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Release Notes

for

ETAdirect

Version 4.5

(part 2)

Part Number E62367-01

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1 Introduction

1.1 Document Purpose and Scope

This document contains the description of new features, changes and significantly altered functionalities introduced in ETAdirect versions 4.5.5-4.5.8 as compared to the previous versions. It also provides brief overview of minor changes and issues.

For the description of the changes and improvements introduced in versions 4.5.0 to 4.5.4 please refer to the corresponding separate document.

1.2 Glossary

The glossary below contains the basic ETAdirect terms used in this document.

Term	Explanation
Activity	Any time-consuming work performed by a resource
API	Application Programming Interface - a particular set of rules and specifications that software programs follow to communicate and interact with each other
Bucket	An entity appearing on the resource tree which can contain resources of a defined type and be assigned activities
Capacity	The workforce possessing the necessary work skills available at a certain moment of time
Capacity bucket	Bucket used for Quota management
Capacity category	Predefined set of work skills, work skill groups and time slots within which they are considered by the Capacity API
Context	An ETAdirect or API screen showing all available properties and action links
Data Warehouse	An ETAdirect tool intended for data extracting from the system
Delivery window	A statistically calculated time period in which a resource is expected to start an activity
Dynamic Routing	A Routing option allowing to assign only a predefined number of activities to resources and/or assign activities only for a predefined period of time
ETA	The predicted time at which a resource will arrive at an appointment and start an activity, calculated dynamically for current and historical data
Field	Property present in the system by default
Forecasting	New feature of ETAdirect allowing to forecast the company workload on the basis of historical data
Geocoding	The process of finding geographic coordinates from street addresses or postal codes.
Group	A feature on the resource tree identifying a particular type of resource
GUI	Graphical User Interface, allowing people to use software by manipulating images rather than by issuing text commands
Historical data	Data of the past periods available in the database or from other sources
Inventory	Equipment that can be installed or deinstalled during an activity
Linked activities	Two separate activities related so that the completion or start of one is dependent on the completion or start of the other
Manage Application	Product that allows to manage workforce and activities in realtime. Usually serves

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	as an interface for dispatcher
Mass Activity	An activity involving 2 or more resources
Message (Notification)	Communications within software (which may or may not be readable by humans), as well as person-to-person communications delivered via computer software
Mobility Application	Product that allows field personnel to interact with the system
Not scheduled	An activity not assigned to a specific date
Not ordered	An activity with an unspecified order of execution in a queue, so that it can be executed at any time during the working day. Not-ordered activities do not have defined ETAs or delivery windows
Ordered	An activity with a defined place in a queue, which must be performed at a specified time of day. The order of activities can be changed; ordered activities can be changed to not-ordered activities, vice-versa
Penalty	A relative scale representing the expected increase of total cost which a particular factor brings into routing result
Planning	Company's estimation of the workforce or workload required at a certain moment
Preassigned Activity	An activity which was assigned to a specific resource before the routing run
Property	Field and field value, assigned to an entity in ETAdirect (to user, resource, activity or inventory). There are fields and custom properties
Queue (Route)	A list of activities assigned to a resource for a specific date, or a list of non-scheduled activities assigned to a resource
Quota	Amount of work that can be accepted for the bucket
Repeating activity	An activity recurring with a predefined frequency in a predefined period
Resource	An element in the resource tree representing a defined company asset
Resource Tree	A hierarchy of company resources, showing "parent-child" relationships
Routing	A process of assigning activities to resources (usually automated)
Service Window	The time frame expected by the customer for an activity as scheduled by the company
SLA window	An interval of time (that may involve a range of dates) within which certain work has to be performed according to the Service Level Agreement
Teamwork	A feature allowing resources to assist each other in an activity or on an on-going basis
Time Slot	1) A fixed service window, defined with a name and label, specifying when certain types of activities can be performed 2) Service Window (if the activity type does not support time slots)
User	1) A person using ETAdirect 2) An entity used for authentication and authorization, allowing people or external software to access ETAdirect
Work Skill	1) An activity that a resource is qualified to perform (resource property) 2) The qualification required to perform an activity (activity property)
Work Zone	The defined geographical area in which a resource can perform an activity

2 ETAdirect Version 4.5.5

2.1 Changes Overview

Unnecessary placeholder IDs removed

Glossary on-the-fly improved

'Add Routing Plan' screen layout improved

Firefox 17 – dialog windows appearance improved

File Management processes large files correctly

Activities with warnings can be modified properly

On-call resource's action links improved

Adding activities to shifts improved

Activity reassignment between Resource Trees improved

Inventory-related message placeholders implemented

Message steps editing improved

'Required Inventory' tab introduced

Activity duration recalculation improved

Activity history – hint for long and multi-line properties improved

Activity history table improved

Internet Explorer 7, Internet Explorer 8 – activity links possible

Close Time History model refers to DWH database

Automatic close on capacity category level closes all dependent work zones

Quota closed automatically only once

Quota tables in DWH have company name prefix

'Loading...' message displayed in Quota screen

'Booked Activities' adjustment improved

Refresh browser window reminder in 'Permissions' screen

Interfaces renamed in 'Permissions' screen

Work skill condition values shown in italics

Search in 'Work Skill Groups' screen improved

Work Skill Deletion Improved

'Buttons' group available in new context layout

'Buttons' Group Imported Correctly

Import of enumeration property visibilities improved

Large files import now possible

Display profile import improved

Import of context layouts with 'Required Inventory' predefined tab possible

Linked properties retained after 'Technician/Bucket Info' form save

Linked properties retained after entity type change

'Value Visibility' tables shown for 'aworktype' and 'invtype' properties

Custom action links visibility improved

Safari – context layout list loaded correctly

Internet Explorer 7 – 'Profiles' and 'Users' list displayed properly on API Configuration screen

'Add/Edit Required Inventory' dialog window implemented

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Installed inventory accounted in 'Missing' inventory calculation

Inventory report improved

'Undo Install' and 'Undo Deinstall' actions improved

Teamwork inventory display improved

Team-member's inventory accounted in 'Quantity Available'

Correct accounting of inventory without 'Model'

Non-serialized inventory deinstallation improved

'Quantity' field contains required quantity by default

DWH now reflects new inventory design

DWH export possibilities expanded to include additional data

All activities transferred to input dump

Resource filters improved

Calendar remains visible during/after Routing run

Resource filter hint behavior improved

Dynamic routing settings saved properly

Routing plans without Reoptimization no longer cause errors

User permissions checked before 'Required Inventory' grid display

'Required Inventory' context layout created

'Install' and 'Uninstall' action links only shown for started activities

Total required inventory shown in grid header

Calendar shows correct date

Offline plugins working properly

Properties used only as linked activities conditions passed to browser

'Submit' button visibility conditions improved

Multi-level linked properties work correctly

'Add to Installed/Deinstalled' actions synchronization improved

'Service Unavailable' screen displayed when application server not available

Requests sent regardless of linked properties

'Rows' field value restricted

Charts show correct values

Custom report permissions improved

Routing report calculates overtime correctly

Print preview screen improved

'Schedule Report' takes into account 'CountDays' parameter

"User is typing..." notification introduced in Manage Application

'Share activity info' and 'Reassign activity' actions improved

Activity, inventory or resource details visible to recipient in Manage Application

Warning messages displayed only for activity reassignment

Reassigned activity 'Details' link visible in Mobility Application

Activity sharing with helpdesks improved

Inventory and activity info sharing with helpdesk possible in mobility application

Helpdesk operator permissions improved

HTML tags no longer executed in chat window

Visit-related warning message improved

'Work zone' Label is Used instead of 'Work zone' Name in Resource Management API

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2.2 Manage Application

2.2.1 Unnecessary Placeholder IDs Removed

In the previous versions the Glossary contained placeholder IDs (7403, 8703, 11215) which were not used and for which no translations were available (Figure 1).

Figure 1: Missing translations

These placeholder IDs have been removed in version 4.5.5.
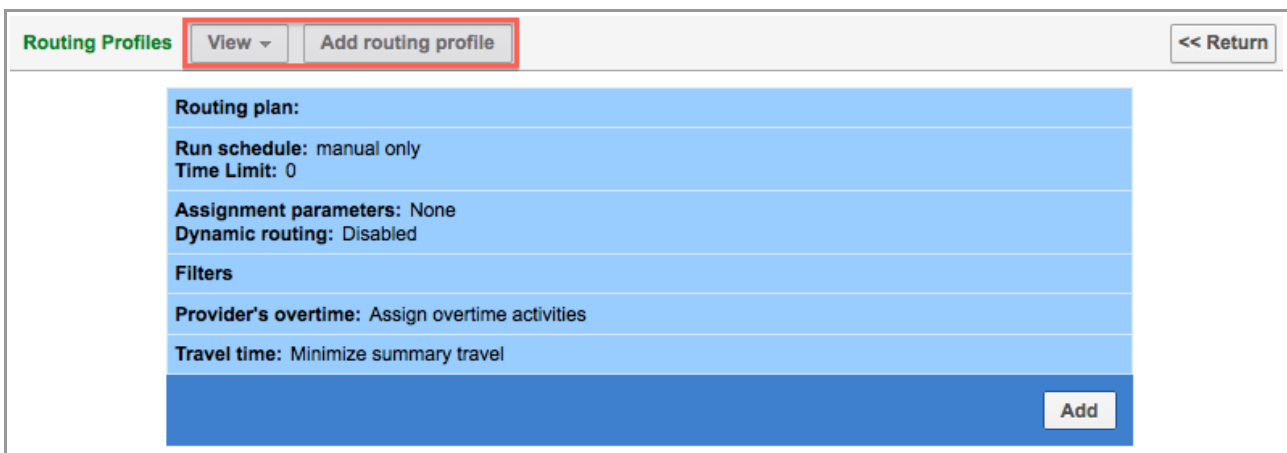
2.2.2 Glossary On-the-Fly Improved

In the previous versions the Glossary on-the-fly editor was not working. When the 'Show placeholders' option was enabled in the 'My Display' screen and the Glossary editor was turned on, clicking on any placeholder on the screen produced no result. An error was written to the log.

This issue has been addressed, and now the Glossary on-the-fly editor works correctly – if the user clicks a placeholder, the editor window is opened.

2.2.3 'Add Routing Plan' Screen Layout Improved

The layout of the 'Add routing plan' screen was the same as that of the 'Routing profiles' screen – it contained the 'Add routing profile button' and the filters button ('View) which were irrelevant to the screen purpose (Figure 2).

Figure 2: Incorrect layout of 'Add routing plan' screen

The screen layout has been changed, and now it only contains the caption 'Routing profiles > Add (Clone) routing plan' and the 'Return' button (Figure 3).
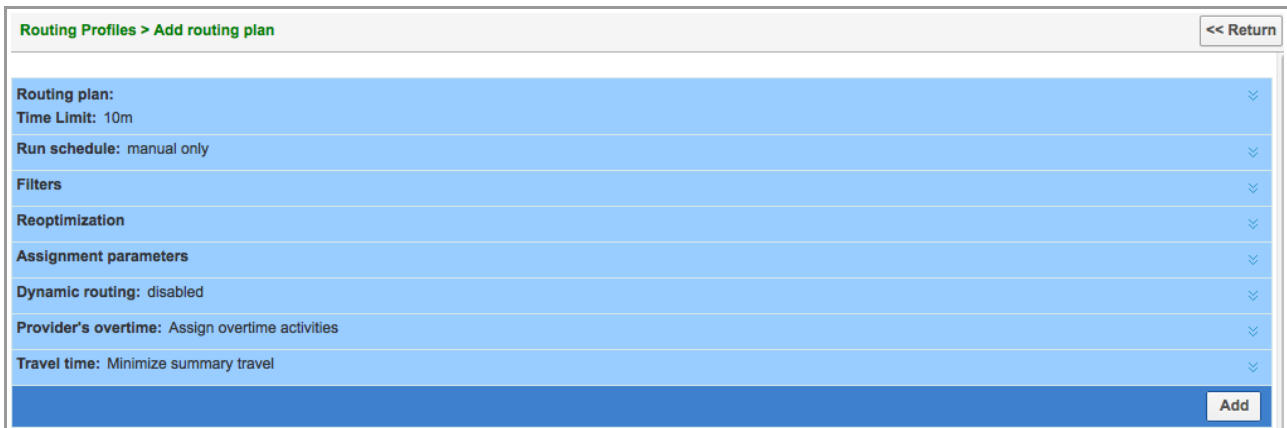
Figure 3: Correct layout of 'Add routing plan' screen

2.2.4 Firefox 17 – Dialog Windows Appearance Improved

When ETAdirect was used in the Firefox 17 browser, dialog windows changed their appearance after rescaling or resizing – some areas had white background while others – blue.

This issue has been addressed in version 4.5.5, and now dialog windows content and background are displayed correctly after rescaling or resizing.

2.2.5 File Management Processes Large Files Correctly

If the user attempted to download a file larger than 200 MB via File Management, the output file had 0 size.

This issue has been resolved – files of any size can be downloaded via File Management. The output file is of the same size as the original file.

2.2.6 Activities with Warnings Can Be Modified Properly

Previously, when any file properties were updated for activities with warnings, the 'OK' button became inactive after the user clicked 'Continue' in the warning 'Confirmation' window (Figure 4). The changes made to the activity were saved, but the user could only exit the screen by clicking 'Close'.
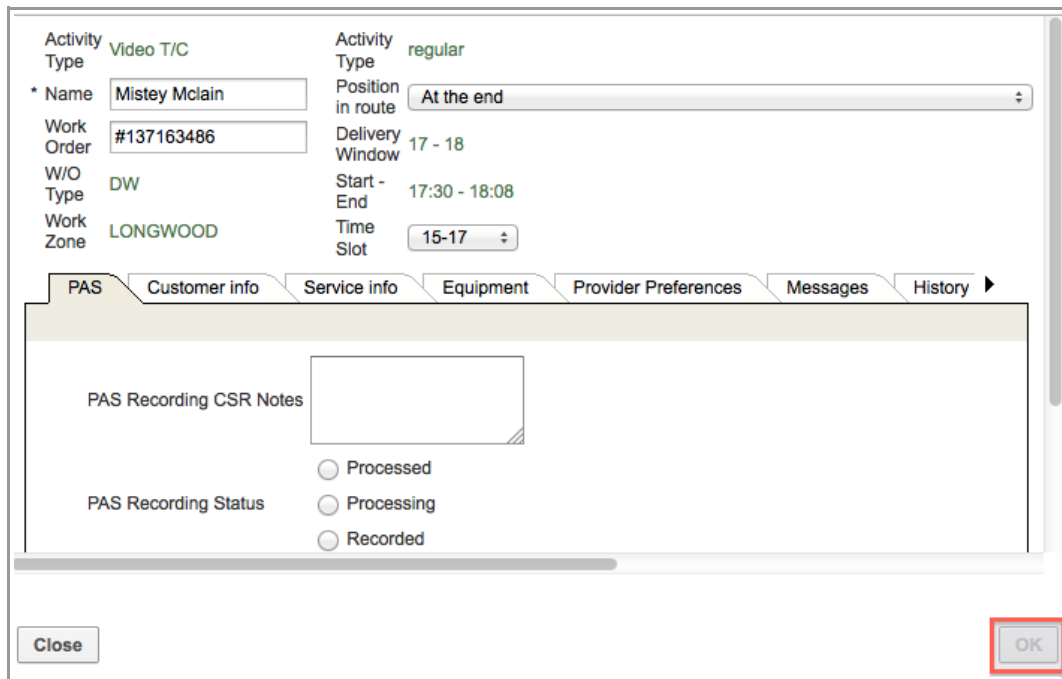
Figure 4: Inactive 'OK' button in 'Activity details' screen

This issue has been fixed in version 4.5.5 and now the 'Continue' button submits the form and closes the 'Activity details screen.

2.2.7 On-Call Resource's Action Links Improved

If a resource had simultaneously a non-working regular calendar and a working on-call calendar, the 'Start' link in the activity hint and the 'Activate route' in the resource hint were not available for such resource. At the same time, the 'Add activity', 'Activate route' and 'Start activity' links were only shown in the List View and Map View, while missing in the Time View. At the same time, these issues did not occur for resources having only a working on-call calendar.

This has been fixed in version 4.5.5 – now the resources having working on-call calendars simultaneously with non-working regular ones, can activate or deactivate their routes and manage their activities properly. Also, all action links are available in Time, List and Map View.

2.2.8 Adding Activities to Shifts Improved

– Previously, no activities could be added to a shift in the 'Shifts' screen – the 'OK' button in the 'Shifts > Activities' screen became disabled.
  This issue has been resolved. Users can now add activities to shifts properly.

– Also, if any activity type of the 'Teamwork' group had the 'Allow repeating activities' feature enabled, such activity type was not shown in the 'Activity type' list of activities to be added to a shift. At the same time, the 'Add activity' window had the 'Assists to' field. The activity was not added and the 'Choose resource in tree, please' error message was displayed.
  The issue has been fixed and the 'Add activity' window now has no irrelevant fields. Activities can be added to shifts properly.

2.2.9 Activity Reassignment between Resource Trees Improved

If an activity was dragged from the top Resource Tree and dropped on a resource in the bottom Resource Tree for which a past date was set, such activity move was rejected with an 'Activity cannot be moved to

the past' error message (Figure 5).
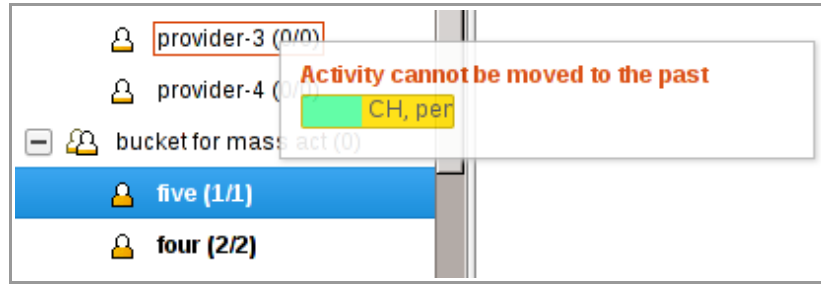
Figure 5: Error message for activity reassignment

Now the date of the original panel is used during the activity move, and activities can be moved between panels even when the second panel date is set to past or future.

2.2.10   Inventory-Related Message Placeholders Implemented

With the enhancement of the inventory functionality, new placeholders have been added to the message engine:

– **inventory_quantity** – integer value representing the quantity of non-serialized inventory. This value can be 0 or negative and is always 1 for serialized inventory

– **inventory_model_property_value** – the value of the 'Model property' selected in the 'Inventory type' window. When 'Model property' is not defined for an inventory type, this value is an empty string

The required inventory of an activity is a new block containing the list of all inventory required for the activity. Each required inventory has the following fields:

– **required_inventory_type_id** – inventory type ID

– **required_inventory_type_name** – inventory type name translated into the message language

– **required_inventory_type_label** – inventory type label

– **required_inventory_model** – inventory model

– **required_inventory_quantity** – required quantity

2.2.11   Message Steps Editing Improved

A message step for the 'Set property' or 'External system' methods could not be saved if the 'within' field value was greater than 23. A 'Select second hour of time range' error message was displayed and the message step was not saved (Figure 6).

Figure 6: Error message in 'Modify notification scenario step' window

The 'hours' field validation has been changed, and now this fields accepts values up to 99. This provides better flexibility and ensures correct migration from pervious versions of ETAdirect.

2.3 Activity Improvements

2.3.1 'Required Inventory' Tab Introduced

For activity types with the 'Support of required inventory' feature enabled the 'Activity details' screen will automatically have a 'Required Inventory' predefined tab (Figure 7).

Figure 7: 'Required Inventory' tab

This tab contains the Required Inventory grid with the following columns:

 – Model – inventory model
 – Inventory Type – inventory type label

- Qty Req – inventory quantity required for the selected activity
- Qty Available – inventory quantity in the resource's pool
- Qty Installed – quantity of the installed inventory of the same type
- Missing – inventory quantity not sufficient for the activity completion

The 'Required Inventory' tab also has 'Edit' and 'Delete' action links allowing to modify or delete the particular inventory item as well as the 'Add link' allowing to add required inventory to the grid.

2.3.2 Activity Duration Recalculation Improved

Previously, activity duration was recalculated only for activities assigned to technicians. If an activity was assigned to a bucket, its duration was recalculated only after the first duration key change. If the user changed the duration key more than once, its value was saved but the actual duration was not changed. This issue has been resolved in version 4.5.5. Activity duration is recalculated after each duration key change regardless of whether the activity is assigned to a technician or to a bucket.

2.3.3 Activity History – Hint for Long and Multi-Line Properties Improved

Whenever an Activity History contains a long or multi-line property, such field has a hint displaying the full value of the property. However, in the previous versions this hint had incorrect appearance – its background was brown (Figure 8) while by design it should be white.

Figure 8: Incorrect appearance of Activity History hint

The hint design has been changed in version 4.5.5 (Figure 9).
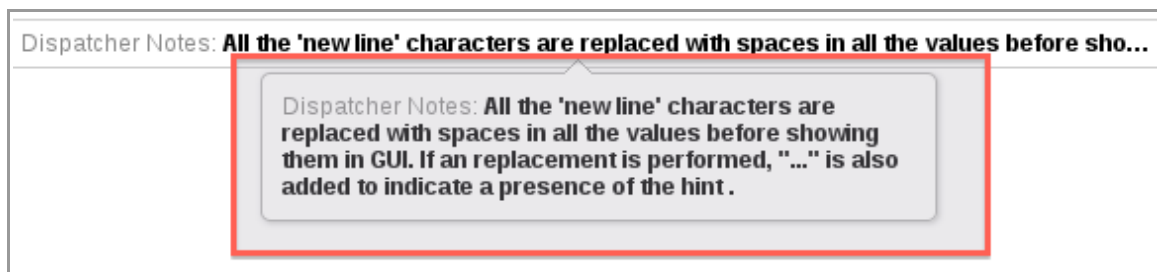
Figure 9: Correct appearance of Activity History hint

2.3.4 Activity History Table Improved

In the previous versions the columns of the Activity History table were of equal width. This was not always convenient as their content could be quite different.

As of version 4.5.5 the columns width has been changed to correspond to their content. In the Firefox browser the columns width fits the content, the 'Changes' column always being the widest. In the Internet Explorer 7 browser the columns width ratio is fixed as follows: 'Action time', 'Action' – 15%, 'User' – 25%, 'Changes' – 45% of the total table width. This ensures better data display and increases the overall usability of the 'Activity History' functionality.

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2.3.5 Internet Explorer 7, Internet Explorer 8 – Activity Links Possible

In the previous versions users were unable to create activity links in the Internet Explorer 7 and Internet Explorer 8 browsers. Clicking 'Add link' caused the 'Loading' message to appear on the screen indefinitely and an error to be written to the log.

This issue has been fixed in version 4.5.5 – activities can be linked properly thus enhancing the system compatibility with the Internet Explorer 7 and Internet Explorer 8 browsers.

2.4 Quota Management

2.4.1 Close Time History Model Refers to DWH Database

As of version 4.5.5. the 'Close Time History' model uses the DWH database instead of master.

2.4.2 Automatic Close on Capacity Category Level Closes All Dependent Work Zones

Previously, if a work zone status was changed manually, a subsequent automatic close action on the capacity category level did not close such work zone.

As of version 4.5.5 an automatic close action performed on the capacity category level closes all dependent time zones for which no individual close time was set.

2.4.3 Quota Closed Automatically Only Once

In the previous versions automatic closing of quota was possible more than once if quota was reopened for some capacity categories after the first automatic closing. With the next recalculation the quota was closed automatically again.

This behavior was caused by the incorrect action of the "AUTO_CLOSE_IS_DONE" flag which has been improved in version 4.5.5. Now this flag is set with the first automatic quota closing and does not allow the same operation again. Manual modifications of the quota or its status have no effect on this flag value.

2.4.4 Quota Tables in DWH Have Company Name Prefix

As of version 4.4 all tables in the DWH database have company name as a prefix. This allows using the same DWH database for several companies simultaneously.

The similar approach has been implemented to the quota log tables created in the DWH database. Now all quota history tables in the DWH database ('quota_day_log', 'quota_time_slot_log', 'quota_category_log', 'quota_work_zone_log', 'quota_close_schedule_log') have company name as a prefix.

2.4.5 'Loading...' Message Displayed in Quota Screen

During a request processing the system now displays the 'Loading...' message in red in the bottom right corner of the screen. It replaced the previously used 'Processing...' message, thus improving the overall system uniformity.

2.4.6 'Booked Activities' Adjustment Improved

Previously, deletion of activities not being part of the capacity management influenced the 'Booked activities' value. This could lead to incorrect and even negative 'Booked activities' values.

This issue has been resolved and actions to activities not being part of the capacity management (such as internal activities) no longer increase or decrease the 'Booked activities' values which is the correct system behavior.

2.5 Company Settings

2.5.1 Refresh Browser Window Reminder in 'Permissions' Screen

Whenever any permissions are changed, such changes apply only after the browser window is refreshed. However, it was not obvious from the 'Permissions' screen, as it responded with a 'Settings were successfully updated' to clicking the 'Save' button, but, in fact, the new permissions were not applied yet. In version 4.5.5 when the user clicks 'Save' in the 'Permissions' screen, the system responds with the 'Permission was successfully updated. After you finish working with permissions, refresh the browser window for all changes to apply' message giving a clear instruction to the user (Figure 10). This ensures smooth work flow and enhances the system usability.
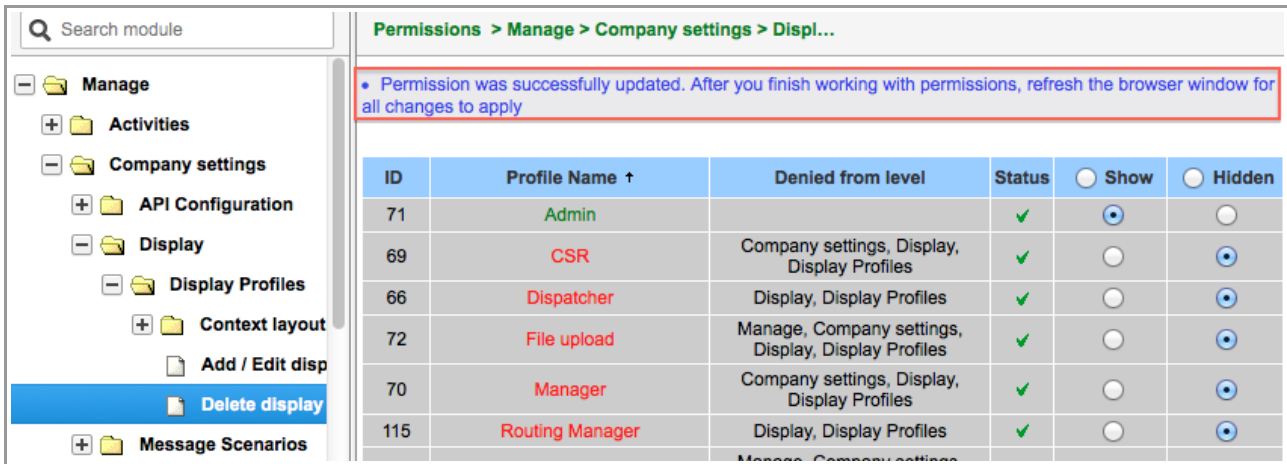
Figure 10: Reminder in 'Permissions' screen

2.5.2 Interfaces Renamed in 'Permissions' Screen

In order to maintain the consistency of the terminology throughout the system, the interfaces were renamed as follows in the 'Permissions' screen (Figure 11):

- – WEB Interface → Manage
- – Mobile Interface → Mobility
- – SOAP Interface → SOAP

Figure 11: Permissions Tree in version 4.5.4 (left) and version 4.5.5 (right)

2.5.3 Work Skill Condition Values Shown in Italics

For better clarity, the work skill condition values are shown in italics in the 'Work skill conditions' grid (Figure 12). Now the values are easily visible in the grid.

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Figure 12: Work skill condition values shown in italics

2.5.4 Search in 'Work Skill Groups' Screen Improved

Previously, a search for a valid value in the 'Work Skill Groups' screen resulted in the 'Loading...' message displayed indefinitely on the screen. No results were returned.

The necessary improvements have been made, and now search in the 'Work Skill Groups' screen works properly.

2.5.5 Work Skill Deletion Improved

In the previous versions a work skill deletion caused an error to be written to the log file. However, the work skill was deleted successfully.

After the necessary improvements work skills can be deleted without errors.

2.5.6 'Buttons' Group Available in New Context Layout

If a context layout of the form type was cleared and then a new empty layout was added to it, the 'Buttons' group was missing. The same behavior was observed when a context layout was changed to a new empty layout ('Change' → 'New empty layout').

Now the 'Buttons' group containing the 'Submit' button is added automatically to new context layouts at time of their creation.

2.5.7 'Buttons' Group Imported Correctly

Previously, after a context layout import to a display profile the 'Buttons' group was missing from the newly imported context layout.

The buttons import process has been improved. The 'Buttons' group is now imported correctly.

2.5.8 Import of Enumeration Property Visibilities Improved

During a context layout import to a display profile the 'is empty' and 'is not empty' visibility conditions of enumeration properties, if present, were not imported.

The import validation of such condition types has been improved, and now visibility conditions are imported properly.

2.5.9 Large Files Import Now Possible

During an attempt to import a large .xml file into a display profile a 'Service is unavailable. Please, try later' alert message appeared on the screen.

The import process has been improved, and now large context layouts can be imported successfully without any errors or alerts.

2.5.10   Display Profile Import Improved

In the previous versions, the display profile import failed with a 'Service is unavailable. Please, try later' alert message. The display profile validation was successful, though, but the subsequent import was not. The validation and import processes have been adjusted so that now display profiles are imported successfully.

2.5.11   Import of Context Layouts with 'Required Inventory' Predefined Tab Possible

When the 'Required inventory' predefined tab was added to the 'Add activity/Activity details' context layout, such layout could not be imported. The validation process would stop on the 'Add activity/Activity details' context and the context layout was not imported.

Now such context layouts are imported successfully, as the validation process handles predefined tabs correctly.

2.5.12   Linked Properties Retained after 'Technician/Bucket Info' Form Save

Previously, when any Linked Properties were configured for the 'Technician/Bucket info' context layout, such Linked Properties relations were lost after the 'Technician/Bucket info' form save. If any match key was applied and then deleted, the form remained unchanged.

This issue has been resolved – the Linked Properties remain linked after the form save.

2.5.13   Linked Properties Retained after Entity Type Change

Previously, when any Linked Properties were configured for a context layout which also contained an entity type property ('aworktype', 'invtype', 'ptype', 'srtype'), such Linked Properties relations were lost after any change to the entity type property value.

This issue has been resolved – the Linked Properties remain linked regardless of any changes to the entity type property value.

2.5.14   'Value Visibility' Tables Shown for 'aworktype' and 'invtype' Properties

The visibility of 'aworktype' and 'invtype' properties can be managed through context layout settings. Therefore, visibility tables are now shown for these properties.

2.5.15   Custom Action Links Visibility Improved

In the previous versions, when the visibility of any custom action links was based on the activity type, such custom links were never displayed in the Mobility Application regardless of their visibility settings. The visibility rules processing has been updated and the visibilities depending on the 'aworktype' property are handled correctly. Action links are displayed in accordance with their visibility settings.

2.5.16   Safari – Context Layout List Loaded Correctly

When ETAdirect was used in the Safari browser, clicking 'Layouts' in the 'Display' screen resulted in the 'Loading...' message shown indefinitely. The context layouts list was not displayed. Moreover, the

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available 'Monitored inventory' and 'Languages' fields were empty.

The 'Display' screen was improved so that it can be displayed properly in the Safari browser.

2.5.17   Internet Explorer 7 – 'Profiles' and 'Users' List Displayed Properly on API Configuration Screen

In the previous versions the 'Profiles' and 'Users' lists in the 'API Configuration' screen could not be displayed. The 'Loading...' message was indefinitely displayed on the screen and an error was written to the log.

The API configuration functionality has been changed for better compatibility with the Internet Explorer 7 browser, and the 'API Configuration' screen can be now loaded completely.

2.6 Inventory

2.6.1 'Add/Edit Required Inventory' Dialog Window Implemented

With the introduction of the 'Required inventory' concept the users should be able to add or edit the required inventory for an activity. For that purpose the 'Required Inventory' tab now has the 'Add required inventory' dialog window. This window is displayed when 'Add' is clicked in the 'Required inventory' tab (Figure 13-14).

Figure 13: 'Add' link in 'Required inventory' tab

Figure 14: 'Add required inventory' window

This window has the following elements:

- Inventory type field – a mandatory field where the required inventory type is to be selected from the drop-down list of all inventory types defined in the system
- Model – a text field or a drop-down box where the model is to be entered or selected. This field is only visible when a 'Model properly' field is set for the selected inventory type. If 'Model property' is a string property, the 'Model' field is a text field. If 'Model property' is an enumeration property,

the 'Model' field is a drop-down box.

- Quantity – a mandatory field where the required inventory quantity is to be defined. Valid values are integer numbers. The default value is 1.

The 'Edit' action link in the 'Required inventory' grid opens the 'Edit required inventory' dialog window with the same fields (Figure 15). However, only the 'Quantity' field can be edited.
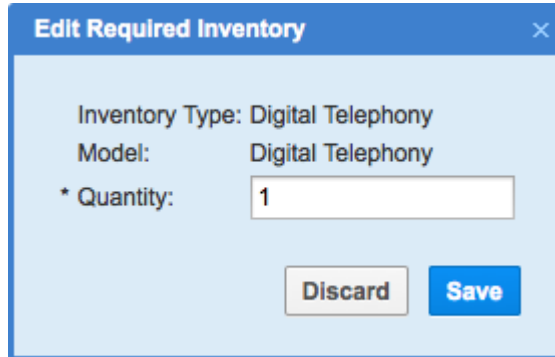
Figure 15: 'Edit required inventory' window

2.6.2 Installed Inventory Accounted in 'Missing' Inventory Calculation

When the system calculates the 'Missing' inventory value by comparing the required inventory quantity and the inventory quantity in the resource's pool, it now takes into account the installed inventory of the same type. So, the 'Missing' inventory value is calculated as 'Required inventory' less 'Inventory in resource's pool' less 'Installed inventory'. For these purposes a 'Qty installed' column has been added to the 'Required inventory' grid (Figure 16). A new placeholder (14803 "Qty Installed") has been added to the Glossary.

Figure 16: 'Qty installed' column in 'Required inventory' grid

2.6.3 Inventory Report Improved

The Inventory Report showed incorrect values in the 'Available' column – non-serialized inventory without 'Model' was not taken into account.

Now the 'Inventory report' functionality has been improved and now the report shows non-serialized inventory regardless of 'Model' settings.

2.6.4 'Undo Install' and 'Undo Deinstall' Actions Improved

Previously, in the Manage Application, if all installed non-serialized inventory was deinstalled by means of the 'Undo Install' action, its quantity was added to the resource's pool, but the record remained (Figure 17). The same issue existed for the 'Undo Deinstall' action.

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Pool	Equipment type	Model	Ownership Status	CAID	Quantity	Serial Number	Actions
installed	Other Non-Serialized	3XX TYPE REM -4					Deinstall Change
technician	Other Non-Serialized	3XX TYPE REM -4			5		Install Change

Figure 17: 'Installed' record remaining after deinstallation

Now as soon as the quantity of installed or deinstalled inventory is 0, the corresponding record is deleted. Otherwise, the quantity is increased or decreased, as applicable.

2.6.5 Teamwork Inventory Display Improved

In a teamwork, members of the team can share inventory (when the corresponding feature is enabled), and the available inventory is shown in several pools corresponding to the team holder's and team-members' pools. In the previous versions the teamwork inventory display showed 'Undefined' instead of the actual team-member's name in the Mobility Application. The team-holder's name was displayed correctly, though. The team-member's name was also missing from the 'Install' drop-down list.

This issue has been fixed. The 'Inventory' list and the 'Install' drop-down show team-member's name as an inventory pool.

2.6.6 Team-Member's Inventory Accounted in 'Quantity Available'

If two resources were joined in a teamwork with the 'Share inventory in teamwork' feature enabled, the team-member's inventory was not accounted in the 'Quantity available' calculation. This also affected the 'Missing inventory' calculation.

This issue has been resolved – now the team-member's inventory is included in the 'Quantity available' and 'Missing' calculations which, therefore, produce correct values.

2.6.7 Correct Accounting of Inventory without 'Model'

Previously, if an inventory type had no 'Model' defined for it, required inventory of such type was always shown as 'Missing', even if there was enough inventory in the resource's pool. The 'Quantity available' column was empty. However, this issue was not actual for the Mobility Application where the calculation was correct.

The calculation of available and required inventory in the Manage Application has been improved so that inventory without 'Model' is accounted correctly.

2.6.8 Non-Serialized Inventory Deinstallation Improved

When non-serialized inventory was deinstalled in the Mobility Application, the system responded with an 'Unable to deinstall inventory. Mandatory parameter is empty' error message and an error was written to the log file. At the same time, the deinstalled inventory quantity was subtracted from the customer's pool but was not added to the deinstalled pool.

The logic of inventory move between pools has been improved, and now non-serialized inventory can be deinstalled correctly. No error messages appear any longer.

2.6.9 'Quantity' Field Contains Required Quantity by Default

As of version 4.5.5 in the Manage Application the 'Quantity' field in the 'Install inventory' window is pre-filled with the required inventory quantity, if required inventory is defined (Figure 18). If no required inventory of this type or model has been defined, the 'Quantity' field is set to 1.
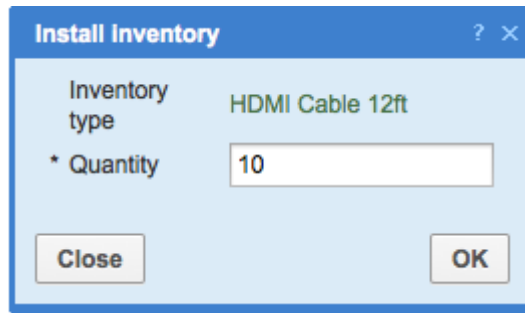
Figure 18: 'Install inventory' window with pre-filled 'Quantity' field

2.7 DWH

2.7.1 DWH Now Reflects New Inventory Design

With the introduction of the Inventory Type concept and the new 'quantity' field applicable to non-serialized inventory, DWH has been changed to reflect these new features.

Now the 'type_list' DWH table and the corresponding .csv file contain the inventory types. The DWH script takes into account the 'quantity' field.

2.7.2 DWH Export Possibilities Expanded to Include Additional Data

The default configuration of DWH export includes the following data:

- activities plus all their properties (appt)
- queue plus properties of the resource (provider)
- resource tree (provider)
- inventory plus all their properties
- custom messages
- custom message text
- property description
- property lookup
- property file
- type list
- PAS question
- PAS answer

Now DWH script has been improved to allow exporting additional data. Such additional data to be exported can be defined or modified in the user's configuration file (xml). The exported data can be downloaded as a .csv or .xml file via FTP or WEB.

Below is the list of customizable additional data which can be exported via DWH subject to the user's configuration file settings:

- service request
- activity link
- time slot
- activity work skill
- resource work skill
- gpsman data

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- gps tracks

As of version 4.5.5 this list has been expanded with the following data:

- provider properties ({companyname}_provider_properties.csv) containing a list of resources plus their properties (all or selected):

  provider_id (provider_children child_id)

  provider_external_id (provider external_id)

  provider_name (provider pname)

  +**properties**

- provider work skill ({companyname}_provider_skills.csv (referring not to a particular queue but to all resources) with the following fields:

  provider_id (provider_work_skill provider_id)

  provider_external_id (provider external_id)

  work_skill_id (provider_work_skill work_skill_id)

  work_skills_ratio (provider_work_skill work_skills_ratio)

- user list ({companyname}_user_list.csv) with the following fields:

  provider_id (security_user_provider sup_pid)

  provider_external_id (provider external_id)

  provider_name (provider pname)

  user_id (security_user uid)

  user_login (security_user ulogin)

  user_status (security_user sustatus)

  user_name (security_user uname)

  login_policy (security_user login_policy_id)

  last_login (security_user last_login)

  time zone (security_user su_zid)

  user_created (security_user sucreated)

  user_updated (security_user suupdated)

  user_last_password_change (security_user last_password_change)

  user_force_reset_next_login

  user_display_profile (security_user display_profile_id)

  Note: If a password is used, it should be shown as an empty field.

- relation between the user and the resource ({companyname}_user_provider.csv) showing which resources are visible to particular users) with the following fields:

  user_id (security_user uid)

  user_login

  provider_id (pid of the provider visible to user)

  provider_external_id (provider external_id)

2.8 Routing

2.8.1 All Activities Transferred to Input Dump

In the previous versions Routing transferred only activities matching the highest priority filter to the input dump.

After the necessary changes all activities are transferred to the input dump. Activities are assigned to resources according to the priority set by the routing filters.

2.8.2 Resource Filters Improved

Previously, when the user created two custom resource filters, the activities were filtered incorrectly – the system applied the resource assignment costs incorrectly and assigned activities to unsuitable resources. However, when the user used only one custom filter and the default * (other) filter, the system assigned activities correctly.

This issue has been resolved, and now the system applies the resource filters correctly and assigns activities according to the filter settings.

2.8.3 Calendar Remains Visible during/after Routing Run

The calendar in the 'Routing' screen disappeared during a Routing run or a rollback of a previous routing result (Figure 19-20). It remained hidden after the Routing run was completed. The user had to select a different bucket to see the calendar again.
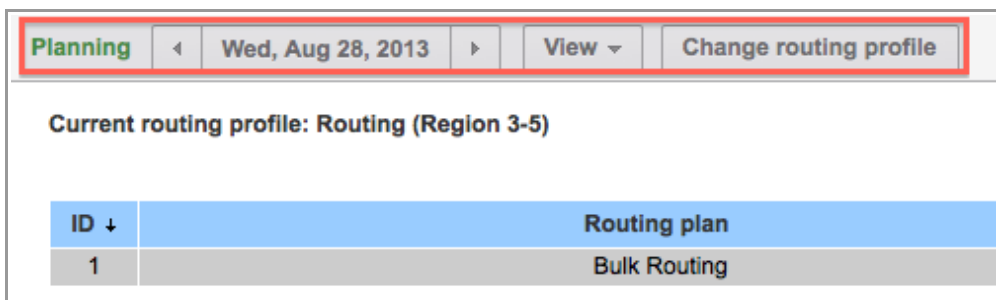
Figure 19: Calendar shown on 'Routing' screen
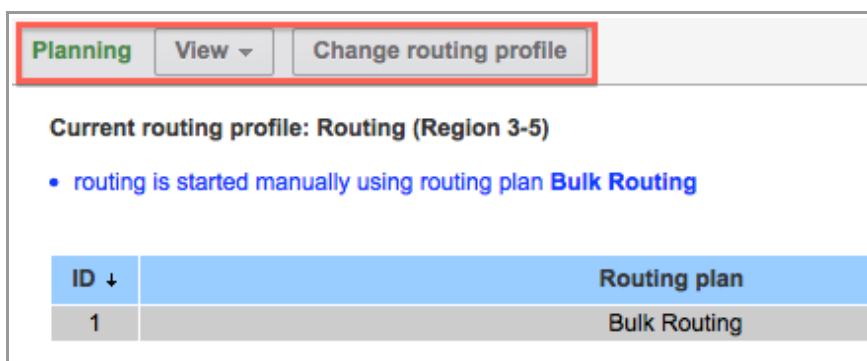
Figure 20: Calendar hidden after Routing start

The issue has been fixed – the calendar now remains visible at all times.

2.8.4 Resource Filter Hint Behavior Improved

The 'Change order, add new resources and deactivate existing' hint appearing in the Resources filters window remained on the screen after the window was closed, although the hint should disappear as soon as the mouse leaves the 'Edit' icon (Figure 21).

Figure 21: Resource filter hint remaining on screen

This issue has been resolved – now the hint appears when the mouse hovers over the 'Edit' icon and disappears when the mouse is moved away from it.

2.8.5 Dynamic Routing Settings Saved Properly

In the previous versions the settings of the 'Dynamic routing' checkbox in the 'Assignment parameters' section of the Routing Plan were not saved together with the Routing Plan itself. When the Routing Plan was opened next time, the 'Dynamic routing' settings were reset.

In version 4.5.5 this issue has been fixed, and now the 'Dynamic routing' settings are saved properly.

2.8.6 Routing Plans without Reoptimization No Longer Cause Errors

If a Routing Plan as created without the Reoptimization feature enabled, an unexpected error was written to the log file.

This issue has been resolved by adding a check of Reoptimization settings. Now such Routing Plans no longer cause errors.

2.9 Mobility Application

2.9.1 User Permissions Checked before 'Required Inventory' Grid Display

To view both the 'Required inventory' grid and the 'Required for...' grid in the Mobility Application the user has to have the appropriate permissions (Figure 22).

Figure 22: 'Required inventory' permissions

Now the system checks the user permissions before displaying the 'Required inventory' grid and the 'Required for...' grid in the Mobility Application.

2.9.2 'Required Inventory' Context Layout Created

With the enhancement of the inventory functionality the context layout list now contains a separate context layout for the 'Required inventory' form in the Mobility Application (Figure 23). This context layout is used to manage the 'Add/Edit required inventory' form in the Mobility Application.

Context ↑	Entity	Interface	Context type	Also used in	Action
Edit **Required** Inventory	required inventory	Mobility	form	Dispatcher; Technician; soap; CSR; Manager; Automatic Routing; Technician (10 pending ordered activities); Technician (8 pending ordered activities); Technician (2 pending ordered activities); Technician (Android); Engineer	Change Clear Structure

Figure 23: 'Edit Required Inventory' context layout

This context refers to the 'Required Inventory' entity and contains 4 system properties (fields) related to required inventory. No new properties can be added to the 'Edit Required Inventory' context layout, therefore, the 'Add property' window is always empty (Figure 24).

Figure 24: 'Edit Required Inventory' context layout structure

The database now contains new fields 'required_type', 'required_model', 'required_quantity', 'required_available_quantity' and can be found in the 'Properties' screen (Figure 25).

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Figure 25: Properties related to Required Inventory

2.9.3 'Install' and 'Uninstall' Action Links Only Shown for Started Activities

Since inventory can only be installed or uninstalled during an activity performance, it is logical that 'Install' and 'Uninstall' action links are only shown for a started activity.

Therefore, they were removed from the 'Inventory' screen of activities of all statuses other than started.

2.9.4 Total Required Inventory Shown in Grid Header

The 'Required Inventory' grid now has the total number of required inventory in the header which allows evaluating the required inventory immediately. The number is shown in parenthesis after the title (Figure 26).
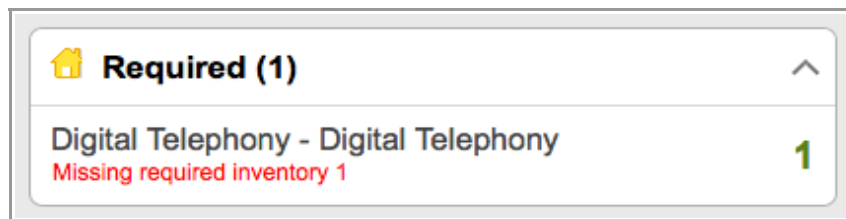
Figure 26: Total required inventory shown in header

2.9.5 Calendar Shows Correct Date

Previously, if the Calendar was switched to a different date in the future, the Mobility Application showed the queue for the selected date, however, the calendar continued to show today's date.

The calendar functionality has been adjusted so that to display the selected date on the screen.

2.9.6 Offline Plugins Working Properly

In the Mobility Application plugin assets were not loaded, therefore, plugins were not available in the offline mode. When the plugin action link was clicked, the system responded with a 'Page not found' message.

Now plugin assets are loaded together with other application assets, and plugins are available and functional in the offline mode.

2.9.7 Properties Used Only as Linked Properties Conditions Passed to Browser

As of version 4.5.5 all properties and fields referred to in the Linked Properties conditions, but otherwise not appearing in the Mobility Application GUI, are passed to the browser.

2.9.8 'Submit' Button Visibility Conditions Improved

In the previous versions the 'is empty' and 'is not empty' conditions were not working for the 'Submit'

button visibility. If the 'Submit' button visibility was dependent on a checkbox settings, its visibility remained the same regardless of whether the checkbox was checked or not.

The necessary changes have been made, and now the 'Submit' button is enabled or disabled depending on the checkbox settings, when the corresponding visibilities are defined.

2.9.9 Multi-Level Linked Properties Work Correctly

In some cases 3 enumeration properties were linked so that the visibility of the values of the 2nd property depends on the values of the 1st property and the visibility of the values of the 3rd property depends on the values of the 2nd property. In such cases the settings of the 3rd property value visibilities were ignored, and its values were displayed regardless of other two properties.

The conditions matching logic was improved so that multi-level links between properties work correctly.

2.9.10 'Add to Installed/Deinstalled' Actions Synchronization Improved

When the user added inventory to the 'Installed' or 'Deinstalled' pool by means of the 'Add to installed' or 'Add to deinstalled' actions, respectively, no synchronization requests were sent for such actions. As soon as the user logged out of the Mobility Application, any inventories created in the Installed' or 'Deinstalled' pools were lost.

The synchronization requests have been added to the 'Add to installed' and 'Add to deinstalled' actions which prevents data loss between applications.

2.9.11 'Service Unavailable' Screen Displayed when Application Server Not Available

Previously, if the Mobility Application was unable to reach the application server, the browser displayed only a blank screen.

Now when the connection to the application server is lost, the screen displays the 'Service Unavailable' message.

2.9.12 Requests Sent Regardless of Linked Properties

If any Linked Properties were configured for a Service Request but were left empty, such Service Request could not be sent. The system responded with an 'Internal error. Please review your route' error message.

In version 4.5.5 this issue has been resolved. Service Requests can be sent in a proper manner with no error messages, even if their Linked Properties are not filled-in.

2.10 Reports

2.10.1 'Rows' Field Value Restricted

Previously, the user could enter any value in the 'Rows' field of the View filter while the maximum allowed value is 999. For invalid values an 'Error occurred: - Incorrect number of items per page' message was displayed (Figure 27).

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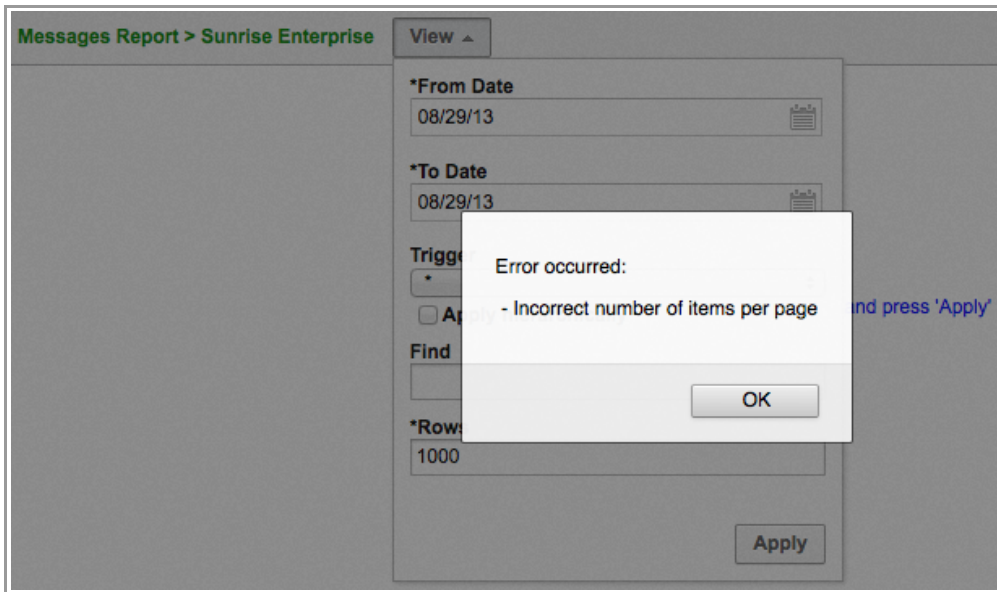
Figure 27: Error message for invalid 'Rows' value

This behavior was not always clear as it did not suggest the correct input. As of version 4.5.5 the 'Rows' field value is restricted to 3 digits, so that the maximum possible value is 999 which is a valid input. Whenever an invalid value is entered (0, -1, alphabetic characters, etc.), the 'Incorrect number of items per page' message is displayed.

2.10.2   Charts Show Correct Values

Sometimes charts of custom reports interpreted value incorrectly – when a value was thousands and had a comma between units, the chart ignored any units after comma which decreased values by thousand (for example, 11,722 was regarded as 11 and shown on the chart as such).

This issue has been resolved by removing commas from the values used in the reports. Now all values sent to charts contain no commas and are interpreted correctly.

2.10.3   Custom Report Permissions Improved

In the previous versions a new custom report created in the Maintenance Area was not shown in the Permissions Tree in the Manage Application immediately. The user had to refresh the screen to see the new report.

This issue has been fixed. The Permissions Tree is refreshed whenever the user opens the Permissions page, therefore, it always displays the current information.

2.10.4   Routing Report Calculates Overtime Correctly

For resources with the 'Working time includes travel from last activity' feature enabled overtime and idle time were calculated incorrectly in the Routing Report. If such resource's route contained an activity which was finished after the working time end and also included travel from such activity, the overtime was calculated as 0, while in fact it should have been the time between the working time end and the activity completion plus travel time.

The overtime calculation has been adjusted, so that now it is correct for resources with the 'Working time includes travel from last activity' feature enabled.

2.10.5   Print Preview Screen Improved

The 'Print preview' window in the 'Reports' screen was not formatted properly – the text was displayed in the same font against blue background and the 'Print' link was shown as text rather than an active link (Figure 28).
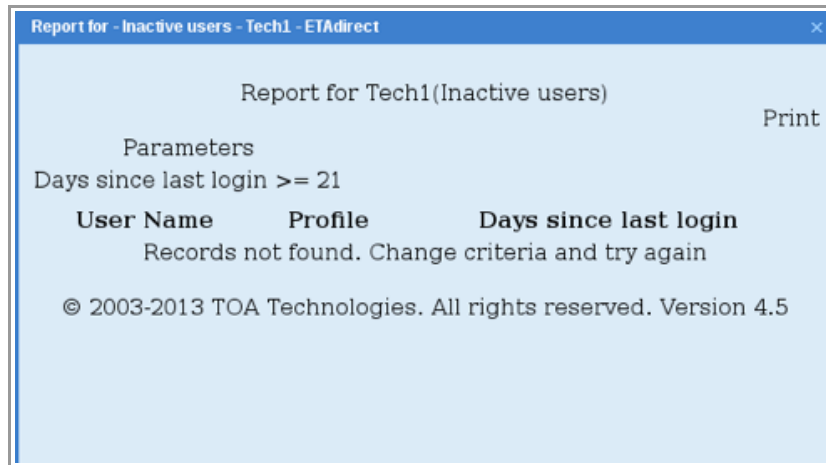
Figure 28: Incorrectly formatted 'Print preview' screen

The layout of the 'Print preview' screen has been improved – the content is shown correctly and the 'Print' link is active (Figure 29).
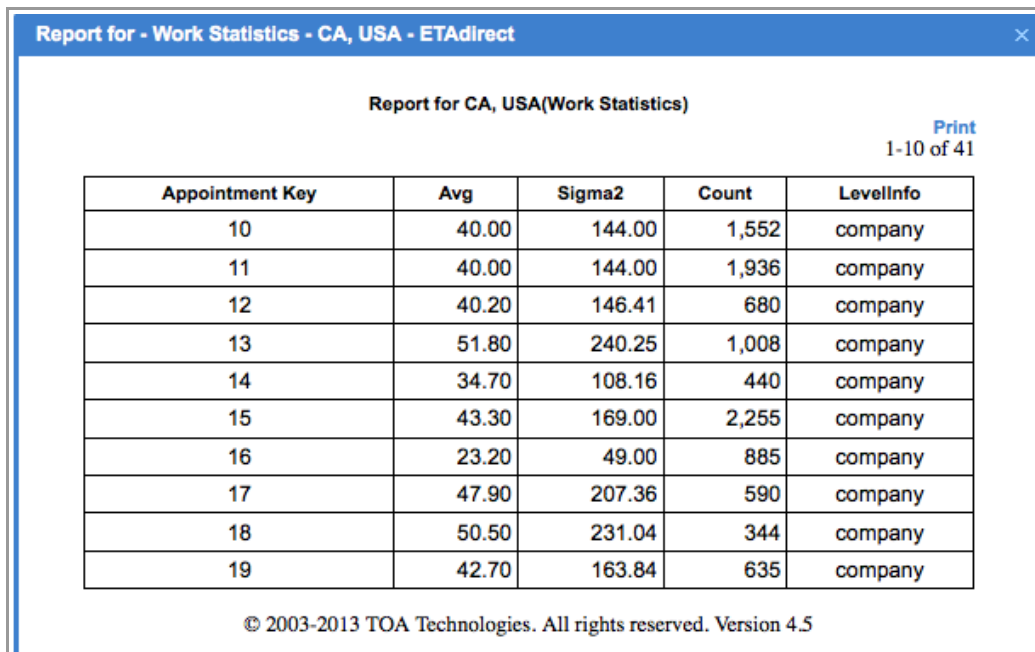
Figure 29: Correctly formatted 'Print preview' screen

2.10.6   'Schedule Report' Takes into Account 'CountDays' Parameter

When the user created a custom report with a specified value of the 'CountDays' parameter, the received report ignored such value and always contained data for one day only. The report showed the 'CountDays' value as 1 (Figure 30).

#	Parameter	Value
1	FromDate	2013-06-17
2	CountDays	1

Expected Window of Arrival

table 1

#	Technician Name	Technician External Id	Parent Name	Date range	Total	Inside Delivery Window	As Inside Delivery Window of Total	Before Delivery Window	As Before Delivery Window of Total	After Delivery Window
1	ares1		A	2013-06-17 and 2013-06-17	4	3	75	0	0	1
2	ares2	ares2	A	2013-06-17 and 2013-06-17	3	2	67	0	0	1
3	ares3	ares3	A	2013-06-17 and 2013-06-17	1	1	100	0	0	0
4	test1		A	2013-06-17 and 2013-06-17	2	1	50	1	50	0

Figure 30: Report issued for 1 day

In version 4.5.5 the value of the 'CountDays' parameter set by the user is applied correctly. The reports are issued for the number of days specified by the user.

2.11 SmartCollaboration

2.11.1 "User is typing…" Notification Introduced in Manage Application

As of version 4.5.5 the "USER_NAME is typing…" notification is displayed in the Community window of the Manage Application whenever the other party in a conversation is typing a message. When several users are typing their messages simultaneously, the notification reads "USER_NAME_A, USER_NAME_B are typing…" (Figure 31).

This message is displayed on the screen for 10 seconds and afterwards is hidden.
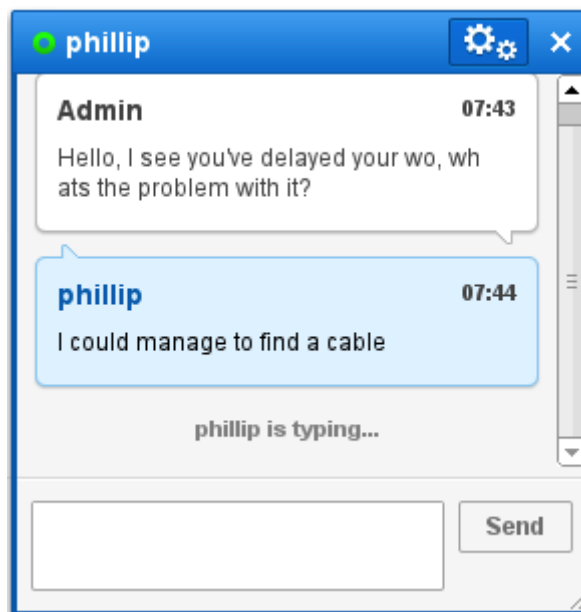
Figure 31: 'User is typing…' notification in SmartCollaboration

As of version 4.5.5 this new feature is implemented in the Manage Application.

2.11.2 'Share Activity Info' and 'Reassign Activity' Actions Improved

Previously, the Mobility Application users were unable to share activity info or reassign activities by means of the corresponding actions, although all necessary permissions were set. These actions actually had no effect on the selected activity.

This issue has been resolved in version 4.5.5. The necessary checks have been added, and now activities can be reassigned via SmartCollaboration and their info can be shared, as well.

2.11.3   Activity, Inventory or Resource Details Visible to Recipient in Manage Application

When an activity, inventory or resource info is shared in the Community window between two users of the Manage Application, their details can be viewed by clicking the arrow in the top right corner of the message (Figure 32).
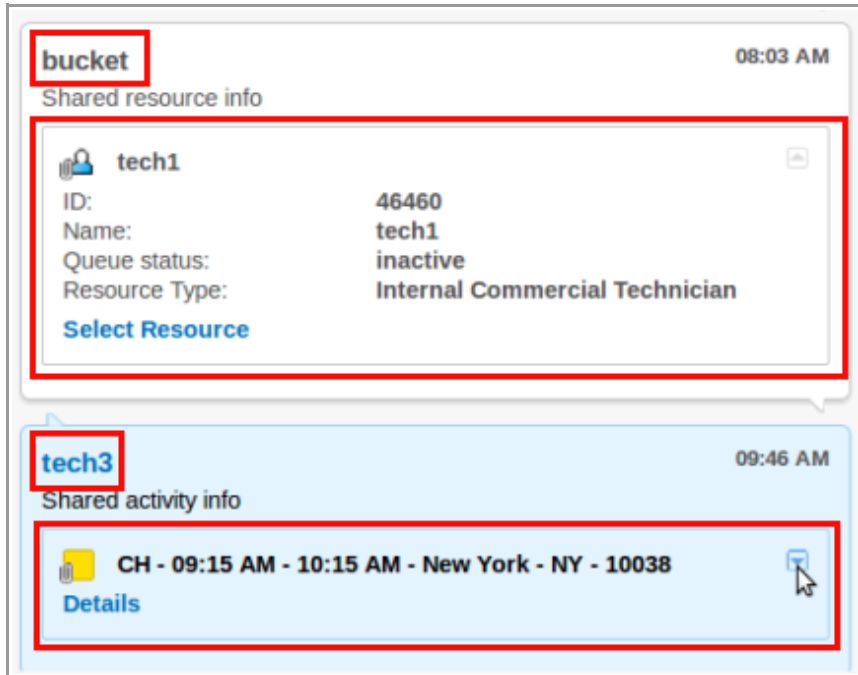
Figure 32: Activity and resource details in the chat

However, only the user sending the info was able to view the details by clicking the arrows. The recipient could not view the details, as clicking the arrows had no effect.

The necessary changes have been made, and now both the sender and the recipient can view the details of the shared activity, inventory or resource.

2.11.4   Warning Messages Displayed Only for Activity Reassignment

When an activity had any warnings associated with it, such warning messages were displayed whenever such activity was dragged and dropped to the chat in the Manage Application (Figure 33). However, logically, such warning messages are needed only in cases of activity reassignment.
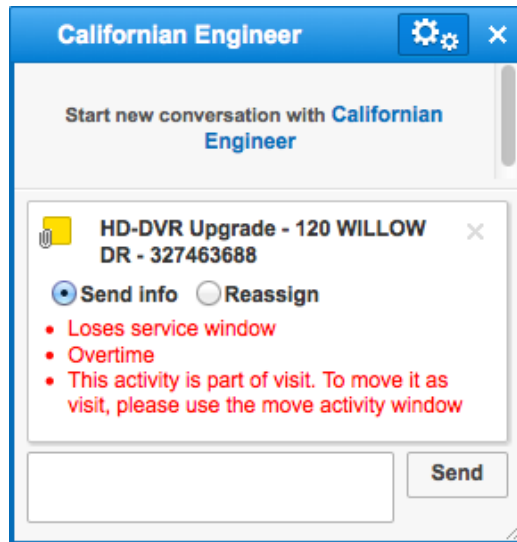
Figure 33: Warning messages displayed in chat

In version 4.5.5 any warnings associated with an activity are only displayed in the chat when the 'Reassign' button is clicked. Warnings are hidden when the activity info is shared via SmartCollaboration in the Manage Application.

2.11.5   Reassigned Activity 'Details' Link Visible in Mobility Application

Previously, when an activity was reassigned via SmartCollaboration to a Mobility Application user, its 'Details' link was only visible to the sender. The recipient could only see this link after closing and reopening the chat (Figure 34).
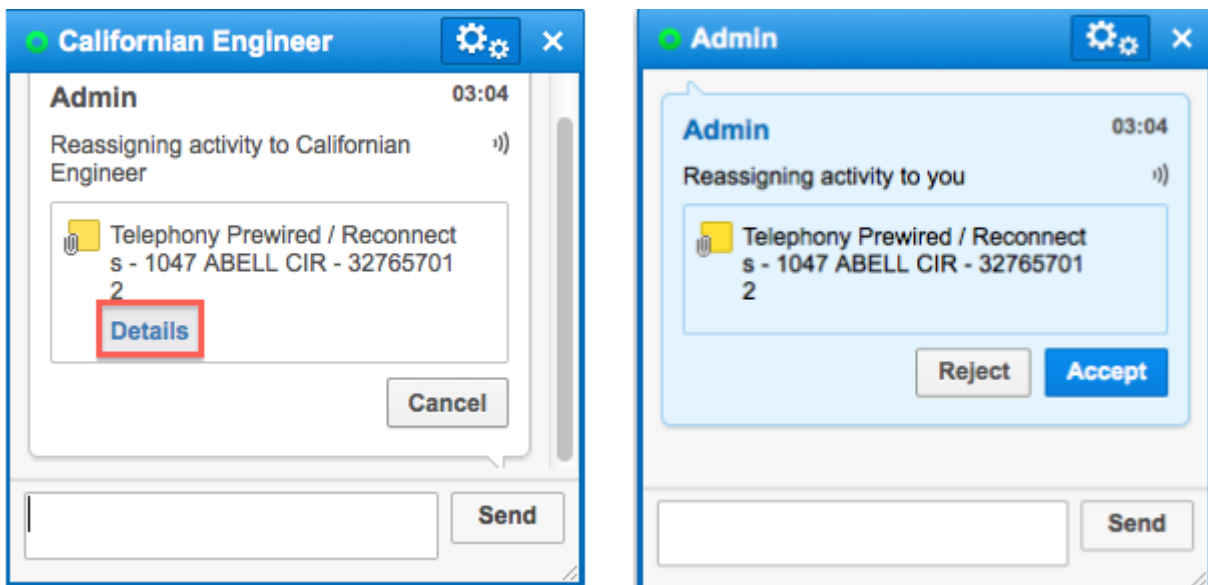
Figure 34: 'Details' link visible in sender's screen (left) and invisible in recipient's screen (right)

In fact, the logical behavior is exactly the opposite – the 'Details' link is visible to the recipient as they have to see the activity details before accepting or rejecting it, while it is no longer needed for the sender as the activity is not in their route anymore. As of version 4.5.5 this behavior has been implemented, and the Mobility Application user receiving a reassigned activity is able to view its details.

2.11.6 Activity Sharing with Helpdesks Improved

When an activity was dragged and dropped to a chat with a helpdesk in the Manage Application, it was not shown in the chat window. The user was unable to share an activity with a helpdesk.

This issue has been resolved. Now activities dropped into a helpdesk chat appear there and can be shared with a helpdesk.

2.11.7 Inventory and Activity Info Sharing with Helpdesk Possible in Mobility Application

In the previous versions no 'Share activity' or 'Share inventory' action links were available in the helpdesk chat in the Mobility Application when the respective activity (inventory) details were open.

As of version 4.5.5 the helpdesk chat menu contains the 'Share activity' ('Share inventory') items when the activity (inventory) details are displayed on the screen (Figure 35).
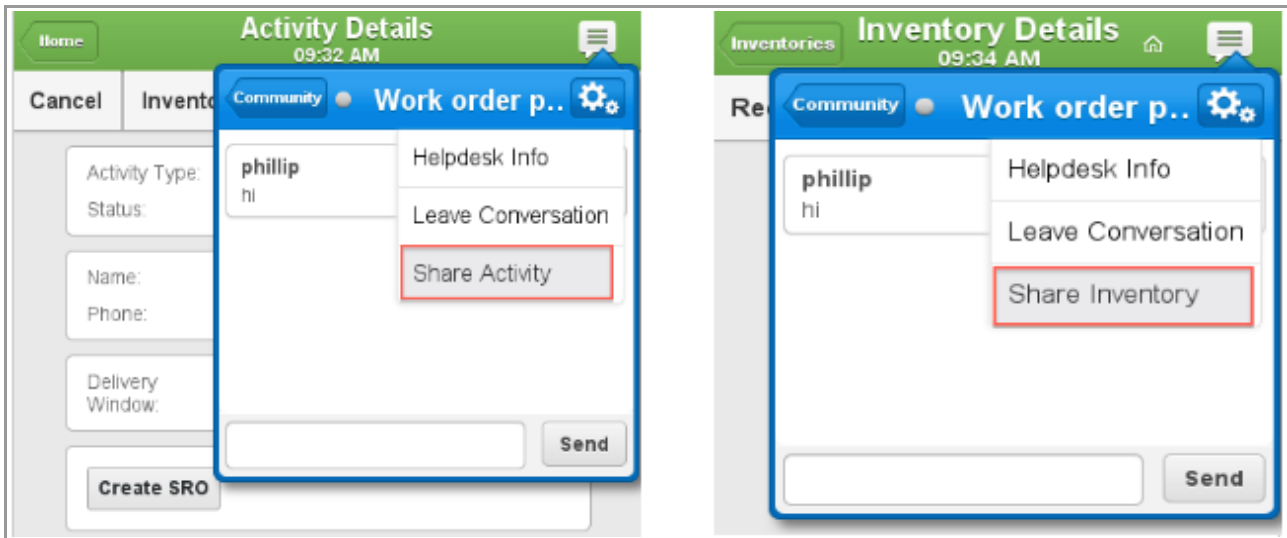
Figure 35: 'Share activity' and 'Share inventory' menu items

2.11.8 Helpdesk Operator Permissions Improved

Previously, when an operator receiving a user request started a new conversation with such user, while having no permission to open a chat with that user, any attempts to send a message to the user resulted in 'Error starting chat' messages (Figure 36).

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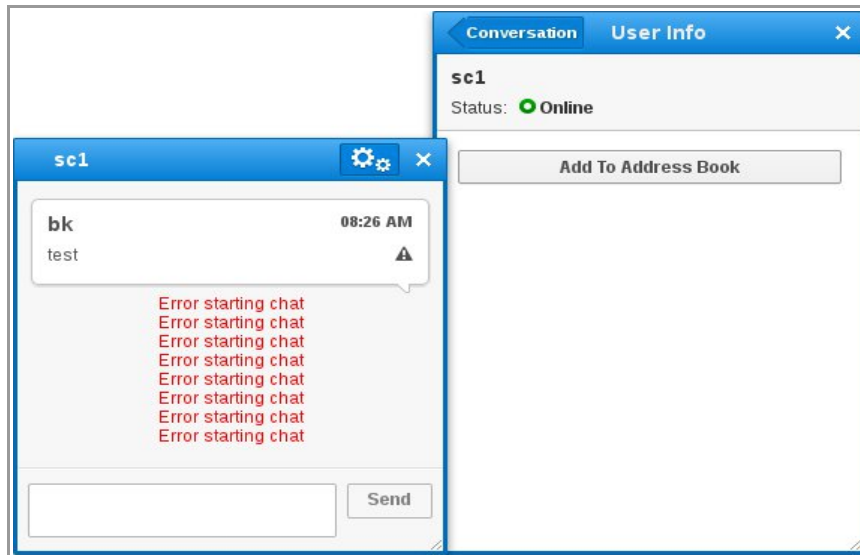
Figure 36: 'Error starting chat' message

As of version 4.5.5 the 'New conversation' action is only available to the helpdesk operator if the particular user is in the operator's contact list and the operator has the permission to chat with such user. Otherwise the action is not available and the chat window is not opened.

2.11.9   HTML Tags No Longer Executed in Chat Window

If a message sent via SmartCollaboration contained HTML tags, such tags were executed in the chat window.

In version 4.5.5 the message text is escaped and only afterwards added to the chat window.

2.11.10   Visit-Related Warning Message Improved

A 'This activity is part of visit. To move it as visit, please use the move activity window' warning message appeared for reassignment of activities which were not part of a visit or even when the visit functionality was disabled (Figure 37).
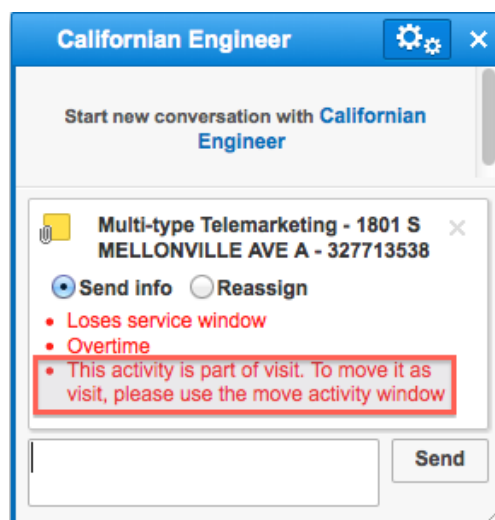
Figure 37: Visit-related error message

An additional check has been added, and now this message only appears for activities belonging to visits.

2.12 Public API

2.12.1   'Work zone' Label is Used instead of 'Work zone' Name in Resource Management API

In the previous versions, 'work zone' name (which varies in different languages) was used by Resource Management API. As a result, during SOAP API request, an error was returned indicating that 'work zone' did not exist in the system.

As of version 4.5.5 'work zone' label is used, since it is a unique key as opposed to 'work zone' name.

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3 ETAdirect Version 4.5.6

3.1 Changes Overview

Permissions change through script no longer possible

'Start Activity' screen – linked properties behavior improved

Conditions based on related entities work correctly

Requests with linked properties sent successfully

Requests sent successfully after display profile export

'View' filter improved

'set_message_status' function sets 'updated' field

'Quantity' field always mandatory in 'Install/Deinstall' screen for non-serialized inventory

'Add New Inventory' window layout corresponds to inventory type

'Install' link hidden from Missing Required Inventory Details screen

Non-serialized inventory installed/deinstalled as single action

Non-serialized inventory model retained in Install/Deinstall action

Routing execution logs can be compared without errors

All Routing screen sections show same time

Dynamic Routing settings saved after Routing Plan cloning/change

Routing Plan filters saved properly

Custom theme applied correctly

Dark/bright custom themes determined correctly

'Service Request' screens with file properties displayed correctly

3.2 Security

3.2.1 Permissions Change through Script No Longer Possible

Previously, a user having ReadWrite access to the Permissions Tree was able to change the visibility of any module (including those invisible for the company) for any security profile by changing the request parameters. The script containing new permissions set by the user was processed and after a page refresh the new permissions were applied in the Permissions Tree and shown in the database.
In ETAdirect version 4.5.6 this security issue has been resolved. The user is no longer able to change permissions for the screen not available for the company using the script.

3.3 Manage Application

3.3.1 'Start Activity' Screen – Linked Properties Behavior Improved

When the 'Start activity' link was clicked in the hint of a resource with an inactive queue, the 'Activity details' form showed incorrect properties. The displayed properties did not correspond to the visibility settings of the appropriate Activity Types Group. If the 'Activity type' field contained only activities of the 'Internal' group, the form, nevertheless, contained the fields of a 'Customer' activity (Figure 38).

Figure 38: 'Activity details' of Internal activity with Customer activity fields

This issue has been fixed in version 4.5.6 – now the properties displayed in the 'Activity details' screen correspond to the visibility settings of the Activity Types Group.

3.3.2 Conditions Based on Related Entities Work Correctly

Previously, when a property visibility condition was based on an entity other than the entity of the current form, such property values were not saved. For example, when an 'Activity details' field was conditioned by a field of the 'Technician/Bucket info' screen, such field was not shown, even when the condition was satisfied. This issue occurred both in the Manage and Mobility Applications.

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This issue has been resolved. Properties are saved correctly when depend on related entities.

3.3.3 Requests with Linked Properties Sent Successfully

When a property in the 'Send/View Request' context was linked to a property related to a different entity, such requests could not be sent.

In version 4.5.6 the linked properties processing has been improved. Now the 'Send request' forms with linked properties of different entities are saved correctly and requests are sent successfully.

3.3.4 Requests Sent Successfully after Display Profile Export

When a display profile was exported and then imported into a new profile, no requests could be sent. The 'Entity not found' error message appeared, the request was not sent and an error was written to the log.

In version 4.5.6 this issue has been fixed. Service Requests of different types (Activity, Inventory, Resource) as well as those containing linked properties are sent successfully.

3.3.5 'View' Filter Improved

Whenever the 'View' filter included a calendar (for example, in the 'Technicians Calendars', Technician Work Zones', 'Users', 'Message Reports' screens, etc.), the 'View' filter closed immediately after any date was selected in the calendar. The filter settings were not applied.

This issue has been resolved in version 4.5.6, and now only the calendar closes after the date selection. The user is able to click 'Apply' to have the filter settings applied to the screen.

3.4 Message Engine

3.4.1 'set_message_status' Function Sets 'updated' Field

As of version 4.5.6 the 'set_message_status' SOAP function changing the message status also automatically sets the 'updated' field of the message. This behavior is logical and represents a continuous and consistent process of message handling.

3.5 Inventory

3.5.1 'Quantity' Field Always Mandatory in 'Install/Deinstall' Screen for Non-Serialized Inventory

In ETAdirect install or deinstall actions with non-serialized inventory must always specify the quantity of inventory to be installed or deinstalled. Therefore, the 'Quantity' field must always be present in the 'Install/Deinstall inventory' screens for non-serialized inventory and, moreover, its visibility in this case must be mandatory (Figure 39). For serialized inventory the 'Quantity' field is not mandatory.

For these purposes the 'Quantity' field and its visibility have been made configurable through context layouts for both Manage and Mobility Applications. In addition, a check has been implemented which checks the 'Quantity' field presence and mandatory visibility for non-serialized inventory types. This change concerns the 'Install', 'Deinstall', 'Undo Install', 'Undo deinstall' screens.

If the 'Quantity' field is missing or its visibility is ReadOnly or ReadWrite, the system responds with a warning message and the form is rejected. The corresponding context layout has to be reconfigured.
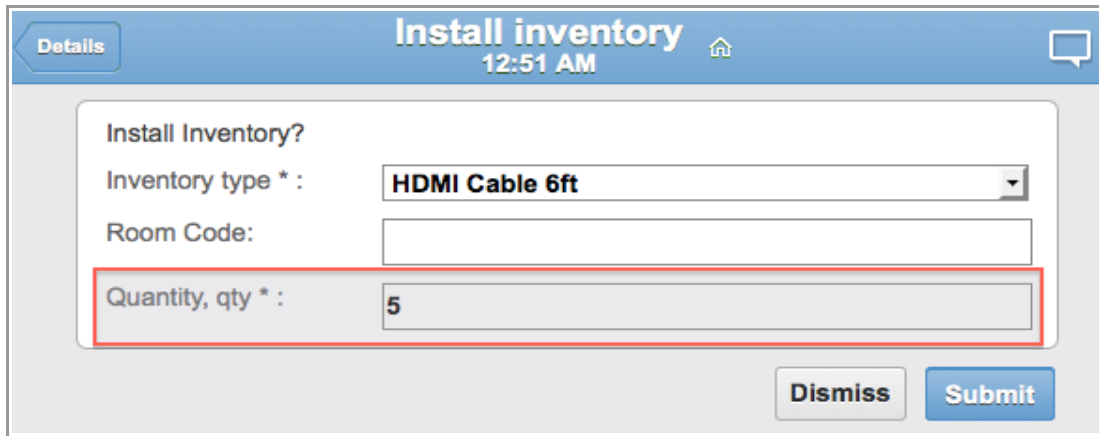
Figure 39: Mandatory 'Quantity' field in 'Install inventory' screen

3.5.2 'Add New Inventory' Window Layout Corresponds to Inventory Type

As of version 4.5.6 the layout of the 'Add new inventory' dialog window is recalculated to match the selected Inventory Type (Figure 40). This window fields are linked to certain values of the 'Inventory Type' window through the context layout and are visible or hidden according to the selected Inventory Type.
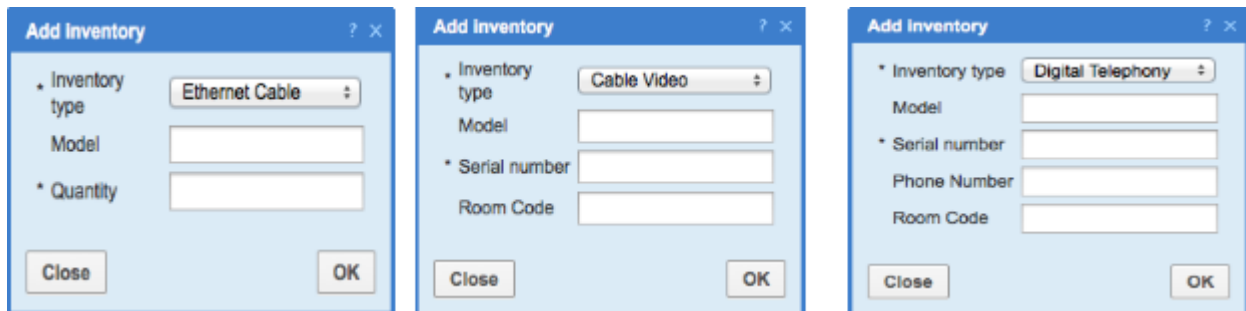
Figure 40: Different layouts of 'Add Inventory' window for different Inventory Types

3.5.3 'Install' Link Hidden from Missing Required Inventory Details Screen

In the previous versions the 'Details' screen of missing required inventory in the Mobility Application had the 'Install' link which made no sense as there is no way to install missing inventory (Figure 41). Moreover, when the user tapped this link, they were logged out and redirected to the Login screen.

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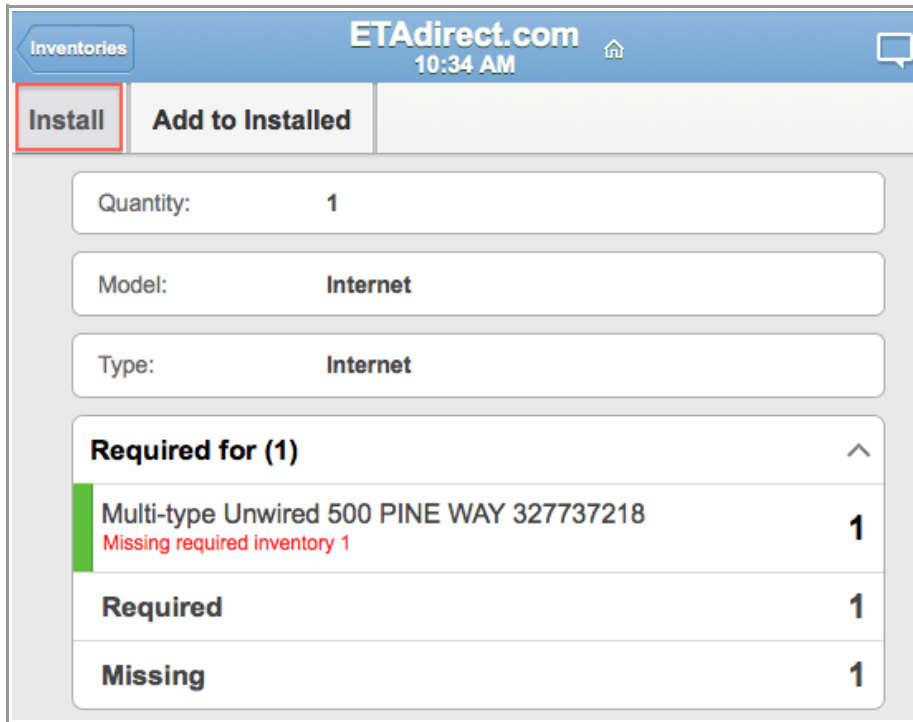
Figure 41: 'Install' link in missing required inventory details screen

As of version 4.5.6 the 'Install' link is hidden from the screen when the resource's pool has no inventory matching the required inventory.

3.5.4 Non-Serialized Inventory Installed/Deinstalled as Single Action

Previously, when non-serialized inventory was installed or deinstalled, this action, in fact, was a combination of two actions – decrease of inventory in the source pool and increase of inventory in the destination pool. If the second action failed, it resulted in inconsistent inventory data.

These risks no longer exist in ETAdirect, because as of version 4.5.6 inventory installation and deinstallation is done as a single action – Change Inventory Pool. This action ensures that inventory is transferred to the destination pool without losing any data in the process and that both inventory pools have correct inventory data.

3.5.5 Non-Serialized Inventory Model Retained in Install/Deinstall Action

When in the Mobility Application non-serialized inventory was installed or deinstalled by moving it to a pool not having such inventory record, its model data was lost during installation/deinstallation. This situation occurred when 'Model' visibility was set to ReadOnly in the respective context.

This issue has been fixed with the introduction of installation/deinstallation as a single action. Now non-serialized inventory is transferred between the pools without losing its model in the process.

3.6 Routing

3.6.1 Routing Execution Logs Can Be Compared without Errors

If a Routing Plan was run repeatedly and then the 'Compare' link was clicked, the 'Compare' report was not displayed and the modal window showed a fatal error.

This issue has been fixed – now Routing execution logs can be compared without fatal errors. The 'Compare' report is properly displayed on the screen.

3.6.2 All Routing Screen Sections Show Same Time

Previously, the 'Current routing profile' section showed time of the last Routing run in the bucket time zone, while the 'Routing execution log' showed it in the company time zone. This caused different sections of the Routing screen to show different time of the same event (Figure 42). This was misleading and confusing for the user.

Figure 42: Different time in different sections of Routing screen

In version 4.5.6 the Routing execution log shows time in the bucket time zone as well, thus increasing the clarity and usability of the 'Routing' screen.

3.6.3 Dynamic Routing Settings Saved after Routing Plan Cloning/Change

If a Routing Plan was cloned or modified, the Dynamic Routing settings were not saved in the resulting Routing Plan.

In version 4.5.6 the 'Dynamic Routing' checkbox logic has been improved and now its settings are saved in a cloned or modified Routing Plan.

3.6.4 Routing Plan Filters Saved Properly

If the Routing Plan already contained an activity filter with the 'Do not assign activities if technician is unlikely to arrive > min. before end of time-slot' option enabled, the next activity filter with a different option selected as unacceptable overdue could not be saved anymore. The system displayed a 'Time-slot overdue is invalid' error message and the new filter settings were not saved (Figure 43).

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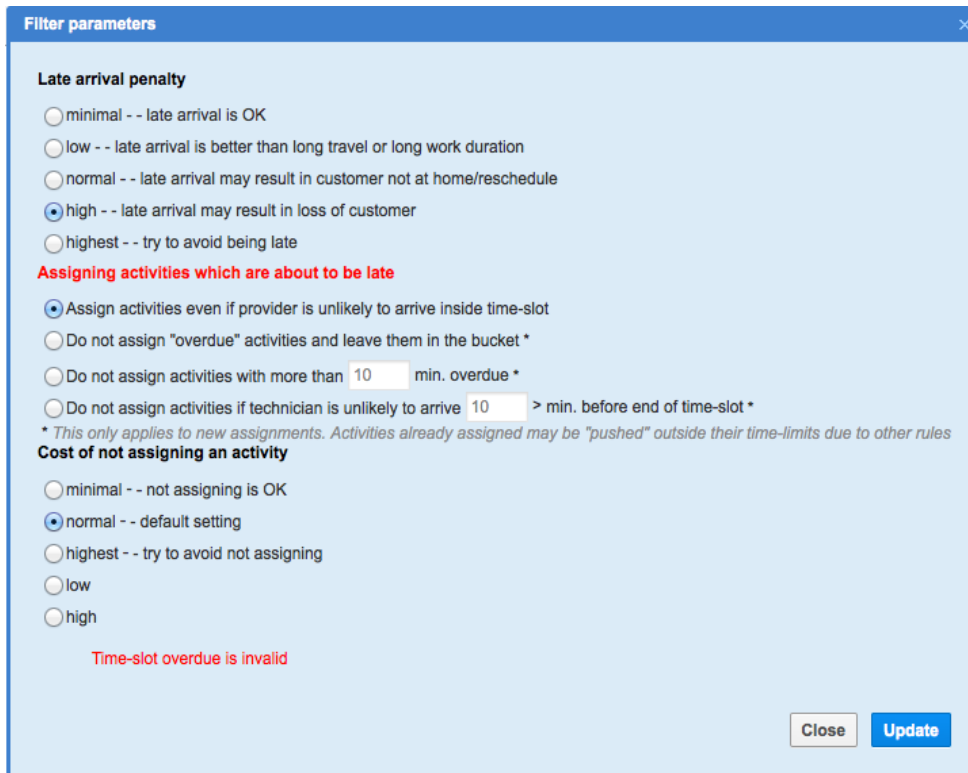
Figure 43: Error message in 'Filter parameters' window

This issue has been resolved in version 4.5.6 – the Routing filters can be saved properly.

3.7 Mobility Application

3.7.1 Custom Theme Applied Correctly

When a custom theme was created and uploaded into ETAdirect and afterwards selected in the Mobility Application in 'Options' → 'Design Theme', the custom page title and copyright string were not applied. The default title page and copyright string were shown instead.

The custom themes functionality has been improved and now the user can see the selected custom theme after relogin to the Mobility Application.

3.7.2 Dark/Bright Custom Themes Determined Correctly

In the Mobility Application a dark base color used in a custom theme was regarded as bright by the system. The header and buttons text was in black font which made it difficult to read (Figure 44).
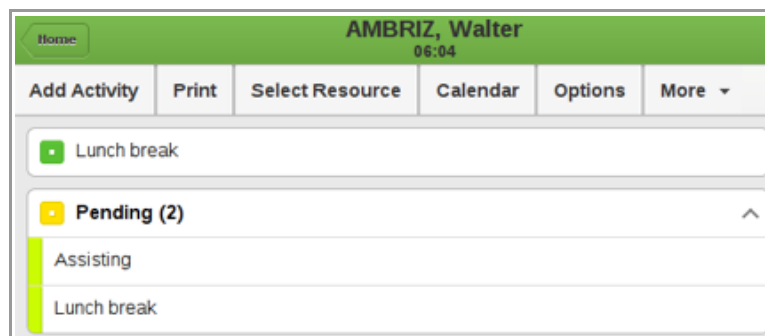
Figure 44: Dark color regarded as bright

In version 4.5.6 the dark and bright custom themes are determined correctly. The text is in black font for bright themes and in white font for dark ones (Figure 45).
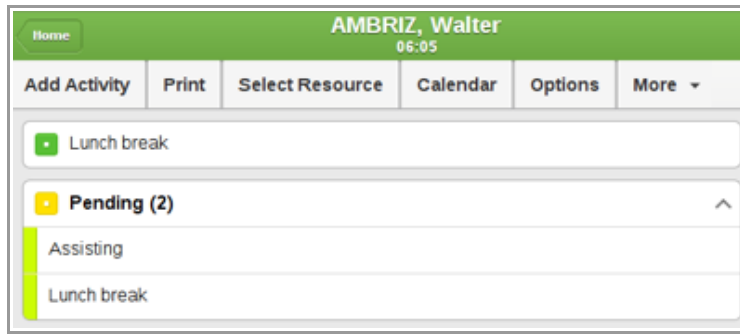
Figure 45: Correct base color definition

3.7.3 'Service Request' Screens with File Properties Displayed Correctly

In the previous versions, whenever the 'Add/Details' screen of the service request contained a file property, such screen was not opened in the Mobility Application. The screen could only be shown if all file properties were removed from it.

The error of file processing in forms has been removed. Now service request screens containing file properties are displayed correctly.

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4 ETAdirect Version 4.5.7

4.1 Changes Overview

Company default language and theme stored in database

Redis history unavailability no longer produces errors

iOS7 – browser no longer crashes in Mobility Application

'Automatic fill' replaced with 'Mass populate'

Enhanced Quota History functionality implemented

Non-instantiated activities included in 'Other Activities'

'Other activities' values calculated correctly

Support of 'Start-time' statistical keys for activities and resources

Multiple changes to Quota screen saved properly

'Close Time History' displayed correctly

'Close Time History' shows current day data properly

ReadOnly popup windows added to Quota screen

'Discard Changes' button added to Quota screen

'Total' row added to 'Capacity Category' and 'Time Slot' tables

Cell editing on client side results in Quota fields recalculation

'Estimate quota based on historical data' checkbox influences historical data-related sections

Chrome – 'Enter' or 'Esc' keys no longer produce errors

Manual Quota settings improved

Access to 'security_user_preferences' table optimized

User locked after maximum login attempts

Activity assignment fields displayed in Manage Application

Activity assignment fields can be set up as linked properties

'Resource hierarchy position' permission applied correctly

Resource Tree expand/collapse actions improved

Resource Tree displays correct date after browser refresh

Activity move improved

Activity type groups separated in 'Add activity' screen

iPad – Main Manu working properly

Log View processes large files correctly

Internet Explorer 7 – activities List View opening without errors

Overnight functionality accounted in Calendars

Internet Explorer 8 to 10 – scrolling of enumeration property values list improved

'Default language' parameter added to 'Display' screen

Linked properties – visibilities with same access no longer affect each other

'Capacity by Category' report shows capacity category name

Behavior of NSI column of 'Inventory Types' screen improved

Warning message shown when 'Quantity' field is not mandatory

Action links in 'Required Inventory' tab correspond to permissions

'required_inventory_install' and 'required_inventory_add_install' action links shown only in 'Edit required inventory' context

'Missing' inventory calculated correctly in Mobility Application

iPad3 – Community window functions available

'Activities in the existing routes' filter section cannot be deleted

'Routing by inventory' displayed only when selected

Recurrent Routing plan time validation improved

'Technician's overtime' caption improved

Filter parameters window improved

Resource routes displayed with plugin action links used

Working time saved with Overnight functionality enabled

User options applied immediately

Unused placeholder removed

Resource History Report improved

Child resource history displayed properly

Printed report improved

'dwh_cut' script works correctly

Custom action links with 'view_directions' base action improved

Custom action links with 'change_activity' base action improved

Data loading from external sources simplified

Duration keys now calculated for activities in 'stats_duration_data_buf'

Duration statistics transferred to 'stats_duration_data' table properly

Statistics agent no longer executes invalid commands

Capacity API – 'quota' and 'available' values no longer multiplied

Capacity API – empty nodes no longer returned

Capacity API – aggregated capacity returned correctly

Capacity API – activity type identified by label

Capacity API – missing keys separator introduced

Mobile Client API – new 'Activity Links' functionality supported

Mobile Client API – correct response after 'Provider ID' deletion from 'Add Activity/Activity Details' context

Inbound API – invalid values of 'head/allow_change_date' parameter processed correctly

Inbound API – activity links updated correctly

Inbound API – inactive activity link types can no longer be added

4.2 General

4.2.1 Company Default Language and Theme Stored in Database

The 'company' table in the database now has two new columns – 'default_language' and 'default_theme'. The application server uses the data in these columns to retrieve the following default company elements:

– default language label of the company

– logo image used in the theme

– last theme update date

– copyright string used in the theme

– default theme label of the company

4.2.2 Redis History Unavailability No Longer Produces Errors

Whenever the redis history was unavailable, the system returned fatal errors in most ETAdirect screens working with the User Preferences.

This issue has been resolved. If the redis history is not available, the system continues to work with the available resources. The 'Activity List' and 'Search activity' functions work with the default settings and the 'Activity history' is empty. No errors are returned, however, the records of redis-related errors are written to the log.

4.2.3 iOS7 – Browser No Longer Crashes in Mobility Application

When the Mobility Application was used on an iOS7 device, the browser crashed when the delta contained complex data for large context layout structures. This happened because visibilities and values were returned as IDs which required too much storage space.

This issue has been resolved by replacing visibility and value IDs with indexes, therefore, reducing the required storage. Now the system functions properly on devices using iOS7 operating system.

4.3 Quota Management

4.3.1 'Automatic Fill' Replaced with 'Mass Populate'

The 'Automatic fill' functionality has been renamed to 'Mass populate' as this accurately renders the logic of the functionality. This functionality, which, effectively, is intended for updating multiple cells on the Quota View is a completely manual operation, therefore, 'Mass populate' carries a clearer meaning.

With the 'Mass populate' functionality the values can be copied from the current day to future days or shifted one day forward to populate the Quota View cells.

The functionality is accessible with the 'Mass populate' action link in the Quota screen. This link leads to a dialog window where the mass population parameters can be selected together with the source and target dates (Figure 46).
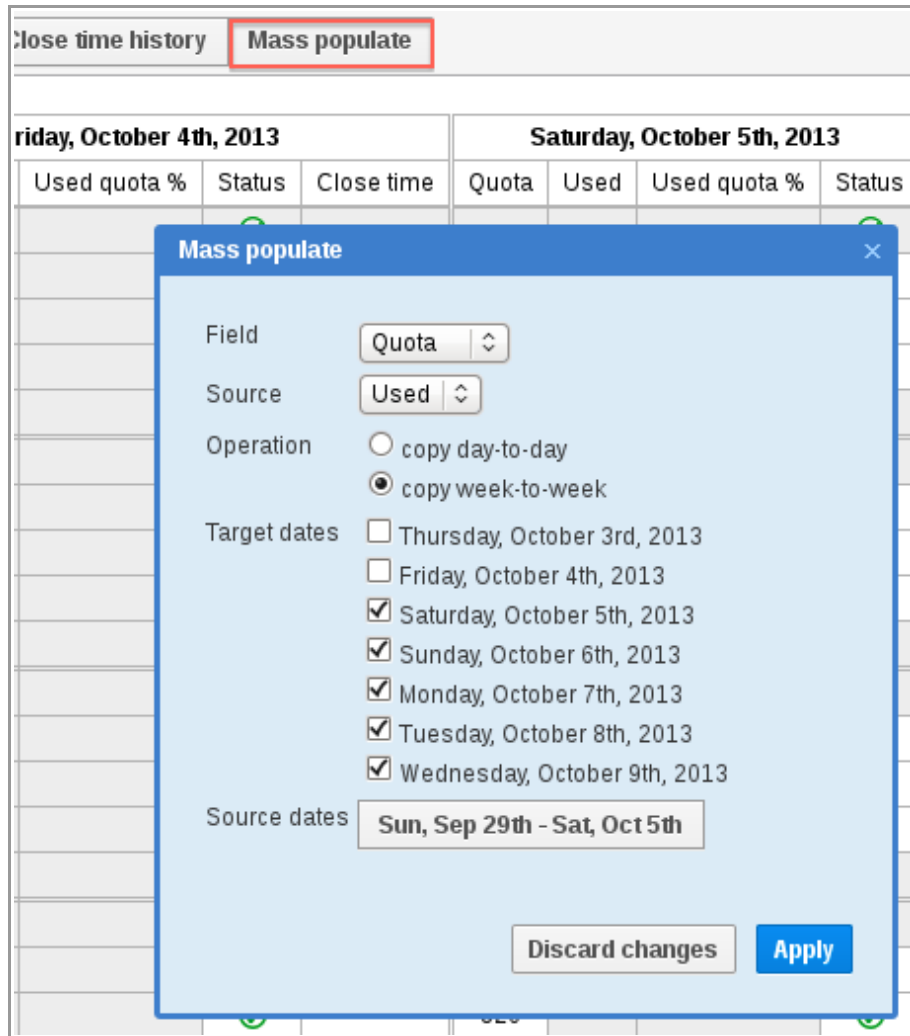
Figure 46: 'Mass populate' action link and dialog window

4.3.2 Enhanced Quota History Functionality Implemented

With the enhancement of the 'Quota' functionality the 'Quota history' has been changed to reflect the new fields of the Quota screen. Now the 'Quota history' table has new columns: '% Quota', 'Min quota', '% to stop booking at' (Figure 47).

Figure 47: New 'Quota history' table

Date	Time slot	Capacity category	Work zone	Action	Action time	% Quota	Min quota	Quota	% to stop booking at	User
11/07/11	08-10	Install		Close capacity category	11/07/11 06:46	20%	987	2000	87%	Admin
11/07/11	08-10	Install	ALTAMONE SPRINGS	Close work zone	11/07/11 06:40					
11/07/11	08-10	Install	CHULUOTA	Close work zone	11/07/11 06:34					
11/07/11	10-12			Close time slot	11/07/11 06:12	49%	456	1500		
11/07/11	08-10			Open time slot	11/07/11 05:55	48%	987	3000		Admin
11/07/11	08-10	Install		Open capacity category	11/07/11 05:43	23%	898	900	87%	Admin
11/07/11				Open day	11/07/11 05:41	98%	0	1200		Admin
11/07/11				Close day	11/07/11 05:39	98%	0	9900		Admin
11/07/11	08-10			Change time slot quota	11/07/11 05:34	50%	345	500		Admin
11/08/11	08-10	Trouble Call		Open capacity category	11/07/11 05:24	18%	789	9000	87%	Admin
11/08/11	08-10	Trouble Call		Close capacity category	11/07/11 05:01	34%	769	1240	87%	Admin
11/07/11	08-10				11/07/11 05:34	50%	345	500		Admin
11/08/11	08-10	Trouble Call		Open capacity category	11/07/11 05:24	18%	789	9000	87%	Admin
11/08/11	08-10	Trouble Call		Close capacity category	11/07/11 05:01	34%	769	1240	87%	Admin

This way the 'Quota history' table now reflects the new Quota functionality and changes made to 'Quota'.

4.3.3 Non-Instantiated Activities Included in 'Other Activities'

The 'Other activities' value is calculated on the basis of all activities that are not part of the Quota Management.

Up to version 4.5.6 the 'Other activities' value included only repeating, mass and shift activities with 'instances'.

As of version 4.5.7 the 'Other activities' value consists of all repeating, mass and shift activities including those without 'instances'. Changes related to the activities with instances are processed immediately, that is, in the same manner as regular booked activities. Activities without instances are processed on a periodical basis. They are handled by the same process which performs periodical recalculation of the 'Max available' and 'Quota' values.

4.3.4 'Other Activities' Values Calculated Correctly

In some cases values of the 'Other activities' field were calculated incorrectly. The following different issues have been observed:

- when the duration of an internal activity was distributed among several not overlapping time slots, the total sum of the distributed values exceeded the original value
- if an internal activity had an estimated travel time, such travel time was added to the 'Other activities' value twice
- if the 'Subtract these activities from the maximum time slot capacity before calculation of quota' option was enabled for a capacity bucket, the calculated 'Other activities' value should be

subtracted from 'Max available' before '% Quota' is applied. However, the 'Other activities' values calculated on the basis of instantiated activities were not subtracted from 'Max available' by the server during periodic recalculation. At the same time, this operation was performed correctly in the GUI. Also, the 'Other activities' processing on the basis of non-instantiated mass and repeating activities was correct, too.

All these issues have been resolved, and now 'Other activities' values are calculated correctly.

4.3.5 Support of 'Start-Time' Statistical Keys for Activities and Resources

The new version of Quota Management provides a new type of statistics – Start Time. This statistics allows to determine the probability of the activity start within the selected hour. Such prediction can be used for estimating the capacity required for the selected time interval. The approach used in the Start-time statistics is the same as the one used in the Duration and Travel time.

For scheduled activities, the probability is calculated on the basis of the statistics collected for similar records in the past. 'Other' activities scheduled for the same day are not taken into account.

The calculation uses the resource key (grouping resources by a certain criterion allowing to collect separate statistics) and the activity key (grouping activities into company-specific logical groups allowing to process such groups separately).

For the purposes of keys definition, new sections have been added to the 'Company Settings' → 'Statistics parameters' screen (Figure 48-49).
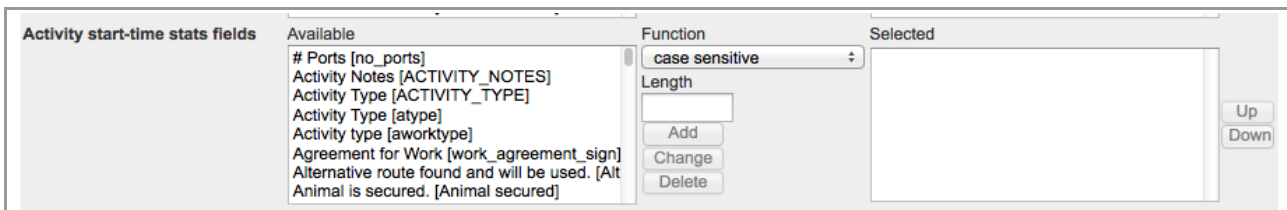
Figure 48: 'Activity start-time stats fields' in 'Statistics Parameters'
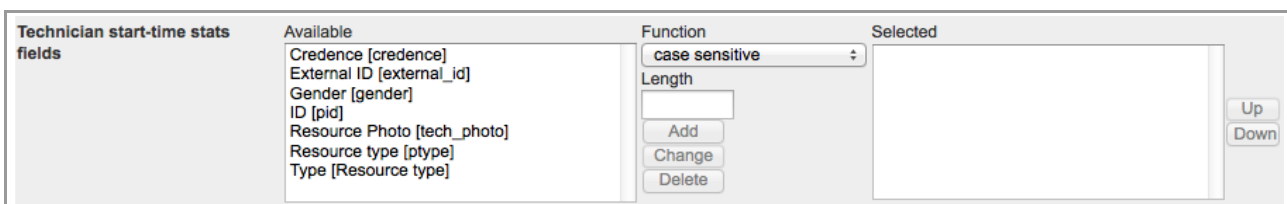
Figure 49: 'Technician start-time stats fields' in 'Statistics Parameters'

4.3.6 Multiple Changes to Quota Screen Saved Properly

When a user made many changes to the Quota screen or changed many individual work zones, Quota was not saved. In some cases after clicking 'Save' the user was logged out of the system and redirected to the login screen.

The maximum number of records which can be saved in a single request has been increased, and now multiple changes to the Quota screen are saved properly in one action.

4.3.7 'Close Time History' Displayed Correctly

In the previous versions the 'Close time history' window showed 'Records not found' even when changes to the close time have been made. At the same time an error was written to the log.

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This issue was caused by incorrect processing of time zone list of buckets. It has been fixed, and now the 'Close time history' window displays correct data.

4.3.8 'Close Time History' Shows Current Day Data Properly

The 'Close time history' window displayed today's changes only if the next day was selected in the Quota screen. When the current day was selected, the 'Close time history' window showed 'Records not found', regardless of any changes made to the close time before.

This issue was caused by incorrect processing of time zone list of buckets. It has been fixed, and now the 'Close time history' window displays correct data.

4.3.9 ReadOnly Popup Windows Added to Quota Screen

As of version 4.5.7, if a user's permission to a 'Status' column cell is ReadOnly, such user still can view the list of work zones and their close time, if any. By clicking a ReadOnly cell, the user can see a popup window with the work zones list (Figure 50). However, the work zone checkboxes are disabled in this case, so that the user may not make any changes.

This popup window is available at the capacity category level.
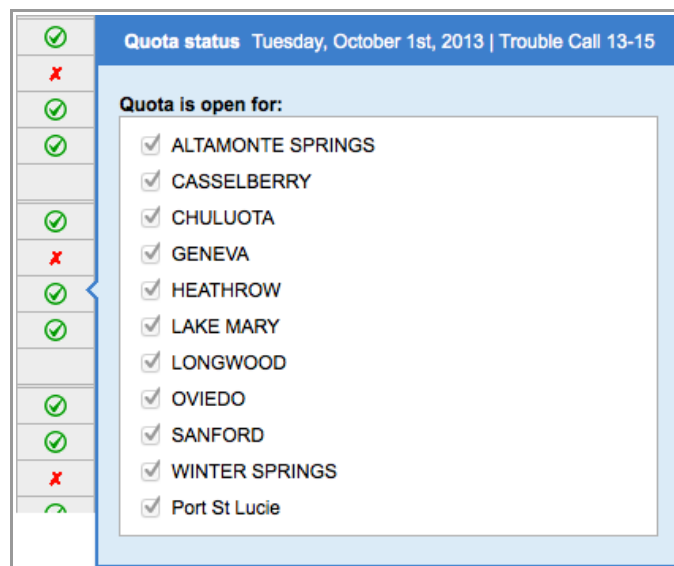
Figure 50: ReadOnly popup window

4.3.10 'Discard Changes' Button Added to Quota Screen

For better usability, a 'Discard changes' button has been added to the Quota screen. It appears together with the 'Save' button as soon as any changes have been made to the values in the Quota grid (Figure 51).

If the user wishes not to save the changes made to the Quota grid, they can click 'Discard changes', and all values in the grid will revert to those before editing. The orange corners marking the edited cells also disappear.

Total	19000	11066			
15-17		3176		✓	
Deinstall	1500	62	4.13%	✓	
Install	500	287	57.4%	✗	03 PM
Trouble Call	1600	1340	83.75%	✓	
Upgrade	1500	1487	99.13%	✓	
Total	5100	3176			

Discard changes   Save

Figure 51: 'Discard changes' button in Quota screen

4.3.11   'Total' Row Added to 'Capacity Category' and 'Time Slot' Tables

As of version 4.5.7, the 'Capacity category' and 'Time slot' tables have the 'Total' row displaying the total values of the 'Max available', 'Quota', 'Booked activities', 'Used' and the calculated 'Used quota %' columns for the selected time slot or capacity category (Figure 52).

Time Slot Capacity Categories	Tuesday, October 1st, 2013					
	Quota	Booked activities	Used	Used quota %	Status	Close time
08-10		213	11582		✓	
Install	900	18	723	80.33%	✗	07 AM
Trouble Call	900	17	636	70.67%	✓	
Upgrade	12909	178	10223	79.19%	✓	
Total	14709	213	11582			
10-12		191	8465		✓	
Install	900	20	895	99.44%	✗	10 AM
Trouble Call	1900	48	1895	99.74%	✓	
Upgrade	6000	120	5511	91.85%	✓	
Total	8800	188	8301			

Figure 52: 'Total' row in Quota grid

Whenever the 'Quota', '% quota' or 'Min quota' values are changed, the totals are recalculated. If the 'Quota' value in the 'Total' row is changed, the change is distributed proportionally to the previously entered values or, if no values have been entered, equally between all cells.

If the sum of rounded values is not equal to the 'Total' value entered by the user, the 'Total' value is adjusted. Rounding performed according to the currently selected units of measurement. If the unit of measurement is 'Minutes', the values are rounded to integer, otherwise – to two decimal places.

4.3.12   Cell Editing on Client Side Results in Quota Fields Recalculation

If any editable cells are edited on the client side, the related fields of the 'Quota Management' screen (Quota, Quota %, Booked activities, Used, Used quota %) are recalculated accordingly. The recalculation is performed both at the edited level and on the lower levels.

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The color of the recalculated values text may also change after recalculation, if the cell status has changed as the result.

4.3.13   'Estimate Quota Based on Historical Data' Checkbox Influences Historical Data-Related Sections

As of version 4.5.7 the value of the 'Estimate quota based on historical data' checkbox influences the presence or absence of the 'Historical values to be used' and 'Process historical data (same weekdays) for period of' groups.

Since these two groups are only relevant when the 'Estimate quota based on historical data' checkbox is checked, they are visible only then (Figure 53). Otherwise, they are hidden (Figure 54).
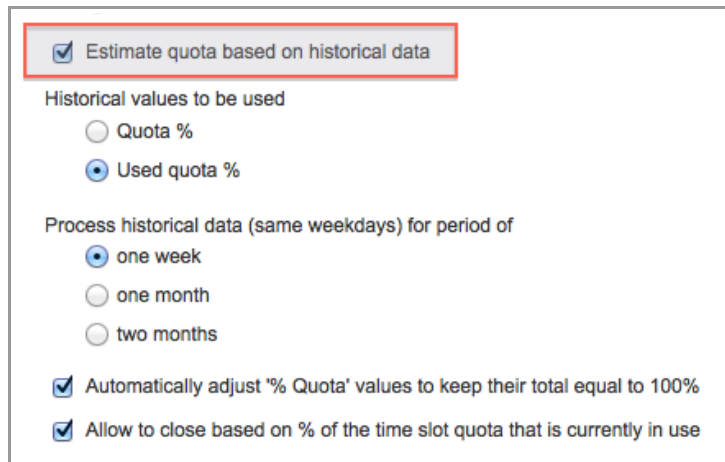
Figure 53: 'Estimate quota based on historical data' checkbox checked
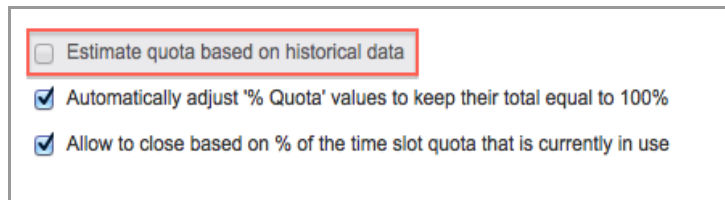
Figure 54: 'Estimate quota based on historical data' checkbox unchecked

4.3.14   Chrome – 'Enter' or 'Esc' Keys No Longer Produce Errors

In the Chrome browser, every time 'Enter' or 'Esc' was pressed in the Quota Management screen, an error occurred.

This issue has been resolved. Now the 'Enter' and 'Esc' keys no longer produce errors in the Chrome browser.

4.3.15   Manual Quota Settings Improved

In the previous versions Quota could not be set manually on the day level. Any values entered or edited manually were cleared after the user clicked 'Save'. However, this behavior only occurred when the Quota was defined in minutes. When it was defined as percentage of the capacity available by calendar, the manual settings were saved and applied properly.

In version 4.5.7 this issue has been addressed, and now Quota can be set in minutes on the day level. The valuers entered by the user are saved.

4.4 Users

4.4.1 Access to 'security_user_preferences' Table Optimized

Previously, the system requested user settings from the database with each Activity Search and each Activity List loading.

As of version 4.5.7 the system caches the settings of the first access to the 'security_user_preferences' table and periodically saves any settings changes to the database in a single request, except single requests to each cache.

4.4.2 User Locked after Maximum Login Attempts

In the previous versions a user was not locked after the number of maximum login attempts was reached. Such user was able to continue trying to log in.

This issue has been fixed in version 4.5.7. Whenever the number of login attempts exceeds the number set in the 'Max login attempts' field of the corresponding 'Login policy', the user is locked and is no longer able to enter passwords for the time defined in the 'Login block time' field of their Login Policy.

4.5 Manage Application

4.5.1 Activity Assignment Fields Displayed in Manage Application

With the introduction of the 'Activity assignment method' functionality the following new fields have been created:

Field	Label
Auto-routed to resource	auto_routed_to_provider_id
Auto-routed to resource (name)	auto_routed_to_provider_name
Auto-routed to date	auto_routed_to_date
First manual operation	first_manual_operation
First manual operation interface	first_manual_operation_interface
First manual operation performed by user	first_manual_operation_user_id
First manual operation performed by user (login)	first_manual_operation_user_login
First manual operation performed by user (name)	first_manual_operation_user_name

The above-mentioned fields can be added to all screens and forms of all activity-related display profiles and to the Activity List View. The maximum visibility of these fields is Read Only. If a field is empty, it is not shown in the corresponding activity form. In the activity grid empty 'Auto routed to resource' and 'First manual operation performed by user' fields are shown as zeros while other empty fields are shown as empty spaces.

4.5.2 Activity Assignment Fields Can Be Set Up as Linked Properties

The new fields created in connection with the introduction of the 'Activity assignment method' can now be configured as linked properties in the 'Context layout structure' screen. For this purpose the following fields have been set up to be configured as enumeration properties in visibility conditions (values to be selected from the list):

- First manual operation (value – name of the operation)
- First manual operation interface (value – name of the interface)

The following three fields have been set up for configuration as string properties (values to be entered):

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- Auto-routed to resource (value – resource ID)
- Auto-routed to date (value – date)
- First manual operation performed by user (value – user ID)

4.5.3 'Resource Hierarchy Position' Permission Applied Correctly

Previously, when the 'Resource hierarchy position' permission was disabled for a user, such user was nevertheless able to see the resource hierarchy from the resource hint (Figure 55).
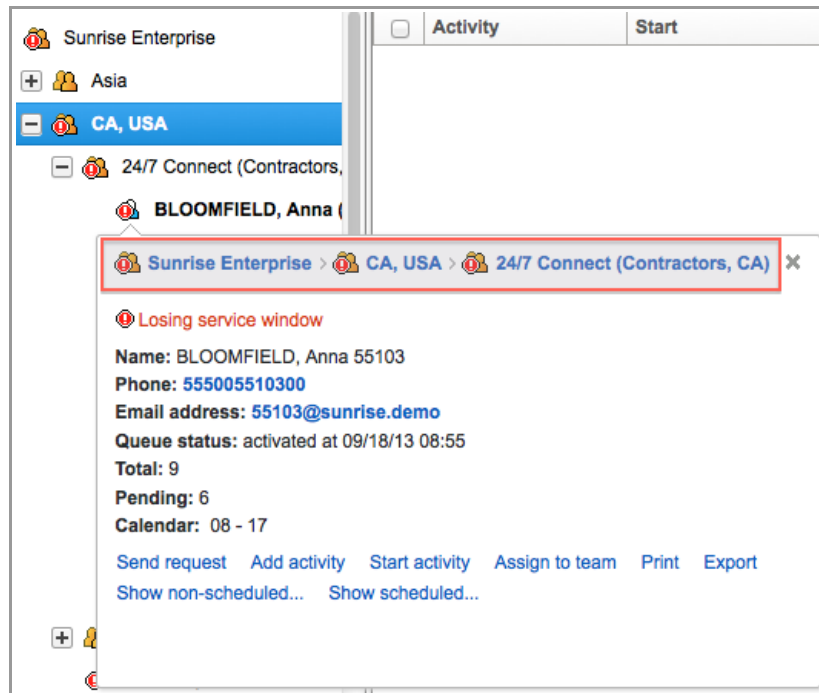
Figure 55: Resource hierarchy visible in resource hint

In version 4.5.7 the 'Resource hierarchy position' permission check has been added, and now the resource hierarchy is only visible in the hint when the permission is enabled.

4.5.4 Resource Tree Expand/Collapse Actions Improved

In some cases expanded Resource Tree branches, in fact, did not display their child resources. The branch was marked as expanded (the '-' symbol), while no child resources were shown. This occurred after the user switched to a different screen. Resource Tree branches could be opened only after relogin. The Resource Tree functionality has been improved, and now its branches can be expanded or collapsed properly.

4.5.5 Resource Tree Displays Correct Date after Browser Refresh

If a future date was selected in the Manage Application, the Resource Tree continued to display the same future date in the Calendar field of all Activity Views (Time/List/Map) after the browser refresh. At the same time all other screens used the current date after refresh.

This issue has been resolved, and now the Calendar of all Activity Views displays the current date together with all other screens in the Manage Application.

4.5.6 Activity Move Improved

If the company's timezone was greatly different from UTC, so that its resources' date as compared to UTC was yesterday, no activity moves were possible. The system responded with an 'Activity cannot be moved

to the past' error message. Other actions (route activation, activity creation, etc.) were possible, though. In version 4.5.7 the system checks the timezone of the resource to which the activity is to be moved. Therefore, activity moves to resources with 'yesterday' time zones are performed properly.

4.5.7 Activity Type Groups Separated in 'Add Activity' Screen

In the 'Add activity' screen of the Manage Application all activities in the 'Activity type' drop-down list were displayed without separation into groups according to the 'Activity Types' configuration. This made the list difficult to use.

This issue has been fixed, and now the activity type groups are shown in bold type in the drop-down list to increase the screen usability (Figure 56).
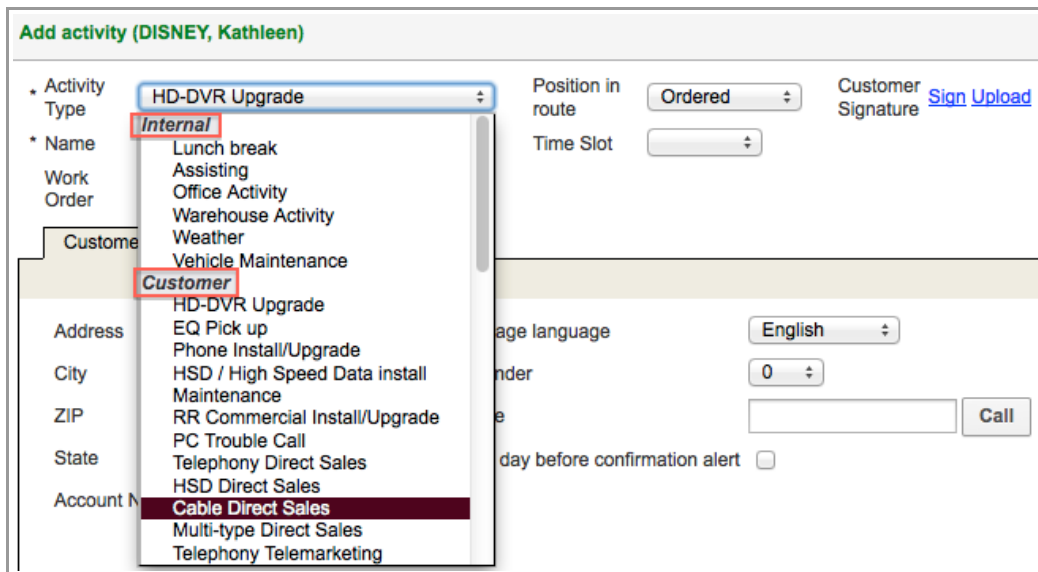
Figure 56: Activity types separated

4.5.8 iPad – Main Manu Working Properly

In the previous versions iPad users were unable to select any item of the Main Menu – whenever any item was selected from the drop-down list, there was no response from the system. The selected screen was not opened.

This issue has been resolved in version 4.5.7 – now the screens selected from the Main Menu are displayed properly.

4.5.9 Log View Processes Large Files Correctly

If the user attempted to download a file larger than 200 MB via Log View, the output file had 0 size.

This issue has been resolved – files of any size can be downloaded via Log View. The output file is of the same size as the original file.

4.5.10   Internet Explorer 7 – Activities List View Opening without Errors

Previously, if ETAdirect was used in the Internet Explorer 7 browser, opening the Activities List View caused an error to appear in the logs.

This issue has been fixed, and now the Activities List View can be opened in Internet Explorer 7 without errors appearing in the logs.

4.5.11   Overnight Functionality Accounted in Calendars

In the previous versions the resources' calendars determined the day status (open or closed)

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disregarding the overnight functionality. That did not allow the user to change yesterday's calendar during overnight.

Now the calendars have been adjusted so that yesterday's calendar can be updated during the overnight time.

4.6 Company Settings

4.6.1 Internet Explorer 8 to 10 – Scrolling of Enumeration Property Values List Improved

Previously, in the Internet Explorer 8-10 browsers there was no scroll bar in long lists of enumeration property values, if ReadOnly mode was defined for the 'Properties' screen. The user was unable to scroll up or down the values list and view all values.

This issue has been fixed – now whenever a list of enumeration property values is too long to fit the window, a scroll bar appears. This improves ETAdirect compatibility with Internet Explorer and increases the overall system usability.

4.6.2 'Default Language' Parameter Added to 'Display' Screen

As of version 4.5.7, a new parameter 'Default language' has been added to the 'Display' screen (Figure 57). This parameter allows setting the company's default language which will be used in the Login Portal, if the URL includes instanceID.

The following new placeholders related to the 'Default language' settings have been created:

- Company language
- Default language
- Invalid value of default language
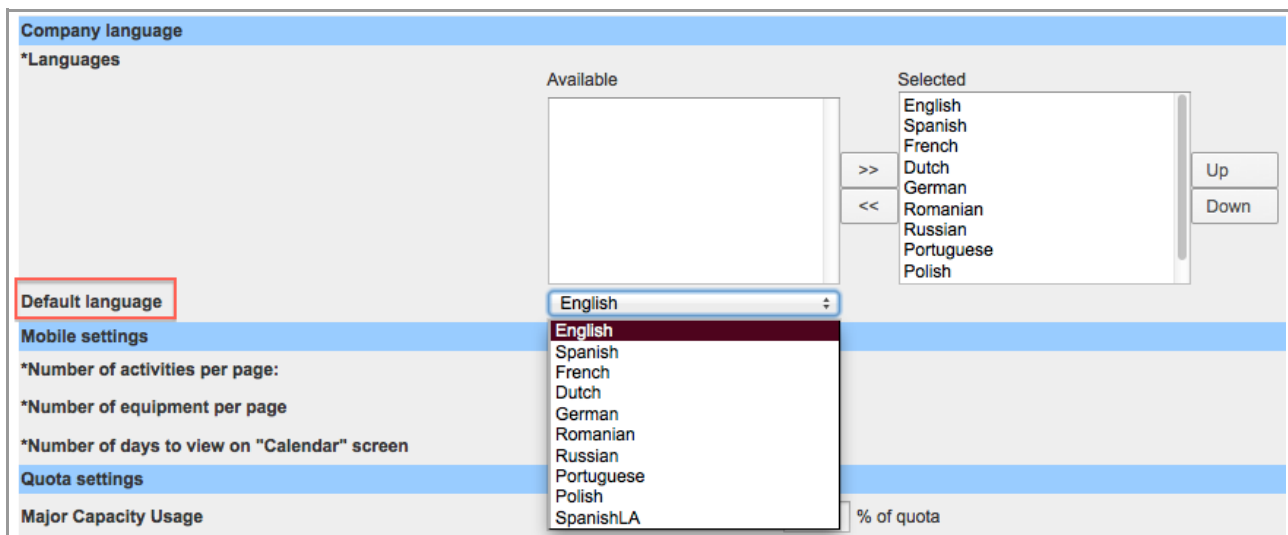
Figure 57: 'Default language' field in 'Display' screen

4.6.3 Linked Properties – Visibilities with Same Access No Longer Affect Each Other

In the previous versions any custom visibility with conditions overwrote the existing default visibility with the same access. For example, a ReadOnly visibility with conditions deleted a ReadOnly default visibility. In other cases, the default visibility was not saved during the display profile import. The imported file

contained only the custom visibility with conditions.

The algorithm of visibility saving has been changed. As of version 4.5.7 a context layout can include any number of custom visibilities but only one default visibility. Whenever a custom visibility is added, it has no effect on the existing visibilities. However, if a second default visibility is added, it overwrites the existing default visibility.

All defined visibilities are saved during import.

4.7 Dashboards

4.7.1 'Capacity by Category' Report Shows Capacity Category Name

When the 'Capacity by category' report was configured to display a particular capacity category selected in the 'Settings', such report showed the label of such capacity category in the title, while it should have shown its name (Figure 58).
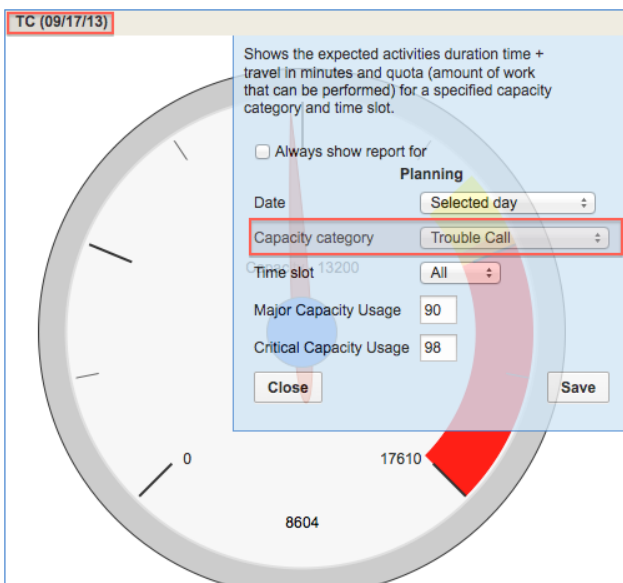
Figure 58: "Capacity by category' report showing capacity category label
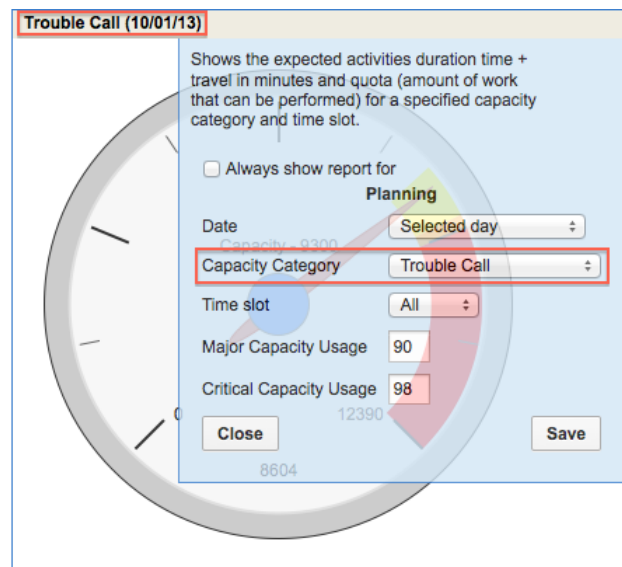
Figure 59: 'Capacity by category' report showing capacity category name

The report has been fixed so that it now shows the capacity category name in the title (Figure 59).

4.8 Inventory

4.8.1 Behavior of NSI Column of 'Inventory Types' Screen Improved

The NSI column of the 'Inventory Types' grid showed a green tick even for inventory types for which the 'Non-serialized' checkbox was not checked (Figure 60).
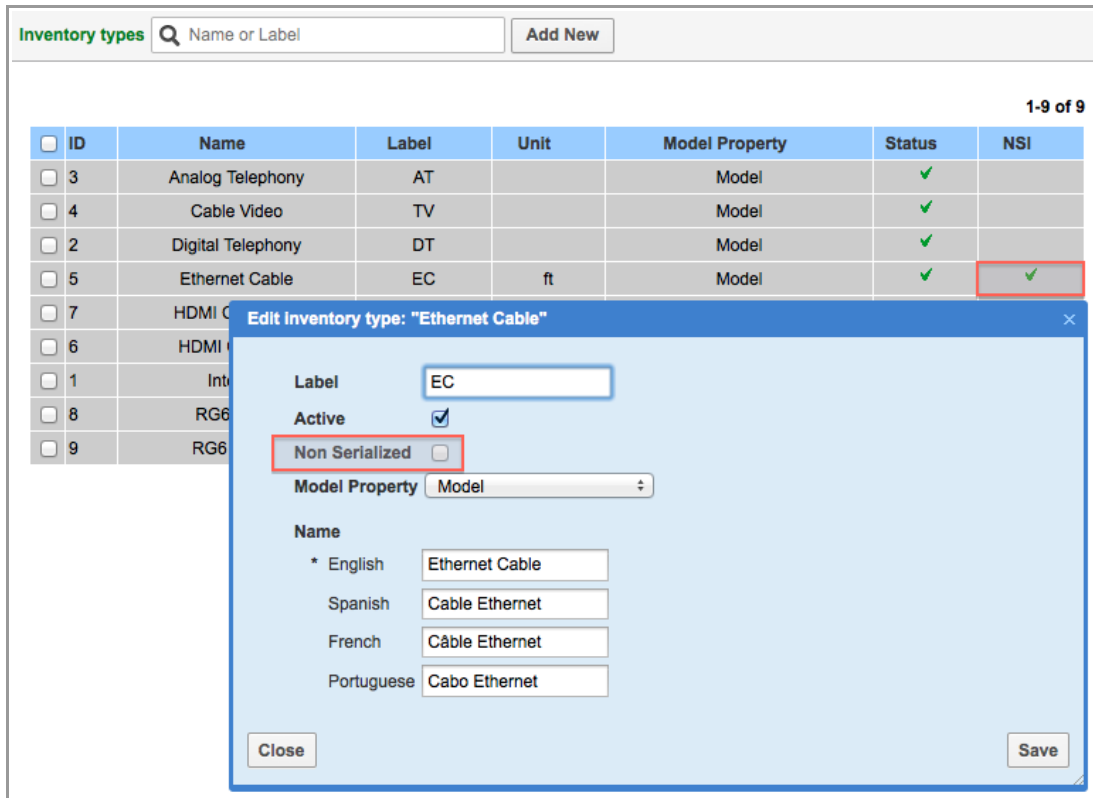
Figure 60: NSI column inconsistent with inventory type settings

As of version 4.5.7 the NSI column shows the green tick only for inventory types for which the 'Non-serialized' checkbox has been checked.

4.8.2 Warning Message Shown when 'Quantity' Field is Not Mandatory

The 'Quantity' field is mandatory in any screens related to installation or deinstallation of non-serialized inventory. It is also mandatory for adding inventory to the resource's or customer's pool.

The system performs a check whether the visibility of the 'Quantity' field in the respective context layout is mandatory. Otherwise, a warning message appears for any attempt to add non-serialized inventory to a pool or to install/deinstall any such inventory (Figure 61).
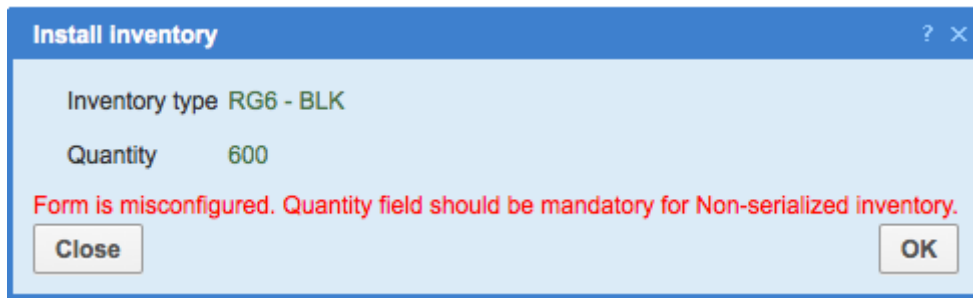
Figure 61: Warning message in 'Install inventory' window

4.8.3 Action Links in 'Required Inventory' Tab Correspond to Permissions

When the 'Required inventory' permissions were set to ReadOnly, the 'Required inventory' tab still showed the 'Add', 'Edit' and 'Delete' action links. However, when the user clicked any of these links, the 'Operation is not permitted. Please relogin. If problem persists contact technical support' alert message

appeared.

Now the visibility of the action links in the 'Required inventory' tab depends on the permissions set for the user. Whenever the 'Required inventory' permission is set to 'ReadOnly', no action links are visible at all.

4.8.4 'required_inventory_install' and 'required_inventory_add_install' Action Links Shown Only in 'Edit Required Inventory' Context

The 'required_inventory_install' and 'required_inventory_add_install' action links could be added to any context in the Mobility Application. When added, these links were displayed in the corresponding screen, but when the user clicked any of them, the user was logged out.

In version 4.5.7 the 'required_inventory_install' and 'required_inventory_add_install' action links are only visible in the screens related to the 'Required inventory' entity. They can still be added to other contexts as well, but will not be displayed.

4.8.5 'Missing' Inventory Calculated Correctly in Mobility Application

When an inventory type is required for a pending activity and the same inventory type is installed in a started activity in the Mobility Application, the quantity of the required inventory missing for the pending activity was calculated incorrectly. The installed quantity was subtracted from the missing quantity for the pending activity.

This issue has been resolved. Now the quantity of installed inventory or any changes to it have no effect on the quantity of missing required inventory for another activity

4.9 SmartCollaboration

4.9.1 iPad3 – Community Window Functions Available

Users of the Mobility Application were unable to use SmartCollaboration on iPad3 devices, as the Community window had no field to enter messages, menu items or 'Send' button (Figure 62).
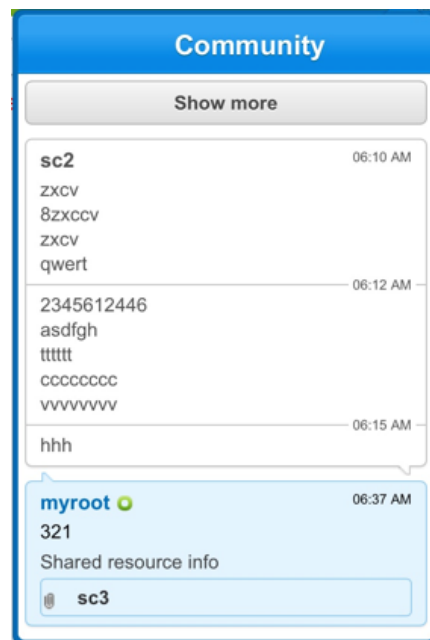
Figure 62: Unusable Community window

This issue no longer exists in version 4.5.7, and iPad3 users can fully enjoy the functionality of SmartCollaboration.

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4.10 Routing

4.10.1 'Activities in the Existing Routes' Filter Section Cannot Be Deleted

Previously, if the 'Activities in the existing routes' filter section contained several filters, multiple clicking of the 'Delete' link for any filter deleted the entire section. However, this section must be always present in the 'Routing plan' window.

This issue has been fixed in version 4.5.7. Now only filters available for deletion can be deleted, and the 'Activities in the existing routes' section always remains.

4.10.2 'Routing by Inventory' Displayed Only When Selected

In the previous version, 'Routing by inventory' was displayed in the caption of the 'Assignment parameters' section even if this parameter had not been selected.

This has been fixed in 4.5.7 and the 'Routing by Inventory' parameter does not show, unless it was previously checked.

4.10.3 Recurrent Routing Plan Time Validation Improved

When the 12-hour format was selected in 'My Display', the time in the 'to' and 'from' drop-down lists in the 'Run schedule' section of the Routing plan is shown in AM/PM format. When the absolute value of the 'from' field was higher than the value of the 'to' field, disregarding the AM/PM indicators, such Routing plan was rejected with a ''from time' should be earlier than or equal to 'to time'' error message (Figure 63).

Figure 63: Routing plan error message

This issue has been resolved. Now the 12-hour format time validation is correct, and Routing plans are saved without errors.

4.10.4 'Technician's Overtime' Caption Improved

In the previous versions the caption of the 'Technician's overtime' section of the Routing plan did not correspond to the actual technician's overtime settings. When the 'Do not assign activities unlikely to be finished in N min. before end of technician's day*' option was selected, the caption read 'Do not assign activities' which was inconsistent with the selected option.

As of version 4.5.7 the caption of the collapsed 'Technician's overtime' section reads 'Do not assign activities in last N min. of day' which is the correct description of the selected option (Figure 64).

Figure 64: Correct caption of 'Technician's overtime' section

4.10.5 Filter Parameters Window Improved

In the 'Filter parameters' window of the 'Filters' section of the Routing plan, the values of the 'Cost of not assigning an activity' section were sorted in an incorrect order: minimal → normal → highest → low → high (Figure 65). This order was illogic, and in version 4.5.7 it has been changed to 'minimal → low → normal → high → highest' (Figure 66). Therefore, the values now are sorted in ascending order.

Figure 65: 'Cost of not assigning an activity' section before change

Figure 66: 'Cost of not assigning an activity' section after change

4.11 Mobility Application

4.11.1 Resource Routes Displayed with Plugin Action Links Used

If the 'is plugin' checkbox was checked for the 'Assign to team' action link in the Manage Application and the 'Plugin details' tab was not configured (no plugin URL was specified), the user was unable to open the resource route afterwards.

The plugin processing has been adjusted, and now plugins no longer affect the resource route display. The user can open the resource's route without specifying the plugin URL.

4.11.2 Working Time Saved with Overnight Functionality Enabled

If 'Overnight' was enabled for the company, the 'Calendar' form with 'Start time' greater than 'End time' was not saved in the Mobility Application. Also, when 'Overnight' was disabled, such forms were not saved, either, but the system displayed an 'Overnights are not supported' error message and deleted the

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value entered in the 'End time' field.

The 'Overnight' functionality logic was changed. Now, when it is enabled, forms with 'Start time' greater than 'End time' are saved without errors. When the 'Overnight' functionality is disabled, the form is not saved, the 'Overnights are not supported' error message is displayed and the entered values are kept.

4.11.3 User Options Applied Immediately

Previously, any changes to the user's options (language, date/time format, etc.) were not applied immediately after the user clicked the 'Submit' button. The user had to submit the form again or relogin to the Mobility Application for the changes to apply.

The necessary changes to the application server have been made. Now the changes to the user's options are applied immediately after the form submission.

4.12 Reports

4.12.1 Unused Placeholder Removed

As the system no longer offers the 'Detailed report', the 'Detailed report' placeholder has been removed from the 'Glossary'.

Category	ID	Inherited Text / English		Custom Text / English	
glossary	283	Detailed Report	>>		Clear
security_module.smid	90	**Detailed Report**	>>		Clear
Reset					Save

Figure 67: 'Detailed report' placeholder in previous versions

4.12.2 Resource History Report Improved

Previously, when a resource's work zone or calendar was deleted, the Resource History report showed an empty field in the 'Value' column. However, this information was hardly informative, as the report showed no details of the deleted work zone or calendar.

The Resource History report functionality has been improved in version 4.5.7. Now the report shows the information on the deleted or modified work zone or calendar.

4.12.3 Child Resource History Displayed Properly

When the user requested a child resource history by clicking the 'Resource history report' action link in such resource's hint, the screen showed the 'Loading...' message indefinitely, no history was displayed and an error was written to the log. This behavior occurred both for child buckets and individual technicians.

The Resource Tree functionality has been improved so that resource history is now displayed properly for all child resources in the Tree.

4.12.4 Printed Report Improved

When any filter was set in the 'View' window for the 'Appointments by statuses', 'Average number of calls per customer' or 'Average travel time' report, the printed report showed unexpected symbols. In addition, errors were written to the log.

The report structure has been improved, and now the report head shows the correct filter values defined by the user.

4.13 DWH

4.13.1 'dwh_cut' Script Works Correctly

The 'dwh_cut' script did not work in ETAdirect versions 4.5.x – it was unable to select a directory for the exported sql files.

In version 4.5.7 the 'dwh_cut' script works properly.

4.14 Plugin API

4.14.1 Custom Action Links with 'view_directions' Base Action Improved

When the user created custom action links and selected 'view_directions' as the base action, such action link was not working in the Manage Application. When the action link was clicked, the 'Directions' screen was not opened and errors appeared in the log.

In version 4.5.7 the custom action links with 'view_direction' as the base action work properly. The 'Directions' screen is opened without any errors in the log.

4.14.2 Custom Action Links with 'change_activity' Base Action Improved

When a custom action link with the 'change_activity' base action was created, such action link created a new activity instead of modifying the original one. Moreover, it produced irrelevant error messages.

After the necessary changes custom action links work properly. Activities are saved with changed properties and no new activities are created. No irrelevant error messages are displayed, either.

4.15 Statistics

4.15.1 Data Loading from External Sources Simplified

As of version 4.5.7 the process of data loading to the statistics agent from external sources has been simplified. New 'stats_duration_data_external_buf', 'stats_starttime_data_external_buf', 'stats_travel_data_external_buf' tables have been created which no longer require new keys registration in the dictionary table. During the statistics agent run its checks for any new data in the 'external_buf' table and registers new keys in the dictionary table.

This is a universal solution simplifying data loading from external sources for the user.

4.15.2 Duration Keys Now Calculated for Activities in 'stats_duration_data_buf'

Previously, the statistics agent only recalculated duration keys for the activities added to the 'stats_duration_data' table after the last statistics agent run. That way, the activities transferred from the 'stats_duration_data_buf' table were not included in the keys calculation.

Now the statistics agent also includes the activities from the 'stats_duration_data_buf' table in the keys calculation during each run.

4.15.3 Duration Statistics Transferred to 'stats_duration_data' Table Properly

In some cases duration statistics were not transferred from the 'stats_duration_data_buf' table to the 'stats_duration_data' table during the statistics agent run but remained there.

The statistics agent operation has been fixed, and now duration data is properly transferred to the 'stats_duration_data' table during the statistics agent run.

4.15.4 Statistics Agent No Longer Executes Invalid Commands

Previously, if the parameter of the first command line of the statistics agent contained any input starting

with '-', the statistics agent ignored it and ran in the default (daily) mode passing that parameter as an argument for subcommands.

A new check has been added, and now in such cases the statistics agent exits with an alert about an unknown command line option.

4.16 Public API

4.16.1 Capacity API – 'Quota' and 'Available' Values No Longer Multiplied

When the request contained multiple identical 'date' and/or 'location' tags, the 'quota' and 'available' values in the response were multiplied by the number of the identical tags.

This issue has been resolved. Now the 'get_capacity' function ignores duplicated values of the 'date' and 'location' parameters. Consequently, the returned 'quota' and 'available' values are no longer multiplied.

4.16.2 Capacity API – Empty Nodes No Longer Returned

Previously, the 'get_capacity' function sometimes returned capacity nodes in which both 'quota' and 'available' fields had 0 value. Such 'empty' nodes were redundant and there was no need to return them.

As of version 4.5.7 the 'get_capacity' function no longer returns capacity nodes with both 'quota' and 'available' fields having 0 values.

4.16.3 Capacity API – Aggregated Capacity Returned Correctly

If a single 'get_capacity' request was sent for a group of capacity buckets, the response contained an empty list of capacity nodes.

This issue has been fixed – now such responses contain aggregated values of used capacity and quota.

4.16.4 Capacity API – Activity Type Identified by Label

In the previous versions the Capacity API identified the activity type ('aworktype' field) only by the internal numeric ID which was inconvenient for the users.

As of version 4.5.7 a new field – 'worktype_label' – has been introduced which allows specifying the activity type by its label. This field is used in addition to the existing 'aworktype' field, therefore, there is no effect on the existing implementation.

4.16.5 Capacity API – Missing Keys Separator Introduced

In the previous version, when in a capacity request the 'calculate_duration' and 'calculate_travel_time' options were set to 1, but the key fields were missing in the request, the response included the list of the missing fields with no separator between them.

In version 4.5.7 the 'get_capacity' function has been changed so that it now uses ';' as the separator between the missing fields.

4.16.6 Mobile Client API – New 'Activity Links' Functionality Supported

With a significant enhancement of the 'Activity Links' functionality, the following changes have been made to the Mobile Client API:

- *'get_activity_links' method:*

  2 new optional fields have been added to the 'get_activity_links' response in the 'link' element: 'min_interval', 'max_interval'

- *'link_activities' method:*

  2 new optional fields have been added to the 'get_activity_links' request in the 'link_activities_parameters' element: 'min_interval', 'max_interval'. These fields are added if they

are set as 'Adjustable'

– **_'unlink_activities' method:_**

The request type has been changed from 'link_activities_parameters' to 'unlink_activities_parameters'. The fields of the new request type remain the same.

New error codes have been introduced:

No.	Text	Description
27	LINK_INTERVAL_NOT_ADJUSTABLE	'min_interval' or 'max_interval' sent for link type not allowing interval modification
28	LINK_INTERVAL_INVALID	'min_interval' is greater than 'max_interval'
29	CIRCULAR_APPT_LINK	returned instead of code 23 (BAD_REQUEST) when activity links create a loop
30	DUPLICATED_APPT_LINK	returned instead of code 23 (BAD_REQUEST) when a duplicate link is sent

4.16.7 Mobile Client API – Correct Response after 'Provider ID' Deletion from 'Add Activity/Activity Details' Context

When the visibility of the 'Provider ID' field was deleted from the 'Add activity/Activity details' context for the SOAP interface, a number of operations returned error code 100 with the 'php error: 8 "Undefined index: pid' message. The affected operations are as follows:

– cancel_activity
– complete_activity
– create_activity
– create_customer_inventory
– create_customer_request
– create_inventory_request
– create_resource_inventory
– create_resource_request
– deinstall_inventory
– delay_activity
– delete_inventory
– exchange_inventory
– get_activity_work_skills
– get_customer_inventory_list
– get_customer_request_list
– get_inventory_request_list
– install_inventory
– prework_activity
– reopen_activity
– start_activity
– suspend_activity
– undo_deinstall_inventory
– undo_install_inventory

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- update_activity
- update_inventory

After this issue has been fixed, all above-mentioned operations return successful responses even if the 'Provider ID' in the SOAP interface context is not visible to the user.

4.16.8 Inbound API – Invalid Values of 'head/allow_change_date' Parameter Processed Correctly

The valid values of the 'allow_change_date' parameter of the 'head' node are 'yes' and 'no' (lowercase). However, when an 'update_activity' containing an invalid value of this parameter was sent, the request was not rejected but a duplicate activity was created.

A check for the 'allow_change_date' field value validity has been added. Now requests containing an invalid value are rejected with error code 69189: 'head/allow_change_date' has invalid value '[____]'. (valid values are 'yes' and 'no' lowercase)'

4.16.9 Inbound API – Activity Links Updated Correctly

Previously a request for updating an existing activity link in fact made no changes to it. Moreover, if the update request contained invalid values of the 'min_interval' and 'max_interval' parameters, no error messages were returned.

This issue has been resolved. Now the Inbound API updates activity links according to the requests and checks the values of the 'min_interval' and 'max_interval' parameters. When the activity link is changed, the activities are rearranged in the queue according to the new link type, if necessary.

4.16.10 Inbound API – Inactive Activity Link Types Can No Longer Be Added

If a request for an activity link contained an inactive link type, such link was, nevertheless, added. After the necessary changes such links are no longer added and a warning response 'Invalid link type label:' is returned.

5 ETAdirect Version 4.5.8

5.1 Changes Overview

Security vulnerabilities resolved

IFrame integration disabled by default

File Storage Implemented

Logout now redirects user to login page of the same application

SAML Single Logout (SLO) with SessionIndex supported

'Registered' field of 'My Display' shows user's time zone

Forecasting supports different units of measurement

Forecasting and plan values rounded to two decimal places

Placeholders added for translation to other languages

Activities View refreshed according to selected resource

Teamwork hint displayed fully

Resource Tree scroll position the same in different screens

'Save' button behavior in 'Edit Work Skills' window improved

Resource Tree resizer displayed correctly in small screens

Compliance Bar loaded properly in Time View

Overnight functionality applicable to Calendars

Resources' time zones checked during Calendar change

Display layout import – correct error message displayed if file for import has incorrect format

Required inventory grid can be added only once

Multi-bucket mode implemented

Parent bucket of resource selected in other screen automatically opened in Quota screen

Quota grid resized after browser zoom

Quota statuses shown correctly with quota closed for several work zones

New display layout for Quota screen created

Capacity recalculation functionality improved

Application server restart no longer removes yesterday's 'Used' data

'Other Activities' column behavior improved

Quota changes no longer affect past dates

'Mass Populate' fields depend on Quota Management settings

Quota History displayed for Capacity Category

Property labels added to 'Model Property' values in 'Add/Edit Inventory Type' window

Non-serialized inventory with non-mandatory 'Quantity' field can no longer be added to installed/deinstalled when form was not redrawn

Similar inventory records without model merged in Inventory Report

Search key highlighted in search results in 'Inventory Types' screen

Language names aligned in 'Add/Edit Inventory Types' window

'Quantity' field populated with '0' in 'Edit Inventory' dialog window

Type of existing inventory and model property of existing inventory type can no longer be edited

Inventory Types can no longer be deleted

'Quantity' field validation added

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'Add to installed/deinstalled' buttons hidden for activities not supporting inventory

'Install' and 'Add to Installed' buttons available only for started activities

Required inventory 'Model' field uses model property name

Team members' inventory pools have correct titles

Non-serialized inventory installation in teamwork processed correctly

Customer inventory exchange in teamwork improved

Required inventory can only be managed for started and pending activities

'Required quantity' shows required inventory for current activity only

'Missing required inventory' warning shown only in resource's and required inventory

'Required inventory quantity' shown only in resource's pool

Inventory records with zero quantity no longer deleted

Missing required inventory calculation improved

Expand/Collapse marks applied correctly to resources' pools in teamwork

Only positive values of required inventory quantity accepted

Inactive inventory types moved to end of list

Messages sent in offline mode in Manage Application delivered properly

'Chat with Technician' button works properly

Unread messages count and waiting time calculated correctly in Manage Application

Long messages without spaces wrapped in chat window

Closed chat details accessible from History in Manage Application

'Show More' button works correctly in chats history in Mobility Application

User can no longer start chat with himself/herself

Multi-language support in SmartCollaboration enhanced

Address Book ordering improved

'History' action link available on 'User Info' screen in Manage Application

'Move inventory/Activity via chat' permissions added for Mobility Application

'Share'/'Reassign' options available for transferred activity

iPad – 'Cancel' button visible properly

Earlier messages, including system messages, loaded properly

'New Conversation' button removed from 'Helpdesk Info' screen

'Identify inventory by' context applied to inventory share via chat

'Resource details in chat' context adjusted

Messages no longer disappear from chat list

Map display in Mobility Application not dependent on ETA fields

Reoptimization goals implemented

'npass_limit' field removed from database and Manage Application

Linked activities processing by Routing improved

Resource's overtime saved correctly

Activity filters can no longer be cloned by pressing 'Enter' button

Filter deletion improved

Filters order saved properly

Dynamic Routing and Reoptimization settings cloned properly

Recurrent Routing Plan time validation improved

Routing execution log shows correct results after rollback

Custom themes supported in offline mode

Custom themes applied properly

Correct application behavior with online plugins used offline

Activity delay time calculated correctly in overnight

'Clear' button removes all signature attributes

On-Call resources can manage routes for past or future days

'Activity site has been reached' alert shown

Yesterday's date active for rescheduling activities

'Change calendar details' screen displayed properly

Checkbox property saved after resubmitting

Tab group displayed correctly

'Account' trigger works properly

Inventory history stored in DWH

DWH no longer crashes with empty GPS host

Overnight time accounted properly by DWH

Messages report shows correct methods

Report columns sorting improved

Resource History Report shows complete locations data

Location assignment and reassignment records distinguished in Resource History Report

Travel statistics split by travel area

External statistics calculation improvement

Mapping between travel keys and travel areas implemented

Capacity API – multiple buckets query without results aggregation

Capacity API – automatic bucket determination by work zone

Capacity API no longer returns capacity for expired time slots

Capacity API – time slot names retrieval

Resource locations management through Resource Management API

Resource Management API – permissions applied correctly

Inbound API – commands for past days handled correctly

Mobile Client API – non-serialized inventory exchange rejected

Interface to SmartLocation sends more events

Application server supports batch requests to SmartLocation

Track Bar in Time View no longer shows irrelevant idle time

Application server deadlock no longer possible

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5.2 Security

5.2.1 Security Vulnerabilities Resolved

Previously, when any action in the 'Action Management' screen was modified via the 'Modify' link and the request was intercepted by the browser, the 'action_link_id' parameter of the request was vulnerable to SQL injections. The resulting SQL request was processed and the system was able to load unsafe data.

A similar issue occurred with the 'Interface' parameter of the Display layouts search. When a request for filtered search by 'Interface' was intercepted, the 'Interface' parameter could be modified and the resulting SQL request was processed.

Now this issue has been resolved. The system is protected from injections and no unsafe data can be uploaded.

5.2.2 IFrame Integration Disabled by Default

Previously, the default configuration enabled IFrame integration.

As of version 4.5.8, the default configuration of ETAdirect no longer allows IFrame integration. If necessary, it can be enabled.

5.3 General

5.3.1 File Storage Implemented

ETAdirect now supports various types of file properties. Some file properties, such as images, may be quite large. Until recently, all file properties were stored in the database which was becoming rather massive and sometimes difficult to maintain.

A new solution which could simplify the database maintenance, decrease maintenance time, reduce disk space and increase the overall database performance, availability and flexibility was required, therefore, File Storage has been implemented.

File Storage is a data storage allowing to write, read and delete files. As of version 4.5.8 the content of file properties existing in ETAdirect is no longer stored in the database, but is sent to File Storage.

5.3.2 Logout Now Redirects User to Login Page of the Same Application

Previously, after logout the user was redirected to the login page of the Manage Application, even if the user was working in the Mobility Application before logging out.

Now the user is redirected to the login page of the same application they used before logging out.

5.4 User Management

5.4.1 SAML Single Logout (SLO) with SessionIndex Supported

In earlier versions the standard SLO flow was not yet implemented. The SLO flow used Username for logout instead of SessionIndex.

As of version 4.5.8 the standard SLO flow is supported, and the logout request uses SessionIndex.

5.4.2 'Registered' Field of 'My Display' Shows User's Time Zone

The 'Registered' field of 'My Display' always showed time in the default time zone regardless of the particular user's settings.

The necessary changes have been made – now the 'Registered' field shows time in the same time zone which was defined for the user in the 'Users' screen.

5.5 Manage Application

5.5.1 Forecasting Supports Different Units of Measurement

As of version 4.5.8, the Forecasting functionality of ETAdirect supports the selection of units of measurement. This improvement brings it in line with the Quota Management which also supports different units of measurement.

The units of measurement to be used in the Forecasting screen are the same as defined in the 'Business Rules' for Quota Management (Figure 68). The 'Dashboard View' and 'Table View' in Forecasting use the same units of measurement.
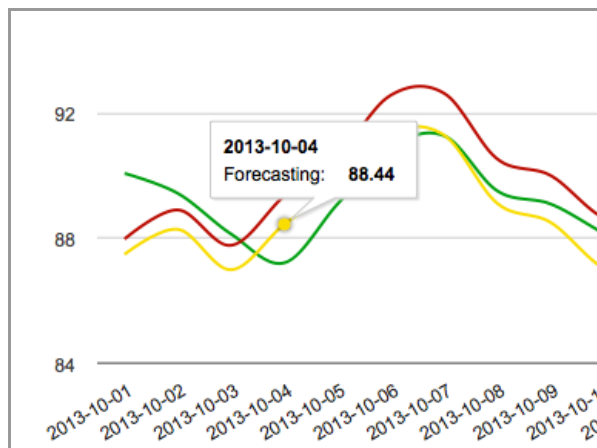
Figure 68: Forecasting data displayed in man-days

5.5.2 Forecasting and Plan Values Rounded to Two Decimal Places

When plan was set in the 'Forecasting' screen, the plan and forecasting values appearing on the graph were rounded to 4 decimal places. Such accuracy was unnecessary. This behavior was observed after data extraction or a .csv file upload.

The necessary changes have been made, and now the values are rounded to the 2nd decimal which is the correct value display.

5.5.3 Placeholders Added for Translation to Other Languages

Several items have been added as placeholders to the Glossary to enable their translation into different languages:

- linked activities statuses in the 'Links' tab of 'Activity details'
- resource work zone priorities – 'Regular' and 'Override'
- 'Delete required inventory' window caption

5.5.4 Activities View Refreshed According to Selected Resource

If the Activities List or Map View contained two panels for two different resources, the Activities List or Map was not refreshed when the top panel was closed. This resulted in the Resource Tree and the Activities View showing different resources (Figure 69). However, such behavior was not observed in the Time View.

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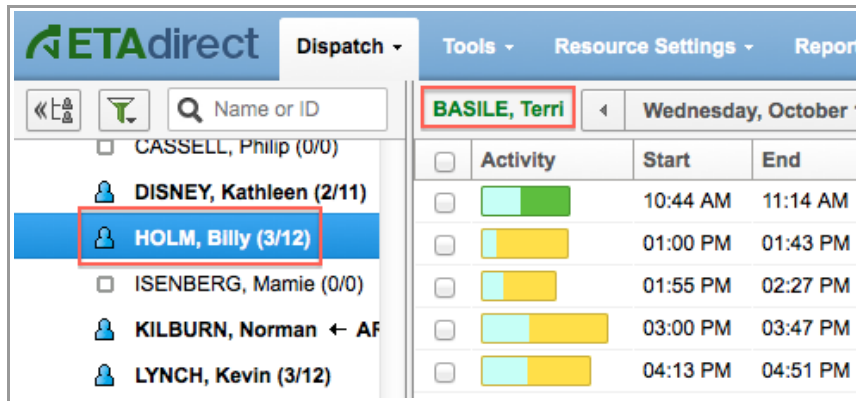
Figure 69: Different resources in Resource Tree and Activities List View

The necessary logic has been added, and now the Activities View shows the data related to the resource selected in the Resource Tree.

5.5.5 Teamwork Hint Displayed Fully

Previously, when a teamwork was created by dragging a resource and dropping to another resource, the resource hint was not completely displayed – if it had three lines, the third line was not fully visible (Figure 70).
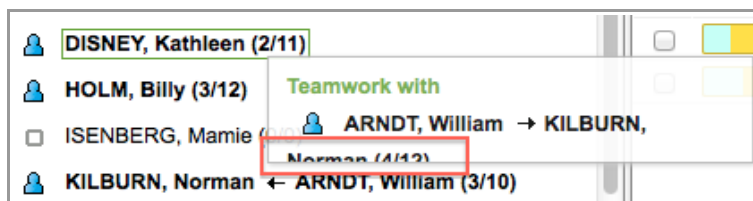
Figure 70: Third line of teamwork hint displayed incompletely

This issue has been addressed, and now resource hints are fully displayed during teamwork creation (Figure 71).
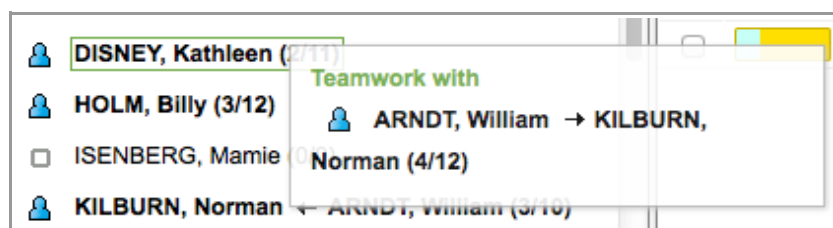
Figure 71: Teamwork hint displayed fully

5.5.6 Resource Tree Scroll Position the Same in Different Screens

Sometimes the Resource Tree scroll in the Activities View was positioned differently from the Resource Tree scroll in other screens (Routing, DashBoards, etc.). This was caused of two Resource Trees used in the Activities View, which could have different states including their scroll positions.

In version 4.5.8 the scroll position in different screens has been synchronized, and now the scroll of the single Resource Tree or the Resource Tree in the top panel, when two panels are displayed, is in the same position as the scroll in other screens.

5.5.7 'Save' Button Behavior in 'Edit Work Skills' Window Improved

If a work skill with a very long name was configured for a resource, but the configuration was incorrect, the resulting error message in the bottom of the window shifted the 'Save' button so that it became hidden (Figure 72).
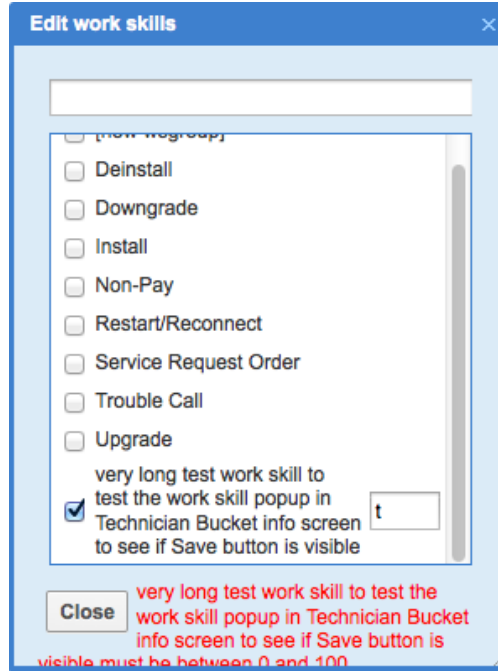
Figure 72: 'Save' button hidden

This issue has been resolved by placing both 'Close' and 'Save' buttons under the error message. If the error message is long, the 'Edit work skills' window is resized to include the error message and both buttons (Figure 73).
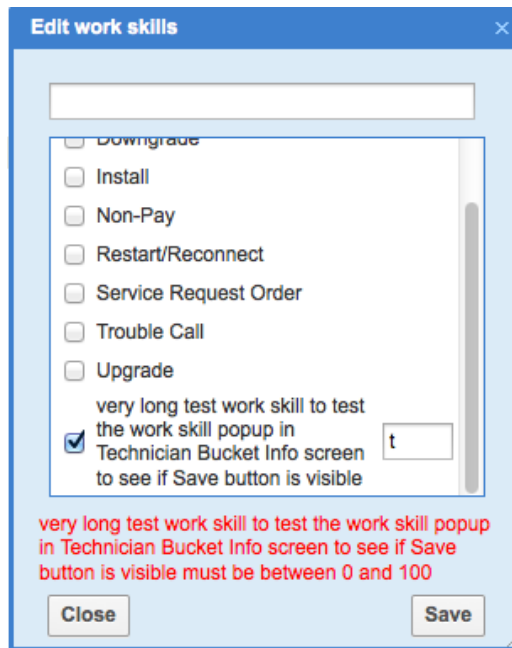
Figure 73: 'Save' button visible

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5.5.8 Resource Tree Resizer Displayed Correctly in Small Screens

When the Manage Application was used in a narrow screen, the bar changing the width of the Resource Tree and the Activities view was not displayed completely – the top part of the bar was missing (Figure 74).
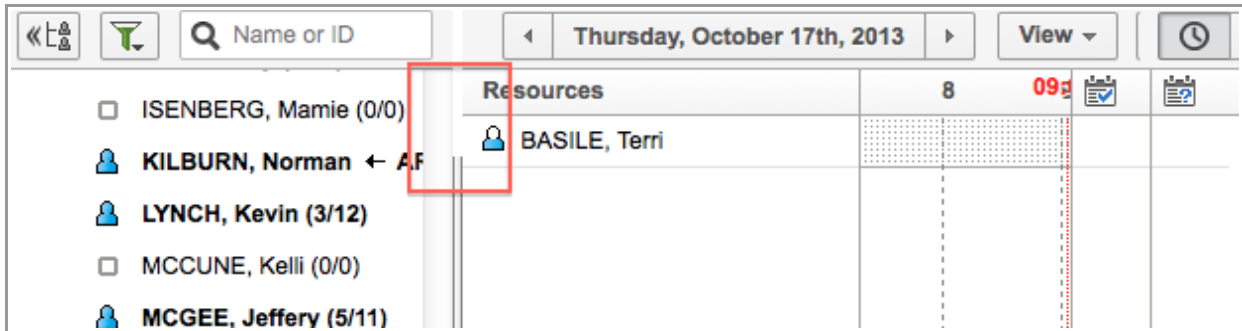
Figure 74: Resize bar displayed incompletely

The necessary improvements have been made, and now the resize bar has no gaps when ETAdirect is used on devices with small screens.

5.5.9 Compliance Bar Loaded Properly in Time View

Previously, if the 'Show resource trace' option was enabled in the 'View' filter of the Activities Time View, the SmartLocation Compliance Bar was not shown immediately. The user had to click elsewhere on the Resource Tree to have the Compliance Bar displayed.

This issue has been fixed. Now the Compliance Bar appears immediately after the 'Apply' button is clicked in the 'View' window.

5.5.10   Overnight Functionality Applicable to Calendars

Previously, the day status on the 'Daily' screen (open or closed) was determined without taking into account the overnight functionality. Consequently, no modification of calendars during the overnight time was possible.

In version 4.5.8 the 'Daily' screen checks for overnight when determining whether a calendar can be changed and allows calendar changes during overnight.

5.5.11   Resources' Time Zones Checked during Calendar Change

If a resource's calendar was to be changed, the system only considered the company time zone. However, for correct results the resource's time zone as well as the overnight functionality must be checked.

This check has been implemented in version 4.5.8. Also, if the calendar is changed for a group of resources having different time zones, the calendar of the parent resource cannot be changed if the current date is closed for at least one of its child resources.

5.5.12   Display Layout Import – Correct Error Message Displayed if File for Import Has Incorrect Format

If a file of an incorrect format has been selected for display layout import, the system now responds with a correct validation message: 'Error format xml file'. This message gives the user a clear explanation of the import failure reason.

5.5.13   Required Inventory Grid Can Be Added Only Once

The Required Inventory Grid could be added more than once to the 'Edit/View activity' context layout. This resulted in several Required Inventory Grids appearing in the 'Activity Details' screen, cluttering the display and confusing the user (Figure 75).
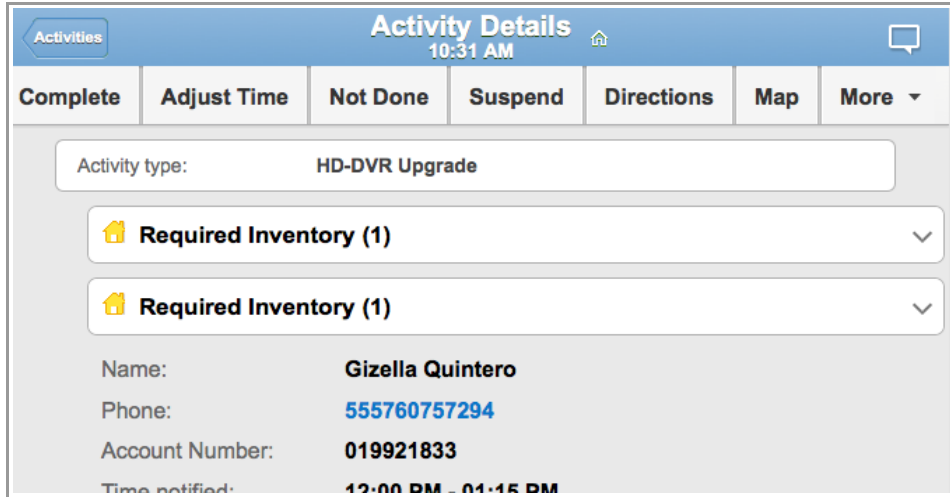
Figure 75: Several Required Inventory Grids in 'Activity Details'

Now the system checks if the Required Inventory Grid has already been added to the context layout. The Required Inventory Grid can be added only once (Figure 76).
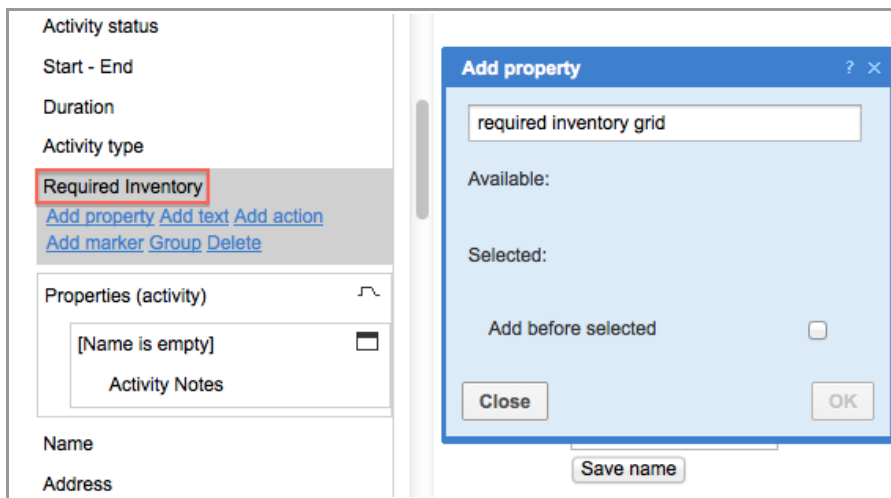
Figure 76: Required inventory grid available only once

5.6 Quota Management

5.6.1 Multi-Bucket Mode Implemented

The Quota Management functionality has been enhanced by adding the multi-bucket mode which allows viewing the data of all child buckets in the same quota grid. When the company structure includes parent and child buckets, with the multi-bucket functionality implemented, the user is able to select the parent resource and view the aggregated data for all its child resources.

For this purpose the 'View' window now contains the 'Show aggregated results' checkbox which enables

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multi-bucket display (Figure 77).
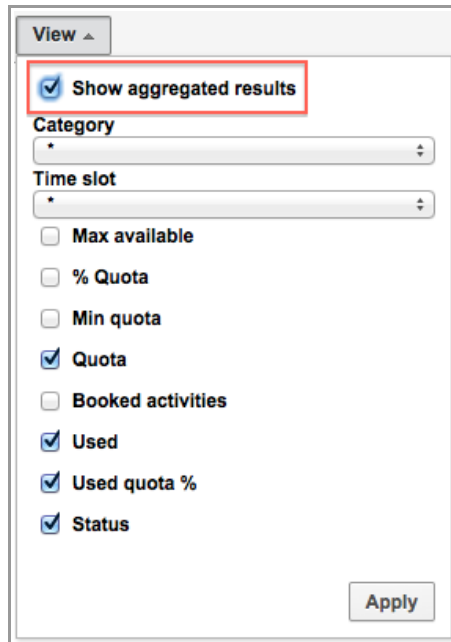
Figure 77: 'Show aggregated results' option in 'View' window

When the multi-bucket mode is switched on, a new column, 'Capacity bucket', is added to the quota grid where the child buckets of the selected parent bucket are listed. The quota grid shows the data for each bucket in separate lines (Figure 78).

Capacity bucket	Time slot Capacity categories	Wednesday, October 23rd, 2013				
		Quota	Used	Used quota %	Status	Close time
test bucket	08-10	3500	69	1.97%	✓	
	Install				✓	
	Trouble Call				✓	
	Upgrade		69		✓	
	Total		69			
Planning	08-10		11582		✓	
	Install	1350	723	53.56%	✓	07 AM
	Trouble Call	4200	636	15.14%	✓	
	Upgrade	9755	10223	104.8%	✓	
	Total	15305	11582			

Figure 78: Multi-bucket view

5.6.2 Parent Bucket of Resource Selected in Other Screen Automatically Opened in Quota Screen

When the user switches to the Quota screen after selecting a resource in another screen, the capacity bucket which is parent of the selected resource is automatically opened on the Quota screen.

If the selected resource is a capacity bucket, the same capacity bucket is opened on the Quota screen. If

the selected resource is not a capacity bucket, the closest parent capacity bucket is opened.

5.6.3 Quota Grid Resized after Browser Zoom

When the browser window is zoomed in or out, the quota grid is resized accordingly. The grid is shown properly after browser zoom with all its actions and functions and can be scrolled as usual.

5.6.4 Quota Statuses Shown Correctly with Quota Closed for Several Work Zones

In some cases, when quota at the capacity category level was closed for several work zones, while other work zones remained open, the quota status showed a red cross (quota closed for all work zones in the selected combination of capacity category and time slot). This behavior was incorrect and misleading as some work zones were still open.

The quota status calculation has been changed so that partially closed quota for a capacity category and time slot is accounted correctly. Now such statuses are marked with a green tick, which is the correct representation of such quota status (Figure 79).

Figure 79: Correct quota status

5.6.5 New Display Layout for Quota Screen Created

For the purposes of Quota action links and buttons configuration a new display layout for the Quota screen has been created. The new layout allows configuring all actions and buttons which can be used on the Quota screen, including their visibility settings, similar to other ETAdirect screens configuration (Figure 80).
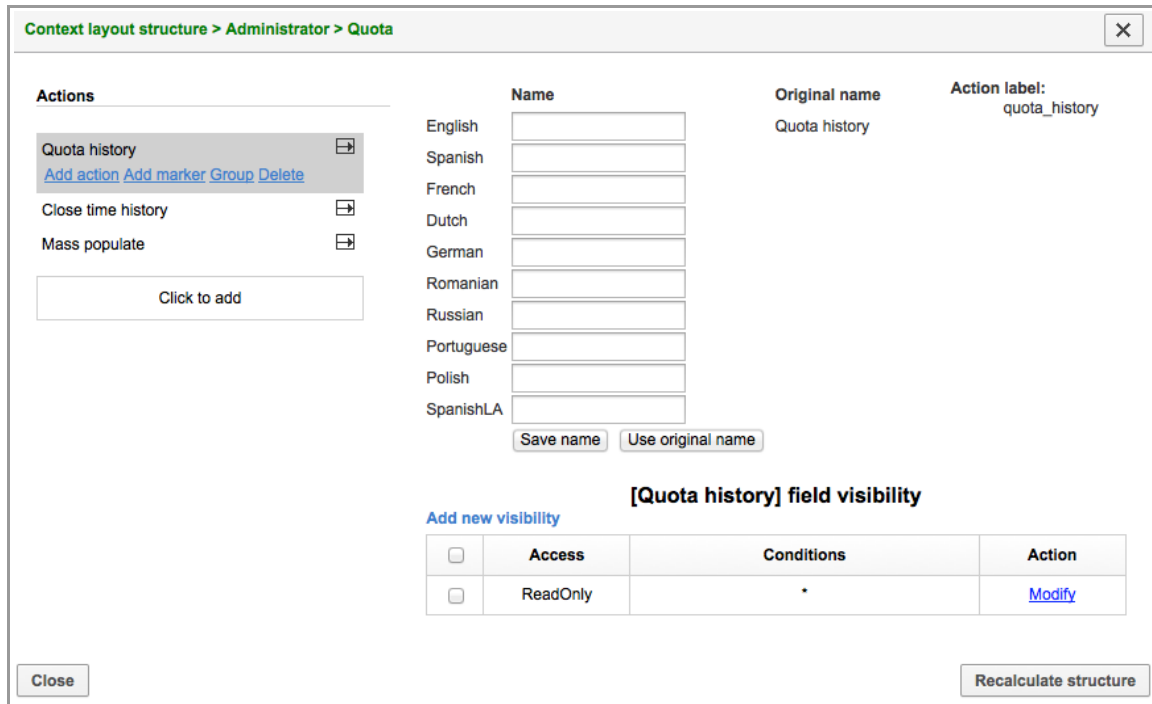
Figure 80: Quota context layout

5.6.6 Capacity Recalculation Functionality Improved

The 'Quota management' section in the 'Business Rules' screen contains the 'Available capacity is automatically recalculated every...' parameter allowing to set the period of capacity recalculation for the Quota management. However, in the previous versions the capacity was recalculated every 1 minute regardless of this parameter value.

This issue has been fixed, and now the capacity is recalculated according to the 'Business Rules' settings.

5.6.7 Application Server Restart No Longer Removes Yesterday's 'Used' Data

If the company used the Overnight functionality, in some cases the 'Used' capacity data for yesterday were removed after the application server restart. If the 'Quota' screen was opened after the application server restart, the 'Used' column would be empty, while it should have contained a value.

This issue has been addressed. The yesterday's values of the 'Used' column are recalculated properly after the server restart.

5.6.8 'Other Activities' Column Behavior Improved

By design, the 'Other activities' column and filter option are available at the Day level of Quota management when the 'Estimate capacity used by activities that are not a part of the Quota Management' option is enabled in the capacity bucket configuration. However, this column was present in the grid and its value was calculated even with this option disabled.

As of version 4.5.8 the 'Other activities' value is calculated only when the 'Estimate capacity used by activities that are not a part of the Quota Management' option is enabled. The corresponding column is available in the Quota grid with this option enabled, too.

5.6.9 Quota Changes No Longer Affect Past Dates

If the user changed the Quota at the Day level for today's or future dates, when the quota grid was showing past days as well, the past dates quota was also changed. Clicking 'Save' resulted in the 'Action

on past dates is not allowed' error message. The user was unable to save their changes, as clicking 'Save' always resulted in the error message.

Now the Quota view submits only the actually changed values without changing any past values. The user's changes are successfully saved.

5.6.10 'Mass Populate' Fields Depend on Quota Management Settings

The 'Field' value options in the 'Mass populate' dialog window now depend on the selection of quota definition method. When quota for the bucket is entered in minutes according to the capacity bucket configuration, the 'Field' drop-down list in the 'Mass populate' window will show only the 'Quota' option. Similarly, if quota is entered as percentage, the available 'Field' option will be '% Quota'.

This is a logical approach to the 'Mass populate' functionality, because it works correctly only in such configuration.

5.6.11 Quota History Displayed for Capacity Category

Previously, the 'Quota History' table at the capacity category level contained no records, even when actions were performed to capacity category quota. The 'Quota History' table was empty with the 'Records not found. Change criteria and try again' message.

This issue has been resolved in version 4.5.8. Now the Quota History contains records of the actions performed at the capacity category level.

5.7 Inventory

5.7.1 Property Labels Added to 'Model Property' Values in 'Add/Edit Inventory Type' Window

For better usability of the 'Inventory Types' functionality, the values of the 'Model property' field now have labels allowing to distinguish between model properties having similar names (Figure 81).
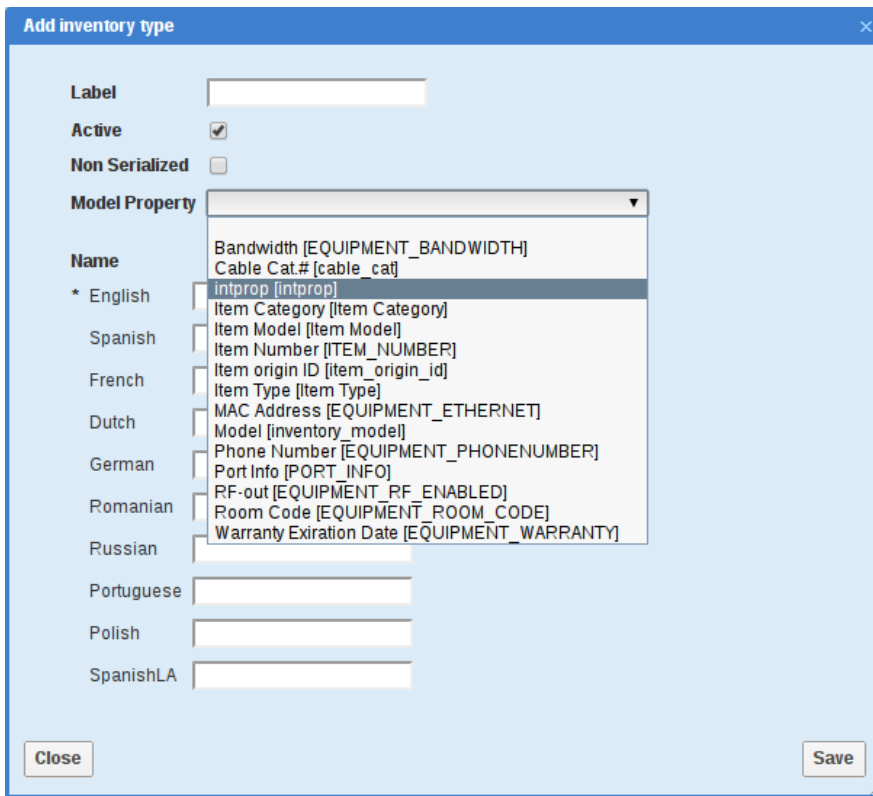
Figure 81: Property labels shown in 'Add/Edit inventory type' window

With the property labels added, adding or editing inventory types has become much easier and more transparent. It now allows selecting the needed property immediately.

5.7.2 Non-Serialized Inventory with Non-Mandatory 'Quantity' Field Can No Longer Be Added to Installed/Deinstalled When Form Was Not Redrawn

By intention, whenever any actions are performed to non-serialized inventory, the 'Quantity' field must be mandatory. Otherwise the action is rejected and a warning is issued.

However, when non-serialized inventory was added to installed/deinstalled in the Mobility Application, the visibility of the 'Quantity' field was not checked. As the result, non-serialized inventory could be added to the installed or deinstalled pool without specifying its quantity.

An additional check has been added which checks whether the 'Quantity' field is mandatory in the 'Add to installed' and 'Add to deinstalled' context layouts. Otherwise, a warning is issued and the action is not performed.

5.7.3 Similar Inventory Records without Model Merged in Inventory Report

When an activity required certain non-serialized inventory without model and the technician installed the same inventory, the inventory report showed two records for such inventory. One record contained the information on the available and installed inventory, the other – on the required and missing inventory. At the same time, the missing inventory was calculated incorrectly – the available and installed inventory were not taken into account (Figure 82).

Model	Type	Required	Installed	Available	Missing
Internet	Internet	0	0	1	0
Digital Telephony	Digital Telephony	1	0	2	0
Analog Telephony	Analog Telephony	0	0	1	0
HDMI Cable 6ft	HDMI Cable 6ft	0	0	6	0
RG6 - BLK	RG6 - BLK	0	100	500	0
RG6 - WHT	RG6 - WHT	0	0	400	0
coaxial	Cable	0	0	400	0
twisted pair	Cable	0	0	300	0
	No Model NSI	0	30	70	0
	No Model NSI	40	0	0	40

Figure 82: Incorrect records for non-serialized inventory without model

In version 4.5.8 such inventory records are merged into a single record, and the missing inventory is calculated taking into account the available and installed inventory of the same type (Figure 83).
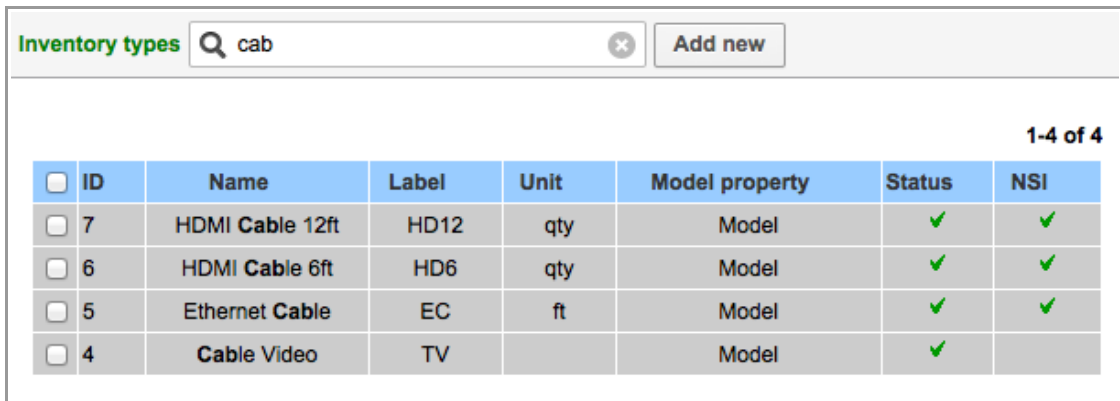
Model	Type	Required	Installed	Available	Missing
Internet	Internet	0	0	1	0
Digital Telephony	Digital Telephony	2	0	2	0
Analog Telephony	Analog Telephony	2	0	1	1
HDMI Cable 6ft	HDMI Cable 6ft	0	0	6	0
HDMI Cable 12ft	HDMI Cable 12ft	0	0	10	0
RG6 - BLK	RG6 - BLK	0	0	600	0
RG6 - WHT	RG6 - WHT	0	0	400	0
	No Model NSI	40	30	70	0

Figure 83: Correct (merged) record for non-serialized inventory without model

5.7.4 Search Key Highlighted in Search Results in 'Inventory Types' Screen

When any search was performed in the 'Inventory Types' screen, the search results were displayed correctly, but the search key was not highlighted in the search results, contrary to search in other ETAdirect screens.

In order to increase the usability of the search functionality in the 'Inventory Types' screen and to bring it in consistency with other ETAdirect screens, the search in the 'Inventory Types' screen has been changed so that the search key is now highlighted in bold type (Figure 84).

Figure 84: Search key highlighted in bold type

5.7.5 Language Names Aligned in 'Add/Edit Inventory Types' Window

If 'Company Settings' contained several languages defined for the company, the same languages were offered for selection in the 'Add/Edit Inventory Types' dialog window for entering the inventory type name translations. In the previous versions the language names were not aligned properly.

In version 4.5.8 the language names are aligned to the left which improves the overall appearance of the dialog window.

5.7.6 'Quantity' Field Populated with '0' in 'Edit Inventory' Dialog Window

For better usability, the 'Quantity' field of the 'Edit inventory' dialog window was populated with the existing quantity value, when the user edited non-serialized inventory. However, when the previous quantity value was '0', the 'Edit inventory' window showed an empty 'Quantity' field.

This issue has been resolved. The 'Quantity' field shows '0' when non-serialized inventory with zero quantity is edited.

5.7.7 Type of Existing Inventory and Model Property of Existing Inventory Type Can No Longer Be Edited

Previously it was possible to edit the model property of an existing inventory type. This led to inconsistent data and caused incorrect records to appear in the Resource Inventory and Inventory Report (for example, the same inventory was shown without the model in the Inventory Report and with the model in the resource's pool).

This issue has been resolved by disabling the 'Model property' field for the existing inventory types so that 'Model' becomes ReadOnly for such inventory types.

At the same time, the recommended context layout configuration is making both 'Model' and 'Inventory type' ReadOnly whenever 'Inventory ID' exists ('inventory ID' is not empty). This ensures data

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consistency between the inventory pools and reports.

5.7.8 Inventory Types Can No Longer Be Deleted

If an Inventory Type was deleted, while such inventory was in use anywhere in the system, such inventory in any pool would be shown without the type in the Manage Application and with 'undefined' type in the Mobility Application (Figure 85). Such inventory was impossible to work with.

Figure 85: Inventory of deleted type in inventory list

This issue has been resolved by changing an approach to Inventory Types management. Now the 'Delete' action is no longer available for inventory types (there is no 'Delete' link in the 'Inventory Types' screen) (Figure 86). Inventory types can be activated or deactivated by using the corresponding links.

Figure 86: 'Delete' link removed form 'Inventory types' screen

5.7.9 'Quantity' Field Validation Added

Previously, when the user tried to install or add fractional quantities of non-serialized inventory in the Manage Application, the system responded with a 'Property type mismatch' error message which was not clear and did not contain an explicit description of the error. If the user tried to install fractional quantities of required inventory, or performed any actions with fractional quantity of non-serialized inventory in the Mobility Application, the fractional part was removed without any warning.

As of version 4.5.8 the 'Quantity' field is validated and accepts only integer values. Whenever fractional quantities are entered in the 'Add/Edit inventory', 'Add required inventory' forms in the Manage Application and in the 'Install/Deinstall inventory' and 'Add to installed/deinstalled' forms in the Mobility Application, the action is rejected with an error message (Figure 87).
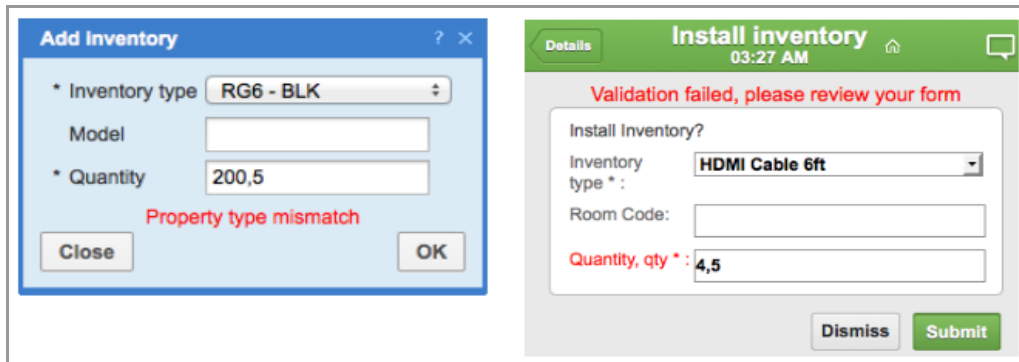
Figure 87: Error message issued for fractional inventory quantity in Manage (left) and Mobility (right) Applications

5.7.10   'Add to Installed/Deinstalled' Buttons Hidden for Activities Not Supporting Inventory

In the Mobility Application, the 'Add to Installed' and 'Add to Deinstalled' actions are intended to add inventory from the technician's pool to the corresponding pool of the started activity. These actions can be configured in any context, therefore, inventory can be added from any context where these action links are available. However, if the started activity did not support inventory, adding inventory to its installed or deinstalled pool resulted in errors.

To resolve this issue a new action-link condition field, 'started_activity_feature', has been created, which checks the activity feature flags. The visibility of 'Add to installed' and 'Add to deinstalled' buttons has been configured so that they are hidden when the started activity has no 'Support of inventory' feature enabled.

5.7.11   'Install' and 'Add to Installed' Buttons Available Only for Started Activities

Previously, in the Mobility Application the 'Install' and 'Add to Installed' buttons were available in the required inventory details of activities of any status (including completed and cancelled activities). These actions made no sense and resulted in errors, as inventory can only be installed in a started activity.

In version 4.5.8 this issue has been fixed – the 'Install' and 'Add to Installed' buttons are available in the required inventory details only for started activities and hidden for all other activities.

5.7.12   Required Inventory 'Model' Field Uses Model Property Name

If an enumeration property was used as the 'Model property' for an inventory type, and the same type was defined as 'Required inventory', the 'Edit inventory' window showed model property label instead of its name (Figure 88). The same behavior was observed in the Inventory List of the Mobility Application.

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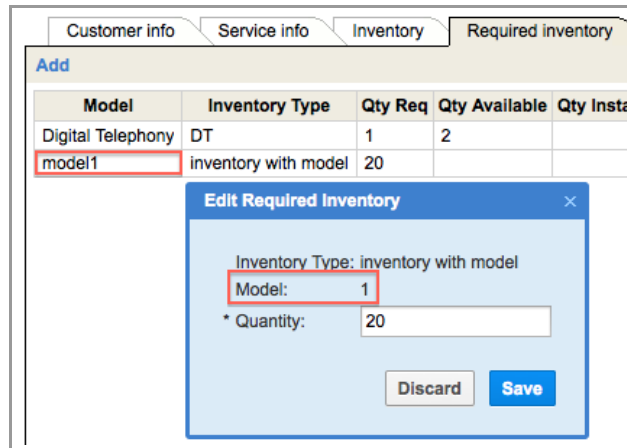
Figure 88: Model property label used instead of name

Now the 'Model' field retrieves the Model name of required inventory rather than its label, thus ensuring that the same data is shown in all fields.

5.7.13 Team Members' Inventory Pools Have Correct Titles

If only one of the resources in the team had inventory, such resource's pool was titled incorrectly in the Mobility Application, when viewed by the other resource – instead of the resource's name the pool title showed resource type ('Truck' or 'Resource', etc., according to the Glossary configuration) (Figure 89).
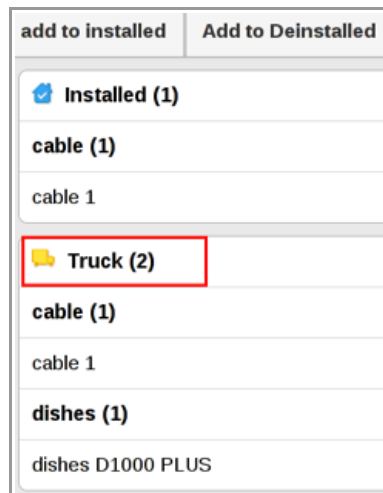
Figure 89: Inventory pool with resource type as title

The algorithm of shared inventory determination has been changed. Now team members see pools of other team members with their names.

5.7.14 Non-Serialized Inventory Installation in Teamwork Processed Correctly

If a team member installed non-serialized inventory from other team member's pool, at the same time having such inventory in own pool, after the installation the first team member's pool contained two records of non-serialized inventory. The installed inventory record moved from one team member to the other.

Now the issue has been fixed – the inventory PID is not changed after installation, therefore, the installed

inventory record remains in the corresponding resource's pool. Two separate records in two pools are displayed.

5.7.15 Customer Inventory Exchange in Teamwork Improved

If a team member attempted to exchange customer inventory with another team member's inventory, the exchange operation was rejected with the 'Unable to exchange inventory' warning message.

This issue has been resolved – inventory exchange between the customer's pool and another team member's pool is possible.

5.7.16 Required Inventory Can Only Be Managed for Started and Pending Activities

Previously, required inventory could be added, edited or deleted for completed, suspended or not-done activities which could result in inconsistent data.

Now the activity status check has been added which prohibits adding, editing or deleting required inventory for completed, suspended or not-done activities. The corresponding action links are not available for such activities.

5.7.17 'Required Quantity' Shows Required Inventory for Current Activity Only

Previously, the 'Required quantity' field showed the total quantity of required inventory of the selected type for the entire resource's queue, even when the 'Inventory' screen was opened from a specific activity details screen. This value was not always informative, as sometimes the resource needed to know the quantity of required inventory for a particular activity.

The approach to the required inventory display has been changed – now the total quantity is shown only when the 'Inventory' screen is accessed from the 'Activities list' screen. When the required inventory is shown for a particular activity, it displays the quantity required for such activity only.

5.7.18 'Missing Required Inventory' Warning Shown Only in Resource's and Required Inventory

Previously, the 'Missing required inventory' warning was displayed in all inventory pools in the Mobility Application except 'Required Inventory'. However, such message was redundant in the customer, installed and deinstalled inventory pools.

As of version 4.5.8 the 'Missing required inventory' is only shown in the resource's pool and in the required inventory grid, where it makes sense.

5.7.19 'Required Inventory Quantity' Shown Only in Resource's Pool

In earlier versions, the 'Required inventory quantity' field was shown in the customer, installed and deinstalled inventory pools in the Mobility Application. However, this field was redundant in all pools except the resource's pool.

Now the 'Required inventory quantity' field has been removed from all inventory pools except resource's pool.

5.7.20 Inventory Records with Zero Quantity No Longer Deleted

The approach to handling 'Undo install/deinstall' actions both in the Manage and Mobility Applications has been changed. Previously, when such operation resulted in non-serialized inventory quantity becoming 0, such inventory record was deleted. This led to losing service requests sent in connection with the installed or deinstalled inventory before the 'Undo' action.

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Now the inventory record resulting from the 'Undo' action remains, even if the inventory quantity is 0. The new approach helps to maintain data consistency in the system and to process inventory-related service requests correctly.

5.7.21   Missing Required Inventory Calculation Improved

If any inventory was required for an activity, while the resource had no such inventory at all, such inventory was not marked as missing (Figure 90-91). However, if the resource had any (insufficient) quantity of such inventory, the missing quantity was calculated correctly.

	Serial number ↑	Inventory pool	Inventory type	Quantity	Model	Actions
☐		Technician	RG6 - BLK	500	RG6 - BLK	Modify
☐		Technician	RG6 - WHT	400	RG6 - WHT	Modify
☐		Technician	Cable	300	twisted pair	Modify
☐		Technician	HDMI Cable 6ft	6	HDMI Cable 6ft	Modify
☐	58NBME39T065517	Technician	Analog Telephony	1	Analog Telephony	Modify
☐	HRSC63602	Technician	Digital Telephony	1	Digital Telephony	Modify
☐	PLBJ1C3AB	Technician	Digital Telephony	1	Digital Telephony	Modify
☐	PMUD106F8	Technician	Internet	1	Internet	Modify

Figure 90: 'Coaxial cable' missing from the resource's pool

Customer info	Service info	Inventory	**Required inventory**	Preferred Resources

Add

Model	Inventory Type	Qty Req	Qty Available	Qty Installed	Missing	Actions
coaxial	Cable	200 m				Edit Delete
Digital Telephony	DT	1	2			Edit Delete

Figure 91: 'Coaxial cable' not marked as missing in 'Activity details'

The missing inventory calculation has been improved. Now whenever no inventory in the resource's or installed pool matches the required inventory type, the whole quantity of the required inventory is marked as missing.

5.7.22   Expand/Collapse Marks Applied Correctly to Resources' Pools in Teamwork

When several resources were joined in a teamwork with the 'Share inventory in teamwork' feature enabled, expanding or collapsing one resource's pool caused the same expand/collapse mark to appear for other resources' pools (Figure 92). The pools themselves remained in the previous status, though.
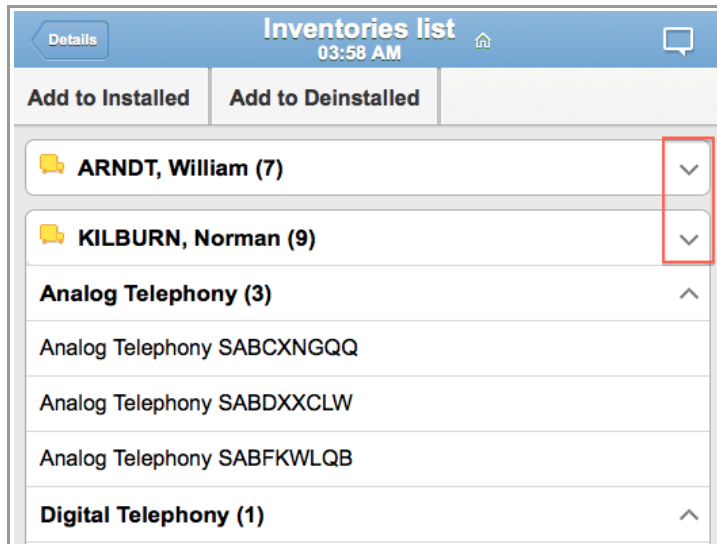
Figure 92: Expanded pool with 'collapsed' symbol

The reason for such behavior was that the expand/collapse mark was toggled for all resources' pools in a teamwork simultaneously. Now the code has been changed so that only the mark of the corresponding pool is toggled (Figure 93).
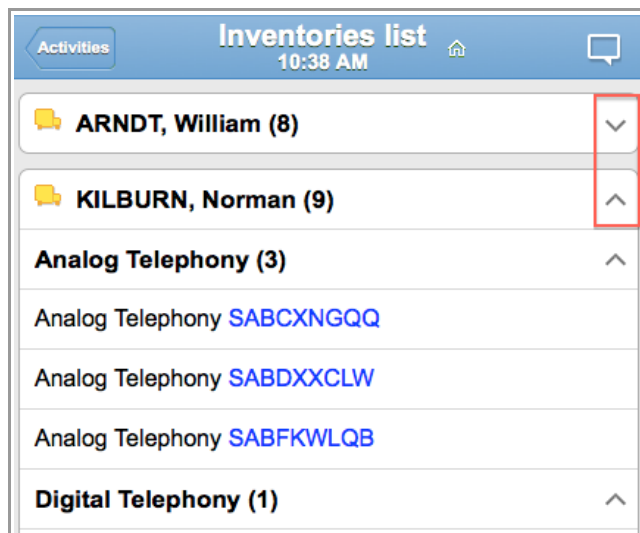
Figure 93: Correct expand/collapse marks

5.7.23 Only Positive Values of Required Inventory Quantity Accepted

In earlier versions the system accepted negative values of required inventory. However, negative quantities of required inventory were not sent to Routing which resulted in incorrect processing of such activities by Routing.

The required inventory quantity field is now validated and allows only positive integer values in the range from 0 to 2147483647. When a negative value is entered, the required inventory with such quantity is not added and a warning is issued (Figure 94).

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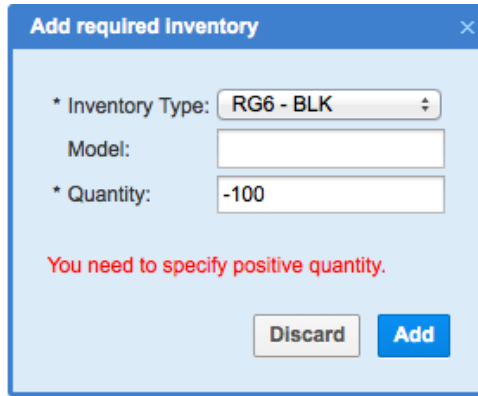
Figure 94: Warning issued at attempt to add negative quantity

5.7.24   Inactive Inventory Types Moved to End of List

According to the design, inactive inventory types should be placed in the end of the list in the 'Inventory Types' screen. However, in the previous versions inactive inventory types were not moved to the end of the list and remained in their places according to the alphabetic sorting (Figure 95).

	ID	Name	Label	Unit	Model Property	Status	NSI
☐	3	Analog Telephony	AT		Model	✔	
☐	21	Cable	Cable	m	Model	✗	✔
☐	4	Cable Video	TV		Model	✔	
☐	2	Digital Telephony	DT		Model	✔	
☐	5	Ethernet Cable	EC	ft	Model	✔	✔
☐	7	HDMI Cable 12ft ✏	HD12	pc	Model	✔	✔
☐	6	HDMI Cable 6ft	HD6	pc	Model	✗	✔
☐	1	Internet	NT		Model	✔	
☐	8	RG6 - BLK	RG6BLK	ft	Model	✔	✔
☐	9	RG6 - WHT	RG6WHT	ft	Model	✔	✔

Figure 95: Inactive inventory types not moved to end of list

As of version 4.5.8 the inventory types sorting has been adjusted so that inactive inventory types are moved to the end of the list. This sorting is the default sorting applied to the 'Inventory types' grid. If the grid is sorted by the values of any other column, the inactive inventory types might be not in the end of the list.

5.8 SmartCollaboration

5.8.1 Messages Sent in Offline Mode in Manage Application Delivered Properly

When two Manage Application users, both being offline, sent messages to each other, such messages were delivered incorrectly when the users returned online. The messages were in incorrect order and, in some cases, a user would receive his or her own messages. No new chats started in the offline mode were delivered, either.

In some cases messages sent in the offline mode were not delivered at all after the users returned online.

The logic of messages delivery after online mode restoration has been added. Now messages sent in the offline mode in the Manage Application are delivered to the intended recipient in the same order as they were sent. New chats are delivered properly.

5.8.2 'Chat with Technician' Button Works Properly

When the 'Chat with Technician' button was added to the 'Activity details' screen (Figure 96), this button did not work – clicking it produced no effect.
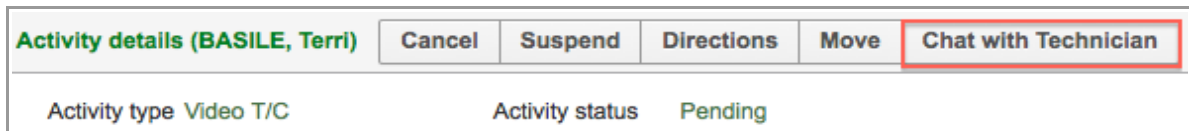
Figure 96: 'Chat with Technician' button in 'Activity details' screen

This issue has been resolved. Now clicking the 'Chat with Technician' button starts a SmartCollaboration chat with the selected technician.

5.8.3 Unread Messages Count and Waiting Time Calculated Correctly in Manage Application

When messages were sent to a user who was then offline, such user, after returning online to read the messages and going offline again, saw incorrect unread message count when he or she returned online again. The unread messages count did not decrease after the messages were read and the waiting time was shown incorrectly.

This issue has been addressed in version 4.5.8 – the unread messages count and waiting time are shown correctly.

5.8.4 Long Messages without Spaces Wrapped in Chat Window

In the Mobility Application, long messages without spaces which did not fit the window were cut off so that the end of the message was not visible (Figure 97).

Figure 97: Long message cut off

In version 4.5.8 such long messages are wrapped so that they fit the window and can be viewed in full.

5.8.5 Closed Chat Details Accessible from History in Manage Application

Previously, no closed chat details could be viewed from SmartCollaboration history – instead of the chat history, a new conversation window was opened.

After the necessary changes have been made, closed chats can be retrieved from the history and all their

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messages can be viewed.

5.8.6 'Show More' Button Works Correctly in Chats History in Mobility Application

If a user, viewing a closed chat history in the Mobility Application, tapped 'Show more' to see more messages, the screen displayed 'Loading', but no new messages were shown. The user was unable to see all messages in the closed chat.

Chat retrieval from history has been fixed – when the 'Show more' button is tapped, other messages of the closed chat are loaded.

5.8.7 User Can No Longer Start Chat with Himself/Herself

Sometimes a Manage Application user could find himself/herself in the Address Book. When the user started a chat with himself/herself and sent a message, the 'Error starting chat' message was cyclically displayed in the chat window and the Community icon was blinking online-offline. The user had to leave the conversation to stop he process.

As of version 4.5.8 users can no longer find themselves in the Address Book, therefore, starting a chat with oneself is no longer possible.

5.8.8 Multi-Language Support in SmartCollaboration Enhanced

The usability of SmartCollaboration has been further improved by enhancing the possibilities of its GUI elements translation to other languages (other than English). For this purpose the following placeholders have been introduced:

- "Address Book"
- "Alert"
- "Start"
- "Complete"
- "Joining the conversation"
- "Error joining the conversation"
- "Cancelling"
- "Sorry, could not cancel the operation due to low connection"
- "Accepting"
- "Sorry, could not perform the operation due to low connection"
- "Rejecting"
- "Sorry, could not reject the operation due to low connection"
- "Sorry, could not leave the conversation due to low connection"
- "Leaving conversation"
- "Sorry, history search failed due to connection quality. Please retry again."
- "Sorry, could not search nearby due to low connection"
- "Failed searching nearby"
- "Sorry, could not invite user"
- "Search keyword must be at least 2 characters in length"
- "Adding contact"
- "Error add contact"

- "Removing contact"

- "Error remove contact"

- "no messages"

- "Take chat"

- "Move chat"

- "<1 min"

- "Helpdesk"

- "There are no online operators at the moment"

- "Enter name of contact and press Find"

- "Found {CHATS_COUNT} chats"

- "Load more contacts"

With this improvement, all messages and GUI elements listed above can be translated to other language , thus improving the overall usability and consistency of the SmartCollaboration functionality.

5.8.9 Address Book Ordering Improved

According to the design, the SmartCollaboration address book is divided in 2 sections – Helpdesks (shown at the top of the contacts list) and Users (shown after the Helpdesks section). Both contact groups are arranged alphabetically by their names, their online or offline status having no effect on their position in the list.

However, in the Manage Application the two sections were not clearly separated from each other and sometimes User contacts were shown before Helpdesk contacts in the list (Figure 98).
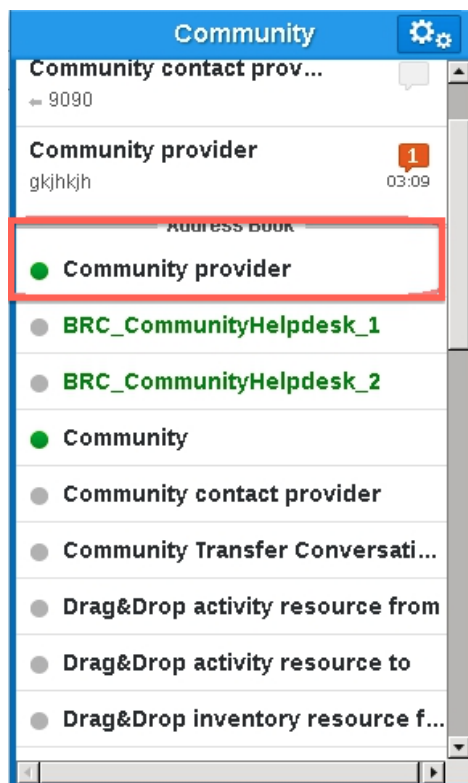
Figure 98: User contact shown before Helpdesk contacts

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User contacts which were just added to the Address Book and those from whom messages had been just received were added to the top of the Address Book before Helpdesks.

The ordering of the Address Book has been improved. How the contacts are clearly divided into two groups – Helpdesks and Users – and sorted alphabetically within the groups, regardless of their statuses or chat activity.

5.8.10   'History' Action Link Available on 'User Info' Screen in Manage Application

If, after closing a chat, a user opened the 'User Info' screen of the other chat participant, the 'History' link was not available. The user was unable to see the closed chats with the other user. This behavior was only observed in the Manage Application, while in the Mobility Application the 'History' link was available and functional (Figure 99-100).
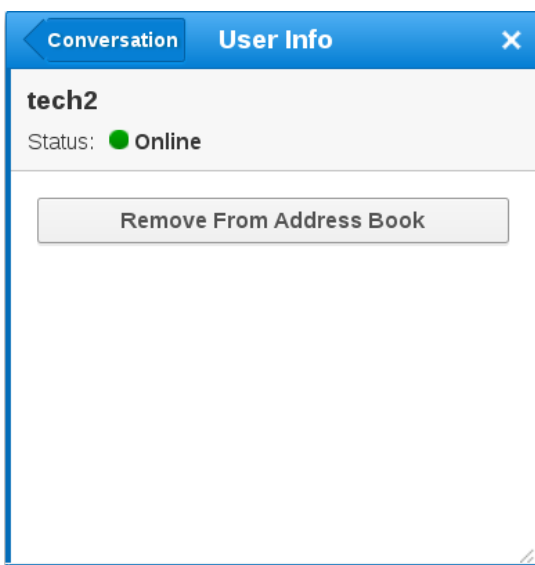
Figure 99: 'History' link absent in Manage Application
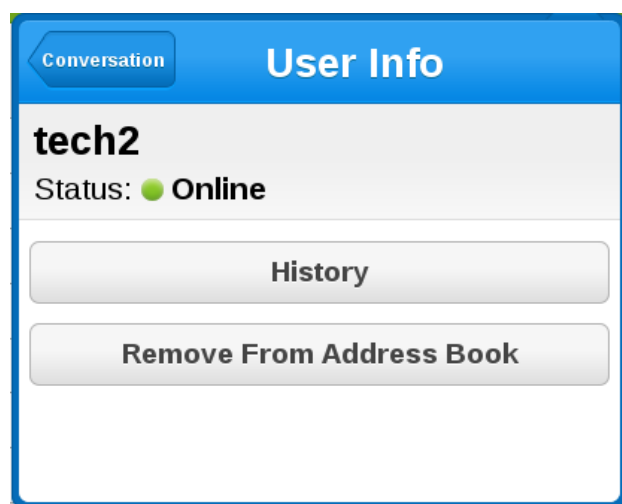
Figure 100: 'History' link available in Mobility Application

The 'History' action link has been added to the Manage Application, and now the chat history is accessible from the 'User Info' screen in both ETAdirect applications.

5.8.11   'Move Inventory/Activity via Chat' Permissions Added for Mobility Application

Previously, users permissions to move activity or inventory via SmartCollaboration chat could be set only for Manage Application Users, as there were no corresponding permissions for the Mobility Application. Therefore, if activity or inventory move via SmartCollaboration was denied for a user in the Manage Application, the same user was able to do it in the Mobility Application.

In version 4.5.8 the similar permission has been implemented for the Mobility Application (Figure 101), and now activity and inventory move via chat can be controlled in both applications.
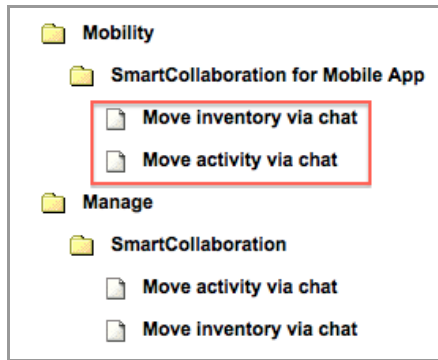
Figure 101: 'Move activity/inventory via chat' permissions for Mobility Application

5.8.12   'Share'/'Reassign' Options Available for Transferred Activity

In the Mobility Application, no 'Share' or 'Reassign' options were available to the recipient of a transferred activity. When the recipient opened the transferred activity details, not 'Share' or 'Reassign' links could be found.

In version 4.5.8 this issue has been fixed. The 'Share' and 'Reassign' links are available to the user who received a transferred activity.

5.8.13   iPad – 'Cancel' Button Visible Properly

If a Mobility Application user reassigned an activity or transferred inventory via chat on an iPad device, the 'Cancel' button in such chat looked incorrect – the name of the button was not visible (Figure 102).
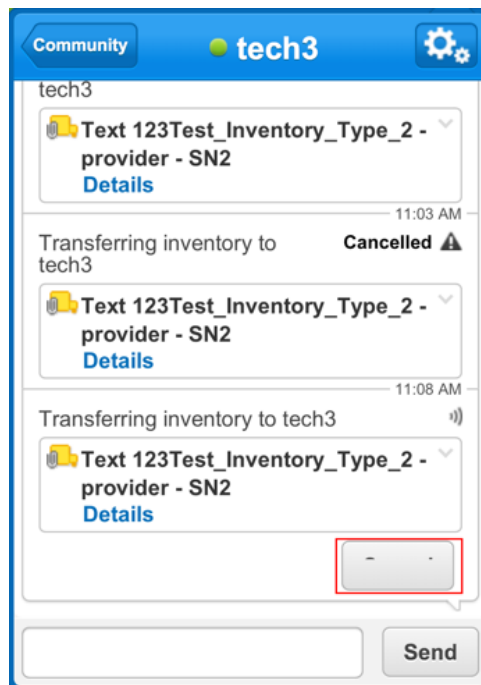
Figure 102: Incorrect appearance of 'Cancel' button

This issue has been fixed – now the 'Cancel' button looks correct with its name displayed fully.

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5.8.14 Earlier Messages, Including System Messages, Loaded Properly

If a user opened a long chat and wished to load earlier messages, he was unable to do so if the chat contained system messages (for example, 'User left/joined the conversation' and such). The earlier messages were not loaded and errors appeared.

The message drawing logic has been improved – now earlier messages are loaded, regardless of whether the chat contains system messages or not. No errors appear in such situations anymore.

5.8.15 'New Conversation' Button Removed from 'Helpdesk Info' Screen

Previously, the 'Helpdesk Info' screen in the Manage Application contained a 'New Conversation' button which produced no action and, therefore, was absolutely useless (Figure 103).
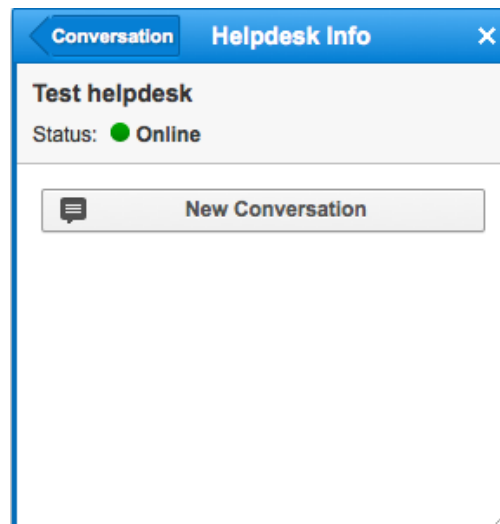
Figure 103: 'New Conversation' button in 'Helpdesk Info' screen

As of version 4.5.8 this button has been removed from the 'Helpdesk Info' screen in order not to mislead users. This button is only visible in the 'User Info' screen.

5.8.16 'Identify Inventory By' Context Applied to Inventory Share via Chat

If the 'Identify inventory by' context layout was configured with several inventory properties, still, only the serial number was shown when inventory was shared in a chat in the Manage Application (Figure 104-105).
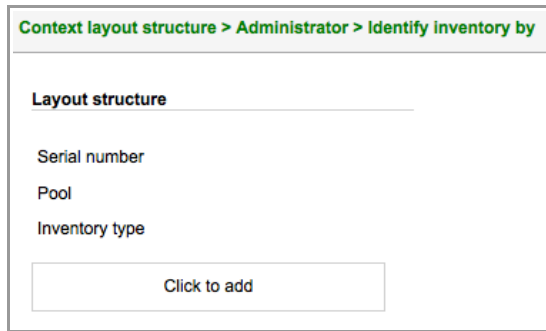
Figure 104: 'Identify inventory by' context layout configured with several properties
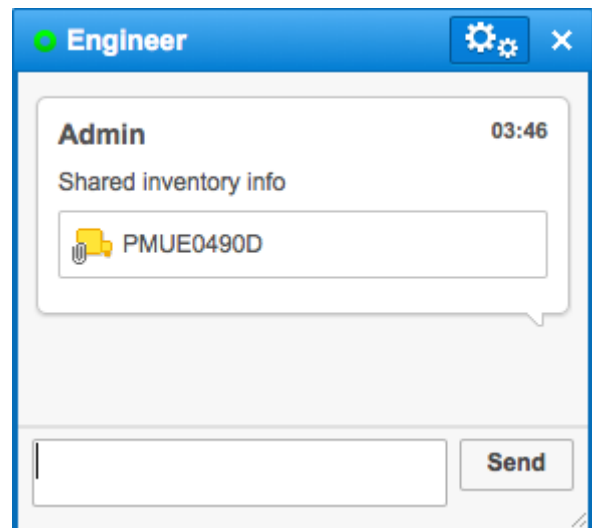
Figure 105: Only serial number displayed for shared inventory

This issue has been fixed. Now the inventory info shared in a chat contains all properties configured in the 'Identify inventory by' context layout.

5.8.17   'Resource Details in Chat' Context Adjusted

When resource details were shared via chat, the resource's queue status was displayed as a placeholder rather than its value. On the other hand, the 'Calendar' field was not displayed at all, even when added to the 'Resource details in chat' context.

However, the 'Queue status' and 'Calendar' fields should not be available for the 'Resource details in chat' context at all. As of version 4.5.8 these fields can no longer be selected for adding to the 'Resource details in chat' context.

5.8.18   Messages No Longer Disappear from Chat List

In some cases the last messages sent in a chat disappeared from the chat list and even from the chat itself. Service messages about the user leaving the chat were not shown, either, when they were the last messages in the chat.

The logic of last message retrieval has been changed, and now the last message in the chat is shown properly in the chat list.

5.9 Maps

5.9.1 Map Display in Mobility Application Not Dependent on ETA Fields

Whenever no activity contexts for the Mobility Application contained ETA fields, the map focused on zero coordinates (the Atlantic Ocean) by default. No actual activities locations were shown.

The same behavior occurred when a route contained only cancelled activities.

Now the map functionality has been improved so that the map is focused and scaled so that to show all activities markers, regardless of ETA fields configuration.

5.10 Routing

5.10.1   Reoptimization Goals Implemented

The reoptimization functionality may be used to ultimately achieve different business goals. The business

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goals are determined by the company's policies and practices in respect of the activity priority and various costs and penalties associated with any deviations.

As of ETAdirect version 4.5 the Routing module has been enhanced to account for such individual policies and practices and to focus on achieving the predefined goals.

For this purpose ETAdirect offers a selection of three possible goals which may be achieved by Reoptimization. When any of such goals is selected for a particular Routing plan, the Routing configuration and tuning is focused on such goals and is therefore simpler. A certain reoptimization goal requires different reoptimization parameters and the criteria of the reoptimization result acceptance. The available reoptimization goals are as follows:

- Reduce overdue
- Optimize routes
- Assign high priority activities

The reoptimization goal selection is offered as a drop-down list in the 'Reoptimization' section of the 'Add/Edit routing plan' screen (Figure 106).
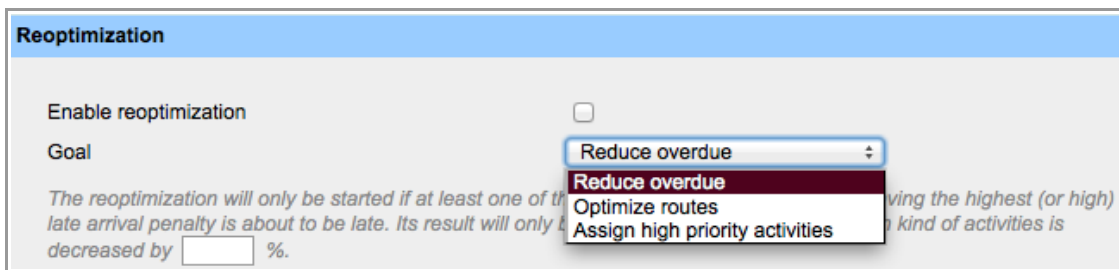
Figure 106: Reoptimization goals selection

When an option is selected, the hint explaining Routing behavior with this option selected is displayed.

- **Optimize routes** – *It is the default behavior. The reoptimization will only be started if it has the ability to assign new activities or change existing routes. There are no acceptance criteria.*
- **Reduce overdue** – *The reoptimization will only be started if at least one of the activities to be processed and having the highest (or high) late arrival penalty is about to be late. Its result will only be applied if the total overdue for such kind of activities is decreased by [ ] %.*
- **Assign high priority activities** – *The reoptimization will only be started if at least one of the not assigned activities to be selected for this run has the highest (or high) cost of not assigning. Its result will only be applied if at least one of these activities has been assigned.*

5.10.2 'npass_limit' Field Removed from Database and Manage Application

The logic of 'npass_limit' field processing has been changed. This parameter is automatically assigned the value of 1 when the Routing Run time limit is set to 0. In all other cases this parameter is not sent to Routing at all. Therefore, in the current logic the 'npass_limit' parameter is not used.

Following this change, the 'npass_limit' field has been removed from the database and the Manage Application to avoid misunderstandings.

5.10.3 Linked Activities Processing by Routing Improved

If an activity link type did not support the 'Maximal interval' parameter (the 'delay_max' constraint), the corresponding attribute of the link was still sent to Routing. As the result, in some cases Routing did not assign one of the linked activities.

As of version 4.5.8 the 'delay_max' attribute is only passed to Routing when the corresponding constraint is enabled for the link type processed. This way, linked activities are properly assigned by Routing.

5.10.4 Resource's Overtime Saved Correctly

If the user configuring the 'Provider's overtime' tab of the Routing Plan, saved the 'Do not assign activities that unlikely to be finished in NN min. before end of technician's day' option, these settings were saved correctly and later applied by the Routing. However, during the next editing of the same Routing Plan, the 'Provider's overtime' showed the 'Do not assign activities with more than NN min. overtime' option selected.

After the necessary changes, the selected resource's overtime options are displayed correctly.

5.10.5 Activity Filters Can No Longer Be Cloned by Pressing 'Enter' Button

Previously its was possible to clone activity filters in the 'Filters' section of the 'Routing Plan'. If the user pressed the 'Enter' button several times while adding an activity filter, several identical filters were added. However, such cloned filters were not saved and disappeared after the section reopening. At the same time, such behavior was confusing for the users.

As of version 4.5.8 the 'Enter' key submits the form immediately, therefore, no cloned filters can be created any longer.

5.10.6 Filter Deletion Improved

When a Routing Plan contained several filters in the 'Activities in the existing routes' section and several filters in another section, the user was unable to delete a filter placed before the '(*Other')' filter in the grid. Clicking the 'Delete' link produced no result.

This issue has been fixed. Now all filters, except '*Other', in the 'Activities in the existing routes' section can be deleted subject to the user's permissions.

5.10.7 Filters Order Saved Properly

If the order of activity filters was changed by dragging and dropping, the resulting order was not saved. When the Routing Plan was opened next time, the filters were sorted in the alphabetical order.

This issue has been resolved, and now the order of filters is saved properly. The filters are sorted according to the user's settings.

5.10.8 Dynamic Routing and Reoptimization Settings Cloned Properly

When a Routing Plan containing Dynamic Routing or Reoptimization settings was cloned, such settings were not saved and were missing from the cloned Routing Plan.

The necessary improvements have been made. Now all parameters of the initial Routing Plan are saved in the cloned Routing Plan.

5.10.9 Recurrent Routing Plan Time Validation Improved

When the 'from' field of the recurrent Routing Plan settings was set to '12:00 AM' or '00:00', such Routing plan was rejected with a ''from time' should be earlier than or equal to 'to time'' error message (Figure 107). However, when the 'from' field was set to '12:01 AM' or '00:01', the Routing Plan was saved.

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Figure 107: Incorrect time validation in recurrent Routing Plan

Now the time validation in the 'Routing Plan' window is correct. Recurrent Routing Plans with starting time set to '12:00 AM' or '00:00' are saved properly.

5.10.10   Routing Execution Log Shows Correct Results after Rollback

If between a Routing run and a subsequent Routing rollback any of the routed activities were deleted, the Routing execution log showed an incorrect result – the log stated that 0 activities were returned to their initial position. In fact, it should have stated that all but the deleted activities were returned.

The Routing execution log functionality has been improved, and now it shows correct data after the Routing rollback.

5.11 Mobility Application

5.11.1   Custom Themes Supported in Offline Mode

As of version 4.5.8 custom themes selection is supported in the offline mode, as well. With this new feature users are able to work with the selected custom theme even when the application is offline.

5.11.2   Custom Themes Applied Properly

In the previous versions users experienced several issues with customs themes selection in the Mobility Application:

– the custom theme selected in the 'User Options' changed to the default theme after a page refresh

– the custom theme selected by the user in the Manage Application was not applied in the Mobility Application for the same user after a page refresh

– when a custom theme was created and uploaded into ETAdirect and afterwards selected in the Mobility Application in 'Options' → 'Design Theme', the custom page title and copyright string were not applied. The default title page and copyright string were shown instead

These issues have been fixed in version 4.5.8. Now custom themes selected by the user in the Mobility Application are applied correctly.

5.11.3   Correct Application Behavior with Online Plugins Used Offline

If an online plugin was selected in the Mobility Application immediately following its switching to the offline mode, the application opened another instance of ETAdirect which resulted in double top bar appearing on the screen.

As of version 4.5.8 a check for offline mode has been implemented. Now the user attempting to run an online plugin in the offline mode is redirected to the previous screen, which is the correct behavior.

5.11.4 Activity Delay Time Calculated Correctly in Overnight

If a user of the Mobility Application adjusted a started activity time so that the end time was after midnight (falling, in fact, on the following day), the activity end time was calculated incorrectly. The end time showed the time entered by the user + 24 hours.

Now, when the start and end times of an activity fall on different dates, the times are calculated correctly. In this case the activity end date is changed to the next date.

5.11.5 'Clear' Button Removes All Signature Attributes

Previously, if an activity details contained a signature which was saved into a file, tapping 'Clear' removed only the actual image, but the file name and size remained.

Now, when the user taps 'Clear', both the image and the related file details (name and size) are removed.

5.11.6 On-Call Resources Can Manage Routes for Past or Future Days

When a resource had an on-call calendar for a certain day, such resource was unable to view their routes for past or future days, reschedule activities to future dates or work with the past route with Overnight enabled, because the dates were inactive in the calendar.

This issue has been resolved. Now the resource with an on-call calendar can select a different date which will be active, exactly like when the resource has a regular calendar.

5.11.7 'Activity Site Has Been Reached' Alert Shown

When a resource arrived to the site of a pending activity with ETA which had already occurred, the Mobility Application should display an 'Activity site has been reached' alert. However, such alert was never displayed in the Mobility Application.

This issue has been fixed. When the resource with no started activity in the queue reaches the site on an activity with ETA which has just occurred, the 'Activity site has been reached' alert is displayed.

5.11.8 Yesterday's Date Active for Rescheduling Activities

When the company used the 'Overnight' functionality, its should be able to work with yesterday's activities. However, in the Mobility Application today's activities could not be rescheduled to yesterday, because the yesterday's date was shown as inactive in the Calendar.

Now the system checks if Overnight is enabled. If so, yesterday's date is available in the Calendar for rescheduling activities.

5.11.9 'Change Calendar Details' Screen Displayed Properly

If the 24-hour format was selected through the User Options, the 'Change calendar details' screen showed an unnecessary empty combobox after the 'End time' field (Figure 108).

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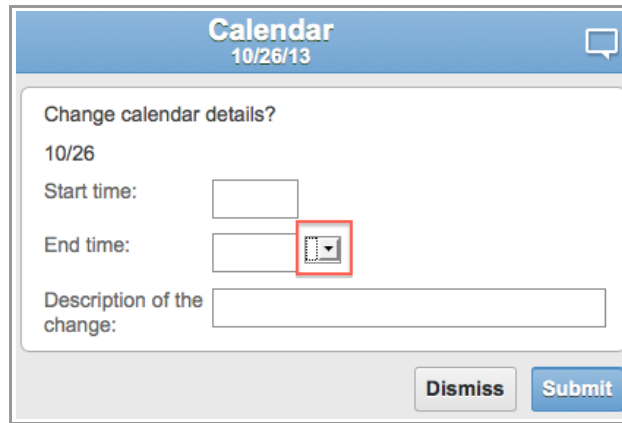
Figure 108: Unnecessary combobox in 'Change calendar details' screen

As of version 4.5.8 this combobox is no longer displayed in the 'Change calendar details' screen, regardless of the time format used.

5.11.10   Request Details Including Mandatory File Properties Shown in ReadOnly Mode after Sending

If a mandatory file property was added to an 'Add/View request' context for any entity, the details of such request after sending were shown in the ReadWrite mode and no actual values were displayed.

Now this issue has been fixed. Sent request details are shown in ReadOnly mode with all entered values displayed.

5.11.11   Checkbox Property Saved after Resubmitting

If the 'Add activity' context layout and 'Edit/View activity' in the Mobility Application contained a checkbox property, the value of such property was lost if the form had to be resubmitted due to a validation error.

In version 4.5.8 the checkbox property value is saved correctly after the form resubmission.

5.11.12   Tab Group Displayed Correctly

In the previous versions, tabs in the 'Activity details' screen were arranged in a single line. When the number of tabs was large, they continued beyond the screen borders and some of them were hidden (Figure 109).

In version 4.5.8 this issue has been resolved – the tabs are dropped to a new line with all of them staying within their section (Figure 110).
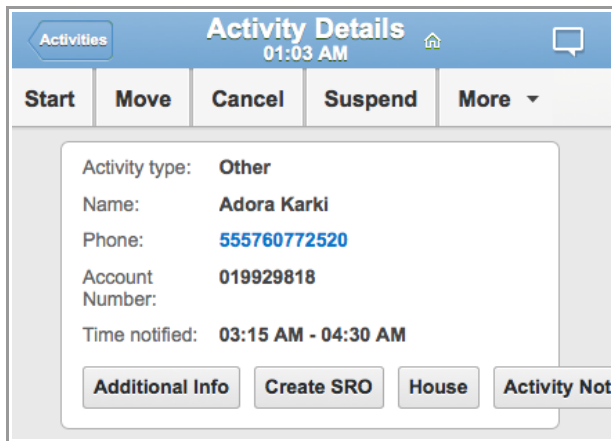
Figure 109: Tabs continuing beyond screen borders
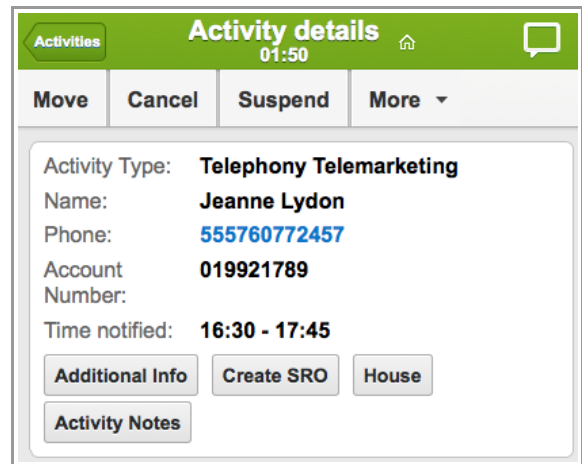
Figure 110: Tabs dropped to new line

5.12 Message Engine

5.12.1 'Account' Trigger Works Properly

The 'Account' trigger is used to send messages to users whose accounts are blocked after the number of password attempts is exhausted. However, in the previous version such trigger did not work – no message was sent to the blocked user.

This issue has been fixed. The 'Account' trigger works properly, and messages are sent to the blocked users, as intended.

5.13 DWH

5.13.1 Inventory History Stored in DWH

As of ETAdirect version 4.5.8 inventory changes are logged in the DWH history tables.

The following inventory fields are logged in DWH:

"instance" – identifier of the application server instance

"invid" – Id of the changed inventory

"action_id" – ID of the corresponding action_log record

"action_time" – time of the inventory action in GMT

"interface" – ID of the interface in which the action was performed

"user_id" – ID of the user who performed the inventory action

"operation" – identifier of the performed operation

"operation_time" – original time of the action

"transaction_id" – sequential ID of the transaction defining the operations order within the system

"provider_id" – ID of the resource to which the inventory is assigned

"activity_id" – ID of the activity to which the inventory is assigned

"pool" – inventory pool

"user_agent_id" – ID of the user agent (browser) from which the action is performed

"new_value" – array containing the modified fields and properties with their new values

5.13.2 DWH No Longer Crashes with Empty GPS Host

Previously, when SmartGPS was not configured (the "gps.host" parameter was empty), the DWH script still tried to connect to it and crashed.

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As of version 4.5.8 the DWH script no longer connects to SmartGPS when the "gps.host" parameter is empty and continues running properly.

5.13.3   Overnight Time Accounted Properly by DWH

DWH stores certain data (for example, messages) in the GMT time zone. During the extraction the time difference between the company time zone and GMT (if any) is taken into account by adjusting the extraction period for the time difference. If the company uses the overnight functionality, this should be accounted as well.

However, the overnight duration was not included in the extraction period calculation. Consequently, no messages sent during overnight were exported by DWH.

This issue has been resolved. The extraction period for messages is calculated as 24:00 GMT + time zone difference + overnight. Thus, all messages, including those sent during overnight, are exported properly.

5.14   Reports

5.14.1   Messages Report Shows Correct Methods

The Messages report showed incorrect values – parent notification method was shown instead of the actual notification method used for the selected message.

The Messages Report has been improved to show the actual notification method corresponding to the selected message. The same method is now displayed in printed and exported reports and in the messages history.

5.14.2   Report Columns Sorting Improved

The arrows in the report column header indicating the ascending or descending sorting order of the values disappeared when the user clicked three times on the column header. On the first click the column was sorted in the ascending order, on the second click – in the descending order and on the third click no arrow was displayed anymore and the column was sorted according to the sorting of another column.

This issue has been fixed. Now the arrows indicating the sorting order are always displayed and the values are sorted correctly.

5.14.3   Resource History Report Shows Complete Locations Data

Records of actions with resource's locations in the resource history report contained incomplete data – no location labels were shown, only their type and weekday. On the other hand, when any location was modified, the report contained no corresponding record.

As of version 4.5.8 the resource history report shows location labels and types for created and deleted locations. Location modification records show modified field values in the resource history report.

5.14.4   Location Assignment and Reassignment Records Distinguished in Resource History Report

Previously, the records for a location assignment and the same location reassignment had the same label in the Resource History Report – 'Create location'. The report seemed to show that two different locations were created, while in fact, a location was created and then reassigned.

Now any updates of an existing location are shown as 'Update location' which allows clear distinguishing between different operations with locations.

5.15 Statistics

5.15.1   Travel Statistics Split by Travel Area

Previously, the travel statistics (the travel time estimations) used in Routing were sent to Routing as a single file, which in some companies could be quite large. However, usually only one travel area is processed in a particular Routing run. When the entire travel statistics was sent to Routing, it had to be parsed anew for each travel area which resulted in very long processing times.

In version 4.5.8 the approach to sending travel statistics to Routing has been changed. The travel statistics is split by travel area which can be loaded to Routing independently. This allowed to dramatically reduce the server time required for the Routing runs, as now Routing only processes one travel area at a time.

5.15.2   External Statistics Calculation Improvement

As of version 4.5.8 the processing of keys with high weight has been improved. They are now correctly accounted in the statistical calculations which produces valid results.

5.15.3   Mapping Between Travel Keys and Travel Areas Implemented

Previously, there were no means of establishing the relations between external travel statistics and travel areas which could cause some activity keys to be missing from the imported data.

In version 4.5.8 the relation between external statistics and travel areas has been implemented.

5.16 Public API

5.16.1   Capacity API – Multiple Buckets Query without Results Aggregation

As of version 4.5.8 the Capacity API is able to query multiple capacity buckets in a single request without aggregation of their results. For this purpose the 'get_capacity' request now has a new boolean option: **'dont_aggregate_results'**. When this option is set to 'true', the results of different capacity buckets are not aggregated.

Also, a new field has been added to the 'capacity' node of the 'get_capacity' response: '**location**'. This field allows distinguishing between the records for different buckets.

5.16.2   Capacity API – Automatic Bucket Determination by Work Zone

In most cases, different buckets have different work zones, therefore, the destination bucket of an activity is determined by its work zone. To simplify the "work zone to bucket" mapping, the 'get_capacity' function has been improved by adding the possibility of determining the capacity bucket by the passed activity details.

For this purpose the 'get_capacity' request now has a new boolean option: **'determine_location_by_work_zone'**. When this option is set to 'true', the work zone to which the activity belongs is retrieved, and all capacity buckets to which such work zone is assigned are processed. If the same work zone is assigned to several buckets, the capacity nodes for all buckets corresponding to the work zone are returned.

If different work zones are assigned to different days, they are processed for each of the requested days separately.

If the requested capacity buckets are not visible to the user due to the permissions set, no quota will be returned for such buckets. However, no error message is returned, either.

In addition to the **'determine_location_by_work_zone'** flag, a list of predefined locations can be

passed to be used to filter the buckets found in the given work zone.

When the **_'determine_location_by_work_zone'_** option is enabled, the request must contain the work zone. If no work zone can be identified from the passed details, error code 14 is returned with the following message: 'Unable to determine work zone for given fields'.

5.16.3   Capacity API No Longer Returns Capacity for Expired Time Slots

As of ETAdirect version 4.5.8 the Capacity API is able to determine expired time slots for which no capacity is to be returned. This is achieved by introducing a new parameter –

_'min_time_to_end_of_time_slot'_. When this parameter is passed, the time remaining to the end of the time slot is calculated and the quota is only returned if the calculated value is equal to or exceeds the set threshold.

The value of this parameter is set in minutes in the range from -1,440,000 to 1,440,000. Any values outside this range are automatically changed to the minimum or maximum value, respectively.

5.16.4   Capacity API – Time Slot Names Retrieval

When an activity is booked in a CRM system, time slots are shown with their names, while the 'get_capacity' function returns only time slot labels. To ensure data consistency, the 'get_capacity' function has been enhanced by adding the ability to return time slot names.

A new boolean parameter, **_'return_time_slot_info'_** has been added. When this option is enabled, the function returns the corresponding time slot node containing the time slot label, name and time interval. For 'all-day' time slots no time interval is returned.

5.16.5   Resource Locations Management through Resource Management API

As of version 4.5.8 resource locations are managed via the Resource Management API. For this purpose, the following new operations have been implemented:

- 'get_locations'
- 'update_locations'
- 'delete_locations'
- 'set_resources_locations'
- 'get_resources_locations'

The corresponding permissions have been created for SOAP interface in the Resource Management Node.

5.16.6   Resource Management API – Permissions Applied Correctly

Previously, no permissions were checked for the Resource Management API. Any user having a SOAP permission was able to make any Resource Management API operation.

Now the Resource Management API checks whether the requesting user has the appropriate permission for the operation. New permissions have been created for SOAP interface in the Resource Management Node:

- 'set_resources_calendars'
- 'get_resources_calendars'
- 'set_resources_skills'
- 'get_resources_skills'
- 'set_resources_zones'
- 'get_resources_zones'
- 'get_user '

When the user has no appropriate permission for the operation they are requesting, an error is returned. For such cases a new error code has been implemented:

Code: 100   Error message: 'No permission'

5.16.7   Inbound API – Commands for Past Days Handled Correctly

Previously the Inbound API sometimes created records in the 'queue' table after 'update_activity' commands were sent for a past date. The command was rejected, but a record in the 'queue' table was created.

This issue has been resolved – now the command on a past date is rejected with no record inserted in the 'queue' table.

5.16.8   Mobile Client API – Non-Serialized Inventory Exchange Rejected

As of version 4.5.8 the Mobile Client API has been improved, and now it returns an error message to an 'exchange_inventory' request for non-serialized inventory. This is consistent with the non-serialized inventory concept which does not support exchange.

In such cases error code 100 is returned with the following explanation: 'Can't exchange inventories: 9382916: exchange_inventory: Cannot exchange non serialized inventory. InventoryID = [ ]. Type = [ ]'.

5.17 System

5.17.1   Interface to SmartLocation Sends More Events

Previously, the interface to SmartLocation only sent 'Complete' events.

As of version 4.5.8 the interface also sends 'Suspend', 'Not done' and 'Delay' events. In this case a 'Delay' event is determined as a change of a started activity duration.

5.17.2   Application Server Supports Batch Requests to SmartLocation

SmartLocation allows sending multiple commands within the same request to increase the overall efficiency.

As of version 4.5.8 the application server has a single command interface with SmartLocation, therefore, supporting batch requests, too.

5.17.3   Track Bar in Time View No Longer Shows Irrelevant Idle Time

Previously, if the resource sent the coordinates of a started activity and then again sent the same coordinates in a different track point (within the distance defined in the 'Business rules' as the 'Resource is considered to be at the activity location if the distance to it is less than...' parameter), the Track Bar in the Time View showed idle time. At the same time, the Map View showed the track points in blue color which is the correct representation of a resource being at the activity location.

The SmartLocation functionality has been improved which resolved this issue. Now the Track Bar in the Time View corresponds to the resource track points in the Map View. Particularly, in the situation described above it shows a solid blue bar which means that the resource is at the activity location.

5.17.4   Application Server Deadlock No Longer Possible

There were cases in the Application Server, where locking order was violated when generating configuration log for 'user' or 'appt' template updates. Shared lock was acquired after exclusive "read only ignore" lock. This behavior is unacceptable as it could lead to the Application Server deadlock.

This has been fixed in version 4.5.8 by implementing the deadlock avoidance algorithm.

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