card including but not limited to incidents, assets, persons, SLAs and so on. Single point of failures and relationships within the organizations can be identified easily making service operations faster.



2.23 Trash Can

The trash can is displayed in the Working space UI. All deleted data cards are in the trash can, not only the ones the user him-/herself has deleted. On the other hand, users can see only those deleted data cards they have permission to read.

Those who have permission to delete data cards have also permission to permanently delete them or restore them to the original folder.

2.24 Manual Data Import

Administrators can import new data to the Efecte platform through the administration user interface or through Efecte Web API. You can create new data cards and keep your existing data cards up to date with the import.

The service management tool stores the imported data in those data cards to the templates. The service management tool recognizes the existing data cards by the unique attributes. If the unique attribute values of the imported data are identical to those of existing data cards, the service management tool considers them identical and updates the existing data cards. If the existing data cards do not include unique attribute values that the imported data include, then new data cards are created. Importing large quantities of data consumes processing time and memory resources on the Efecte platform. Administrators should execute large imports to happen outside of peak working hours.

The following settings are available for the import target:

- **Folder** – The drop-down menu shows a list of all the folders you can import data to.
- **Restrict updates to folder** – If this checkbox is selected, only the data cards in the folder defined in *Folder* field are updated. If this checkbox is not selected, matching data cards in other folders may be updated as well.
- **Create new data cards** – If this checkbox is selected, new data cards are created if the imported data cards do not yet exist. If this checkbox is not selected, only existing data cards are updated, no new data cards are created.
- **Create new static values** – If this checkbox is selected, all unknown static attribute values in the imported data are added to the list of static attribute values. They are also displayed on the data card. If this checkbox is not selected, unknown values are left out from the data card. The checkbox is disabled if the user does not have permission to create static values.
- **Create empty reference data cards** – If this checkbox is selected, empty reference data cards are created if references to data cards are not found in the imported data.
- **Ignore unique checks** – If this checkbox is selected, the service management tool does not compare the imported data with the existing data. In practice, the service management tool does not update existing data cards with the imported data, but instead creates a new data card from each imported data card.
- **Show imported data cards** – If this checkbox is selected, a list of the affected data cards is included in the report displayed after the import.
- **Enable Value Removal** – If this checkbox is selected, imported attributes which have an empty value will delete the corresponding data card value already saved. It this checkbox is not selected, imported attributes which have an empty value will not have any effect on the data card. Note that this setting has effect only on those data cards which get updated during the import.

It is possible to import data from an XML file or by entering XML directly into the text field.

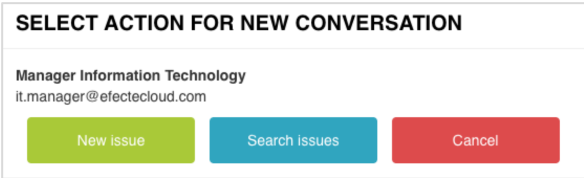
2.25 CTI Integration

When the service management tool is used for operating a service desk, then the Computer Telephony Integration is useful for processing calls. Support for Computer Telephony Integration (CTI) is implemented with a http interface and URL requests.

Prerequisites to the CTI-systems integration is that CTI-system's client must be able to trigger an http get-request from end user's workstation. Sending https get-request opens a new browser window.

When a call in CTI system is answered, it will trigger URL –command where user id is a parameter (referred to in the platform settings as caller ID). The user id can e.g. be a phone number or email address.

The user can then select whether wants to create a new data card, search issues related to the incoming caller or cancel the action.



Based on user id parameter, the service management tool tries to identify the corresponding user. If multiple numbers are found with one parameter, a pop-up activates a drop-down list where the user can select the actual caller.

Here is the example of example URL that must be triggered by the CTI solution:

- https://efecte.mycompany.com/efecte/Frameset.do?a=cti/actions/+555342669678

The administrator can define which templates will be searched.

2.26 Chat Tool Integration

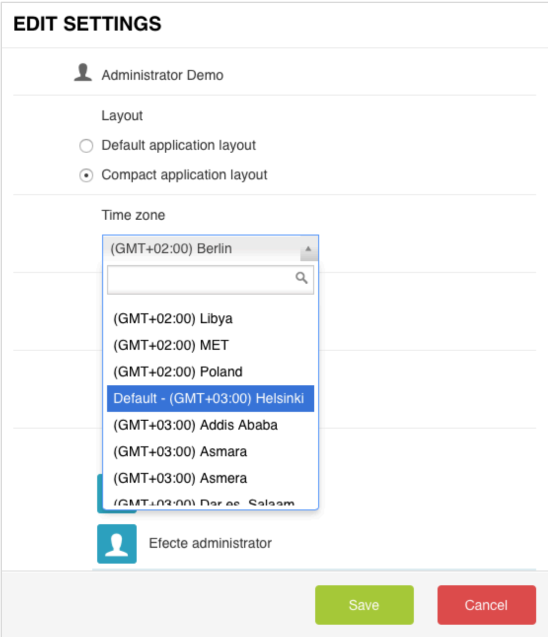
The Efecte platform can also be integrated to the Giosg Chat Platform. The Efecte Multi-Room Chat add-on functionality must be licensed separately. The chat tool integration consists of two major functionalities:

- Importing the chat conversation logs
- Supporting the service desk agent in getting more information about the end user and creating an issue from the conversation similar to the CTI functionality

The details of the Efecte Multi-Room Chat functionality are described in a dedicated document.

2.27 Time zone Management

Incidents, service requests, changes and other services can be managed in different time zones. Every user can personalize his time zone. All times will be shown then in the user's time zone in the Workspace UI.



The Efecte Platform has a default time zone in which all records are recorded in the database and which is the default for newly created time zones. Common automation elements such as those creating time stamps and calculating the adherence to Service Level Agreements are taking the time zone management into account.

2.28 UI Customization

Administrators are able to customize the user interface of the self-service portal and the service management tool in order adjust to the brand identity of the organization.

On the self-service portal, the colors of icons and the background wallpaper can be customized by the administrator.

Colors of the buttons and icons, as well the background colors of the navigation areas can be customized by the administrators of the service management tool. Colors of graphs can be adjusted also by the administrator to additional color palettes of the customer's choosing. The logo which serves as link to the homepage can be changed to a custom logo.

2.29 Importing and Exporting of Configurations

If configurations of the service management tool shall be cloned, then either the entire configuration or selected parts can be exported. The entire service management configuration can be copied to an XML file which then can be imported into a new Efecte platform deployment to copy the existing configuration for example into a test or production system. The target system for such a copy must have an "empty" database without pre-existing configurations at the time of the import. The service management tool is not able to resolve conflicts between the existing and imported configuration.

Partial configuration exports can be done for template and workflow configurations. These will be exported to a XML file which can be imported to another system. Templates cannot be imported to a target system if the technical template code exists already. Incremental updates of templates or workflows is not possible.

2.29.1 Creating a Configuration Change Log

The Service Management Tool continuously logs any changes to the configuration to a dedicated log file. The following changes will be recorded:

- Template configuration

- Workflow configuration
- Views configuration
- Scheduled task configuration
- Permission configuration
- Folder configuration

Some changes such as modifications inside of script-based automation may not be recorded in the change log, if they are not designed inside of the Administration UI but in external tools. Each configuration change activity is logged with a time and user stamp. Administrators can export the log file and import to tabular tools such as Microsoft Excel to create a chronological change record for version management purposes.

2.29.2 Incremental Template Transports

Administrators can transport templates from one environment to another with the in-built export and import functionality. The template transport functionality is implemented with the following functionality:

- Verification of the exported configuration to check whether the necessary technical codes exist
- Validation of the configuration to be imported for conflicts in regards
    - References
    - Shared classes
    - Deleted attributes
    - Datatype consistency
    - Overlapping order of attributes
- Removal of attributes and classes
- Updates of existing attributes and their order
- Addition of new classes and attributes

Should a validation fail, then the import is interrupted with a corresponding error message to the administrator. The conflicts must be removed manually before the import can succeed. Deleting of attributes will require a double confirmation dialog because it will remove also user data from the database, which cannot be undone.

2.29.3 Incremental Views Transports

Administrators can transport role-specific views from one environment to another with the in-built export and import functionality. The functionality allows to transport List Views, Graphs, and Calendar Views.

2.30 Organization and User Data Management

The service management tool has a dedicated logical module (just like there is one for each enterprise service) in which most common information is stored. This Organization module is delivered with every Efecte platform deployment. The Organization module includes the following, pre-configured templates:

2.30.1 Approvals

The approval template stores all approvals generated by the Visual Workflow Automation. This template should not be modified without consulting a certified Efecte consultant.

Order	Collapsed	Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
0	☐	Approval info	Issue	⦿	Reference	ApprovedIssue	No	No	No	No	
			Status	○	String	Status	Yes	No	No	No	
			Approval decision	○	String	ApprovalDecision	Yes	No	No	No	ValueButtonHandler
			Efecte ID	○	String	efecte_id	No	Yes	No	No	IDGenerator
			Approval time	○	Date and time	ApprovalTime	No	No	No	No	MonitoringStamp
			Reason	○	Text	Reason	No	No	No	No	
			Requested approver	○	Reference	Approver	No	No	No	No	ReferredEntityViewer
			Actual approver	○	Reference	ActualApprover	No	No	No	No	

References:
- Issue: this value is linked from the issue that the approval belongs to; typically, a service or change request
- Requested approver: this value stands for the targeted approver and is linked to the Person template
- Actual approver: this value stands for the actual approver (if delegate or forwarded approval) and is linked to the Person template

2.30.2 Active Directory Groups

This template records all known access rights defined as Active Directory groups.

Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
AD Group information	Name	⦿	String	displayname	No	Yes	No	No	
	Description	○	String	description	No	No	No	No	
	Status	○	String	status	Yes	No	No	No	DatacardHiddenState
	Common name (CN)	○	String	cn	No	No	No	No	
	Distinguished name	○	String	dn	No	No	No	No	
	Managed by	○	Reference	managed_by	No	No	No	No	
	Active Directory creation time	○	Date and time	active_directory_creation_time	No	No	No	No	
	Active Directory modification time	○	Date and time	active_directory_modification_time	No	No	No	No	
	Azure-DatasourceID	○	String	azuredatasourceid	No	No	No	No	
	ObjectGUID	○	String	Object_guid	No	Yes	No	No	
	Data SourceID	○	String	data_source_id	No	No	No	No	
	External ID	○	String	external_id	No	Yes	No	No	
	AzureID	○	String	azureid	No	No	No	No	
	Display name	○	String	displayName	No	No	No	No	
	Default validity policy	○	Number	default_validity	No	No	No	No	
	Active directory Id	○	String	active_directory_id	No	No	No	No	
AD Group relations	Services	○	Reference	services	No	No	No	Yes	
	Persons	○	Back reference	persons	No	No	No	Yes	
	Applications	○	Back reference	applications	No	No	No	Yes	

The following references fetch information from related templates:

- Managed by: a person in the corresponding template that is responsible for the access rights.
- Persons: a back-reference listing the persons which have been entitled to the access right.
- Applications: a back-reference to applications

2.30.3 Business Hours

This template allows service providers to record business hours. The business hours will be taken into account in service level agreement calculations.

Order	Collapsed	Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
100	☐	Business hours	Name	●	String	name	No	No	No	No	
			Timezone	○	String	timezone	No	No	No	No	TimeZone
			Monday hours	○	String	mondayHours	No	No	No	No	AttributeCombiner
			Tuesday hours	○	String	tuesdayHours	No	No	No	No	AttributeCombiner
			Wednesday hours	○	String	wednesdayHours	No	No	No	No	AttributeCombiner
			Thursday hours	○	String	thursdayHours	No	No	No	No	AttributeCombiner
			Friday hours	○	String	fridayHours	No	No	No	No	AttributeCombiner
			Saturday hours	○	String	saturdayHours	No	No	No	No	AttributeCombiner
			Sunday hours	○	String	sundayHours	No	No	No	No	AttributeCombiner
			Exceptions	○	Reference	exceptions	No	No	No	Yes	
			Monday start	○	String	mondayStart	No	No	No	No	
			Monday end	○	String	mondayEnd	No	No	No	No	
			Tuesday start	○	String	tuesdayStart	No	No	No	No	
			Tuesday end	○	String	tuesdayEnd	No	No	No	No	
			Wednesday start	○	String	wednesdayStart	No	No	No	No	
			Wednesday end	○	String	wednesdayEnd	No	No	No	No	
			Thursday start	○	String	thursdayStart	No	No	No	No	
			Thursday end	○	String	thursdayEnd	No	No	No	No	
			Friday start	○	String	fridayStart	No	No	No	No	
			Friday end	○	String	fridayEnd	No	No	No	No	
			Saturday start	○	String	saturdayStart	No	No	No	No	
			Saturday end	○	String	saturdayEnd	No	No	No	No	
			Sunday start	○	String	sundayStart	No	No	No	No	
			Sunday end	○	String	sundayEnd	No	No	No	No	
8000	☐	Additional information	Additional information	○	Text	additional_information	No	No	No	No	TextNote

Exceptions to the usual business hours are referenced from the Exceptional Day templates.

2.30.4 Exceptional Days

Order	Collapsed	Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
10	☐	Date (string)	Date (String)	○	String	date	No	No	No	No	
20	☐	Exceptional hours	Combined name	●	String	combinedName	No	No	No	No	Expression
			Name	○	String	name	No	No	No	No	
			Start	○	String	start	No	No	No	No	
			End	○	String	end	No	No	No	No	

For single, exceptional days, the following template can be used:

Order	Collapsed	Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
10	☐	Date	Date	○	Date	date	No	No	No	No	
20	☐	Exceptional hours	Combined name	●	String	combinedName	No	No	No	No	Expression
			Name	○	String	name	No	No	No	No	
			Start	○	String	start	No	No	No	No	
			End	○	String	end	No	No	No	No	

2.30.5 Organizations

The Organizations template is designed to store data about a legel entity, typical a company or a public organization. Persons managed in the service management tool should be assigned to a organization.

The template includes optional information for Enterprise Contract Management and Identity Governance and Administration (IGA).

Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
Information	Name	◉	String	company_name	No	Yes	Yes	No	
	Description	○	Text	company_description	No	No	No	No	
	Organization ID	○	String	company_id	No	No	No	No	
	Type	○	String	company_type	Yes	No	No	No	
	Internal or external	○	String	organization_internal_external	Yes	No	No	No	
	Status	○	String	company_status	Yes	No	No	No	DatacardHiddenState
	Email extension	○	String	email_extension	No	No	No	No	
Address information	Street address	○	String	street_address	No	No	No	No	
	Postal code	○	String	postal_code	No	No	No	No	
	City	○	String	city	No	No	No	No	
	Country	○	Reference	country	No	No	No	No	
Organization relations	Persons	○	Back reference	persons	No	No	No	Yes	
	Service agreements	○	Back reference	service_agreements	No	No	No	Yes	
	Service level	○	Reference	service_level	No	No	No	No	
	Related service providers	○	Reference	related_sp	No	No	No	Yes	
	Cost centers	○	Reference	cost_centers	No	No	No	Yes	
Contact information	Phone	○	String	phone	No	No	No	No	
	Fax	○	String	fax	No	No	No	No	
	Websites	○	External reference	websites	No	No	No	Yes	
Contract type information	Contract types	○	Back reference	agreement_types	No	No	No	Yes	
Contract permissions	Write permissions	○	Reference	write_permissions	No	No	No	Yes	
	Read permissions	○	Reference	read_permissions	No	No	No	Yes	
Additional information	Additional information	○	Text	additional_information	No	No	No	No	TextNote

The following references fetch information from related templates:

- Persons: this back-reference lists all persons in the Person template that have been linked to the organization
- Contract type: this back-reference all contract types used by the organization
- Countries: the reference allows users to select countries from a pre-entered list
- Write permissions: this optional value lists to which contracts persons associated with the organization have write permissions
- Read permissions: this optional value lists to which contracts persons associated with the organization have read permissions
- Service agreements: this optional value lists which service agreements for IGA have been linked to the organization

2.30.6 Locations

The Location template is designed to record different physical locations in which the organization operates.

Order	Collapsed	Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
10	☐	Location information	Location name	⦿	String	location_name	No	Yes	No	No	
			Location type	◯	String	location_type	Yes	No	No	No	
20	☐	Address information	Street address	◯	String	street_address	No	No	No	No	
			Postal code	◯	String	postal_code	No	No	No	No	
			City	◯	String	city	No	No	No	No	
			Country	◯	Reference	country	No	No	No	No	
30	☐	Additional information	Additional information	◯	Text	additional_information	No	No	No	No	TextNote

2.30.7 Countries

The country template serves as master for all country fields in other templates such as the Location and the Organziation template. There are over 100 static values preconfigured covering for all European countries, the top 100 countries by population, the top 100 countries by GDP, and the top 100 countries by land mass.

Order	Collapsed	Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
0	☐	Information	Name	⦿	String	country_name	Yes	Yes	No	No	
			Country code	◯	String	country_code	No	Yes	No	No	

2.30.8 Cost Centers

The cost center template can store organizational data. It allows to create parent cost centers for creating a hierarchy in the cost centre structure. By default, the cost centre template includes one class Related HR cases that is targeted for HR Service Management deployments.

Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
Cost center information	Cost center name	⦿	String	cost_center_name	No	Yes	Yes	No	
	Cost center description	◯	Text	cost_center_description	No	No	No	No	
	Company	◯	Reference	company	No	No	No	No	
	Cost center owner	◯	Reference	cost_center_owner	No	No	No	No	
	Cost center ID	◯	String	cost_center_id	No	No	No	No	
Cost center relations	Parent cost center	◯	Reference	parent_cost_center	No	No	No	No	
	Persons	◯	Back reference	persons	No	No	No	Yes	
	Company	◯	Back reference	company_relation	No	No	No	No	
Related HR Cases/SR's	Related cases	◯	Back reference	hr_cases	No	No	No	Yes	
	Related service requests	◯	Back reference	hr_requests	No	No	No	Yes	
	Active budget	◯	Back reference	active_budget	No	No	No	Yes	
Related ITSM items	Incidents	◯	Back reference	related_incidents	No	No	No	Yes	
	Service requests	◯	Back reference	related_requests	No	No	No	Yes	
	Changes	◯	Back reference	related_changes	No	No	No	No	
Additional information	Additional information	◯	Text	additional_information	No	No	No	No	TextNote

The following references fetch information from related templates:

- Company: this attribute stores to which organization from the corresponding template the cost centre belongs to.
- Cost center owner: this attribute records which person from the corresponding template is responsible for the cost center.
- Parent cost center: this reference points to another cost center in the same cost center template.
- Persons: this back-reference lists all persons which have been assigned to the cost center.

- Related Cases: this back-reference lists all HR cases which have been linked to the cost center for HR budget calculation purposes.
- Related Service Requests: this back-reference lists all HR service requests which have been linked to the cost center for HR budget calculation purposes.
- Incidents: this back-reference lists all incidents which have been linked to the cost center for IT budget calculation purposes.
- Service Requests: this back-reference lists all IT service requests which have been linked to the cost center for IT budget calculation purposes.
- CHanges: this back-reference lists all changes which have been linked to the cost center for IT budget calculation purposes.
- Active Budget: this back-reference lists the budgets which have been linked to the cost center for HR budget calculation purposes.

2.30.9 Persons

The Person template is a crucial element of the Efecte platform recording the user information that is used in service management. Many references are pointing to this template and many references point fromt his template to other templates. Modifications in this template should be done only by certified Efecte administrators.

Order	Collapsed	Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
100	☐	Person information	First name	○	String	first_name	No	No	No	No	
			Organization	○	Reference	organization	No	No	Yes	No	
			Given name	○	String	given_name	No	No	No	No	
			Middle name	○	String	middle_name	No	No	No	No	
			Last name	○	String	last_name	No	No	No	No	
			Initials	○	String	initials	No	No	No	No	
			Full name	●	String	full_name	No	No	No	No	AttributeCombiner
			Display name	○	String	display_name	No	No	No	No	
			Contact information CTI	○	String	contactinfo_cti	No	No	No	Yes	Expression
			Person is VIP	○	String	person_vip	Yes	No	No	Yes	
			VIP SLA	○	Reference	vip_sla	No	No	No	No	
			Title	○	String	title	No	No	No	No	
			Mobile	○	String	mobile	No	No	No	No	
			Home phone	○	String	home_phone	No	No	No	No	
			Fax	○	Number	fax	No	No	No	No	
			E-Mail	○	String	email	No	Yes	No	No	
200	☐	Supporting information	Phone	○	String	phone	No	No	No	No	
			Cost center	○	Reference	cost_center	No	No	No	No	
			Manager of	○	Back reference	manager_of	No	No	No	Yes	
300	☐	Company information	Company	○	Reference	company	No	No	No	Yes	
			Department	○	String	department	No	No	No	No	
			Office	○	String	office	No	No	No	No	
350	☐	IGA person Information	Account	○	Reference	account	No	Yes	No	No	
			Active Access rights	○	Back reference	currentlyActiveAccessRights	No	No	No	Yes	
			Removed Access rights	○	Reference	removedAccessRights	No	No	No	No	EntitySearch
			Business Roles	○	Reference	business_roles	No	No	No	No	
			Data SourceID	○	String	data_source_id	No	No	No	No	
			Azure-DatasourceID	○	String	azuredatasourceid	No	Yes	No	No	
			AzureID	○	String	azureid	No	Yes	No	No	
			Default Groups	○	Reference	default	No	No	No	Yes	
400	☐	Support group information	Support Group	○	Reference	support_group	No	No	No	Yes	
			Default support group	○	Reference	default_support_group	No	No	No	No	
			Email notifications	○	String	emai_notification	Yes	No	No	No	
600	☐	Equipment information	Mobile devices	○	Back reference	mobile_devices	No	No	No	Yes	
			Workstations	○	Back reference	workstations	No	No	No	Yes	
			Displays	○	Back reference	displays	No	No	No	No	
			Other equipment	○	Back reference	other_equipment	No	No	No	Yes	
			SIM cards	○	Back reference	sim_cards	No	No	No	Yes	

The following references fetch information from related templates:

- Cost Center: the attribute stores to which cost center from the corresponding template the user belongs.

- Manager of: the back-reference list persons from the corresponding template the user is a manager of.
- Company: the attribute stores to which organization from the corresponding template the user belongs to.
- Account: this optional attribute lists all user accounts that have been recorded for the person with IGA.
- Access roles: this optional attribute lists all access rights the user has been entitled to in the Active Directory currently.
- Add Access rights: this optional attribute is used by the access right lifecycle management of IGA to determine the active access rights.
- Remove Access rights: this optional attribute is used by the access right lifecycle management of IGA to determine the active access rights.
- Currently Active Access rights: This optional attribute lists all access rights from the corresponding template that are valid for the person.
- Support group: this attribute lists to which support groups from the corresponding template the person is assigned to. Note: some automatic assignment functionality does not work, when the person belongs to more than one support group.
- Default support group: this attribute can hold a value from the Support Group template to which support group the user should be assigned to by default.
- Equipment information class: this class contains several optional back-references to asset templates in order to give an overview at a glance what assets have been registered for the person.

Typically, the user data is provisioned from an Active Directory or other master data management system to the Efecte platform. The Active Directory data is stored in the Person template in a dedicated class:

800		Active Directory information	Status		String	status	Yes	No	No	No	DatacardHiddenState
			Description		String	description	No	No	No	No	
			Home directory		String	home_directory	No	No	No	No	
			Home drive		String	home_drive	No	No	No	No	
			Login script path		String	login_script_path	No	No	No	No	
			SAM-Account-Name		String	samaccountname	No	No	No	No	
			Active Directory account		String	active_directory_accountXX	No	No	No	No	
			Last password reset		Date and time	last_password_reset	No	No	No	No	
			Distinguished name		String	distinguished_name	No	No	No	No	
			Active Directory groups		Reference	groups	No	No	No	Yes	
			Active Directory creation time		Date and time	active_directory_creation_time	No	No	No	No	
			Active Directory modify time		Date and time	active_directory_modify_time	No	No	No	No	
			Account expires		Date and time	account_expires	No	No	No	No	
			Manager		Reference	manager	No	No	No	No	
			AD groups		String	active_directory_groups	No	No	No	Yes	
			Customer name		String	customer_name	No	No	No	No	
			Department number		String	department_number	No	No	No	No	
			Distinguished name (DN)		String	dn	No	Yes	No	No	
			UPN		String	upn	No	No	No	No	
			ext_id_type_name		String	ext_id_type_name	No	No	No	No	
			int_id_type_name		String	int_id_type_name	No	No	No	No	
			Internal id		String	internal_id	No	No	No	No	
			repr_name		String	repr_name	No	No	No	No	
			Room number		String	room_number	No	No	No	No	
			Service provider name		String	service_provider_name	No	No	No	No	
			City		String	city	No	No	No	No	
			Common name (CN)		String	cn	No	No	No	No	
			Country		String	country	No	No	No	No	
			Location		String	location	No	No	No	No	
			Street address		String	street_address	No	No	No	No	
			Zip code		String	zip_code	No	No	No	No	
			Agent ID		String	agent_id	No	No	No	No	
			Account ID		String	account_id	No	No	No	No	
			External ID		String	external_id	No	Yes	No	No	
			objectGUID		String	object_guid	No	No	No	No	

The attribute *Active Directory Groups* lists which access rights the user has from the list of available access rights in the corresponding template in the Organization module.

The attribute Manager identifies the superior of the user as recorded in the Active Directory.

2.30.10 Support Groups

The Support Group template allows the formation of teams to which multiple persons belong to.

Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
Email notifications	Support channel	○	String	support_channel	No	No	No	No	
	Team email signature	○	String	team_email_signature	No	No	No	No	
Group information	Group name	◉	String	group_name	No	Yes	Yes	No	
	Email notifications	○	String	mail_notification	Yes	No	No	No	
	Group members	○	Back reference	group_members	No	No	No	Yes	
	Group e-mail	○	String	group_e-mail	No	No	No	No	
	Members emails for entitystatemail	○	String	members_emails_for_entitystatemail	No	No	No	No	Expression
	Members emails	○	Text	members_emails	No	No	No	No	Expression
	Chat support	○	String	chat_support	Yes	No	No	No	
	Queue Manager	○	Reference	queue_manager	No	No	Yes	No	
Additional information	Additional information	○	Text	additional_information	No	No	No	No	TextNote

2.30.11 Service Feedback

The Feedback template stores detailed customer feedback given by end users in the self-service portal. The attributes in this template match the feedback form configuration of the baseline configuration.

Class	Name	Primary	Datatype	Code	Static	Unique	Required	Multivalue	Handler
Customer information	Customer	○	Reference	customer	No	No	No	No	
Feedback core information	Related incident	◉	Reference	ticket_id	No	No	No	No	
	Overall rating score	○	Decimal number	ticket_rating	No	No	No	No	
	Overall rating	○	String	ticket_rating_overal	No	No	No	No	Expression
	Open feedback	○	Text	open_feedback	No	No	No	No	
	Status	○	String	status	Yes	No	No	No	
	Customer wants to reopen the issue	○	Decimal number	customer_reopen_flag	No	No	No	No	
	Customer wants to reopen the issue	○	String	reopen_displaytxt	No	No	No	No	Expression
	Customer wants to be contacted	○	Decimal number	contact_request_flag	No	No	No	No	
	Customer wants to be contacted	○	String	contact_displaytxt	No	No	No	No	Expression
Qualitative feedback (Checkboxes)	Service delivered in time flag (placeholder)	○	Decimal number	speed_flag	No	No	No	No	
	Request delivered in time	○	String	service_speed	No	No	No	No	Expression
	Service completeness flag (placeholder)	○	Decimal number	service_completeness_flag	No	No	No	No	
	Service completeness	○	String	completeness	No	No	No	No	Expression
Quantitive feedback (Rating)	Friendliness of support person input (placeholder)	○	Decimal number	service_friendliness_input	No	No	No	No	
	Friendliness of support staff	○	String	service_friendliness	No	No	No	No	Expression
	Perceived competence input (placeholder)	○	Decimal number	support_competence_input	No	No	No	No	
	Perceived competence of support person	○	String	support_competence	No	No	No	No	Expression
	Perceived communication skills input (placeholder)	○	Decimal number	communication_skills_input	No	No	No	No	
	Perceived communication skills	○	String	communication_skills	No	No	No	No	Expression
General information	Efecte ID	○	String	efecte_id	No	Yes	No	No	IDGenerator
	Created	○	Date and time	created	No	No	No	No	CreationStamp
	Updated	○	Date and time	updated	No	No	No	No	CreationStamp
	Creator	○	String	creator	No	No	No	No	CreatorStamp
	Latest update by	○	String	latest_update_by	No	No	No	No	CreatorStamp
	Workflow status	○	String	workflow_status	No	No	No	No	WorkflowStatusHandler

The following references fetch information from related templates:

- Customer: this attributes records the end user in the Person template who has given the feedback in the self-service portal.
- Incident: this attribute links to the incident in the Incident template of the IT Service Desk module for which the feedback was given.

2.31 Monitoring of Active Users

Administrators are able to see which users are currently active and how long they have been idle in the service management tool from the Administration UI. Should sessions be active which shouldn't be for whatever reason, then the administrator can end these user sections from the Administration UI.

2.32 User License Management

Administrators are able to view to which users named licenses have been assigned. Available licenses can be assigned to new users that have been provisioned or created locally. Existing license allocations can be removed by the administrators to reassign them to another user.

2.33 Audit and troubleshooting logs

The Efecte Platform creates a wide selection of logs for different purposes. The destination of the log files, the maximum size, and the log rotation can be defined according to the customer requirements.

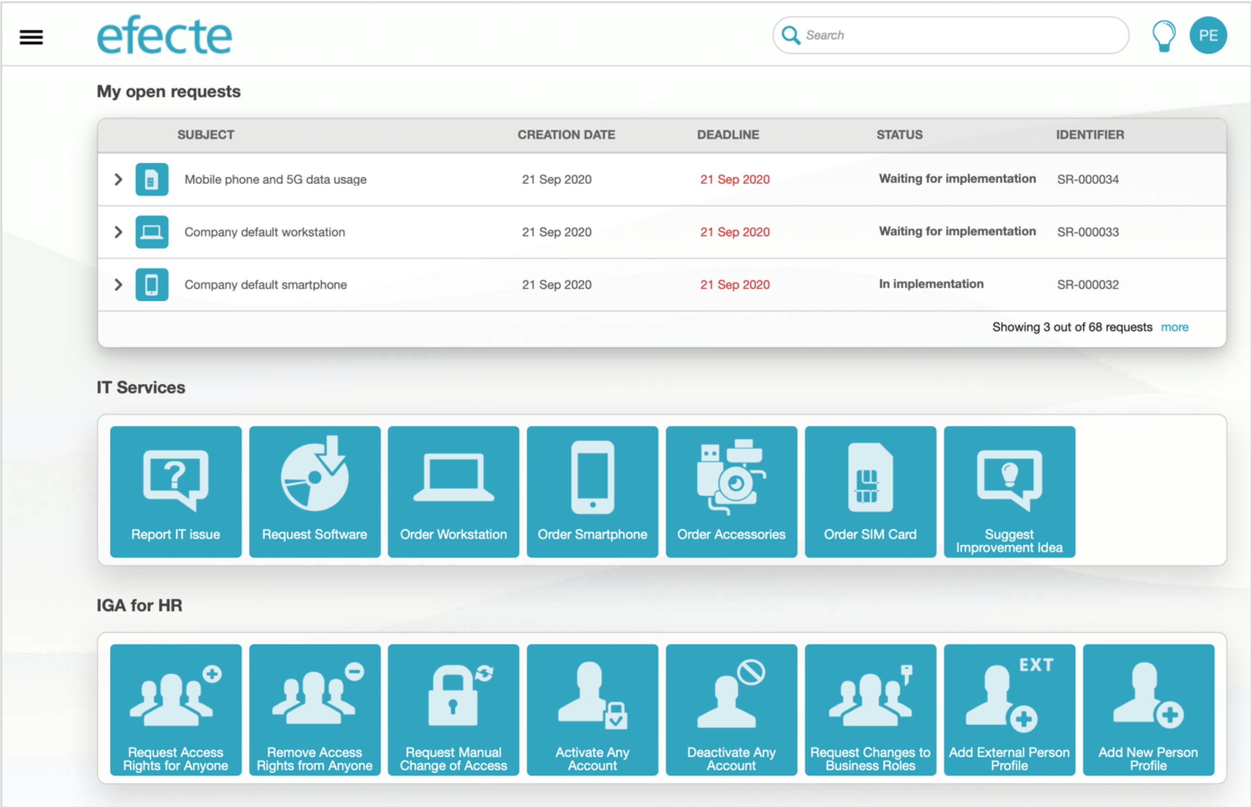
The following logs are created by default:

- Security log: Records all security relevant activities such as login and log-out events of users, approvals of workflow issues, and so on
- Configuration log: Records changes to the solution configuration on the administration interface (does not log changes to workspace UI such as modifications of views)
- Integration log: Logs events related to Web API for importing and exporting of data
- Application error log: Records errors and warning related to the application server
- Data card access log (optional, separately licensable capability): Records all views of issue both in list as well in detail view for the templates it is configured to do so

Note: The logs are stored for 30 days after which they will be deleted and cannot be recovered.

3 SELF-SERVICE PORTAL

The Efecte platform includes an easy-to-use, browser-based self-service portal to enable enterprise services. Graphically designed self-service tools offer a new way of improving productivity. Regardless of the device, end users can keep track of your service requests and problem reports online, in real time and from one place. The self-service portal provides the same experience for all services: end users can request support and order supplies, software and access rights – including other company-specific services or products such as business cards, or vacation requests, and follow the progress of the request from a unified user experience. This eliminates all unnecessary emails, calls and messages related to ordering standard services. Requests with most volume or tedious manual steps can be fully automated to deliver better user experience and faster cycle times.



Users of the self-service portal can order a variety of different enterprise services with as little as three steps. Users can see at a glance the status of open service requests, make orders for equipment, or help themselves with automated services such as granting access to email lists.

A global search functionality allows users to find information quickly on available services, own requests made, and the knowledge base (based on subject of the article).

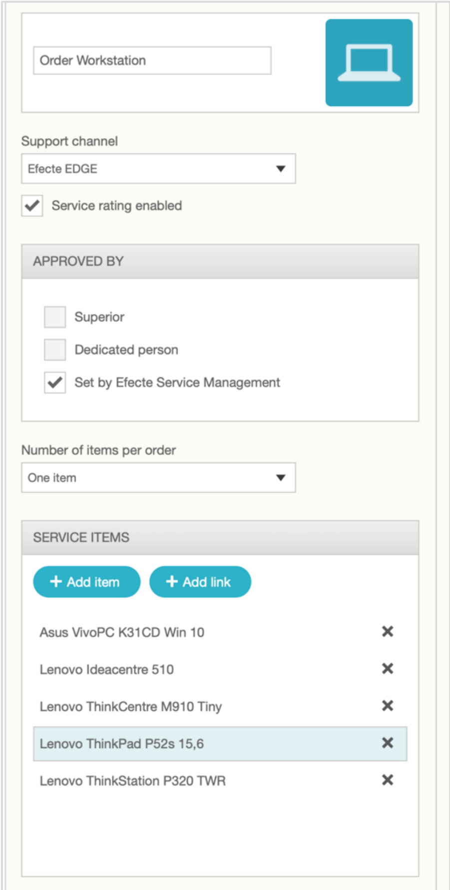
The self-service portal includes a dedicated incident/issue reporting with 2-level classification. Different kind of incidents can be used for directing the requests to appropriate support queues or service providers to improve time to solution. Common problems affecting group of people and other general announcements can be shown to the end-users to prevent reporting of duplicate incidents or problems that are already being solved.

3.1 Service Catalog

The service catalog is managed in the self-service portal by service offerings which are combining service items that are of the same kind together.

3.1.1 Service Offering Definition

Administrators can define any amount of service offerings. Every service offering must have at least one service item. In order to display the best possible description of a service item in the self-service portal with images and optional items, the service item is described in detail in the self-service catalog and only matched with a service item in the service management tool at the time of making the service request. Prices for the service item can be fetched however from the service management tool periodically to simplify the price management.



For every service offering, the administrator must choose a name and an icon from a ready set of icons available. The support channel, which may be different if the self-service portal is used for different enterprise services, must be selected. If service rating (described later in this document) should be possible, then it can be enabled for each service offering.

The administrator must choose if and how a service request in the service offering will be approved. Approval can be asked from the superior (manager) of the requester, a dedicated person (always the same), or a person dynamically decided by Efecte's service management tool.

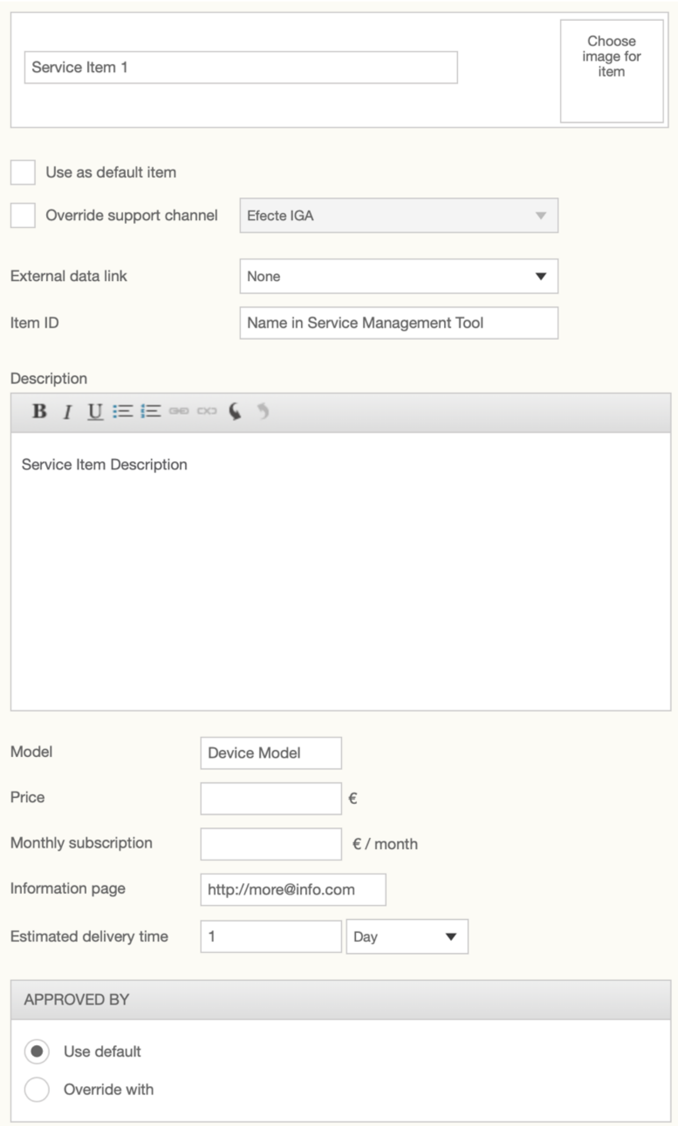
The administrator can choose whether a request made from a service offering includes one or many service items. If it can include multiple service items, then the shopping cart method (described later in this document) will be activated.

The administrator can add any amount of service items or links to external service items (external web shops) to the service offering.

Any changes to the service offering are automatically saved by the self-service portal. When the administrator is satisfied with the configuration, s/he can decide to publish the changes to the self-service portal.

3.1.2 Service Item Definition

There is a multitude of fixed and optional fields that can be configured for each service item:



The service catalog manager can define a name and upload an image for each service item.

If multiple service items can be ordered within a single service request, then one particular service item can serve as default item.

The support channel can be overridden for a particular service item to something else than the default channel for the service offering.

If the service items are dynamically populated from the service management tool, then an external link can point to the relevant template, folder, and attribute.

If the service item is managed locally in the self-service catalog, then a specific name under which the service item is recorded in the service management tool should be entered.

A description in HTML format should be provided for each service item to the end users.

If the service item is managed locally, then a price or monthly subscription cost can be provided.

A device model name which doesn't need to be localized can be provided.

Additional information in external web pages can be provided with an URL.

The estimated delivery time can be selected and will be displayed to the end user.

The default approver can be overridden and replaced by the superior or a dedicated person.

The service catalog manager can add a multitude of additional input fields in order to collect more information for the service item order from the end user:

One or many header texts can be added to group input fields under different topics. The header text can be displayed selectively like most other fields based on a condition.

A text field with limited set of characters can activated as input field. A validation by regular expression with a freely configurable error message can added to the input field.

A text area for long input fields with many characters can also be added.

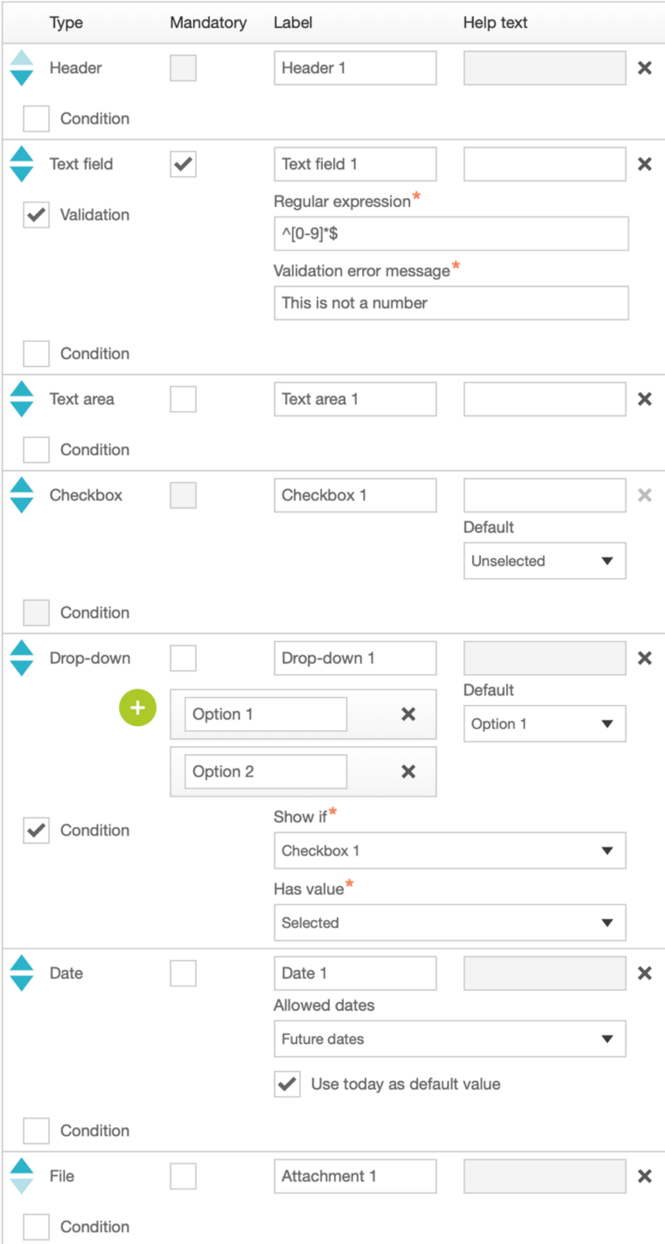
A checkbox can be added to provide a quick way to get the end user’s input.

A drop-down selection with freely configurable options can be added to the service item. A default item can be selected from the options. Like many other fields, this field can be displayed based on a condition such as the value of the checkbox or the value of another drop-down selection.

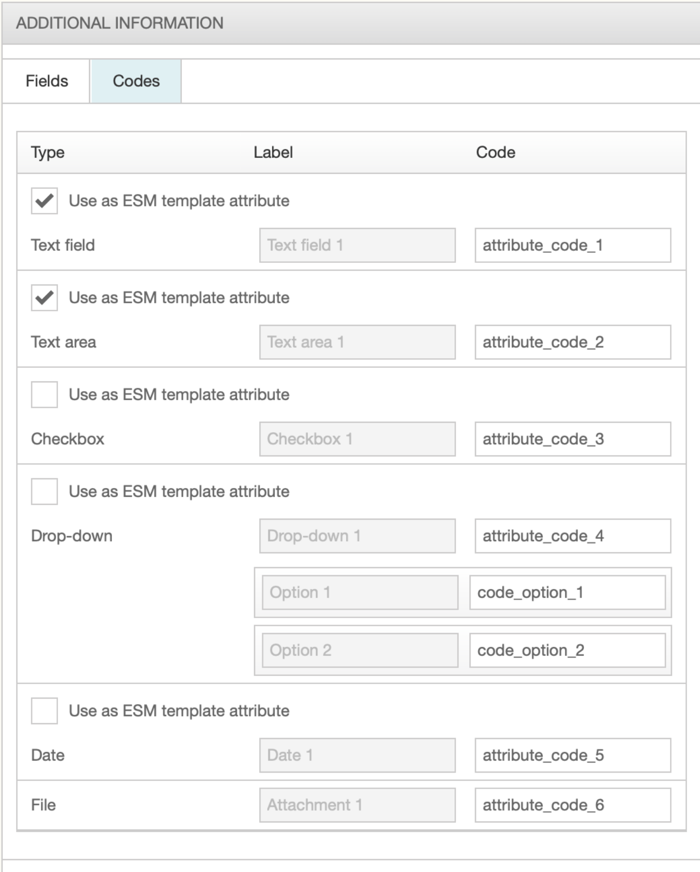
A date input field can be added. It can be configured whether the allowed dates include past or only future dates. The current date can be automatically set as default selection.

Any attachment can be added to service item by the end user, however the size limit is 5 MB.

Input fields can be made mandatory restricting the end user to send the service request before providing the necessary information.

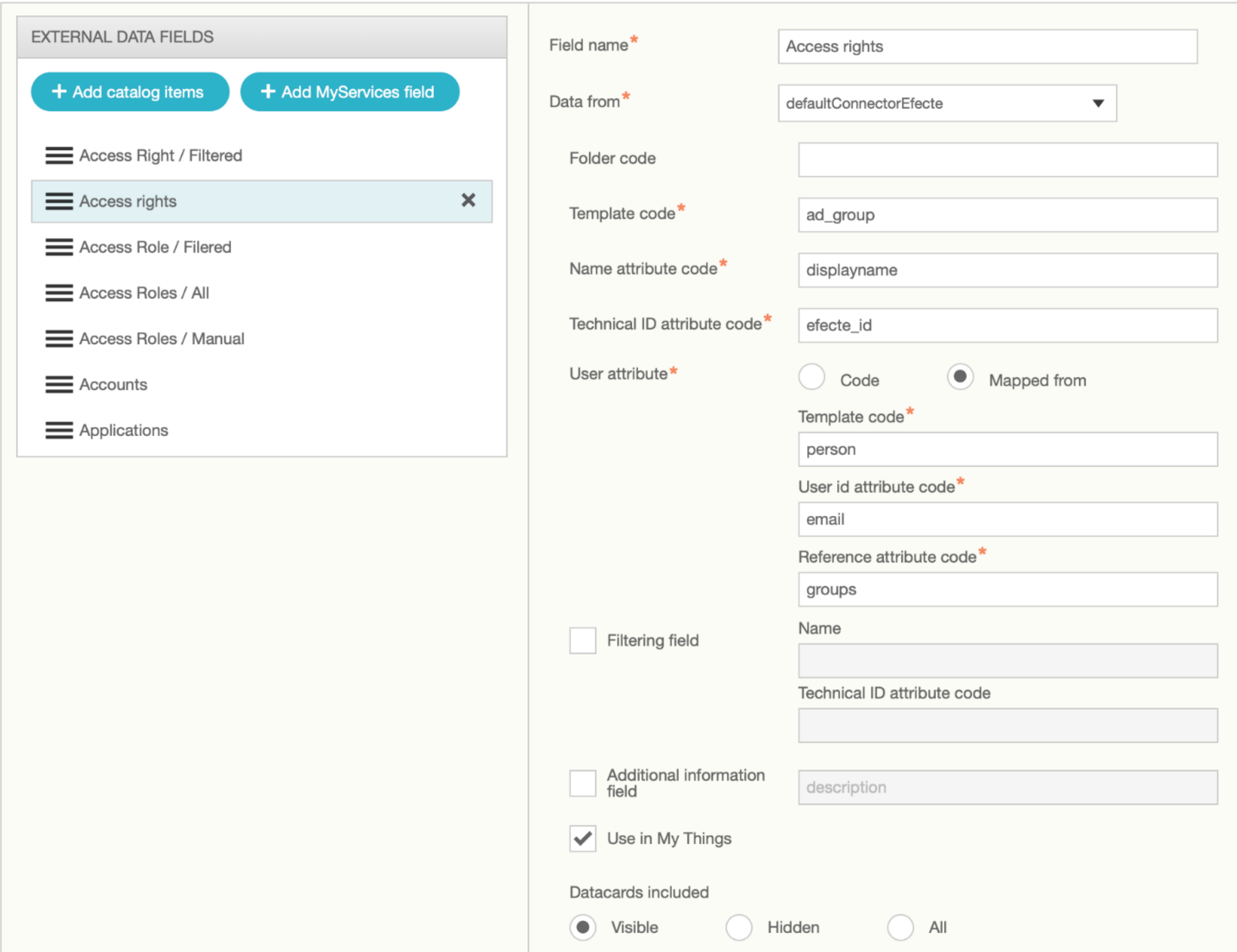


The values of most input fields can be mapped to optionally added attributes of the service request template in the service management tool. The mapping of input fields and attributes is following the same structure of the input field configuration:



3.2 Dynamic Service Item Values with MyServices Import

The administrator can use values stored in the service management tool for many use cases in the self-service portal. The most common use case for using values from the service management tool is to provide them as input selections when making a service request. Administrators can configure the template, the folder, and the attribute of the values to be imported.



Sometimes it might be useful to check whether the user is having a data card with the value of the MyServices field. For these use cases, it is possible to configure through which reference to identify the user.

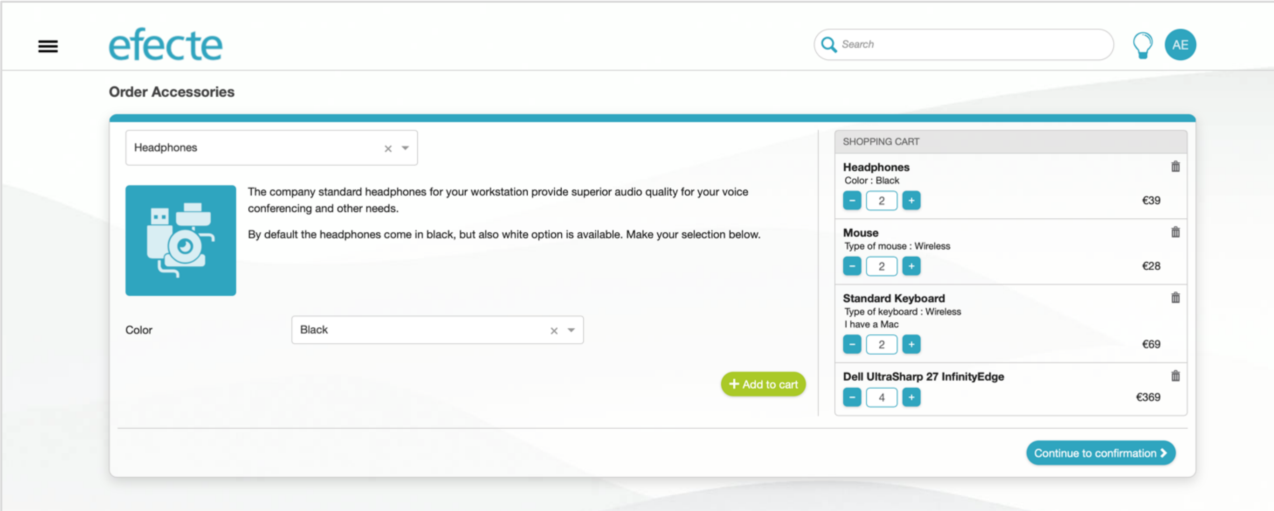
Through a filtering field, administrators can introduce an attribute that contains a reference to another template in the service management tool which can be used to create a filtering pair. For example, the list of roles would be linked to a service. This pair could be used to show only roles that belong to given service.

Administrators can also choose an additional information field that is displayed in a shopping catalog mode or in My Things together with the MyServices value. It is possible to select whether to show all, all visible, or only values hidden in the service management tool.

MyService values can be used as options in the service item configuration. The administrator can add a filter to each service item whether the values to be displayed to the end user only contain values which have been recorded for the user through a reference in the service management tool. Alternatively, it is possible to show only values which the end user does not have yet in order to avoid duplicate orders.

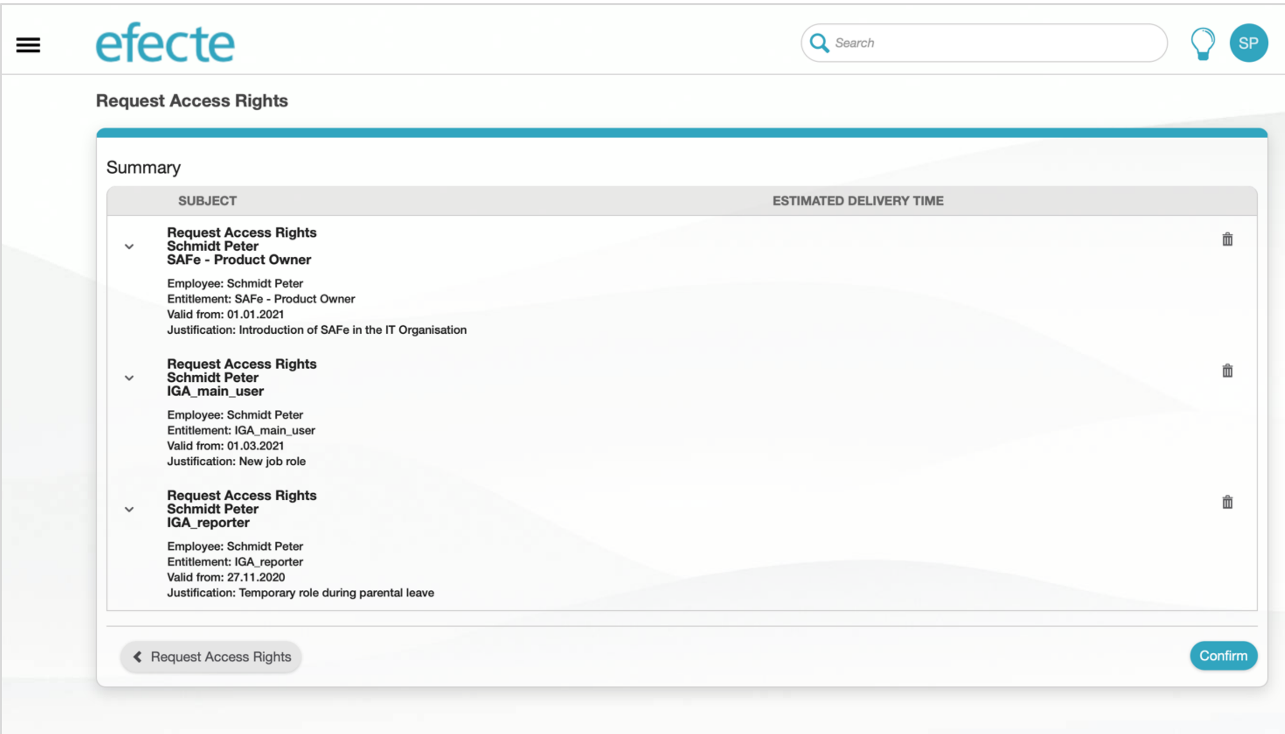
3.3 Shopping Cart

The self-service portal has a shopping cart functionality. Multiple service items can be ordered in a single transaction. Additional information about the service item can be provided to a link to an external source. Any data that is necessary to process the order such as the service item options, dates, or free text can be added to each item in the catalog. Filtering of choices can be implemented also to simplify the ordering process.



3.4 Confirmation Page

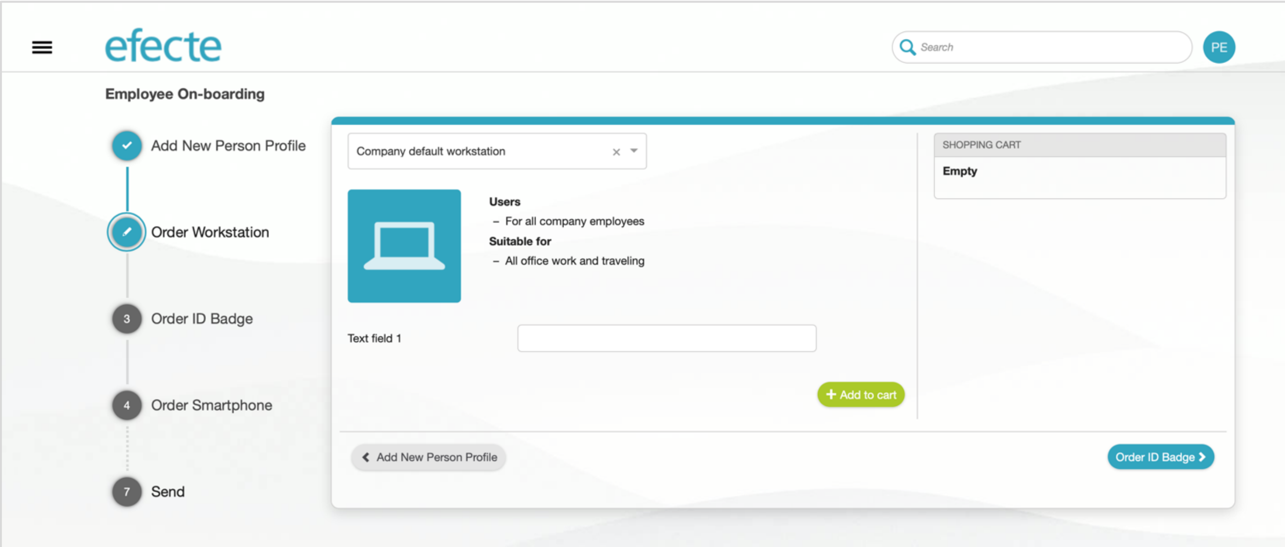
Before a service request is sent to the service management tool, a confirmation dialog that displays all details of the request is displayed to the end user.



The administrator can choose whether the cost center and delivery address are displayed as part of the confirmation page for each support channel. This allows for the customization of the check-out page for different services.

3.5 Service Bundles

It is possible to create service bundles (also called guided offerings) for processes, which include multiple service catalog items for purposes such as the onboarding of a new employee or the move of an employee from one department to another. Things like ordering a smartphone, ordering a workstation, granting access rights, setting up email accounts, and creating a workspace can all group together to one service bundle.

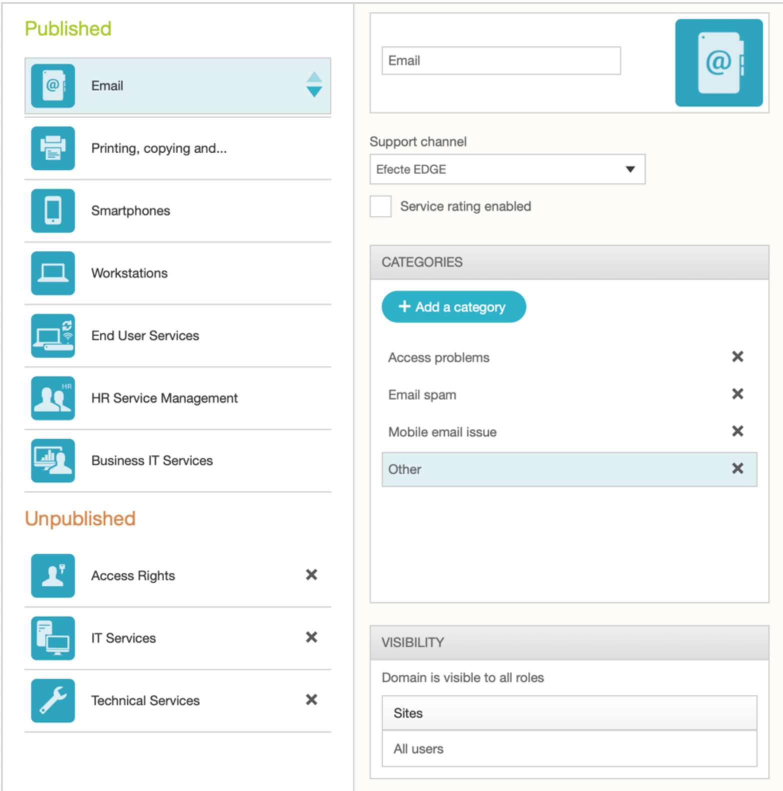


3.6 Enterprise Services Categorization

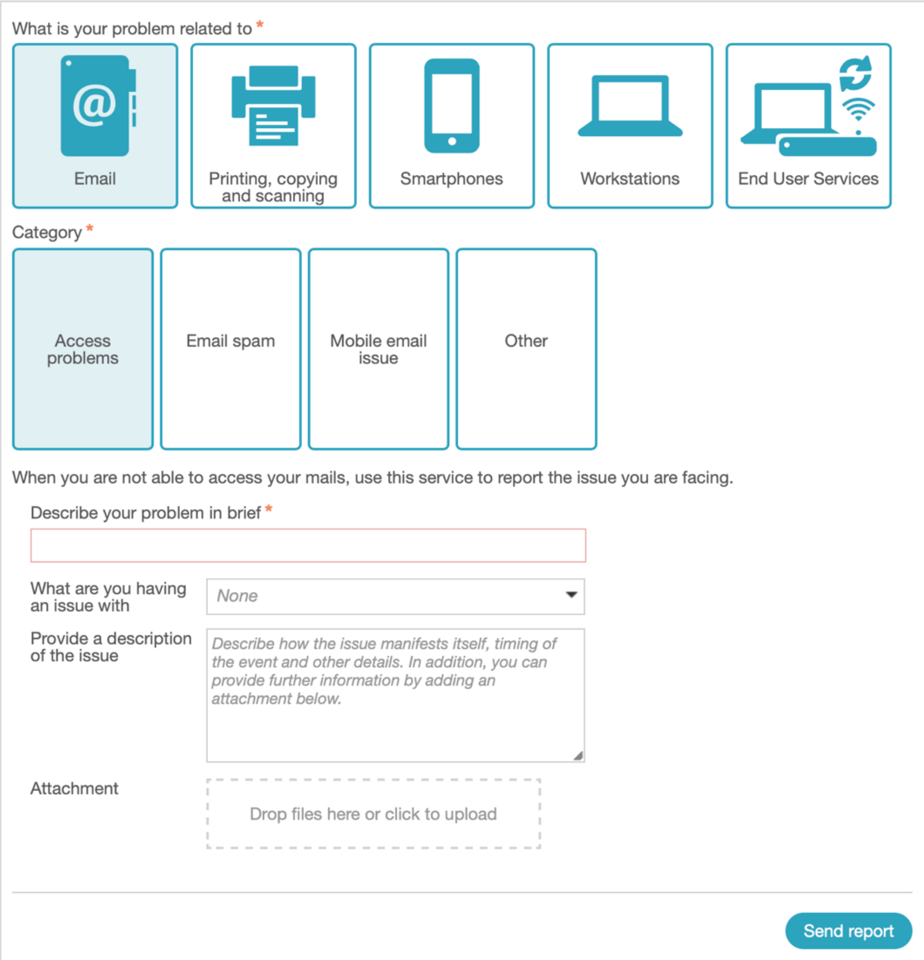
Service offerings and service bundles can be categorized for different enterprise services such as IT, HR, facility, or Identity Governance and Administration services. Service offerings can be assigned freely to any of the service categories to make it easier for the end user to find an enterprise service.

3.7 Support Domain Management

If the self-service portal is used for reporting IT incidents or HR issues, then a dedicated domain management can be configured to channel issues to the appropriate support team.



These domains are then displayed to the end user when clicking on the *Report Problem* icon. Within each issue domain, the administrator can create several categories to which the issue belongs to further refine the pre-analysis.



The web form for each issue category can be freely configured similar to the configuration of service items. MyServices fields can be used to retrieve options dynamically from the service management tools such as workstations that may be affected by the issue or a policy document that may be affected in the HR issue.

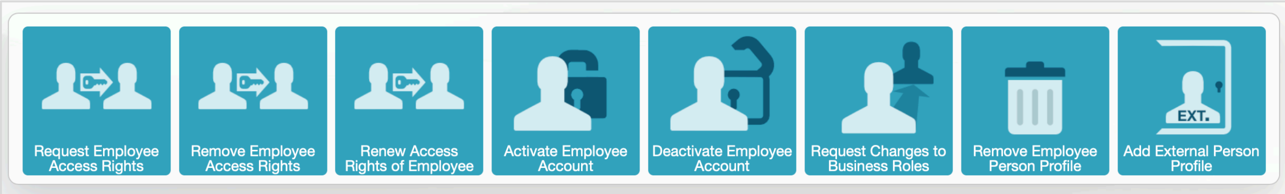
The support domains can be used also for grouping of knowledge base articles in Tips&Tricks.

When the user enters the problem description, then the self-service portal will do a live search in the Tips&Tricks database on whether an article includes some of the words the user uses to describe her/his problem. That allows showing a potential solution before the problem even needs to be reported.

The user can rate the solution on whether it was useful or not, which will be stored as part of the knowledge base article in the service management tool.

3.8 Custom Icons

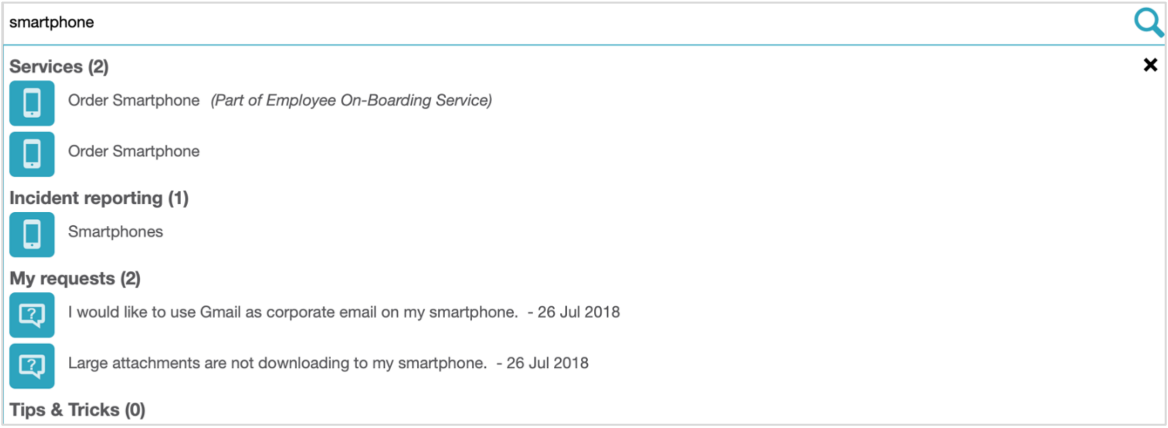
Self-service portal administrator can upload custom icon by clicking plus character on top of the service offering, guided offering or domain icon area.



When designing the custom icon, the .png file format can be set to have a transparent background to offer more dynamic visuals.

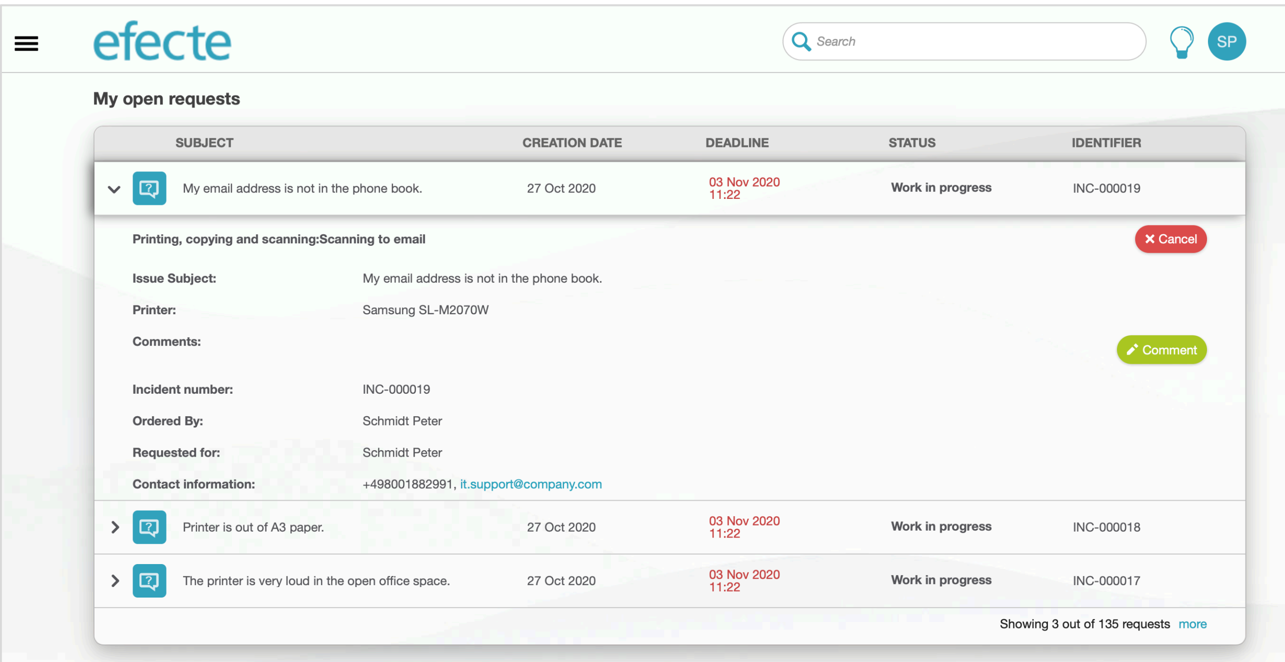
3.9 Global Search

The self-service portal includes a global search functionality that covers the available service catalog, service requests, reported problems, and Tips & Tricks.



3.10 Request Tracking

End users can track the status of their requests online from the self-service portal. The status of the service request as it is being processed in the service management tool is displayed at all times.

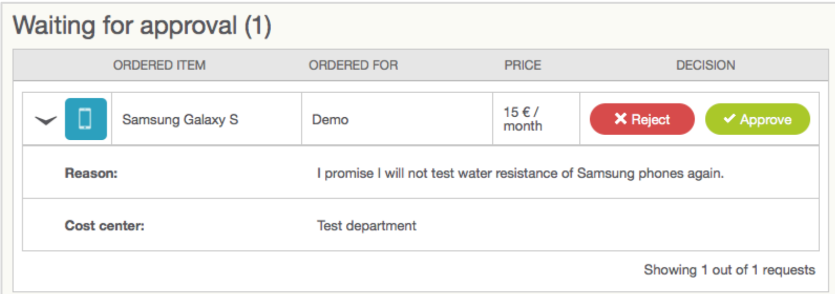


Open service requests or reported issues/incidents can be cancelled by the end user from the self-service portal. Issues/incidents that are in status Resolved in the service desk can be reopened from the self-service portal. The end user can choose to hide a request from the self-service homepage in order to focus on more important issues. The end user can leave comments after making the initial request to provide additional information.

Based on the configuration by the administrator, the assigned support person and the relevant contact information can be displayed to the end user.

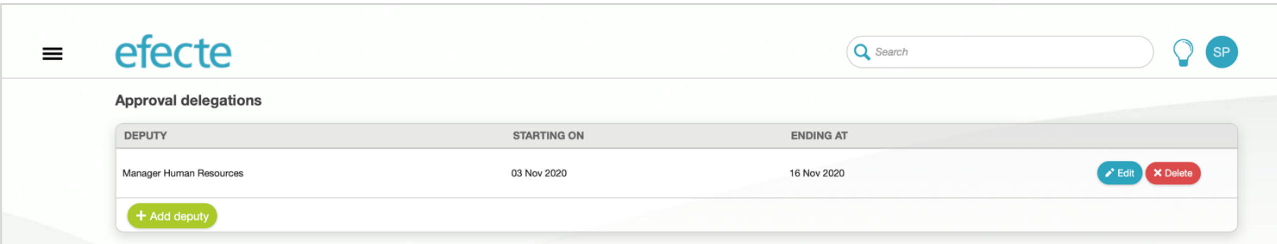
3.11 Approval of Service Requests

Superiors, dedicated users or users selected dynamically by the service management tool can be included in the service request process as approvers.



3.11.1 Approval Delegation

Approvals can be delegated to other known users during absences or leaves keeping operations running smoothly. The approver can define to whom and for which date range to delegate the approval.



3.11.2 Forwarding Approvals

If the approver is of the opinion that s/he is not the correct person to approve a request, then s/he can decide it to forward it another user that is known. The actual approver will be recorded in the service management tool along with the approver from whom the approval was originally requested.

3.11.3 Approval Decision Justifications

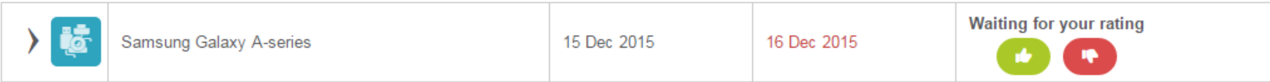
The self-service portal allows the recording of a decision justification for a positive as well a negative decision. The justification can be recorded with the service request in the service management tool for audit purposes.

3.11.4 Approval History

The approver can see a list of requests he/she has approved or rejected previously at any time.

3.12 Service Performance Rating

End users can give positive or negative rating once a service has been completed by selecting a thumbs up or thumbs down.



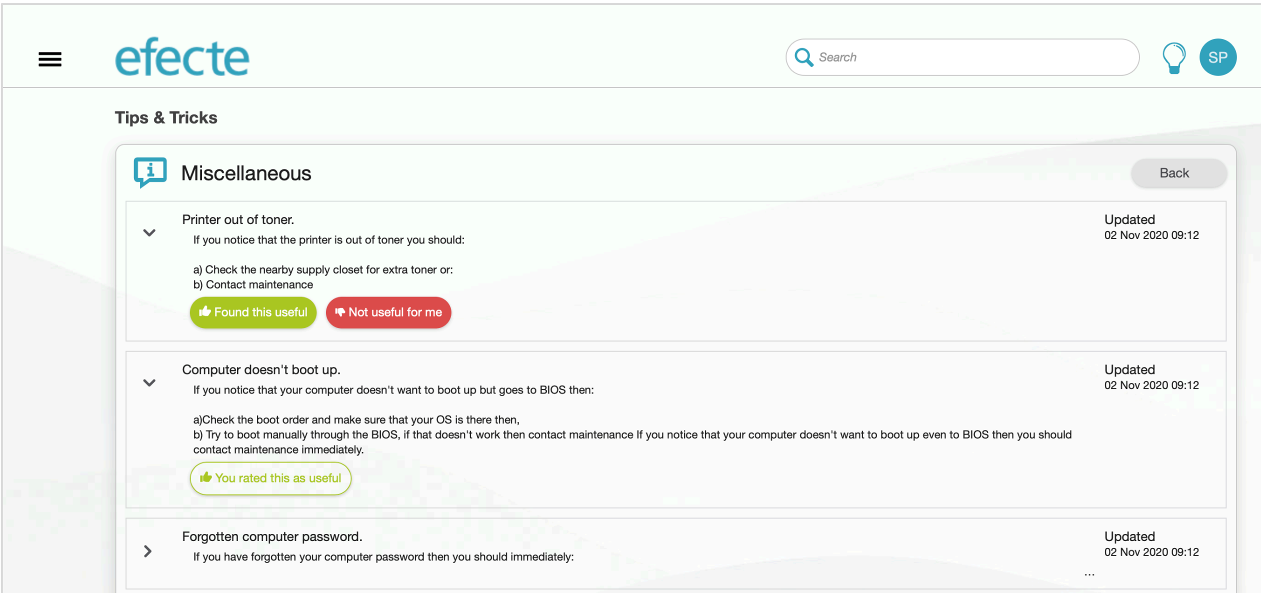
The result of the end user's opinion is consolidated for customer success management in the service management tool.

3.13 Announcements and News

To reduce load on service desk, administrators can publish announcements of known problems or any other kind of news from the service management tool to end users. The announcements are shown to end users in the top of the self-service portal. These announcements may include notifications on e.g. planned maintenance, end of support and problems impacting many employees. The announcements have dedicated fields for how long a news is valid. Announcements will be automatically removed when they expire in the service management tool.

3.14 Self-Help through Knowledge Base

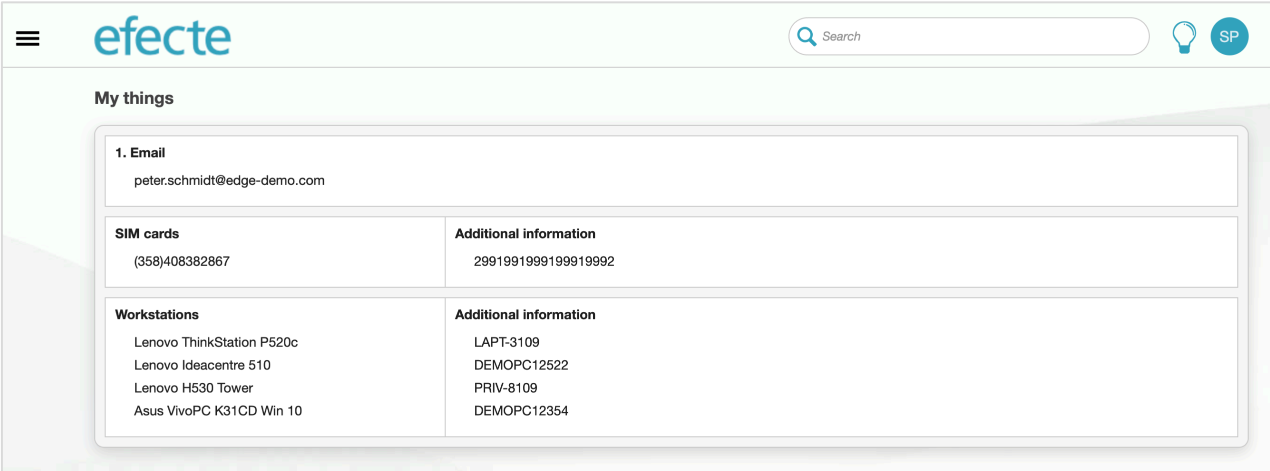
The self-service comes with a facility to have knowledge base articles from Efecte's service management component to allow employees seek information to help themselves in solving issues they are facing bringing cost savings and efficiency. With careful categorization of articles, the employees are provided with intuitive and familiar view to articles: articles can have some basic html formatting and contain links to external resources for videos, documents and other.



3.15 Displaying My Things from Service Management Tool

The self-service portal can display information about the end user recorded in the service management tool such as personal data, assets, or even open issues and service requests in a dedicated view called *My things.*

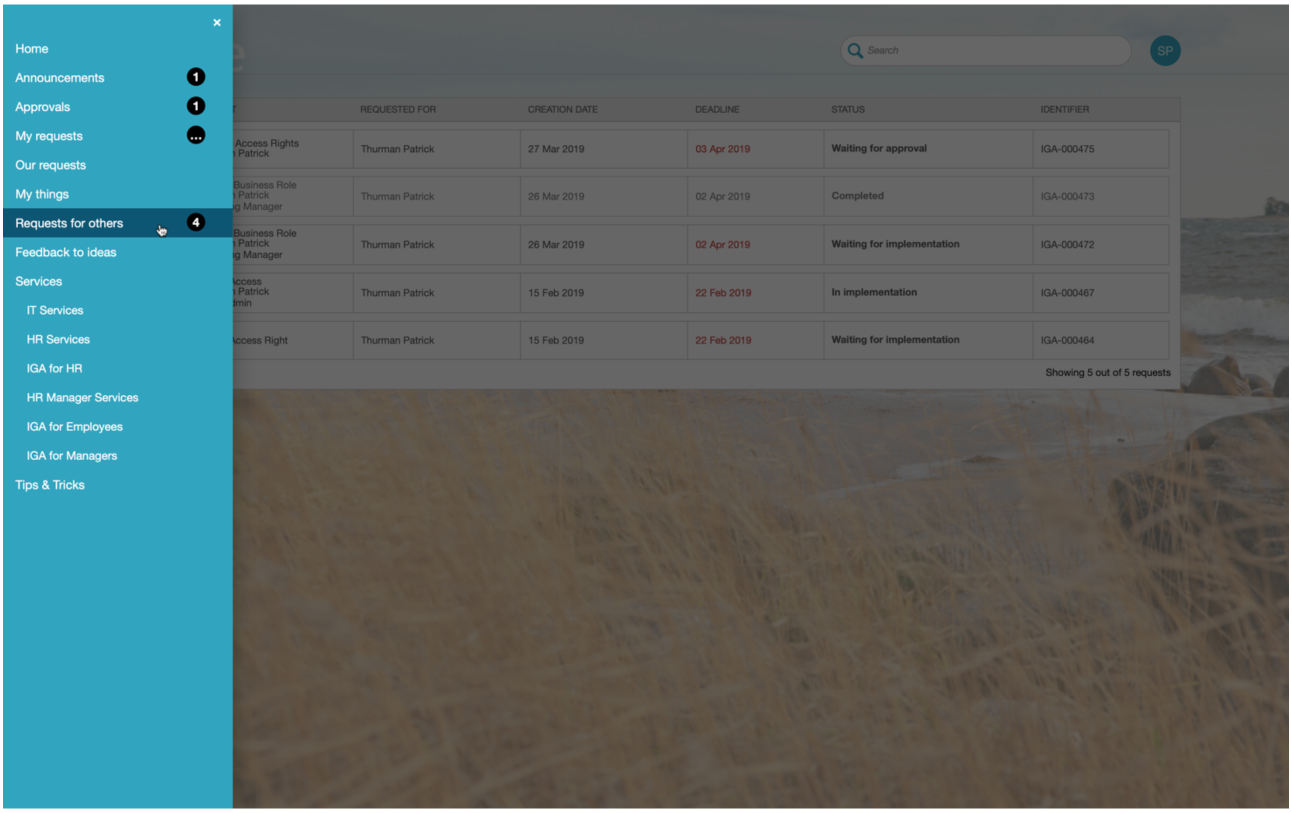
The attribute name and the value recorded for the end user are displayed. Multi-value attributes are supported. One additional field can be selected to provide additional information about the My Things value.



The administrator can configure which information is retrieved from the service management tool and displayed to end users.

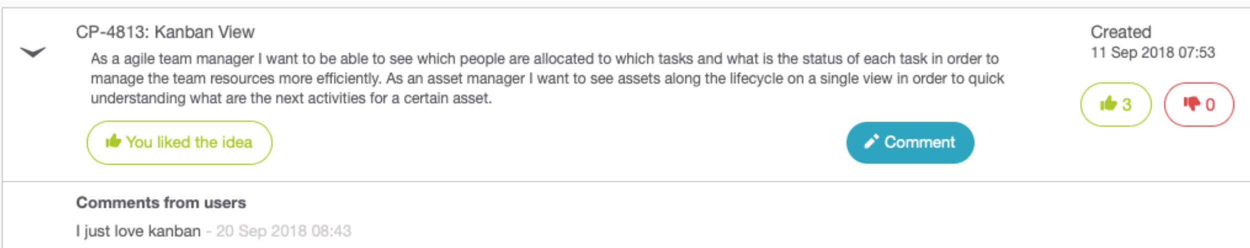
3.16 Displaying Requests from the Same Organization in Our Requests

It is possible to display all requests and incidents that have been recorded from end users belonging the same organization unit in a dedicated view. This allows end users to see the status of issues made by colleagues or by their subordinates.



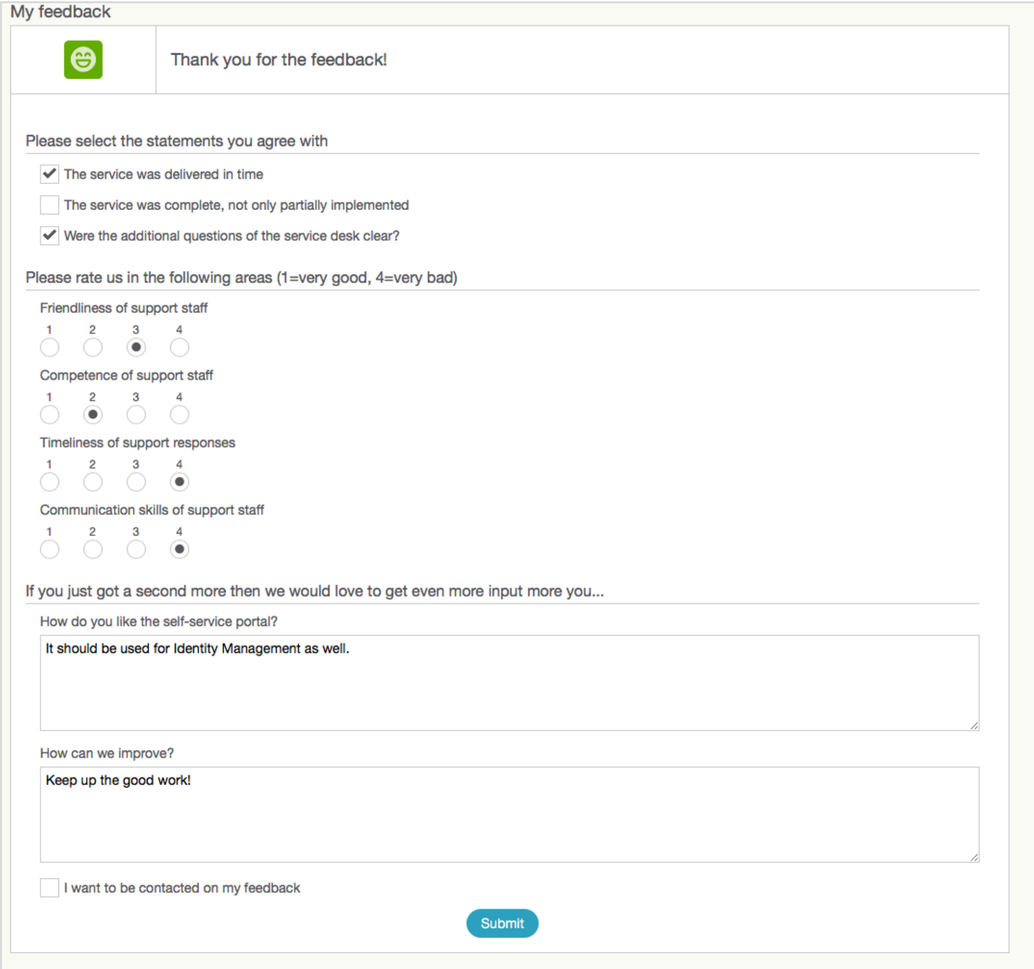
3.17 Rating of Ideas

The self-service portal supports the presentation and rating of ideas by end users. The ideas are managed in the service management tool and displayed in the Ideas view. The end user can rate and comment the idea. The ratings and comments are recorded in the service management tool to be analyzed by change or demand manager.



3.18 Collecting Customer Satisfaction Feedback for Completed Service

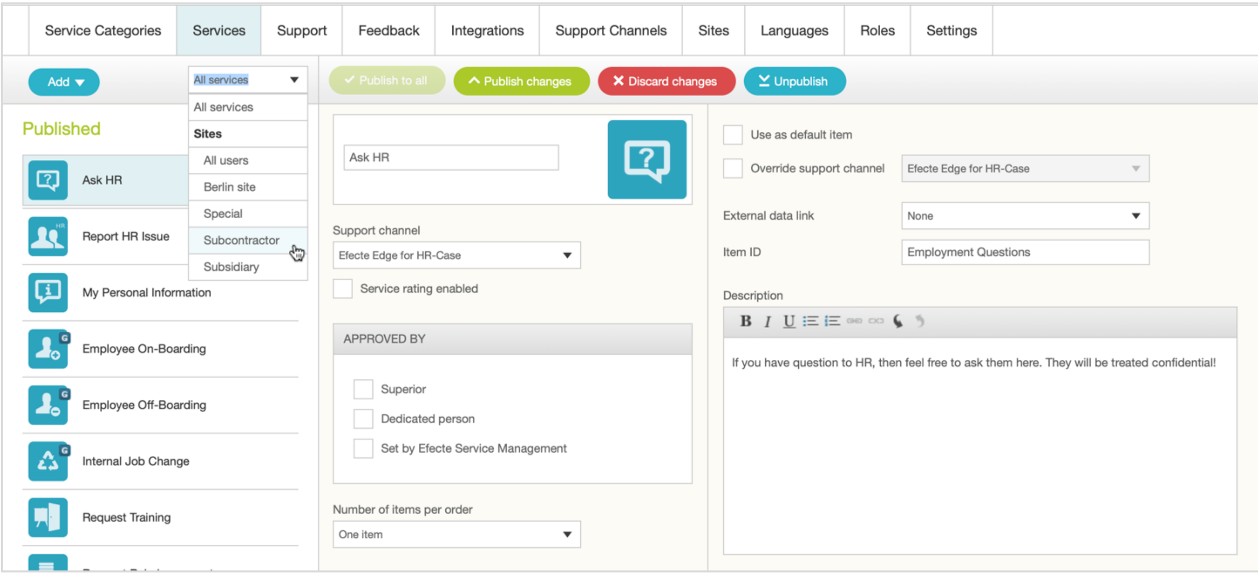
When an issue was resolved or a service request, then the Efecte Platform can trigger a customer survey. The customer survey will be initiated with an email that is sent to the end user by the Visual Workflow Automation. Once the end user has given an intial score for the service performance, then the end user will be forwarded to a customer satisfaction survey form like the one below:



The customer survey form can be freely configured in the self-service portal using any amount of headlines, questions with check boxes, questions with numerical ratings from 1 to 4, and open feedback. One feedback form can be defined in a self-service portal linking to one enterprise service at the time.

3.19 Site-Specific Offering (based on Organization Membership)

Any service offering can be made visible (and therefore available) to users based on the user’s organization membership as defined in the Active Directory. Service offering can be made – and are made by default – visible to all users – but administrators can configure which service offerings are available only for a subset of all users.

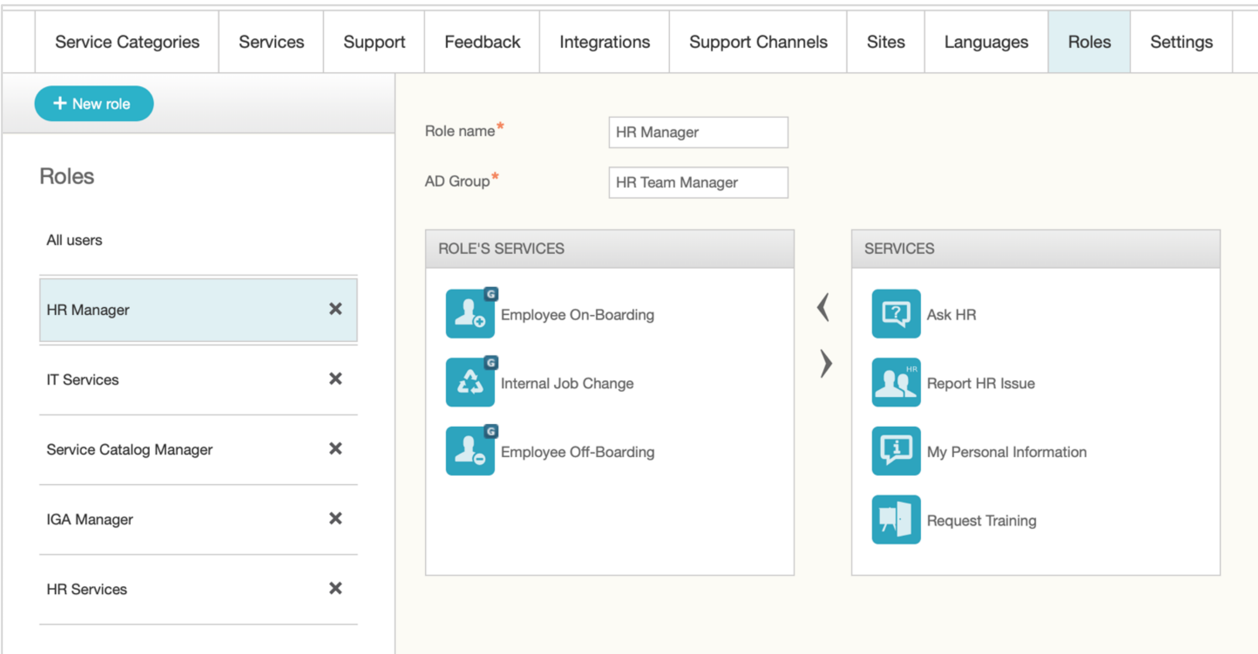


The administrator can create any number of sites in the administration UI with a name of their choosing assigning it to the Organization Unit as provisioned from the Active Directory.

It is also possible to manage the visibility of problem domains by the same site concept.

3.20 Role-Specific Service Offering

Administrators can configure the self-service portal in a way that service offerings are available based on the role. The roles of the users are identified by the Active Directory Group. One service offering can be assigned to one role and is then only visible to those users. All unassigned service offerings are visible to all users.



3.21 Multiple Languages Support

The self-service portal is designed for supporting of multiple languages. All presentation texts can be localized. All service catalog texts can be localized. All service item descriptions can be localized. The user can select the preferred language and the self-service portal will immediately display all information in the desired language.

The localization of the service catalog can be done mostly from the administration UI of the self-service portal. Localization files can be exported for each language and read into translation tools such as PO Editor for more convenient localization.

3.22 Exporting and Importing of Service Offerings

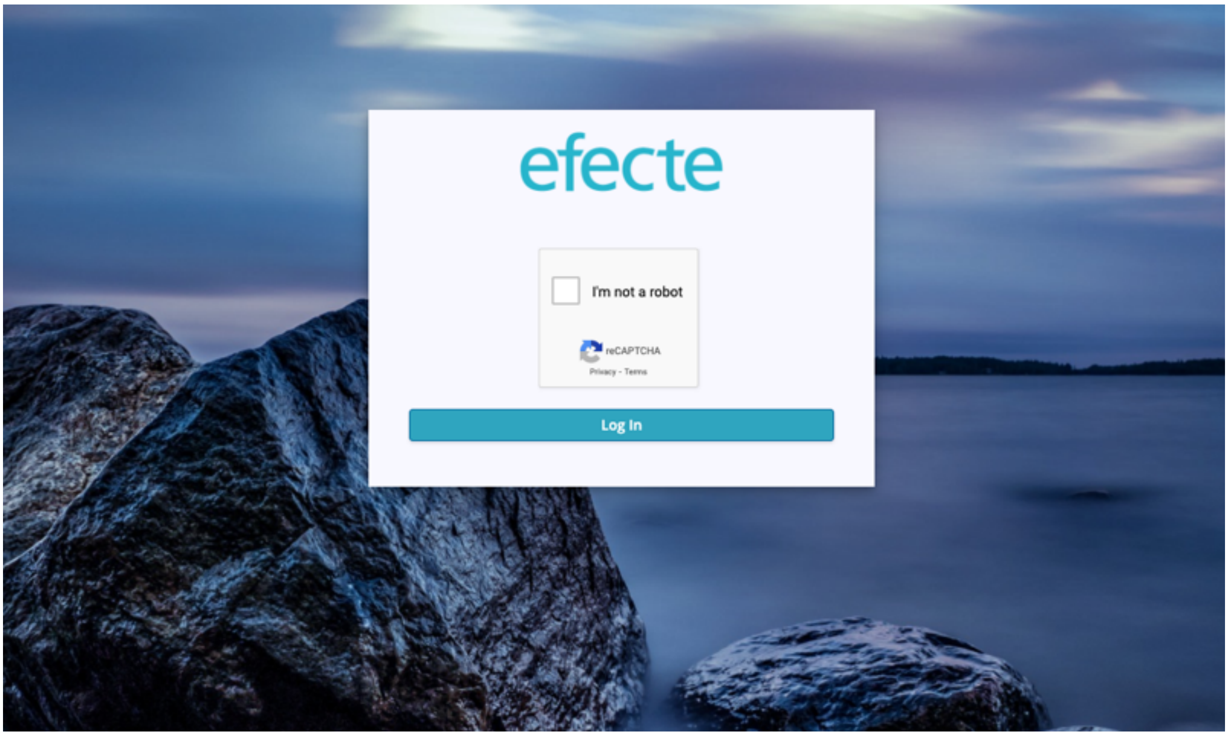
Administrators can export selectively service offerings from one Efecte cloud platform tenant to another for example when developing new service offerings. The importing of service offerings is also possible from the Administration UI, however MyServices configuration will be lost in the export.

3.23 Managing Administration Roles

The self-service portal has two kind of administration levels. One for administrators which can do anything in the self-service portal and one for service catalog managers who can only edit the service catalog. The administration right is managed by Active Directory group provisioned to the self-service portal.

3.24 Access to Self-Service for Unregistered and Unlicensed Users

When it is necessary to provide access to Efecte's Self-Service Portal for unregistered users, then this can be enabled as optional functionality* in the Efecte platform. Unregistered users are such that are not provisioned from the master data system such as an Active Directory or an HR system to the Efecte platform. The access for these users to solutions running on the Efecte platform will be anonymous and no person profile will be created in the process. This feature was developed to address numerous use cases, including reporting of public service issues, low office inventories, organizational misbehaviour, and fully anonymous feedback.



Unregistered access will be through a static public URL to a dedicated, additional Self-Service Portal with a dedicated, limited service offering for security reasons. This URL can be embedded into any webpage or be provided through any other methods such as email. This URL serves as the direct link to the Self-Service Portal without login procedure. Customers are recommended to enable the captcha** feature to protect the solution against malicious actions such as using robots and brute force attacks.

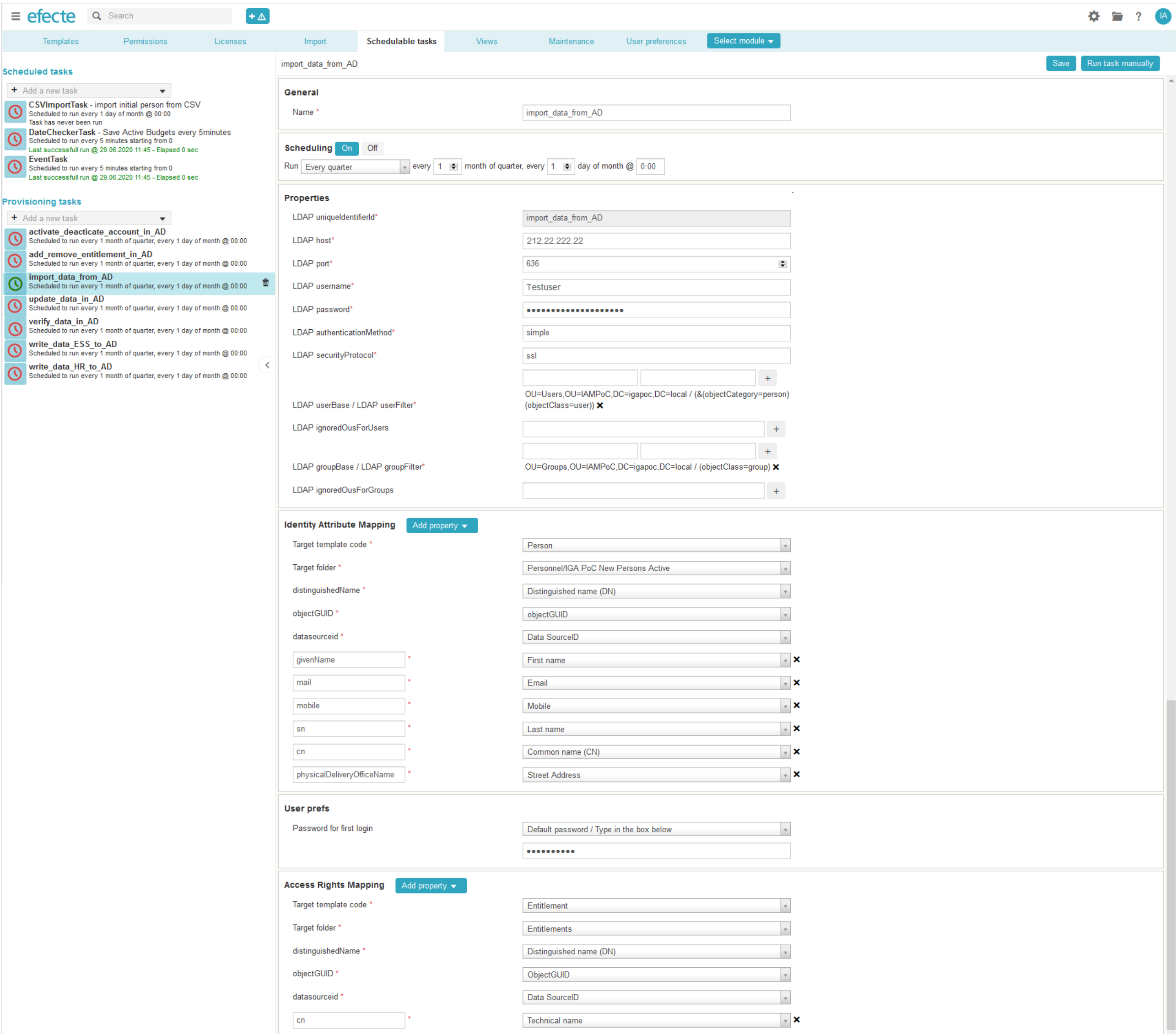
* Note! This optional feature needs a dedicated authentication service, the so-called Efecte Secure Access component, that can be activated in a customer's cloud environment as professional service
**Note! A customer Google account is required for enabling the captcha* functionality.

4 PROVISIONING OF USER DATA

The Efecte platform includes the Efecte Provisioning Engine (EPE) to accelerate the provisioning of users (also called fulfilment in the area of Identity and Governance Administration). The Efecte Provisioning Engine will work in a true parallel processing method by allowing multiple scheduled and event-based access right changes.

4.1 Bi-directional Provisioning of the Identity Data

The scheduled tasks functionality allow you to easily create provisioning tasks that automatically execute an action at the specified time in accordance with the specified conditions.



EPE provisioning and deprovisioning are bi-directional, which means that identity data can be created inside the solution and imported to Efecte platform. Then identity data can be provisioned to required application. Provisioning tasks are automated, schedulable tasks meant for importing user identity data into Efecte Service Management Tool using either the Lightweight Directory Access Protocol (LDAP) interface for Active Directory or either Microsoft Graph API for Microsoft Azure AD. When creating the provisioning task, administrators need to define the user directory properties and user/group base. The UI also provides the possibility to define how to map user directory attributes to specific fields of any data card in Efecte's Service Management Tool.