ConSol Consulting & Solutions

DOCUMENT

Release Notes ConSol CM

Version 6.10.1.0

Author: Michael Siebenborn
Phone: +49 (0) 89 / 45841-100
Mail: michael.siebenborn@consol.de
Version: 1.3
Date: 01.03.2016
Status: Released

ConSol
Consulting & Solutions

Table of contents

General update and installation instructions

For an update of ConSol⁜CM from one version to another two possible ways exist:

- Distribution installation
  The distribution is installed into the application server. For an update every local configuration, like the data source configuration, has to be saved before and reconfigured afterwards.
  This type of update ensures that really every change between the versions is installed.
  This type of update is recommended for updates of the major or minor version, e.g. for an update from 6.6.3 to 6.7.5.
- EAR / WAR Update
  For this type of update of the ConSol⁜CM, the EAR (cm6.ear, cmrf.ear) and WAR (cm-track.war) files of the new version have to be installed into the application server. Additionally every installation related changes described in the chapters 'Update and installation instructions' have to be applied manually. The changes have to be applied for every version between your original CM version and the new CM version, e.g. for an update from 6.6.3 to 6.6.7 the instructions of the versions 6.6.5, 6.6.6 and 6.6.7 have to be checked.
  This type of update is only recommended for updates within a minor version.

Additionally for every type of update, the 'Update and installations instructions' chapter has to be checked for further important notes.

If available, the solution specific Release Notes have to be checked too.

1 Version 6.10.1.0 (12.06.2015)

Version 6.10.1.0 includes 6.9.4 versions up to 6.9.4.3, 6.9.3 versions up to 6.9.3.9, 6.9.2 versions up to 6.9.2.11, 6.8 versions up to 6.8.5.8 and 6.7 versions up to 6.7.13

1.1 Update and installation instructions

1.1.1 New license necessary

In order to use the ConSol✳CM 6.10.1.0 a valid license for version 6.10 or higher is needed. Please check and upgrade the license in the Admin-Tool (Navigation Group *System*, navigation item *License*). You may have to obtain the required license from ConSol✳.

Please note that licenses for the Web Client and for the REST API are separated now. For each usage a fixed number of licenses is allocated now whereas previously those were pooled. This means that for REST access cannot be blocked anymore by Web Client access consuming the complete pool and vice versa. Note the REST API license overuse defect correction from ticket #626616 in section 1.5, too.

1.1.2 Resource Pool usage requires specific licensing

Specific licensing is necessary when you intend to use the Resource Pool feature. In case you plan to do so, please make sure you have a sufficiently extended license and add it in the Admin-Tool. To inquire about licensing this feature for your installation you have to contact your ConSol✳ sales representative.

1.1.3 DWH schema update

The introduction of the resource pool brought changes in 6.10.0.0 and 6.10.1.0 which make it necessary to modify the database schema of the data warehouse (DWH) database. Update scripts have been provided. Please request those update scripts by contacting the ConSol✳CM Support Team.
The upgrade steps depend on the DWH mode that is currently in use.

Caution! Please be aware that the single step “Updating database structure” during the DWH update could take longer than expected. There may even be showing the message “No response from remote peer”. This message can safely be ignored. This single step takes ca. 2,5 hours on a moderately used system with 15.000 tickets 1.000.000 ticket history entries and 200 engineers.

- For DWH Admin mode:
  Please execute the update scripts of 6.10.1.0 after the upgrade to the version 6.10.1.0 **but before** CMRF is started.
  The scripts must be executed directly on the DWH database.
  Please update the DWH after the schema change.

- For DWH Live mode:
  1. Stop the Live mode by switching it to *ADMIN* in the CM6 Admin Tool, so that automatic updates will be halted.
  2. Before the start of the CM6 upgrade to 6.10.1.0 please ensure that that CMRF has finished all pending jobs by checking the following things:
     - When using JMS transfer mode, check that the message queues *control, live, log*, and *transfer* are empty and that the following database tables *cmas_dwh_ser_sync_object* in the CMAS schema is empty and that in the CMRF schema the tables *int_live_buffer, int_transfer_buffer, int_serialized_object, int_sql_statement* are empty.
     - When using DIRECT transfer mode check that the following database tables are empty: *cmas_dwh_ser_sync_object* in the CMAS schema and in the CMRF schema the tables *int_control_queue, int_live_queue, int_log_queue, int_transfer_queue, int_live_buffer, int_transfer_buffer, int_serialized_object, int_sql_statement* are empty.
  3. Make the CM and CMRF upgrade to 6.10.1.0.
  4. Execute the update script of 6.10.1.0. The script must be executed directly on the DWH database.
  5. After starting CM and CMRF switch to ADMIN mode in the Admin-Tool and update the DWH.
  6. Start the Live mode by switching it to *LIVE* in the CM6 Admin Tool.

1.1.4 Support for WildFly 8.2.0 Application Server Platform (#627033)

ConSol✳CM now supports the application server platform WildFly (version 8.2.0 Final). This is the first release for the 6.10 versions supporting this platform after the support was introduced in version 6.9.4.3. The WildFly product serves as basis for current versions of the JBoss application server platform, so most information about the latter applies in this context, too. JBoss version 7 (JBoss EAP 6.2.0GA) are extended subscription products based on WildFly 8. WildFly is available freely without subscription from this site:

http://wildfly.org/

ConSol✳CM System requirements for use with WildFly 8.2.0:

Operating systems:

- Linux with a kernel 2.6.24 or newer or
- Windows Server 2008 and 2012, in case of limited performance requirements like for specific test systems client versions as well, namely Windows Vista or newer (64 Bit support starting with Windows 7).

Java runtime version:

- Java 1.7.0 Update 51 or later

Hardware (recommendation for a typical installation of 50 concurrent users):

- at least 10 GB of memory (RAM)
- at least 10 GB of hard drive storage
- 2 GHz Dual Core processor or equivalent.

ConSol✳CM - Available Distributions for WildFly 8.2.0:

- For Oracle: dist-package-distribution-6.10.1.0-oracle-wildfly-8.2.zip
- For Microsoft SQL Server: dist-package-distribution-6.10.1.0-mssql-wildfly-8.2.zip
- For MySQL: dist-package-distribution-6.10.1.0-mysql-wildfly-8.2.zip

Update

WildFly support started with ConSol✳CM version 6.9.4.3 and is now supported on 6.10 versions as well. Thus, the system must be newly deployed on an initially new WildFly installation. The update option will be available for the following releases.

CM6 and CMRF Migration

WildFly 8.2.0 and JBoss EAP 6.2.0GA installations are identical in most aspects. They differ only in very few details. For this reason only their relevant differences are explained in this section. All other aspects and details of a migration/installation of ConSol✳CM on the WildFly application server platform are documented in the Release Notes of CM version 6.9.3.3 by the section about JBoss EAP 6.2.0GA support.

Please refer to this section about JBoss EAP 6.2.0GA support and migration in the ConSol✳CM 6.9.3 Release Notes for detailed step-by-step descriptions of the migration procedure for Wildfly 8.2.0, too!
Please note the other existing documentation regarding JBoss EAP 6.2.0GA, which should address WildFly support and the few existing differences as well.

The following paragraphs only describe the relevant differences of WildFly 8.2.0 setup from the JBoss EAP 6.2.0GA configurations. Due to these (and some more minor) configuration differences it does not work to copy a configuration file from an existing JBoss 6.2.0GA installation to a WildFly installation!

CMRF URL configuration
The CMRF URL setting for the DWH configuration in the Admin-Tool must be a different value for use with WildFly compared to JBoss EAP:
WildFly: http-remoting://<CMRF_HOST_IP>:<HTTP_PORT>
(i.e. http-remoting://192.168.0.1:8080)
For comparison:
JBoss EAP: remote://<CMRF_HOST_IP>:<JNDI_PORT>
(i.e. remote://192.168.0.1:4447)

Clustering domain socket configuration
In a cluster setup the domain socket binding group configurations are used to define the ports which are opened and used for incoming connections. There are fewer components in use for WildFly than for JBoss EAP so there are fewer configuration items. The two socket binding groups “full-sockets” and “full-ha-sockets” are affected by this difference. For each server product a working default/example configuration is provided with the distribution. Thus, for details please see the clustering configuration documentation

Custom CM project dependencies
For custom CM projects a modification is necessary for the file “jboss-app.xml” to support WildFly. The file can be found in the directory `modules/package/ear/src/main/app-resources`. There is an additional dependency for WildFly which has to be met when creating

custom CM projects. It must be present in the file “jboss-deployment-structure.xml” in the directory `modules/package/ear/src/main/app-resources`. Apart from this dependency the setup corresponds to the one for JBoss EAP. The extra dependency is contained in the following line:

```
<module name="org.apache.xalan" export="true"/>
```

See the custom project documentation for JBoss EAP 6.2.0 and WildFly 8.2.0 for a full account of the configuration.

1.1.5 Pentaho update to version 5

The Pentaho Business Analytics and Data Integration Platform underlying reporting and ETL tasks has been updated to version 5.0.1. Newer Pentaho versions like 5.2 will not be working. Please be aware that updating this platform is necessary in order to keep using processes based on these tools. Please see section 1.2.18 for more details.

1.1.6 Microsoft Excange 2010/2013 support

The integration of calendar data originating from Microsoft Exchange 2010 SP and 2013 is available in ConSol⁕CM beginning with this release. Note that Exchange version 2007 is not supported! Please see section 1.2.4 for further information.

1.1.7 OpenOffice 3.2.1 support in CM.Doc

The ConSol⁕CM Add-on CM.Doc (formerly CM/Office) can now be used together with the suite OpenOffice version 3.2.1 starting from this version. Please see section 1.2.5 for more information on using this office suite together with CM and the CM.Doc Add-on. The necessary configuration is explained there as well.

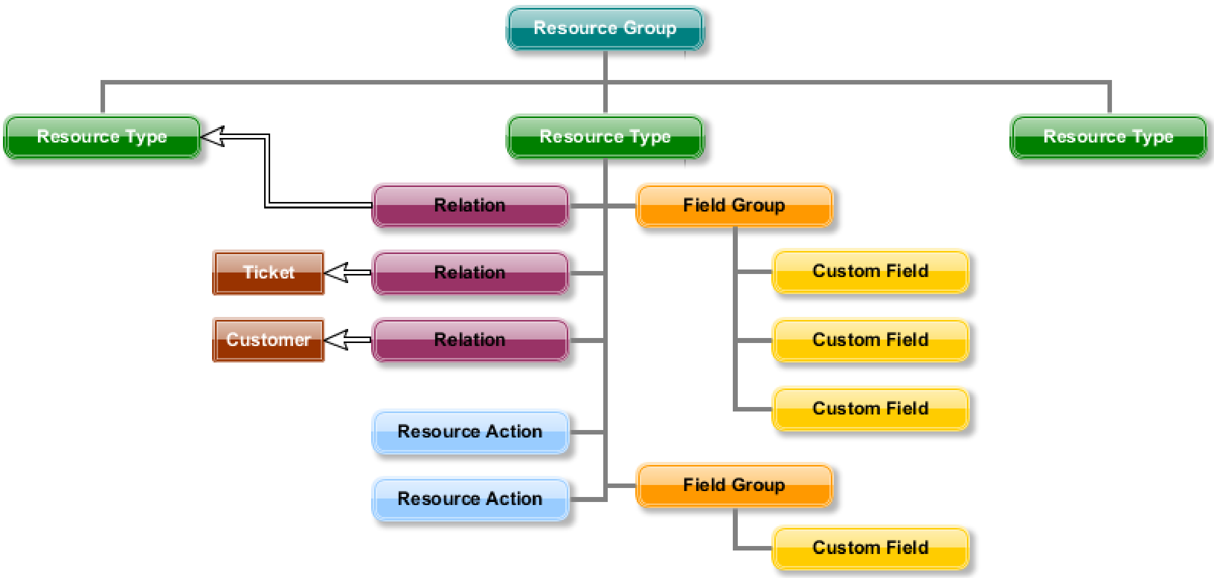
No further instructions available.

1.2 New Features

1.2.1 Resource Pool (#625029)

ConSol✳CM now features the Resource Pool, a completely new functionality for using resources as new kind of object generally available in the system. The resource pool requires additional licensing extending previously owned licenses (see section 1.1.2 also).

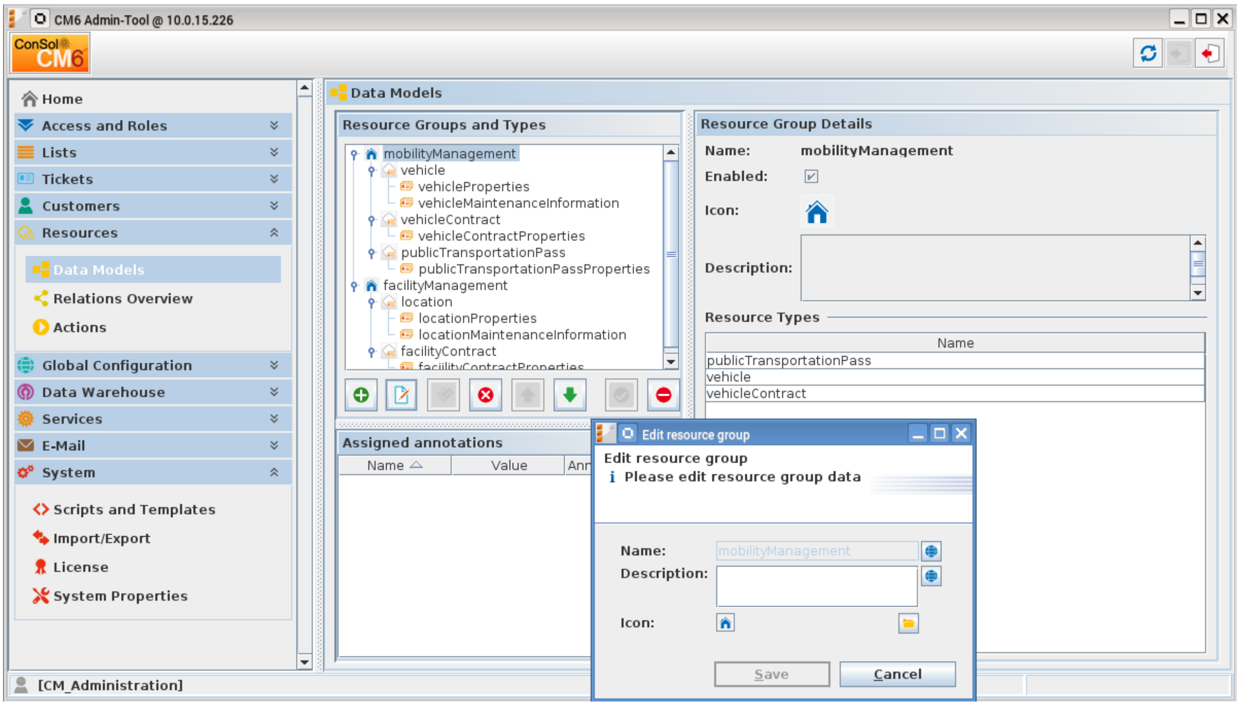
A resource in ConSol✳CM is a third basic object besides the ticket and the customer. While the ticket is a single instance of a process execution and the customer is an individual or organizational unit associated with such a ticket, a resource is some other (real-world) object possibly associated with either. The resource pool is the functionality for handling resources in ConSol✳CM.
Some examples for resources are products, facilities and rooms, vehicles, computers, parts, software packages, licenses, contracts and many more.
Similar resources are grouped together in a type and resource types belonging together form resource groups. So any specific resource is an instance of a resource type. Each resource type has its own set of resource fields organized in resource field groups which are defined by the administrator. This allows resources to specifically hold the information which is important for handling such a resource of a certain kind. Resources can be related to each other as well as to tickets or customers. Furthermore it is possible to define actions to perform on resources which allows for complex operations programmed in scripts.



Resources are generally available in the Web Client for creation, usage and association with other objects. The specific data of actual resources can be accessed and operations can be executed for them on the respective pages. Dedicated pages for resource management have been added. The data model for the resources, their presentation, relations and actions are all defined in the Admin-Tool.

Admin-Tool: resource model and administration

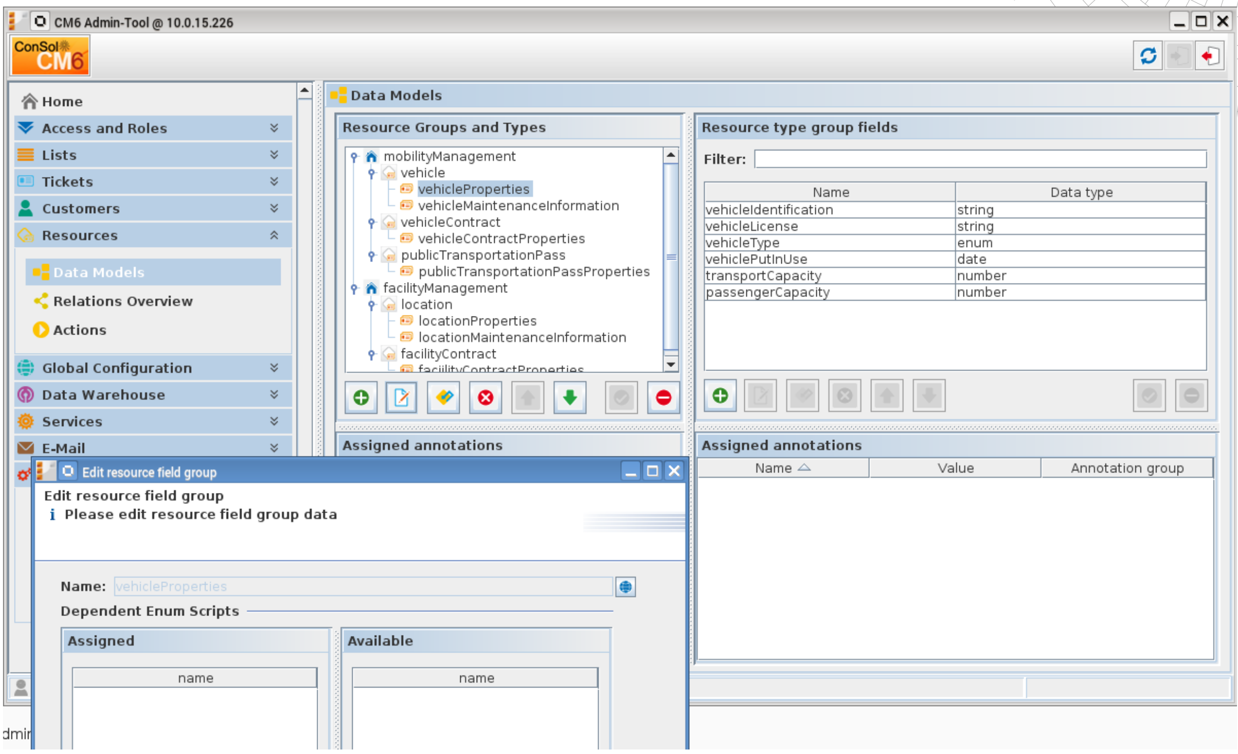
The Admin-Tool has been extended with three resource pool administration sections which form the navigation group “Resources”. The content section shown for the navigation item “Data Models” is used for all aspects related to defining and organizing resource types, including their resource fields and relations to other objects.



Initially at least one resource group to hold resource types must be defined. Resource groups are used to unite resource types of a common subject under a unique label. Any number of groups can be defined and each can have many resource types. The groups are used in the Web Client for the same purpose, thus, name and description can be localized. Resource types can be localized in the same way.

The detail information on the right side of this content section displays information about the object selected in the tree “Resource Groups and Types”. Below the tree are the buttons for administration of the selected object: creating, editing, annotating, deleting, ordering, and activating/deactivating. The annotations below the tree become available for a field group of a resource type when the field group is selected in the tree.

Within a field group the individual resource fields for the resource type can be managed. For resource field groups dependent ENUM scripts can be assigned as well while editing. For resources dependent ENUMs work in the same way as for ticket or data objects. This applies to administration as well as to usage in the Web Client. Definition and management of the resource fields parallels the field administration for custom fields and data object group fields. Generally the field and field group annotations show the same behavior as in other field definition contexts.



The initial creation of a resource type must include its name and naming its first field group. It can be edited and extended after it was created. A localized description, an icon and its mode can be set. The mode identifies the data source and handling for the resource data. Possible modes are:

- **Internal**: resource data is fully managed by CM6.
- **On the fly**: resource data is retrieved from an external backend system whenever requested (available only in a later release).
- **Cached**: resource data is originating from an external backend system and cached in CM6, a refresh a an item can be triggered manually (available only in a later release).
- **Imported**: resource data is originating from an external backend system and stored in CM6, an update required a new bulk data import.

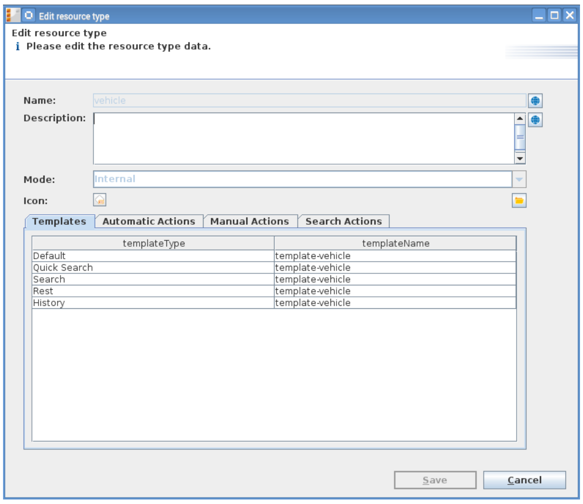
While the mode “Imported” requires a previous import by ETL the modes “Cached” and “On the fly” rely on a customer specific implementation of the class `ResourceExternalSource`. So only the internal mode is useful out of the box. Support for updating data for any resources in external systems is not planned.
Furthermore the dialog for editing a resource type allows assigning the display templates in standard contexts and the resource actions for this type. Both generally parallel the configuration of the corresponding unit templates and actions. This information is displayed on the “Details” tab when selecting a resource type in the tree.
The templates referenced for a resource type must have been created in the template administration of the Admin-Tool in advance. The following code shows two simple examples for resource templates:

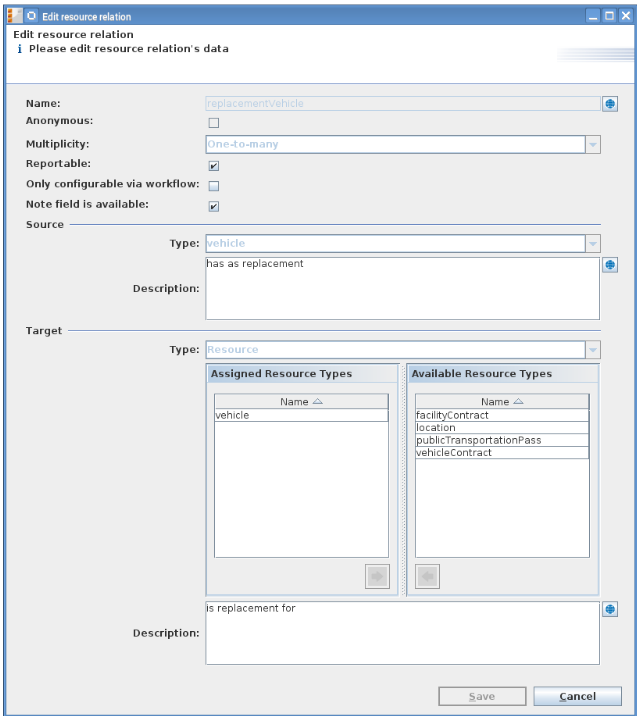
```
// Example 1
${resource.get("vehicleProperties", "vehicleIdentification") + ' (' +
resource.get("vehicleProperties", "vehicleLicense") + ')'}
```

```
// Example 2
${resource.get("publicTransportProperties", "passName")}
```

Please note that there is no inheritance for resource types and that the Admin-Tool does not provide a copy function for resource types. In case resource instance copies are repeatedly necessary a customized resource action can provide such functionality in the Web Client.

The relations of the resource type are shown when choosing the “Relations” tab. This also provides the functions to modify the relations of the selected resource type: creating, editing, deleting, activating/deactivating. This list cannot be sorted directly since all relations are put in order globally in the content section “Relations Overview”.

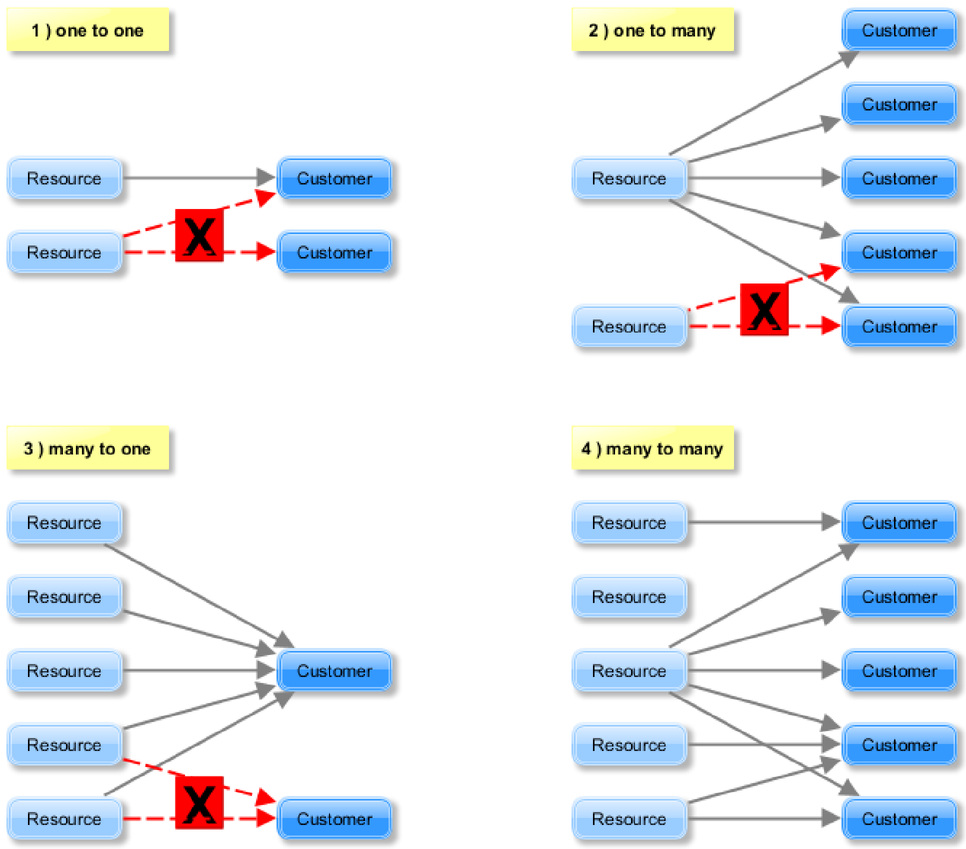




When creating a relation, it usually has to be named. The only exemption is an anonymous relation which automatically is named “related”. A multiplicity must be selected defining how many source and target elements can be related. This mirrors standard database modeling, though special care must be taken, since the relationship between objects is defined, not one of the objects themselves. The multiplicity/cardinality can be one of the following types:

- **One-to-one**: Each resource can have only one relation with a single target object, i.e. the source may have only one relation of this type and the target may have only one relation of this type.
- **One-to-many**: Each resource can have many relations with different target objects, i.e. the source may have many relations of this type and the target may have only one relation of this type.
- **Many-to-one**: Many resources can have one relation each with only one single target objects, i.e. the source may have only one relation of this type, the target may have many relations of this type.
- **Many-to-many**: Many resources can have many relations with different target objects, i.e. the source may have many relations of this type and the target may have many relations of this type.

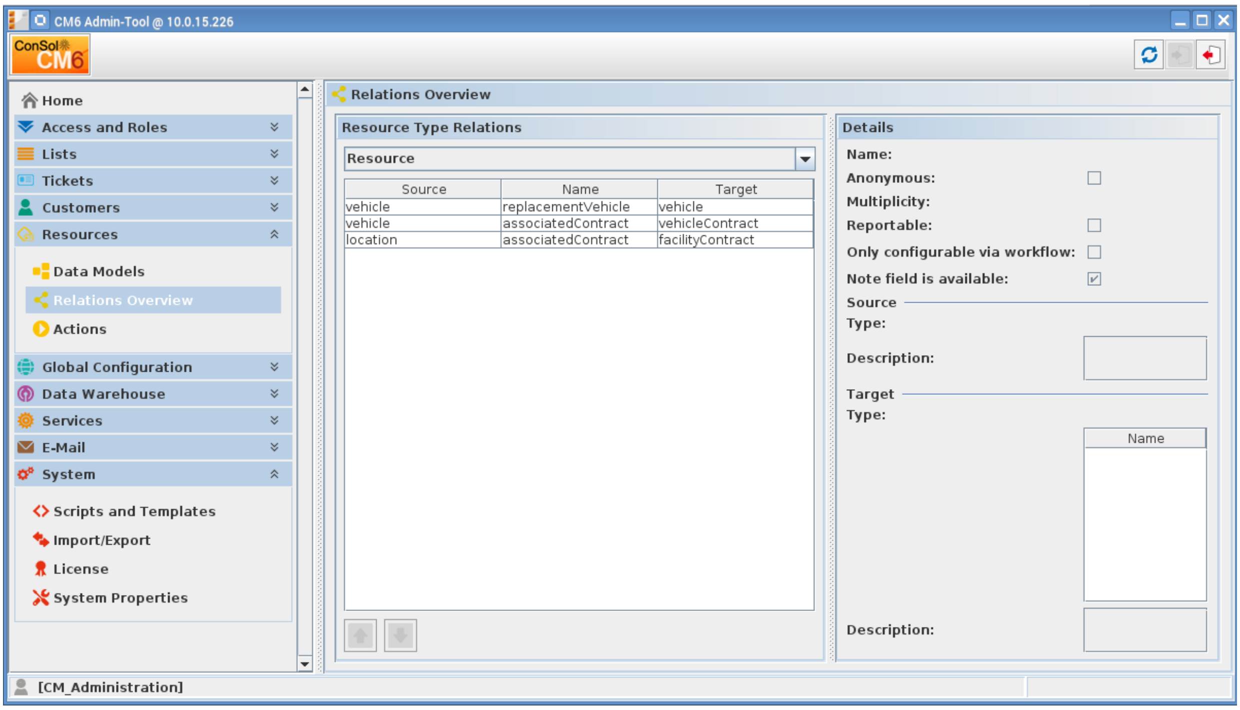
The values “Many-to-one” and “Many-to-many” are of much higher significance than in database modeling since the source of the relation always is the resource and thus the direction of the relation can be reversed to standard expectations. Please note the following diagram – the relations to be modeled are represented by the arrows (only the grey ones are allowed, the red ones cannot be created):

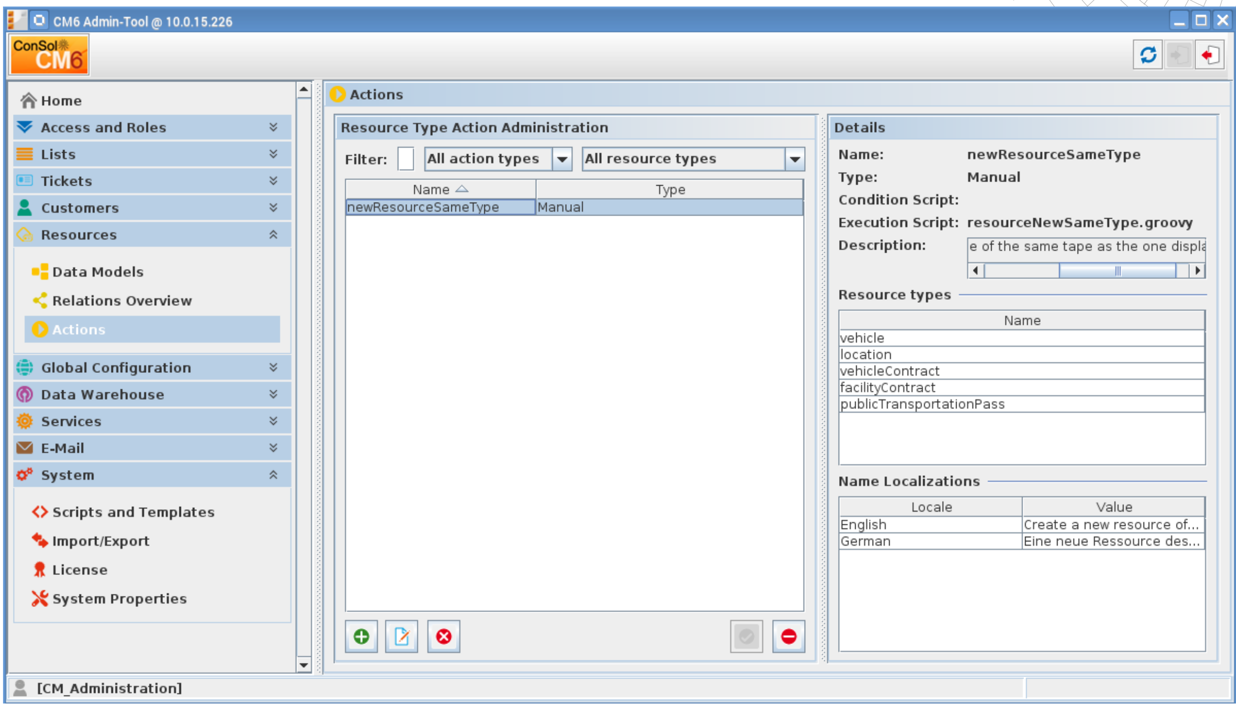


The checkbox “Reportable” in the relation dialog identifies, if the relation will be transmitted to the data warehouse. “Only configurable via workflow” prohibits creating/managing the relation in the clients analog to customer relations. “Note field is available” defines, if the note entry field will be shown when creating and editing such a relation. The source object for the relation is preselected by the selection in the resource tree, but a localized description for the source side of the relation can be entered. This will be the label showing in the Web Client. For the target objects the object type must be selected which then allows to associate the corresponding target objects with the relation. The localized description entered here will show as the target side of the relation in the Web Client. This means it is the label for the relation when the target object is the main display object on the detail page.

Caution! Please be aware of the performance limitations regarding relation counts! The system was thoroughly tested for the maximum number of relations (independent of target entity type: ticket, customer or resource) which can be displayed in a reasonable time. Tests were done on modern well-performing server hardware and different client computers with varying performance characteristics. The maximum total number of relations for one specific resource which can be rendered in a time below 10 seconds is between 500 and 1000. The effective rendering time in a specific case strongly depends on client PC's performance and detail level selected in client. Exceeding 1000 relations in general or 500 on a low performing client computer with display detail level set to maximum will mostly result in unwanted long page loading times.
Therefore, in scenarios where high numbers entities would get related to the same resource instance (like a “Standard” service level agreement for example), please reconsider your configuration thoroughly and possibly modify your data model design, so that the numbers mentioned above will not be highly exceeded!

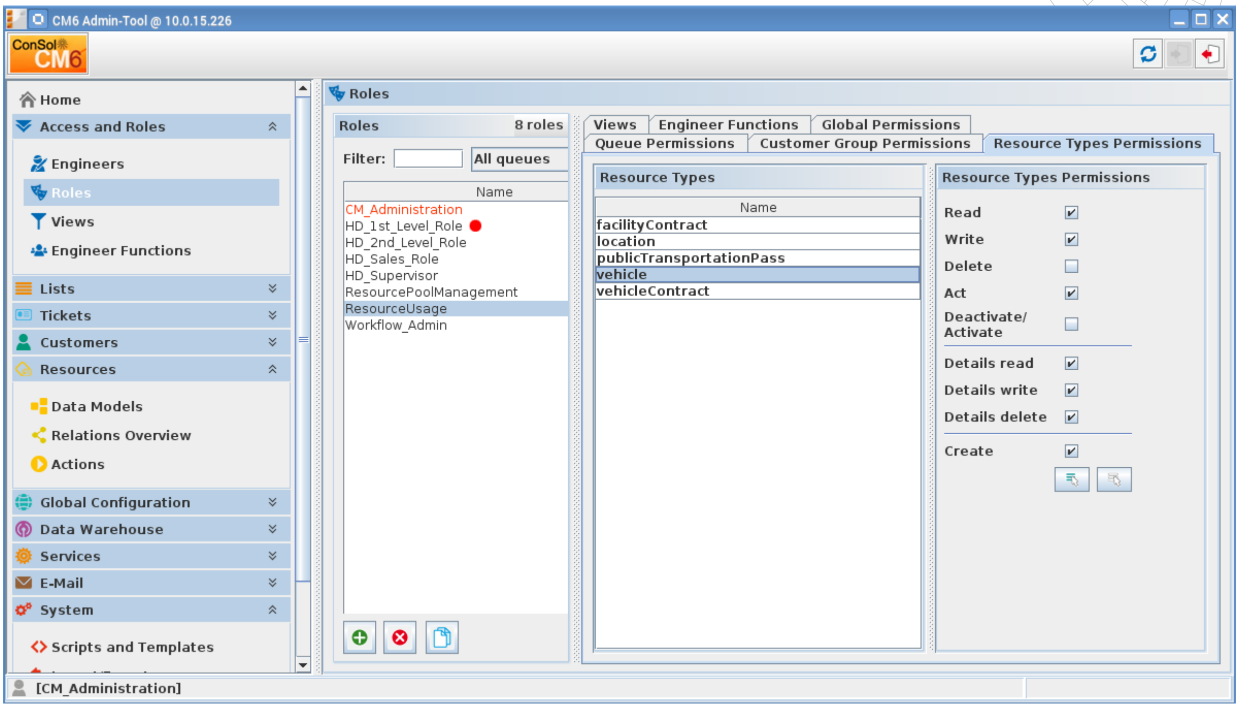
The “Relation Overview” content section provides a list based on all resource relations which is generally filtered by the target object types (since the source object always is a resource). To the right of the list the detail information for the selected relation is displayed. The arrows on the bottom can be used for ordering the relations of the list. The order defined in this list is being used in the Web Client for displaying the object type relations. Thus, this list must be manually sorted and does not provide automatic sorting mechanisms by column (which would obscure its purpose of manual sorting for the list).





It is possible to define resource actions on the content section opened via the navigation item “Actions”. The resource action definition is the same as the definition of data object actions. The referenced scripts must have been created in the script administration as type “Resource-Action”, “Resource-Condition”, or “Resource-Search”, respectively, to be used in a resource action. Only correctly typed scripts will be listed in the respective drop-down menus in the creation/editing dialog – and only after the action type has been selected! The list can be filtered by action type and resource type or by a filter string for the name. The details for the selected action are displayed to the right of the list. The actions are associated to a resource type in the resource type definition dialog.

A user must have a role with sufficient permissions associated so that he can handle resources in the web client. These are defined on a new tab “Resource Types Permissions” in the role administration. When a role is selected, the resource type can be selected on the tab in the list in the middle. The role’s permissions on the right side have to be enabled specifically for each resource type.



The privileges available for each resource type are these:

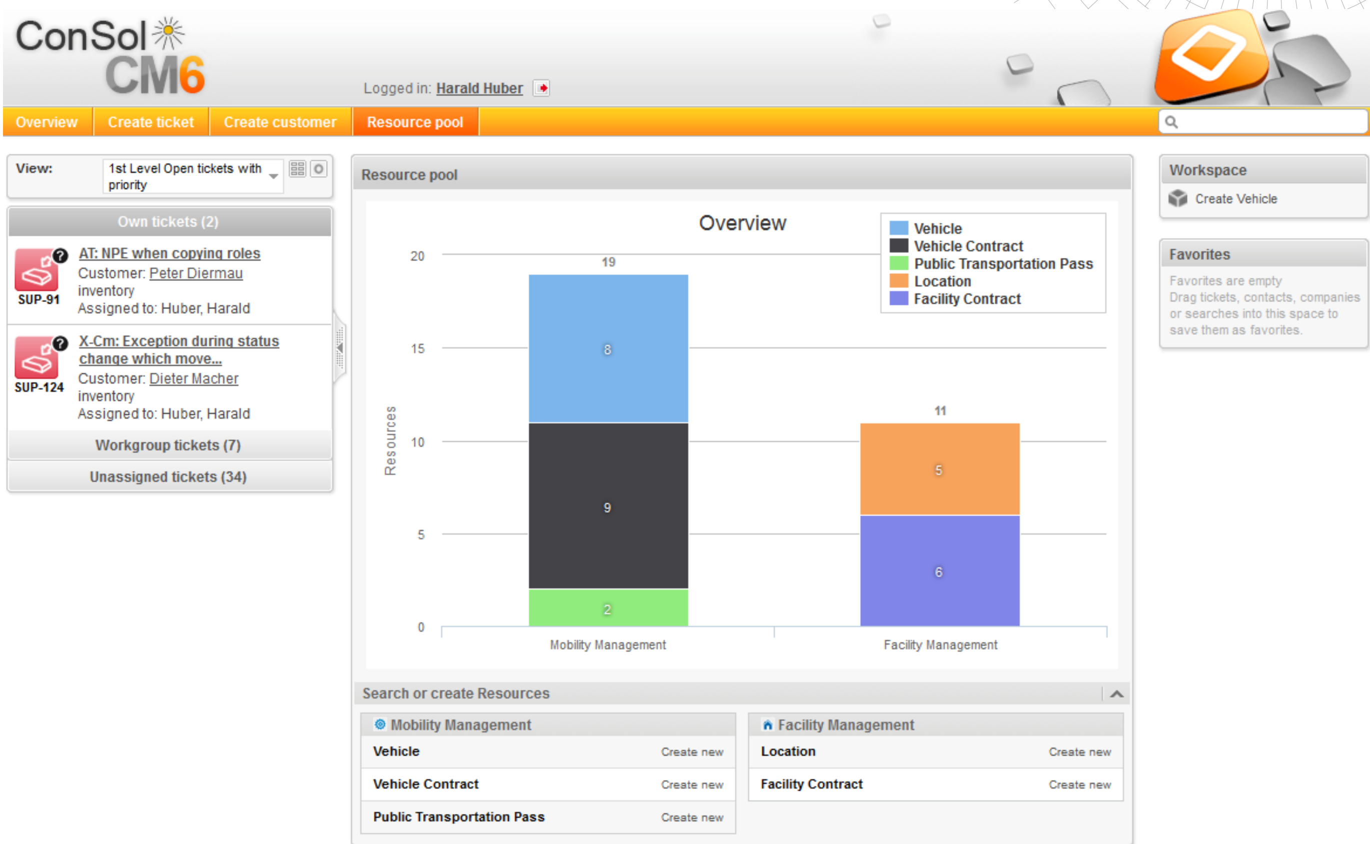
- **READ**: Load and display resources of the selected type in the Web Client
- **WRITE**: Change resource field data of this type of resources
- **DELETE**: Delete resource of the respective type from CM6
- **ACT**: Execute resource actions defined for this type of resources
- **DEACTIVATE/ACTIVATE**: (De-) Activate resources of the type in question
- **DETAILS READ**: Load and display comments/attachments for resources of this type
- **DETAILS WRITE**: Add and change comments/attachments for resources of this type
- **DETAILS DELETE**: Remove comments and attachments for resources of this type
- **CREATE**: Create new resource entries for the type of resources

The buttons below the list of permissions allow to select/deselect all privileges at once.

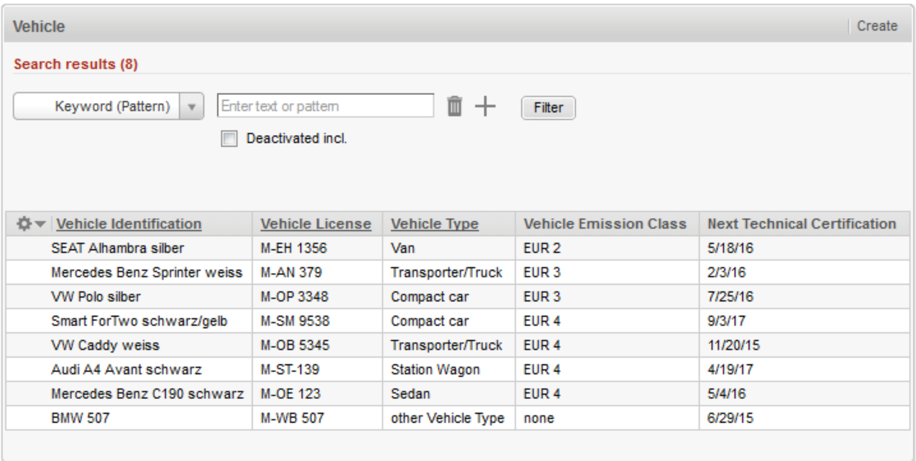
Web Client: resource usage

The particular resources relating to some kind of real-world object will be handled in the Web Client. The client's main menu provides a link "Resource Pool" for accessing a central page as starting point for working with resources. This page can contain a dashboard and offers a comprehensive listing of resource groups and resource types for finding existent resources or creating new ones.

The dashboard on the resource pool page can display any kind of data, not just resource related information. Its configuration parallels the main dashboard configuration on the overview page. The example below presents the default dashboard for the resource pool.

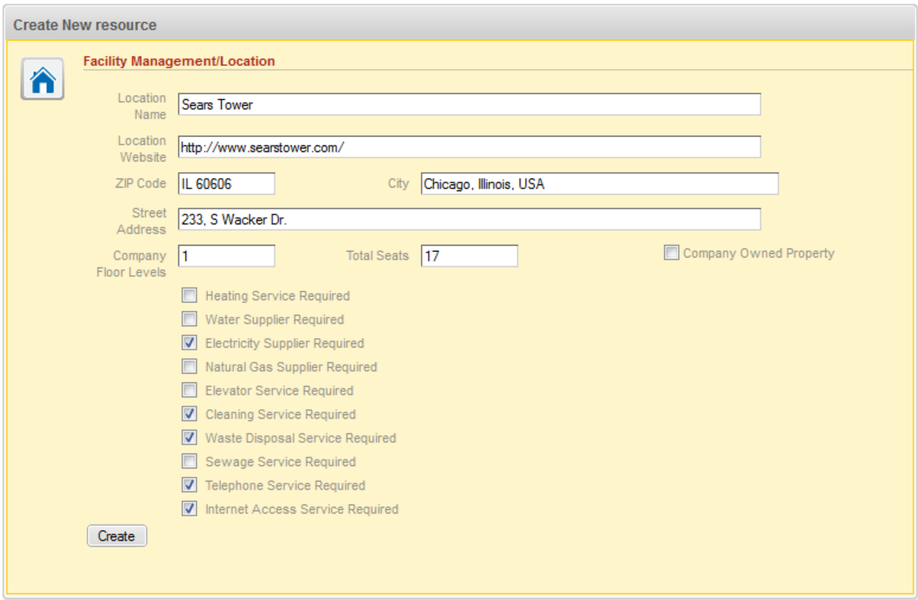


The section "Search or create resources" lists the available resource groups and the resource types subsumed under the groups. The user logged in must have a role with sufficient resource type permissions to get access to resources of a certain type. Missing privileges on a type will cause it not to be listed. If the user has no sufficient privileges on all types of a resource group, the group will not be shown either.
The resource type name can be clicked which requires the READ privilege. Clicking it leads to the resource type page. On this page the respective resource type is display as headline and the resources of this type are shown. Below is an example which has been beautified regarding column selection and order. The rows of the table can be clicked which will directly open the detail page of the resource identified in the result. The list can be filtered by adding more filter/search criteria and selecting the checkbox "Deactivated incl." to be able to find deactivated resources as well. Normally deactivated resources will be filtered from the list. Please see below at the end of this section for some more details on resource search.



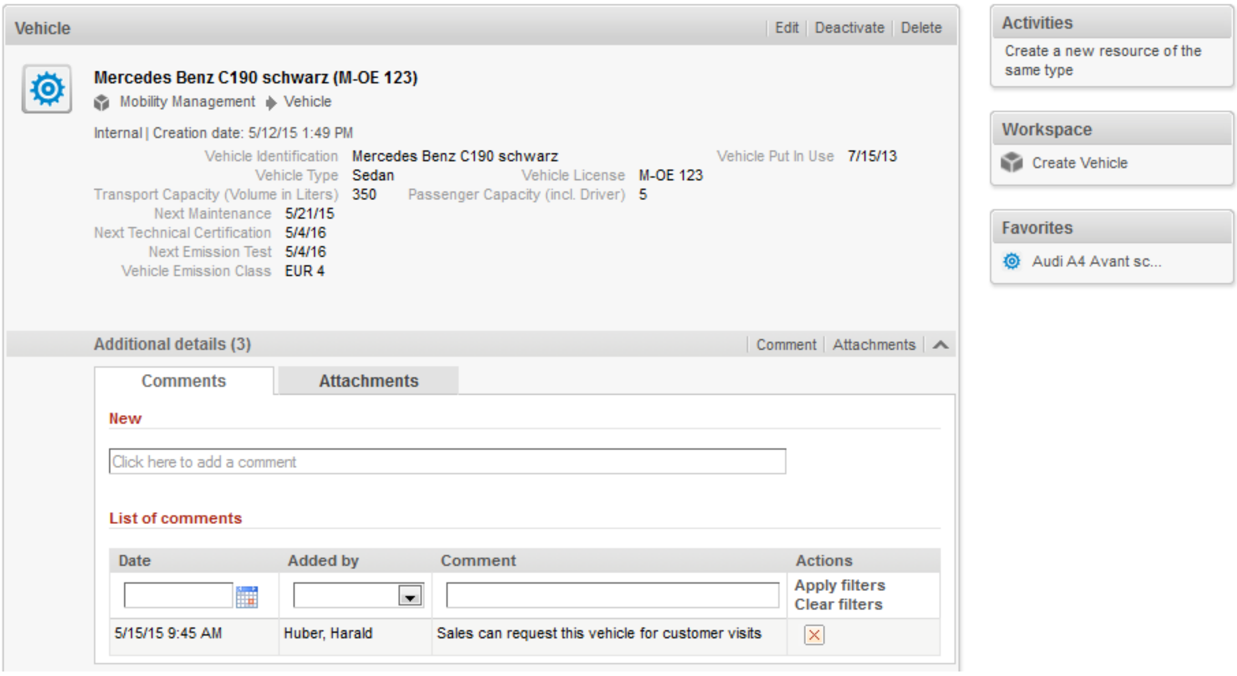
The “Create” link in the header will lead to the create page specific for the referenced resource type. The same is true for the resource type link labeled “Create new” on the resource pool main page. This way a new resource of the selected type can easily be created. The link is only available if the user has a role with the CREATE privilege for the resource type in question.

The field and layout configuration for the creation form is done in the Admin-Tool and parallels custom fields. Leaving the page before finishing the form and clicking “OK” will create an entry in the Workspace box on the right. After submitting the form the newly created resource will be displayed on the resource details page for review and addition of more information.

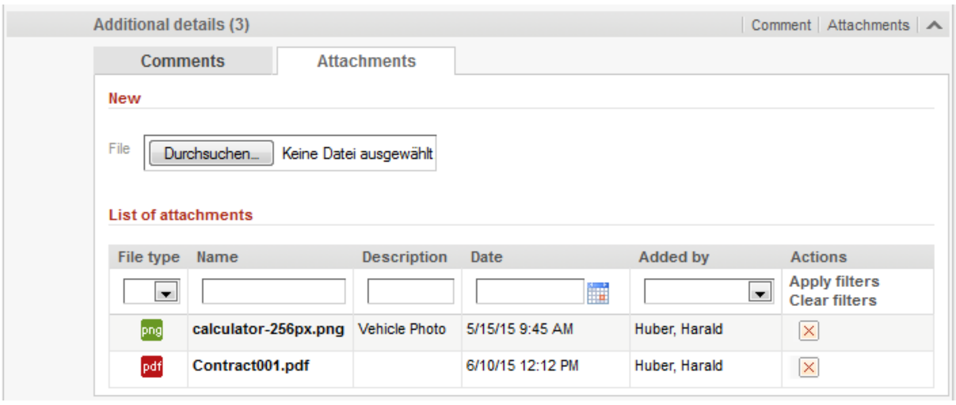


The details page comprehensively shows all information about the resource and lists the resource actions defined for the resource in box on the top right. An action will only be listed in this place for a user with a role including the ACT privilege for this resource type. Depending on the usage scenario an action which creates a new resource based on the one displayed can be shown here. Currently such a resource type action is the only way for copying a resource.

The icon on the left of the basic resource information can be dragged to the “Favorites” box creating a favorites entry.
The page’s first section shows the resource field data entered in the create form. The header bar shows links to edit, deactivate and delete the resource depending on the privileges. If the resource is already deactivated it will show a link for activating instead of deactivating it.

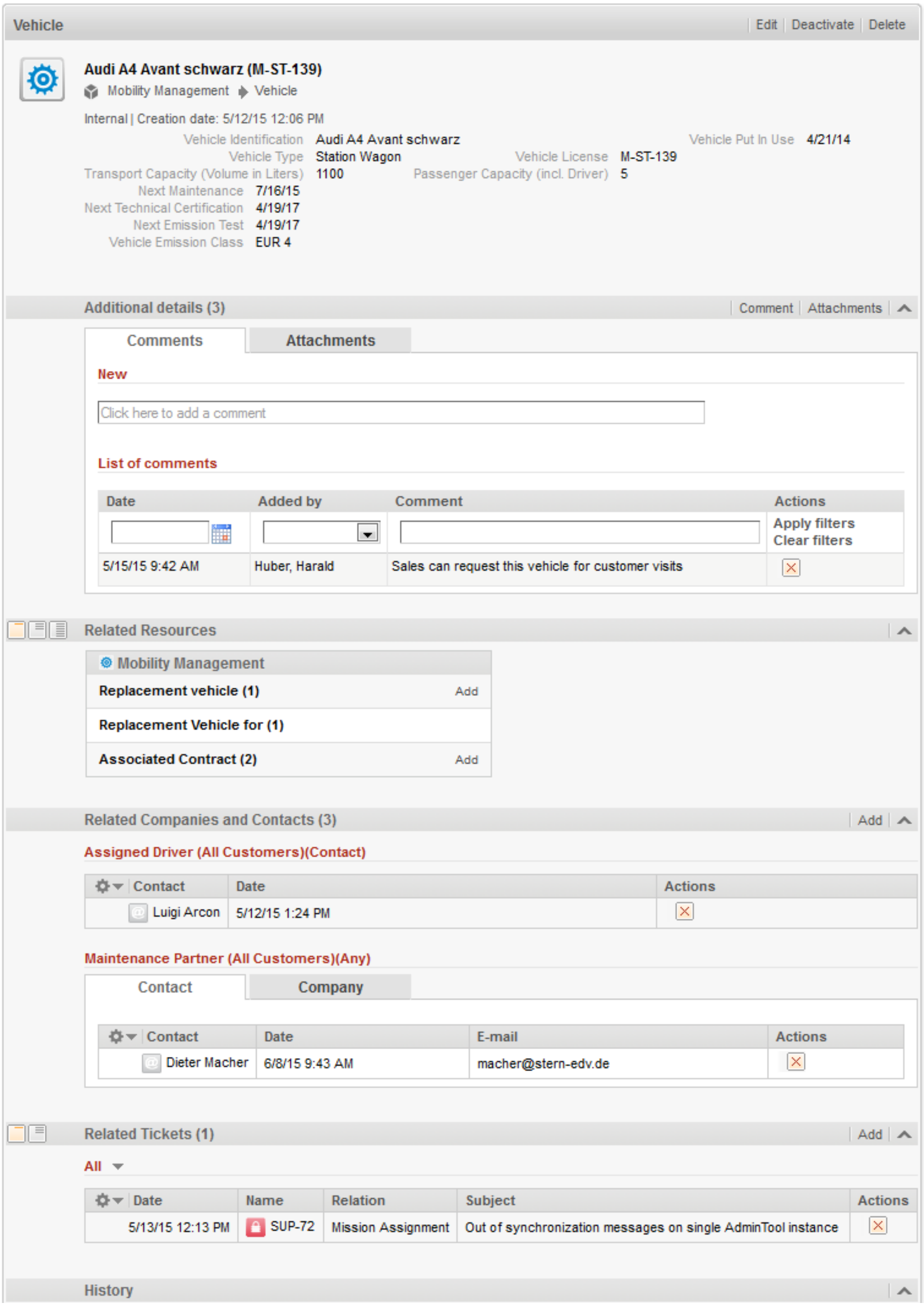


Below the basic resource information additional details like comments and attachments can be added. The header displays the total number of entries for the section in parentheses. If there are no entries for a tab a corresponding message is shown, otherwise a table which lists the entries is displayed. The usage of the tables parallels the same kind of tables for tickets or customers. They can be filtered for column entries for example.

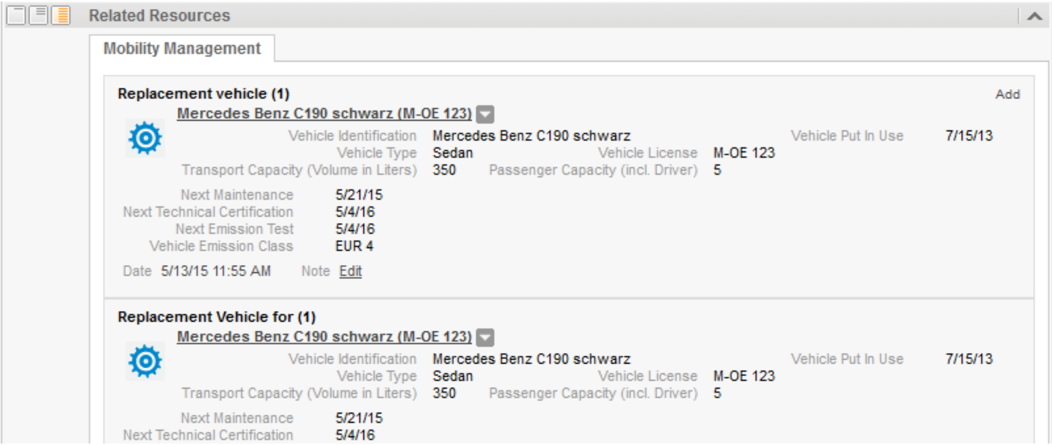


The full resource detail page can be seen below. Following the additional details it has sections for relations with other resources, tickets, and customers. Furthermore it has a history section which is collapsed in the screenshot below. Sections can be collapsed and expanded manually by clicking the arrow icon on the far right of the header just like on other pages.

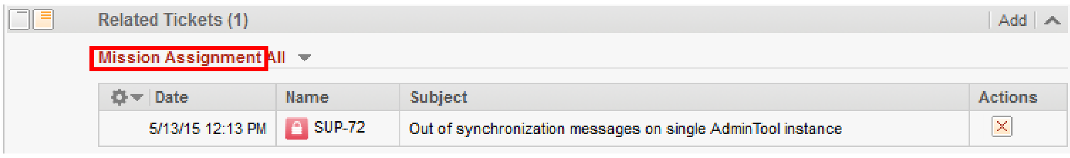
When loading the page the sections can be initially collapsed by configuration. This is done by a page customization comparable to other pages.
The sections for resource and ticket relations have several levels of detail to select from, the most basic one being used for both in this example.



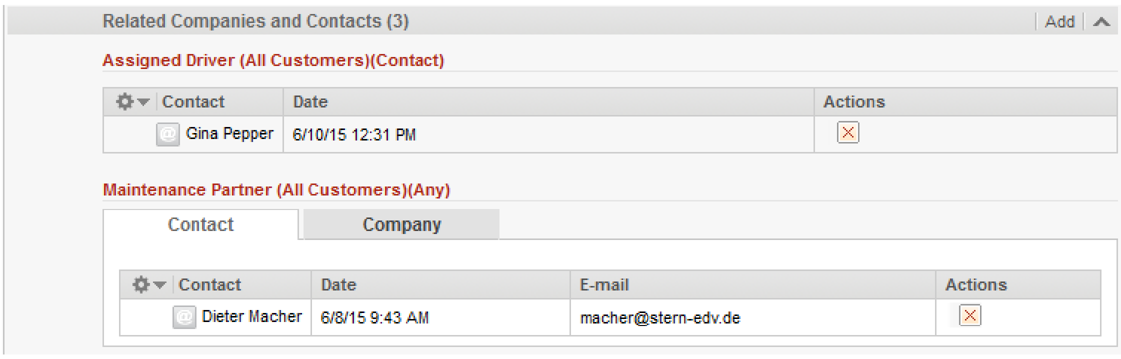
The maximum detail level for relations of the resource to other resources is shown below. The header displays the total number of resource relations. This level of detail features a tab for each resource group for which relations exist. On the tab for each type of relation a list is shown. The list label also displays the relations count next to the relation description. On the far right on this line there is the “Add” link to create a new relation of this kind with the current page’s resource as its source. The resource label in the list is rendered by a template. Besides it a triangle menu can be opened to switch to the related resource or remove the relation with the resource.

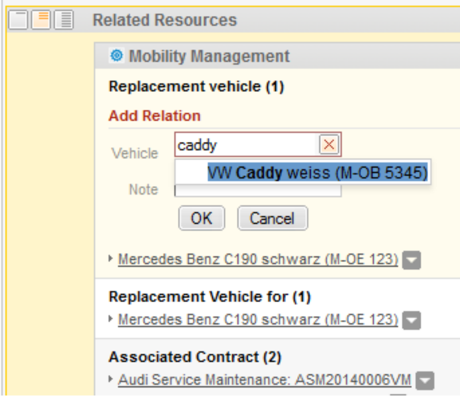


In the screenshot of the full resource page above the ticket (relation) section is set to the basic level of detail. In this view all ticket relations are listed all together in one table. The extended detail view shown below uses one table for each ticket relation type, note the highlighted relation name. In both views there is a triangle menu next to the table headline for a basic all/open/closed filter. Table usage does not differ from other tables in the Web Client. An “Add” link is on the right side of the ticket (relation) section header so that new relations can be created.

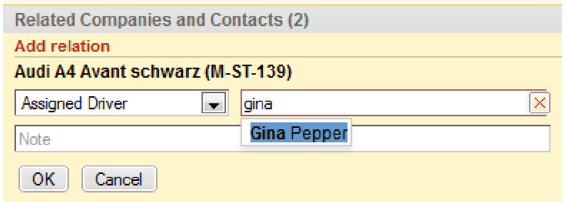


The customer section always provides separate tables for each kind of relation. Usage of these tables is just like for other tables. The section header also shows an “Add” link on the right.



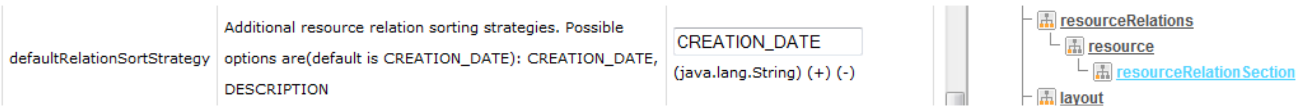


Adding a new relation is initiated by clicking an “Add” link in the corresponding header. When adding a relation to another resource the link can be found on the headline of the resource relation name so a specific relation will be created right away. In the form that opens below the header only the target resource has to be selected and a note can be added (depending on the relation configuration). The resource types offered as a target are filtered by the allowed resource types for this kind of relation.
Creating a new relation with a ticket or a customer differs slightly since there is only one “Add” link in the section header, so the exact relation to create is not specified yet. Thus, first the relation type must be selected in the form before identifying the target object. This works the same for tickets and customers, the example below shows creation of a contact relation.

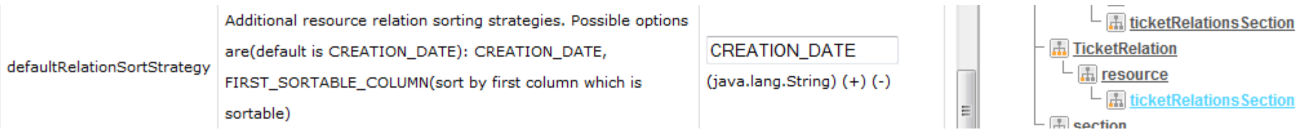


The functionality necessary for filtering resource relations with units and tickets has been added. When the count of relations exceeds a configurable limit the filtering controls known from other tables are shown. The controls are similar to the ones for the tables in the ”Additional details” section. The default limit of relations needed to show the controls is 10. They are shown, if more relations are listed in the table. The page customization to change this limit is the attribute *compactViewLimit* in the scopes *TicketRelation* and *UnitResourceRelation*, respectively.

Page customizations have also been added to define to order the different entries for a specific relation are sorted: alphabetically or by creation date with the newest entry first. By default they are sorted by creation date with the newest entry first. The customizations must be made on the resource detail page. The scope depends on the target object while the attribute always I called *defaultRelationSortStrategy*. The scope for resource-resource relations is *resourceRelationSection*:



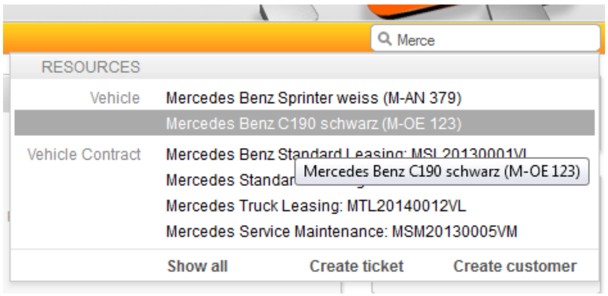
The acceptable values are CREATION_DATE which also is the default and DESCRIPTION for resources which uses the template defined for display to sort the entries alphabetically. The scope for relations with tickets is *ticketRelationsSection*.

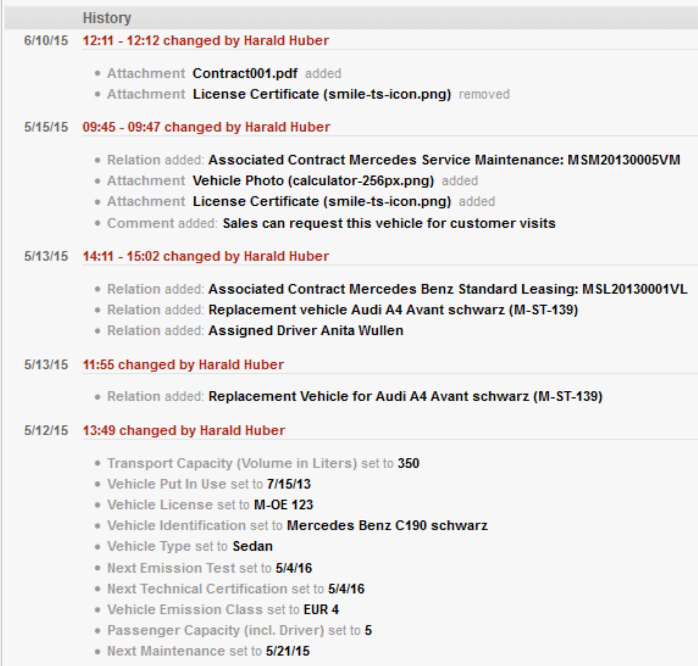


The scope to be used for resource-unit relations is *unitRelationsSection*. Both for resource relations with units and tickets the possible values are CREATION_DATE and

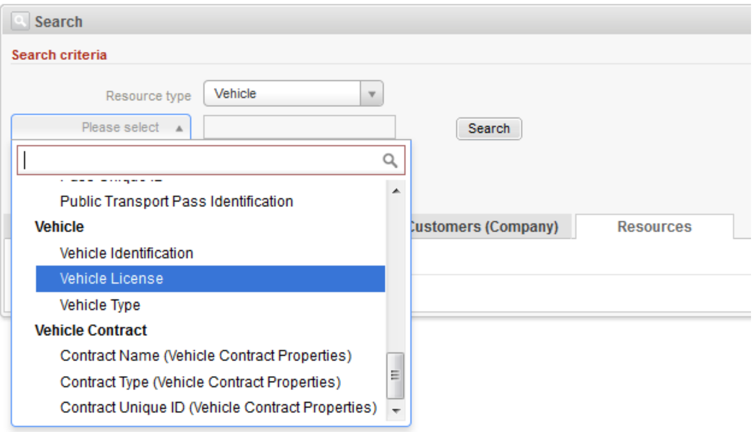
FIRST_SORTABLE_COLUMN. The date is used by default while the other value uses the first available sortable field for alphabetically ordering.

The history section at the bottom of the page lists the changes made to the resource chronologically with the latest change first. This includes changes to the resource fields, the additional data and all the relations of the resource in question.
This section can only be collapsed and its contents will be hidden. Currently there is no other possibility to interact with it since it is there for informational purposes only.

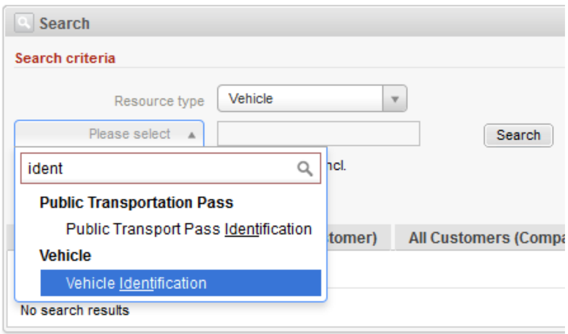




The Web Client's search capabilities have been extended to be able to deal with resources as well. The quick and easy search now lists resources matching to the string entered grouped by their resource type. The entry shown for the resource itself is defined by an Admin-Tool template set in the resource type definition. This is also used for the tooltip, please refer to the screenshot.

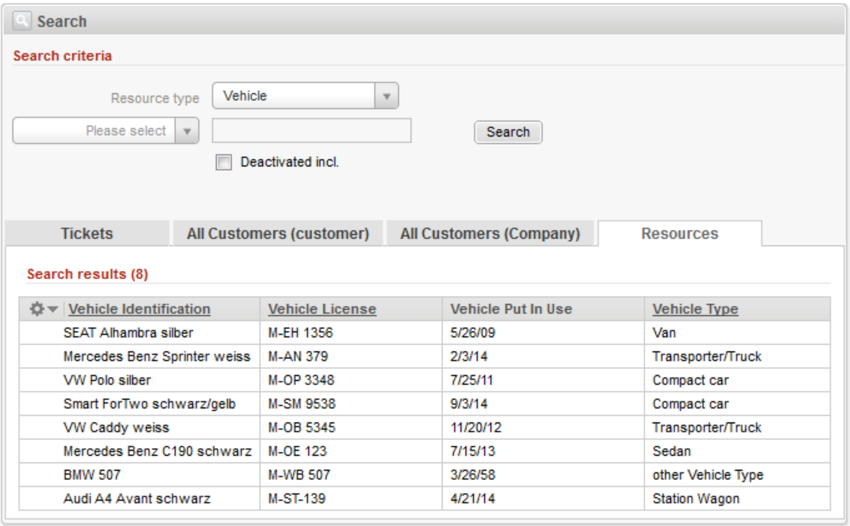


The detail search now offers a new result tab "Resources". When accessing this tab a search field for selecting the resource type to search for is immediately shown. Additionally the search field selection provides the searchable resource fields grouped by the resource type. A field must have the annotation "field indexed" set to be shown in this search field list.



The search field list is searchable now (see section 1.3.3 below). Typing a string in the field at the top of the list filters the field name entries shown accordingly. The checkbox labeled "Deactivated incl." allows to search for deactivated resources as well, if it is checked. Normally deactivated resources are filtered out in the search results.

The search results are shown in the table on the tab “Resources”. A search result can be accessed directly by clicking on its line in the result table. Changing the table appearance and sort order does not differ from the other tables in the Web Client.



Vehicle Identification	Vehicle License	Vehicle Put In Use	Vehicle Type
SEAT Alhambra silber	M-EH 1356	5/26/09	Van
Mercedes Benz Sprinter weiss	M-AN 379	2/3/14	Transporter/Truck
VW Polo silber	M-OP 3348	7/25/11	Compact car
Smart ForTwo schwarz/gelb	M-SM 9538	9/3/14	Compact car
VW Caddy weiss	M-OB 5345	11/20/12	Transporter/Truck
Mercedes Benz C190 schwarz	M-OE 123	7/15/13	Sedan
BMW 507	M-WB 507	3/26/58	other Vehicle Type
Audi A4 Avant schwarz	M-ST-139	4/21/14	Station Wagon

Resource pool ETL and data warehouse functionality

This release provides full ETL functionality for the resource pool feature. The ETL plugins are fully aware of the resource pool structures and can be used in the same ways like for other objects without limitation.

The release also features full functionality of the CM data warehouse/CMRF for the resource pool feature. Like other field resource fields need to have the annotation “reportable” being set in order to have the data transferred into the data warehouse.

1.2.2 Range search for numbers and dates (#610820, #625078)

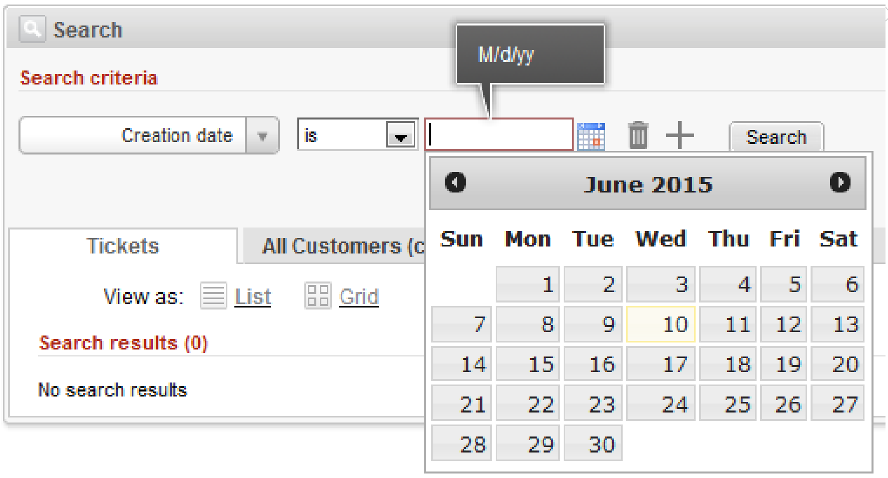
The detail search previously did not allow search for values within an interval. This functionality has been added so that now it is possible to search for values within a defined range. This kind of search is offered for the number and date field types.
The available operators for defining the search intervals and values are:

- **is** (equals, the only previously available operator, available for numbers and dates)
- **between** (specifying two inclusive values, available for numbers and dates)
- **lower** (specifying the inclusive upper limit, available for numbers)
- **greater** (specifying the inclusive lower limit, available for numbers)
- **before** (specifying the exclusive latest point in time, available for dates)
- **after** (specifying the inclusive earliest point in time, available for dates)
- **last** (specifying an interval before the current date, available for dates)

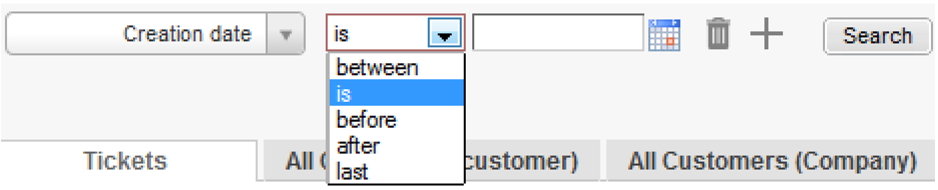
The interval search is both available in the Web Client and in the REST API.

Web Client

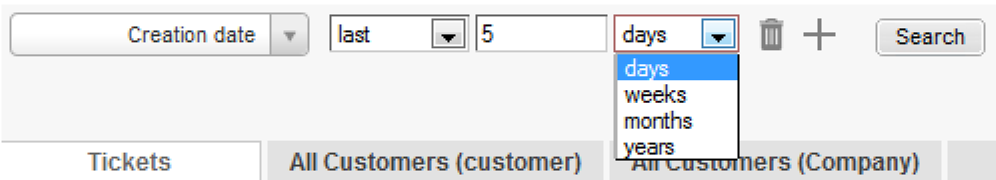
The search in a date field does now offer a drop-down menu to select the operator after the field has been chosen. A date entry field will be following it normally.



The operators offered are the range operators available for date fields.



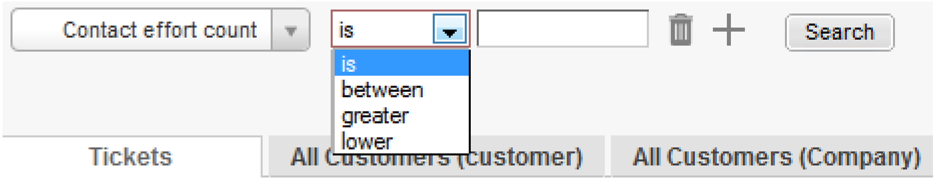
When choosing the operator “last” an entry field for a number followed by a drop-down menu for the interval is shown. This allows to define an exact time interval like “5 days” which limits the search to field entries with a value corresponding to the last 5 days before the time of the search.



In case the operator “between” is chosen two date entry fields are displayed which allows to specify the threshold values for the interval. The field value must have a value between these two dates for a match. The threshold values are included in the search, so if the field value matches either entry this is also considered a valid result.

The same applies to the single search values entered for the “before” and “after” operators. The user entry is included in the search.

The search for ranges over a number field generally works the same. In this case only the valid operators for selection will be shown as well.



The operators “lower” and “greater” both include the threshold values entered so the search field entry value will be a match in the search results.

Also both values entered will be included as matches for the results.

REST API

All range search capabilities described above can be accessed by using the REST API also. The URL pattern to call for tickets by date field with a range has to look like the following command:

```
curl -u Huber:consol http://{$HOST}/restapi/tickets?{$GROUP}:{$FIELD}={$DATE/$DATE_RANGE}

with values for:

$HOST  - CM Host
$GROUP - Group of fields, eg. helpdesk_standard
$FIELD - Custom field
$DATE/$DATE_RANGE (by operator):
       - IS      - date in format dd.mm.yyyy%{timezone offset in minutes}
       - AFTER   - [dd.mm.yyyyTO]
       - BEFORE  - [TOdd.mm.yyyy] BETWEEN
       - BETWEEN - [dd.mm.yyyyTOdd.mm.yyyy]
```

A URL call pattern for tickets by a range for a number field is explained by this command:

```
curl -u Huber:consol http://{$HOST}/restapi/tickets?{$GROUP}:{$FIELD}={$NUMBER_RANGE}

with values for:

$HOST  - CM Host
$GROUP - Group of fields, eg. helpdesk_standard
$FIELD - Custom field
$NUMBER_RANGE - Number range to apply for filtering tickets (has to be url encoded)
         in format [{lower} TO {greater}] separated by ','.
```

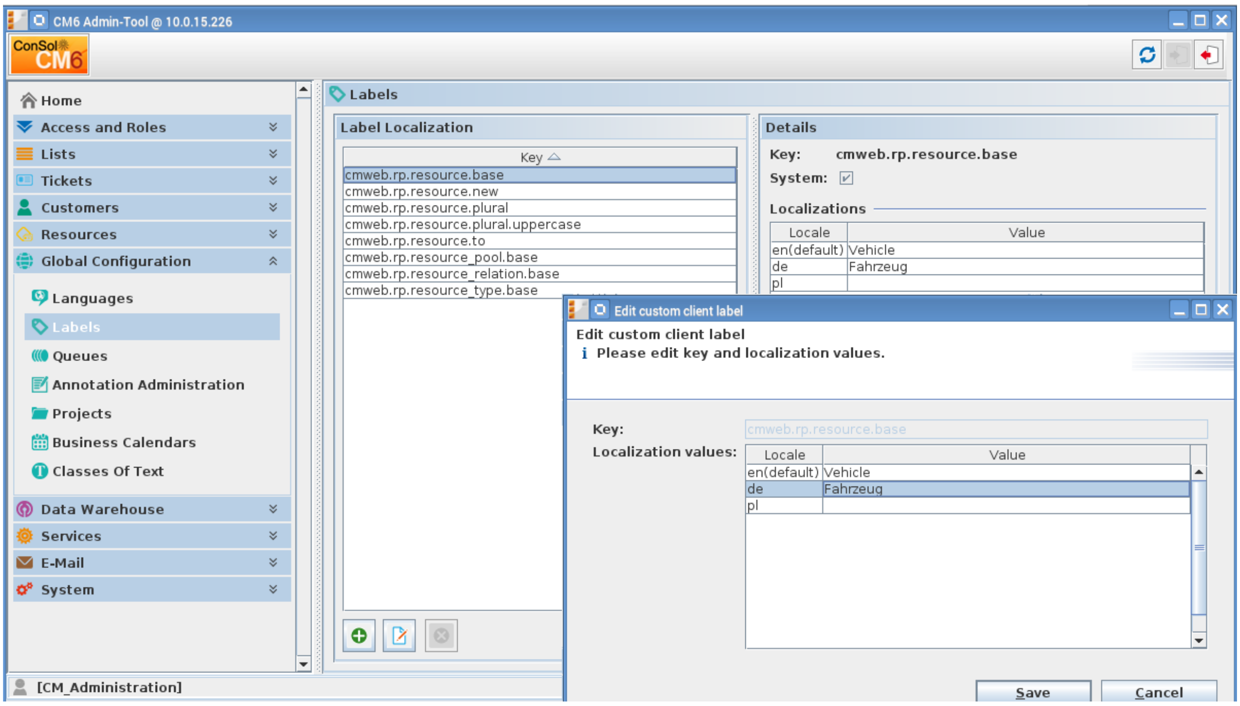
Strings used in an URL have to be URL encoded which includes the brackets, so in the URL an interval description like `[01.01.2015TO31.01.2015]` must be encoded as `%5B01.01.2015TO31.01.2015%5D`.

In case of the operator “is (equal)” no brackets are necessary and just the value is provided after the equal sign. The interval description is generally in brackets and uses the string “TO” to separate the threshold values. Each value can be omitted to get an open interval but one must be provided:

- value — is equal to value date/number
- [valueTO] — after value date or greater than value number
- [TOvalue] — before value date or lower than value number
- [value1TOvalue2] — between value 1 date/number and value 2 date/number

1.2.3 Client Labeling Extension (#626888, #627245)

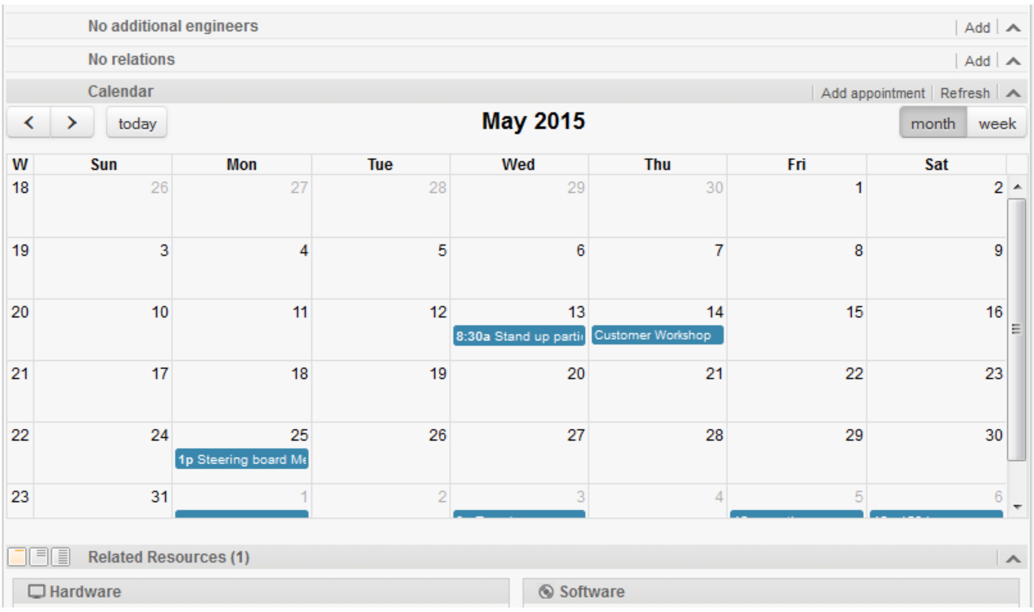
A new mechanism has been added to be able to easily relabel basic objects in the web client. This configuration can be done in the Admin-Tool. In this release it is implemented only for the resource object of the resource pool, but more will follow in upcoming releases. Currently the term “resource” can be replaced by “vehicle” for example, if the resource pool is used to model a company's car pool.



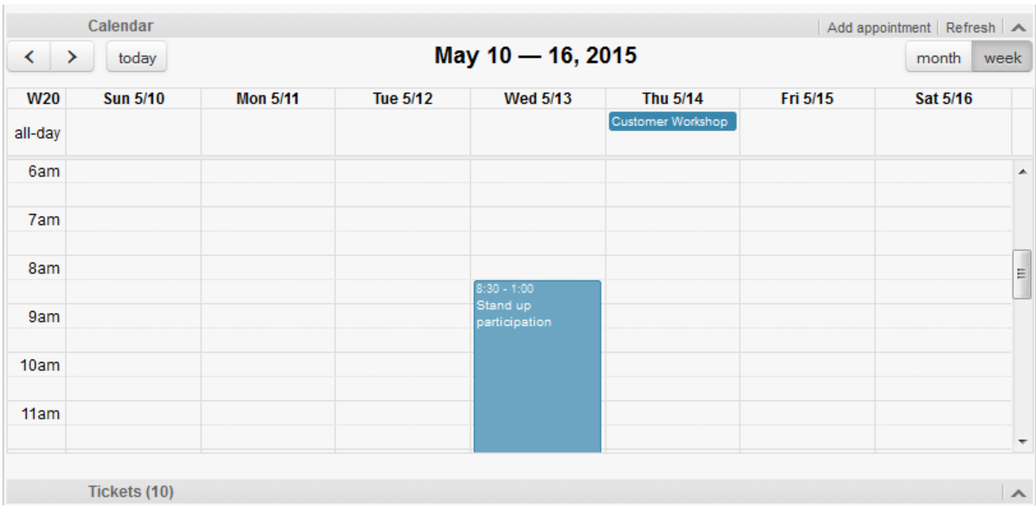
The navigation item “Labels” in the navigation group “Global Configuration” provides a list with the available word forms of the term which are used in labels in the Web Client. These can be edited for each localization to have a consistent appearance in the Web Client.
Adding new terms for custom client projects should be only after thorough planning since it is common that several different word forms are needed. A best practice on how to devise the addition is available from ConSol✳.

1.2.4 Microsoft Exchange 2010/2013 Calendar Integration (#625725)

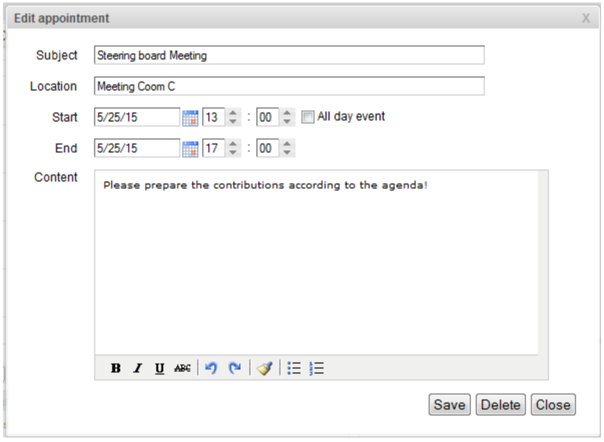
In CM a new component has been introduced allowing the integration of a calendar based on Microsoft Exchange Server versions 2010 SP2 and 2013. Exchange version 2007 is not supported.

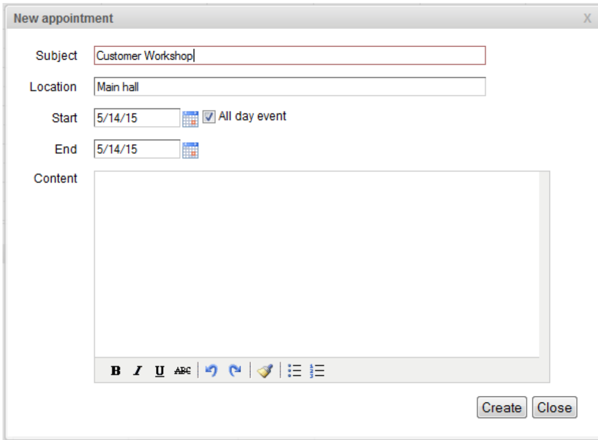


The calendar view can be shown in its own section on ticket or unit pages depending on the specific use case. There is no section with the calendar available on the resource page. The calendar view provides a month and a week view with the appointments. On the top right of the calendar there are two toggle buttons for switching between these views. On the top left there are buttons to navigate in the calendar: two arrow buttons for going to the next or previous week/month and a button labeled “Today” to move to the week/month which includes the current day.



Appointments can be moved by drag and drop if they are editable. Clicking on an existing appointment opens it for editing. A new appointment can be created by clicking “Add appointment” on the right of the section header. The “Refresh” link next to it reloads the calendar data from the server so that the user can ensure he sees changes made in the meantime. The dialogs for creating and editing an appointment are basically the same.





The configuration of the calendar control is mostly done via page customization. The section is made visible the conventional way by setting the page customization attribute *state* on the ticket (or unit) page in the scope *calendar* from “hidden” to “expanded”. The connection to the Microsoft Exchange server is handled by an Admin-Tool script which must be identified in the attribute *calendarInitializationScript* by its name. The attribute *editable* must be set to “true”, if the user should be able to edit appointments and move then via drag and drop.

state	The visibility mode of the section, possible values are [expanded, collapsed, collapsed_and_preload, hidden], default: 'expanded'	hidden (java.lang.String) (+) (-)
calendarInitializationScript	Name of the script which produces calendar configuration. If value is empty or script returns *null* calendar won't be shown	(java.lang.String) (+) (-)
editable	Whether the apointments can be dragged and resized. This value overwrites source configuration	false (boolean) (+) (-)

calendar
ticketEditPage
calendarSection

There are numerous other page customization attributes in the scope controlling the display and behavior of the calendar component. They all feature a short explanation of their impact and values in the description column.

The required Admin-Tool script provides the connection information. This script must be of the type “calendar integration” and have a content and structure like the following example script:

```
return [
name: 'Exchange Source',
'access.type': 'EXCHANGE',
'access.url': 'https://exchange1.server.net/EWS/Exchange.asmx',
'access.username': 'exchange-user',
'access.password': 'exchange-password',
'access.domain': 'SSO',
'access.impersonation': 'somebody@sso.server.net',
'access.version': '2013'
]
```

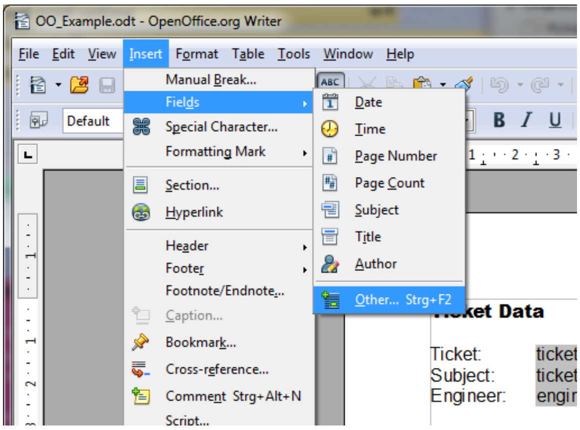
1.2.5 CM.Doc integration with OpenOffice (#624882)

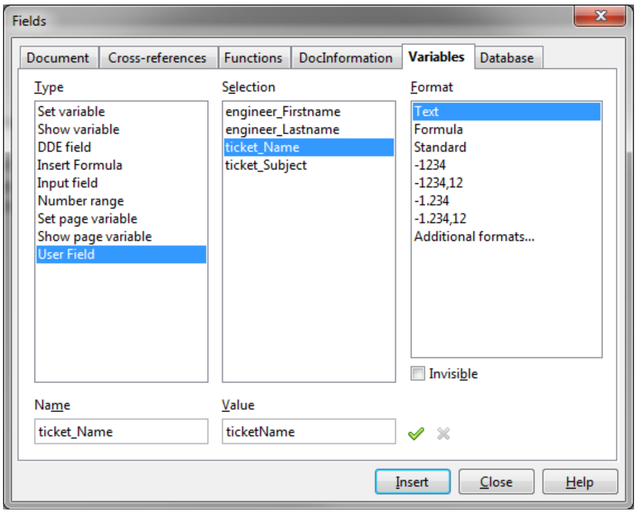
CM.Doc (formerly CM/Office) can now be used together with the suite OpenOffice version 3.2.1. Before this version only Microsoft Office had been supported.

The CM configuration to be able to use CM.Doc together with OpenOffice requires CM.Doc to be generally enabled. This is done as before by setting the system property *cmoffice.enabled* in the Admin-Tool in the module *cmweb-server-adapter* to “true”. Additionally the path to the OpenOffice main program directory must be known to the system. This is achieved by adding the path as value to a system property *cmoffice.oo.path.<NUMBER>* in the module *cmweb-server-adapter*. These properties are numbered (starting with 0) so that different path can be used to accommodate different OpenOffice installations on varying operating systems and different system configurations. So a possible list of properties and values for the path configuration would be:

- *cmoffice.oo.path.0*: C:\Program Files (x86)\openoffice\program
- *cmoffice.oo.path.1*: /usr/lib/openoffice/program
- *cmoffice.oo.path.2*: /usr/lib64/openoffice/program

The handling of OpenOffice documents in the CM Web Client is identical to the handling of Microsoft Office documents. When preparing a document template with CM data in OpenOffice the basic handling also mirrors the procedure in Microsoft Office. So generally the existing CM.Doc documentation applies here, too. When you want to add a field to the OpenOffice Template, the dialog “Fields” can be opened by selecting the Menu entry “Insert” → “Fields” → “Other” and selecting the tab “Variables”.





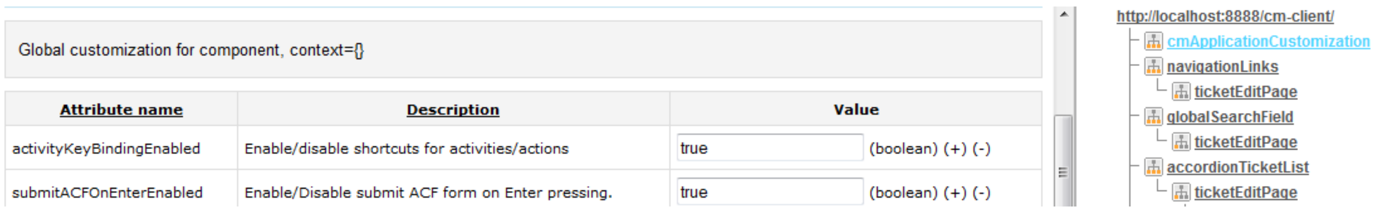
On this tab a CM field can be added by first selecting the Type “User Field” and the format “Text”. The next step is entering the field name taken from the column “Key” in the document template administration and putting it in the dialog field labeled “Name”. Add a useful value for recognizing the field in the document. Click on the arrow symbol to the right of the field “Value” so that the field shows in the middle list “Selection” and make sure it is selected there. Clicking on the “Insert” button on the bottom right side of the dialog will insert the field into the document at the current cursor position. This has to be repeated for every field that should show up in the document.

The usage of an OpenOffice document template in the Web Client is no different from the usage of a Microsoft Word template. It is done by selecting the office template while adding a new attachment. Please see the existing documentation for this kind of document handling.

Corresponding labels like navigation item and messages presented to the user in the context of this functionality have been adjusted to be neutral with respect to the office suite product.

1.2.6 Keyboard shortcut additions for workflow activities (#625645, #627471)

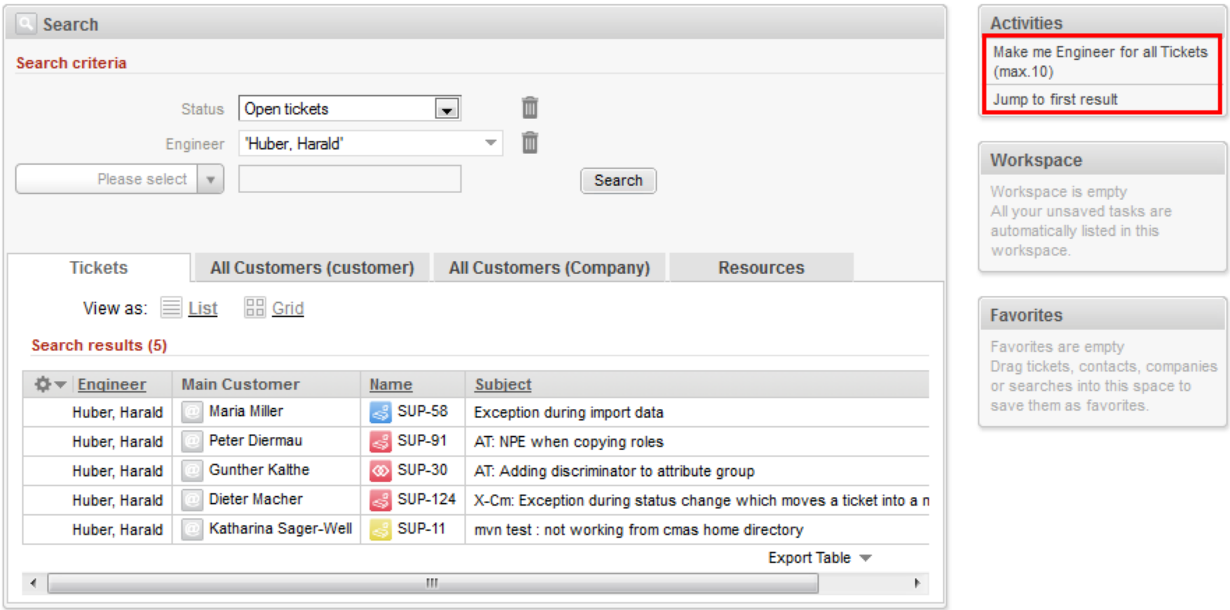
The Keyboard shortcuts in previous versions of CM were limited to the shortcut ALT-F to activate the Quick and Easy Search box for entry. The available keyboard shortcuts have now been extended to cover activities. This includes workflow activities for ticket as well as data object actions and resource actions.
The available activities can be executed by pressing the ALT key together with a number. The number is the position in the list of activities displayed, so ALT-1 executes the first activity, ALT-2 the second one and so on. Please note that is only covers the first nine activities in the list. If the list contains ten or more activities the tenth and subsequent activities cannot be accessed by a keyboard shortcut anymore.
In case a workflow activity opens an Activity Control Form the cursor will be positioned in the first field to edit and pressing ENTER will submit the form.



The new behavior described here can be (de-) activated by two now page customizations. By default these keyboard shortcuts are turned on. The customizations are in the scope *cmApplicationCustomization*. The attribute *activityKeyBindingEnabled* controls the execution of activities via keyboard shortcuts and *submitACFOnEnterEnabled* activates submitting ACFs by pressing ENTER. For both the value “true” means the shortcuts are available while “false” deactivates the shortcuts.

1.2.7 Search result actions (#625075, #627517)

This release features a new concept in the web client. It is now possible to define actions on search results. These actions are presented like workflow activities for ticket, data object actions and resource actions, however, they can operate on the whole result set of a search and not just on a single object like the others.

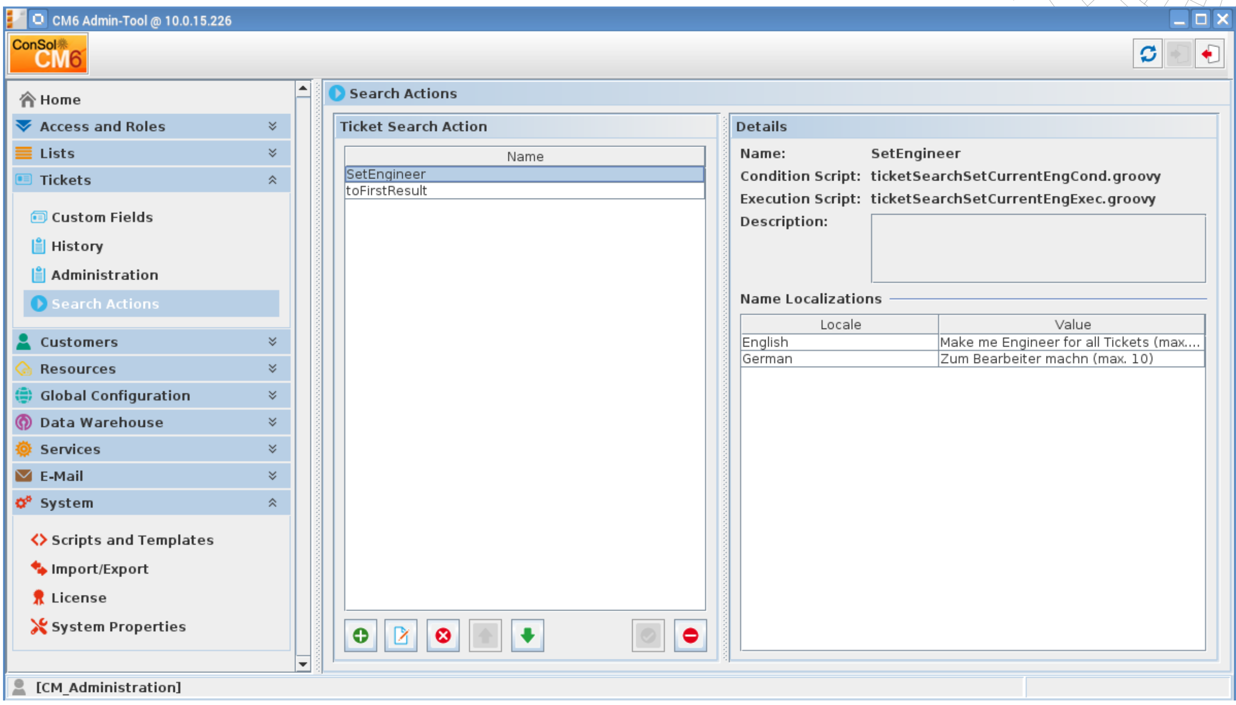


Search action configuration

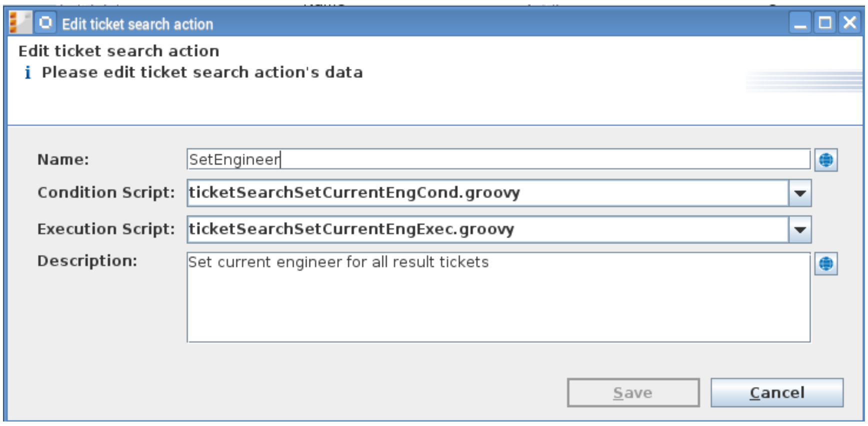
They are defined in the Admin-Tool, depending in the object type of the search results shown. This means that different action will be listed for each result tab like tickets, customers and resources. For customers they can be selectively associated with each customer group, so they are shown for those customer groups only. The same applies for resource types which also can be associated separately. This fine-grained mapping is achieved by introducing sic new script types for scripts in the Admin-Tool:

- Bulk ticket action
- Bulk ticket condition
- Bulk resource action
- Bulk resource condition
- Bulk data object action
- Bulk data object condition

Scripts must have this type set when being created so that they can be used in the desired search action. The scripts have to be created before defining the actions. The search object the action is related to determines where it has to be defined:



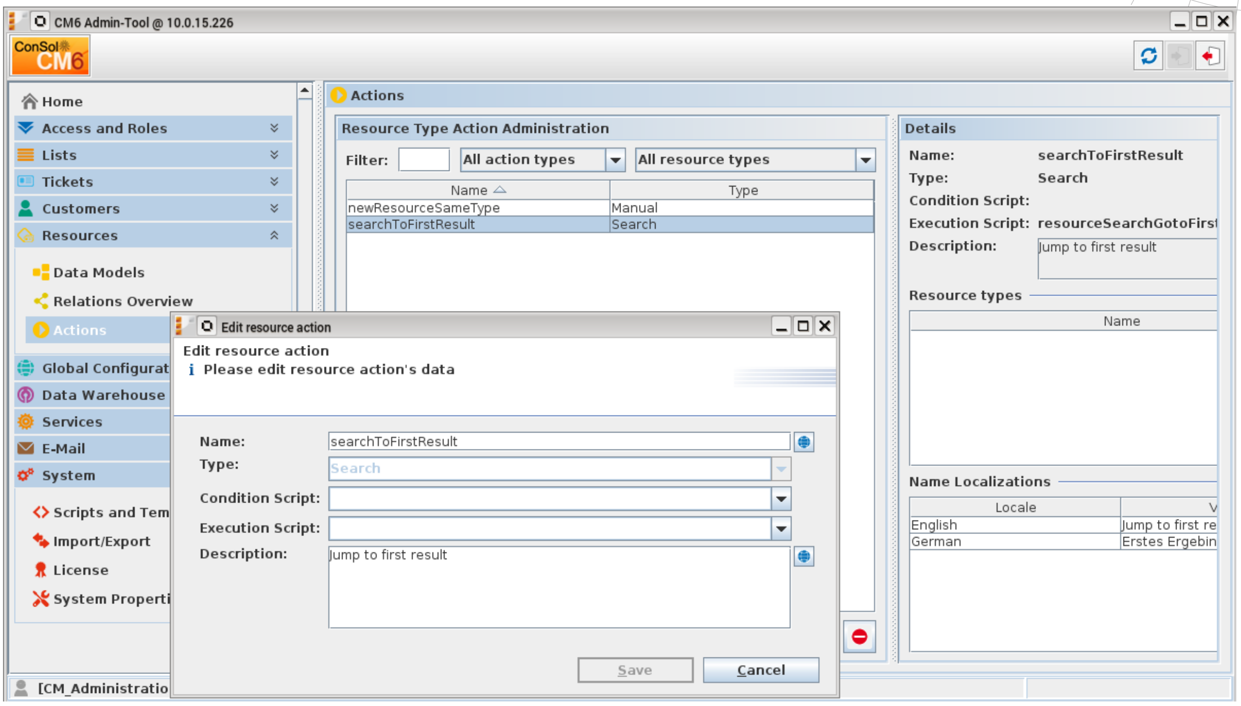
- Ticket search actions are created on a new page in the Admin-Tool under the navigation item “Search Actions” in the navigation group ”Tickets”.
- Data object (unit) search actions are created under “Actions” in the navigation group “Customers”.
- Resource search actions are created under “Actions” in the navigation group “Resources”.



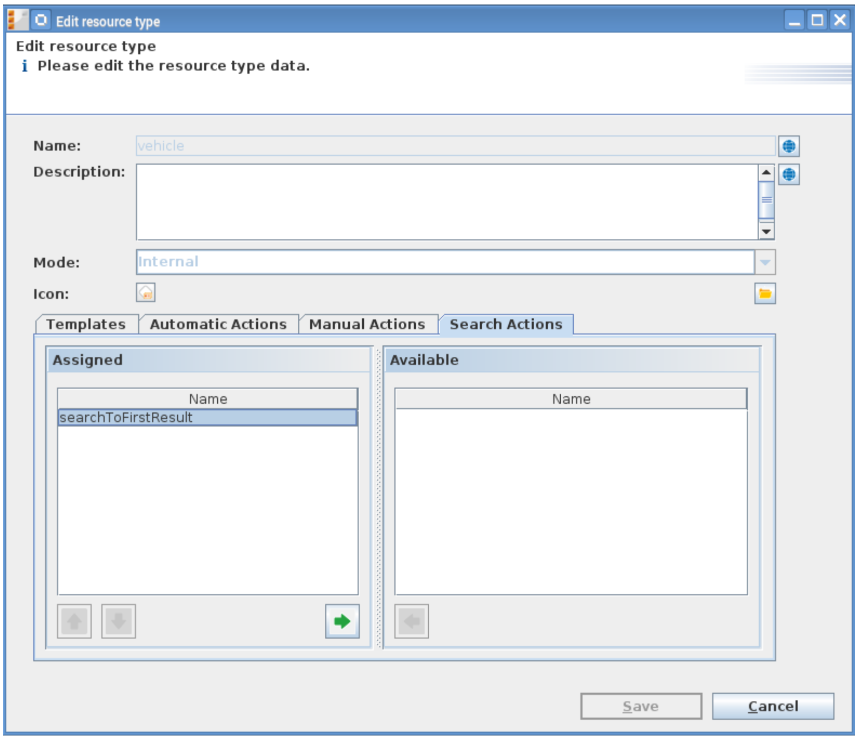
When creating a new (search) action in either of these spots, the action must be named and the corresponding type and script(s) need to be selected. The type “Search” must be chosen for data object actions and resource actions to used as a search action.

Caution! Now for all types of data object and resource actions the type must be selected before a selection of the scripts can be made! This includes not only the new type search action but also create, update, delete, and manual actions!

A ticket search action is complete after the definition, because it will be shown in the Web Client for all ticket searches, at least if the condition script returns “true”.



Search actions for data objects (units) and resources must still be assigned to the objects they should be shown for: A resource search action is only shown in the Web Client, if the resource type set for the result list is associated with the action.



This association can be made on a new tab “Search Actions” of the dialog to edit a resource type. The available and assigned scripts for this resource type are listed and the assignment can be made or removed by moving a script from one list to another.
The same assignment must be done for data object actions with customer groups. The dialog to edit a customer group also features a new tab “Search Actions” on which the assignment can be made in the same manner. This tab displays lists to separately assign customer and company search actions for dealing with a two-level customer data model.

Search action code examples

The following search condition and execution scripts bindings are available:

- **criteria** (TicketCriteria, UnitCriteria, ResourceCriteria)
- **pageSize** (positive integer)
- **pageNumber** (non-negative integer)
- **tickets** (List<Ticket> for ticket search action)
- **units** (List<Unit> for unit search action)
- **resources** (List<Resource> for resource search action)

A very simple example ticket condition script checking the size of the result set looks like this:

```
if (tickets.size() <= 10){
    return true
}

else
{
    return false
}
```

The following code is an example ticket execution script which sets the engineer currently logged in as the engineer for all tickets of the result set:

```
import com.consol.cmas.core.server.service.action.PostActionType
import com.consol.cmas.common.model.ticket.Ticket

def engineer = engineerService.getCurrent();
tickets.each { ticket ->
    ticket.setEngineer(engineer);
};
return actionScriptResultFactory.getPostAction("success",
"cmweb.search.assigned").withRefreshContent();
```

The execution script code below is a ticket search script which will switch to the first ticket in the result list:

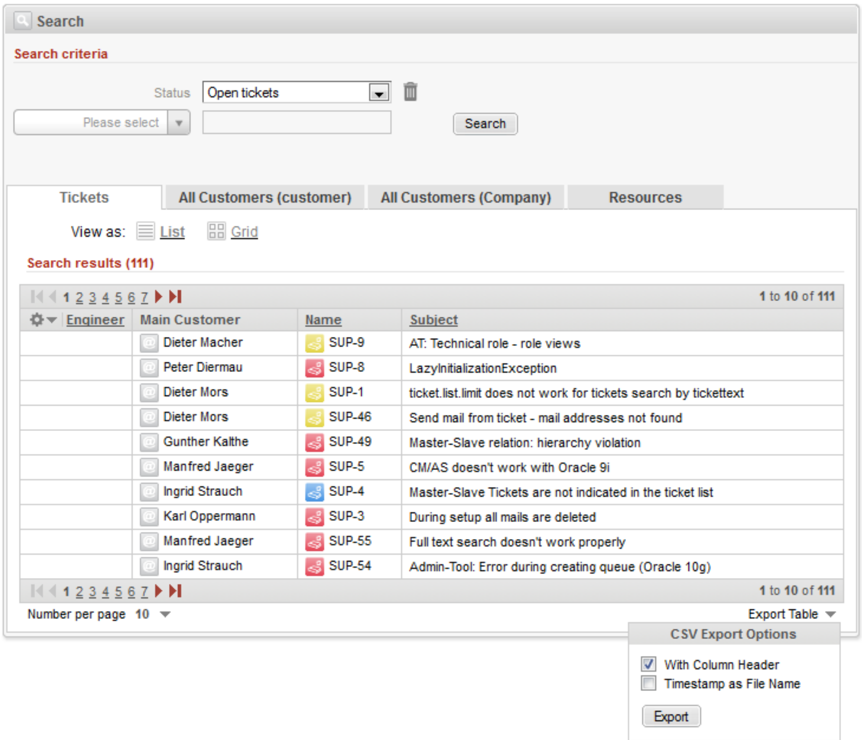
```
import com.consol.cmas.core.server.service.action.*

return actionScriptResultFactory.getPostAction(PostActionType.GOTO_TICKET, tickets[0]);
```

Below is a resource search script switching to the first result resource:

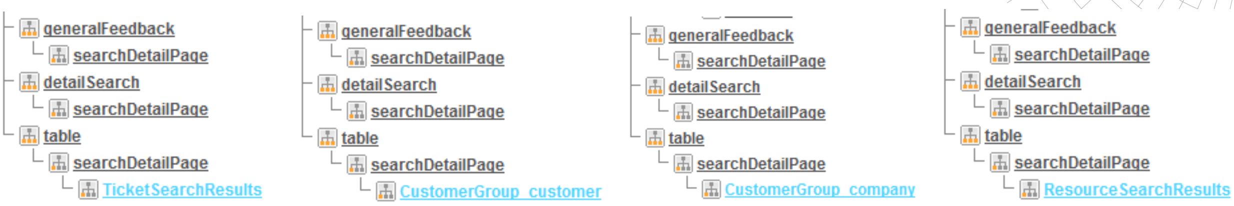
```
import com.consol.cmas.core.server.service.action.*

return actionScriptResultFactory.getPostAction(PostActionType.GOTO_RESOURCE, resources[0])
```

1.2.8 Search result CSV export (607069#, #627227)

The set of entries shown in a table in the web client, for example the results of a detail search, can now be exported to a CSV file for external use. However in principle this can be allowed for any list of entries displayed in table. This functionality can be (de-) activated by a web customization for each table.



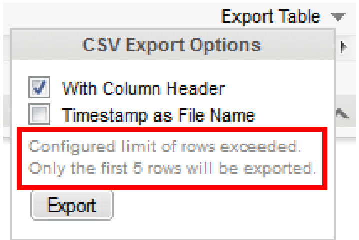
On the right side of the table bottom there are now the options to control and initiate this export. After clicking the triangle next to the label “Export Table” those options are shown. The option “With column header” adds the column labels of the result table in the first lines as a content description. By checking the option “Timestamp as File Name” the preselected file name will be the current date and time instead of the standard name “export.csv”. This option thus has the information of the time of export visibly available. Such information can be helpful for external use since it tells after which time data changes in the system cannot reflect in the export file anymore. Clicking the button “Export” will create the file and offer it for download showing the browser’s standard file download dialog.
In the file there will be no pagination, the result lines will be listed uninterrupted. Icons in the result display will be ignored. Custom field string values will be quoted by standard double quotes.
This new feature can be controlled separately for each table by page customizations. On the detail search page there are different scopes depending on which result tab is shown.



For search results they are each subsumed under *table/searchDetailPage* and are named by the corresponding result object: *TicketSearchResults*, *CustomerGroup_customer*, *CustomerGroup_company*, and *ResourceSearchResults*. Generally the attributes are available for each table on any page.

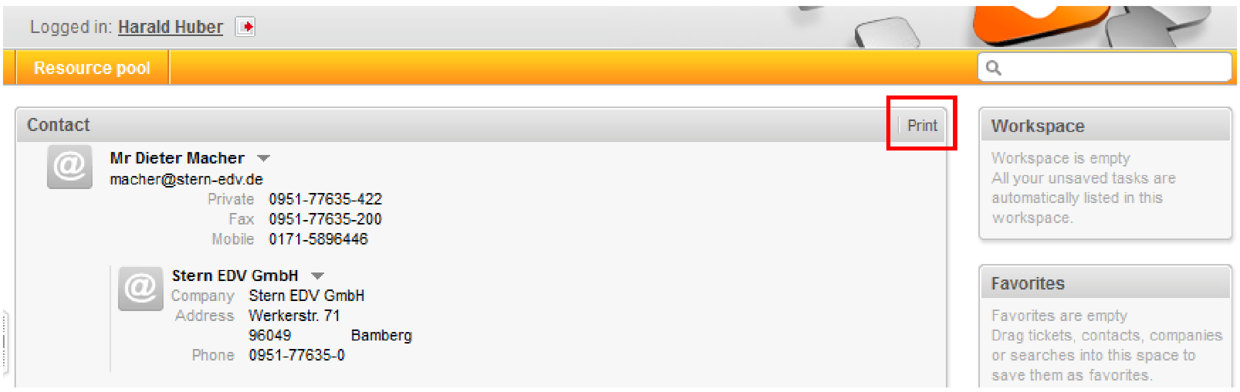
Attribute name	Description	Value	
enabled	Enable/Disable export.	false	(boolean) (+) (-)
exportRowsLimit	Max limit of exported rows (0 = no limit).	0	(int) (+) (-)

The attributes controlling the export are *enabled* and *exportRowsLimit*. While the first one is used to activate the export generally by setting the value to “true” the other one defines the maximum number of rows which can be exported to a file. Setting this value to “0” will allow exporting an unlimited number of result lines while any other positive number sets the maximum exported row to this limit. A negative number will be interpreted as “0”.
When a user tries to export a table with a number of results exceeding the limit a hint is shown in the export options:

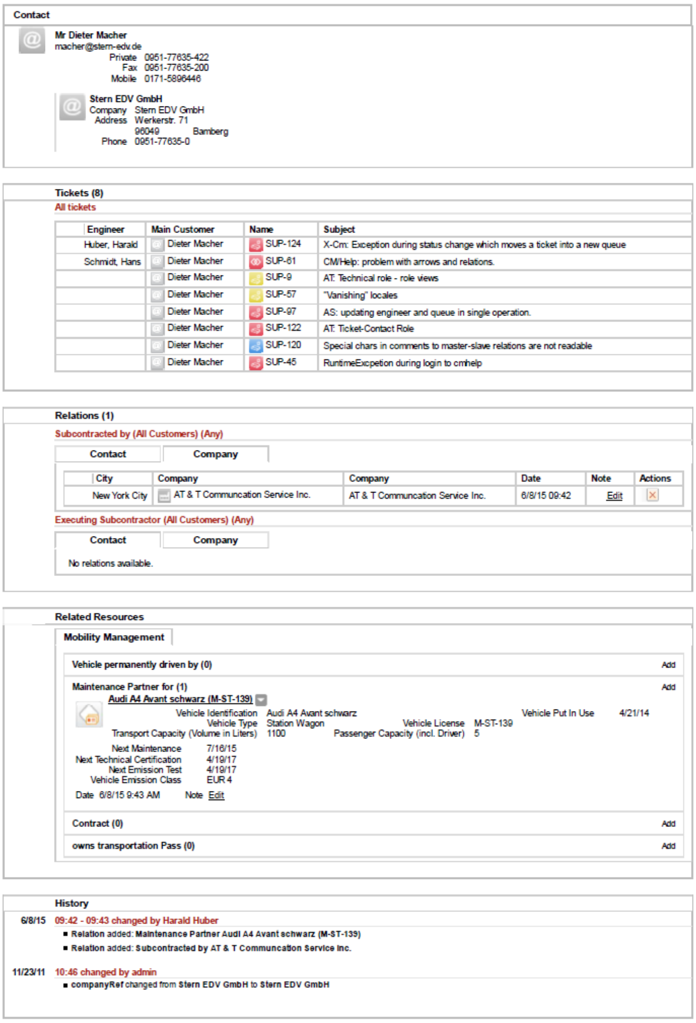


1.2.9 Print customer Data (#625784, #627654)

New functionality to print customer data has been added. The header of the customer page features a print button on the right side. Clicking on this button will print the current content of the page using the system/browser print dialog.



The data printed closely mirror the data shown on the page. If a section is collapsed, only the header will be printed. If the section is expanded, all data shown within the section are printed. In a tabbed section only the visible tab is shown on the print. For hidden tabs only the tab (label) itself is displayed on the print mirroring like the display in the browser. In the same manner lists, for example the tickets within the ticket section of the customer, are just printed



as shown within the section of the browser display. This means, only the active page of the list will be printed. Currently it is not planned to allow printing all list entries. For an overall impression of a printout please see the illustration on the right.

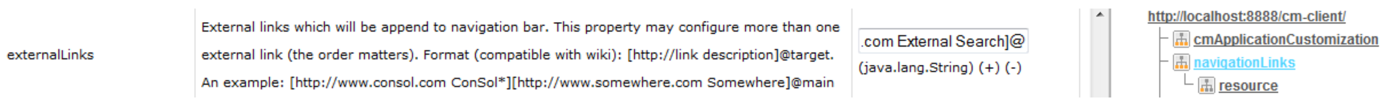
Please be aware that list may be cut off on the right edge, because the page width may not be sufficient to print all data of a list entry!

1.2.10 Unit Relations Static Column "Contact"/"Company" (#623839)

A static column "Contact"/"Company" like it is used in the result lists for the detail search and for the contacts table at the company page has been added to the unit relations table. The content of this column is defined by the same template we already use for the detail search.

1.2.11 External navigation link target configuration (#627236)

The target value for links in the navigation bar can be configured now. Earlier it generally used "_blank" as a value opening the URL in a new browser tab/window. This can be changed now by adding "@" so that the URL is opened in the current browser tab/window. After the “@” a target frame name can be specified if this should be available.



Several links can be specified following one another in the page customization value:

```
[http://firstlink.com First Link][http://secondlink.net Second Link]@[http://thirdlink.org Third Link]@framename
```

This value for the customization attribute would result in three links being displayed, labeled “First Link”, “Second Link”, and “Third Link”, respectively. The first one would be opened in a new browser window/tab like before ensuring backwards compatibility. The second one would open in the same window while the third one would open in the frame named after the “@”, if it was available.

1.2.12 Parallel Editing of a Ticket (#626365)

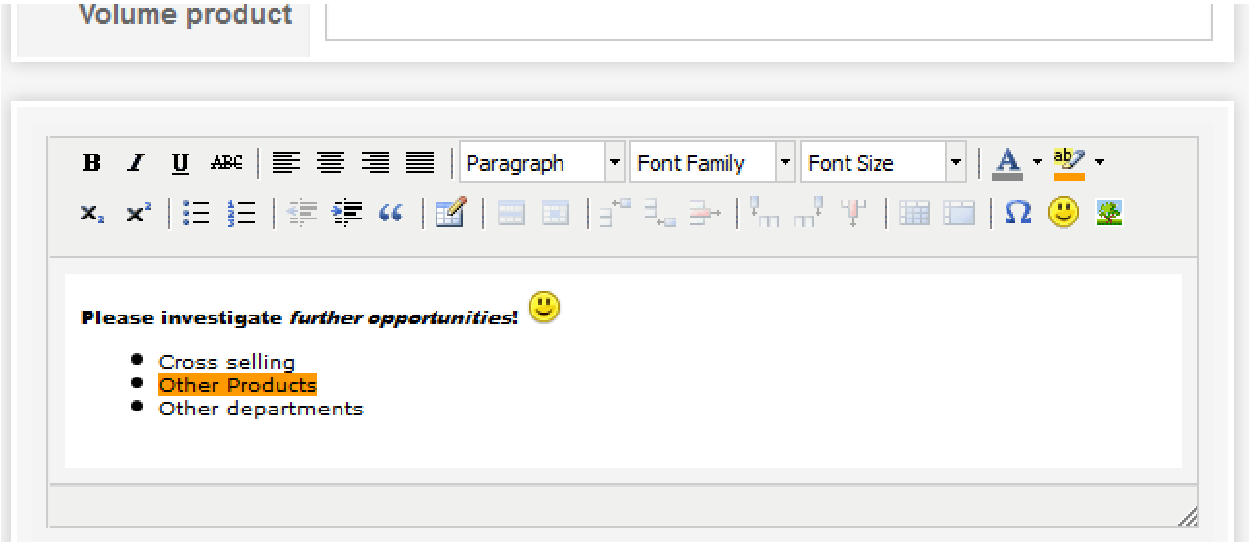
It was not possible in earlier releases of ConSol*CM that two engineers could make modifications to a ticket at the same time. After the first engineer saved his changes the second engineer invariably got the message that he needed to refresh the ticket view before saving was possible, resulting in the loss of his changes. The logic has been changed in this release. Now changes can be made to a ticket concurrently as long as they do not interfere with each other. When the same data are edited this cannot work and a message will be issued like before. The old behavior can also be enforced by the server property defining this behavior.

The configuration property in the Admin-Tool is called *diffTrackingEnabled* and can be found in the module *cmweb-server-adapter*. Setting its value to “true” will allow the concurrent editing of tickets while setting it to “false” will enforce the previous behavior. The default value is “true” introducing concurrent editing of ticket as the new standard behavior.

Caution! Please be aware that the new default implies a behavior change of the CM system! Please review a system before update for potential consequences and change to the previous behavior if necessary!

1.2.13 CM/Track: new Rich Text editing (#625123)

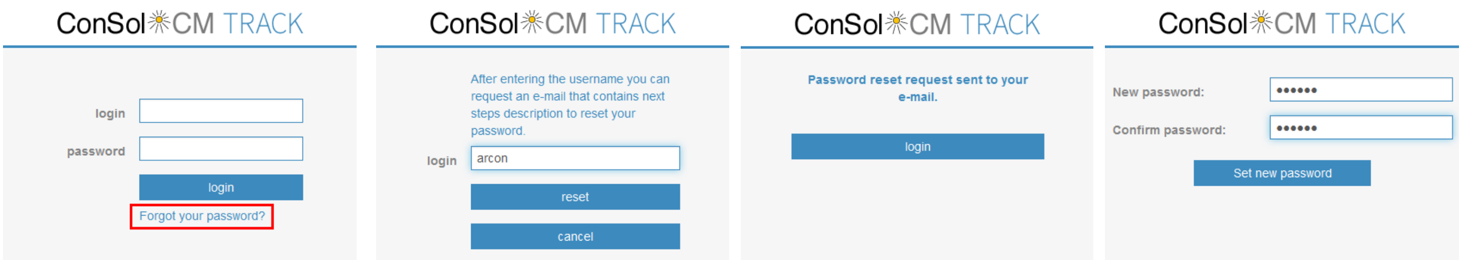
New functionality for entering formatted texts in description fields has been added to the CM/Track client. This has been achieved by adding the same editing capabilities as in the CM6 Web Client which can be seen in the screenshot below.



This functionality is currently enabled/disabled at build time. The value of `enable_tinymce` in the source file `config.js` must be set to “false” to disable these text formatting capabilities. These are enabled by default.

1.2.14 CM/Track: password reset/change functionality (#622194, #625122, #626100)

The CM/Track client has been extended so that the user accessing CM6 via CM/Track can now change the password himself.
Additionally the login page has been extended to show a link labeled “Forgot your password?”. Clicking this provides an entry field for the CM/Track user name. Supplying a valid user name causes an e-mail with a reset URL to be sent to the e-mail address defined for the customer. Opening this URL in a browser shows a page to reset the CM/Track password.



This reset password functionality relies on a correct configuration. For creating the e-mail sent to the CM/Track user a template called “`track-password-reset-template`” is required. The template needs to include the reset code `${resetCode}` for the e-mail to be useful, ideally as (clickable) URL: `http://$TRACK_URL#track=set_new_password/resetCode-${resetCode}`
A very simple example template for “`track-password-reset-template`” is this:

```
Your Password Reset Link:
http://10.20.30.40:8080/cm-track/#track=set_new_password/resetCode-
${resetCode}
(Reset Code: ${resetCode})
Valid 24 hours only, please visit before expiry!
```

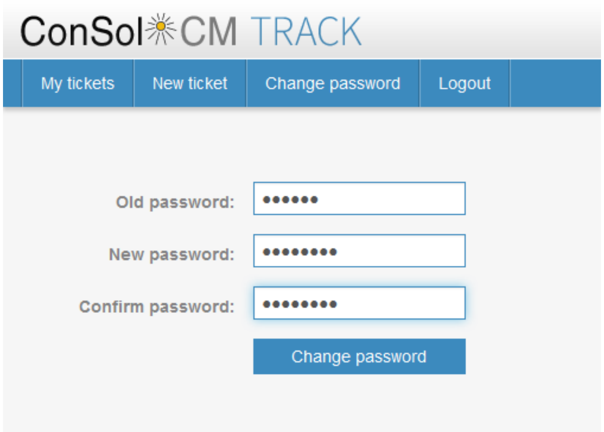
The e-mail body generated by using the template shown above looks like this:

```
Your Password Reset Link:
http://10.20.30.40:8880/cm-track/#track=set_new_password/resetCode-Tbb66ToQfI0wj0GaVjYXqfUx1y17MHAe
(Reset Code: Tbb66ToQfI0wj0GaVjYXqfUx1y17MHAe)
Valid 24 hours only, please visit before expiry!
```

There are two new REST API methods to achieve the behavior described in this section:

- `/user/resetPassword`: Generate a reset code, write it to the database, and send an e-mail with the reset code to user.
- `/user/setNewPassword`: Change user password and remove reset code from the database.

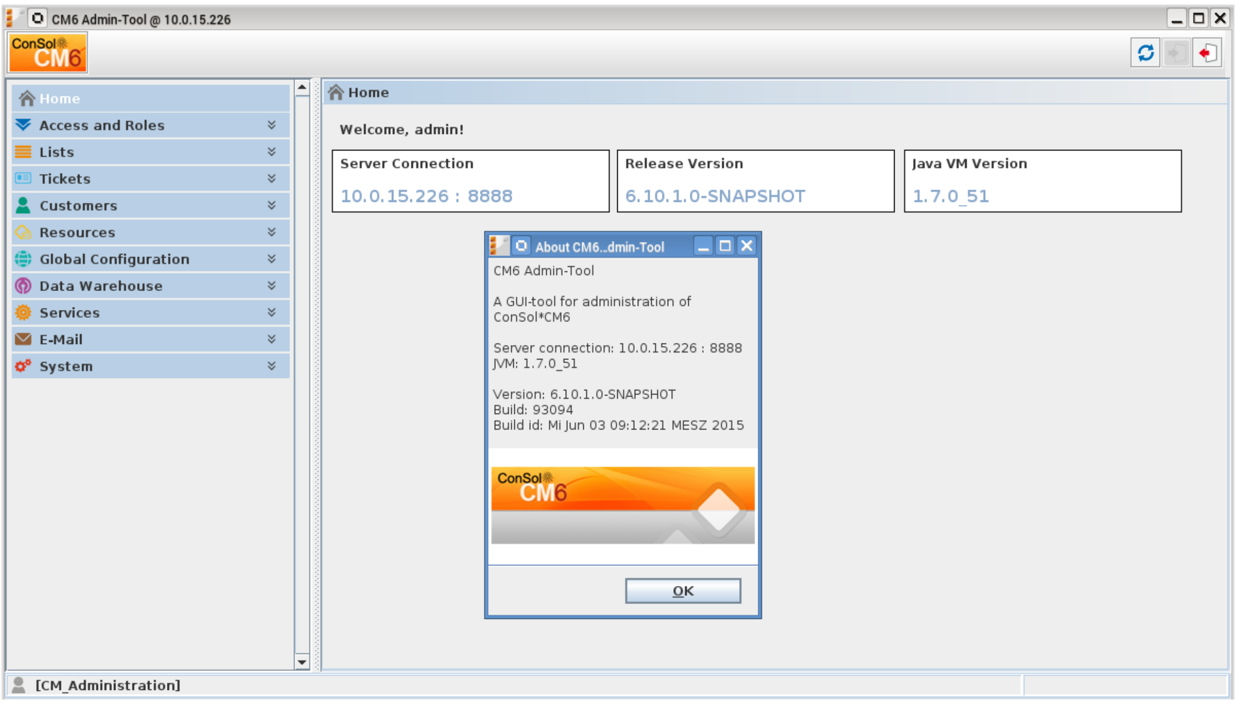
Also a new entry “Change password” has been added in CM/Track to the menu bar for changing the password when logged in normally. When clicking this link the user will be shown the password change page of CM/Track.



The page has three text fields to enter the current password as well as the new password twice for confirmation of correctness. If the old password is incorrect or the two entries for the new password do not match, a specific message gets displayed below the field with the mismatch. After successfully changing the password a corresponding message is shown on the same page above the password entry fields.

1.2.15 Admin-Tool navigation redesigned (#625391, #627476, #627477)

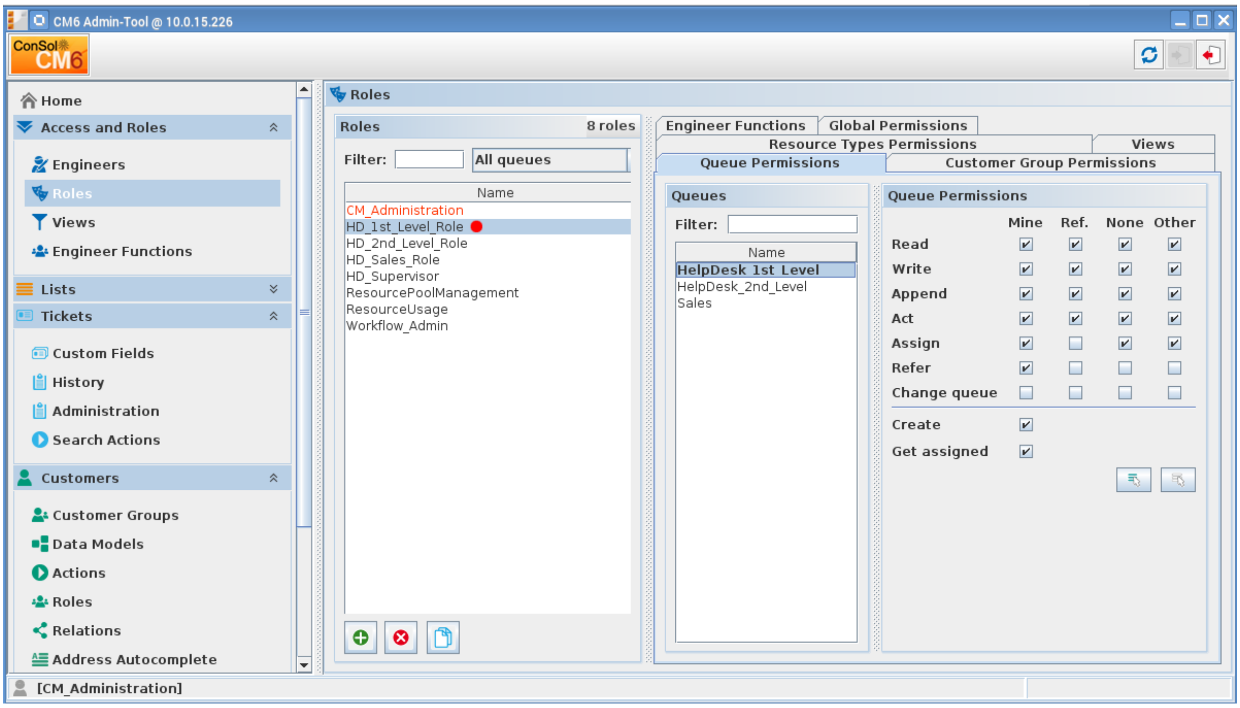
The navigation for the CM6 Admin-Tool has been redesigned for an easier and more intuitive use. The main menu and most of the items of the icon bar have been removed. All the content for administration can still be accessed, generally in a directer fashion which is better understandable.



The icon bar now only contains a button labeled “ConSol CM6” on the left which can be used to access the “About” dialog. On the far right the buttons for refreshing the data, login and logout remain unchanged. A new addition is the Home navigation item displaying current system information: the server connection used by the Admin-Tool and the CM version it accesses as well the client Java version the Admin-Tool runs on.

The navigation tree left of the main content sections is now used for the navigation among the different sections for administration. The navigation items are basically representing the removed icon bar (and module menu) entries. The content sections are basically unchanged, however, some sections which were on tabs in the previous layout are now sections of their own with a corresponding navigation item. This allows for easier and quicker access of these sections.

The navigation tree consists of the items directly corresponding to a content section for administration which will be displayed when clicking the item. The items are arranged in navigation groups like “Customer” for example so that content sections for a common topic are joined under a single header. Clicking on a navigation group header will toggle its item list display. A displayed list will be hidden when clicking and a hidden list will be displayed. It is possible to display the navigation items of several groups at once.



Additionally modern icons are used in the navigation tree and the order of the tabs in the role administration has been improved.

1.2.16 Password expiry and policy configuration (#626757, #626806)

The policy for password strings and expiry information has been modified to be configurable now. The new configuration is achieved with four new system properties. All of them are part of the module *cmas-core-security*. They define the string pattern the password must satisfy, the maximum age a password may reach before it must be changed again, and the password rotation ratio, i.e. the number of distinct passwords a user must use one after another before

an identical password will be allowed again. Additionally it can be defined, if the user name is case-sensitive, however when using MySQL as database engine with its default collation “utf8” this will not work since this collation is not case-sensitive. MySQL must be configured with a case-sensitive collation like “utf8_bin” for this CM setting to function as expected!
The properties are:

- *policy.password.pattern* (String): A regular expression describing the pattern the password must satisfy, example and default value: “`^.3,$`”.
- *policy.password.age* (Integer): Maximum age a password may reach, before the user is forced to change it again, defined by the number of days, example and default value: “5500” (about 15 years).
- *policy.rotation.ratio* (Integer): The number of subsequent password for a user which must be different, this number defines the number of previous passwords which may not be identical, example and default value: “1”.
- *policy.username.case.sensitive* (Boolean): The information, if the user name is distinguishing between upper case and lower case letters, example and default value: “true”. Note that this setting is affected by the MySQL collation setting and needs the correct collation to work properly with MySQL.

All properties are optional and none of these require a system restart. Corresponding error messages will be shown, if one of the first three rules is violated. These messages may be configurable in the future by the client labeling extension introduced in this release (compare section 1.2.3 above).

1.2.17 Supported MS Internet Explorer versions (#627459)

Beginning with this release of ConSol⁕CM 6.10.1.0 version 11 of the Microsoft Internet Explorer is supported additionally now. Please note that the releases 8, 9, and 10 of Internet Explorer are still supported as well. However, with the release 6.11.0.0 the support of Internet Explorer 8 will be dropped. Thus, starting with CM 6.11.0.0 the supported of Microsoft Internet Explorer will cover the versions 9, 10, and 11 only.

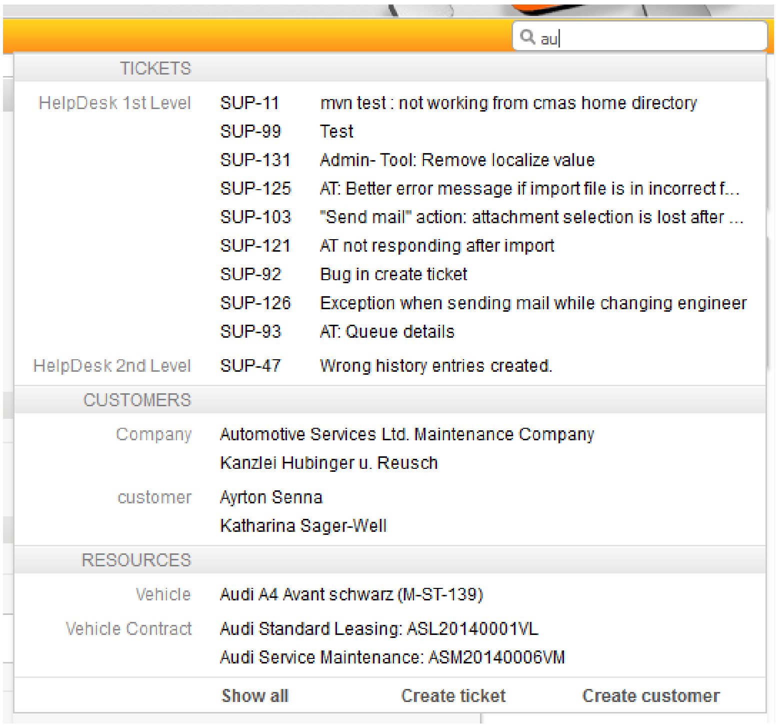
1.2.18 Supported Pentaho version (#627339)

The Pentaho Business Analytics and Data Integration Platform underlying reporting and ETL tasks has been updated to version 5.0.1. The ETL-Plugins also are all now requiring this version. Please be aware that updating this platform is necessary in order to keep using processes based on these tools. However, an update to newer Pentaho version like 5.2 is not suitable. Please refer to the Pentaho product documentation for eventual adjustments necessary for reporting processes and results.

1.3 Changes

1.3.1 Layout improvements

- **Clearer Section Headers in German (#627632):** Sections headers listing object relations have been prefixed with the term “verknüpft” stressing the relation nature of the content where this was considered adequate.
- **Attachment File Type Column Display Simplified (#625972):** The attachment section of tickets and customers has a table column "File type" which previously listed a MIME type string like "application/pdf" for the file type of an attached file. This has been simplified to show the file extension like "pdf" which can be interpreted more quickly.
- **Selector Separator Line Moved (#612477):** The separator line between the customer group selector and the quick and easy search field has been moved away a bit from the border of the search field to provide a more pleasing design.
- **New File Operation Icons in Admin-Tool (#617768):** New icons have been supplied for loading and saving script files in the Admin-Tool.
- **Quick and Easy Search Improvements (#627070):** the result box of the Quick and Easy Search has been improved. It now features a more pleasant list lay, headers for the main object types tickets, customers and resources for better distinguishing theses and the links to the functions “Show all”, “Create ticket” and “Create customer” are now aligned horizontally on the last line of the box.



1.3.2 Improved API for Action Scripts (#626076)

The API for the action execution scripts for data objects has been improved to be better to handle when writing scripts. The same API handling has been implemented for resource actions. The following examples show the usage of the improved API.

Create a unit

Create unit (*PostActionType.CREATE_UNIT*) redirects the user to the create unit page. It uses the optional *PostActionParameter.CUSTOMER_GROUP_ID* parameter to decide for which customer group a new unit has to be created and optionally a custom fields map (*PostActionParameter.FIELDS_MAP*) to fill the unit's custom fields with values passed.

```
//Sample script which fills unit data
import com.consol.cmas.common.model.customfield.Unit
import com.consol.cmas.core.server.service.action.PostActionType

Unit contact = new Unit("customer", unit.getCustomerGroup());
contact.set("firstname", "Jan");
contact.set("name", "Nowak");
return actionScriptResultFactory.getPostAction(PostActionType.CREATE_UNIT,
contact);
```

Create a ticket

Create ticket (*PostActionType.CREATE_TICKET*) redirects the user to a create ticket page. It uses the optional *PostActionParameter.UNIT_ID* with the ID of the main contact, *PostActionParameter.QUEUE_ID* with the ID of the queue and a custom fields map *PostActionParameter.FIELDS_MAP*.

```
//Script which creates a ticket with subject, queue and custom fields
import com.consol.cmas.core.server.service.action.PostActionType
import com.consol.cmas.common.model.ticket.Ticket

Ticket ticket = new Ticket();
ticket.setQueue(queueService.getByName("Helpdesk"))
ticket.setSubject("sample subject")
ticket.set("queue_fields.string", "test")
ticket.set("queue_fields", "boolean", "true")
return actionScriptResultFactory.getPostAction(PostActionType.CREATE_TICKET,
ticket)
//to additionally set the main contact use
//return
actionScriptResultFactory.getPostAction(PostActionType.CREATE_TICKET, ticket,
unit)
```

Go to a unit

Go to unit (*PostActionType.GOTO_UNIT*) redirects to a unit page. It uses the obligatory *PostActionParameter.UNIT_ID* parameter with the ID of the unit.

```
//Go to company page
import com.consol.cmas.common.model.customfield.Unit
import com.consol.cmas.core.server.service.action.PostActionType

Unit contact = unitService.getByCustomerGroup(unit.getCustomerGroup()).get(0)
return actionScriptResultFactory.getPostAction(PostActionType.GOTO_UNIT,
contact)
```

Go to a ticket

Go to ticket (*PostActionType.GOTO_TICKET*) redirects to a ticket page. It uses the obligatory *PostActionParameter.TICKET_ID* parameter with the ID of the ticket.

```
//Go to ticket page
import com.consol.cmas.core.server.service.action.PostActionType
import com.consol.cmas.common.model.ticket.Ticket

Ticket ticket = ticketService.getByContact(unit).iterator().next()
return actionScriptResultFactory.getPostAction(PostActionType.GOTO_TICKET,
ticket)
```

Go to a page identified by URL

Go to page (*PostActionType.GOTO_PAGE*) redirects to a page identified by its URL. It uses obligatory *PostActionParameter.URL* with the desired URL.

```
//Go to page by URL
import com.consol.cmas.core.server.service.action.PostActionType

return actionScriptResultFactory.getPostAction(PostActionType.GOTO_PAGE,
"http://consol.de");
```

Create a resource

Create resource (PostActionType.CREATE_RESOURCE) redirects to a resource create page with fields filled with resource data prepared.

```
//Create a resource filled with some data
import com.consol.cmas.common.model.resource.Resource
import com.consol.cmas.common.model.resource.meta.ResourceType
import com.consol.cmas.core.server.service.action.PostActionType

ResourceType type = resourceTypeService.getByName("resource type 1")
Resource resource = new Resource(type)
resource.setFieldValue("group1", "stringField1", "value1")
resource.setFieldValue("group2", "numberField1", 1L)
return
actionScriptResultFactory.getPostAction(PostActionType.CREATE_RESOURCE,
resource)
```

Go to a resource

Go to resource () redirects to the resource page of the given resource.

```
//Go to resource page
import com.consol.cmas.common.model.resource.Resource
import com.consol.cmas.core.server.service.action.PostActionType

Resource resource = resourceService.getAll().iterator().next()
return actionScriptResultFactory.getPostAction(PostActionType.GOTO_RESOURCE,
resource)
```

1.3.3 Parent reference Task Execution Framework extension (#627242)

The Task Execution Framework has been extended with the method `setContextReference()` which allow to set a context reference in the parent script calling a task. This way some information can be passed into the task to be further used, for example as a reference to the calling parent script. In the task this reference can be accessed with the new method `getContextReference ()`.

An example action script defining the context reference looks like the following code:

```
import com.consol.cmas.common.model.task.*;

GroovyTask commandTask = new GroovyTask();
commandTask.setStaticScript(scriptSourceService.getByName("sometask"));
commandTask.setContextReference("ref id test");

taskExecutionService.schedule(commandTask, "taskGroup");
```

The corresponding task script executed by the action script and using the context reference is shown here:

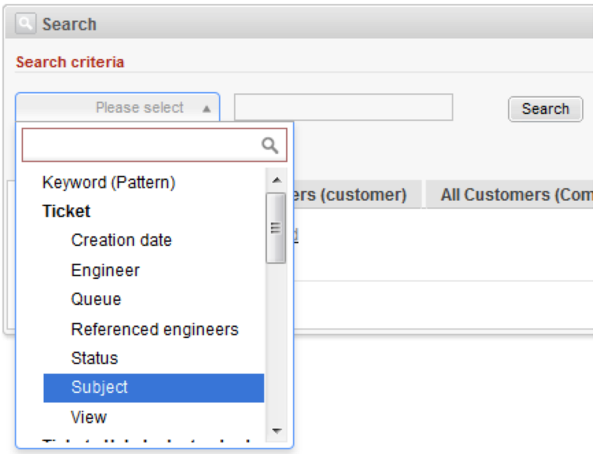
```
def onInitialize(taskDescriptor) {
    log.info("sometask has been initialized!")
}

def onExecute(taskDescriptor) {
    log.info("sometask's reference field: " + taskDescriptor.getContextReference())
}

def onError(taskDescriptor) {
    log.info("sometask has thrown an error!")
}

def onCancel(taskDescriptor) {
    log.info("sometask has been cancelled!")
}
```

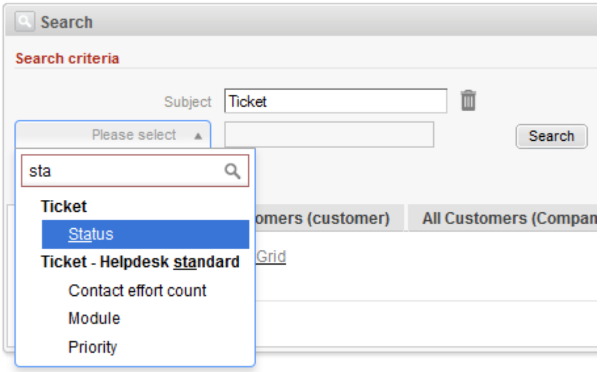
1.3.4 Detail search page criteria and column selection improvements (#626090)

The selection elements for the search criteria and the columns of the result table on the detail search page have been changed for better ease of use.

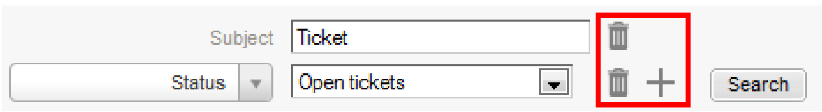
Search criteria selection

The selection element for the search criteria can now easily be identified as a drop-down menu instead of appearing like a link as before.



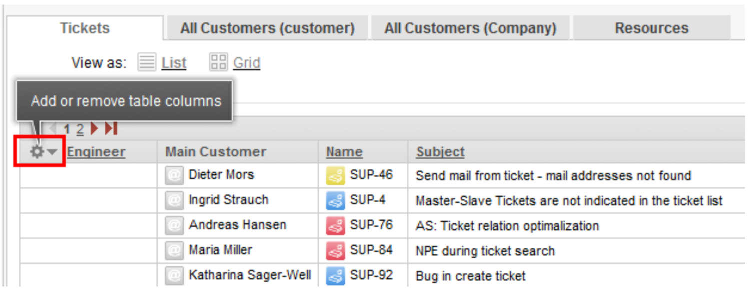


The list which shows up when clicking on the element contains all available search criteria initially. The criteria are grouped by the category/custom field group they belong to with the more general pattern search being the first list entry. Each list entry representing a search criterion can be selected by click while the headers for grouping cannot be selected. An entry field for dynamic filtering of the list is above the first entry. Strings typed in this field serve as filter for the list, displaying only these entries (and their group headers) which match. The match is underlined. If a group header matches, the group and all its entries are listed.

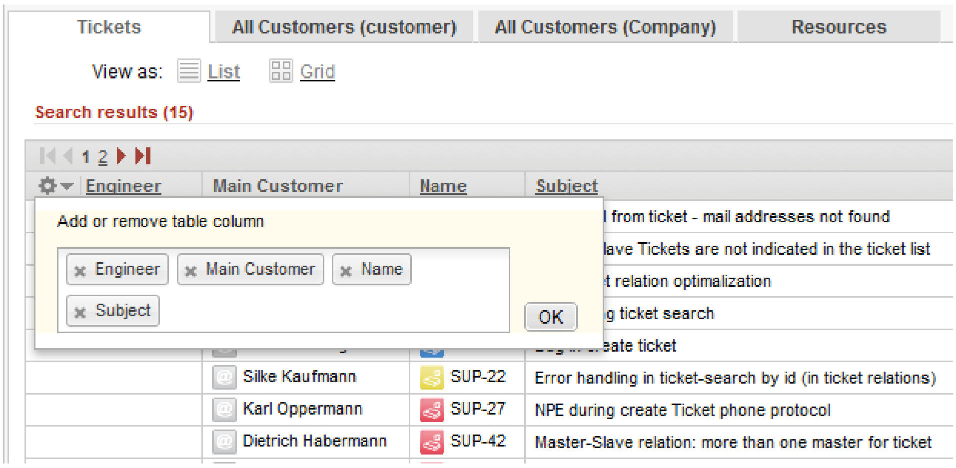


Additionally the button symbols for adding and removing a criterion have been changed to be more intuitive. Adding a criterion can now be achieved by clicking the large plus symbol, removing one requires clicking the trashcan symbol on this line.

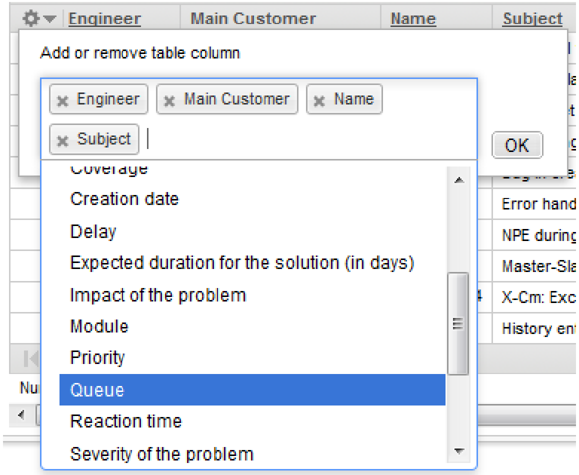
Result list column selector

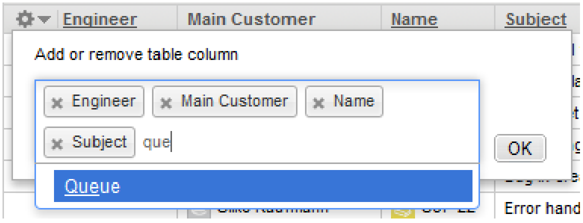


A new element to define the columns for the search result table has been introduced as well. It can be accessed by clicking on the cogwheel icon on the far left of the table column headers. It displays each column as a button inside a box grouping these column buttons. The buttons have the same order as the columns of the table.



A click in the free area of the box lets a column list drop down. The list initially contains all available columns for the search result table which are not displayed yet. Typing in this free area uses the entered string as a dynamic filter for the list so that only these columns are displayed which match the string. This is highlighted in the right screenshot below.





A column selected by click can easily be added to the result list table by clicking on the “OK” button to the right of the box/list. A column which is used in the current table can be removed by clicking the cross symbol left of the name on its button and then clicking the “OK” button to the right. Columns cannot be rearranged in this box. This can be done in the same way as before via drag and drop for the column headers.

1.3.5 Direct link to ticket in search result list (#625966)

The search result list table on the ticket detail search page has been extended with a direct link to each ticket shown in the search results. The ticket name string in the column "Name" now allows to directly access the detail page of this ticket. It will be underlined when the mouse pointer is over this link which can be seen in the first result line of the screenshot. The icon in this column did not change its behavior and is still the handle for drag and drop of the ticket. Other elements of the result rows did not change either, so a click there still displays the ticket overview tooltip usually. This new behavior also is available for other places in which such a ticket list is shown.

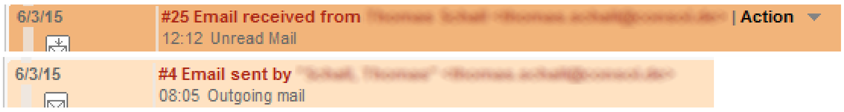
Engineer	Main Customer	Name	Subject
Huber, Harald	Maria Miller	SUP-63	Exception during Status Change in "IT" queue
Huber, Harald	Maria Miller	SUP-58	Exception during import data
Huber, Harald	Dieter Macher	SUP-124	X-Cm: Exception during status change which moves a ticket into a new queue
Schmidt, Hans	Karl Oppermann	SUP-25	Exception during view display
	Peter Diermau	SUP-81	AT: Exception during deleting 'customer role'
	Sophia Kernhauser	SUP-18	AT: Exception during deleting role
	Manfred Jaeger	SUP-77	Exception during deleting customer with tickets

Number per page 10

1.3.6 E-Mail history entry headlines show the address (#624384)

The history entries for E-Mail now show the address. For both outgoing and incoming e-mails the sender address is shown using a headline text which also informs, if the mail was incoming or outgoing.

- E-Mail received:
- E-Mail sent:

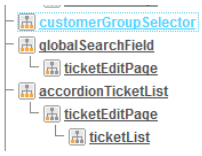


1.3.7 Page customization to hide customer groups in the selection (#627446)

A new page customization has been introduced which can be used to selectively hide specific customer groups from the customer group selector in the navigation bar. After the page customizations are activated on any page the scope *customerGroupSelector* will listed in the customization navigation tree. In this scope there is currently only one attribute *hiddenCustomerGroups*. Valid values are comma separated lists of customer groups. The customer groups are identified by the name specified in the Admin-Tool. There need to be no space between a comma and a name and a single name requires no comma.

Attribute name	Description	Value
hiddenCustomerGroups	List of customer group which not appear in selector(comma separated names of customer groups)	(java.lang.String) (+) (-)

Create Reset

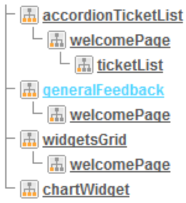


Please be cautious! In case the configuration made here results in only one customer group to show the selector will not be displayed anymore. For this reason the page customization will also not be accessible! A value change must then be made by accessing the JMX bean and setting a new value by this mechanism. Depending on the new value the customization may be available again.

1.3.8 Configuration to add cluster node information to client error message (#625423)

A new configuration option has been added to allow information about the cluster node executing the request relating to a client error message.
This can be achieved by using a web customization for the message. When logging in as admin and enabling page customizations which can be done on the overview page already, the required attributes are available under the scope *generalFeedback*. Selecting this entry in the tree and not the subordinate one ensures that this configuration applies globally.

Attribute name	Description	Value
appendHostInfo	Whether to append host information to the error feedback messages.	false (boolean) (+) (-)
appendHostInfoSystemProperty	Which system property to use to describe the host information (cmas.http.host.port is a cm cluster startup parameter).	cmas.http.host.port (java.lang.String) (+) (-)



The attribute *appendHostInfo* configures, if cluster node information is shown together with the error message. Setting it to “true” will show it. The second attribute *appendHostInfoSystemProperty* identifies which system property will be used to provide the value shown. There are two properties which can be used:

- *cmas.http.host.port* (default) and
- *cmas.clusternode.id*

The default setting identifies a cluster startup parameter and must be set when operating CM in cluster mode.

1.3.9 REST API parameter "pageSize" no longer depends on parameter "pageNumber" (#627345)

The use of the parameter “pageSize” without the parameter “pageNumber” did not return the expected results which would have been the first page with the specified number of results. Instead it returned all results in one page. This has been changed and now reasonable defaults return data as expected. The different cases are these:

1. “pageSize” and “pageNumber” not specified: returns all results.
2. “pageSize” not specified and “pageNumber” specified: returns the page specified based on a default page size of 100 results.
3. “pageSize” specified and “pageNumber” not specified: returns the first page 0 with based on the specified page size.
4. “pageSize” and “pageNumber”: returns the specified page based on the specified page size.

1.3.10 Default value "true" for annotations "reportable" and "reportable group" (#614556)

Previously there was no default value set when creating the annotations "reportable" and "reportable group" for a custom field (group) and each field's value had to be set manually. Now the default value is "true" (with the other values being "false" and "stop"). Please be aware that this may have influence on scripts taking advantage of this annotation.

1.3.11 Data warehouse static tables inefficient localization (#603088)

The static tables localization in the data warehouse has been inefficient for trying to retrieve localized values. This has been addressed and now the localized values can be retrieved in the same manner as for dynamic tables.

These changes require the data warehouse update with its implications and the required update time-frame. Please compare section 1.1.3 for more details.

The tables affected are the following ones:

- dim_client_group
- dim_contact_role
- dim_customer_definition
- dim_enum_group

- dim_field_definition
- dim_group_definition
- dim_mla
- dim_project
- dim_queue
- dim_ticket_function
- dim_unit_relation_definition
- dim_activity
- dim_scope
- dim_resource_relation_def
- dim_resource_group
- dim_resource_type

When using ConSol✳CM with the MySQL database engine a configuration with more than two locales causes an error stating “row size too large” because of limitations of this product (see http://dev.mysql.com/doc/refman/5.6/en/column-count-limit.html). Locales in CM can be configured via the system property `cmrf.mysqlLocales` with the value a comma separated list of locales, for example: `-Dcmrf.mysqlLocales=en,de`). If `cmrf.mysqlLocales` is not set, default `locale(Locale.getDefault().getLanguage())` is used.

1.3.12 Editing and transfer improvement in Process Designer (#617813)

Moving/renaming a workflow activity in the Process Designer has been improved so that the activity information is kept and need not be re-entered during the change anymore. This additionally has the effect that for more cases the new workflow activity for tickets to automatically be transferred to is identified accurately, which means fewer tickets have to start in the modified process from the beginning.

1.3.13 Backwards compatibility of exported scenes from release 6.10.0.0 (#627276)

Exported scenes from release 6.10.0.0 were not backwards compatible despite the data version seemd to imply this. The data version number has been increased to reflect the changes including changes made in between.

1.3.14 Two templates removed from standard distribution (#625059)

The templates "cmas-dev-close-mail" and "index-error-mail-template" were removed from the standard shipment since they were unused and thus obsolete in this context. They will not be deleted in an update. In case these templates are present in an installation, it has to be ensured that they are obsolete before deleting them.

1.3.15 Wicket Web framework updated to version 6.17.0 (#626150)

The wicket frame work for web page creation in the web client has been updated to the new version 6.17.0 for improved security.

1.4 Known Issues

Number	Description
621086	**Incoming mail headers with umlauts cause error** Umlauts and other special characters in the mail header of an incoming e-mail can cause an error in processing the e-mail.
621887	**Import failing, if imported MLA is smaller** A scene import fails, if it contains an MLA which has fewer nodes than the same MLA existing in the system. The import should skip the MLA, log a warning and succeed.
623145	**Import not reassigning engineer function** An engineer function that was removed after an export does not get reassigned when importing the scene that still contains it.
623593	**Data warehouse change table fields not correctly filled** The field for previous values for queue and engineer change tables is not set correctly in the data warehouse.
625035	**Import unit definition template problem** Updating the unit definition templates during a scene import is not operational.
626094	**Undesired LDAP response handling of invalid logins** LDAP login attempts with an invalid username log an ERROR and the log only shows the misspelled username in DEBUG mode whereas a warning which always shows the attempted username would be adequate (originally occurred in version 6.9.3.3).
626156	**Web Client user session not invalidated correctly** When instead of properly logging out the login page is accessed with the back button and a different login is successful, the ticket list uses the older login and session (originally occurred in version 6.9.0.0).
626279, 627770	**Customer relation table column issues** On the customer page the relations to other contacts and companies cannot be sorted by clicking the column header. The column order cannot be changed as expected, too.
626675	**REST response missing unit count** The REST API response for unit search using a number range lacks the field “Total number of elements” with the result count (originally occurred in version 6.10.0.0).
626785	**Script execution logging missing execution time information** Logging of script execution times lacks in logging, but duration and information about long running scripts as well as timeouts should be provided by the logging (originally occurred in version 6.10.0.0).
626903	**Deficits in manifest files** Fields for CM-Version and Build-Date are missing in the manifest files (originally occurred in version 6.10.0.0).
627117	**Misleading relation transfer message** Deleting a resource and trying to transfer a relation to a contact which is already related to the target resource yields a misleading error message about illegal circular relations (originally occurred in version 6.10.0.0).
627398	**Dysfunctional dependent ENUM radio buttons** Radio buttons in dependent ENUMs are not functional.
627434	**Creation date ticket search result too large** A search for tickets with a specific creation date using the operator “is” will also return results from the next day.
627606	**“.docm” file in incoming mail rejected** In the standard distribution “.docm” (Word documents with macros) files are rejected in incoming mails. As a workaround this can be changed in custom project.

Number	Description
627608	**Resource-ticket relation remove/undo error** Removing several ticket relations from a resource on the resource detail page or removing, undoing the remove and removing a ticket relation again could lead to an exception.
627660	**View mode customer label field display problem** Label fields for customers are shown in edit, but not in view mode despite the correct configuration when they are not in a group section (while group sections are present).
627661	**View mode resource label field display problem** Label fields for resources are shown in edit, but not in view mode despite the correct configuration.
627664	**Unwanted entry field watermark behavior in Internet Explorer 9 and 10** The behavior of watermarks in entry field when using Internet Explorer 9 and 10 can be unexpected. The watermark text may not disappear when starting to enter text.
627682	**Customer field modification in ACF not possible** Company customer fields of a two-level customer model cannot be changed in an Activity Control Form (ACF).
627691	**Failed task restarting** A failed Task Execution Framework task is started again immediately even though the on-error-method only reschedules it.
627717	**Umlaut value issue in ENUM suggestions** Values beginning with an (upper case) umlaut are not displayed in the suggestions of an ENUM field when searching for the (lower case) umlaut.
627768	**Table export interfering with relation remove undo** Removing a relation to another customer on the customer page, then exporting the table and trying to undo the removal afterwards causes an exception.

1.5 Bugs fixed

Number	Description
618537	**Ticket "Accept" button link displayed in unexpected contexts** The button link "Accept" was displayed against the user expectations when a ticket was opened for editing from the workspace under certain conditions. This unexpected behavior has been fixed and "Accept" does not show any more under these circumstances.
622591	**Trigger disappearing from workflow** Under very specific circumstances one of several triggers attached to the global scope had disappeared after saving and reopening a workflow. Very rare conditions cause the illegal state of two triggers with the same name. This issue has been resolved and should not occur anymore.
623826	**Relations Date/Note field not clickable** The date and note content fields for unit and ticket relations (also with resources) did not show any reaction when clicked. They did not show the preview then. This has been fixed and the preview shows for all these cases.
624123	**Ticket display error due to local "file://" URL in <img> tag** A ticket could not be displayed and an error message was shown instead when an incoming mail contained an <img> tag with a local "file://" URL. This problem was corrected and the ticket with such a mail can be displayed after filtering out the useless URL.
624193	**ETL contact output plugin saving transformation defective** The saving transformation of the contact output plugin for the ETL component did not work properly. This problem has been corrected and the transformation works properly now.
624539	**Inappropriate search criteria yield unwanted result sets** In case a search was performed for inappropriate fields, customer e-mail when searching for companies for example, the results listed all entries (companies) in the system or none in other cases. Now when switching the result tab a message will be shown that inappropriate criteria for this kind of result type have been chosen.
624628	**Oracle database error when accepting more than 1000 index configuration changes** The Oracle Error ORA-01795 "maximum number of expressions in a list is 1000" occurred when accepting a higher number of index configuration changes in the Admin-Tool. This problem has been solved and the error will not occur anymore.
625642	**Contact data reference fields could not be edited** Custom fields could not be edited after creation, if the data type was set to "contact data reference field". This error has been corrected and the respective field properties can be changed now.
625671	**Admin-Tool message window "Invalid E-mail" cannot be closed** The message window "Invalid E-Mail" showing after removing the "Error e-mail address" could not be closed when it opened after trying to switch the Admin-Tool section. This unwanted behavior has been changed and the message window can be closed while the previous value for "Error e-mail address" will be restored.
625743	**No Admin-Tool Session Time-Out in Deployment Section** There did no session time-out occur in the Admin-Tool when staying in the deployment section after a scene import. This issue has been fixed and the session times out in this combination.
625752	**Required Field Marker Missing in the Time-Booking Section on the User-Profile Page** The asterisk as marker for required fields in the time-booking section on the user profile page was systematically missing. This has been corrected and the asterisk is displayed now.
625775	**WicketRuntimeException when selecting "no results" while creating a unit relation** When creating a unit relation on the company page and then selecting the suggestion list entry "no results" for the related unit, a WicketRuntime Exception occurred. This problem has been solved and no error is shown anymore in this case.

Number	Description
626154	**Properties for NIHM with description string "null"** The properties for configuration of NIMH had the string "null" set for a description in the Admin-Tool. This has been corrected so that no description entry is shown instead now.
626434	**Default localization values not created in Admin-Tool** The default localization value entries for some customer data model objects were not created when creating the object or changing the default locale. These included customer models and data objects, customer groups and custom field groups as well as unit actions and relations. This error has been fixed and now the default localization value entries will be created for all these objects.
626616	**Sessions via REST API sporadically not terminated correctly** User sessions created by the REST API using basic authentication were not terminated correctly sometimes. This could have lead to excessive license usage. This issue has been resolved and the sessions end correctly now.
626836	**No update of contact section after addition** Directly after adding a new contact on the company page the new addition has not been displayed until a page refresh. This has been corrected and now it is displayed immediately.
626932	**Dysfunctional MuleSoft logo link** The link and logo to MuleSoft on the overview page were dysfunctional and have been removed.
626971	**Required field validation in group section tab too late** A company with no data entry could have been added even though there is a required field in the group section on a closed tab. This is not validated before saving when the tab is closed and there is no marker that there is a required field on the tab. this has been corrected and messages should show with the tab opening automatically in this case.
626982	**Localized resource type name changes are not reflected in the Web Client** When changing a resource type localized name the Web Client will not use the new name until a CM restart. This is fixed and the change should reflect on the next page load.
626993	**Misleading label for substituting relations** The label informing about the substitution of the unit in relations after deleting this unit only informed about tickets affected but not about resources. This was changed to refer to both now.
627008	**Tooltip special character display issue** The tooltip for group tabs showing the name does not render special characters correctly. This was fixed so that now special characters are displayed correctly.
627041	**Missing message when searching in invalid customer group** When a search with a specific customer group selected has been saved as a favorite and later the favorite is clicked while another customer group is selected, the message informing about the invalid customer group selection is not displayed. This has been corrected and the appropriate message is shown.
627056	**Disabled resource action script type select box** Occasionally it was not possible to set the action script type in the dialog for creating a resource action. This was corrected so that the script type can always be set as needed.
627086	**Deactivated resource groups and types editable** Resource groups and types deactivated in the Admin-Tool could have still been edited in the Web Client. This was corrected so that in this case they are not editable anymore.
627123	**Wrong behavior of selectors for number of entries in tables** The selector for the number of entries per page in tables for companies and contacts on the resource page showed the result count instead of the maximum result lines number. This unwanted display has been changed and the correct numbers are shown now.
627124	**Long resource type headline can overlap with "Add" link** A long headline for a resource type could have overlapped with the “Add” link to create a new relation with this resource type, rendering the link unusable. Now the line breaks before the link so that the link can be clicked.

Number	Description
627128	**Wrong history entry labels for a deleted resource** After deleting a resource the history entries for other objects relating to this deleted resource showed a wrong general Wicket label instead of the resource name. This was fixed so that the correct label is shown now.
627129	**Wrong error message after trying to access an invalid resource by URL** A red error message to contact the administrator has been shown when calling an URL to an invalid resource ID instead of a green qualified warning message. This also affected back button behavior after deleting a resource. This issue has been corrected and the green warning message is displayed now.
627138	**Unwanted logout after repeated attempt to delete a resource** Trying to delete a displayed resource which was already deleted previously in another browser tab has lead to an exception and unwanted logout. This undesired behavior has been corrected and no problem should occur under these circumstances.
627152	**No warning message for ignored "Creation date" search criterion** The search criterion "Creation date" was ignored for units and resources, but no warning message informing about this has been shown. This has been changed and the warning messages are now shown.
627153	**Resource page header section collapsible** In contradiction with the specification the header section of the resource page could have been collapsed by page customization. This was implemented according to the specification and the header cannot be collapsed now.
627154	**Resource page section order not configurable** The page customization to define the order of sections on the resource page was not available for configuration. This has been changed and now it can be configured.
627162	**History entry for additional data not immediately shown** On the resource and customer detail pages, when adding a comment or attachment, the history entry for the addition is not shown immediately, but only after a page refresh. This has been fixed and now the history is updated immediately.
627168	**Pressing Enter to add a customer did not work** It was not possible to add a contact to a ticket by pressing "Enter" with the suggestions visible. This has been changed so that now the addition with "Enter" works.
627170	**IndexOutOfBoundsException when changing the column order on the resource page** When trying to change the order of the "Actions" columns on the resource detail page for contacts and tickets caused and IndexOutOfBoundsException. This error was corrected so that the column cannot be moved anymore.
627176	**No user information about inaccessible customers/resources in resource relations** The user was not informed that he does not see all customers related to a resource due to limited customer group permissions. The total customer count included the inaccessible customers making it appear as a wrong number. This has been addressed and the count should be correct now, both for customers and for resources.
627177	**Technical names of resource relations in history** The history section of the resource page showed the technical name for relations instead of the localized names where available. This was fixed so that the localized name shows.
627178	**No user information about inaccessible tickets in resource relations** The user is not informed that he does not see all tickets related to a resource due to limited queue permissions. The total ticket count includes the inaccessible tickets making it appear as a wrong number. This has been addressed and the count should appear correct now.
627182	**Wrong resource creation date shown on detail page** The creation date shown on the resource detail page was "1/1/1970" for every resource independently of the actual creation date. This issue has been fixed and the correct date is shown now.

Number	Description
627187	**Deactivated resources not displayed accordingly on detail level** Deactivated resources are not rendered grayed out in the resource relation section on the resource page when the maximum detail level is selected. This was corrected and the display is now as expected.
627188	**Different dialogs when saving a search** The dialogs shown when saving a detail search to favorites and to the workspace differed in title, labels and buttons even though the operation is the same. The dialogs have been unified.
627190	**Note label visible for relations without note field** The label for a note in a resource relation is displayed even though the note field itself is unavailable and not displayed. This has been changed so that the note field now is only visible when applicable.
627192	**Undo remove for resource-unit relation not available on resource detail page** On the resource detail page in the customer section there was no option to undo removing a relation to a resource. This has been added and is possible now.
627208	**Resource relation editable in Web Client when "only configurable via workflow" is set** A resource relation can be created and modified in the web client even though in the Admin-Tool the option "only configurable via workflow" is checked, which should prevent this. This problem has been solved and such a resource relation cannot be created in the web client anymore.
627209	**No effect of selector for number of entries in ticket search table** Changing the number of results that should be displayed in the ticket search result table has no effect right after adding or removing a column of the table. This error has been corrected and the number of results is set accordingly.
627210, 627370	**Page customization collapsed all resource relation sections** The page customization to collapse a section only applied to all three sections for resource relations: resources, tickets and customers. It could not be used to collapse only one relation section on loading of the page. This has been corrected and each section can be collapsed separately now.
627309	**No page refresh after resource addition by script** Resources added by a script did not trigger a client page refresh even though this was expected. This has been corrected and the page refreshes now in such a case.
627520	**Workflow method workflowApi.getTicketUpdateEvent().getCustomFieldChangeInfo() returned fake changes** The workflow method workflowApi.getTicketUpdateEvent().getCustomFieldChangeInfo() returned list/struct changes that did not happen. This issue has been addressed and the return values should be now as can be expected.
627696	**Workflow Method Ticket.getMainContact() returned null** The workflow method Ticket.getMainContact() returned null after updating to this version. This issue has been addressed and the return values should be now as can be expected.