DESCARTES™

USER'S GUIDE

Descartes® Route Planner™

17.05

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Welcome to Descartes Route Planner

Descartes® Route Planner™ (formerly known as LNOS Fleetwise™, referred hereafter as "Route Planner") provides an efficient and flexible enterprise-class routing and scheduling logistics solution. The broad set of Descartes Route Planner features and capabilities are specifically designed to enhance the management and optimization of pickup and delivery, order routing, and scheduling.

Features

Descartes Route Planner provides the following key features:

- **Easy-to-use Business Document Interfaces:** self contained XML documents with process codes for simplified interfacing
- **Extensive Administrative Functions:** system configuration, settings, and data management
- **Pick-up and Delivery Reservations Module:** quickly find and reserve available times on the fleet for appointments
- **Route Planning with background optimization:** sophisticated planning and optimization functions that work continuously behind the scenes to improve Routes
- **Dispatcher Management:** view and manage (add, remove, or reassign) work to Routes in progress
- **Wireless Dispatcher Interfaces:** communicate with drivers in the field to assign new work, get statuses, and monitor Route progress
- **Descartes' Logistics Network Operating System™ (LNOS)™ Technology:** based on Microsoft® Corporation's latest .NET architecture, LNOS helps enhance performance, scalability, and interoperability with other Descartes LNOS applications

Learning to Use Descartes Route Planner

Users can learn about Descartes Route Planner from the following sources:

Descartes Route Planner Release Notes

The release notes identify system requirements, new features, and known issues associated with the current release of Descartes Route Planner.

Descartes Route Planner Getting Started Guide

This guide introduces novice and intermediate Descartes Route Planner users to the Descartes Route Planner interface and explains basic tasks within the application.

Descartes Route Planner Administrator's Guide

This guide is written for the administrator and covers document and schedule management within Descartes Route Planner, reference material on field details, and complete instructions.

Integration Strategies

The Integration Strategies guide explains how information flows through Descartes Route Planner (via LNOS Drawbridge™) and explains the structure of Business Documents.

Descartes Route Planner Online Help

Descartes Route Planner includes an online help system. It contains explanations of many features and functions within the Descartes Route Planner application, as well as procedures to guide users through the application's basic functionality.

About This Guide

The *Descartes Route Planner Getting Started Guide* is intended for all users of Descartes Route Planner, and provides an overview of these common tasks and features:

- logging in
- using the interface
- managing user profiles

Document Conventions

This document uses the following conventions:

- Names of windows, frames, dialogs, menus, list boxes, and lists begin with uppercase and are bolded. (**Tools** menu, **Save** button)
- Key combinations that you press appear in mixed case. If the keys are joined by a plus sign (+), press and hold the first key simultaneously with the remaining keys (for example, CTRL+ALT+DEL).
- Text that you type appears in `Courier New` font. (Enter `USERID` in the login field.)
- Cross-references to other documents, or to sections within the current document, appear in underlined italics. (See *Saving a File* for details.)

- *Italics* are used for emphasis throughout this document.

➲ **Note**— Information important to a particular task or function is introduced with the note format and icon.

ⓘ **Tip**— Information that may make completing a task easier, but isn't essential to the task, is introduced with the tip format and icon.

Warning— This warning format indicates information that you need to pay particular attention to. Ignoring information presented as a warning could lead to damage and unexpected results. Disregarding information presented as a warning may result in damage to your software or data.

Application Overview

1. **Setting Up Descartes Route Planner**
   - **a** The administrator sets up the Schedule, Route, and Stop templates.
   - **b** The administrator sets up the Schedules (planning, reservation, Dispatcher, etc) that are used to determine and assign activities for incoming orders.
2. **Getting Data Into Descartes Route Planner**
   - **a** The administrator ensures that the necessary data for Resources, Locations, Orders, and buckets (if Reservations is being used) are available to Descartes Route Planner.
   - **b** Descartes Dataflow, an intermediate data repository, can be used to support both methods of data entry.
   - **c** The administrator ensures that new incoming data (orders, resources, reservation page, etc.) enters Descartes Route Planner using these methods.

   See the *Descartes Route Planner Installation & Configuration Guide* for details on Descartes Route Planner data entry.
3. **Assigning Data to a Schedule**
   - **a** The data are assigned to a schedule when imported into Descartes Route Planner. The assignment is based on the Schedule key passed on in each of the records imported into Descartes Route Planner.
   - **b** The process of creating Stops and Routes is done automatically during the import process. Descartes Route Planner translates orders into activities and Stops, and resources into Routes. It creates empty Routes and Unassigned Stops when resources and orders are imported into Descartes Route Planner.
4. **Creating and Planning Routes**
   - **a** Descartes Route Planner can create routing plans using the empty Routes and Unassigned Stops.
   - **b** Descartes Route Planner can use several methods to optimize the Routes and schedule Stops according to the organization's established criteria and order requirements.
   - **c** Descartes Route Planner reviews the Schedules and Routes and verifies whether Stops have been assigned to Routes optimally and that resources are being used efficiently.
5. **Executing Routes**
   - **a** Planned Routes and associated data are moved to the Dispatcher schedule for execution by the dispatcher.

b The dispatcher can assign new orders and optimize Routes as new orders arrive.

c The dispatcher can communicate with drivers using wireless technology to monitor the progress of Routes and communicate Route changes.

Planning Routes

In Descartes Route Planner, users can view a list of Routes, some of which may be empty, and a list of Unassigned Stops. Creating routing plans from these Routes and Stops involves the following steps:

- Optimizing the schedule
- Reviewing the Routes:
- viewing Route details
- checking for violations
- editing Routes
- Releasing the Routes to Dispatcher

Executing Routes

After Descartes Route Planner has released Routes to Dispatcher, the dispatcher needs to manage the execution of the Routes. Managing the Routes involves these steps, which are performed repeatedly and in any order as the Routes are executed:

- editing the Routes and making necessary Route changes, based on changes to resource or driver availability or other unexpected events
- sending Routes to drivers and handling associated driver communication managing Routes by reacting to alerts, flags, and new orders

Dispatcher Features

Several dispatchers can work with Route data at the same time, with each dispatcher responsible for specific orders, stops, routes, and drivers. Descartes Route Planner lets organizations divide their working data for each dispatcher using filters set up by the Descartes Route Planner administrator.

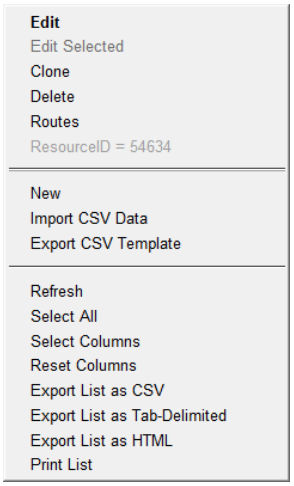
When Routes are modified or Unassigned jobs are added to Routes, Descartes Route Planner generates new Route data that includes projected arrival and departure times for the modified Routes. These changes are displayed in several different views, allowing assessment of the changes.

Descartes Route Planner lets dispatchers and drivers communicate throughout the day. Dispatchers send Route information to the driver's hand-held unit using wireless messaging if it is implemented. Drivers can transmit updated Route information as they complete their work or encounter exceptions. The updated information is used

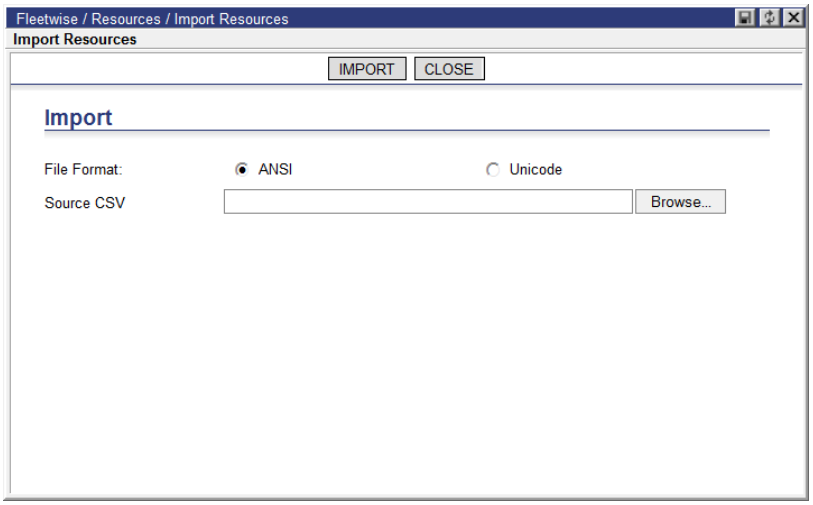
to recalculate Routes using real-time performance. Route displays reflect actual performance, and dispatchers can make adjustments to Routes based on this information.

Importing Data into Descartes Route Planner Using CSV Template

Users can import data into Descartes Route Planner using CSV templates using two standard right-click options on relevant list pages:



- **Export CSV Template:** This option prompts the user to open or save the CSV Template for the current object
- **Import CSV Data:** This option prompts the user to browse her or his computer for the CSV file to upload using the **Import [Item]** window displayed below

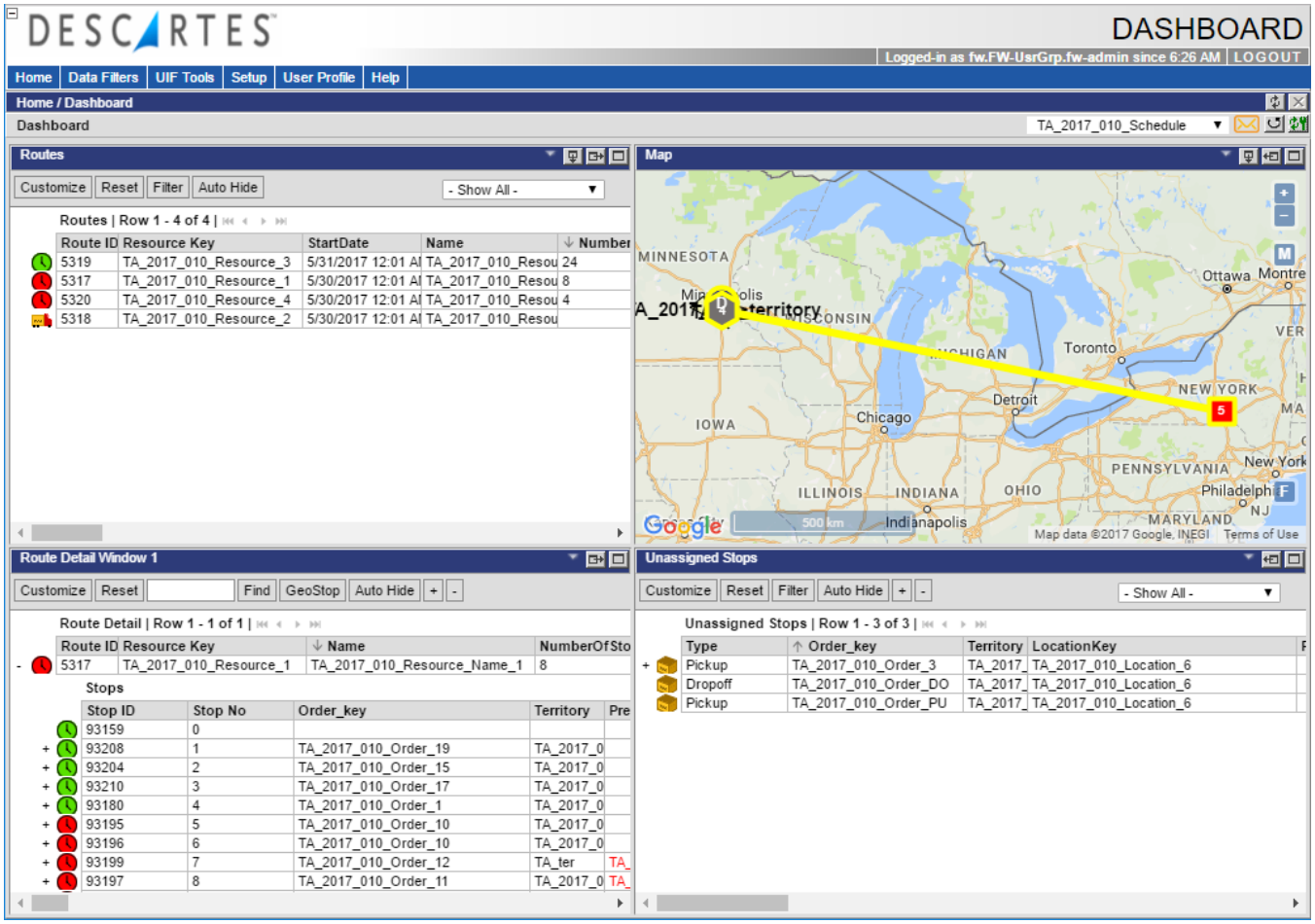


Users can find these options on the following list pages:

- **Data > Schedules**
- **Data > Locations > List**
- **Data >Orders > List**
- **Data > Resources > List**
- **Assets**
- **Data > Assets > Drivers > List**
- **Data > Assets > Trailers > List**
- **Data > Assets > Trucks > List**
- **Data > Buckets**
- **Templates**
- **Data > Templates > Schedules**
- **Data > Templates > Routes**
- **Data > Templates > Stops**
- **Data > Templates > Buckets**
- **Data > Templates > Message**
- **Data > Territories**
- **Data > Product Types**
- **Data > Alert Codes**

Using the Planning and Dispatching Lite Dashboard (Beta)

Descartes Route Planner has been enhanced with a new version of the Planning and Dispatching Lite Dashboard that can only be used in Google Inc.'s Chrome™ browser. This new version of the Lite Dashboard is released in a Beta mode and will allow users to experience faster rendering speeds. Specifically, the map window of the Lite Dashboard is much faster (up to five times faster) compared to the traditional Descartes Route Planner Dashboard supported only by Microsoft Corporation's Internet Explorer®. It also has limited menu options for both the main menu and context menus. Users can use exactly use the same credentials used in Descartes Route Planner to access this new version of the Lite Dashboard.



Users can access this new version of the Lite Dashboard by using Google Chrome™ only and navigating to the following URL: http://servername/rp. The minimum required version is Google Chrome™ 58.0.3029.110 (64-bit).

The new Lite Dashboard User Interface will eventually (possibly version 17.09) merge with our current Descartes Route Planner Dashboard and will be accessible using either Internet Explorer® or Google Chrome™.

Viewing and Managing Descartes Route Planner Data

Descartes Route Planner data can be viewed and managed from three different perspectives: the Schedule perspective, the resource perspective, and the order perspective. Depending on what information is desired, it can be accessed from one of these perspectives.

> ***Example:*** *If, as a customer service representative, a user is trying to determine the status of a customer's order, they can use the order perspective. If, on the other hand, the user is a resource manager responsible for maintaining the motor pool, they will probably use the resource perspective.*

This section walks through the Schedule perspective and shows how the different data tables are interrelated.

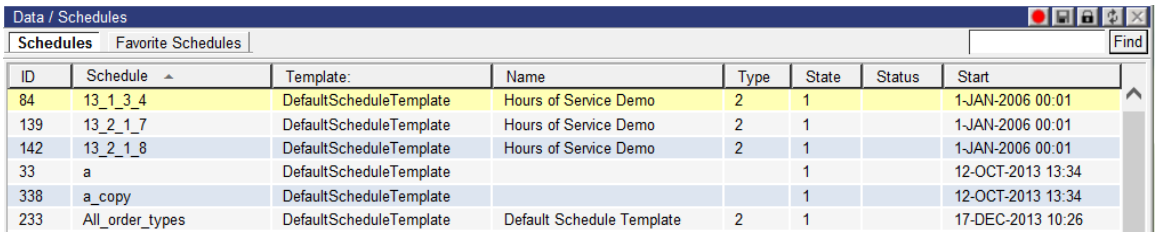
Managing Schedules

Accessing the Schedule List

To access the Schedule list:

1 From the main menu, select: **Data > Schedules**.

The **Schedules** list appears:



ID	Schedule	Template:	Name	Type	State	Status	Start
84	13_1_3_4	DefaultScheduleTemplate	Hours of Service Demo	2	1		1-JAN-2006 00:01
139	13_2_1_7	DefaultScheduleTemplate	Hours of Service Demo	2	1		1-JAN-2006 00:01
142	13_2_1_8	DefaultScheduleTemplate	Hours of Service Demo	2	1		1-JAN-2006 00:01
33	a	DefaultScheduleTemplate			1		12-OCT-2013 13:34
338	a_copy	DefaultScheduleTemplate			1		12-OCT-2013 13:34
233	All_order_types	DefaultScheduleTemplate	Default Schedule Template	2	1		17-DEC-2013 10:26

2 From the **Schedules** list, users can right-click on a desired Schedule and select from the following options:

- **Edit**
- **Add to Favorites**
- (view) **Routes**
- (view) **Unassigned Stops**
- (view) **Buckets**
- (view) **Template**
- **Reset from Template**
- **Copy Schedule**
- **Clear All Schedule Data**

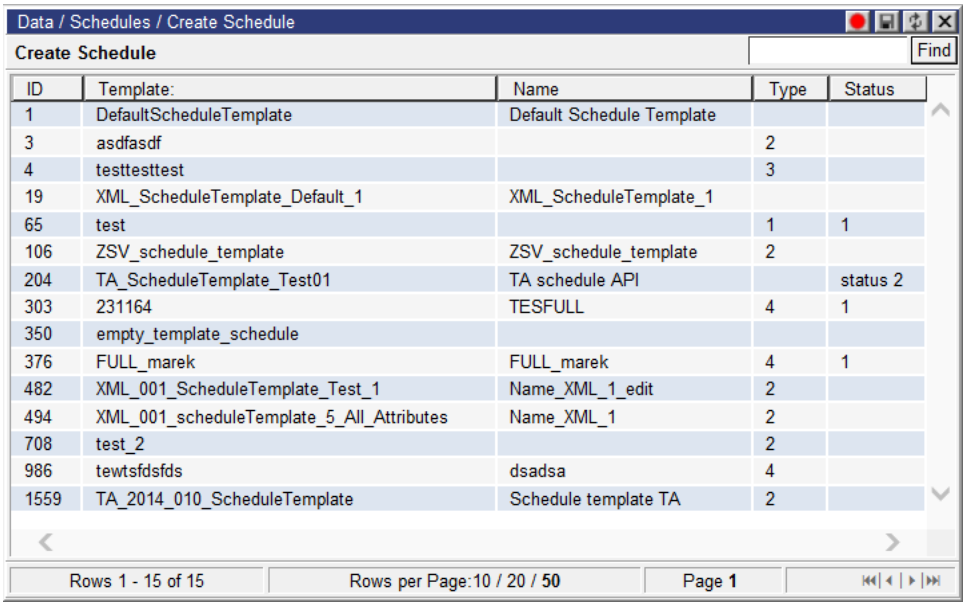
- **Delete Schedule**
- (Create a) **New** (Schedule)

Creating a New Schedule

To create a new Schedule:

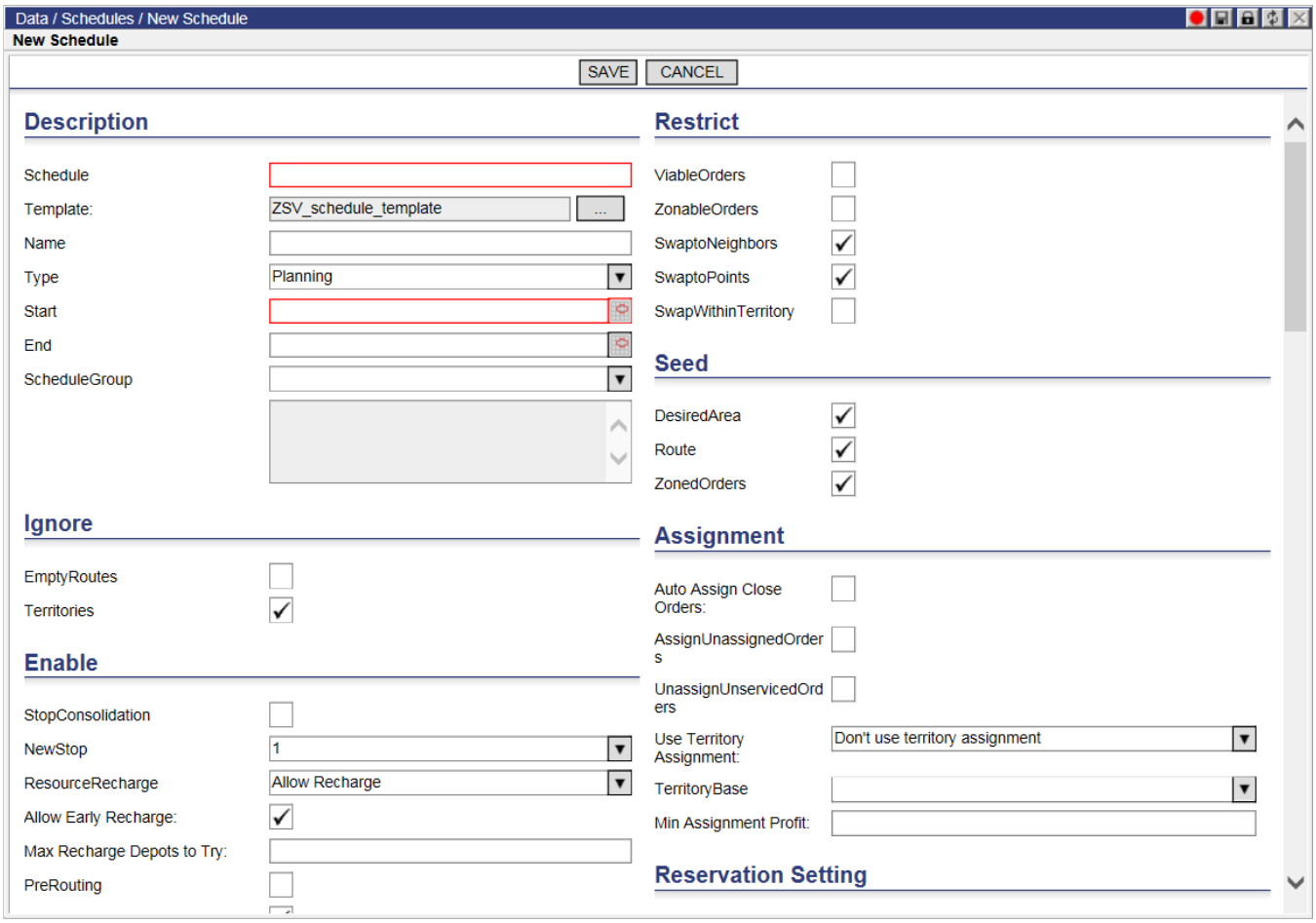
1 From the Schedules list, right-click and select **New**.

The **Create Schedule** page appears:



2 Right-click on a template and select **Create**.

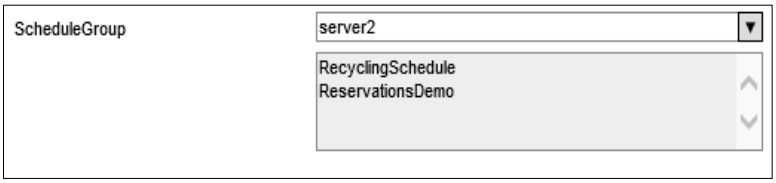
The **New Schedule** page appears:



3 Enter a name for the Schedule in the Schedule field.

4 Enter a start date and time, or click the calendar icon and select a date and time.

5 Select a Schedule Group. The system will display all other schedules in the same group.



6 Enter or select any additional data from the appropriate fields (see *Viewing and Editing Schedule Details* below for more detail on each section and field).

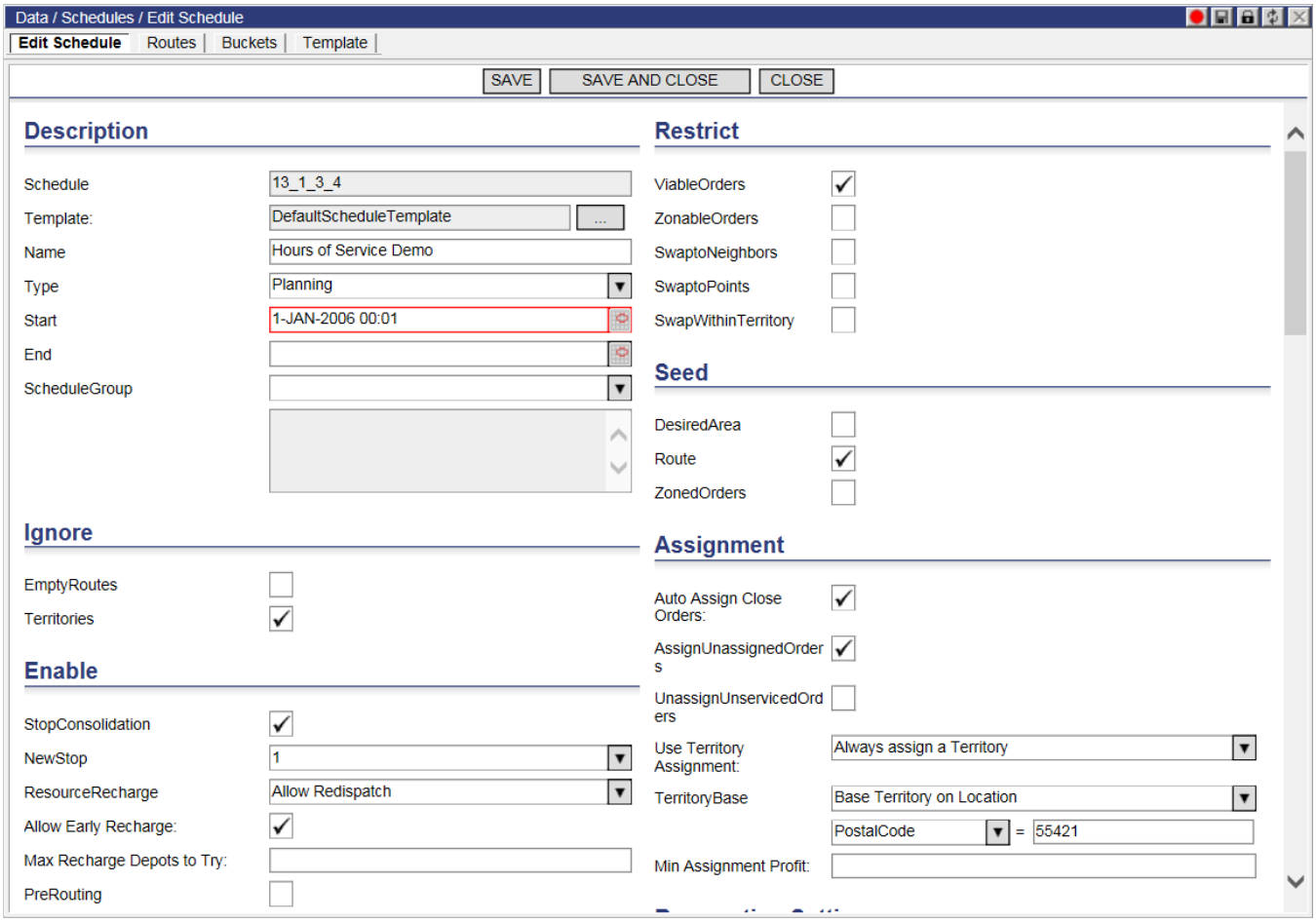
7 When finished entering data, click **Save**.

Viewing and Editing Schedule Details

To view and edit the details of a Schedule:

1 Double-click the desired Schedule, or from the **Schedules** list, right-click on the desired Schedule and select: **Edit.**

The **Edit Schedule** page appears:



2 To edit, modify or add data in the appropriate fields (see *Edit Schedule Field Descriptions* below for more detail on each section and field).

3 When finished entering data, click **Save**.

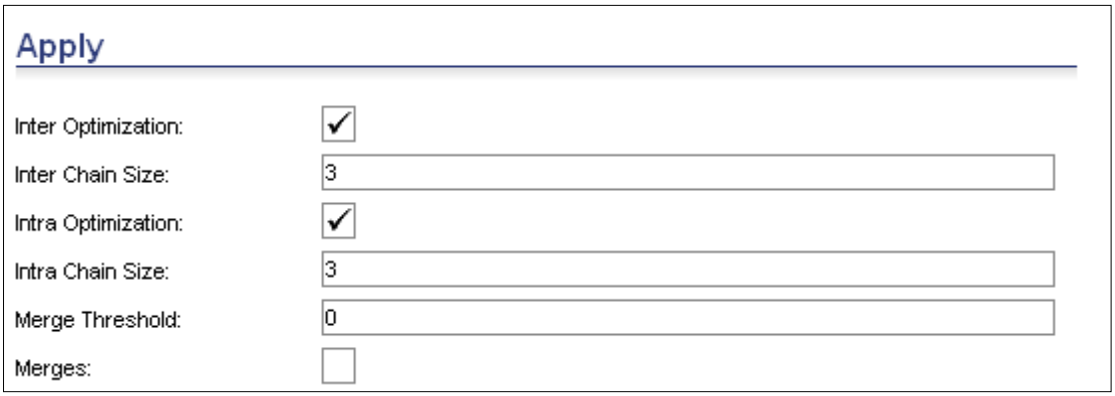
Edit Schedule Field Descriptions

➲ **Note—** Any settings changed and set in the User Interface (UI) takes precedence over the same settings in other places such as the database and rimpi.ini file. These settings are stored in the

FWSchedule table. If any fields are left as NULL, then values and settings are taken from the rimpi.ini file. If no values are in the UI or Rimpi then the defaults are assumed.

All time values in the LNOS database are set in seconds. LNOS will convert the data into the correct format for Rimpi automatically.

Apply section



InterRoute Optimization - InterRoute Optimization moves jobs between routes. It consists of three steps:

1. The Optimizer examines each pair of routes to find chains (or sequences) of jobs that can be moved between two routes.
2. The Optimizer attempts to merge routes, by adding one route to the end of another.
3. If different resources have different cost structures, the Optimizer attempts to exchange entire routings between resources to find the most efficient assignment of resource to routing.

IntraRoute Optimization - IntraRoute Optimization moves jobs within a single route. The Optimizer examines each route to find chains (or sequences) of jobs that can be moved within the route to create an efficiency improvement.

Chain size - The recommend/standard figure here is four. The larger the chain size the longer the optimization takes because it has more combinations of jobs to try and move. Therefore it depends how quickly you want the optimization to finish. If you are after the best possible quality and have no time constraint increase its size.

Merges - Determines if the Optimizer attempts to merge routes or not. If the box is checked (true – 1), the Optimizer will attempt to merge two routes if the

resulting route would have a total length less than MergeThreshold. If the box is not checked (false – 0), then the Optimizer will not attempt to merge routes.

The default is false (unchecked). Merging should only be used when routes are small.

➲ **Note—** The majority of customers have merging turned off. For Descartes Route Planner users using the BGO this setting doesn't matter; the BGO effectively tries merging in its Inter/Batch Assign phase where it takes a group of compatible routes, unassigns all the jobs from them and then batch assigns them back onto the same routes.

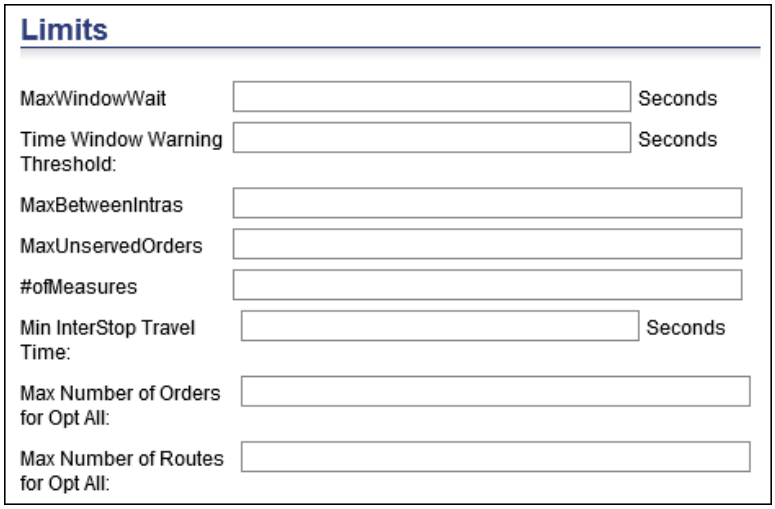
MergeThreshold - Maximum route length that can be created by merging two routes. See Merges above. This is recommended when you have an expected number of stops for a resource.

The default is zero (0). When set to zero, the Optimizer will not attempt to merge routes. Merging should only be used when routes are small.

If a job needs to stay on the current day it is on see note below:

➲ **Note—** An inter optimization tries to improve the quality of the routes and remove violations. Moving a job to a route to the wrong day would put it in violation so it is extremely unlikely to do that. The only reason it might possibly do that is if the job was already missing its time window and the cost and penalties that are being used make it incur less penalties by moving it to another day. Generally if a job can't be serviced during its time window then the optimizer will put it on a route such that it incurs the least penalties and cost. So when determining the costs and penalties for an implementation, you need to decide what you want to happen if a job can't be serviced in its window. Should it be placed on a route so that it is as close to its time window as possible or should it be placed next to a job at a close by location. This is determined by either making mileage costs high or the MissedTimeWindowPenalty high.

Limits



MaxWindowWait - This is ideally used for batch optimizations to determine how long a resource can wait outside a customer location for the time window to open. If you are not using batch processing and using reservations then this figure needs to be set to the length of the longest route. If using batch processing, then a good figure would be twenty minutes, if using reservations leave blank, this will then default to twenty-four hours.

For example, you may have a window for a resource from 7:30am till 5pm. If one job is put on the resource for a 2-4 time window and your max window wait is twenty minutes, then a violation will be occur.

MaxBetweenIntras - When non-zero, during the Assignment Process, the Optimizer runs an IntraRoute Optimization pass every time the specified number of jobs is assigned to a route. For example, if the setting is ten, IntraRoute Optimization runs after the Optimizer has assigned ten jobs, twenty jobs, thirty jobs, and so on.

The default is zero.

➲ **Note—** If you have a tightly constrained problem, such as narrow time windows or capacity constraints, using this setting can help generated better assignment answers because it slows down the Assignment Process.

MaxBetweenIntras - Having this set to zero makes optimizations take longer but can give better results. All jobs still get assigned.

MaxUnservedOrders - The maximum number of unserved jobs that can be assigned. A value of -1 places no restriction on unserved jobs.

The default value is -1 (no restriction on unserved jobs).

➲ **Note—** This is an approximate setting. Under certain conditions generally related to cost structure, the Optimizer can assign more unserved jobs.

There has never been a case where this has not been set to -1.

# of Measures - This is the schedule setting NumMeasures. It is important to set this correctly. If you are using two measures and have this set to one then the optimizer will ignore the second measure. You can have up to nine measures. For example, if you have five measures and this value is set to three, it will only use the first three measures.

Min InterStop Travel Time – Allows users to enter a minimum value for the travel time to be used between two GeoStops. If RMPI calculates the travel time of a route between GeoStops and the resulting time value is less than the entered Min InterStop Travel Time, the Min InterStop Travel Time is used instead.

Max Number of Orders for Opt All – Allows users to set a maximum number of assigned and unassigned orders to be sent to RMPI via Optimize All. If a set of orders exceeds the set maximum, the system returns a warning message.

Max Number of Routes for Opt All – Allows users to set a maximum number of routes to be sent to RMPI via Optimize All. If a set of routes exceeds the set maximum, the system returns a warning message.

Restrict

Viable Orders - RestrictToDoableJobs. Generally this should be set to on. If a job is not doable; its measures exceed the capacity of all resources. For example, if no resource is working during its delivery window, then the optimizer will ignore it and not waste time trying to assign it.

Zonable Orders - Determines if the Optimizer assigns jobs with a territory. If the box is checked (true – 1), then only jobs that have a territory will be assigned. If the box is not checked (false – 0), then the Optimizer performs the following tasks:

1. assigns all jobs that have a territory
2. tries to assign the rest of the jobs

The default value is false (not checked).

➲ **Note—** To prevent violations caused by the Optimizer from occurring set the Zoneable Orders setting to true.

Swap to Neighbors - Limits InterRoute Optimization to swapping between routes that are in close proximity. This may improve the Optimizer's performance. If the box is checked (true – 1), then the Optimizer will only examine pairs of routes that are close together. If the box is not checked (false – 0), then the Optimizer will examine all pairs of routes subject to zone definitions.

The default value is false (not checked).

➲ **Note—** This should be set to true (checked) if the zones are not well-defined. Otherwise you might miss swap opportunities if capacities are included.

Swap to Points - Limits InterRoute Optimiziation to swapping jobs that are in close proximity. This may improve the Optimizer's performance. This should only be used if "Error! Reference source not found." is set to true (1). If the box is checked (true – 1), then the Optimizer will only examine pairs of jobs that are close together and on neighboring routes. If the box is not checked (false – 0), then the Optimizer will examine all pairs of jobs.

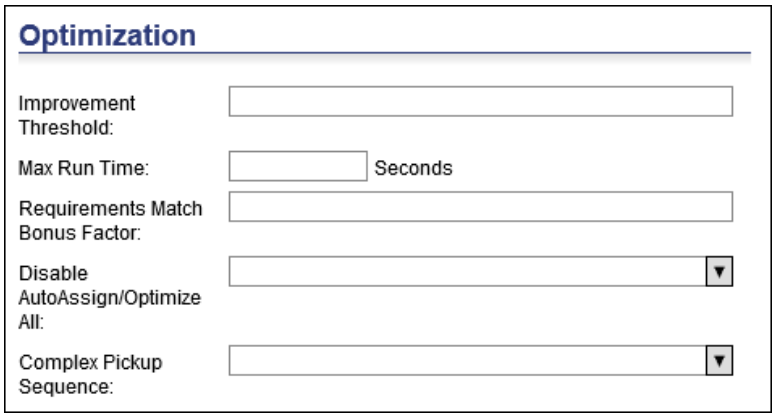
The default value is true (checked).

➲ **Note—** If the value is not true, then you might miss swap opportunities if capacities are included.

Swap Within Territory - Determines if the Optimizer limits job swapping to within territory. If the box is checked (true – 1), then job swapping is limited to same territory only. If the box is not checked (false – 0) then job swapping is controlled by the [Swaps] section of the zone file.

The default value is false (unchecked).

Optimization



Improvement Threshold - During the Improvement Process, the Optimizer will not consider any route change if the net profitability improvement is smaller than this number. The default setting of approximately 0.1 allows the Optimizer to find improvements that save miles while ignoring changes that save feet.

➲ **Note—** Smaller numbers may mean longer run times.

Max Run Time - This setting is defined in seconds and allows users to specify a maximum running time for an optimization run.

Requirements Match Bonus Factor – Multiplier ranging between 0 and 1 which, when multiplied to an order's profit, produces a bonus profit to be added to a route profit. The bonus gets effective only when the order's requirements are met by the resource's capabilities. Default is 0.01.

Disable AutAssign/Optimize All – This setting has two options.

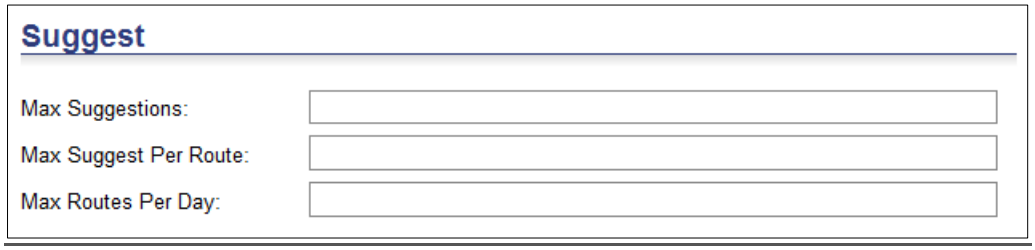
- **Disable Optimize/AutAssign All**: When selected, the **Optimize All** and **Auto Assign All** options will be hidden from right-click menus.
- **Disable Optimize/AutAssign All/Selected:** When selected, the following options will be hidden from right-click menus:

- **Optimize All**
- **Auto Assign All**
- **Optimize Selected** on the **Unassigned Stops** quadrant
- **Optimize Selected**, when more than one non-frozen routes are selected on the **Route Summary** page or **Route Detail** quadrants
- **Optimize Selected**, when multiple unassigned stops are selected on the map or multiple non-frozen routes are selected on the **Map** quadrant
- **Auto Assign** on the **Unassigned Stops** quadrant or when multiple unassigned stops are selected on the **Map** quadrant

Complex Pickup Sequence – This field allows users to specify to RMPI the sequence of pickups for double-ended jobs at the same depot based on the delivery sequence:

- **null:** Last in, first out (LIFO)
- **1:** Last in, first out (LIFO)
- **2:** First in, first out (FIFO)

Suggest



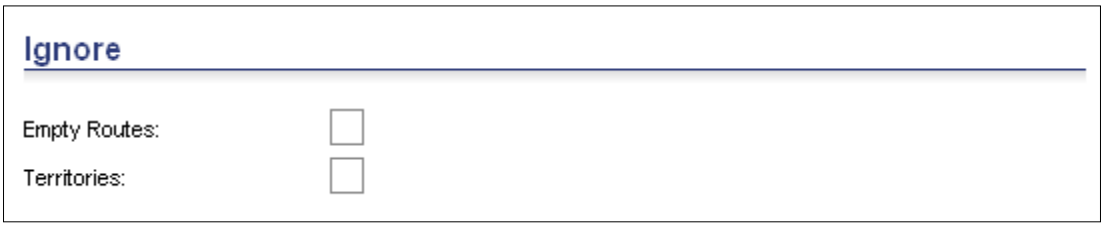
➲ **Note—** These settings apply to both the **Suggest** and **Suggest Order** functions.

Max Suggestions - Max Number of suggests to be returned during a suggest call.

Max Suggests Per Route - Max Number of suggests returned per route.

Max Suggests Per Day – Max Number of suggests returned per day.

Ignore



Empty Routes - Determines if resources without assigned jobs are considered during inter-route swapping. If the box is checked (true – 1), then the Optimizer will only consider resources that already have jobs assigned. If the box is not checked (false – 0), then the Optimizer will consider all resources.

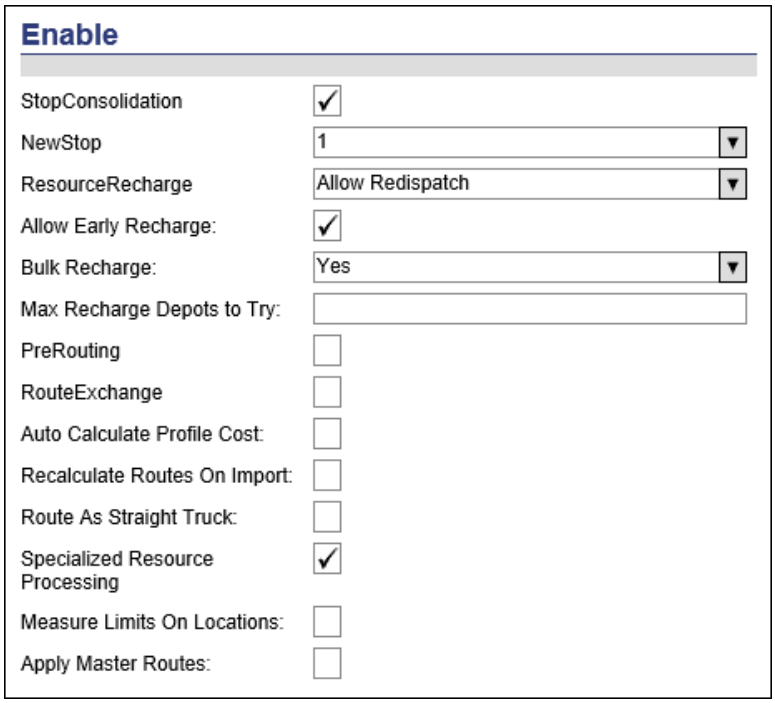
The default value is false (not checked).

➲ **Note—** This setting is ignored during the Assignment Process.

Territories - Determines if territories are ignored. If the box is checked (true – 1), then territories will be ignored. If the box is unchecked (false – 0), then territories will be used.

The default is zero.

Enable



Stop Consolidation - Determines the Rmpi handling of multiple jobs for the same stop (see NewStop) with identical time window constraints. If the box is checked (true – 1), then servicing the first job in the group implies that all jobs for the same stop are serviced successfully. If the box is not checked (false – 0), then each distinct job is evaluated against its distinct job is evaluated against its distinct EarliestTime/LatestTime window (or Open/Close) constraints for success or failure in servicing.

New Stop - Determines what represents a stop in Rmpi and Stop Numbering in Schedule. The values are:

- 0 – Every customer is a new stop (even if same address/location).
- 1 – Each Customer Location ID is a new stop (even if same address/location). For example, if a customer has two deliveries, then this is classed as 1 stop.
- 2 – Each Unique address/location is a new stop (even if Location ID is different).
- 3 – Jobs/Customers that fall within the Resource MinTravelDistanceInFeet setting are considered the same stop (Default MinTravelDistanceInFeet = 150 unless explicitly set in Resource table).

The default value is zero (0).

➲ **Note—** Use this option if you have a lot of deliveries to the same stop. If you set service duration in the database and have a lot of stops in the same place, then your timing could be inaccurate.

Resource Recharge – Enable recharge or redispatch for the schedule.

Bulk Recharge – Instructs RMPI to use incoming actual measures data from Descartes Mobile to calculate recharges forward for single-ended jobs.

Max Recharge Depots to Try - Speeds up optimizations. RMPI only considers the closest recharging sites based on this value.

Pre Routing - Determines if pre-routing is used. If the box is checked (true – 1), then the Optimizer uses pre-routing. If the box is not checked (false – 0), then the Optimizer does not use pre-routing.

The default value is true (checked).

➲ **Note—** Pre-routing reuses routes that it has made before. It makes the process of assignment quicker, but it also might give you slightly less accurate routes. However, it is recommended that it is turned on (checked). It should only be set to false (unchecked), if the cache file contains all (or the vast majority) of the required road distances. In this case, pre-routing slows optimization slightly wasting time determining that no routings are needed.

Route Exchange - Determines if the Optimizer will attempt to swap routes between resources. If the box is checked (true – 1), then the Optimizer will attempt to

swap entire routes between any pair of eligible resources (in accordance with zone files, capabilities, etc.). This is useful when resources have different cost structures (such as different driver pay), or are based at different depots. If the box is unchecked (false – 0), then the Optimizer will attempt to swap entire routes.

The default value is false (unchecked).

Auto Calculate Profile Cost – Allows the system to calculate costs of routes based on Cost Profiles.

Measure Limits on Locations – When enabled, performs a capacity check at each delivery location to ensure weight and security restrictions are met.

Route as Straight Truck – When enabled, sets to Straight Truck, overriding the resource setting

Apply Master Routes – When enabled, the system will attempt to assign unassigned orders to routes generated from master routes before assignment to other routes

Seed

Seeding routes is the process of identifying the difficult jobs (jobs with tight constraints), and assigning them before the easier jobs.

Zoned Orders - Determines if seeding is restriced to zoned jobs. If the box is checked (true – 1), then it restricts seeding to zoned jobs. Un-zoned jobs are never used as seeds. If the box is not checked (false – 0), then it allows seeding with un-zoned jobs. The Optimizer will never seed with more than one un-zoned job in a single pass.

The default value is false (unchecked).

➲ **Note—** It is recommended that it should be set to true (checked) if all jobs are expected to be zoned. It should be set to false (unchecked) if there is a mix of zoned and un-zoned jobs.

Route – Seeding routes is the process of identifying the difficult jobs (jobs with tight constraints), and assigning these jobs ahead of easier jobs. The Optimizer can then try to fill in around the difficult jobs.

- **Y:** Optimizer seeds routes.

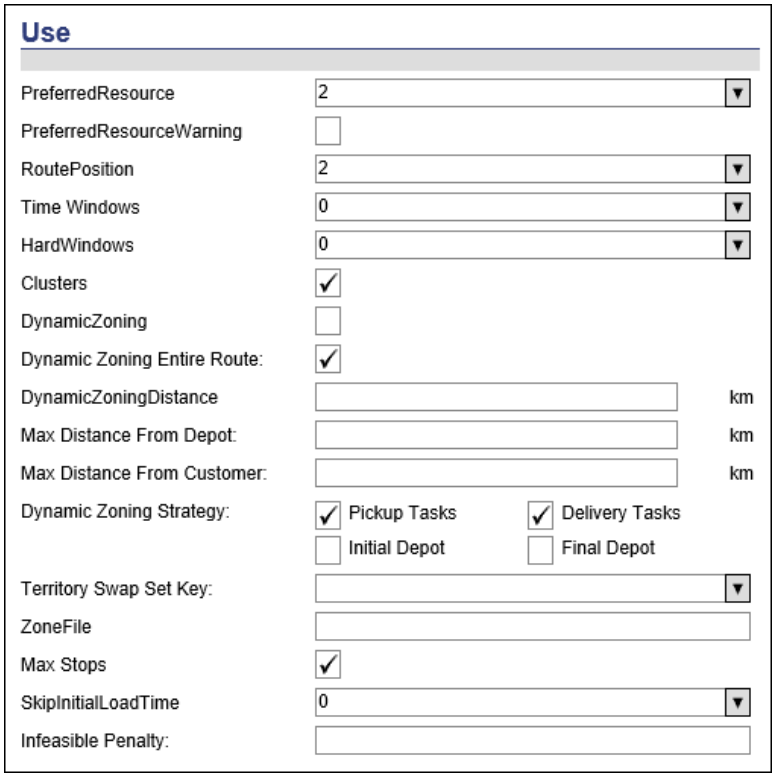
- **N:** Optimizer does not seed routes.

Desired Areas - Enables improved handling for seeding with multiple depots. If the box is checked (true – 1), it prevents usable seeds from being assigned to the wrong area. If the box is not checked (false – 0), then it does not affect assignment.

The default value is true (checked).

➲ **Note—** This is especially useful in multi-depot settings where seed jobs might otherwise get assigned to a route with an inappropriate depot. Generally this should be set to true (checked), unless Assignment Process is producing bad answers.

Use



Preferred Resource - Determines the treatment of jobs' RestrictPreferredRoute attributes. The valid values are:

- 0 – Ignore jobs' PreferredRoute attributes. Overrides jobs' RestrictPreferredRoute attributes. It is equivalent to selecting all jobs and setting RestrictPreferredRoute to false (0).
- 1 – Use jobs' PreferredRoute attributes. Overrides jobs' RestrictPreferredRoute attributes. It is equivalent to selecting all jobs and setting RestrictPreferredRoute to true (1).
- 2 – Use PreferredRoute attributes on jobs that have RestrictPreferredRoute set to true (1).

The default value is to UsePreferredRoute default schedule setting.

Preferred Resource Warning - Determines whether a job that is not on a preferred resource is represented as a violation or a warning. If the box is checked (true – 1), then the job is displayed as a warning. If the box is not checked (false – 0), then the job is displayed as a violation.

For baselines, have this option set to false (not checked) because you want jobs to saty on their set resource.

Route Position - Determines the treatment of tasks' RoutePosition attributes and jobs' Restrict[Type]RoutePosition attributes. The valid values are:

- 0 – Ignore tasks' RoutePosition attributes. Overrides jobs' RestrictRoutePosition attributes. It is equivalent to selecting all jobs and setting RestrictRoutePosition to false (0).
- 1 – Use tasks' RoutePosition attributes. Overrides jobs' RestrictRoutePosition attributes. It is equivalent to selecting all jobs and setting RestrictRoutePosition to true (1).
- 2 – Use RoutePosition attributes on jobs that have RestrictRoutePosition set to true (1).

The default value is the RoutePosition default schedule setting.

Time Windows - Controls the application of a job and customer/depot time windows. The valid values are:

- 0 – Apply any job time windows. Otherwise use customer/depot time windows.
- 1 – Apply customer/depot time windows only. Ignore any job time windows.
- 2 – Ignore all time windows. Only apply resource start and end times.

The default value is the TimeWindows default schedule setting.

➲ **Note—** This setting's name may be misleading. This is not a Boolean attribute: a value of zero (0) does not turn time windows off, and a value of one (1) does not turn them on.

Hard Windows - Determines handling of Window LatestTime fields. The valid values are:

- 0 – Job must be started by WindowLatestTime.
- 1 – Job must be completed by WindowLatestTime.
- 2 – Handling is determined by the job's Window Type attribute. If Window Type is zero (0), then the time window is arrival-based. If it is one (1), then the time window is completion-based.
- 3 – Handling is determined by the job's location time and order date.

The default value is the WindowLatestTime default schedule setting.

➲ **Note—** Use this setting when you have or need to have hard time windows. For example, if in your database you have a time window for a job between 12pm and 1pm, then with this setting, you can specify whether the job has to arrive by 1pm or be completed byt 1pm. If you have it set to option one (1), and the job is not completed by 1pm, then a violation is caused.

Clusters - Turns clustering on and off. Clustering encourages the Optimizer to assign jobs that are near each other on the same route. Nearness is decided by a

number of factors. Two jobs for the same client at the same location are usually near, as are two jobs for clients across the street from each other. Using clustering can speed up the Assignment Process. If the box is checked (true – 1), then the Optimizer attempts to keep jobs that are near to each other on the same route. If the box is not checked (false – 0), then the Optimizer does not cluster nearby jobs.

The default value is true (checked).

➲ **Note—** Clusters can be used only if there are no more than 65,535 jobs. Use AutoAssignCloseJobs to put all jobs for a single customer on the same route regardless of whether or not they will be served.

➲ **Note—** This is not really relevant in reservations, so it can be switched off. If you are using batch assignment, then it is recommended that it is switched on so that it can speed up the Assignment Process.

DynamicZoning –Allows Optimizer to make appropriate geographic decisions based on the current set of orders in the system. Unlike "static" zones (which must be pre-determined in the data set using the "Zone" attributes), Dynamic Zoning allows the set of Resources/Jobs allowed for any given optimization to change over time based on the current assignment of jobs.

Dynamic Zoning Entire Route – When Dynamic Zoning Entire Route is enabled, all the stops on a route as determined by the DynamicZoningStrategy setting must be within the DynamicZoningDistance value of each other. So if DynamicZoningStrategy is set to include pickup and dropoff stops and not Initial and Final Depots (default setting) then all the pickups and dropoffs must be within the DynamicZoningDistance of each other calculated straight line.

When Dynamic Zoning Entire Route is disabled, each stop on a route, as determined by the DynamicZoningStrategy setting, must be within the DynamicZoningDistance value of one other stop on the route. So if DynamicZoningStrategy is set to include pickup and dropoff stops and not Initial and Final Depots (default setting) then all the pickups and dropoffs must be within the DynamicZoningDistance of at least one other pickup or dropoff, calculated straight line.

DynamicZoningDistance – Radius (in meters) around Job or Route that determines distance threshold for inclusion in DynamicZoning.

Max Distance from Depot – Maximum as-the-crow-flies distance away from initial depot of resource.

Max Distance from Customer – maximum distance to path between any two customers. This setting only applies to customers using external pathing and is different from dynamic zoning. If both dynamic zoning and this setting are specified, the maximum distance between customers should be larger than the

dynamic zoning distance; otherwise the optimizer will only plan routes for the lesser of the two.

Dynamic Zoning Strategy – Applies dynamic zoning granularly to Pickup Tasks, Delivery Tasks, Initial Depot and/or Final Depot.

Territory Swap Set Key – This field stores the name of the Territory Swap logic.

Zone File - Full path name of a file containing zone information. A zone file is a simple ASCII text file usually with a .lza file extension. You can use a zone file to define major and minor zones job zones.

A job zone is determined using the following precedence:

- The value in the job's Zone attribute, if any.
- The Zone attribute on the customer record for the last task of the job:

Job Type	Description	Last Task
0	Drop-off only	Drop-off
1	Pickup and Drop-off	Drop-off
2	Pickup only	Pickup
3	Multitask job	Last task record in the job's Task table

The default value is the ZoneFile default schedule setting.

➲ **Note—** When you change the contents of the zone file, RIMMS does not read the changes until you either close and open the schedule, or:

1 Set ZoneFile to blank.

2 Set ZoneFile back to its original value.

3 Click on a route to update the route display.

Max Stops - Determines if RiMMS uses MaxStops when it optimizes the schedule. If the box is checked (true – 1), then it uses the MaxStops attribute. If the box is not checked (false – 0), then it ignores the MaxStops attribute.

The default value is the MaxStops default schedule setting.

SkipInitialLoadTime – With this option activated, double-ended orders will not incur any service duration when the pickup portion of the job takes place at the start of the route and at the initial depot of the resource, assuming the vehicle starts its route in a loaded state.

Infeasibility Penalty - Penalty only used in combination with the Infeasible constraints checked on in this section.

Infeasibility Tagged Constraints – A string property that applies the 'Infeasible' penalty when constraints fail. This features is designed to make some constraint violations less desirable, and this along with MinAssignmentProfit will prevent the assigner from generating routes with these constraint violations.

InfeasibilityTaggedConstraints can take a combination of the characters (C, D, S, R, T, W, Q, M). The following character codes will apply InfeasiblePenalty for:

- C - for Capacity
- D - for Maximum Distance
- S - for Maximum Stops
- R - for Requirements
- T - for Resource Time Window
- W - for Task Time Window
- Q – Route Position Violation
- M - for Commodity Constraints

For example, an Infeasibility Tagged Constraints 'CR' will apply the Infeasible penalty to a route stop if it is infeasible with respect to capacity constraint or requirements (C or R).

SameStopSlots – Encourages the return of the same slots if there is already a stop in the same location as the requested advise

Turbo Advise – Activates turbo advise functionality

Max Routes Per Day – Maximum number of routes per day to be considered for turbo advise

Max Empty Routes – If Max Empty Routes is set, the BGO can include up to this number of empty routes while searching for compatible used routes for batch assign.

Turbo Advise Stem Distance – Radius from the order where available routes will be considered for turbo advise

External Road Router – Map edit server URL used for RMPI routing. Please see the *Precedence of External Router (Pather) URL* section for more information.

Alt External Road Router – Alternate map edit server URL used for RMPI routing. Please see the *Precedence of External Router (Pather) URL* section for more information.

Set Route Position when Locking Route – Checkbox that sets route priority when locked. **Use Call Out/Notification –** Activate or deactivate Callouts/Notifications for this org

Call Out/Notification Profile – This field will identify the primary key of the Callout/Notification Profile to use

Sequence Same Stop Jobs – Configures the optimization sequence of multi-order stops:

0: Do not apply

1: Sequence deliveries before pickups by location key

2: Sequence deliveries first and then pickups by location key

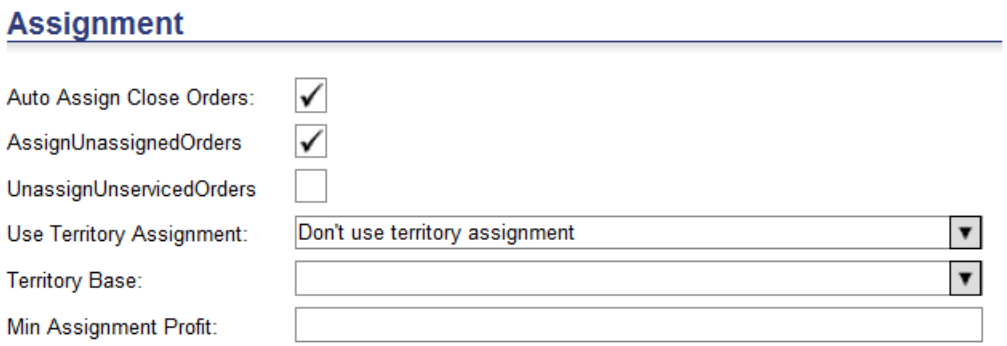
Violation Penalty From Profit Factor (default value of 0.0): This field accepts a value between 0.0 and 1.0:

- When set to 0.0, no additional penalty is incurred (missed time window violations, excessive number of stops and stop order will each have their own penalty factors)
- When set to 1.0, all profit is added on as an additional penalty (missed time window violations, excessive number of stops or stop order will each have their own penalty factors)
- When set to 0.5, all profit is added as an additional penalty equal to half the task profit. Essentially, the profit for that stop increases by (1 - 0.5), multiplied by the task_profit.

Ignore Service Profit On Violation (default enabled): When enabled, regardless of the value of the Violation Penalty From Profit Factor field, violated stops will not

contribute profit and no additional penalty is picked up other than missed time window violations, excessive number of stops or stop order issues. When disabled, the task profit is incurred completely for stops in violation.

Assignment



Auto Assign Orders - If the box is checked (true – 1), then the Optimizer attempts to assign orders to resources. If the box is not checked (false – 0), then the Optimizer does *not* run the Assignment Process.

Assign Unassigned Orders - If the box is checked (true – 1), then the Optimizer runs the Assignment Process and attempts to assign unassigned jobs to resources. If the box is not checked (false – 0), then the Optimizer does not run the Assignment Process and runs the Improvement Process only. It does not assign any of the remaining unassigned jobs.

Unassign Unserviced Orders - Determines if jobs that cannot be serviced are removed from routes. If the box is checked (true – 1), then after the optimization is complete, the Optimizer will remove jobs that cannot be serviced leaving such jobs unassigned. If the box is not checked (false – 0), then the Optimizer will not remove jobs that cannot be serviced.

The default value is false (not checked).

➲ **Note—** This option should be set to false (not checked) or you could end up with a lot of unassigned jobs.

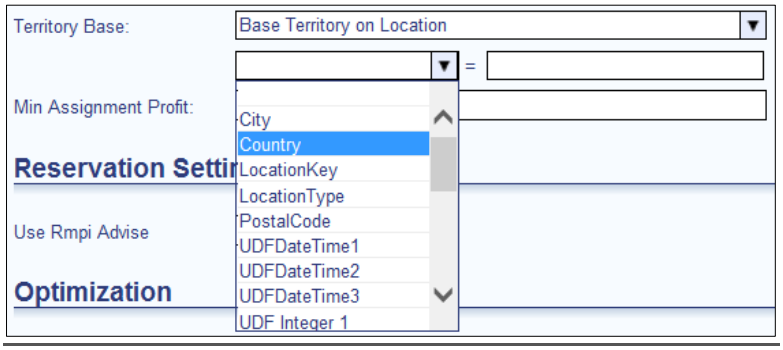
Use Territory Assignment - Determines whether or not a Planner or Dispatcher can assign territories from the Unassigned Stops right-click menu.

- **Do not use territory assignment** – the functionality will not be used.
- **Automatically assign territory** – enables the **Assign Territory** right-click functionality and also allows Descartes Route Planner to automatically assign a territory when the order is created.
- **Assign territory only when territory is null** - enables the **Assign Territory** right-click functionality and also allows Descartes Route Planner to

automatically assign a territory if the Territory field is null when creating the order.

Territory Base - Users can select one of the following options from this menu:

- **Base Territory on Delivery**
- **Base Territory on Pickup**
- **Base Territory on Location:** When this option is selected, an additional drop-down menu appears with a description field, allowing users to select a City, Country, LocationKey, Postal Code and various UDF fields to define the territory. Use the operators used in the filters to match the value.



Min Assigned Profit – Minimum incremental profit that a job must provide in order to be assigned. Number set too small may allow for job violations to be assigned. Number set too high will run longer and may lose potential negative net Job profit assignments, even when net Route profit is positive.

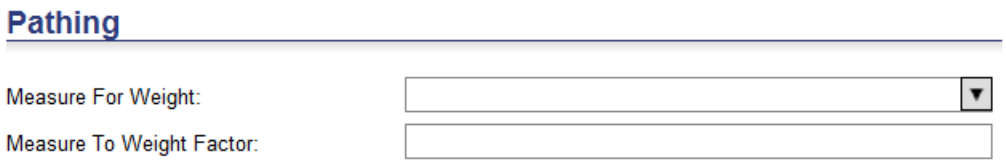
➲ **Note—** A value of zero (0) will usually, but not always, keep all unserved jobs from being assigned. Default value is -10000

Reservation Setting

Use Rmpi Advise – uses Rmpi for advice instead of adapi. It will give more precise return at the expense of performance.

Backhaul Dynamic Zoning Distance – provides distance entry for advise calls with LastNStopForDZ values. If Backhaul Dynamic Zoning Distance is not configured per schedule, the configured CtySysValue equivalent is used. If the distance value entered is zero or is not configured anywhere in the system, backhaul dynamic zoning logic is not included in advise filter.

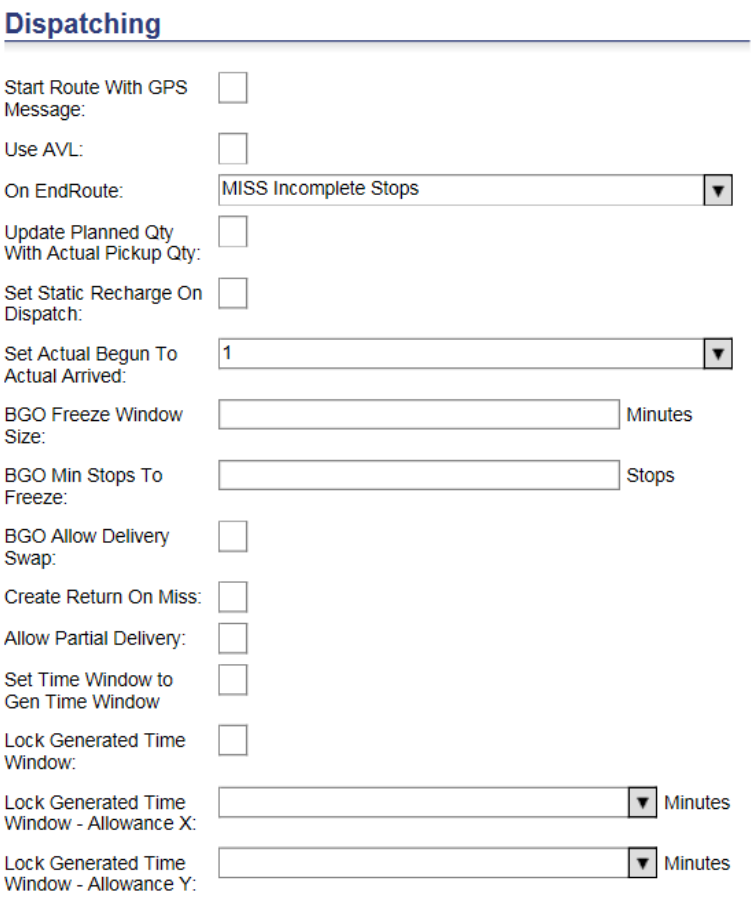
Pathing



Measure For Weight – Select the Measure field you wish to use for weight.

Measure To Weight Factor – Enter the measure to weight factor.

Dispatching



Start Route With GPS Message – if true (selected), a route will be considered dispatched when Descartes Route Planner receives a GPS message. If false (not selected), it needs a status message to dispatch the route.

Use AVL – if true (selected), Descartes Route Planner will calculate AVL related fields after status/GPS messages.

On EndRoute – This setting has the following values:

- **0 or null:** Do not apply
- **1:** Set missed to pending stops on End of Trip
- **2:** Unassign pending stops on End of Trip. When set to 2, the system will unassign any pending or non-complete equivalent status stops of the route and then end the trip. This process will trigger a RMPI update.

Update Planned Qty With Actual Pickup Qty – Update planned measures with actual pickup measures

Set Static Recharge On Dispatch – When this is true, all dynamic recharge will be converted to static recharge when dispatched

Set Actual Begun to Actual Arrived – Sets the Actual Begun timestamp to Actual Arrived

BGO Freeze Window Size – Using the time value (N) entered in this field, any improvement that would assign an order within the next 'N' minutes will be rejected so as to avoid infeasible routes being created when running an execution BGO

BGO Min Stops to Freeze – Using the stops value (N) entered in this field, any improvement that would assign an order to the next 'N' stops will be rejected so as to avoid infeasible routes being created when running an execution BGO

BGO Allow Delivery Swap – When enabled, this setting allows the BGO to swap orders between routes in an execution schedule.

Create Return on Miss – With this setting set to "1", when a stop is marked as "Missed", the system creates a new order, which moves goods from the customer back to the depot. With this setting set to "2", the system can handle cases where multi-task orders with two pickup tasks and a dropoff task would miss the second pickup and therefore the dropoff, making a return unnecessary.

- **0:** Do not create Return on Miss
- **1:** Create Return on Miss
- **2:** Create Return on Miss only for double-ended orders.

Allow Partial Delivery – When enabled, allows multi-task orders to be delivered even if one of the pickups is missed. This setting functions as follows when enabled:

- If one or more pickups are missed (but not all pickups) on a double-ended order, the system will allow drivers to complete the delivery of the pickups successfully completed.
- If the first pickup of a multi-task order is missed, the remaining pickups and their deliveries must remain in "Pending" state.
- If the **Return on Miss** schedule setting is also enabled, if one pickup is missed, the rest of the tasks remain in "Pending" status. If one delivery is missed, a return is created for completed pickups.

Please consider the following examples to illustrate this functionality.

Example 1:

- Return on Miss disabled
- Allow Partial Delivery disabled
- If one pickup is missed, then all other tasks are missed.

Example 2:

- Return on Miss disabled
- Allow Partial Delivery enabled
- If one pickup is missed, the rest of the tasks remain in "Pending" status.

Example 3:

- Return on Miss enabled
- Allow Partial Delivery disabled
- If one pickup is missed, then all other tasks are missed. A return is created for completed pickups.

Example 4:

- Return on Miss enabled
- Allow Partial Delivery enabled
- If one pickup is missed, the rest of the tasks remain in "Pending" status.
- If one delivery is missed, a return is created for completed pickups.

Set Time Window to Gen Time Window – When this setting is enabled, the system will replace existing time windows with generated time windows based on projected arrival and projected departure values.

Lock Generated Time Window – Locks generated time windows in place so that, when this setting is enabled, the system will return a violation if users attempt to update time windows for a route that fall outside the initial values.

Lock Generated Time Window – Allowance X/Allowance Y – allows users to round down the Projected Arrival Time value to the closest hour within a configurable time interval (X) and round up to the closest hour within another configurable time interval (Y).

For example:

If the Projected Arrival Time is 12:45 and the Projected Departure Time is 13:00, then X = 60 and Y = 60. The generated time windows in this case would be calculated as follows:

Projected Arrival Time: (12:45 - 00:60) = 11:45. When rounded down, the value becomes 11:00 hours.

Projected Departure Time: (13:00 + 00:60) = 14:00. When rounded up, the value remains 14:00 hours.

Lock Next Trip on Recharge Complete –This setting has the following options:

- **0:** disabled (default)
- **1:** set route position as trip number

- **2:** set route position as stop number

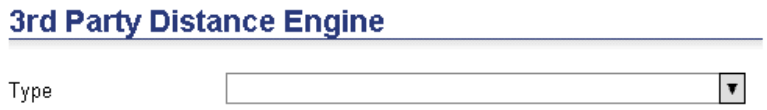
When this setting is enabled, the system will lock all other stops of the next trip, setting both the route position and preferred route.

This setting can be used to allow same-day execution of single-ended orders requiring the route to return to the depot prior to scheduling new work. To ensure this behavior occurs on the first trip, the route must be marked as "Start Empty", allowing a status at the initial recharge to limit the capacity of the remainder of the trip. This feature is useful for customers using reloads that do not work with a single commodity (e.g. Gas).

➲ **Note—** The **Lock Next Trip on Recharge Complete** setting only applies to pickups or deliveries. It will not be applied to double-ended or complex orders.

➲ **Note—** This configuration is only utilized if **Use Route Position** is configured to "1" or "2".

3rd Party Distance

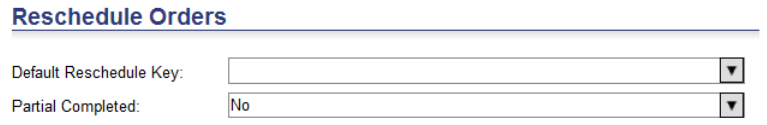


Type – specifies the type of a schedule. Possible values are:

- Reservation
- Planning
- Execution
- Simulation

Only the Execution type can have status/GPS messages.

Reschedule Orders

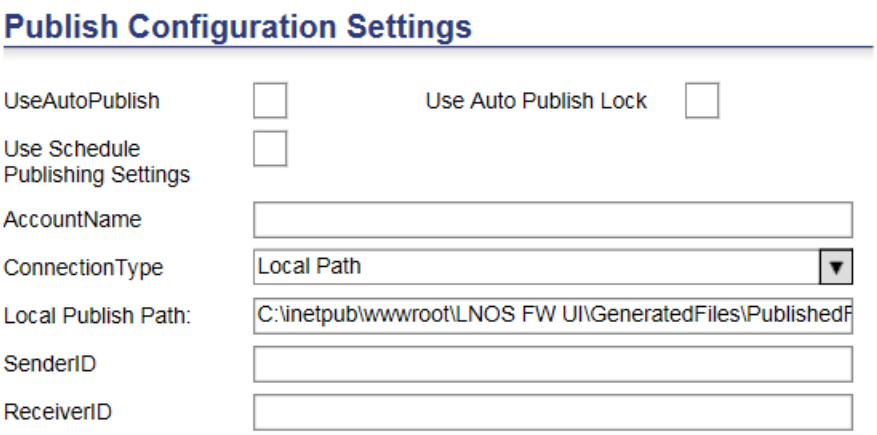


Default Reschedule Key – Default ScheduleKey when a reschedule is called without a destination ScheduleKey

Partial Completed - This field indicates whether or not to allow rescheduling of double or multi-task job orders when only a portion of this order has been completed. Choose one of the following from the drop-down menu:

- **Yes** – Allow rescheduling of orders that have been partially completed
- **No** – Do not allow rescheduling on partially completed orders

Publish Configuration Settings



UseAutoPublish - This checkbox allows users to set this schedule to use the Autopublish routes functionality defined in the AVL parameters for this schedule.

Use Auto Publish Lock – When enabled, this setting will lock the route when the autopublish command XML is sent from Descartes wGLN. By default, the **Use Auto Publish Lock** setting is disabled.

Use Schedule Publishing Settings – Enable or disable the publish settings defined at the Schedule level. If disabled and the global setting is on, then it will use the global publishing settings.

Account Name - Account name for Autopublish functionality. This value will be included in the published xml.

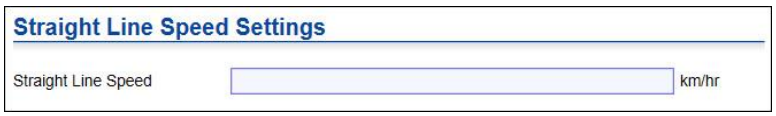
Connection Type - Type of connection to publish data from Descartes Route Planner. The supported connection types are FTP, HTTP and Local Path.

Local Publish Path - If the connection type is Local Path, this field stores the directory path where files will be published.

Sender ID - This field holds the SenderID value to publish in the xml. Normally used to identify the place from which the data is sent.

Receiver ID - This field holds the ReceiverID value to publish in the xml. Normally used to identify the destination of the data.

Straight Line Speed Settings



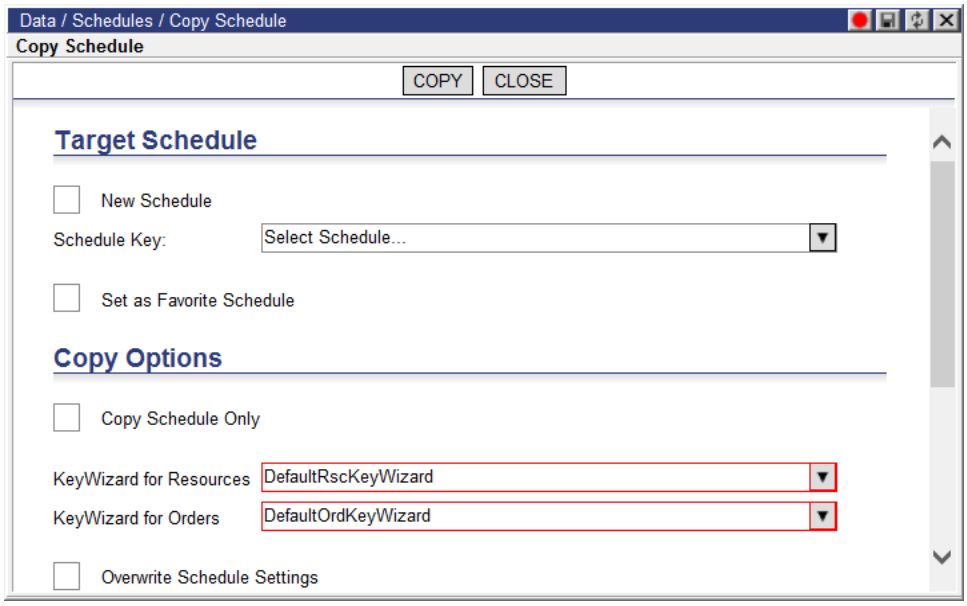
Straight Line Speed – Value used when RMPI cannot find a legal road to navigate from one point to another (m/s)

Copying a Schedule

The **Copy Schedule** window allows an Admin to copy a schedule's schedule, template, data, routes, and master routes.

To copy a schedule:

1 From the **Schedules** list, right-click on the desired Schedule and select **Copy Schedule**.



2 Select the **New Schedule** checkbox.

3 Select the schedule key from the drop-down list.

4 Select the keywizards for the Resources and the Orders.

5 Select the **Overwrite Schedule Settings** checkbox to overwrite the Target Schedule settings with the Source Schedule settings.

6 Select the **Clear Target Schedule Before Copying** checkbox to clear all data on the Target Schedule before copying the new data.

7 Select the **Copy All Data (include non-master-route data)** checkbox to copy all data related to the Source Schedule to the Target Schedule.

Or,

Select **Copy Schedule Only** if the schedule record is the only one that needs to be copied. When this option is selected, the keywizards and the **Copy All Data** option disappear.

8 Select the **Unassign All Drivers and Assets** checkbox to remove all drivers and assets from the copied schedule so that resources can be properly modify resources in the original and copied schedule.

9 Select the **Clear All Actual Data** checkbox have the system copy execution schedules without actual data (reported latitude and longitude values) for schedule modeling purposes. When users copy a schedule with this setting enabled, the system will clear all actual data in the resulting schedule.

10 Enter a value in the Number of Days to Shift field to shift all schedule data by the specified number of days: a positive value shifts dates forward and a negative value shifts dates back. This feature is used when copying live schedules to avoid violating a Descartes Route Planner license.

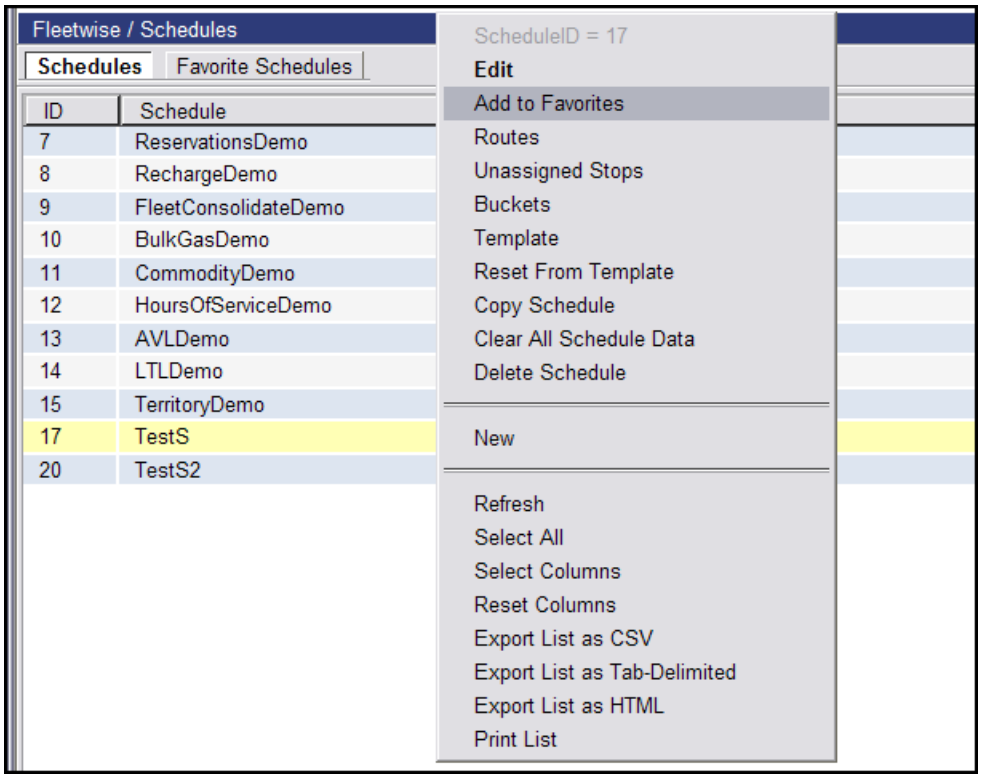
11 Click **Copy** to copy the schedule, or click **Cancel** to return to the **Schedule** list.

Adding and Selecting Favorite Schedules

Users can quickly switch between schedules with ease by saving frequently used schedules as favorites and accessing those schedules from a drop-down menu on the dashboard.

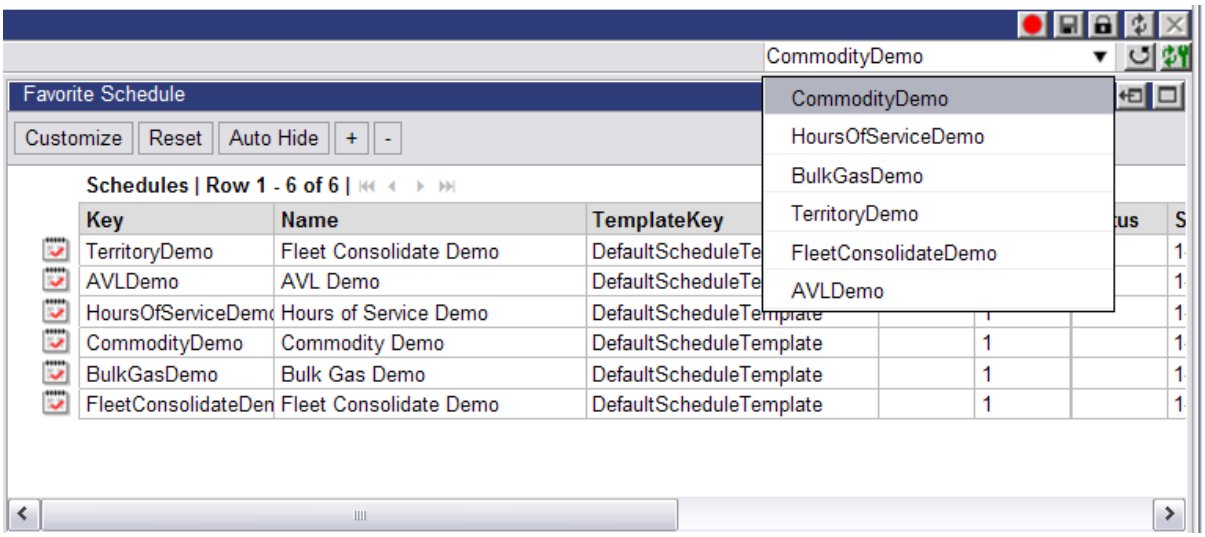
To set your favorite schedules:

1 Select **Data > Schedules**. The **Schedules** list page appears.



2 Right-click on a schedule and select **Add to Favorites**. The page will refresh when the schedule has been added.

3 In the top right-hand corner of the dashboard, select from favorite schedules via the drop-down menu to apply to all quadrants.



Favorite schedules are also displayed in the **Favorite Schedule** quadrant. This functionality enables users to more easily move data between schedules in two ways:

- Routes can be dragged from the **Routes** quadrant to a new schedule in the **Favorite Schedule** quadrant. Click **OK** in the confirmation dialog to move the route.
- By right-clicking on a schedule in the **Favorite Schedule** quadrant, users can apply the following right-click menu options:
  - **Reassign All (Routes) To This:** Reassigns all routes from the current dashboard schedule to the selected schedule.
  - **Reassign All (Unassigned Stops) To This:** Reassigns all unassigned stops from the current dashboard schedule to the selected schedule.
  - **Reassign All To This:** Reassigns all routes and unassigned stops from the current dashboard schedule to the selected schedule.

Managing Schedule Groups

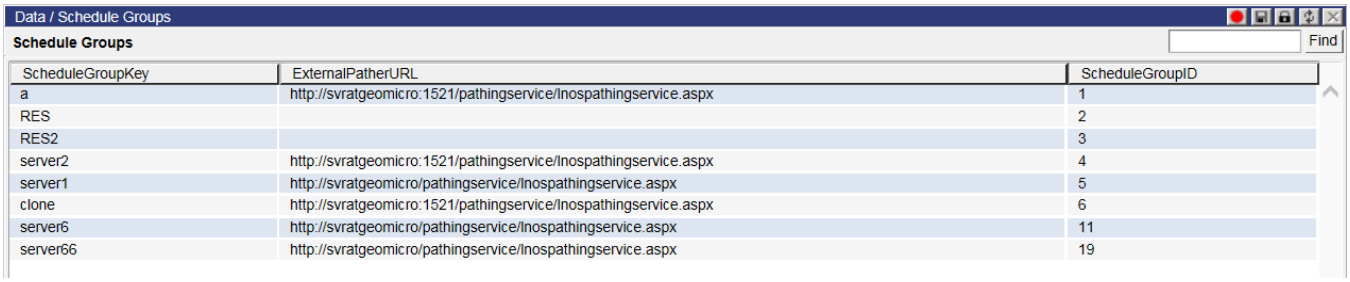
Schedules can be partitioned into smaller manageable groups, each served by a dedicated instance of LNOS Pathing Service for best performance and utilization of computing resources.

Creating Schedule Groups

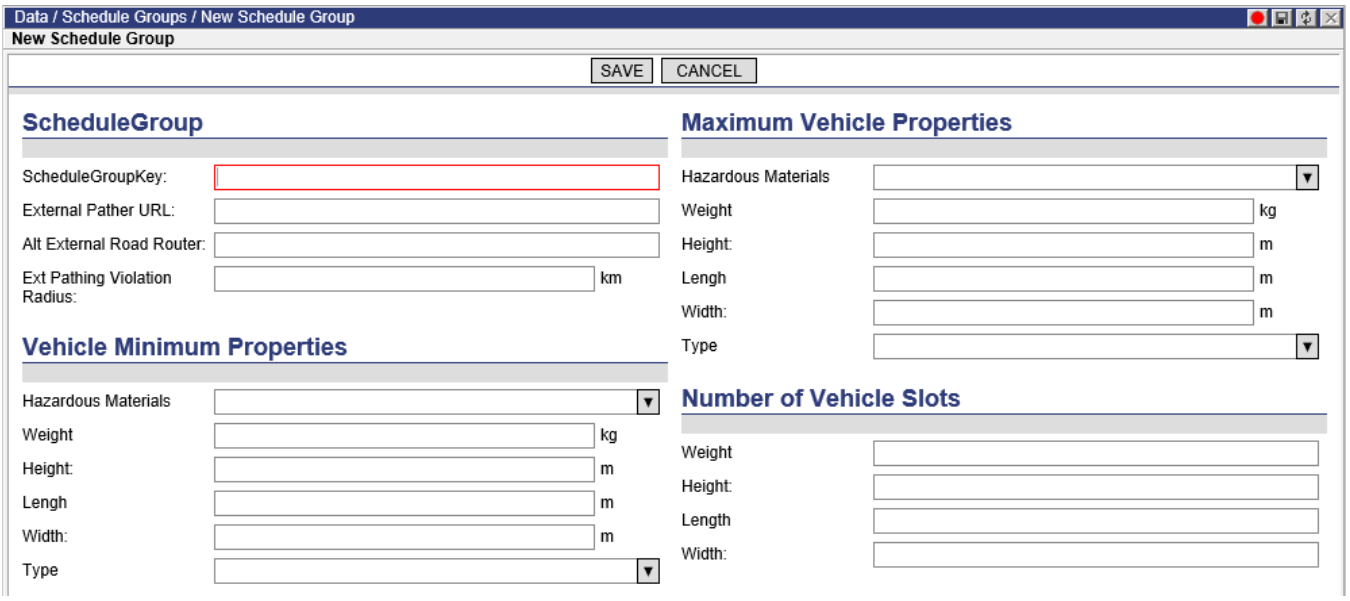
A new **Schedule Groups** list page has been added to allow users to create and manage schedule groups in Descartes Route Planner.

To create a new schedule group:

1 Select **Data > Schedules > Schedule Groups** from the main menu. The **Schedule Groups** list page appears.

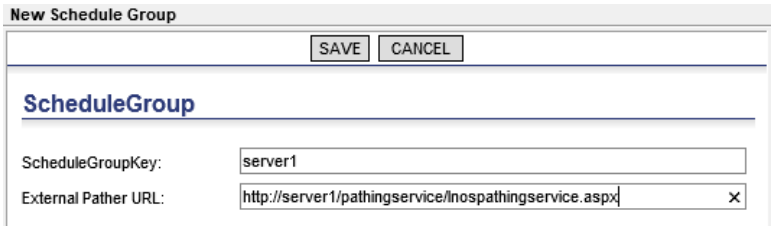


2 Right-click on the **Schedule Groups** page and select **New** from the right-click menu.



3 Enter a ScheduleGroupKey. This must be an alphanumeric value without interleaving spaces. ScheduleGroupKey has been added as a column on the **Schedules** list page, allowing users to view and sort schedules by group membership.

4 Enter the URL of the LNOS Pathing Service that will be used for this group. Specify an alternate External Pather URL at the schedule group level if necessary.



5 Specify minimum and maximum vehicle properties and slots. These settings determine the smallest and largest type of truck that will be used for pathing. The number of vehicle slots determines the maximum number of vehicle dimensions that will be pathed between the minimum and the maximum.

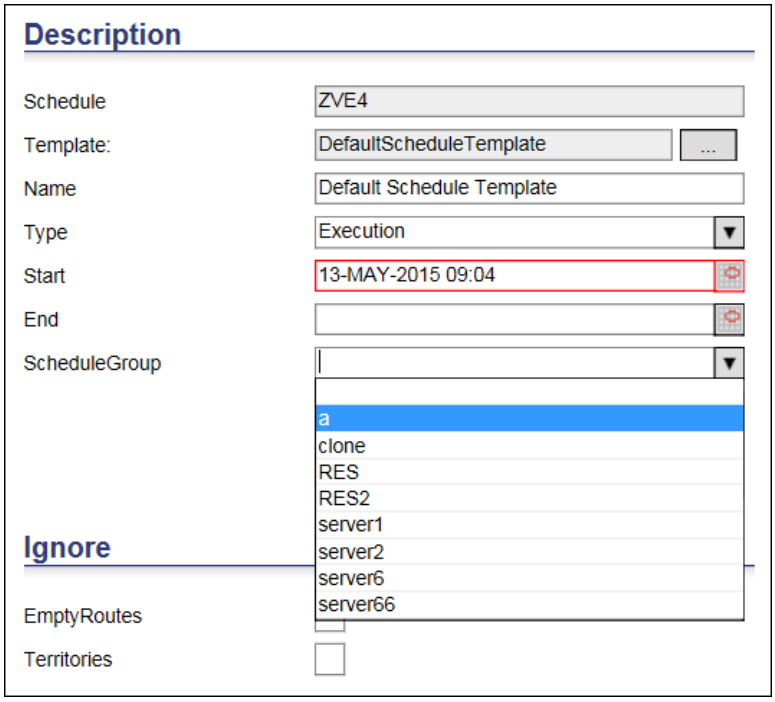
For example, if the Minimum Weight is 9,000 kilograms and the Maximum Weight is 25,000 kilograms and the number of slots is set to two, then the pathing bands will be:

- 0 to 9,000 kg = 9,000 kg (Minimum)
- 9,000 to 17,000 kg = 17,000kg (Slot 1)
- 17,000 kg to 25,000kg = 25,000kg (Slot 2/Maximum)

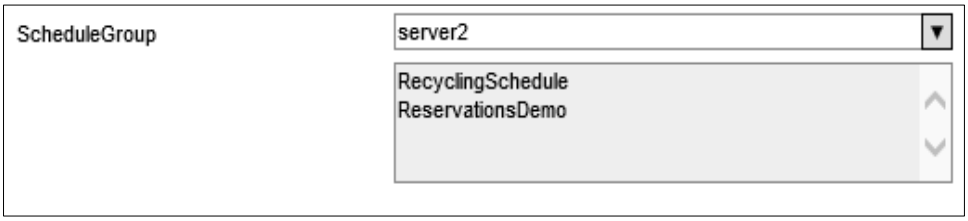
With the configuration above, a truck with a weight of 13,000 kg will be pathed as if it were a 17,000 kg truck, i.e. the weight is rounded up.

6 In the Ext Pathing Violation Radius field, specify a radius value for a circular boundary on the map in which violations will be ignored at the origin or destination when those violations would prevent the External Pather from determining a path between locations. When converting the entered distance value to time, the system uses a static conversion of 35 miles per hour. If no value for Ext Pathing Violation Radius is specified, Descartes Route Planner will send a default of 300 seconds (approximately 2.9 miles) to RMPI.

7 Click **Save**. Configured schedule groups are listed in the **Schedule Group** drop-down on the **New**/**Edit Schedule** pages.



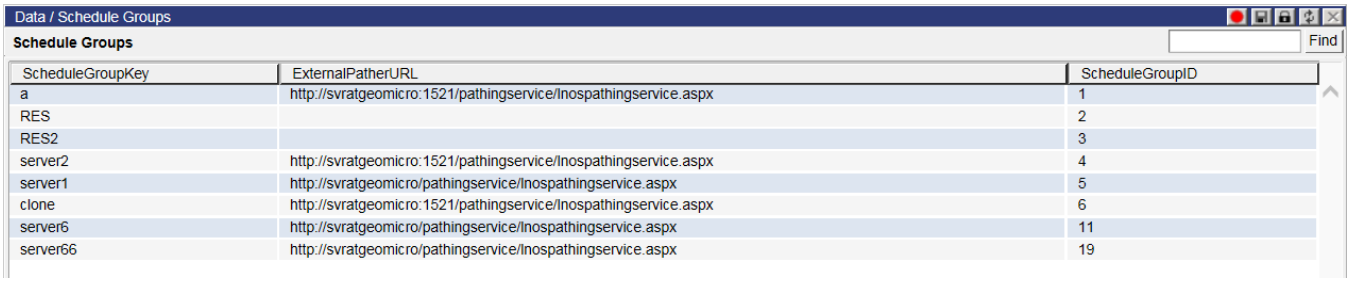
When users select a schedule group from the drop-down, the system will display all other schedules in the same group.



Editing Schedule Groups

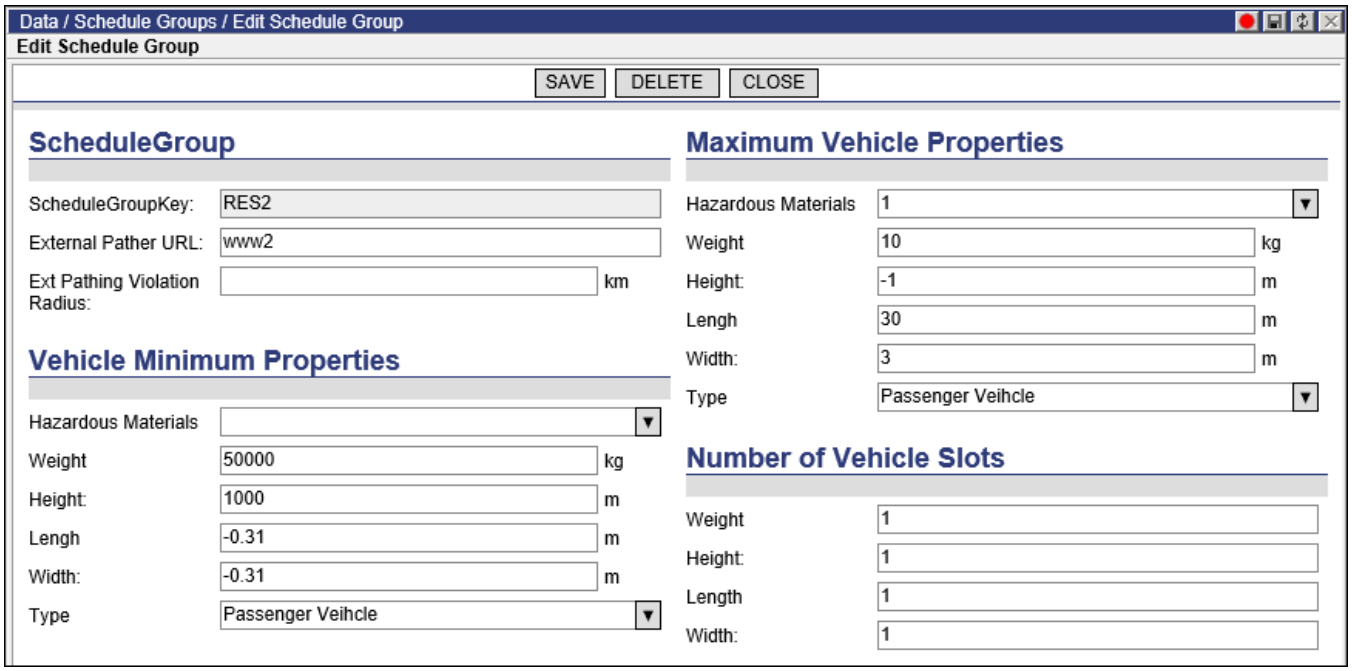
To edit a schedule group:

1 Select **Data > Schedules > Schedule Groups** from the main menu. The **Schedule Groups** list page appears.



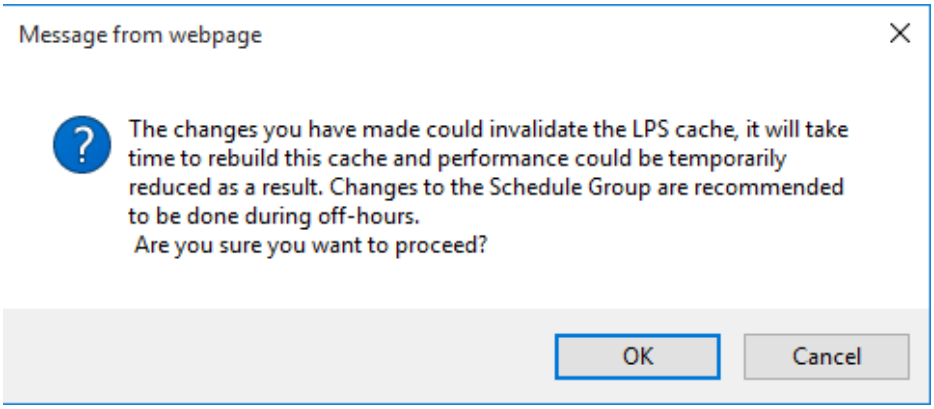
ScheduleGroupKey	ExternalPatherURL	ScheduleGroupID
a	http://svratgeomicro:1521/pathingservice/Inospathingservice.aspx	1
RES		2
RES2		3
server2	http://svratgeomicro:1521/pathingservice/Inospathingservice.aspx	4
server1	http://svratgeomicro/pathingservice/Inospathingservice.aspx	5
clone	http://svratgeomicro:1521/pathingservice/Inospathingservice.aspx	6
server6	http://svratgeomicro/pathingservice/Inospathingservice.aspx	11
server66	http://svratgeomicro/pathingservice/Inospathingservice.aspx	19

2 Right-click on the **Schedule Groups** page and select **Edit** from the right-click menu.



3 Make the necessary edits.

4 Click **Save**. The system will return a confirmation dialog to notify users that the changes made may invalidate the LNOS Pathing Service cache.

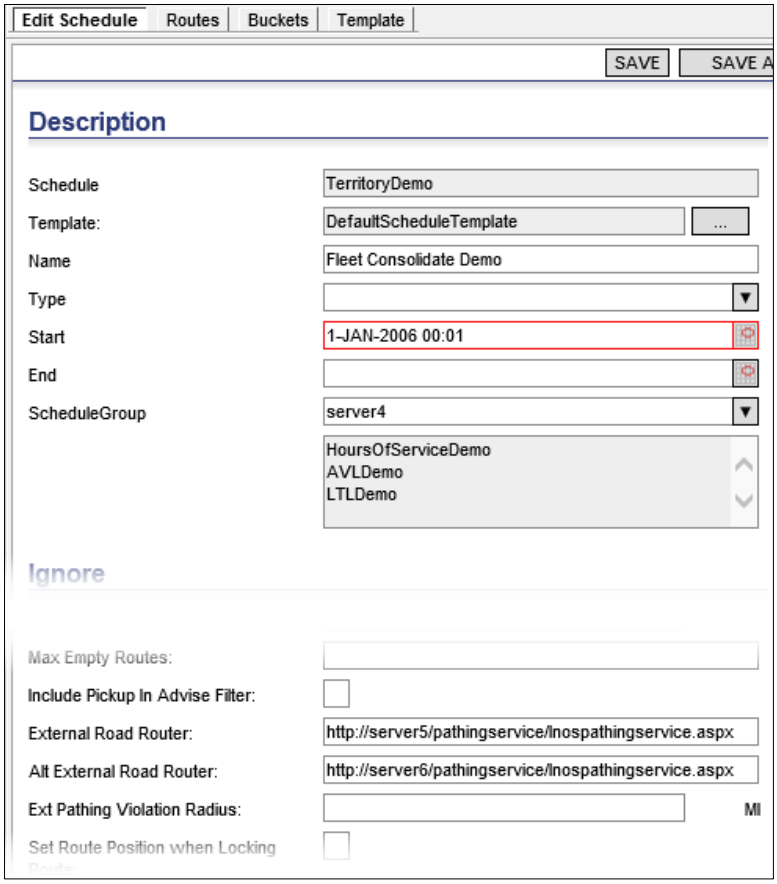


Precedence of External Router (Pather) URL

The URL that determines which LNOS Pathing Service will be used to process requests for a Schedule has the following precedence (from highest to the lowest):

- External Road Router value at the schedule level if configured
- ScheduleGroup value of the schedule if configured
- ExternalRoadRouter system value if configured

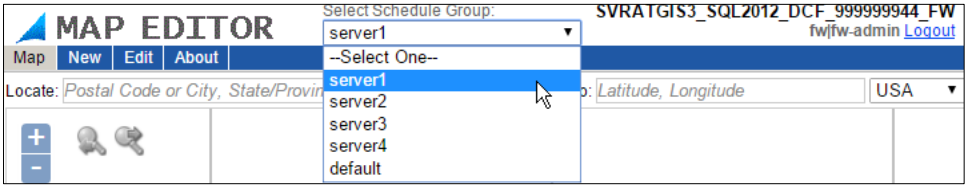
For example, the TerritoryDemo Schedule depicted below has the **ScheduleGroup** set to **server4** and the External Road Router configured to use the URL for **server5**. The External Road Router value takes precedence and the URL entered for **server5** will be used.



Schedule Groups Support in Descartes Map Editor and LNOS Pathing Service

Descartes Map Editor supports the partitioning of map edits by Schedule Groups. When users log in to Descartes Map Editor, the **Select Schedule Group** drop-down is populated with all Schedule Groups owned by the login account. A default schedule group will always appear in the drop-down automatically. Map edits in the default

schedule group will be applied to any schedule that does not belong to a schedule group.



Map edits performed for one group, e.g., **server1**, are applied by the LNOS Pathing Service to schedules in schedule group **server1** only.

Managing Routes

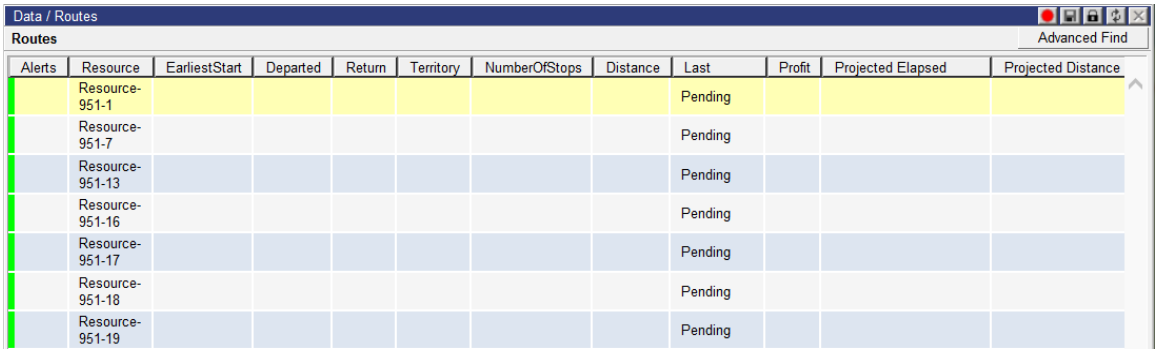
Routes are used to link a specific Schedule with a specific resource. All the Resource settings are copied to the Route record and can be modified within a Route so that different settings can be used to build different Routes from the same resource and different Schedules.

➲ **Note—** Routes are created automatically by Descartes Route Planner, based on the Schedule setting provided with the resource you create. Routes cannot exist without Schedules and resources.

Accessing the Routes List

To access the Route List:

1 From the main menu, select: **Data > Schedules > Routes**.



2 Right-click on a selected Route and select one of the management options:

- View
- Resource
- Schedule
- Send Message
- View Message

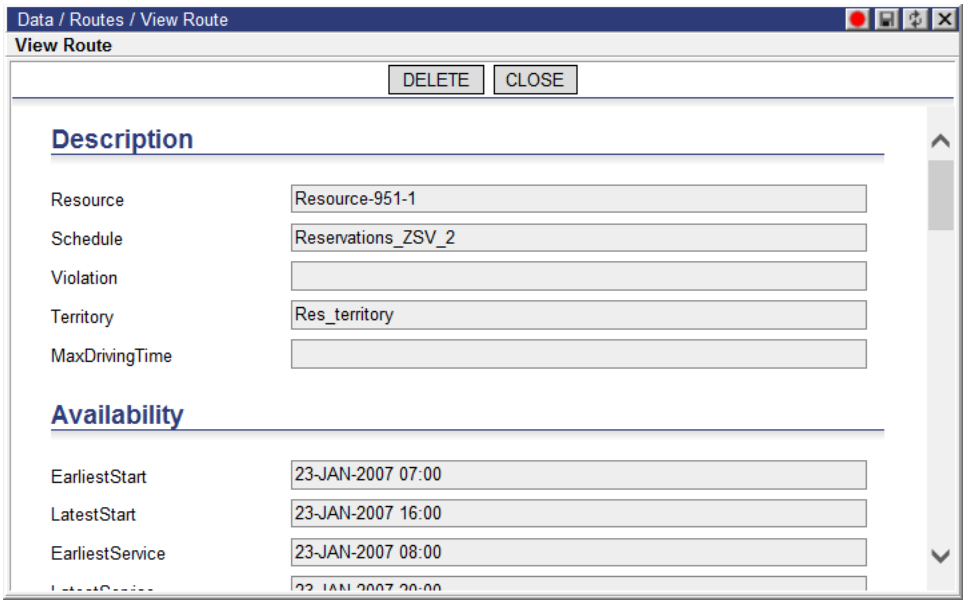
- Route Detail

To view or edit an associated Resources or Schedules, right-click on the desired Route and select the function from the right-click menu.

Viewing a Route

To view the details of the Route:

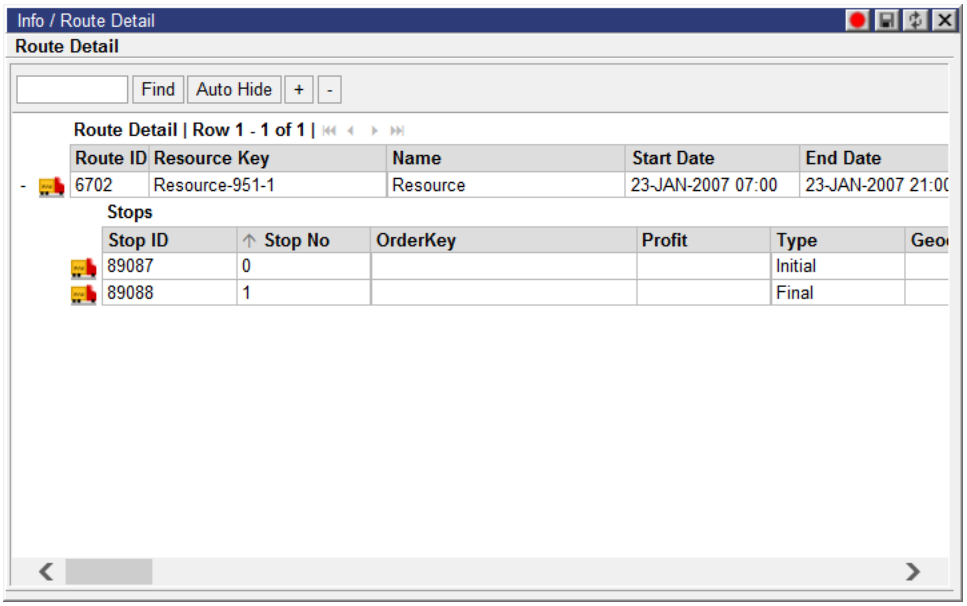
- Double-click the desired Route, or right-click and select **View**. The selected **Route** page appears:



Viewing Route Detail

To view the details of the route from the tree view:

- Right-click the desired route and select **Route Detail**. The selected route's **Route Detail** window appears.



Managing Buckets

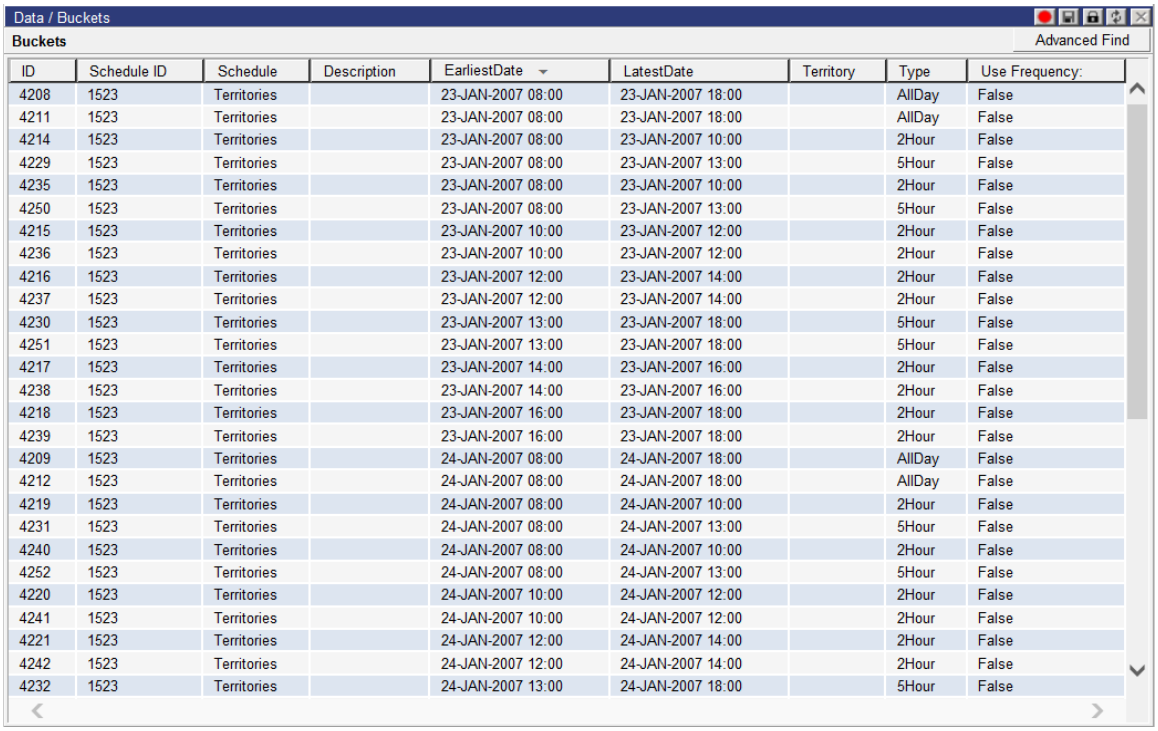
A bucket is a service time window interval used to offer reservation slots to customers. Buckets are identified by date/time boundaries, and the length of a bucket depends on the service level that a company offers to its customers.

Accessing the Buckets List

To access a bucket:

1 From the main menu, select **Data > Schedules > Buckets**.

The **Buckets** list appears:



ID	Schedule ID	Schedule	Description	EarliestDate	LatestDate	Territory	Type	Use Frequency:
4208	1523	Territories		23-JAN-2007 08:00	23-JAN-2007 18:00		AllDay	False
4211	1523	Territories		23-JAN-2007 08:00	23-JAN-2007 18:00		AllDay	False
4214	1523	Territories		23-JAN-2007 08:00	23-JAN-2007 10:00		2Hour	False
4229	1523	Territories		23-JAN-2007 08:00	23-JAN-2007 13:00		5Hour	False
4235	1523	Territories		23-JAN-2007 08:00	23-JAN-2007 10:00		2Hour	False
4250	1523	Territories		23-JAN-2007 08:00	23-JAN-2007 13:00		5Hour	False
4215	1523	Territories		23-JAN-2007 10:00	23-JAN-2007 12:00		2Hour	False
4236	1523	Territories		23-JAN-2007 10:00	23-JAN-2007 12:00		2Hour	False
4216	1523	Territories		23-JAN-2007 12:00	23-JAN-2007 14:00		2Hour	False
4237	1523	Territories		23-JAN-2007 12:00	23-JAN-2007 14:00		2Hour	False
4230	1523	Territories		23-JAN-2007 13:00	23-JAN-2007 18:00		5Hour	False
4251	1523	Territories		23-JAN-2007 13:00	23-JAN-2007 18:00		5Hour	False
4217	1523	Territories		23-JAN-2007 14:00	23-JAN-2007 16:00		2Hour	False
4238	1523	Territories		23-JAN-2007 14:00	23-JAN-2007 16:00		2Hour	False
4218	1523	Territories		23-JAN-2007 16:00	23-JAN-2007 18:00		2Hour	False
4239	1523	Territories		23-JAN-2007 16:00	23-JAN-2007 18:00		2Hour	False
4209	1523	Territories		24-JAN-2007 08:00	24-JAN-2007 18:00		AllDay	False
4212	1523	Territories		24-JAN-2007 08:00	24-JAN-2007 18:00		AllDay	False
4219	1523	Territories		24-JAN-2007 08:00	24-JAN-2007 10:00		2Hour	False
4231	1523	Territories		24-JAN-2007 08:00	24-JAN-2007 13:00		5Hour	False
4240	1523	Territories		24-JAN-2007 08:00	24-JAN-2007 10:00		2Hour	False
4252	1523	Territories		24-JAN-2007 08:00	24-JAN-2007 13:00		5Hour	False
4220	1523	Territories		24-JAN-2007 10:00	24-JAN-2007 12:00		2Hour	False
4241	1523	Territories		24-JAN-2007 10:00	24-JAN-2007 12:00		2Hour	False
4221	1523	Territories		24-JAN-2007 12:00	24-JAN-2007 14:00		2Hour	False
4242	1523	Territories		24-JAN-2007 12:00	24-JAN-2007 14:00		2Hour	False
4232	1523	Territories		24-JAN-2007 13:00	24-JAN-2007 18:00		5Hour	False

2 Right-click on a selected bucket record and select one of the management options:

- New
- Edit
- Edit Selected
- Clone
- Schedule
- Delete

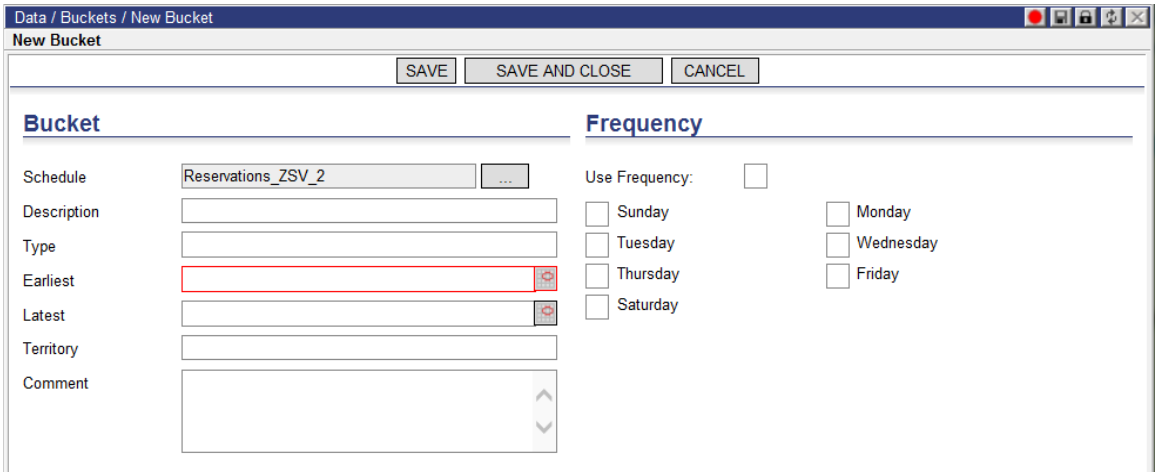
To view or edit an associated Schedule, right-click on the desired Bucket and select **Schedule** from the right-click menu.

Creating a New Bucket

To create a new bucket:

1 From the Bucket list, right-click and select **New**.

The **New Bucket** page appears:



2 Enter the earliest date and time, or click the calendar icon and then select the earliest date and time.

3 If using a frequency schedule, select the frequency days.

4 Enter any additional data in the fields.

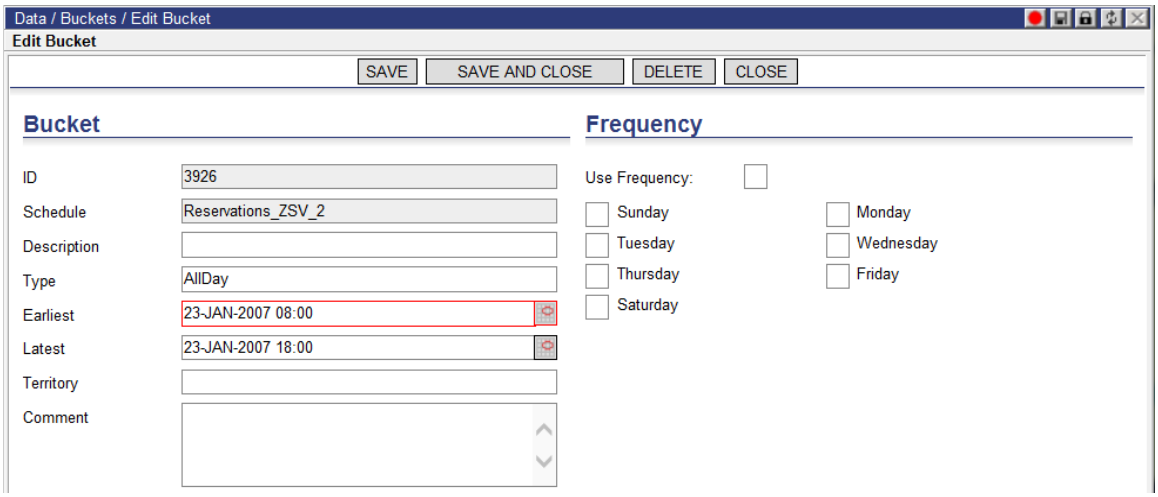
5 Click **Save** to remain on this page or click **Save and Close** to save the bucket and return to the **Bucket** list.

Editing or Copying a Bucket

To edit a bucket:

1 Right-click on the desired bucket and select **Edit**, or double-click a specific bucket record to directly edit that bucket record.

The **Edit Bucket** page appears:

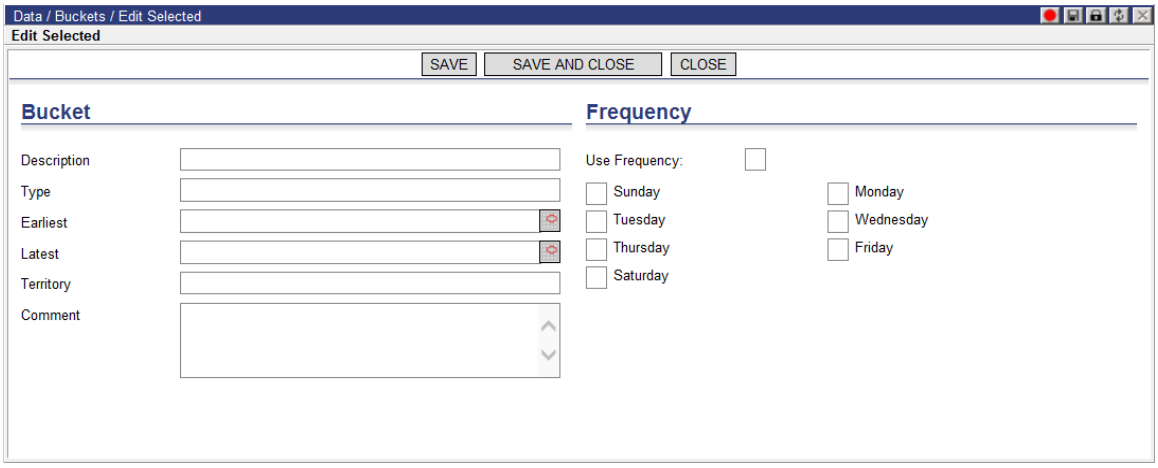


2 To edit, modify or add data in the appropriate fields.

3 Click **Save** to remain on this page or click **Save and Close** to save the bucket and return to the **Bucket** list.

To edit multiple buckets simultaneously:

1 Right-click on the desired bucket and select **Edit Selected**. The **Edit Selected** page appears.



2 Modify any of the following fields for the selected buckets:

- Description
- Type
- Earliest and Latest Date
- Territory
- Comment
- Use Frequency

3 Click **Save** to remain on this page or click **Save and Close** to save the information and return to the **Bucket** list.

To copy a bucket:

1 Right-click on the desired bucket and select **Create Copy**.

The **Edit Bucket** page appears.

2 Enter a description for the copy and then modify or add data in the appropriate fields.

3 Click **Save** to remain on this page or click **Save and Close** to save the bucket and return to the **Bucket** list.

Managing Requirements and Requirement Sets

There are times when products and locations can have highly specialized and complicated constraints on the type of vehicle that can be loaded or visited by, thus possibly making the requirements quiet lengthy and difficult for Planners and Dispatchers to interpret. To help manage these issues, users can create/edit requirements and requirement sets that can contain one or more requirements.

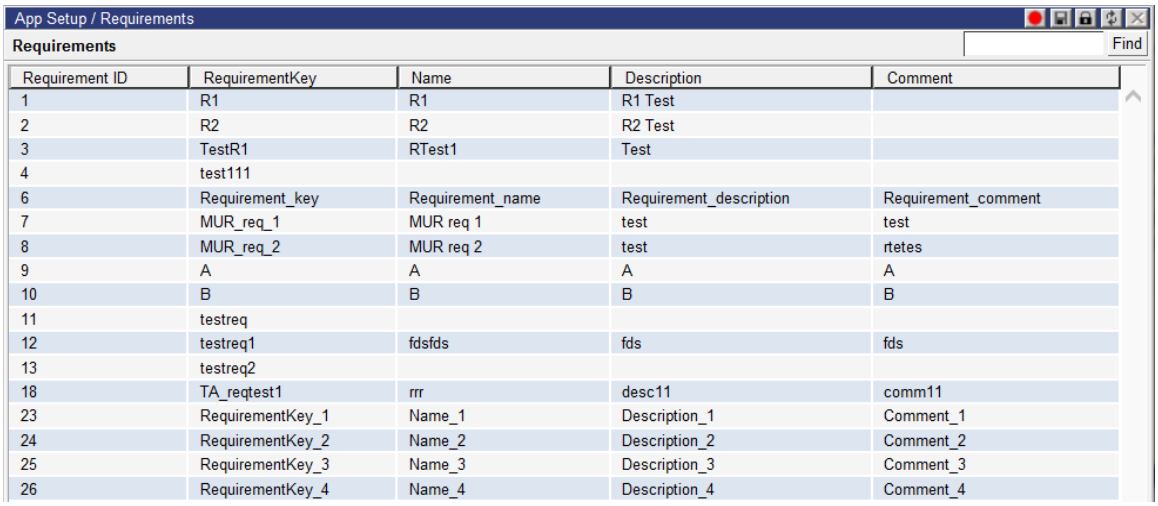
Requirements must first be created before users can create a requirement set.

Creating a Requirement

To create a Requirement:

1 Select **App Setup > Requirement Setup > Requirements**.

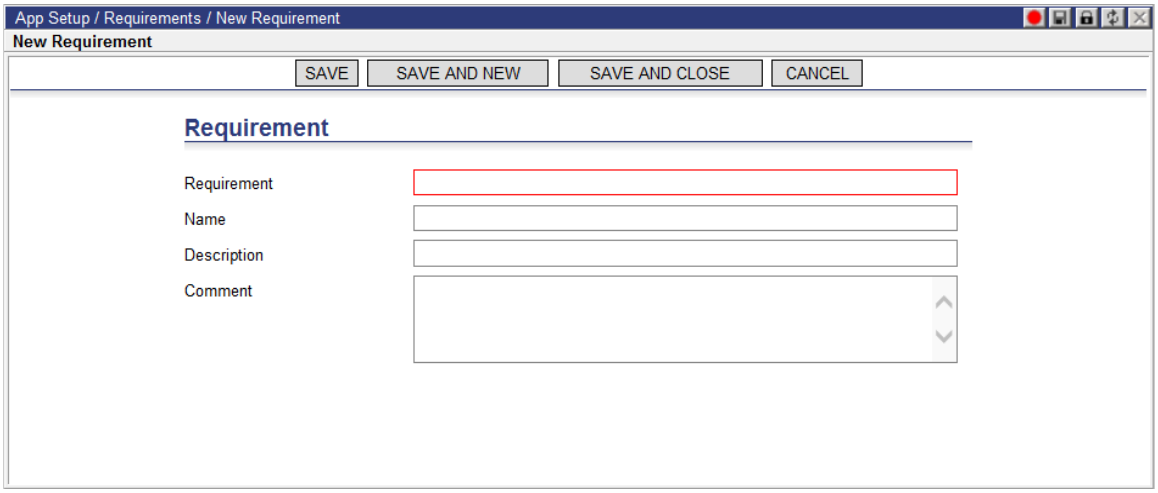
The **Requirements** list page appears:



Requirement ID	RequirementKey	Name	Description	Comment
1	R1	R1	R1 Test	
2	R2	R2	R2 Test	
3	TestR1	RTest1	Test	
4	test111			
6	Requirement_key	Requirement_name	Requirement_description	Requirement_comment
7	MUR_req_1	MUR req 1	test	test
8	MUR_req_2	MUR req 2	test	rtetes
9	A	A	A	A
10	B	B	B	B
11	testreq			
12	testreq1	fdsfds	fds	fds
13	testreq2			
18	TA_reqtest1	rrr	desc11	comm11
23	RequirementKey_1	Name_1	Description_1	Comment_1
24	RequirementKey_2	Name_2	Description_2	Comment_2
25	RequirementKey_3	Name_3	Description_3	Comment_3
26	RequirementKey_4	Name_4	Description_4	Comment_4

2 Right-click on the **Requirements** page and select **New**.

The **Requirements** page appears:



3 Enter a **Requirement** key in the Requirement field.

4 Enter or add any additional information in the appropriate fields.

5 Click **Save** to save the requirement and return to the **Edit** page, or click **Save and Close** to save the requirement and return to the **Requirements** page. Click **Save and New** to save the current requirement and display a clean set of fields for a new entry instead of returning to the list page.

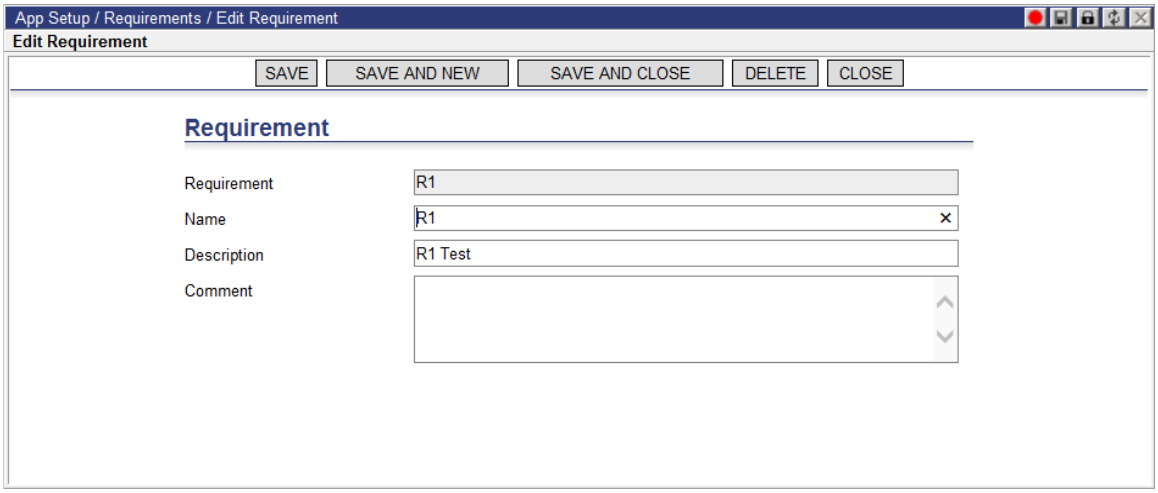
To delete a requirement, right-click on the desired requirement on the **Requirements** list page and select **Delete**. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

Editing a Requirement

To edit the Requirement:

1 Right-click on the **Requirements** page and select **Edit**.

The **Edit Requirements** page appears:



2 Modify or add additional information in the appropriate fields.

3 Click **Save** to save the requirement and remain on this page, or click **Save and Close** to save the requirement and return to the **Requirements** page.

➲ **Note—** Clicking **Delete** will delete the requirement. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

➲ **Note—** When users update a requirement set, the system will propagate any changes made to associated assets. If the assets are already assigned to a resource, the resource requirements will only be updated if the resource is edited and saved again with the assets affected by the automatic update.

Creating a Requirement Set

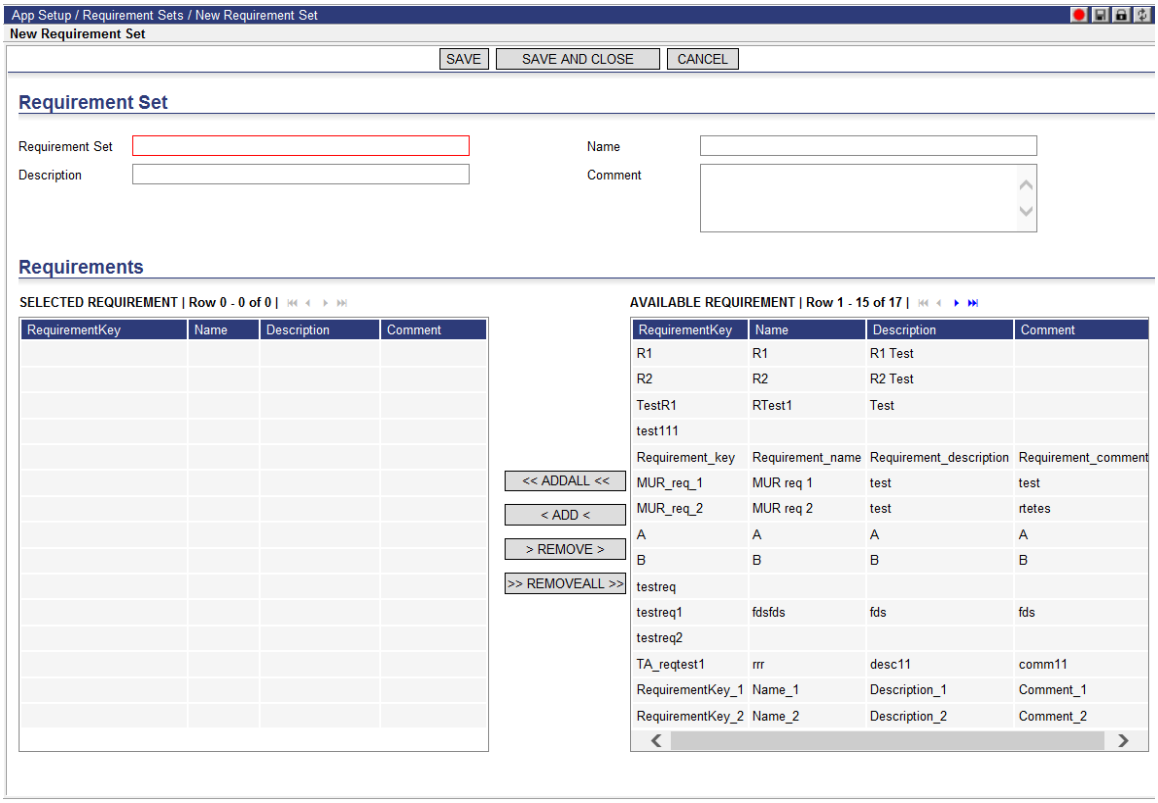
To create a Requirement Set:

1 Select **App Setup > Requirement Setup > Requirement Sets**.

The **Requirement Sets** list page appears.

2 Right-click on the **Requirement Sets** page and select **New**.

The **New Requirement Sets** page appears:



3 Enter a Requirement Set key, Name, Description and Comment, if needed, in the appropriate fields.

4 Use the **Add** and **Add All** buttons to move requirements from the Available Requirement table to the Selected Requirement table. Requirement rows in the Selected Requirement table will be added to the new requirement set when saved. Use the **Remove** and **Remove All** buttons to delete requirements from the Selected Requirement table.

5 Click **Save** to save the requirement and return to the **Edit** page, or click **Save and Close** to save the requirement and return to the **Requirement Sets** page.

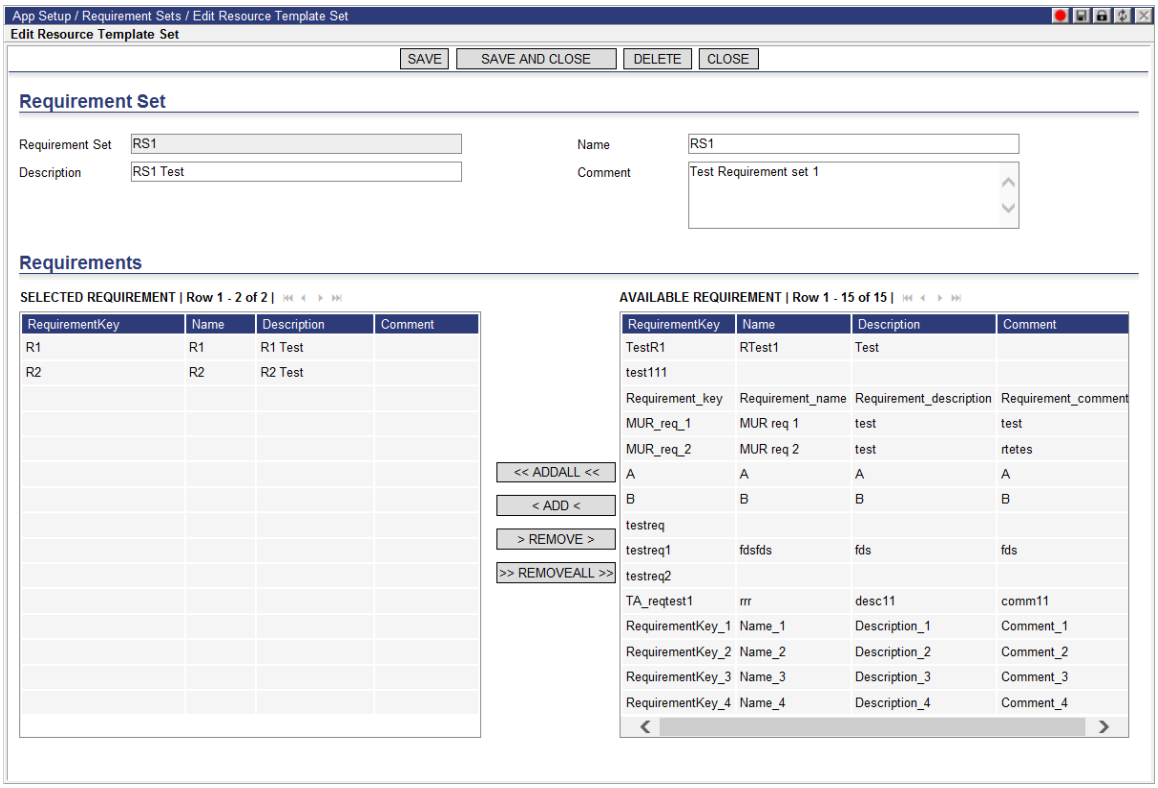
To delete a requirement, right-click on the desired requirement on the **Requirement Sets** list page and select **Delete**. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

Editing a Requirement Set

To edit the Requirement Set:

1 Right-click on the **Requirement Sets** page and select **Edit**.

The **Edit Requirement Set** page appears:



2 Modify or add additional information in the appropriate fields.

3 Click **Save** to save the requirement and remain on this page, or click **Save and Close** to save the requirement and return to the **Requirement Sets** page.

➲ **Note—** Clicking **Delete** will delete the requirement set. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

Managing Resources

A resource is a group of entities used in the planning and execution of orders. A resource has characteristics such as capacity, costs, availability and restrictions, etc. Trucks, drivers, and truck/trailer/driver are commonly used resources.

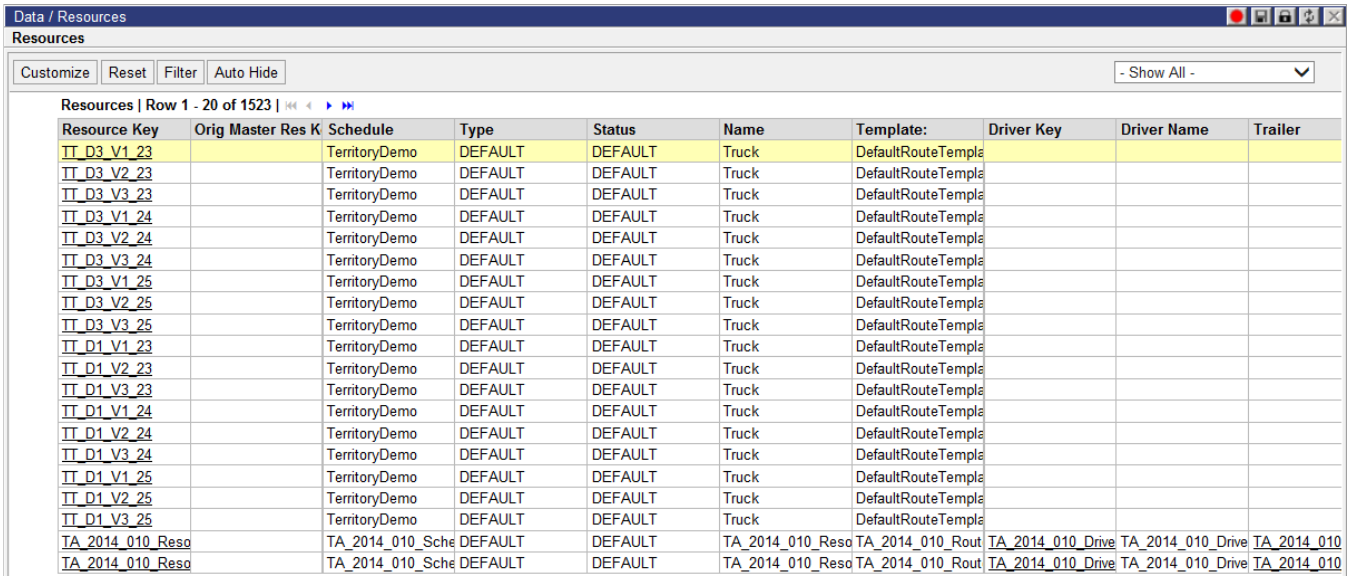
Physical resources can only be used once per Route/Schedule, but the same resource can participate in more than one Schedule or Route for planning, or other purposes.

Accessing the Resource List

To access a resource:

1 From the main menu, select **Data > Resources**.

The list of resources appears:



Resource Key	Orig Master Res K	Schedule	Type	Status	Name	Template:	Driver Key	Driver Name	Trailer
TT_D3_V1_23		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V2_23		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V3_23		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V1_24		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V2_24		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V3_24		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V1_25		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V2_25		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D3_V3_25		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V1_23		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V2_23		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V3_23		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V1_24		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V2_24		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V3_24		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V1_25		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V2_25		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TT_D1_V3_25		TerritoryDemo	DEFAULT	DEFAULT	Truck	DefaultRouteTempla			
TA_2014_010_Reso		TA_2014_010_Sche	DEFAULT	DEFAULT	TA_2014_010_Reso	TA_2014_010_Rout	TA_2014_010_Drive	TA_2014_010_Drive	TA_2014_010
TA_2014_010_Reso		TA_2014_010_Sche	DEFAULT	DEFAULT	TA_2014_010_Reso	TA_2014_010_Rout	TA_2014_010_Drive	TA_2014_010_Drive	TA_2014_010

2 Right-click on a selected resource record and select one of the management options:

- Edit
- Delete
- Clone
- Add Routing Parameters
- Template
- Routes
- New

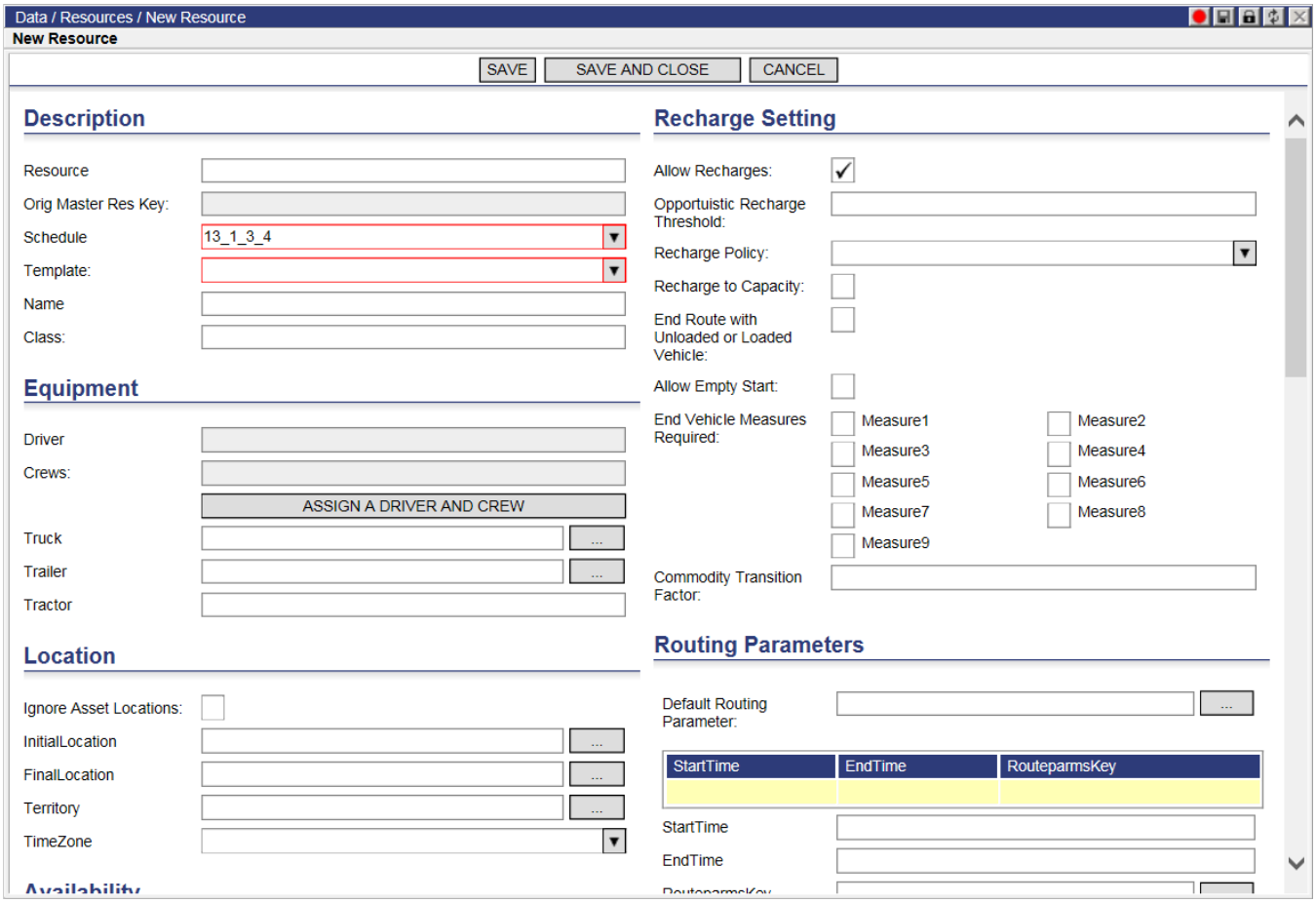
To view or edit associated Routes, right-click on the desired Resource and select **Routes** from the right-click menu.

Creating a New Resource

To create a new Resource:

1 From the **Resources** list, right-click and select **New**.

The **New Resource** page appears:



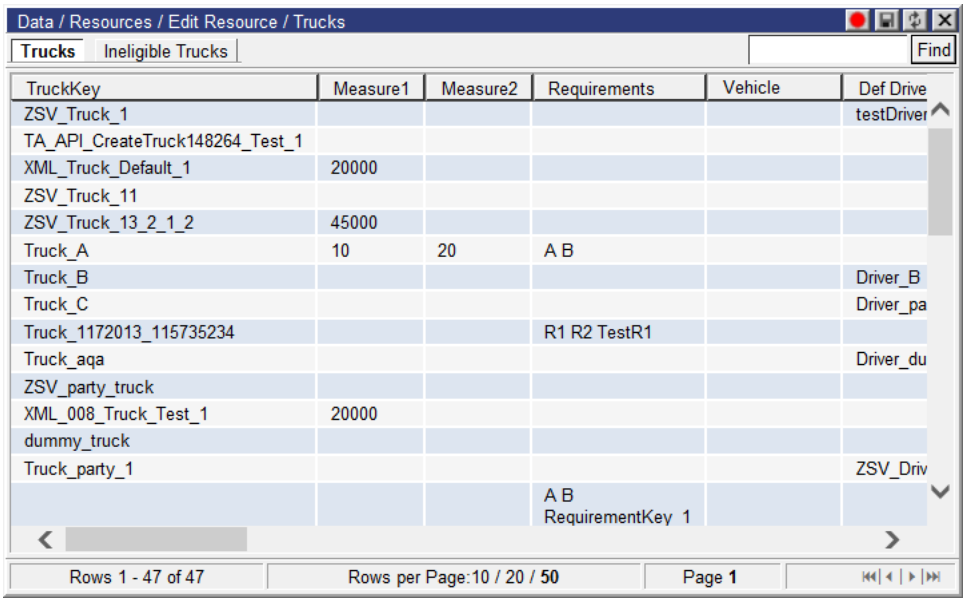
2 Enter a resource ID in the Resource field.

3 Select a schedule and template from the drop-down menus.

4 Enter the earliest start date and time, or click the calendar icon and then select the date and time.

5 Enter the latest end date and time, or click the calendar icon and then select the date and time.

6 Assign a crew, truck and trailer using the associated buttons. The **Truck** and **Trailer** windows can be filtered for results using the Find search box.



7 Click the **Allow Recharges** checkbox to enable/disable dynamic recharges at the resource level (enabled by default). Fill in any additional specifications.

8 Select an option from the **Recharge Policy** drop-down menu to control recharges at depots:

- Recharge at any depot
- Recharge only at initial depot
- Recharge only at final depot
- Recharge at either initial or final depot

9 Enter or add any additional data in the appropriate fields.

10 Click **Save** to remain on this page or click **Save and Close** to save the Resource and return to the **Resources** list.

Editing a Resource

To edit a Resource:

1 From the **Resources** list, right-click and select **Edit**, or double-click a specific resource record to directly edit that record.

The selected **Resource** page appears.

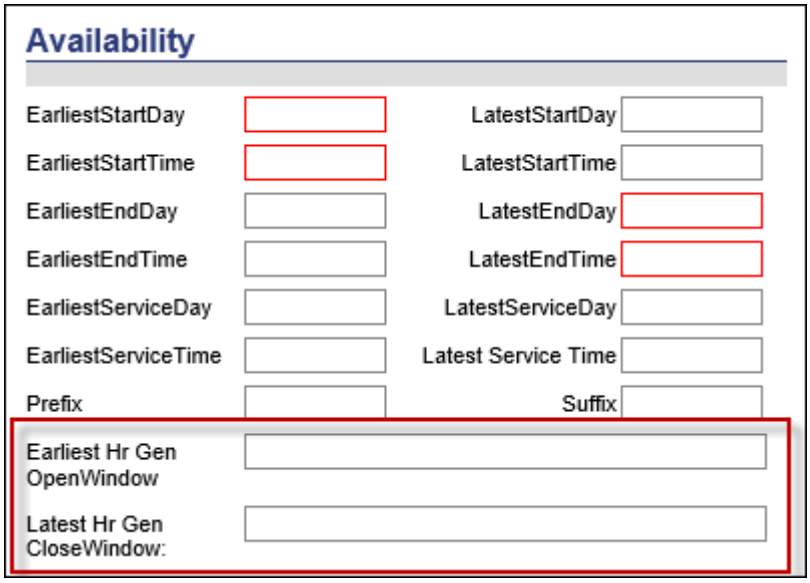
2 Modify or add additional data in the appropriate fields.

3 Click **Save** to remain on this page or click **Save and Close** to save the Resource and return to the **Resources** list.

Capping Generated Window Open and Close Values

The Earliest Hr Gen OpenWindow and Latest Hr Gen CloseWindow fields allow users to put a cap on how early a generated time window can open and how late a generated time window can close. If the generated time windows resulting from any of the following operations exceed the cap values set in the Earliest Hr Gen OpenWindow and Latest Hr Gen CloseWindow fields, the cap value is used instead.

- Lock Generated Time Windows operation
- Route moved to another schedule
- All routes moved to another schedule
- Status updated from first status call



For example, if a user selects the **Lock Generated Time Window** option for a route in the **Routes** quadrant and the generated open time window is earlier than the cap value entered in the Earliest Hr Gen OpenWindow field, the cap value is used instead.

Please note the following the following exceptions regarding this feature:

- If the Projected Arrive Time is earlier than the Earliest Hr Gen OpenWindow value, the Projected Arrival Time is used instead.
- If the Projected Departure Time is later than the Latest Hr Gen CloseWindow value, the Projected Departure Time is used instead.

  ➲ **Note—** In these cases, users should fix the route starting and ending times since the resource settings conflict with the cap values provided.

- If no value is entered in these fields, no cap is enforced.

Understanding Service Durations

Service durations in Descartes Route Planner can be based on user defined rates and measures. All rates must be in the form of units/minutes. The rates and measures can be defined at the following database levels: Order, Order Line, and Product Type.

A service rate can be applied for each of the units that are to be picked up and/or delivered. This rate will allow third party systems to calculate the total service time that will be required to service/deliver or pickup the totality of the order/task.

Service duration rates can also be affected at the location level by a factor that will determine whether a unit can be serviced faster or slower depending on its value.

Simple Orders Service Duration Calculations

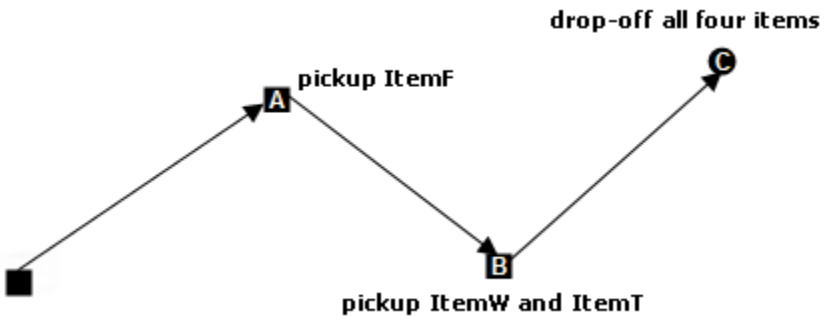
For simple orders, the service durations (pre-service duration and service duration) can be calculated as described below.

Double-ended or Multi-task Orders Service Duration Calculations

Service Durations Specified at the Order level

If the service durations are only specified at the Order level and not at the Order line level, then the pre-service duration and service duration is the same for each activity and order line for the entire order.

Example:



For the route above:

	Measure 1	Measure 2	Qty	Pre Service Duration	Service Duration
FWOrder				10 min	120 min
FWOrderLine (ItemF)	1500	750	2	null	null
FWOrderLine (ItemW)	900	450	1	null	null

FWOrderLine (ItemT)	600	300	1	null	null

The pre-service duration and service duration for each stop activity would be:

	Measure 1	Measure 2	Pre Service Duration	Service Duration
FWActivity (A)	1500	1500	10 mins	120 mins
FWActivity (B)	1500	750	10 mins	120 mins
FWActivity (C)	3000	1500	10 mins	120 mins

Service Durations specified at the Order and Order Line level

If the service durations are only specified at the Order level and the Order line level, then the pre-service duration and service duration is calculated as follows:

- For Pickups - Pre-Service Duration = Order Pre-Service Duration + Order PU Pre-Service Duration + Location Service Factor * (Orderline Pre-Service Duration + Orderline PU Pre-Service Duration)
- For Pickups - Service Duration = Order Service Duration + Order PU Service Duration + Location Service Factor * (Orderline Service Duration + Orderline PU Service Duration)
- For Drop-offs - Pre-Service Duration = Order Pre-Service Duration + Order Delivery Pre-Service Duration + Location Service Factor * {(Orderline1 Pre-Service Duration + Orderline1 Delivery Pre-Service Duration) + (Orderlinex Pre-Service Duration +Orderlinex Delivery Pre-Service Duration)}

  In this equation, x represents all additional order lines. If the route contained three order lines, then three order lines would be represented in the equation above. See the example below.

- For Drop-offs – Service Duration = Order Service Duration + Order Delivery Service Duration + Location Service Factor * {(Orderline1 Service Duration + Orderline1 Delivery Service Duration) + (Orderlinex Service Duration + Orderlinex Delivery Service Duration)}

  In this equation, x represents all additional order lines. If the route contained three order lines, then three order lines would be represented in the equation above. See the example below.

Example:

Using the same route as in the example above, durations are applied to the Order and the Order Lines.

	Pre Service Duration	Service Duration	PU Pre Service Duration	PU Service Duration	Delivery Pre Service Duration	Delivery Service Duration
FWOrder	1 mins	5 mins	1 mins	5 mins	2 mins	6 mins

FWOrderLine (ItemF)	2 mins	45 mins	1 mins	5 mins	2 mins	6 mins
FWOrderLine (ItemW)	2 mins	35 mins	1 mins	5 mins	2 mins	6 mins
FWOrderLine (ItemT)	3 mins	35 mins	0 mins	5 mins	1 mins	6 mins

A location service factor is also applied to each location.

Location	Location Service Factor
(A)	0.9
(B)	1.0
(C)	1.1

The pre-service duration and service duration for each stop activity would be:

	Pre Service Duration	Service Duration
FWActivity (A)	4.7 mins	55 mins
FWActivity (B)	8 mins	90 mins
FWActivity (C)	16.2 mins	157.3 mins

For FWActivit(A):

- Pre Service Duration calculation is: 1 + 1 + 0.9 * (2 +1) = 4.7 mins
- Service Duration calculation is: 5 + 5 +0.9 * (45 + 5) = 55 mins

For FWActivity(B):

- Pre Service Duration calculation is: 1 + 2 + 1.1 * {(2 + 2) + (2 + 2) (3 + 1)} = 16.2 mins
- Service Duration calculation is: 5 + 6 +1.1 * {(45 + 6) + (35 + 6) + (35 + 6)} = 157.3 mins

Service Durations for the Order line level when specified at the Product Type level

If service durations are specified for a product type, then the order line level for that product type would be calculated as follows:

- Order line Pre-Service Duration = Product Type Pre-Service Duration * Product Type Quantity

- Order line Service Duration = Product Type Service Duration * Product Type Quantity
- Order line PU Pre-Service Duration = Product Type PU Pre-Service Duration * Product Type Quantity
- Order line PU Service Duration = Product Type PU Service Duration * Product Type Quantity
- Order line Delivery Pre-Service Duration = Product Type Delivery Pre-Service Duration * Product Type Quantity
- Order line Delivery Service Duration = Product Type Delivery Service Duration * Product Type Quantity

Example:

Using the same route as in first example above, durations are applied to the Order level and the Product Type level.

	Pre Service Duration	Service Duration	PU Pre Service Duration	PU Service Duration	Delivery Pre Service Duration	Delivery Service Duration	Qty	Product Type
FWOrder	1 mins	5 mins	1 mins	5 mins	2 mins	6 mins		
OrderLine (ItemF)	null	null	null	null	null	null	2	F

	Pre Service Duration	Service Duration	PU Pre Service Duration	PU Service Duration	Delivery Pre Service Duration	Delivery Service Duration
FWProductType (F)	1 mins	22.5 mins	0.5 mins	2.5mins	1 mins	3 mins

The Order line level is computed internally and the results are:

	Pre Service Duration	Service Duration	PU Pre Service Duration	PU Service Duration	Delivery Pre Service Duration	Delivery Service Duration
FWOrder	1 mins	5 mins	1 mins	5 mins	2 mins	6 mins
OrderLine (ItemF)	2 mins	45 mins	1 mins	3 mins	2 mins	6 mins

Service Durations Using Measures at the Order line Level

If service durations are applied by measures with a service rate to the Order lines then they are calculated as follows:

➲ **Note—** In order for the measures and the service rate to take precedence over the service duration, a service duration at the Order line level has to be null. If a value is in place, then it overrides the measure and service rate.

- For Pickups - Pre-Service Duration = Order Pre-Service Duration + Order PU Pre-Service Duration + Location Service Factor * (Orderline Pre-Service Duration + Orderline PU Pre-Service Duration)
- For Pickups that has a null service duration at the Order line level - Service Duration = Order Service Duration + Order PU Service Duration + Location Service Factor * (MeasureX * Qty/Service Rate)
- For Drop-offs - Pre-Service Duration = Order Pre-Service Duration + Order Delivery Pre-Service Duration + Location Service Factor * {(Orderline1 Pre-Service Duration + Orderline1 Delivery Pre-Service Duration) + (Orderlinex Pre-Service Duration +Orderlinex Delivery Pre-Service Duration)}

  In this equation, x represents all additional order lines. If the route contained three order lines, then three order lines would be represented in the equation above. See the example below.
- For Drop-offs that has a null service duration at the Order line level – Service Duration = Order Service Duration + Order Delivery Service Duration + Location Service Factor * {(Orderline1 Service Duration + Orderline1 Delivery Service Duration) + (Orderlinex Service Duration + Orderlinex Delivery Service Duration) + (MeasureX * Qty/Service Rate)}

  In this equation, x represents all additional order lines. If the route contained three order lines, then three order lines would be represented in the equation above. See the example below.

Example:

Using the same route as in first example above, some service durations are applied to the Order level and some are applied by measure and service rate.

	Pre Ser Dur	**Ser Dur**	**PU Pre Ser Dur**	**PU Ser Dur**	**Del Pre Ser Dur**	**Del Ser Dur**	**Qty**	**Measure 1**	**Apply To Meas.**	**Service Rate (unit/min)**
FWOrder	1 mins	5 mins	1 mins	5 mins	2 mins	6 mins				
OrderLine (ItemF)	2 mins	**null**	1 mins	**null**	2 mins	6 mins	2	1500	1	100
OrderLine (ItemW)	2 mins	**null**	1 mins	**null**	2 mins	6 mins	1	900	1	100
OrderLine (ItemT)	3 mins	**null**	0 mins	5 mins	1 mins	**null**	1	600	1	100

➲ **Note—** Where service durations are null, the quantity, measure, apply to measure, and service rates apply in the calculation.

A location service factor is also applied to each location.

Location	Location Service Factor
(A)	0.9
(B)	1.0
(C)	1.1

The pre-service duration and service duration for each stop activity would be:

	Pre Service Duration	Service Duration
FWActivity (A)	4.7 mins	37 mins
FWActivity (B)	8 mins	90 mins
FWActivity (C)	16.2 mins	30.8 mins

For FWActivity(A):

- Pre Service Duration calculation is: 1 + 1 + 0.9 * (2 +1) = 4.7 mins
- Service Duration calculation is: 5 + 5 +0.9 * (1500 * 2/100) = 37 mins

For FWActivity(B):

- Pre Service Duration calculation is: 1 + 2 + 1.1 * {(2 + 2) + (2 + 2) (3 + 1)} = 16.2 mins
- Service Duration calculation is: 5 + 6 +1.1 * {(6) + (6) + (600 * 1/100)} = 30.8 mins

Service Durations using Measures at the Product Type Level

If service durations are applied by measures with a service rate to the Product Types then they are calculated as follows:

➲ **Note—** In order for the measures and the service rate to take precedence over the service duration, service durations at the Order line level have to be null and the Measure has to be null at the Order line level. A service duration at the Product Type level also has to be null. If a value is in place, then it overrides the measure and service rate.

- For Pickups - Pre-Service Duration = Order Pre-Service Duration + Order PU Pre-Service Duration + Location Service Factor * (ProductType Pre-Service Duration + ProductType PU Pre-Service Duration)
- For Pickups that has a null service duration at the Product Type level - Service Duration = Order Service Duration + Order PU Service Duration + Location Service Factor * (ProductType MeasureX * Orderline Qty/ProductType Service Rate)
- For Drop-offs - Pre-Service Duration = Order Pre-Service Duration + Order Delivery Pre-Service Duration + Location Service Factor * {(ProductType1 Pre-Service Duration + ProductType1 Delivery Pre-Service Duration) + (ProductTypex Pre-Service Duration +ProductTypex Delivery Pre-Service Duration)}

  In this equation, x represents all additional order lines. If the route contained three order lines, then three order lines would be represented in the equation above. See the example below.
- For Drop-offs that has a null service duration at the Order line level – Service Duration = Order Service Duration + Order Delivery Service Duration + Location Service Factor * {(ProductType1 Service Duration + ProductType1 Delivery Service Duration) + (ProductTypex Service Duration + ProductTypex Delivery Service Duration) + (ProductType MeasureX * Orderline Qty/ProductType Service Rate)}

In this equation, x represents all additional order lines. If the route contained three order lines, then three order lines would be represented in the equation above. See the example below.

Example:

Using the same route as in first example above, durations are applied to the Order level and the Product Type level.

	Pre Ser Dur	Ser Dur	PU Pre Ser Dur	PU Ser Dur	Del Pre Ser Dur	Del Ser Dur	Qty	Measure 1	Product Type
FWOrder	1 mins	5 mins	1 mins	5 mins	2 mins	6 mins			
OrderLine (ItemF)	**null**	**null**	**null**	**null**	**null**	**null**	2	**null**	**F**
OrderLine (ItemW)	**null**	**null**	**null**	**null**	**null**	**null**	1	**null**	**W**
OrderLine (ItemT)	**null**	**null**	**null**	**null**	**null**	**null**	1	**null**	**T**

	Pre Ser Dur	Ser Dur	PU Pre Ser Dur	PU Ser Dur	Del Pre Ser Dur	Del Ser Dur	Measure 1	Apply To Meas.	Service Rate (unit/min)
ProductType (F)	2 mins	**null**	1 mins	**null**	2 mins	6 mins	1500	1	100
ProductType (W)	2 mins	**null**	1 mins	**null**	2 mins	6 mins	900	1	100
ProductType (T)	3 mins	**null**	0 mins	5 mins	1 mins	**null**	600	1	100

➲ **Note—** Where service durations are null; the quantity, measure, apply to measure, and service rates apply in the calculation.

A location service factor (LSF) is also applied to each location.

Location	LSF
(A)	0.9
(B)	1.0
(C)	1.1

The pre-service duration and service duration for each stop activity would be:

	Pre Service Duration	Service Duration
FWActivity (A)	4.7 mins	37 mins
FWActivity (B)	8 mins	90 mins
FWActivity (C)	16.2 mins	30.8 mins

For FWActivity(A):

- Pre Service Duration calculation is: 1 + 1 + 0.9 * (2 +1) = 4.7 mins
- Service Duration calculation is: 5 + 5 +0.9 * (1500 * 2/100) = 37 mins

For FWActivity(B):

- Pre Service Duration calculation is: 1 + 2 + 1.1 * {(2 + 2) + (2 + 2) (3 + 1)} = 16.2 mins
- Service Duration calculation is: 5 + 6 +1.1 * {(6) + (6) + (600 * 1/100)} = 30.8 mins

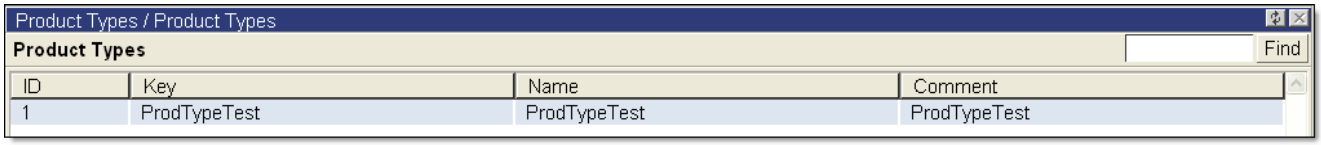
Managing Product Types and Orders

Accessing the Product Type List

To access the product type list:

1 From the main menu, select **Data > Product Types**.

The list of product types appears:



2 Right-click on a selected product type record and select one of the management options:

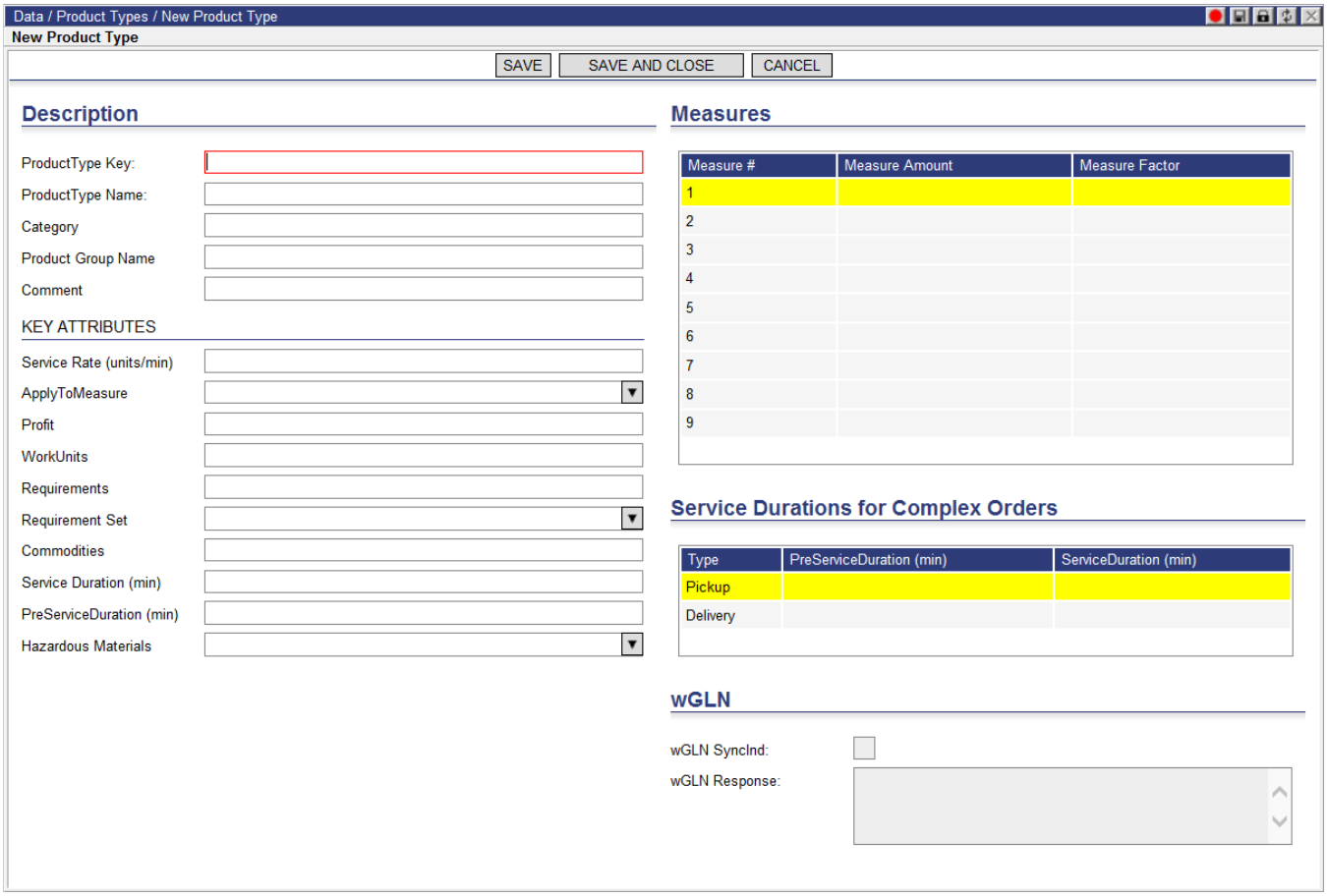
- Edit
- Delete
- Clone
- Publish to wGLN
- Publish All to wGLN
- New

Creating a New Product Type

To create a new Product Type:

1 Right-click on the **Product Types** page and select **New**.

The **New Product Type** page appears:



2 Under **Description**, enter a product type key.

3 If desired, enter a product type name and a comment.

4 Under **Key Attributes**, enter or select from the drop-down list any additional information in the appropriate fields.

This is where users will want to apply any service rates, specify if they apply to any measures, the service duration and pre-service duration, and any requirements or requirement sets.

5 Under **Measures**, specify all measure amounts and factors for this product type if applicable.

6 Under **Service Durations for Complex Orders**, if the product is on a complex order (has a pickup and a delivery (drop-off)) and a pre-service and service duration should be applied, enter the pickup pre-service and service durations and the delivery pre-service and service durations.

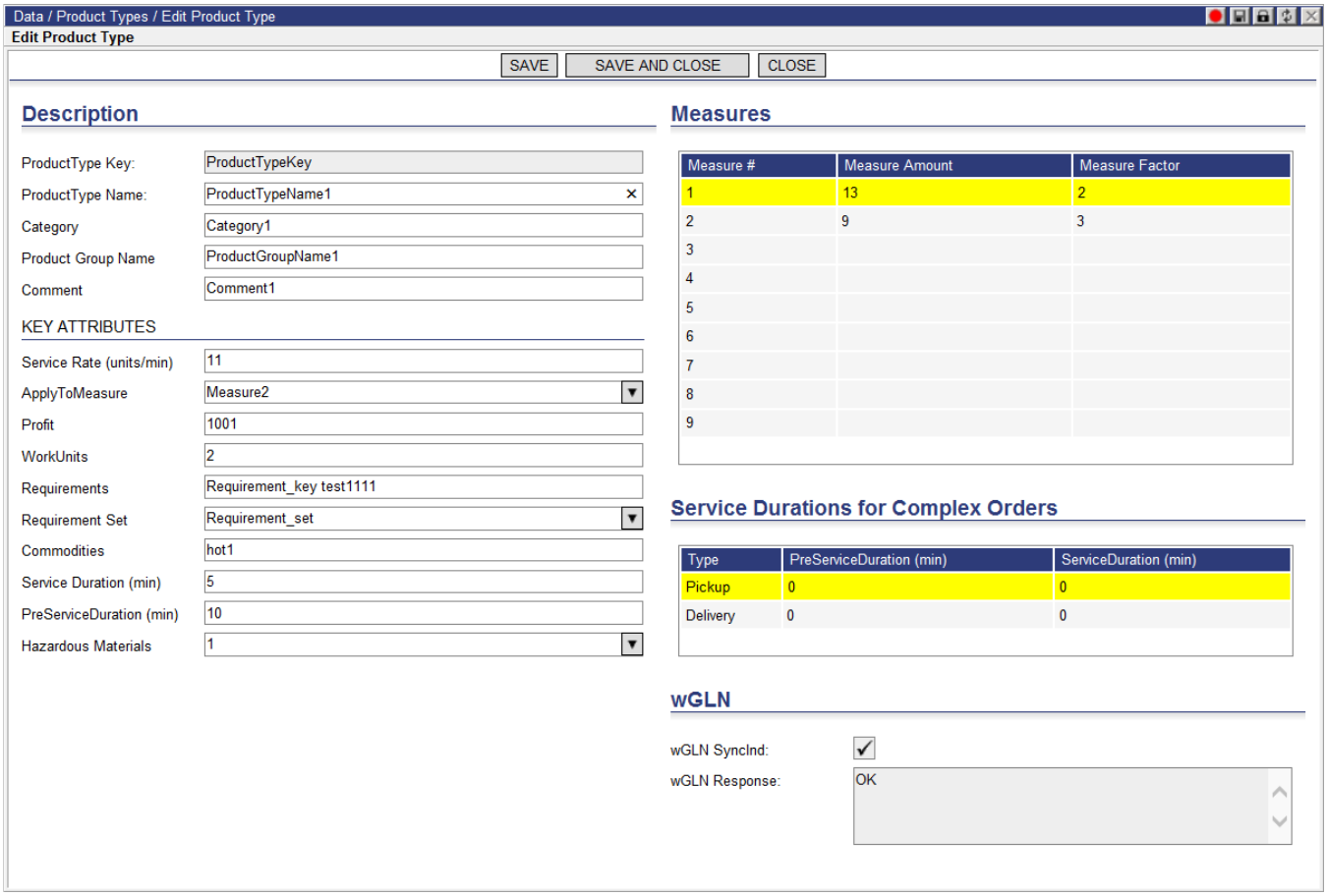
7 Click **Save** to save and return to the **Edit Product Type** page, or click **Save and Close** to save and to return to the **Product Type** page.

Viewing and Editing a Product Type

To view or edit a product type:

1 Right-click on a product type and select **Edit**.

The **Edit Product Type** page appears:



2 Modify or add additional data in the appropriate fields.

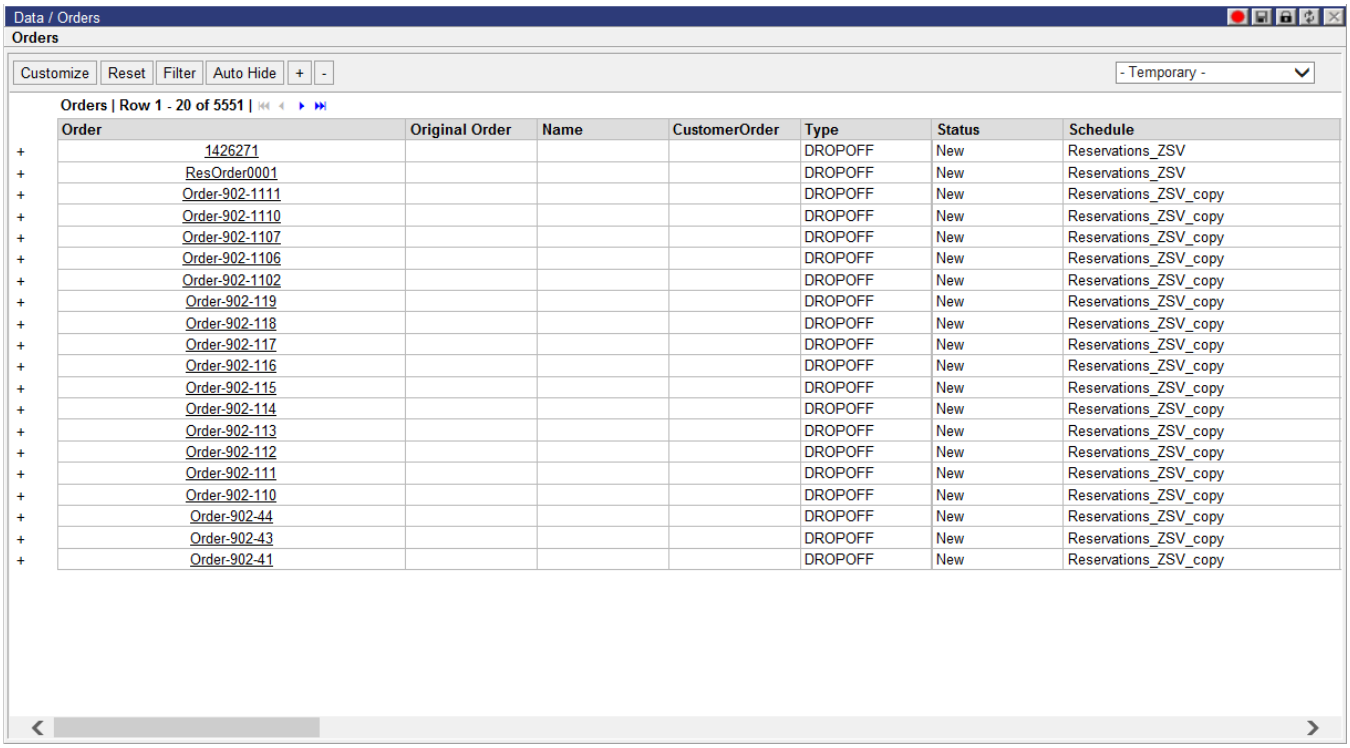
3 Click **Save** to save, or click **Save and Close** to save and to return to the **Product Type** page.

Accessing the Order List

To access the order list:

1 From the main menu, select **Data > Orders**.

The list of orders appears:



	Order	Original Order	Name	CustomerOrder	Type	Status	Schedule
+	1426271				DROPOFF	New	Reservations_ZSV
+	ResOrder0001				DROPOFF	New	Reservations_ZSV
+	Order-902-1111				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-1110				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-1107				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-1106				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-1102				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-119				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-118				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-117				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-116				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-115				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-114				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-113				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-112				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-111				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-110				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-44				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-43				DROPOFF	New	Reservations_ZSV_copy
+	Order-902-41				DROPOFF	New	Reservations_ZSV_copy

2. Select a schedule from the drop-down menu in the top right-hand corner of the page to display all orders assigned to that schedule.
3. Use the plus signs to expand the tree view of the **Orders** list page to view associated stops and order lines.
4. Right-click on a selected order record and select one of the management options:
   - **Edit:** Displays the **Edit Order** page for one or more selected orders
   - **Clone:** Copies the selected order
   - **Split:** Displays the **Split Order** page
   - **Itinerary** (may or may not be present)
   - **Delete**
   - **Show on Dashboard:** When selected for an order, the system will navigate the user to the dashboard with the order's schedule selected and highlight the associated stop/route row in the **Unassigned Stops** or **Routes** quadrants
   - **Reassign Schedule:** Allows the user to move the order to another schedule
   - **Edit Time Windows:** Displays the **Re-date Orders** window, allowing the user to modify the time windows of the order
   - **New Order:** Begins the order creation process

- **List View Mode:** Changes the display from tree view to list view
- **Import CSV Data:** Displays the Import Orders window, allowing users to import data via CSV file
- **Export CSV Template:** Exports displayed order information to a CSV file

Creating a New Order

To create a new Order:

1 Right-click on the **Orders** page and select **Create**.

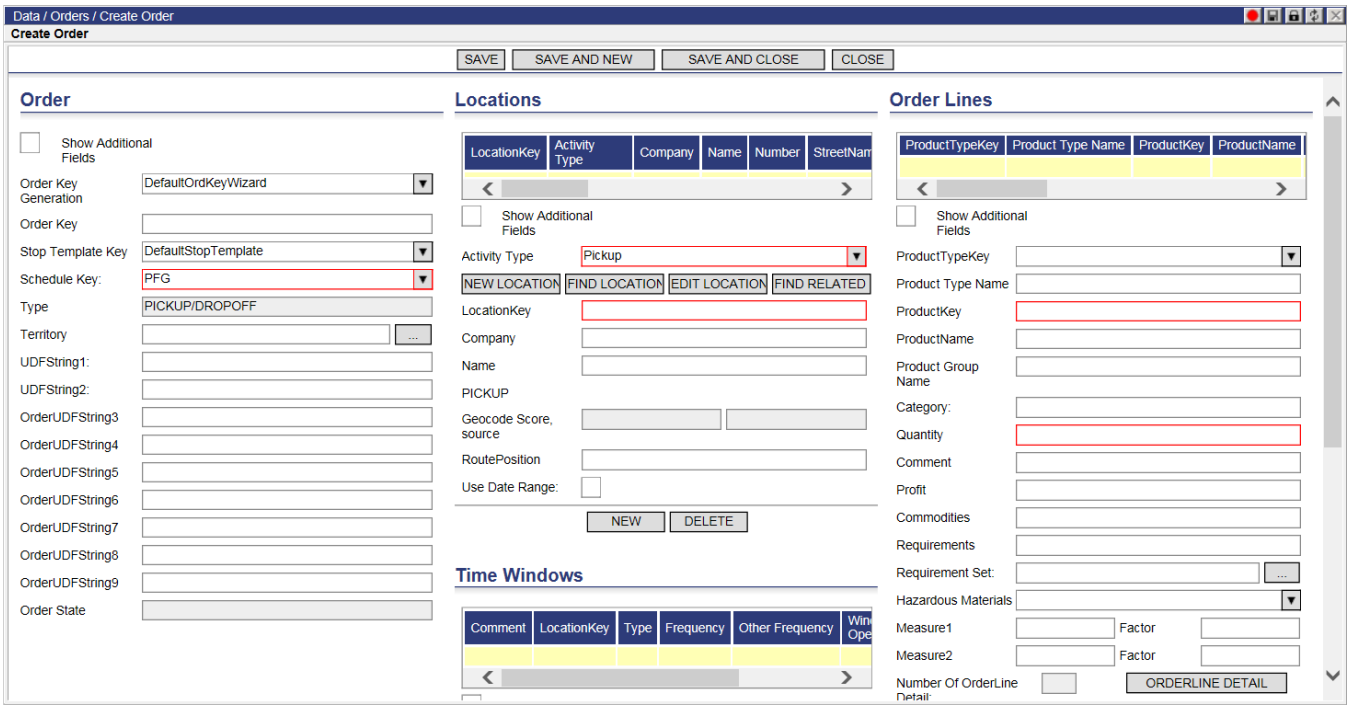
Or,

Right-click on an Order in the **Unassigned Stops** quadrant or in the **Route Detail1** or **2** quadrant and select **New Order**. The **Set Order Type** dialog box appears:

2 Select the type of order being created and click **Create**.

➲ **Note—** The default selection is **PickUp/DropOff**, but Descartes Route Planner will retain the user's previous selection when creating multiple orders.

The **Create New Order** page appears:



➲ **Note—** Selecting the **Show Additional Fields** checkbox displays additional fields for that section: Header Info, Profit, Status, Requirements and RequirementSets.

3 To fill the Territory field under the **Order** section, click [...] to select a saved territory from the **Territories** dialog box.

4 Under **Location**, do one of the following:

- Click **New Location...** to create a new location to add to the order form. See *Creating a New Location* for more information.
- Click **Find Location...** to browse the list of saved location. Double click a location in the list to add it to the order form.
- Click **Edit Location...** to edit the selected location in the order form without leaving the page. See *Editing a Single Location* for more information.

➲ **Note—** For Pickup/Dropoff order types, two locations will need to be created or selected.

5 Enter a Location Key and any additional information for this location.

6 Under **Time Windows**, select an Associated Location and a Type from the drop-down menus and enter any additional information for this time window. Click **New** to create additional time windows.

➲ **Note—** The **Time Window Combo Control** has the following columns: LocationKey, Comment, Earliest Date and Time, Latest Date and Time, Open and Close.

7 Under **Order Lines,** click ... in the Requirement Set field will allow the user to select a saved requirement set from the **Requirement Set** dialog box.

8 Enter a Product Key.

9 Enter the quantity for this order line.

If desired, enter any additional information for this order line. Click **New** to create additional order lines.

10 When finished, click **Save** to save the new order, but stay on the current page, or click **Save and Close** to save the new order and return to the **Order** list page. Save and New will save the current order and take the user to a blank **Create New Order** page.

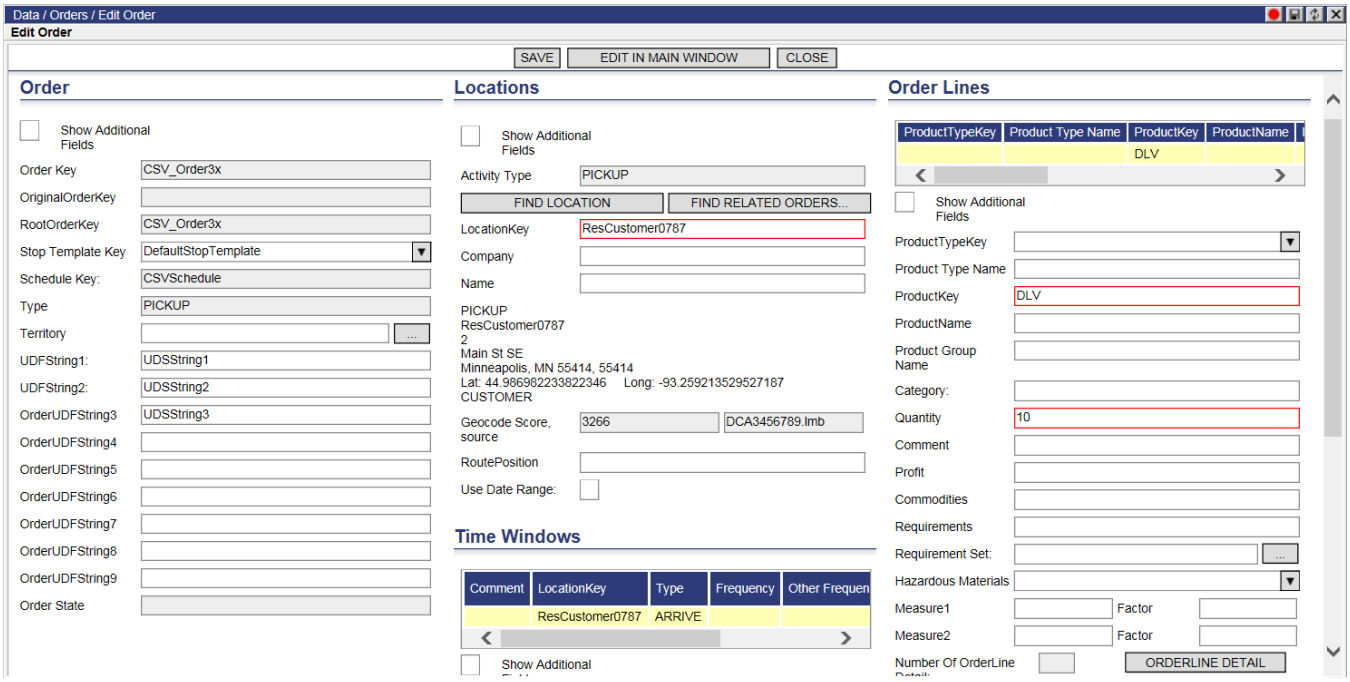
Editing an Order

To edit an order:

1 Right-click on an order and select **Edit**. The **Edit Order** window appears at the bottom of the list page. To maximize the **Edit Order** page, click **Edit in Main Window**.

Or,

Right-click on an Order in the **Unassigned Stops** quadrant or in the **Route Detail1** or **2** quadrant and select **Edit Order**. The **Edit Order** page appears.

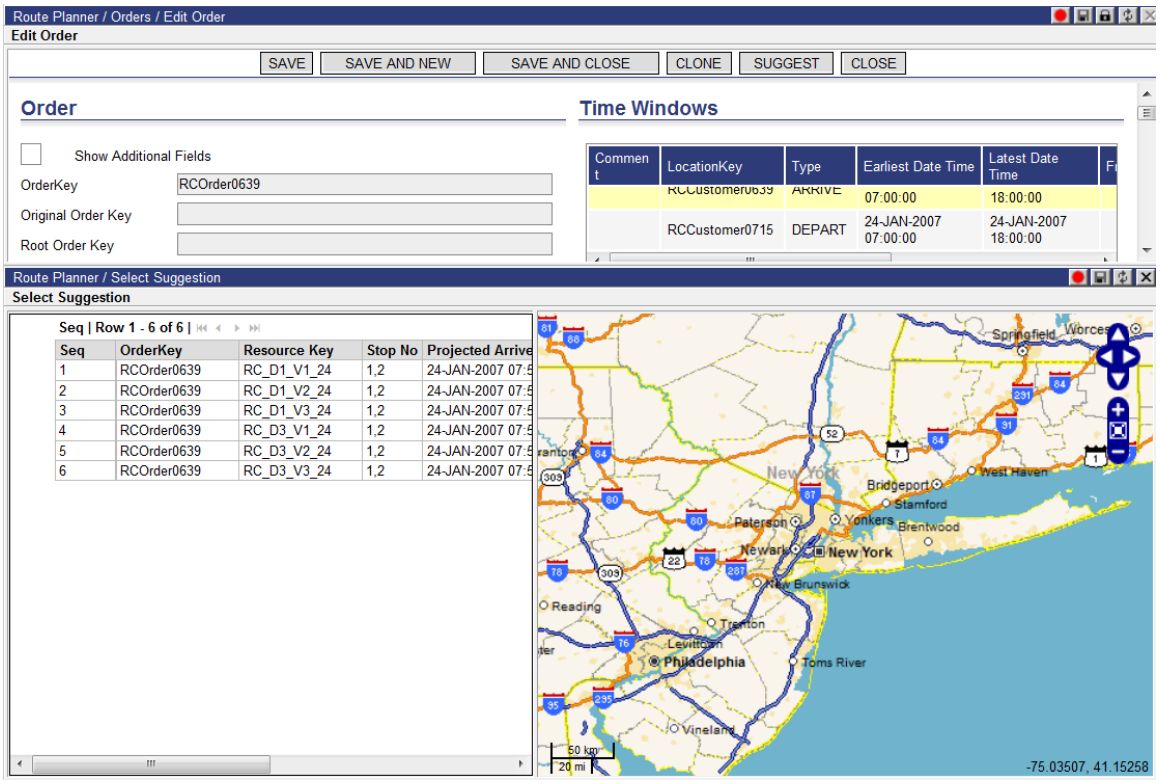


➲ **Note—** For a complete look at the **Order** page, see *Creating a New Order*.

2 Modify or add additional data in the appropriate fields.

4 Click **Clone** to create a new order populated with data from the edited order.

5 Click **Suggest** to display the **Select Suggestion** page at the bottom of the form.



Map data © 1987-2017 HERE

Drag a suggestion from the left panel to the right panel for mapping information.

6 When finished editing data, click **Save** or **Save and Close**.

Splitting an Order

The **Split Order** page allows users to specify how to split the Quantity or Measure(1-9) for each line item contained on the order. Once specified, the new order should contain exactly the same attributes as the original order with the only difference of the updated amounts of the line items. The **Split Order** page will also allow users to transfer order lines from the original order to a new order by entering an amount of zero (0) in the original order quantity and measures and the full amount in the second (2nd) quantity and measures.

Orders can be split from the following locations:

- Unassigned Stops quadrant
- Route Detail1/2 quadrant
- **Order** list page

For this section, splitting an order from the **Orders** list page is described.

➲ **Note—** The order must be a double-ended job to be split.

The new order identifier is created based on the rules defined by the selected Key Wizard on the **Split Order** page.

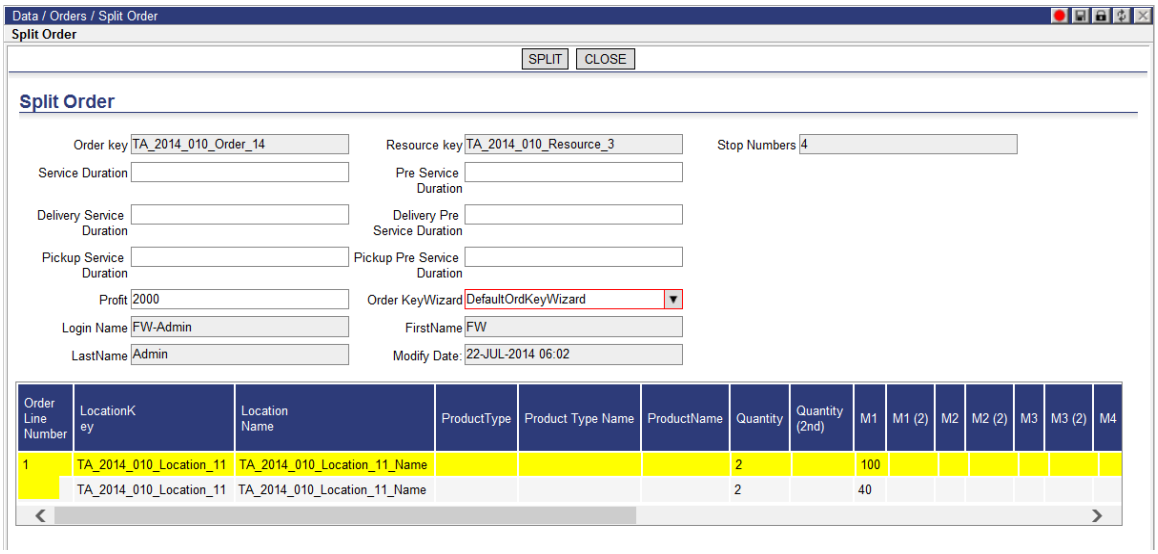
To split an order:

1 From the **Orders** page, right-click on an order and select **Split**.

Or,

Right-click on an Order in the **Unassigned Stops** quadrant or in the **Route Detail1** or **2** quadrant and select **Split Order**.

The **Split Order** page appears.



2 From the **Order KeyWizard** drop-down list, select the desired order keywizard if it is not correct.

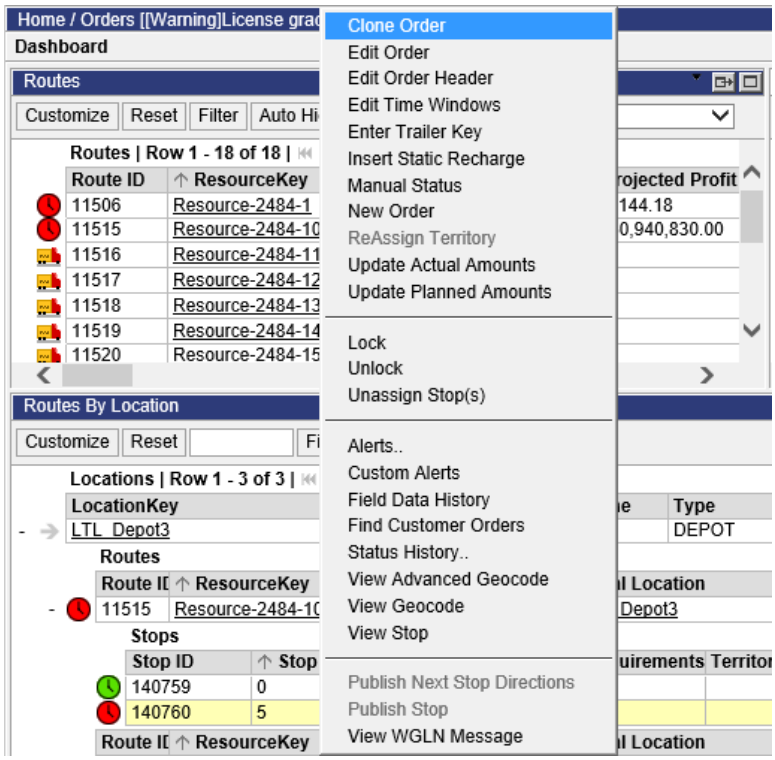
3 If you want to split the quantity, in the Quantity (2nd) column for the order line, enter the second quantity amount. For example, in the screenshot above, you might enter 0.5.

4 If you want to split by measure, in the M1 (2) column, enter the Measure1 for the second quantity. For example, in the screenshot above, you might enter 0.5.

5 Enter any additional desired fields and click **Split**. The original order will now have the Original Order key listed under the Original Order column on the Orders page. The new order is created with the specified amounts and displayed at the end of the Orders page. The new order will also have the Original Order key listed under the Original Order column.

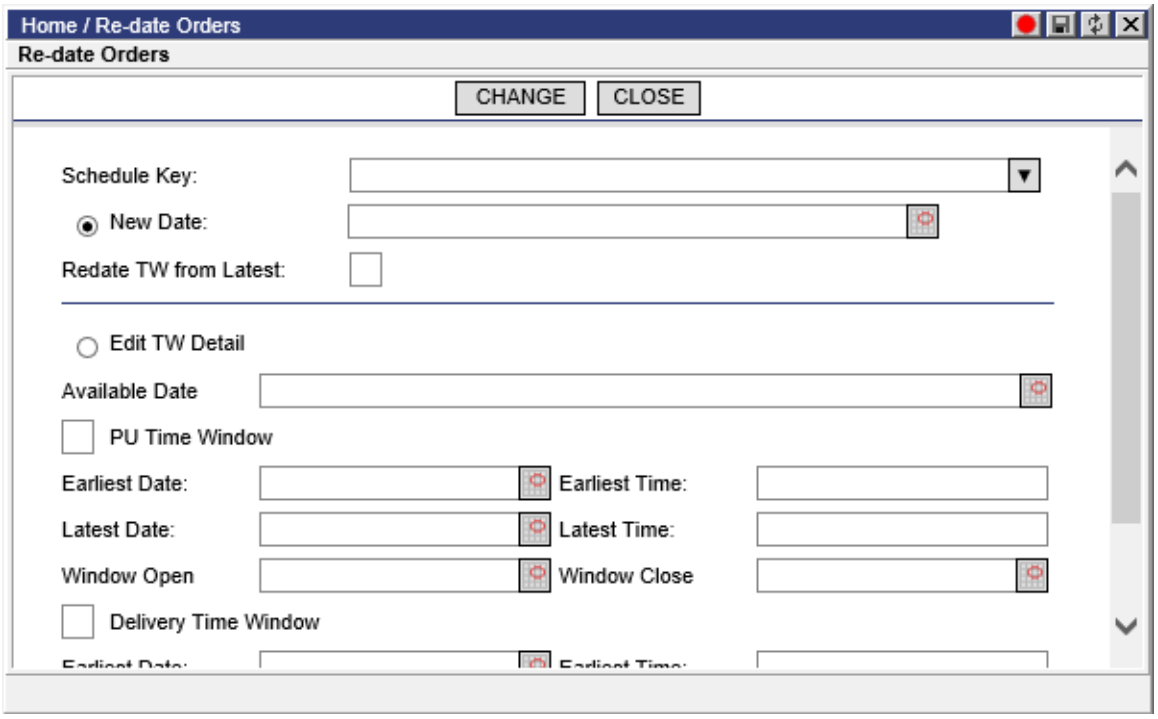
Cloning an Order from the Dashboard

Users can create copies of orders from the Dashboard by selecting the **Clone Order** option for an order on the **Unassigned Stops** quadrant or the Stops node of the **Route Details** and **Routes By Location** quadrants.



Editing an Order's Time Windows

From the **Re-date Orders** window, accessible via the **Edit Time Windows** right-click option on the **Orders** page, users can edit times and dates for pickup and delivery time windows for orders with no time windows or orders with one time window per stop, excluding multitask jobs.



Users can select the radio button for the New Date section to change only the date of the order. Select the **Re-Date TW from Latest** checkbox to have the system adjust the time windows of the selected order backward from the Latest Date value instead of forward from the Earliest Date value.

To edit the time window details:

1. Select the radio button for the **Edit TW Detail** section.
2. Select the **PU Time Window** checkbox to enter time window data for the pickup time window and/or the **Delivery Time Window** checkbox to enter time window data for the delivery time window.
3. Enter earliest/latest time and date values.
4. Enter Window Open and Window Close values.
5. Click **Change** when finished. If the order has no time window, the system will create one based on the entered data. If the order has one time window, the system will update the time window data. If the order has more than one time window, only the dates will be updated.

   ➲ **Note—** For double-ended orders, both pickup and delivery time windows values *must* be entered. Saving only one or the other may create inconsistencies.

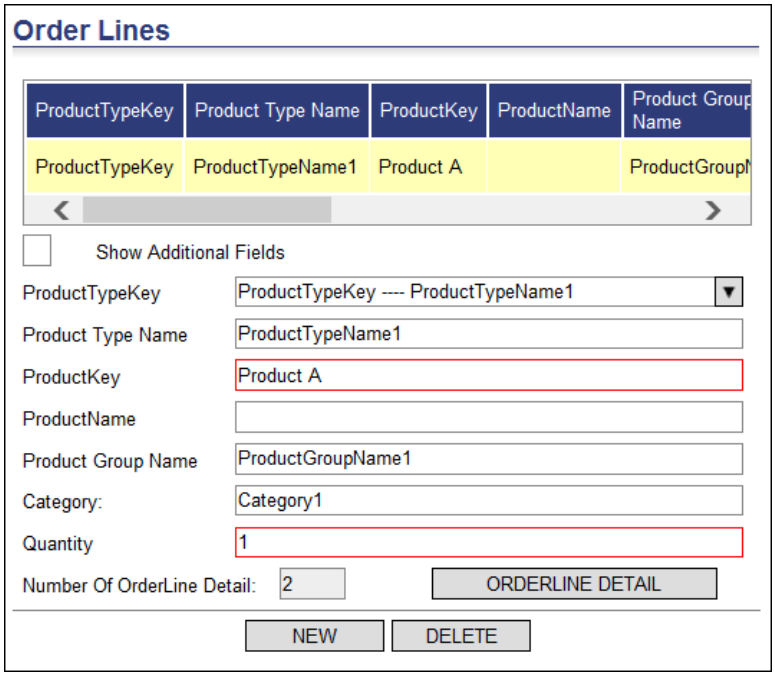
Order Line Details

There is additional hierarchy for order line item details in Descartes Route Planner, allowing users to specify the contents of order line items and view order line details in a new node.

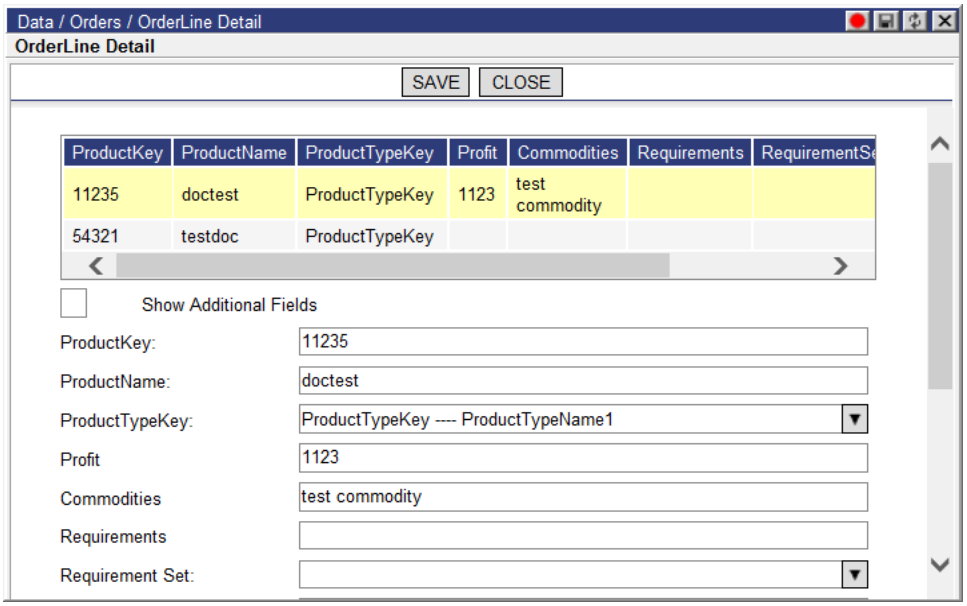
➲ **Note—** This feature has not yet been implemented for the **Update Actual Amounts** and **Update Planned Amounts** functionalities.

Entering Order Line Details

Users can enter order line details information on the **New Order** and **Edit Order** pages.



1. In the Order Lines section of the **New**/**Edit Order** page, ensure that ProductKey and Quantity values are entered before attempting to add order line detail information.
2. Click the **Orderline Detail** button. The **OrderLine Detail** window is displayed.



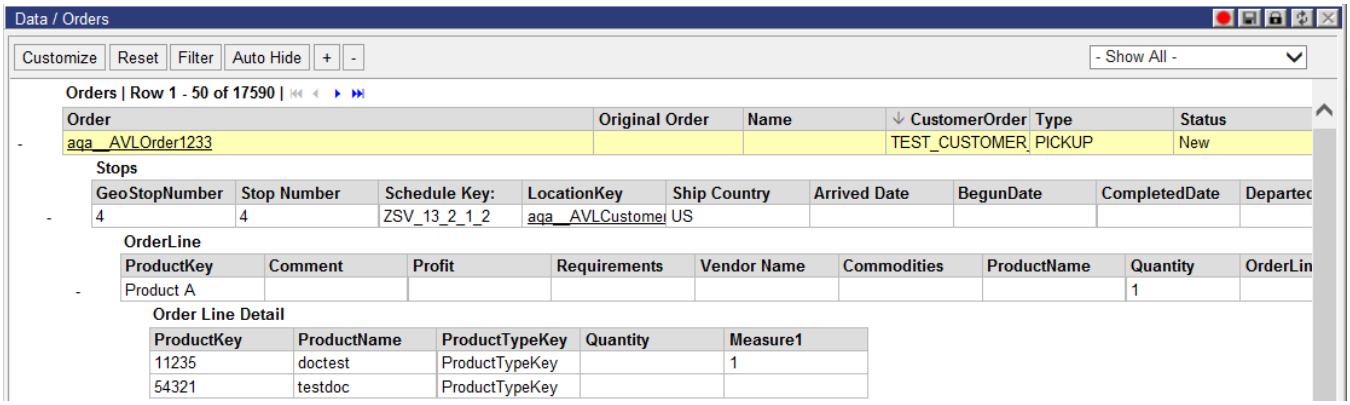
3. Enter the desired product information. Select **Show Additional Fields** to display further measure and service-type fields. The table will update with any entered information.
4. Click **New** to create a new order line details row in the table. Click **Delete** to remove the selected row.
5. Click **Save** when finished. The Number of OrderLine Detail field will be updated with the number of rows added for the selected order line.
6. Save the order.

Viewing Order Line Details

Order line details can be viewed on the following sections of the application:

- **Route Detail** quadrant
- **Orders** page
- Generated POD Sheet
- **Field Data History** page

The Order Line Detail node appears below the OrderLine node on the **Route Detail** quadrant and **Orders** page (in **Advanced List Mode**). As with other nodes, use the +/- buttons to display or hide the Order Line Detail node.



➲ **Note—** When an order contains order line details information, the **Split Order** and **Itinerary** right-click options are disabled.

On a generated POD Sheet, order line details are displayed in bullets below the governing line item.

DESCARTES

Order NO: TA_2014_010_Order_7	**Delivery Date:**

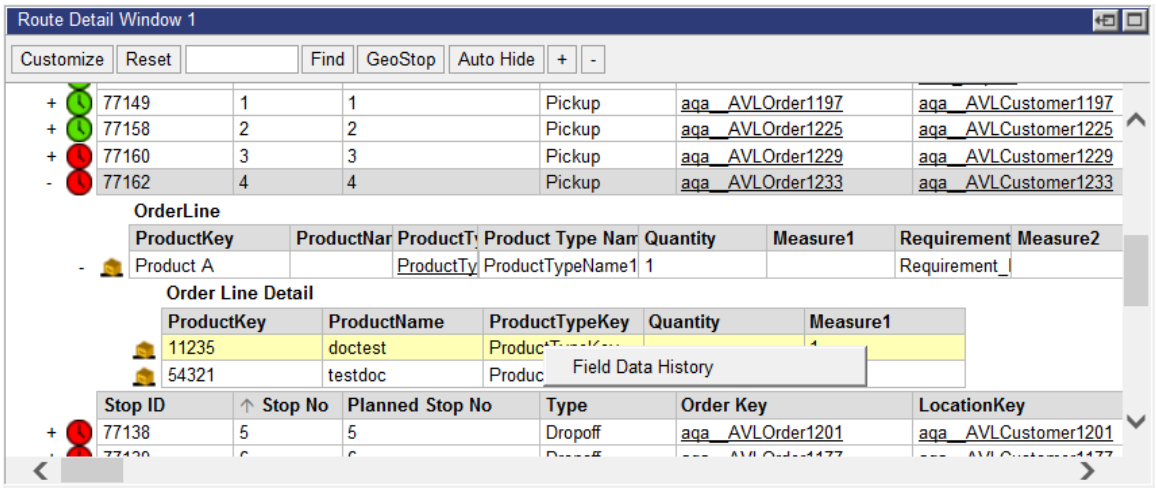
SHIP FROM	
Company:	
Address:	Minneapolis Minnesota US
Tel NO:	
Generated Time Window:	-
Orig Pickup:	11/10/2015 8:40 AM
Picked up:	

SHIP FROM	
Company:	
Address:	Minneapolis Minnesota US
Tel NO:	
Generated Time Window:	-
Orig Pickup:	11/10/2015 9:08 AM
Picked up:	

SHIP TO	
Company:	
Address:	Richfield Minnesota US
Tel NO:	
Generated Time Window:	-
Orig Delivery:	11/10/2015 9:27 AM
Delivered:	

Item	Qty	ActQty	Description	Total M1|M2|M3	Total AM1|AM2|AM3	Remarks
1	3			6 | 9 | n/a	n/a | n/a | n/a	
- Detail 1 : 10	7			14 | 21 | n/a	n/a | n/a | n/a	
- Detail 2 : 11	17		zsv_test	34 | n/a | n/a	n/a | n/a | n/a	
3	2			4 | 6 | n/a	n/a | n/a | n/a	
- Detail 1 : 10	7			14 | 21 | n/a	n/a | n/a | n/a	
- Detail 2 : 11	17		zsv_test	34 | n/a | n/a	n/a | n/a | n/a	

In the **Route Details** quadrant, users can right-click on a row in the Order Line Detail node and select **Field Data History** to view related field data.



Managing Locations

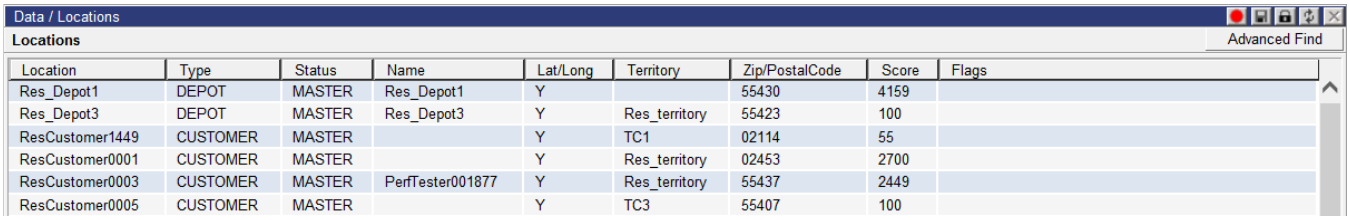
Locations identify a specific geographic location using both address information, and latitude and longitude coordinates. Locations are created automatically when an order comes into Descartes Route Planner, using the origin and destination information from the order. You can also manage locations manually.

Accessing the Location List

To access the location list:

1 From the main menu, select **Data > Locations**.

The list of locations appears:



2 Right-click on a selected locations record and select one of the management options:

- Edit
- Delete
- Clone
- Resources
- View Geocode
- Lock Lat/Long

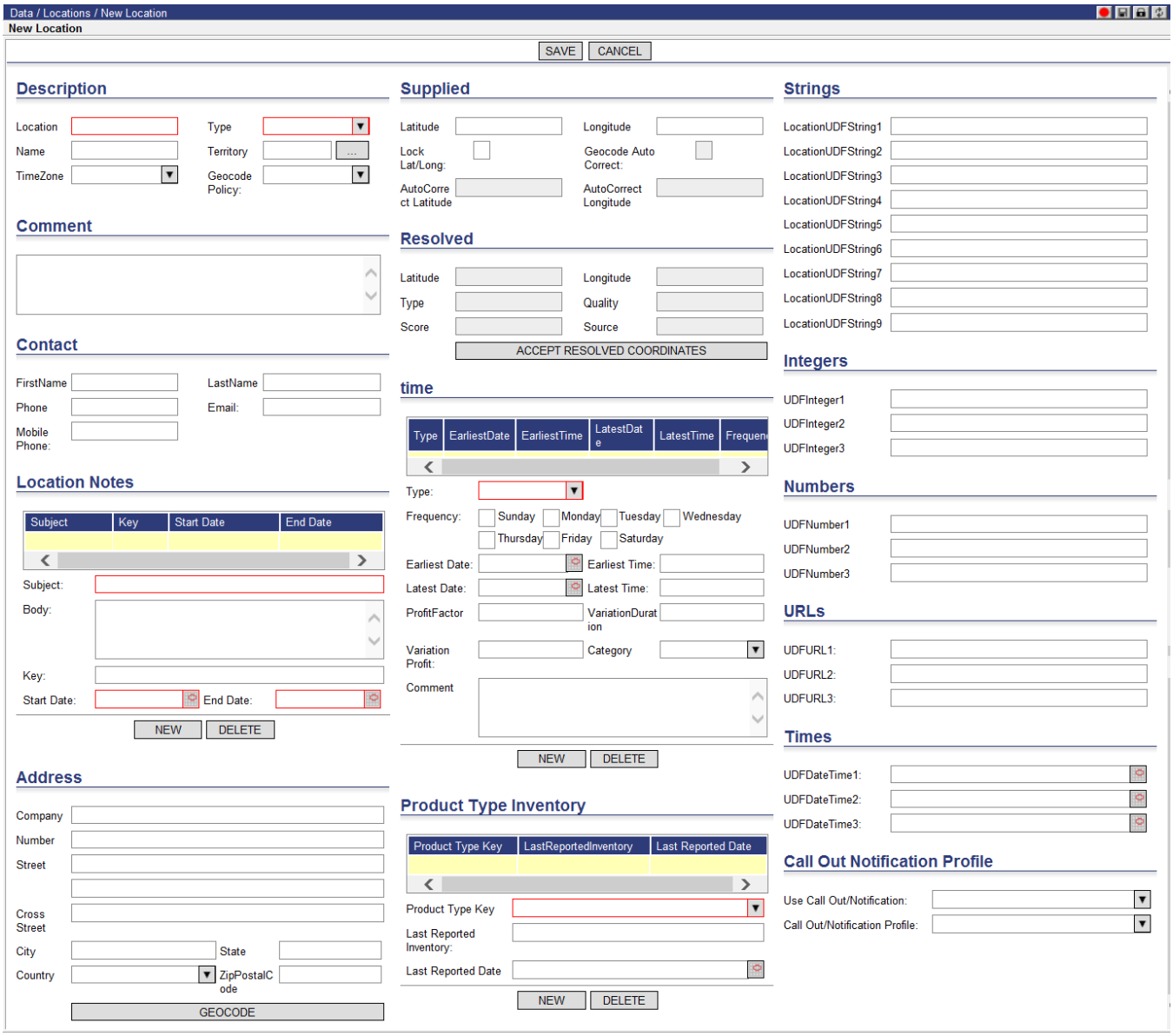
- Geocode Selected Locations
- New
- Geocode All Locations
- Clear Filter

Creating a New Location

To create a new Location:

1 Right-click on the **Locations** page and select **New**.

The **New Location** page appears:



2 In the Description section, enter the location's basic information.

3 Select a location type from the **Type** drop-down menu.

4 If desired, enter any additional information for this location in the appropriate fields, including any additional notes in the **Comment** section.

➲ **Note—** Clicking **Lock Lat/Long** will lock the latitude and longitude for this location so that it cannot be overwritten when locations are automatically geocoded. For more information on locking the

Lat/Long, see *Locking the Latitude/Longitude*. Users can view and sort locations in the list by the Locked column, which displays whether or not the latitude and longitude is locked for a location.

5 Click **Save** to save the location.

Descartes Mobile Integration: Store and Display Inventory Information Per Location

Descartes Route Planner can be configured to track the types and number of items reported by Descartes Mobile delivered and collected at customer locations and maintain an enumerated inventory of each location.

Workflow

To illustrate the workflow, consider the following example. No packages have been delivered to Client X, which has three container types: Cable drums, Steel containers and Pallets. The Driver delivers to the client and reports the number of each type dropped off using Descartes Mobile. Nothing is picked up during this stop, so the driver does not report any pickups. Descartes Route Planner records the following at the Client X location. This information is also available for drivers using Descartes Mobile.

- Pallets: 1
- Cable drum: 0
- Steel container: 2

On the next visit the driver is prompted that the following packaging has to be picked up at the client site:

- Pallets: 1
- Cable drum: 0
- Steel container: 2

The driver will enters how much he leaves behind:

- Pallets: 3
- Cable drum: 1
- Steel container: 0

Instead of the specified amount, the driver picks up:

- Pallets: 1
- Cable drum: 0
- Steel container: 1

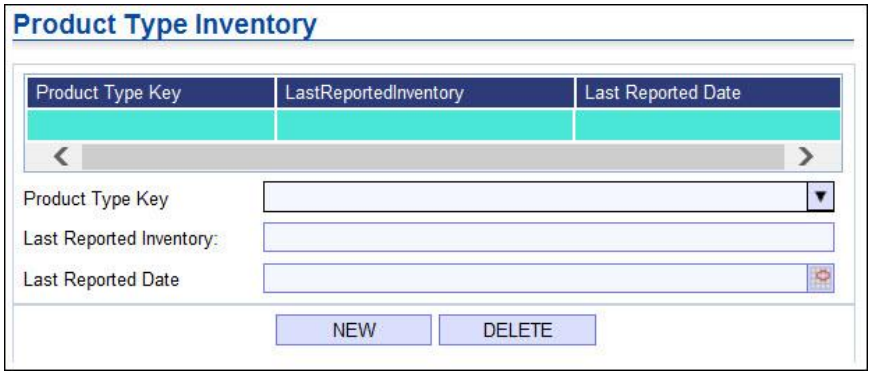
The totals in Descartes Route Planner are updated:

- Pallets: (1 + 3) – 1 = 3 (previous amount + new delivered – picked up = new amount)
- Cable drum: (0 + 1) – 0 = 1
- Steel container: (2 + 0) – 1 = 1

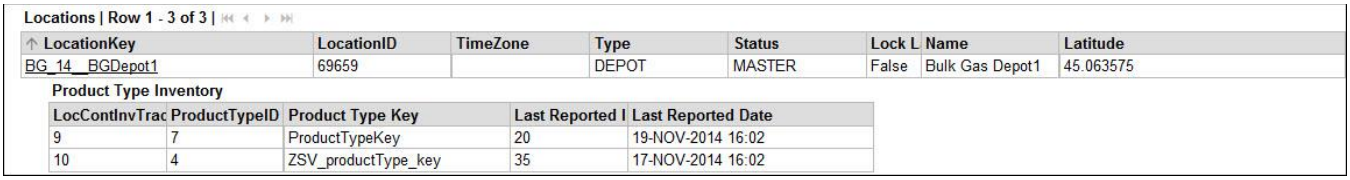
The new values are displayed during the next visit.

UI Display

The Product Type section stores and displays the information…



…and the Product Type Inventory node on the Locations advanced list mode page displays related location inventory values in the following fields:



- LocContInvTrackID
- ProductTypeKey
- ProductTypeID
- LastReportedInventory
- LastReportedDate

Editing or Cloning Locations

Editing a Single Location

To edit a single location:

1. Double-click on a location on the **Locations** page, or right-click on a location and select **Edit**.

   The **Edit Location** page appears:

   ➲ **Note—** For a complete look at the (New/Edit) **Location** page, see *Creating a New Location*.

2. Modify or add additional data in the appropriate fields.

   ➲ **Note—** Clicking **Lock Lat/Long** will lock the latitude and longitude for this location so that it cannot be overwritten when locations are

automatically geocoded. For more information on locking the Lat/Long, see *Locking the Latitude/Longitude*.

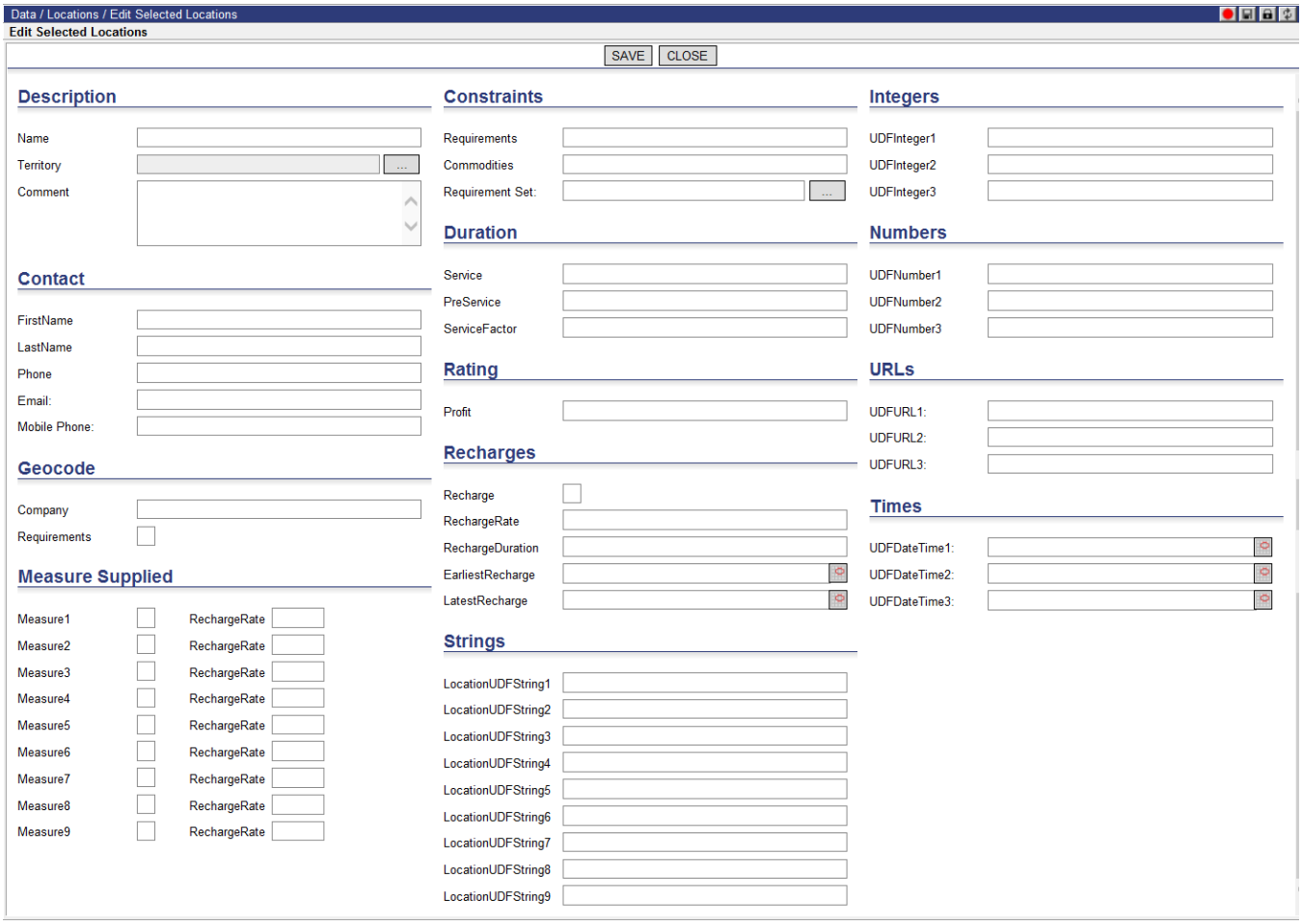
3 Click **Save** to save changes.

Editing Multiple Locations

To edit selected locations:

1 Select the desired locations, right-click and select **Edit Selected Locations**.

The **Edit Multiple Locations** page appears. It is blank so that you can enter the new values for the selected locations.



2 Enter or select the appropriate information in the appropriate fields.

➲ **Note—** Clicking **Lock Lat/Long** will lock the latitude and longitude for this location so that it cannot be overwritten when locations are

automatically geocoded. For more information on locking the Lat/Long, see *Locking the Latitude/Longitude*.

3 Click **Save** to save the new information for the selected locations. The new information is applied to the selected locations.

Cloning a Location

To clone a location:

1 Right-click on a location and select **Clone**.

The **Edit Location** page appears.

2 Enter the location.

3 Modify or add additional data in the appropriate fields.

4 Click **Save** to save changes.

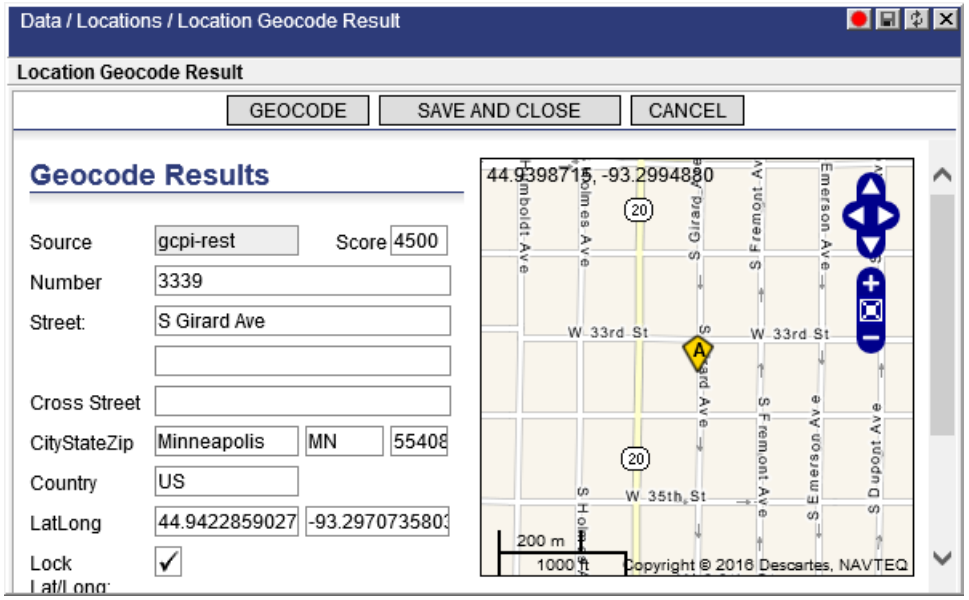
Configuring a Location for Dock Door Planning

Users can set up a depot location for the Dock Door Planning feature from the **Edit Location** page. For more information on this process, please see the *Depot Setup* section.

Viewing a Location's Geocode Information

To view the geocoded information about a location, from **Locations** page, right-click on the desired location and select **View Geocode**.

The following screen appears:



Map data © 1987-2017 HERE

For more information concerning Geocoding, see *Geocoding New or Existing Locations Using Address*.

Locking the Latitude/Longitude

Descartes Route Planner users can specify that the longitude and latitude fields should be locked and not overwritten unless the user unlocks them. If new orders are loaded using existing locations or a location is updated using a business document and these locations' longitude/latitude fields are locked, then the transaction will proceed without overwriting the longitude/latitude fields.

Locations with locked latitude/longitude are marked in the Locked column on the **Locations** list page allowing users to sort locations by this value.

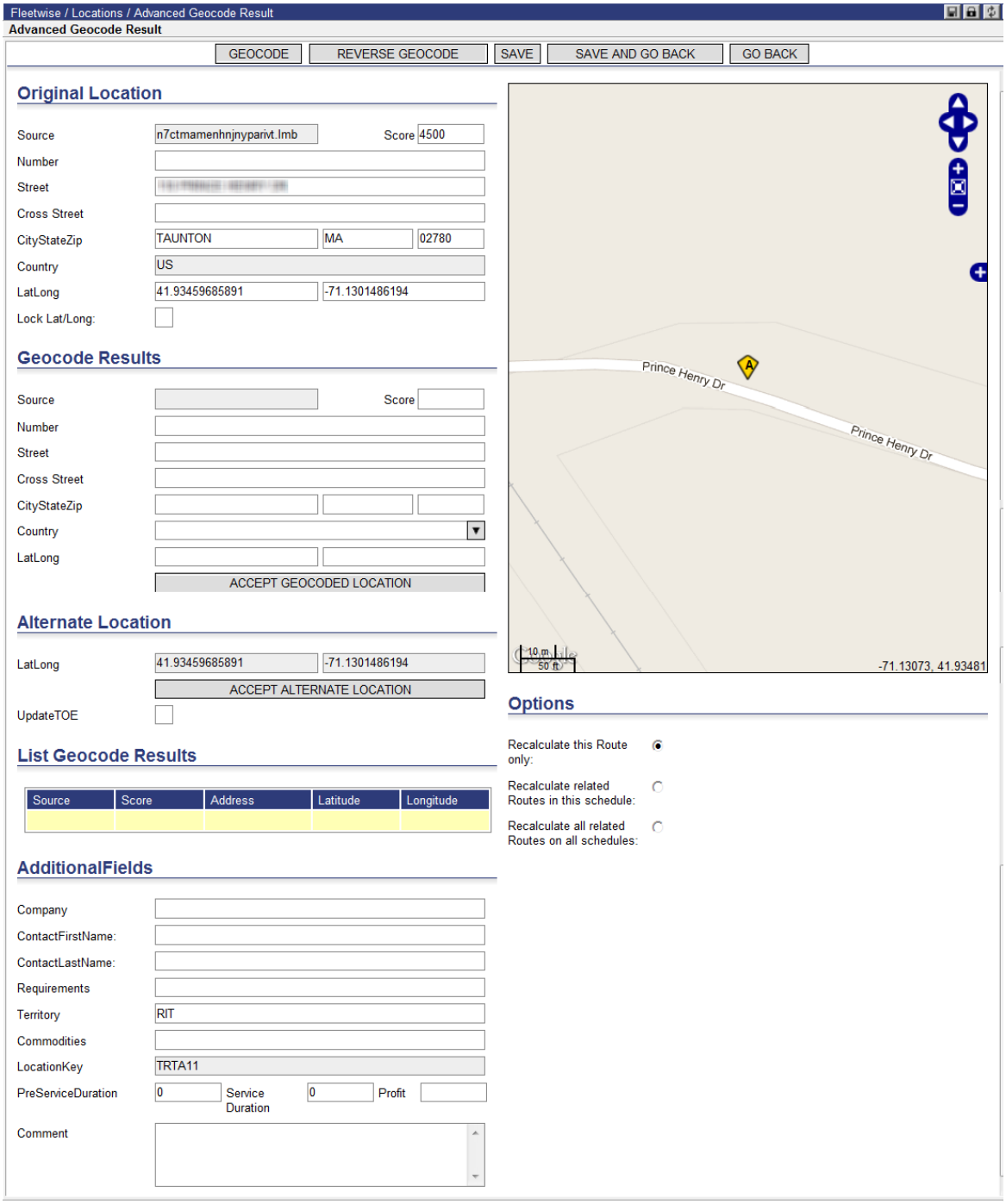
Users can lock the longitude/latitude from the following pages:

- **Geocode Result** page

  If the **Lock Lat/Long:** checkbox is selected, then this location will have its lat/long fields locked.

  To access the **Geocode Result** page, right-click on a stop in the **Unassigned Stops** quadrant or in the **Route Detail** quadrant and select **View Geocode**.

- **Advanced Geocode Result** page



Map data ©2017 Google

If the **Lock Lat/Long:** checkbox is selected, then this location will have its lat/long fields locked.

To access the **Advanced Geocode Result** page, right-click on a stop in the **Unassigned Stops** quadrant or in the **Route Detail** quadrant and select **View Advanced Geocode**.

- **Locations** list page

  The **Lock Lat/Long** option on the **Locations** list page will allow users to select one or more locations and then lock the lat/long for those locations. A pop-up message will display to confirm this action. Select **Ok** to confirm the action or **Cancel** to exit without updating. To access the **Locations** list page, select **Data > Locations**.

- **Edit Location** page

  If the **Lock Lat/Long:** checkbox is selected, then this location will have its lat/long fields locked.

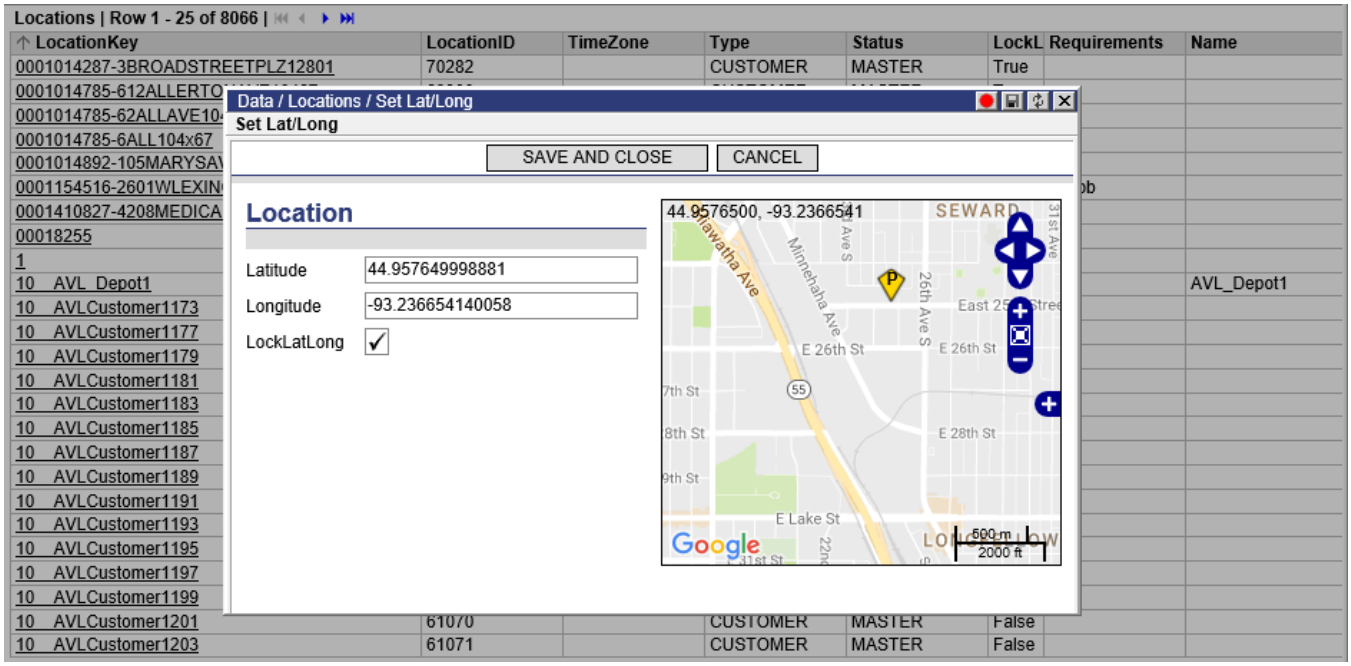
  To access the **Edit Location** page, right-click on a location on the **Location** list page and select **Edit**.

Setting Latitude/Longitude Values for One or More Locations

Users can enter latitude and longitude values for one or more locations on the **Locations** list page by selecting the **Set Lat/Long** option from the right-click menu.

To manually enter latitude and longitude values for locations:

1. From the **Locations** list page, right-click on one or more locations and select **Set Lat/Long** from the right-click menu. The **Set Lat/Long** window appears.



2. Enter Latitude and Longitude values in the appropriate fields. Users can also click the map to move the icon and populate the Latitude and Longitude fields with the latitude and longitude values of the selected location. These values are dynamically displayed in the upper left hand corner of the map as the user moves the mouse cursor.
3. Optionally lock the Latitude and Longitude by selecting the **LockLatLong** checkbox.

Accessing Planner and Dispatcher Options

The Descartes Route Planner users have the same options to create routing plans and manage the execution of Routes. However, a Dispatcher has access to manual status options that Planners cannot access.

Planner and Dispatcher User Options

To access the Planner options, you must log in as a "Planner" level user.

To access the Dispatcher options, you must log in as a "Dispatcher" level user.

For both login levels, the main menu appears the same:

The menu option differences only appear after moving deeper into sub-menu selections.

The rest of this document assumes that users have logged in as either a "Planner" or a "Dispatcher" user.

Planner and Dispatcher Differences

Currently, the only differences between the Planner and Dispatcher options in Descartes Route Planner are that:

- Dispatchers have access to the manual status option, and planners do not have access to this option
- Dispatchers have fewer editing and optimization capabilities than a Planner does

Working with Data Filters

From the **Data Filters** menu, users have five options to available allowing the selection, control and filtering of data in Descartes Route Planner.

- **Select Schedule** – from this page, select the desired Schedule to display in the **Home** page.
- **Options** – from this page, users can set certain session options, including the auto-refresh intervals.
- **Filtering** –from this window, users to can filter certain schedules by date.
- **Find –** the **Find** window provides filter controls for unassigned stops in the system.
- **Filter Management –** from the one list page, **Filter Management**, users can add, remove, apply and edit data filters for the following list pages:
  - Order
  - Resource
  - Location
  - Stop
  - Route
  - Message
  - Order Status
  - Route Gantt Chart
  - Alert Management
  - Assign Crew

This section also reviews filtering options for individual list pages (advanced and otherwise) and Dashboard quadrants.

Selecting Data

Users can select a schedule to work with, and can also choose to work with a subset of data within the schedule, provided the administrator has set up data filtering.

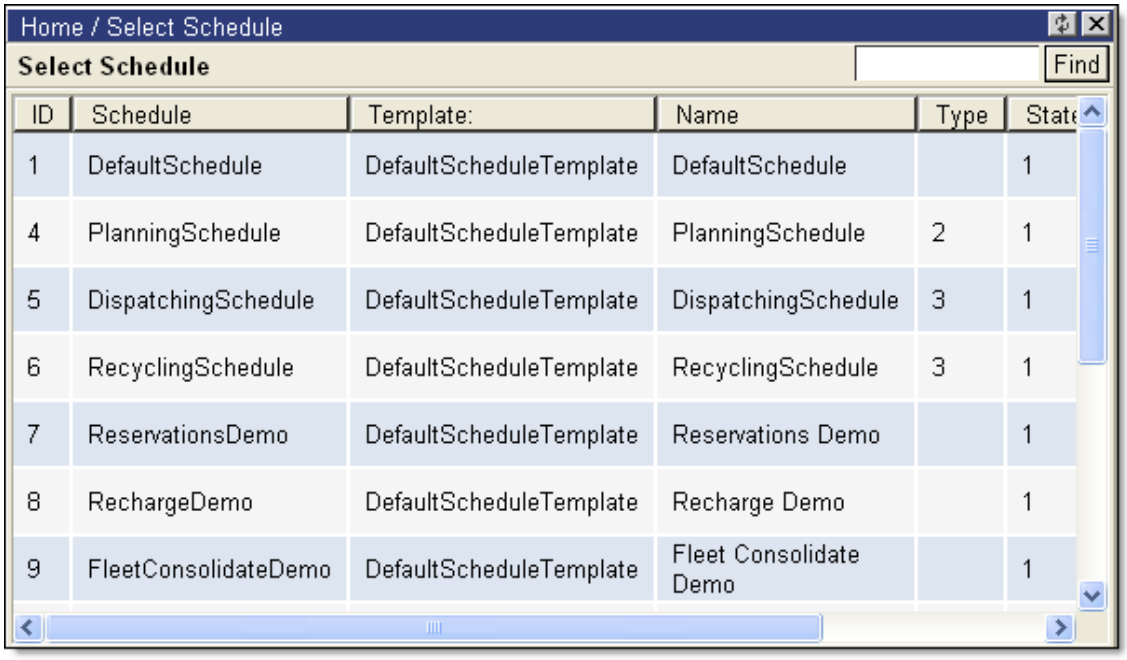
Selecting a Schedule

Descartes Route Planner allows the creation of multiple Schedules to manage Routes during the various stages of planning and execution. A common way to organize Route data is to create a Planner schedule and a Dispatcher schedule, to separate planning from Route execution.

To select a schedule:

1 From the main menu, select **Data Filters > Select Schedule**.

A list of available Schedules appears:



2. Double-click or right-click on the schedule to work with and select **Edit** from the right-click menu.

3. Edit the schedule as desired. When finished, click **Save**, **Delete**, or **Close**.

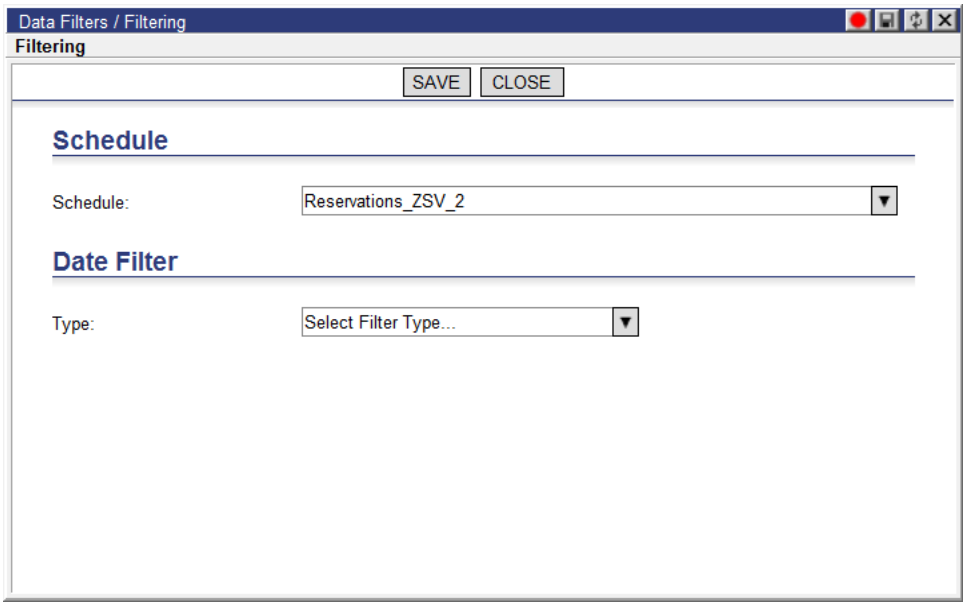
Filtering Data

Filtering Data by Date

To filter data by date:

1. From the Descartes Route Planner main menu, select **Data Filters > Filtering**.

   The **Filtering** window appears:



1 Select a schedule from the **Schedule** drop-down menu.

2 Select a date control from the **Type** drop-down menu.

Users can select one of the following options:

- **Today**: displays only schedule information corresponding with today's date
- **Tomorrow**: displays only schedule information corresponding to tomorrow's date
- **Yesterday**: displays only schedule information corresponding to yesterday's date
- **'N' Days Out**: displays only schedule information corresponding to a date 'N' days after today's date
- **Date Range**: displays only schedule information that falls between the two dates selected
- **Datetime Range:** displays only schedule information that falls between the two datetimes selected
- **Specific Date:** displays only schedule information from one specific day

If **'N' Days Out** is selected, enter the number of days from today in the 'N' Days field.

If **Date Range** is selected, select a 'from' and a 'to' date by clicking the calendar button at the right side of the **From** and **To** fields.

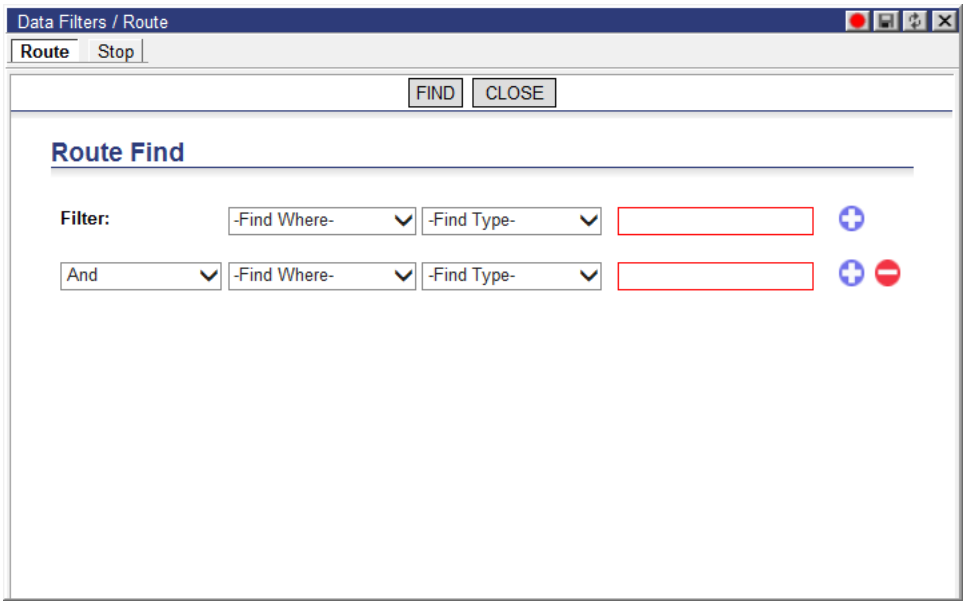
If **Datetime Range** is selected, select a 'from' and a 'to' date by clicking the calendar button at the right side of the **From** and **To** fields. Make sure the correct times are entered—usually, enter 12:00am in the **From** field and

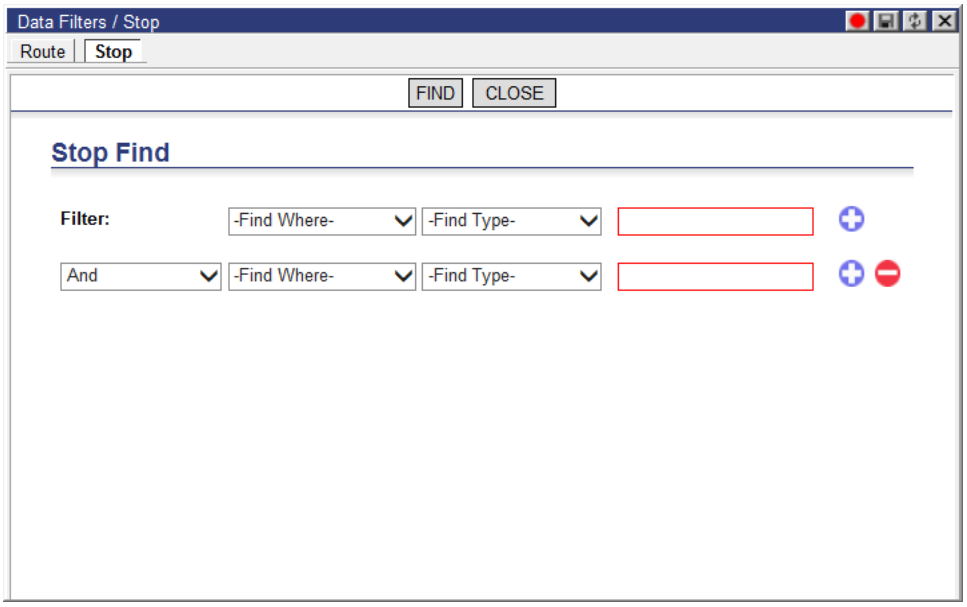
12:59pm in the **To** field— to ensure all of the Routes for the selected day or days appear. See the *Descartes Route Planner Getting Started Guide* for additional details on selecting dates.

Filtering Stops and Routes Using Data Filters > Find (CTRL+R)

From the **Data Filters > Find** window (CTRL+R shortcut), users can search for both routes and stops (assigned and unassigned), search for routes in all schedules and include multiple filtering conditions in the search.

The **Data Filters > Find** window is sectioned into two tabs: **Route** and **Stop**, allowing users to search specifically for routes and assigned/unassigned stops.





Users can enter multiple search conditions in each tab using the **Add** and **Remove** buttons and click **Find** to search. The search returns matching results in the **Routes**, **Route Detail** and **Unassigned Stops** quadrants.

> **Note—** Users have the option of providing a URL as a UDF at both the order level and customer level. The link can be CTRL-clicked to open it in a new browser window.

Click **Find** to apply the filtering criteria, and one of two scenarios will occur:

- If one or more orders matching the filtering criteria are found in the current schedule, the results will display on the Dashboard.
- If no orders matching the filtering criteria are found in the current schedule, the **Find** window will populate with matching orders from other schedules as shown below.

Users can right-click on an order in the list and select the **Show On Dashboard** right-click menu option to navigate to the order's schedule Dashboard with the filter applied.

The **Data Filters > Find** window (accessible by **CTRL-R** shortcut or by selecting **Data Filters > Find > Routes/Stops**) can also be used to search for routes and stops across all schedules. These data are displayed as follows:

- If the resulting routes or stops are found only in the current schedule, the system will display the results on the Dashboard as in previous versions:
  - Matching unassigned stops displayed in the **Unassigned Stops** quadrant
  - Matching assigned stops displayed and highlighted in the **Route Detail** quadrant

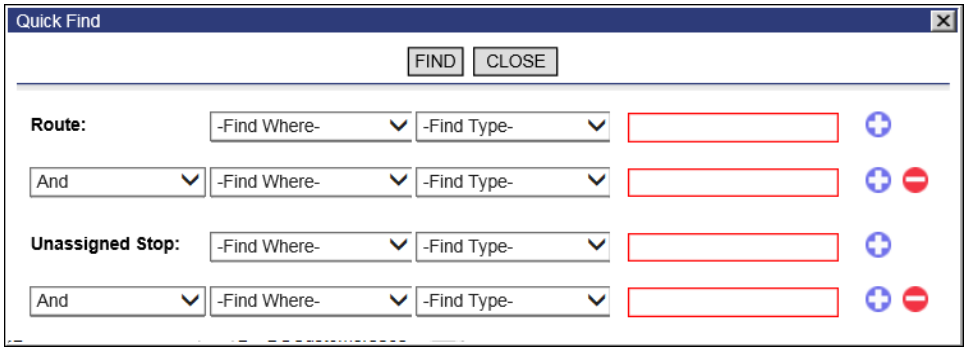
- Matching routes displayed in the **Routes** and **Route Detail** quadrant

- If the resulting routes or stops are found on schedules other than the current schedule, the system will display the results in a list window where users can double-click or select the **Show on Dashboard** right-click menu option to display the desired route or stop on the Dashboard.
- If the resulting routes or stops are on the current schedule as well as on other schedules, the system will display the results in a list window and highlight the routes or stops assigned to the current schedule. Users may then select the desired route or stop to display it on the Dashboard.

➲ **Note—** In subsequent searches, the system will retain the last values used to filter routes and/or stops.

Using the Quick Find Window (CTRL+F)

To find and display specific route and/or stop data on the Dashboard, users can press **CTRL+F** to display the **Quick Find** window.



Users can enter multiple search conditions in each section using the **Add** and **Remove** buttons and click **Find** to search. The search returns matching results in the **Routes**, **Route Detail** and **Unassigned Stops** quadrants.

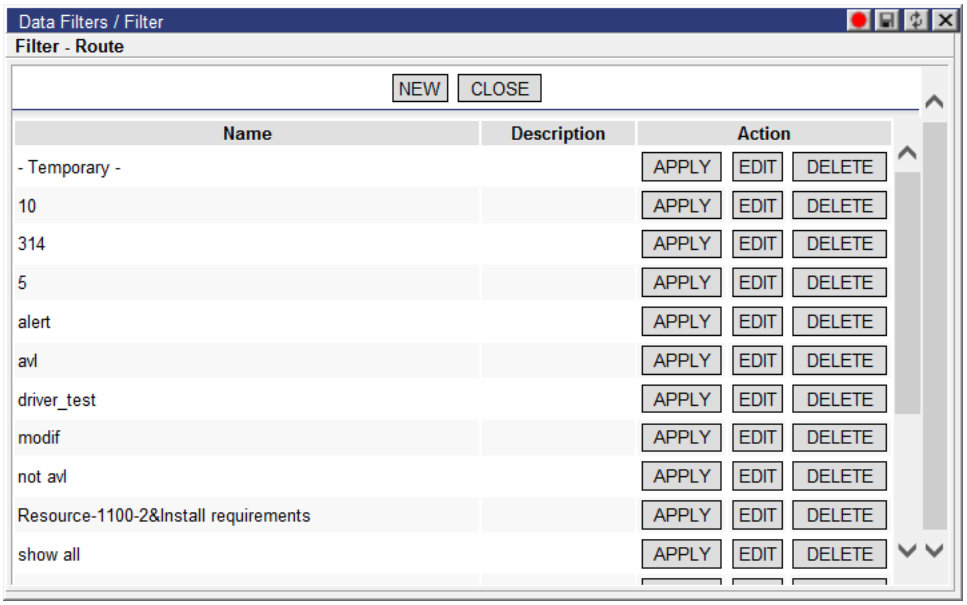
Filtering List Pages and Quadrants

Users can filter data on the following pages/quadrants using the **Advanced Find** button for list pages in **List View Mode** or the **Filter** button for Dashboard quadrants and list pages in **Advanced List Mode**.

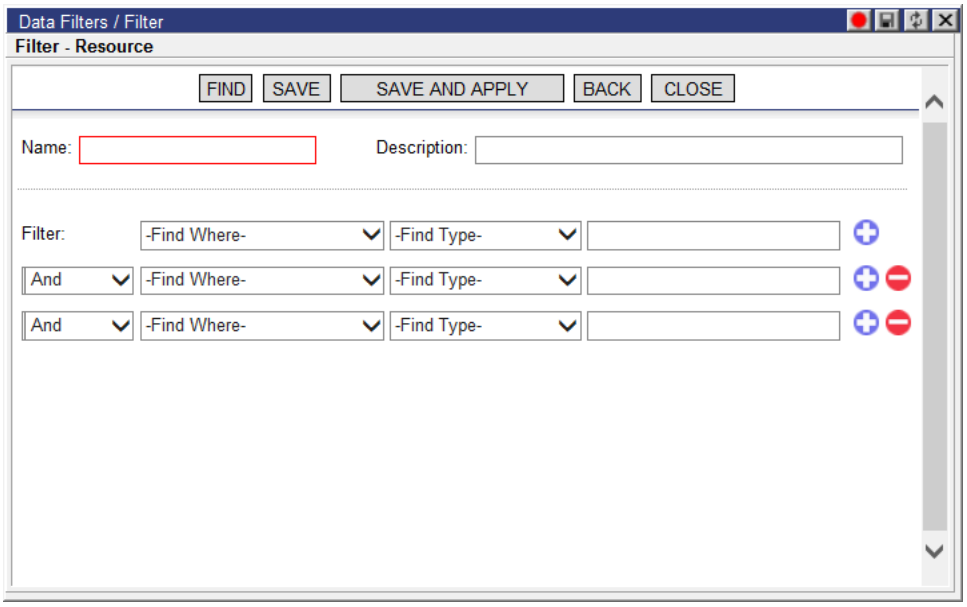
- **Routes** quadrant
- **Unassigned Stops** quadrant
- **Orders** list pages
- **Orders Status** list pages
- **Routes** list pages
- **Resources** list pages
- **Locations** list pages
- **Buckets** list pages

- **Messages** list page
- **Asset Gantt Chart** page
- **Alert Management** page
- **Crew** page

When the **Advanced Find** or **Filter** button is selected, the **Filter** window appears.



From this window, users can apply, edit or delete existing saved filters or create new filters. To create a new filter, click **New**.



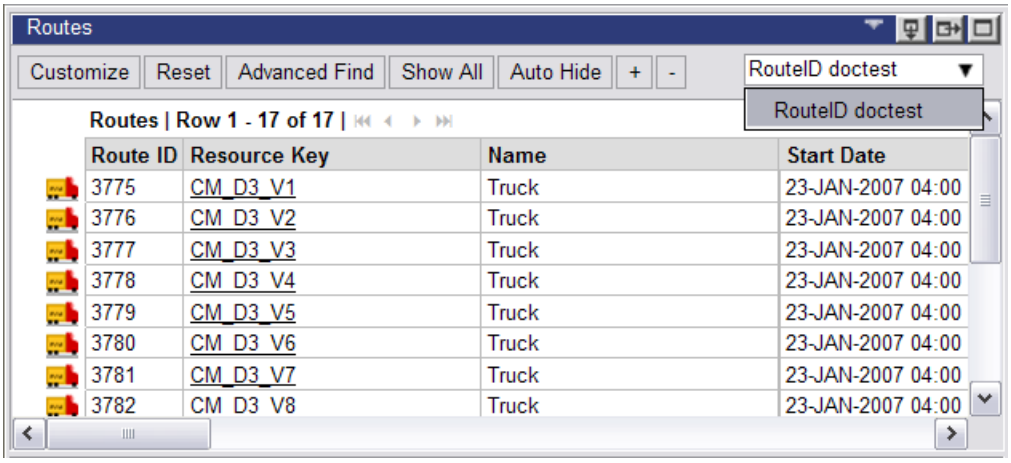
Enter a name, Description and all the find parameters needed. To add a new parameter, click the blue plus icon. To remove a parameter, click the red minus icon. When the filter data is complete, click **Find** to apply the new filter without saving it, **Save** to save the new filter without applying it or **Save and Apply** to save the new filter and then apply it to the page. The same options are available when editing a saved filter as well.

To remove an applied filter from a list page, right-click on the page and select the **Clear Filter** right-click option.

Applying Saved Filters from Drop-down Menu

Saved filters selected from a drop-down menu for application in the **Routes** and **Unassigned Stops** quadrants on the Dashboard as well as all list pages in Advanced List Mode.

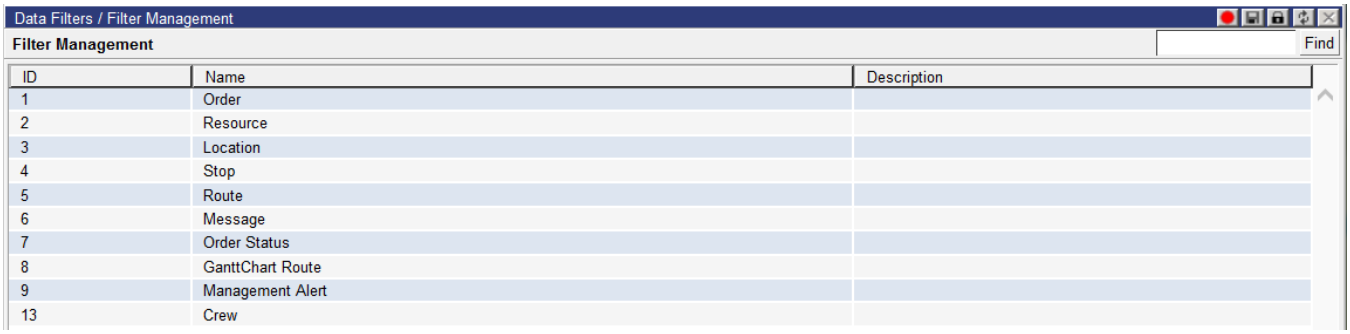
To apply a saved filter, select the desired filter from the drop-down menu in the top right-hand corner.



The quadrant will refresh with the filter applied.

Filter Management

From the **Filter Management** page, users can add, remove, apply and edit filters for all list pages in the system.



Double-click a row to modify the filter for the related list page.

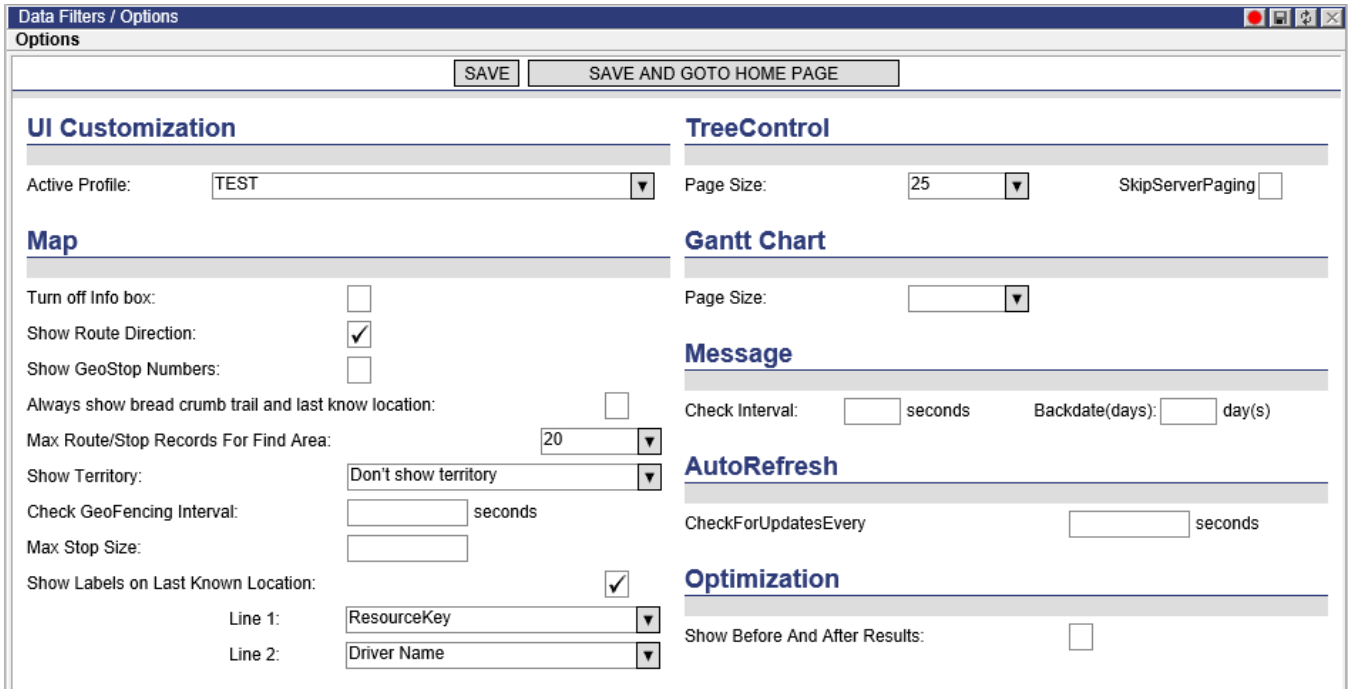
Setting Session Options

Users can decide how to display dates and distances and manage data updates.

To set the options:

1 From the Descartes Route Planner main menu, select **Data Filters > Options**.

The **Options** page appears:



2. Set the date, time, and distance display options.
3. Select the Gantt chart size from the drop-down list.
4. Select the tree page size from the drop-down list.
5. Enter the amount of seconds the system should check for database updates.

   Manual refreshes are performed via the refresh button on the top-right of the page. See *Refreshing Data* in the *Descartes Route Planner Getting Started Guide* for details.
6. Select **Show Before And After Results** to enable the *Before and After Results* functionality.
7. When the **Show Labels on Last Known Location** option is enabled, the **Line 1** and **Line 2** dropdowns appear, allowing users to select two values to display on the **Map** quadrant in a popup box with the custom icon for the last known location of a truck. The values that can be displayed are ResourceKey, Name, DriverKey, DriverName and TruckKey. For more information on this feature please see the *Show Last Known Location* section.
8. Click **Save** to keep the current options.

Enabling/Disabling Auto-Refresh

Users can enable or disable auto-refreshing from the main **Home/Dashboard** page in addition to setting the auto-refresh option on the **Options** page.

To enable/disable the auto-refreshing, On the Home/Dashboard page, click the Enable/Disable autorefresh setting button as shown below:

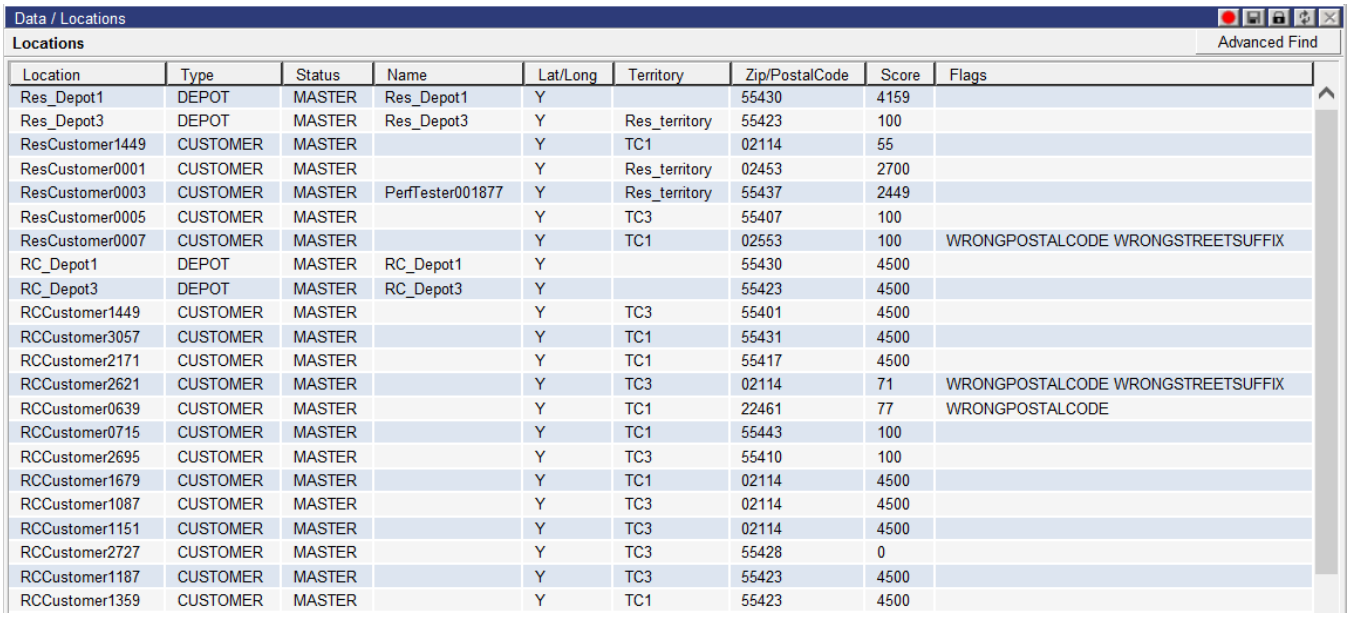
Understanding the Descartes Route Planner Views

List View Mode and Advanced List Mode

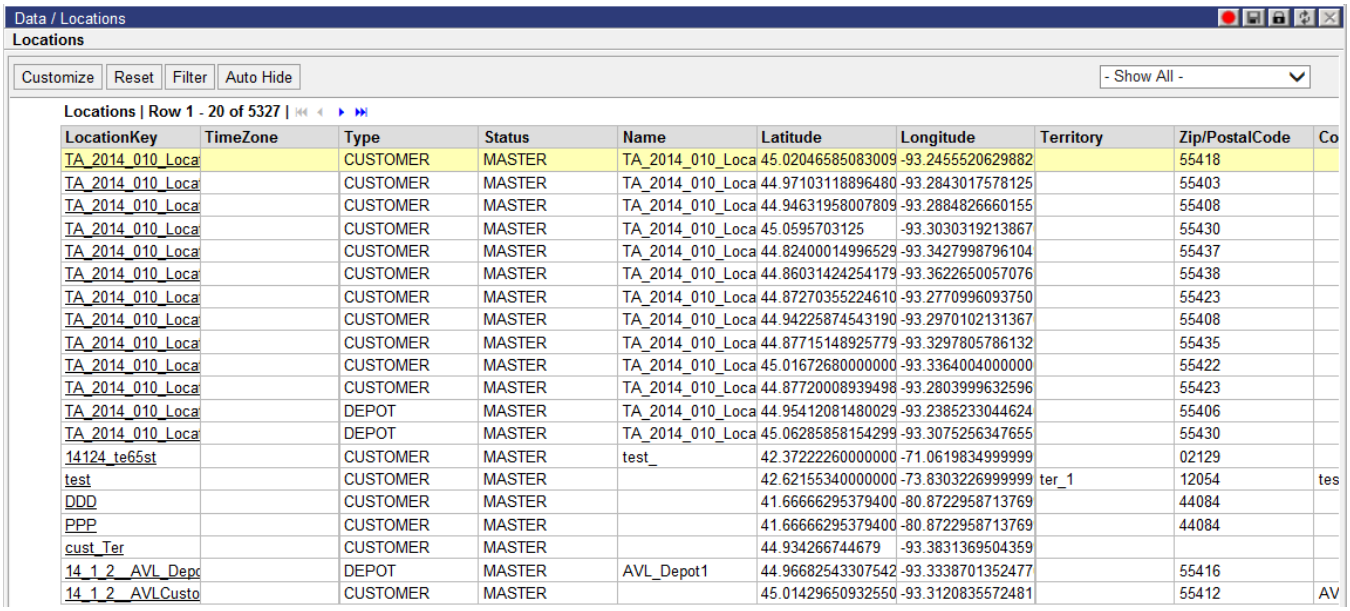
For the **Locations**, **Resources** and **Orders** pages, users have two right-click menu options for displaying rows, **List View Mode** and **Advanced List Mode**.

➲ **Note—** All other list pages display only in **List View Mode**.

The following images depict the **Locations** list page, the first in **List View Mode**, the second in **Advanced List Mode**.



Location	Type	Status	Name	Lat/Long	Territory	Zip/PostalCode	Score	Flags
Res_Depot1	DEPOT	MASTER	Res_Depot1	Y		55430	4159	
Res_Depot3	DEPOT	MASTER	Res_Depot3	Y	Res_territory	55423	100	
ResCustomer1449	CUSTOMER	MASTER		Y	TC1	02114	55	
ResCustomer0001	CUSTOMER	MASTER		Y	Res_territory	02453	2700	
ResCustomer0003	CUSTOMER	MASTER	PerfTester001877	Y	Res_territory	55437	2449	
ResCustomer0005	CUSTOMER	MASTER		Y	TC3	55407	100	
ResCustomer0007	CUSTOMER	MASTER		Y	TC1	02553	100	WRONGPOSTALCODE WRONGSTREETSUFFIX
RC_Depot1	DEPOT	MASTER	RC_Depot1	Y		55430	4500	
RC_Depot3	DEPOT	MASTER	RC_Depot3	Y		55423	4500	
RCCustomer1449	CUSTOMER	MASTER		Y	TC3	55401	4500	
RCCustomer3057	CUSTOMER	MASTER		Y	TC1	55431	4500	
RCCustomer2171	CUSTOMER	MASTER		Y	TC1	55417	4500	
RCCustomer2621	CUSTOMER	MASTER		Y	TC3	02114	71	WRONGPOSTALCODE WRONGSTREETSUFFIX
RCCustomer0639	CUSTOMER	MASTER		Y	TC1	22461	77	WRONGPOSTALCODE
RCCustomer0715	CUSTOMER	MASTER		Y	TC1	55443	100	
RCCustomer2695	CUSTOMER	MASTER		Y	TC3	55410	100	
RCCustomer1679	CUSTOMER	MASTER		Y	TC1	02114	4500	
RCCustomer1087	CUSTOMER	MASTER		Y	TC3	02114	4500	
RCCustomer1151	CUSTOMER	MASTER		Y	TC3	02114	4500	
RCCustomer2727	CUSTOMER	MASTER		Y	TC3	55428	0	
RCCustomer1187	CUSTOMER	MASTER		Y	TC3	55423	4500	
RCCustomer1359	CUSTOMER	MASTER		Y	TC1	55423	4500	



LocationKey	TimeZone	Type	Status	Name	Latitude	Longitude	Territory	Zip/PostalCode	Co
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	45.02046585083009	-93.2455520629882		55418	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.97103118896480	-93.2843017578125		55403	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.94631958007809	-93.2884826660155		55408	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	45.0595703125	-93.3030319213867		55430	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.82400014996529	-93.3427998796104		55437	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.86031424254179	-93.3622650057076		55438	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.87270355224610	-93.2770996093750		55423	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.94225874543190	-93.2970102131367		55408	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.87715148925779	-93.3297805786132		55435	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	45.01672680000000	-93.3364004000000		55422	
TA_2014_010_Loca		CUSTOMER	MASTER	TA_2014_010_Loca	44.87720008939498	-93.2803999632596		55423	
TA_2014_010_Loca		DEPOT	MASTER	TA_2014_010_Loca	44.95412081480029	-93.2385233044624		55406	
TA_2014_010_Loca		DEPOT	MASTER	TA_2014_010_Loca	45.06285858154299	-93.3075256347655		55430	
14124_te65st		CUSTOMER	MASTER	test_	42.37222600000000	-71.0619834999999		02129	
test		CUSTOMER	MASTER		42.62155340000000	-73.8303226999999	ter_1	12054	tes
DDD		CUSTOMER	MASTER		41.66666295379400	-80.8722958713769		44084	
PPP		CUSTOMER	MASTER		41.66666295379400	-80.8722958713769		44084	
cust_Ter		CUSTOMER	MASTER		44.934266744679	-93.3831369504359			
14_1_2__AVL_Depo		DEPOT	MASTER	AVL_Depot1	44.96682543307542	-93.3338701352477		55416	
14_1_2__AVLCusto		CUSTOMER	MASTER		45.01429650932550	-93.3120835572481		55412	AV

The functionality of list pages in Advanced List Mode is similar to quadrants. Instead of clicking the Advanced Find button to filter data on the page, the Filter button is used instead. Additionally, users can filter data on the page with the saved filer drop-down menu. For more information on filtering, see *Working with Data Filters*.

Routes Views

Descartes Route Planner provides four methods for viewing Routes. Each method emphasizes a different aspect of the Route and users can easily switch between the various views. The four views are:

- list (Grid) view
- tree view
- map view
- Gantt view

List (Grid) View

The List view provides a list of the activities on a Route with each activity on its own line. The List view lets users focus on activities.

Tip—In earlier versions of Descartes Route Planner, the List view was called the Grid view.

To see a list view of a Route:

- On the **Routes** quadrant, right-click on the desired Route and select **View Route Details**.

The **Route Detail**s page appears:

➲ **Note—** If one Route is selected, the List view of the Route is displayed. If more than one Route is selected, the Tree view is displayed.

Stops can be moved within a Route by dragging them to a new Location. The Stops are placed after the Stop users drop them on.

Default Command

When one item in the right-click menu is bold, the bold menu is the default command. The default command is what happens when users double-click on an item. For example, if you double-click on a Route in the **Routes** quadrant, the List view of that Route is displayed in the bottom page because Details is the bold command in the Route right-click menu.

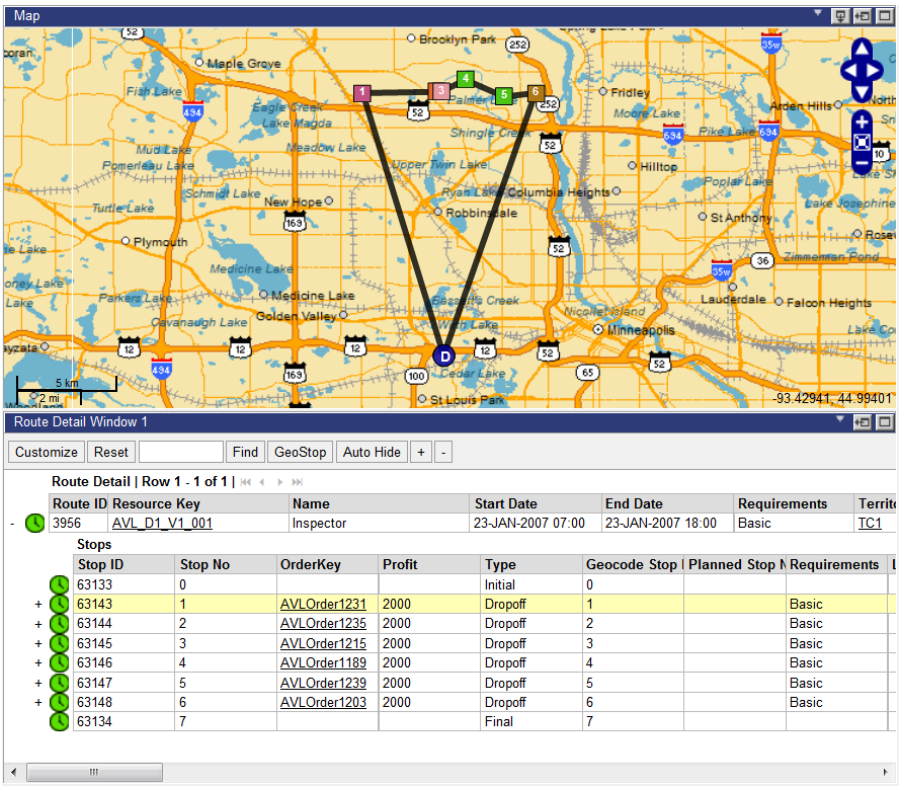
Tree View

The tree view displays a list of the Stops on a Route, with the activities for each Stop nested underneath. The tree view lets users focus on Stops.

Users can view more than one Route in the tree view. The tree view is automatically used to display details if more than one Route is selected in the **Routes quadrant** from the **Home** page.

To see a tree view of a Route:

1. Select the Route(s) in the **Routes quadrant**.
2. Right-click on the Route(s) and select from one of many options:
   - **Show on Map and Route Detail** – shows the Route's details in the map and tree list on the right
   - **Drag and drop** – moves the selected Route(s) to the **Map** or **Route Detail**1 quadrant



Map data © 1987-2017 HERE

More Tree View details:

The following legend describes the icons associated with Stops:

Icon	Alerts	
	No Alerts	
	Missed Window/Time Window Jeopardy	
	Missed Window	outside the time screen for the Route/activity
	Missed Resource Window	outside the time screen for the resource
	Time Window Jeopardy	Route/activity scheduled close to the time screen start or end
	Capacity	
	Capacity Exceeded	capacity of the resource has been exceeded

	General Alert	
	Too Many Stops	resource's distance has exceeded the maximum mileage allowed
	Informational Alert	
	Unresolved Location	latitude and longitude for the activity Location have not been verified
	Requirements Not Met	the capabilities of the resource do not fulfill the requirements of the order
	Wrong Preferred Route	activity is not assigned to the preferred Route identified by the order
	Wrong Route Position	activity is not assigned to the appropriate Route position
	Dispatched Out Of Sequence	activities have been serviced out of the scheduled sequence
	Dispatched Completed	the Dispatched stop has been completed
	Dispatched Untimed	the Dispatched stop is not completed on time

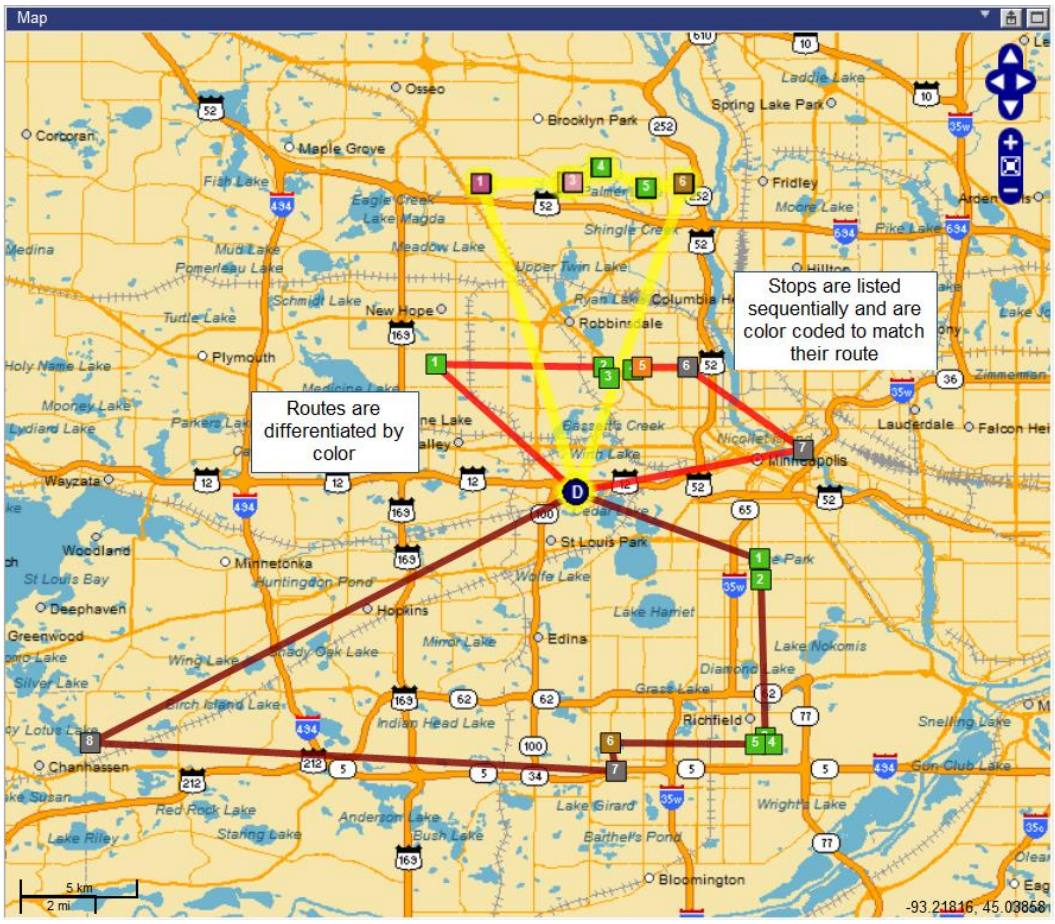
Map View

The map view displays the straight-line path, or along-the-road path, of the Route, with each Stop marked on the Route. Users can view more than one Route in the map view. The map view lets users focus on the Route.

To see a map view of a Route:

1. On the **Routes** quadrant, right-click on the Route and select **Detail** from the right-click menu, or simply double-click on the desired Route. The **Details** page will open in the bottom-right page.
2. Open the **Map** view in the top-right page.

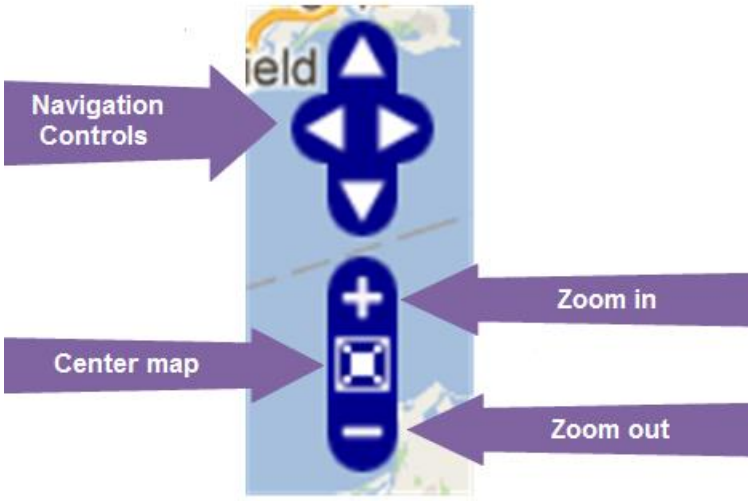
   The **Map** view will appear and will be populated according to the number or Routes selected:



Map data © 1987-2017 HERE

There are several options available for viewing the map:

- Zoom in/out
- Re-Center on Click
- View Best Map



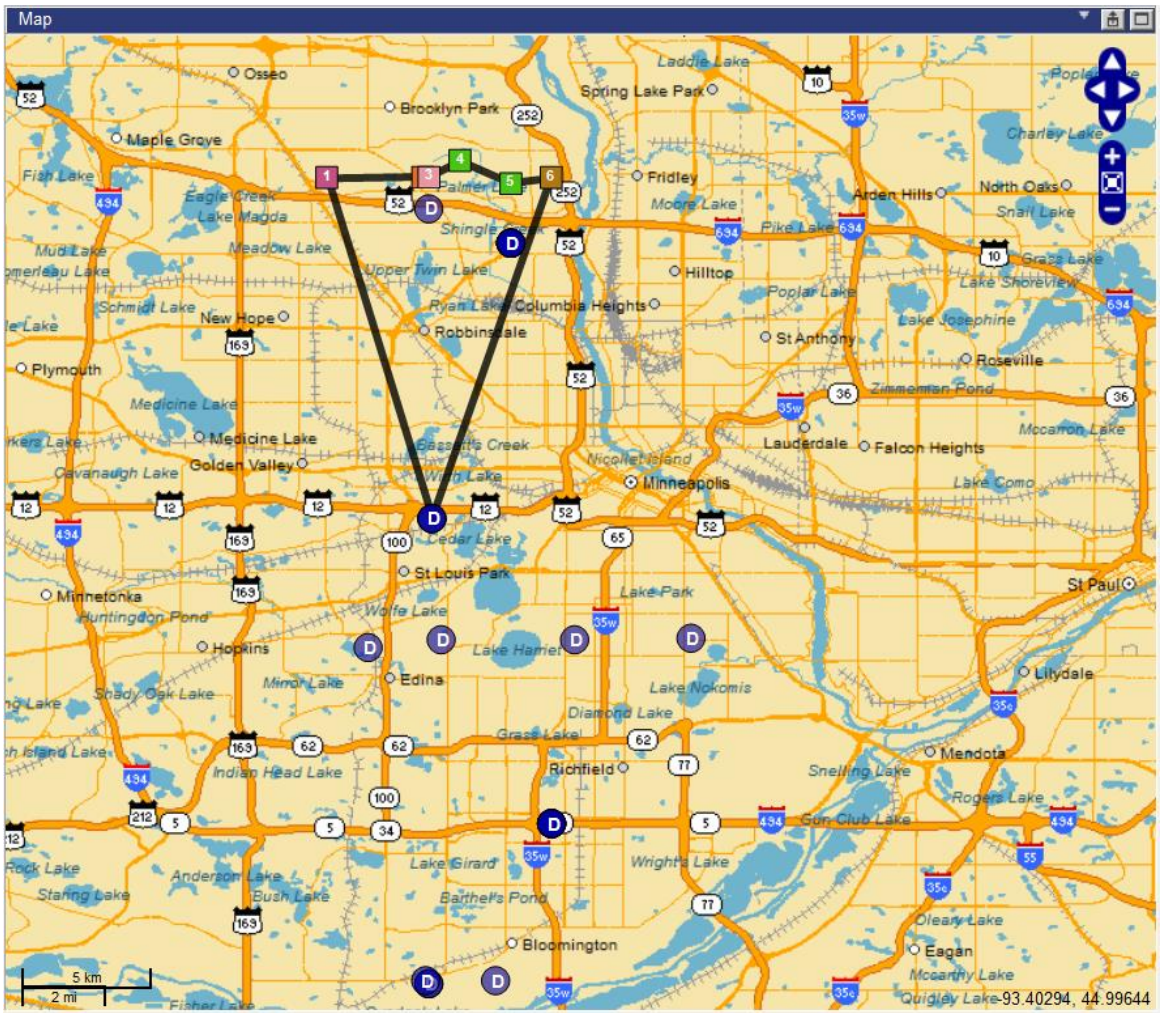
Map data © 2017 Google

Show on Map and Route Details Command

Users can select the **Show on Map and Route Details** command from the right-click menu in the **Routes** quadrant. The **Map** quadrant and **Route Detail** quadrant display the Route or Unassigned Stop information.

Show all Depots on the Map

Users can select the **Show All Depots** command from the **Map** quadrant right-click menu. The **Map** quadrant displays all depots.

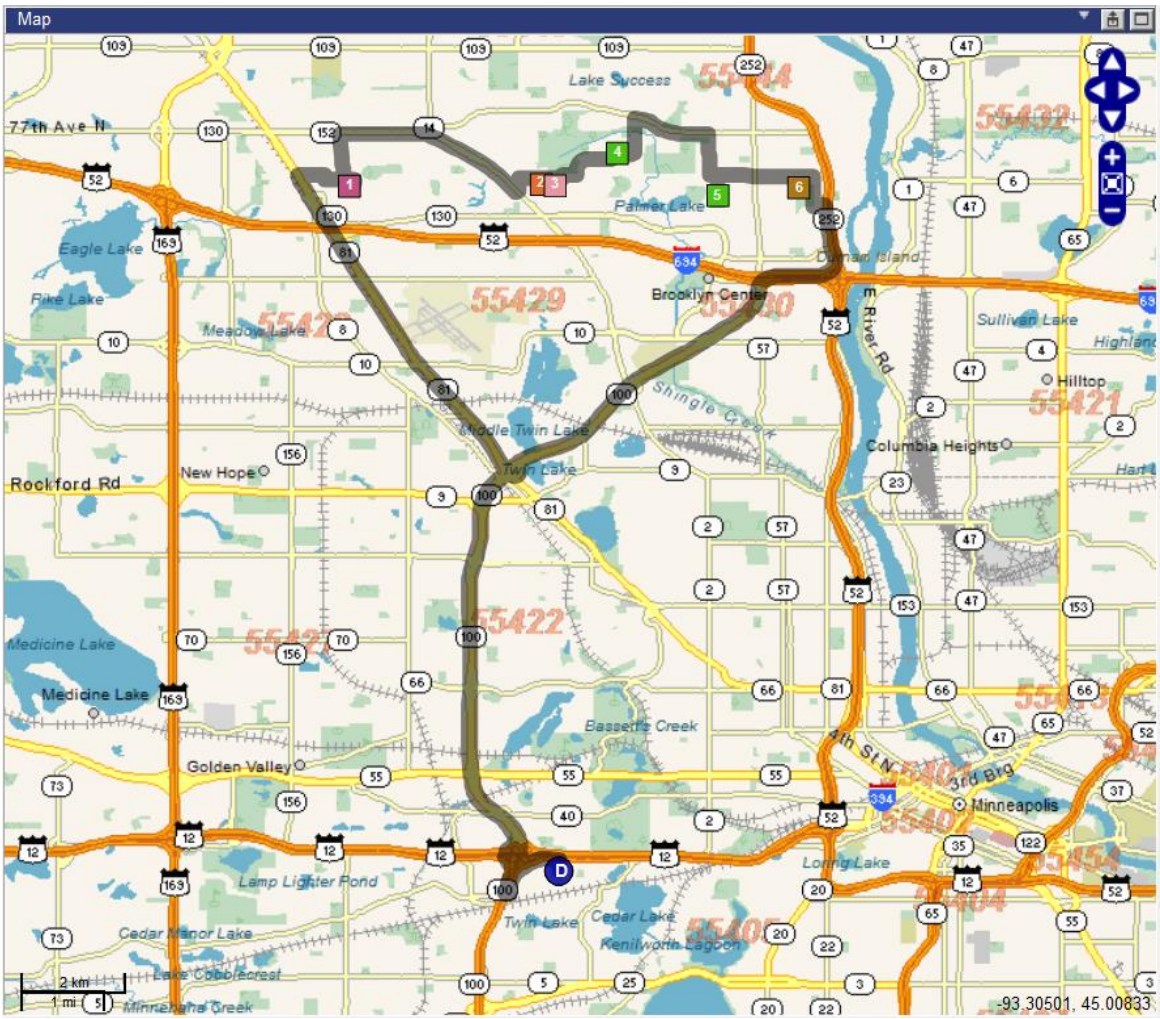


Map data © 1987-2017 HERE

To hide all depots, right-click and select **Hide All Depots**.

Show Along the Road

When users display a route on the map using the **Show Along the Road** option, the map will show arrowheads indicating the direction in which the vehicle should be traveling. A truck icon should also move in the direction of the arrows.



Map data © 1987-2017 HERE

Show Travel Distance on the Map

Users can have Descartes Route Planner calculate a projected travel distance for a leg on the Map quadrant.

To show the travel distance:

1. Right-click on the **Map** quadrant and select **Show Travel Distance**.
2. Right-click on the first stop of the leg and then double-click on the second stop of the leg.

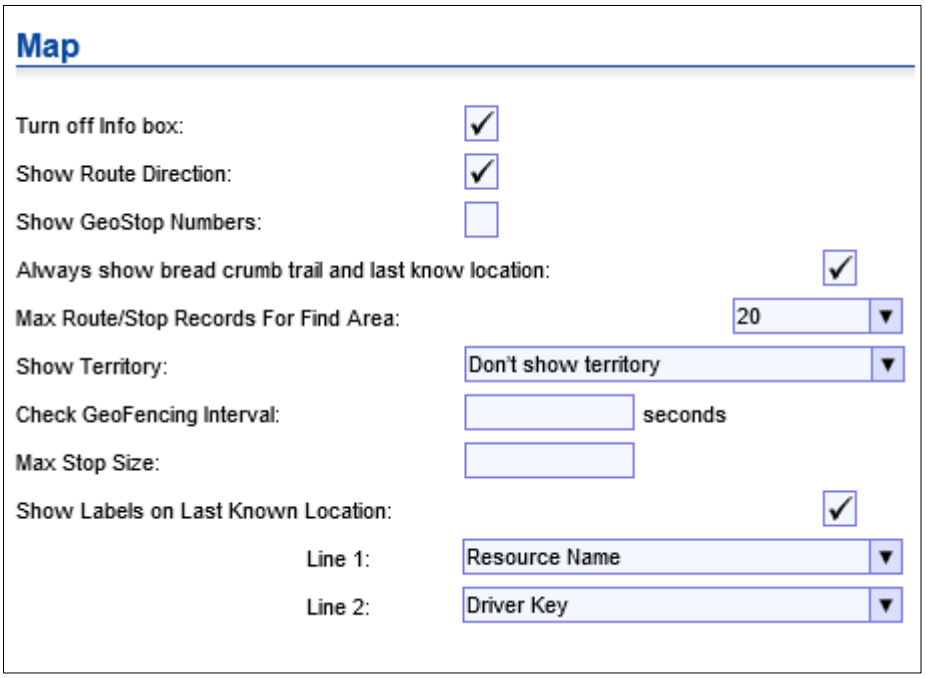
   The projected travel distance tooltip displays on the map.

   To hide the projected travel distance, right-click on the **Map** quadrant and select **Hide Travel Distance**.

Show Last Known Location

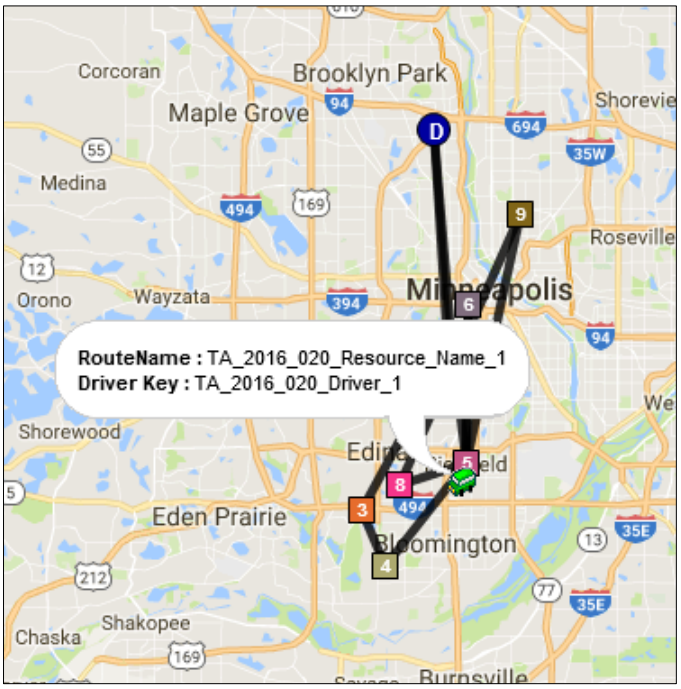
Users can choose to show or hide the last reported longitude/latitude by right clicking on a route and selecting **Show Last Known Location** or **Show All Last Known Locations**.

Users can enable the **Show Labels on Last Known Location** option in the Map section of the **Data Filters > Options** page. When this option is enabled, the **Line 1** and **Line 2** dropdowns appear, allowing users to select two values to display on the **Map** quadrant in a popup box with the custom icon for the last known location of a truck. The values that can be displayed are ResourceKey, Name, DriverKey, DriverName and TruckKey.



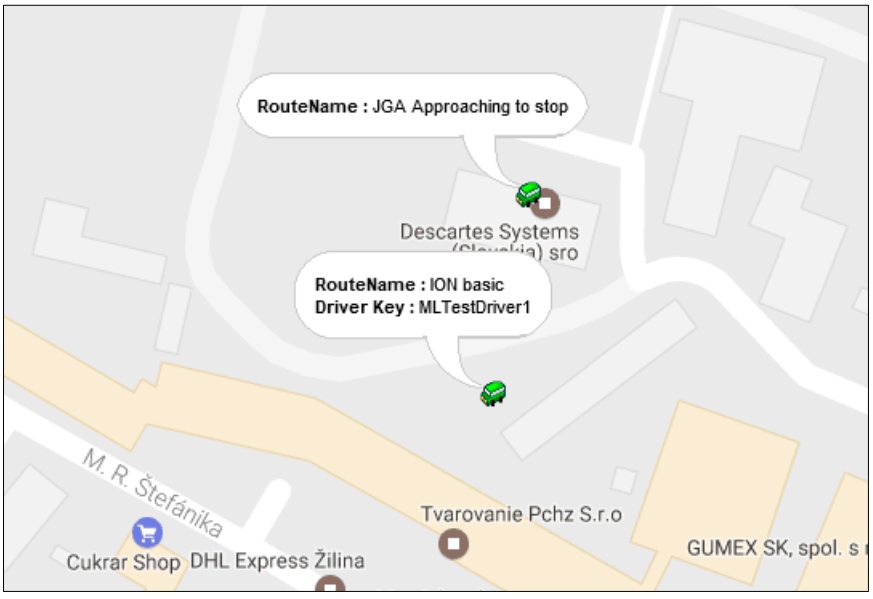
When either the **Show Last Known Location** or **Show All Last Known Locations** right-click menu options are selected on the map, the custom icon(s) will appear with a popup that displays the specified values.

Show Last Know Location



Map data © 2017 Google Inc.

Show All Last Known Locations



Map data © 2017 Google Inc.

This information will make it easier for users to identify trucks without having to click the icon and navigate the subsequent elements.

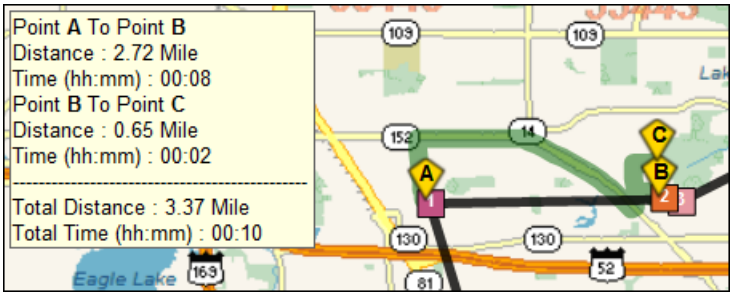
Calculate Point-to-Point Distance on the Map

Users can calculate point-to-point distances on the map without actually creating a route or orders.

To calculate a point-to-point distance:

1. Right-click on the **Map** quadrant and select **Calculate Distance**.
2. Right-click on the first point and continue right-clicking on all consecutive points, double-clicking on the last point.

   The point-to-point distances display in a pop-up on the map.



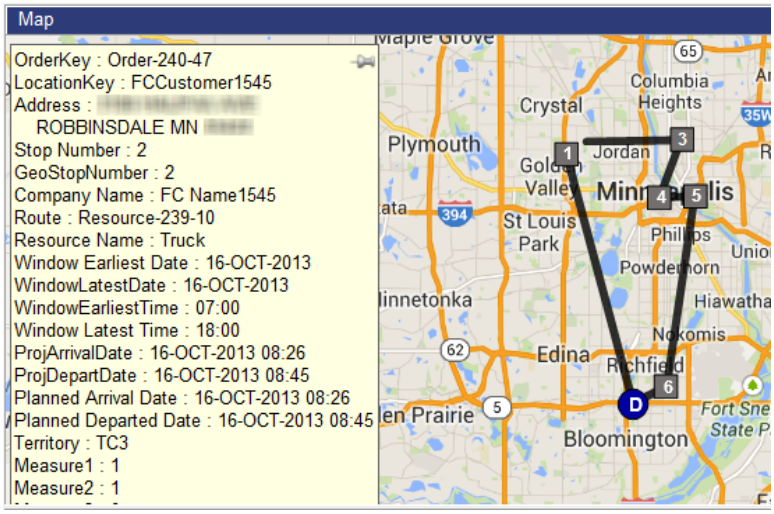
Map data © 1987-2017 HERE

➲ **Note—** Users can cancel the distance calculation at any time before it is completed by right-clicking on the map and selecting **Cancel Calculate Distance**.

To hide the calculated distance path, right-click on the map and select **Clear Distance Path**.

Pin Stop Information Pop-up to Map

Users can pin stop information pop-up boxes to the **Map** quadrant.



Map data © 2017 Google

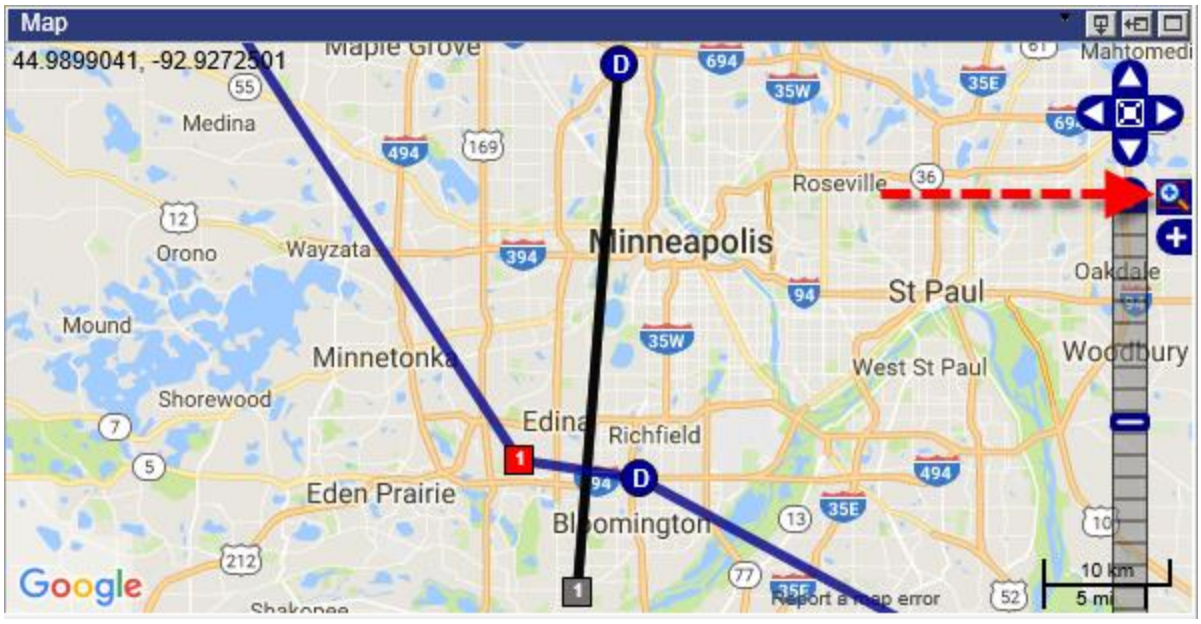
Users can click the pin icon in the pop-up box after moving the box to a desired position and the system will remember the new position the next time the box is displayed.

Find Address Feature

The **Find Address** feature allows users to center the map on a particular address.

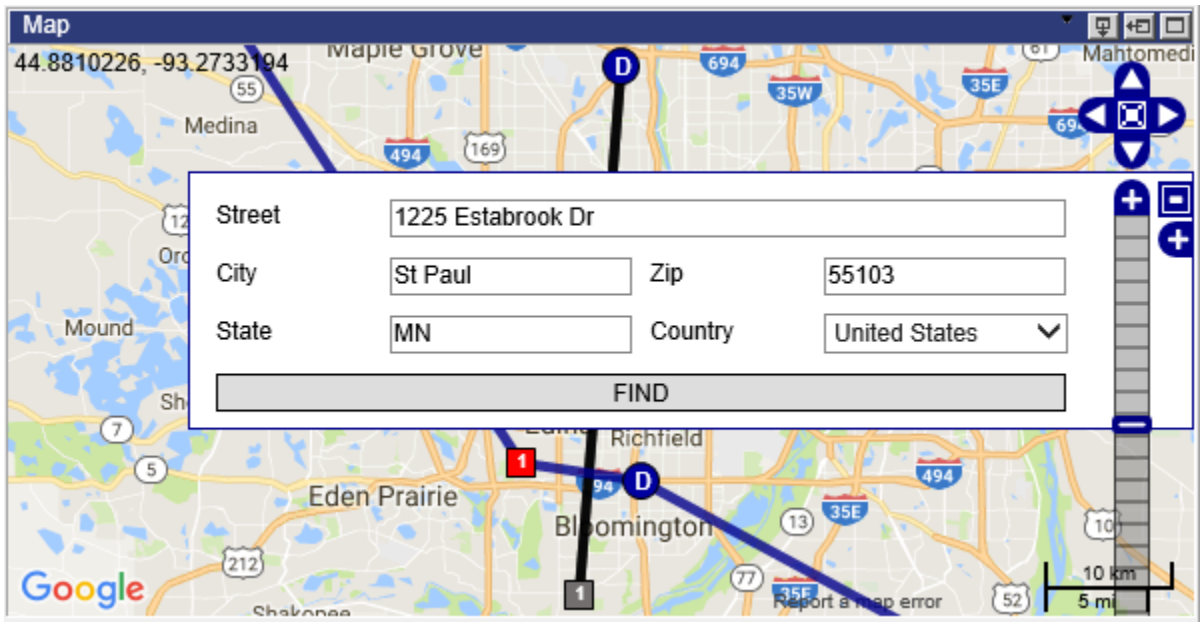
To use the Find Address feature:

1. From the **Map** quadrant or the map on the **New**/**Edit Territory** pages, click the magnifying glass icon on the right-hand side of the map.



Map data © 2017 Google Inc.

A popup window displays.



Map data © 2017 Google Inc.

2 Enter the desired address information.

3 Click **Find**. The system will geocode the information and display the result on the map.

Show Close Routes

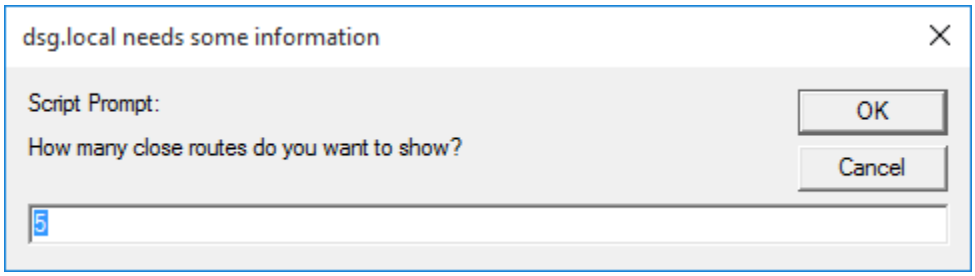
Users can select the **Show Close Routes** right-click menu option to have the system find and display the closest routes to that stop.

To use this feature:

1 Navigate to the Dashboard.

2 Display an unassigned stop on the **Map** quadrant via drag-and-drop or by selecting the **Show On Map** right-click menu option for a stop in the **Unassigned Stops** quadrant.

3 Right-click on the stop icon and select **Show Close Routes** from the right-click menu. A popup window appears, requesting the number of routes close to the stop you wish to return.



4 Enter a number and click **OK**. The **Map** and **Route Detail Window** quadrants will refresh, displaying all routes found by the system.

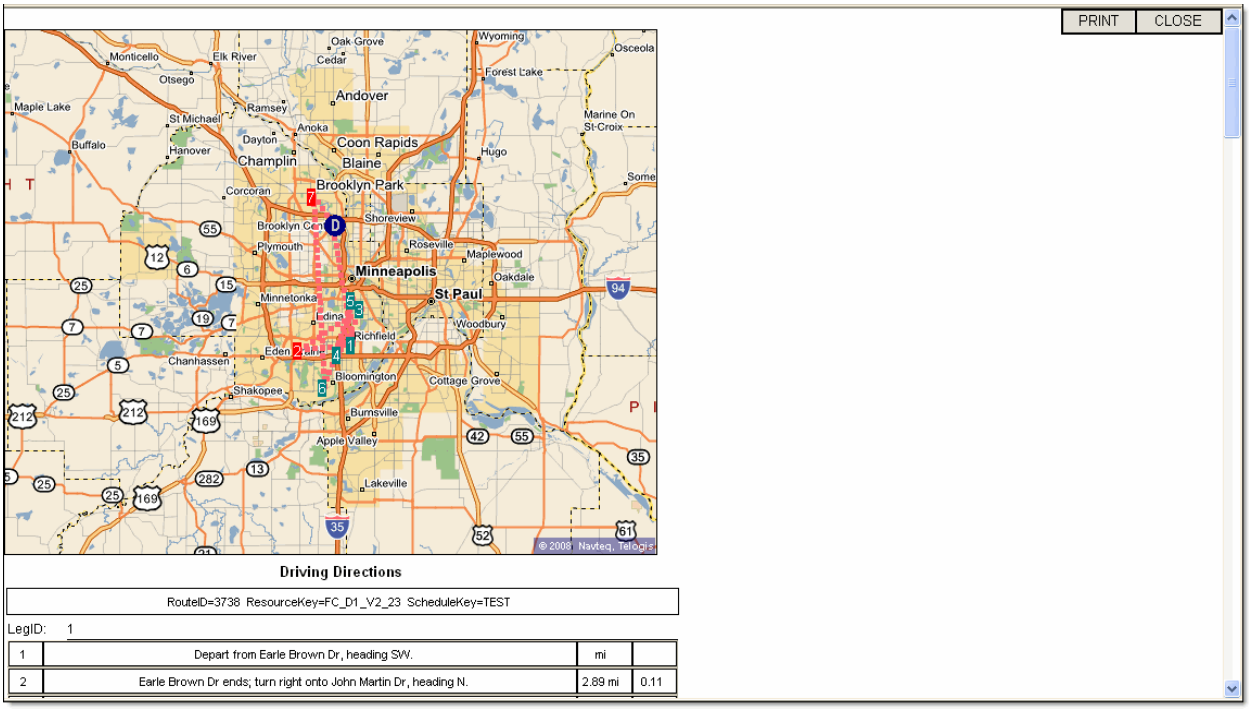
Please note the following regarding this feature:

- If multiple stops are displayed in the **Map** quadrant when **Show Close Routes** is selected, the last selected stop is used to calculate the closest routes.
- If **Show Close Routes** is selected for an assigned stop, the route to which the stop is assigned is not counted among the number of closest routes.

Printing the Map

Users can right-click on the **Map** quadrant and select **Print Map** to print a picture of the current map view. This view might contain Routes, Stops, and other type of execution objects such as GPS messages and Alerts.

When the **Print Map** option is selected, a new browser window displays with the map and map directions displayed.



Driving Directions

RouteID=3738 ResourceKey=FC_D1_V2_23 ScheduleKey=TEST

LegID: 1

1	Depart from Earle Brown Dr, heading SW.	mi	
2	Earle Brown Dr ends; turn right onto John Martin Dr, heading N.	2.89 mi	0.11

Map data © 1987-2017 HERE

When users select **Print**, the print dialogue window allows them to select their own printing preferences:

- Portrait verses landscape
- Paper size
- Color or black and white

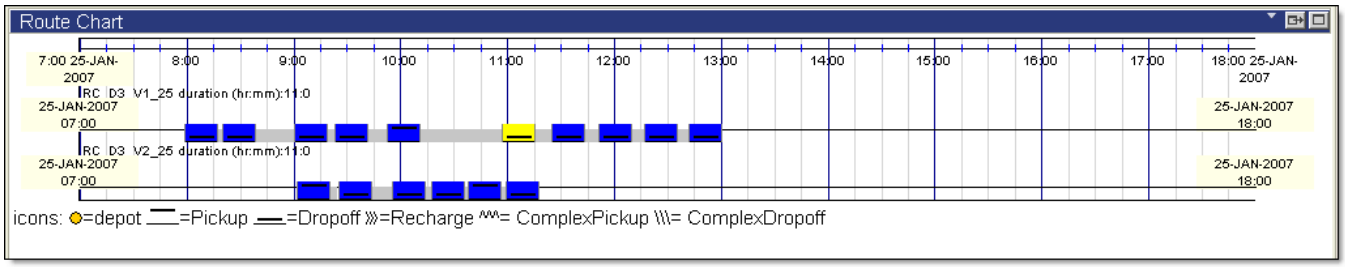
Route Gantt View

The Route Gantt chart allows users to drag routes from the **Routes** quadrant onto the **Route Chart** in order to see each stop's starting and ending time on a timeline. The timeline is in fifteen-minute increments. The chart displays the following information:

- depot
- pickup
- drop-off
- recharge
- pickup duration
- drop-off duration
- complex type drop-off duration

- complex type pickup duration
- recharge duration

The following screenshot shows the **Route Gantt Chart** quadrant.



Asset Gantt View

The Asset Gantt chart allows users to view how their assets (drivers, trailers or trucks) are utilized throughout time as well as their last reported status. The visibility of assets provided by the Asset Gantt chart empowers users to have a better utilization of assets and resources during a planning period. This may ease the planning process and may allow Planners to make better decisions.

In addition to viewing assets, the Asset Gantt chart allows users to:

- assign assets (driver, tractor, or trailer) to one or more selected routes
- unassign an asset
- assign unassigned stops to routes
- drag and drop stops between routes
- unassign stops from a route

The Asset Gantt chart has the flexibility of filtering routes based on:

- Schedule key
- Date Range
- Group by driver, tractor, trailer, or none

The following screenshot shows the **Asset Gantt Chart** page. For more details on how to use the Asset Gantt Chart, see *Understanding the Asset Gantt Chart* in *Working with Assets*.

Working with Routes

Having created Routes and adjusted them appropriately, users need to review the Routes to check for any problems or violations.

Several methods can be used to view Routes and determine if any violations exist, and to determine which Stops may be causing the violations. After finalizing the changes, Stops and Routes can be rearranged.

Viewing Route Details

Descartes Route Planner provides four methods for viewing Routes. Each method emphasizes a different aspect of the Route, and users can easily switch between the various views. The four views are:

- list view
- tree view
- map view
- Route Gantt chart view

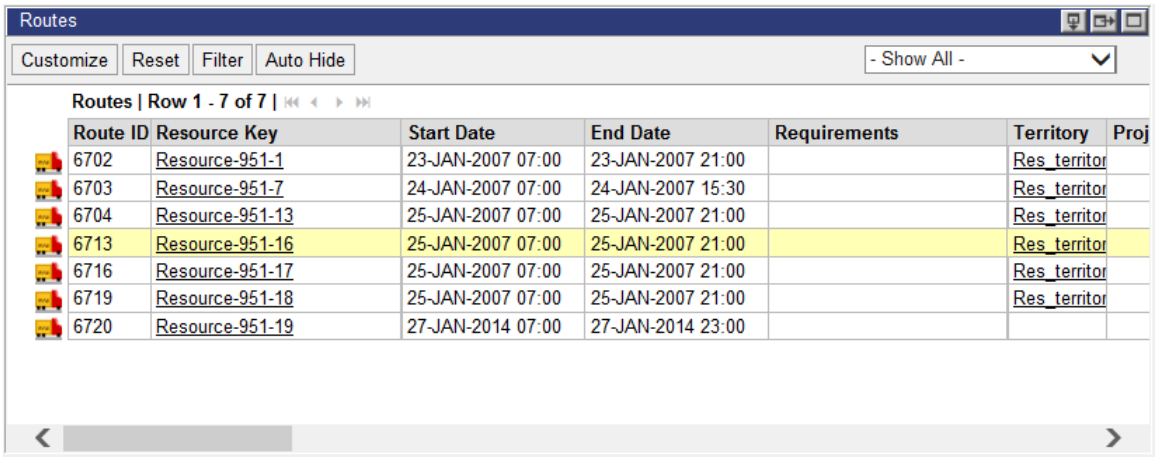
Users can drag and drop Stops within Routes in the List view and the tree view. Users can also drag Stops from the List view or the tree view to another Route in the **Routes quadrant**.

Users can assign Unassigned Stops to a Route by dragging them to the List view, the tree view, or Route Gantt chart view.

➲ **Note—** Users can add special instructions, comments or hyperlinks using the UDFString1…9, UDF Integer1…3 and UDFNumber1…3 fields at the Route level. CTRL-clicking hyperlinks will open the link in a new browser window.

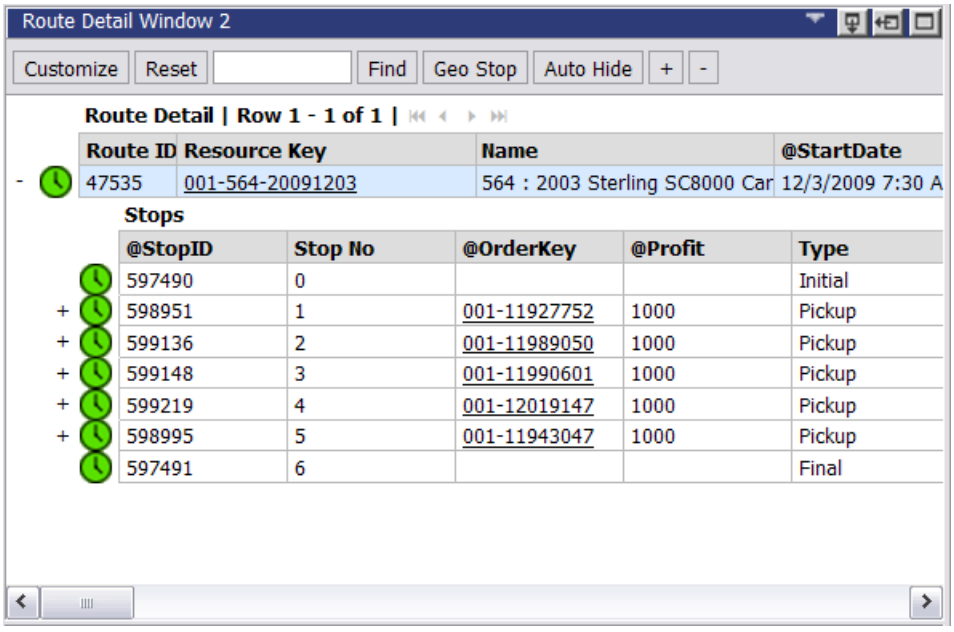
Route List View

To view Routes in the list view, select the **Home** button. By default the top-left quadrant will display the Routes quadrant.



Routes Detail View

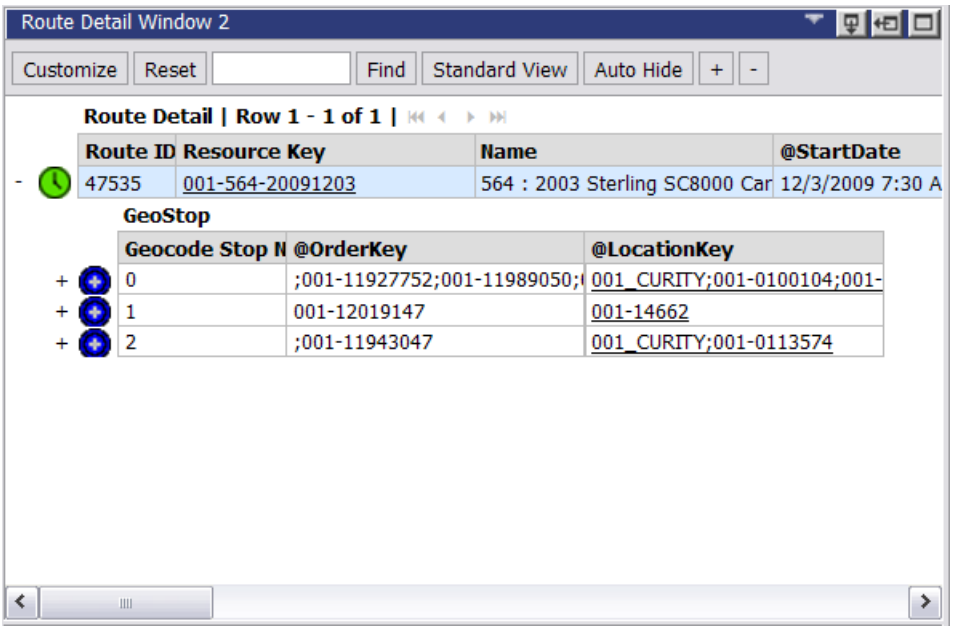
To view a Route in one of the two Details views, select a Route to view by either double-clicking it, or by selecting it and dragging it to one of the **Route Detail** quadrants.



Users should note the following regarding the **Route Detail1** and **Route Detail2** windows:

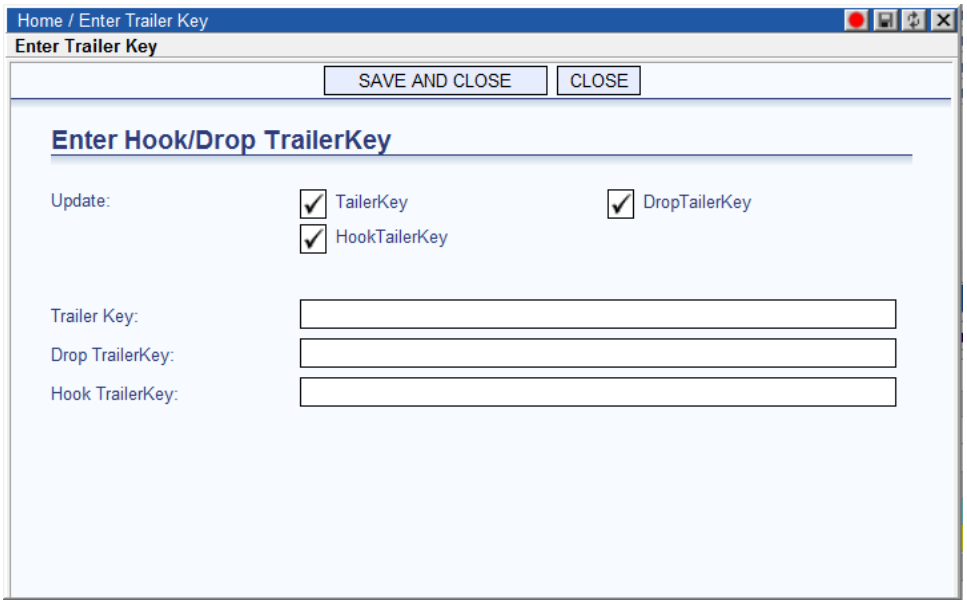
- Users can add special instructions, comments or hyperlinks using the UDFString1…9, UDF Integer1…3 and UDFNumber1…3 fields at the Route level. CTRL-clicking hyperlinks will open the link in a new browser window.

- The UnplannedInd field records unplanned orders such as unscheduled pickups or other services that need to be tracked on the fly. They are displayed as regular orders.
- **Route Detail1** and **Route Detail2** display the AutoCorrectGeocodeInd column, which indicates whether or not AutoCorrection of Geocoding is activated in Descartes Route Planner. See *Configuring Geofencing* for more information.
- Breaks and Rests are shown as a separate row in **Route Detail1** and **Route Detail2**.
- Users can send **Signature Captures** from hand-helds to Descartes Route Planner. This signature capture is displayed as a hyperlink field in the **Route Detail** window at the stop level. Users can verify the signature stored in the database when clicked.
- The **Routes** and **Map** quadrants can be cleared with a single option by right-clicking in either quadrant and selecting **Clear Map and Route Content** from the right-click menu.
- Click the **Geo Stop** button to display Geostop numbers in place of the stop numbers in the quadrant.



To revert the quadrant to display stop numbers, click the **Standard View** button.

- Users can publish routes directly to wGLN via the **Publish to wGLN** option in the **Routes** and **Route Detail** quadrants.
- To assign a Trailer ID to a stop, select the **Enter Trailer Key** option from the right-click menu.



Select which keys are to be updated on the stop, and then enter the following keys in the appropriate fields:

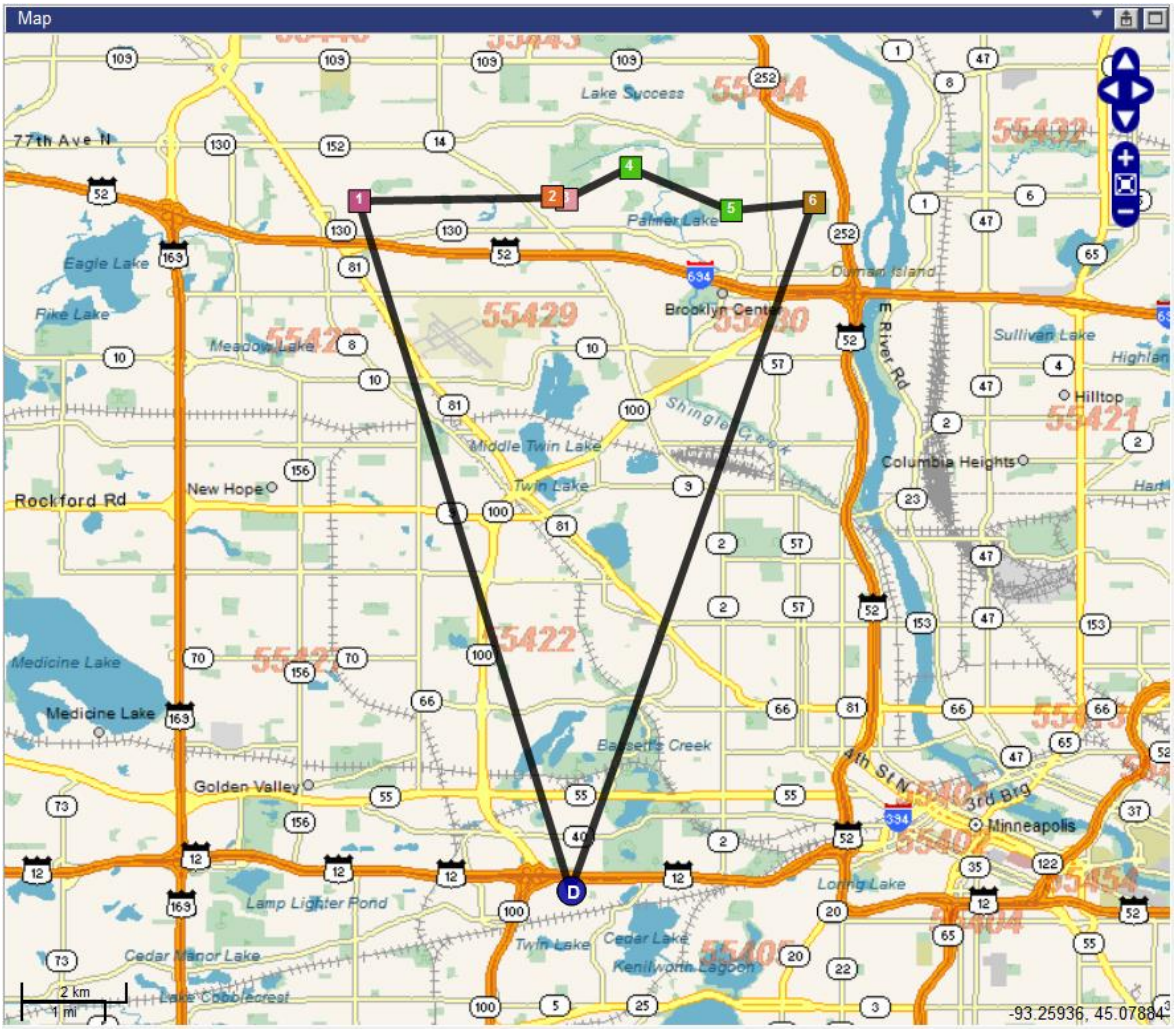
- **Trailer Key:** Refers to the trailer that the truck hauls at arrived moment
- **Drop TrailerKey:** Refers to the Trailer dropped
- **Hook TrailerKey:** Refers to the Trailer hooked

This information will appear in the TrailerKey, Drop TrailerKey and Hook TrailerKey columns, respectively, on the **Route Details** quadrants.

- Select the **Find Customer Orders** right-click option to display all orders that share the selected order's Location Key or Company values.

Route Map View

To view a Route in the Map view, either double-click on the desired Route, or drag the Route over to the **Map** quadrant and drop it.



Map data © 1987-2017 HERE

Users can select the **Show Routes/Stops** right-click menu option to display the routes and unassigned stops contained within the zoomed-in area.

Recharge Routes Map View

Recharge Routes displayed on the map will show multiple trips in different colors. A trip is considered when a recharge takes place. Every segment of the route before and after the recharge will be displayed in a different format. This will allow Planners and Dispatchers the ability to graphically see (on the map) when a route is recharged.

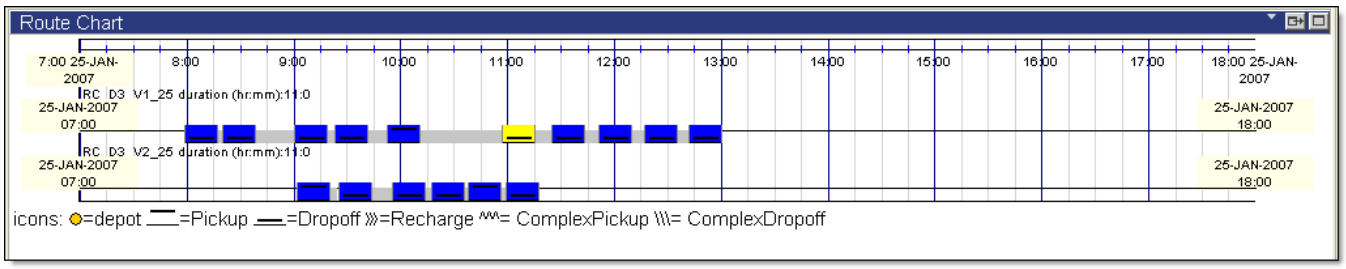
Descartes Route Planner will cycle through colors depending on the number of recharges.

Route Gantt Chart View

To view Routes in the Route Gantt chart view:

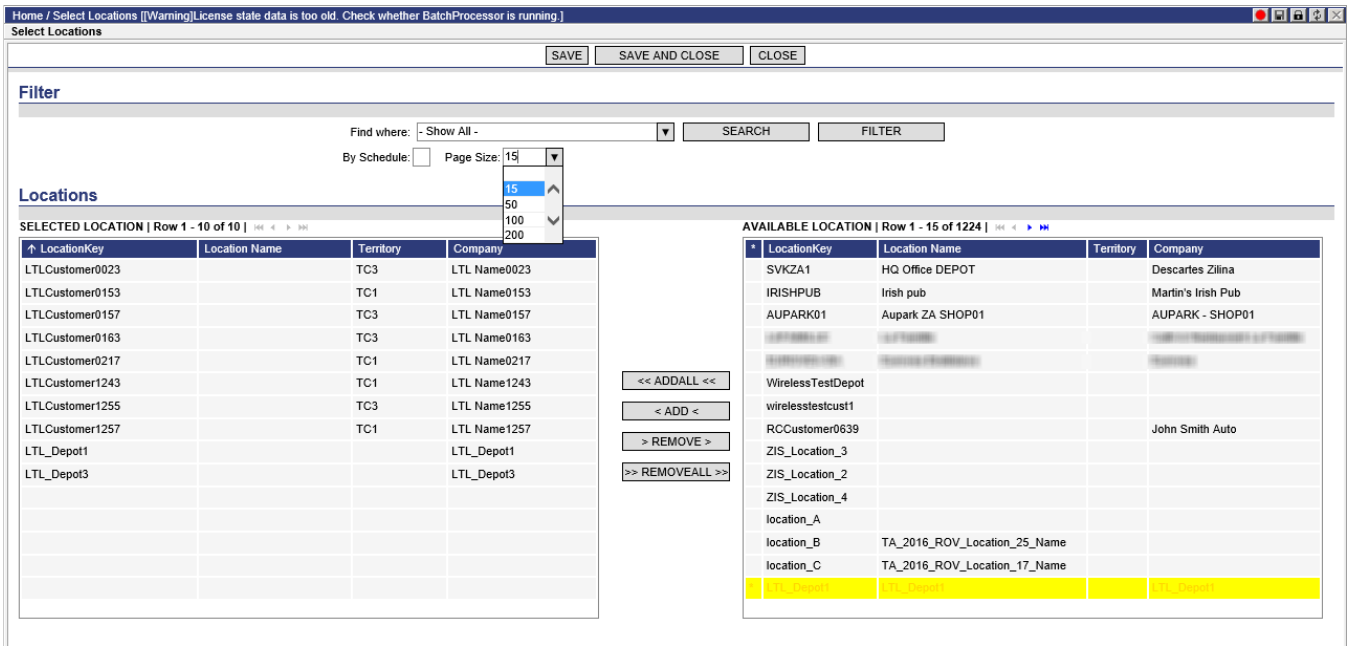
1. Select **Route Chart** from the quadrant drop-down list.
2. Drag a Route from the **Route** quadrant or **Route Detail** quadrant to the **Route Chart** quadrant.

   The Gantt **Route Chart** view displays.



Routes By Location Quadrant

From the **Routes By Location** quadrant, users can view and manipulate routes grouped by pickup or delivery locations. To populate the quadrant, right-click and select the **Select Locations** option from the right-click menu. The **Select Locations** window appears.



Select locations from the Available Locations table and use the controls to add location to or remove locations from the Selected Location table. When finished, click

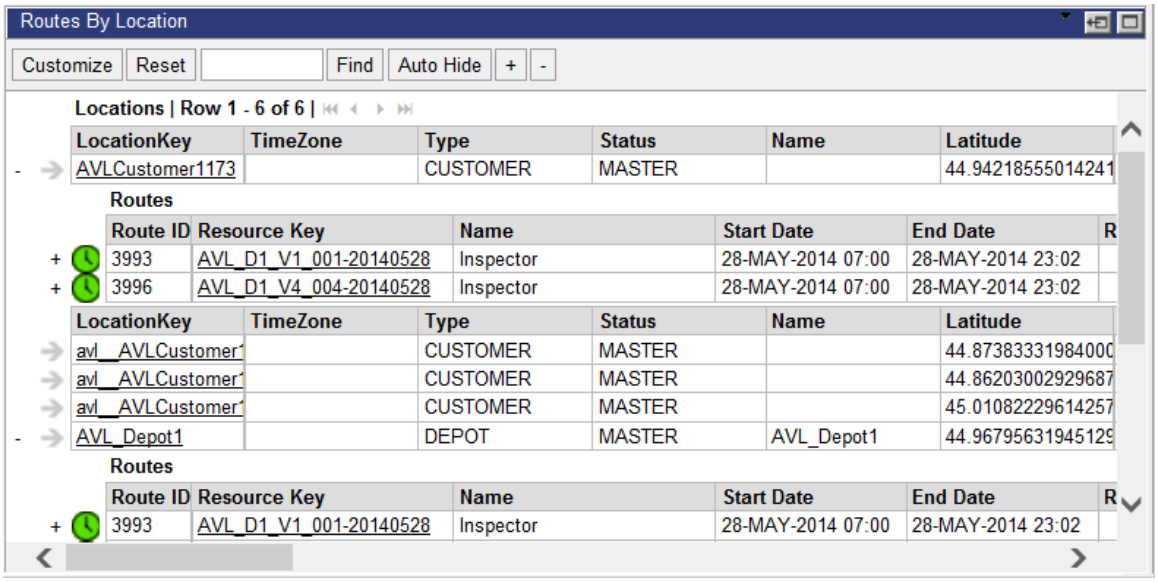
Save or **Save and Close**. The **Routes By Location** quadrant will populate with your selections. Users can control the number of records listed in each table by selecting a value from the **Page Size** dropdown.

Each selected location becomes a parent node in the tree control, with child nodes listing associated pickups and deliveries. One record of each route will display below a location, but there can be more stops returning to the same location on a particular route. Empty routes can also be displayed in the quadrant if a selected location is an initial or final depot.

Default and available columns

Location node columns: All columns available on the **Locations** list page will be available in the **Routes By Location** quadrant. By default, the LocationKey, Name Latitude and Longitude columns will display.

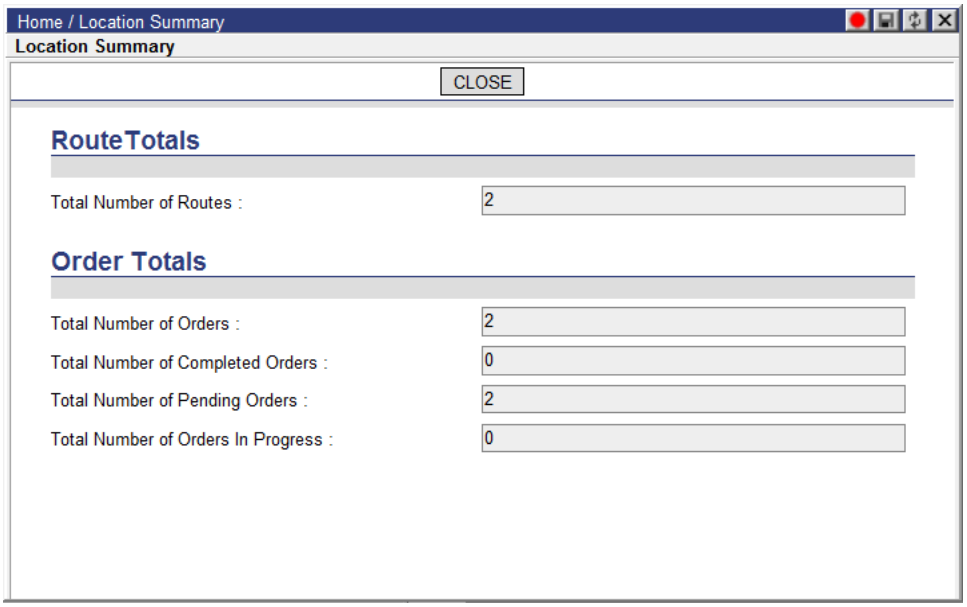
Route node columns: All columns available in the **Routes** quadrant will be available on the **Routes By Location** quadrant. Default columns are identical to those in the **Routes** quadrant.



Right-click options

The following options will be available in the right click on a location node in the **Routes By Location** quadrant:

- **Select Locations:** Displays the **Select Locations** window shown above
- **Edit Location:** Displays the **Edit Location** page
- **View Geocode:** Displays the **Location Geocode Result** window
- **View Location Summary:** Displays the **View Location Summary** window.



From this window, users can view the following information regarding the selected location:

- Total Number of Routes
- Total Number of Orders
- Number of Completed Orders
- Number of pending orders
- Total number of orders in progress – sum of orders associated with the location with "begun" status and orders with "arrived" status

Right-click options for the routes node are identical to those available in the **Routes** quadrant.

Drag and Drop Function

Route drag-and-drop functionality from the **Routes By Location** quadrant works identically to the **Routes** and **Route Details** quadrants. When dragging and dropping an order from the **Unassigned Stops** quadrant to a route in the Routes by Location quadrant, please note the following:

- If the route is dropped on an empty route and the location of the order is among the location nodes, the **Routes By Location** quadrant will refresh and the route will display under the associated location node.
- If the route is dropped on a route in use and the location of the order is among the location nodes, the route can be added to any route node. The **Routes By Location** quadrant will refresh and the route will display under the associated location node.

Optimizing options

The **Routes By Location** quadrant will be refreshed with new data when any of the following options apply changes to routes.

- **Auto Assign**, **Auto Assign to Selected**, **Auto Assign All, Suggest**, **Optimize Selected Stops**, **Optimize All:** These functions can add stop(s) to the routes. When these options are applied, the **Routes By Location** quadrant will be refreshed and the stops will be added appropriately.
- **Unassign All Stops**, **Unassign Stop(s):** These functions remove stop(s) from the selected routes. When these options are applied, the **Routes By Location** quadrant will be refreshed and records of the selected routes will be removed from the stop's location nodes.
- **Unassign All Stops on All Routes:** If no orders are completed (or equivalent to completed) when this option is used, all stops are removed; i.e., all location nodes will remain without routes. If some orders are completed (or equivalent to completed) when this option is used, the records of the routes containing these orders will remain displayed under the associated location node.
- **Reschedule:** The completed orders (or equivalent to completed) can be rescheduled. If the completed orders remain in the original schedule, data will not change in the **Routes By Location** quadrant. Otherwise, the **Routes By Location** quadrant will refresh and records of the route containing the selected orders will be removed from the stop's location nodes.
- **Optimize All, Optimize Selected Routes, Resequence:** Since orders can be added or removed from routes, the **Routes By Location** quadrant will refresh to ensure the route nodes and location nodes are displayed correctly when these options are applied.
- **Reverse:** When this option is selected, positions of all location nodes and routes nodes in the **Routes By Location** quadrant remain unchanged. The quadrant will refresh and to update values in the route columns.
- **Reassign Schedule:** Using this option, routes can be rescheduled. If the routes remain in the original schedule, the route attributes will be updated in the **Routes By Location** quadrant. Otherwise, the **Routes By Location** quadrant will refresh and records of the routes will be removed from the corresponding location nodes.

Viewing Line Items

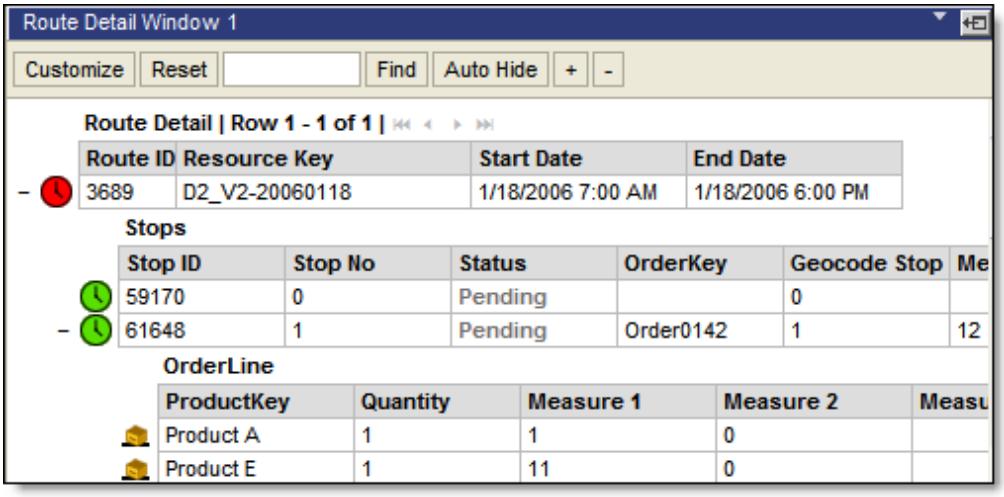
Line items for a Stop can be viewed using the List view.

To view line items:

1 From the **Unassigned Stops** or the **Route Detail** quadrant, select a Stop and then expand the page to view all the line items contained in the selected Stop.

➲ **Note—**The **Line Items** command is only available for Stops that have line items associated with them. If a Stop is not associated with line items, the **Line Items** command option is not available.

The **Line Items** branch will appear only when the Stop record is expanded.



➲ **Note—** Users can add special instructions, comments or hyperlinks using the UDFString1…9, UDF Integer1…3 and UDFNumber1…3 fields at the Route level. CTRL-clicking hyperlinks will open the link in a new browser window.

Adding Unassigned Stops Using the Anchor Command

To add Unassigned Stops to a Route:

1. Make sure the details of the Route to be edited are in the bottom (**Details**) quadrant and that the **Map** view is open in the top page.
2. Right-click anywhere on the map and select **Show Unassigned Stops**.

   Each Unassigned Stop appears on the map as a purple box with a U in it: 

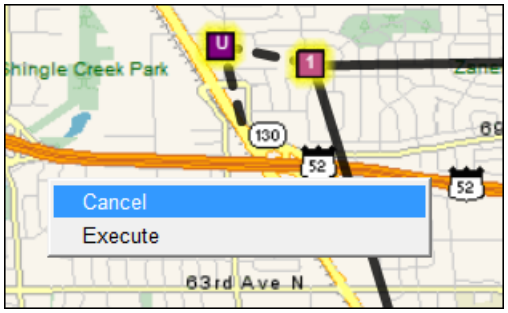
   ➲ **Note—** You can hide Unassigned Stops at any time by selecting **Hide Unassigned Stops** from the right-click menu.
3. Right-click on the Stop before the point in the Route where users want to add the Unassigned Stop.
4. Select **Anchor** from the right-click menu.
5. Click on the Unassigned Stop.

   A yellow line connects the first Stop with the Unassigned Stop.

Map data © 1987-2017 HERE

6 Double-click on the Unassigned Stop. Or, from the right-click menu, select **Execute**.

➲ **Note—** You can select **Cancel** from the right-click menu, instead of **Execute**, to cancel the assigning function.



Map data © 1987-2017 HERE

Descartes Route Planner adds the Stop and renumbers the rest of the Stops on the Route.

ⓘ **Tip—** You can assign more than one Unassigned Stop. Make sure to select an assigned Stop first, and then select the sequence of Unassigned Stops in the order they should appear on the final Route. Only Unassigned Stops can be selected after setting the anchor point; however, you can resequence the Route after adding all of the Stops.

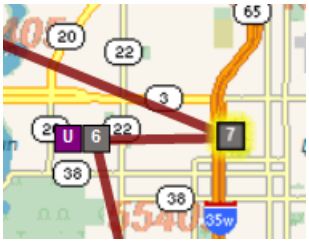
➲ **Note—** Users can add special instructions, comments or hyperlinks using the UDFString1…9, UDF Integer1…3 and UDFNumber1…3 fields at the Route level. CTRL-clicking hyperlinks will open the link in a new browser window.

After any assignment, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the assignment. See the *Before and After Results* section for more information.

Resequencing Routes Using the Anchor Command

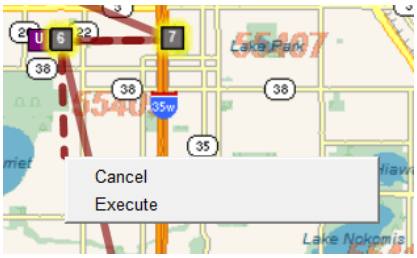
To resequence a Route:

1. Make sure the details of the Route to resequence are visible in the bottom (**Details**) page.
2. Make sure the **Map** view is open in the top page.
3. Right-click on the Stop before the first Stop to resequence.



Map data © 1987-2017 HERE

4. Select **Anchor** from the right-click menu.
5. Click the Stop to follow the anchor Stop.

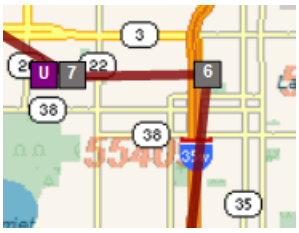


Map data © 1987-2017 HERE

6. Click the rest of the Stops to resequence, in the desired order.
7. When finished selecting the new sequence, click anywhere on the map and select **Execute** from the right-click menu.

> **Note—** You can select **Cancel** from the right-click menu to end the resequence process without saving the changes.

Descartes Route Planner resequences and renumbers the Stops on the Route.



Map data © 1987-2017 HERE

Reordering Routes Using Lasso Functionality

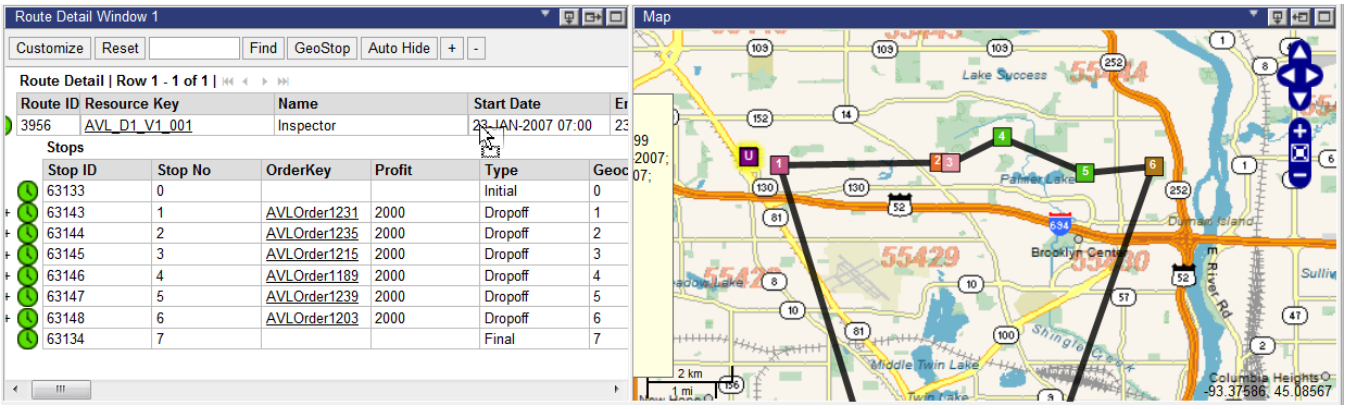
Users can select groups of stops on the **Map** quadrant by drawing a line around them using the Lasso functionality. Specific stops can be "lassoed" in this manner and reordered manually on a route, as well as other functions.

1. From the Map quadrant, hold CTRL, left click and hold to begin your 'lasso' around a group of stops. Hold both CTRL and the left mouse button until your circle is complete, as shown in the video clip below.

2. When the lasso is complete, release both buttons. The lassoed stops become highlighted on the map.
3. Right-click on the highlighted stops to perform any functions from the right-click menu, or left click on the stops to drag and drop them to a different sequence.
4. For lassoed unassigned stops, drag and drop to an existing route to add them to the route. In both cases, the stops will be added in sequence after the stop on the route they were dropped on.

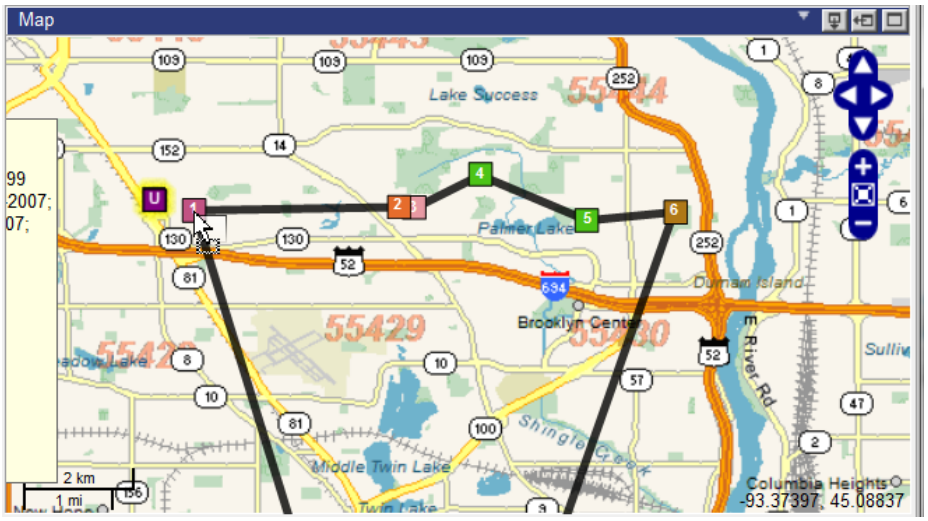
Reordering Routes Using Drag and Drop Functionality

Users can drag and drop stops between the **Map** quadrant and the **Routes**, **Route Detail** and **Unassigned Stops** quadrants on the Dashboard to manipulate them in the following ways:



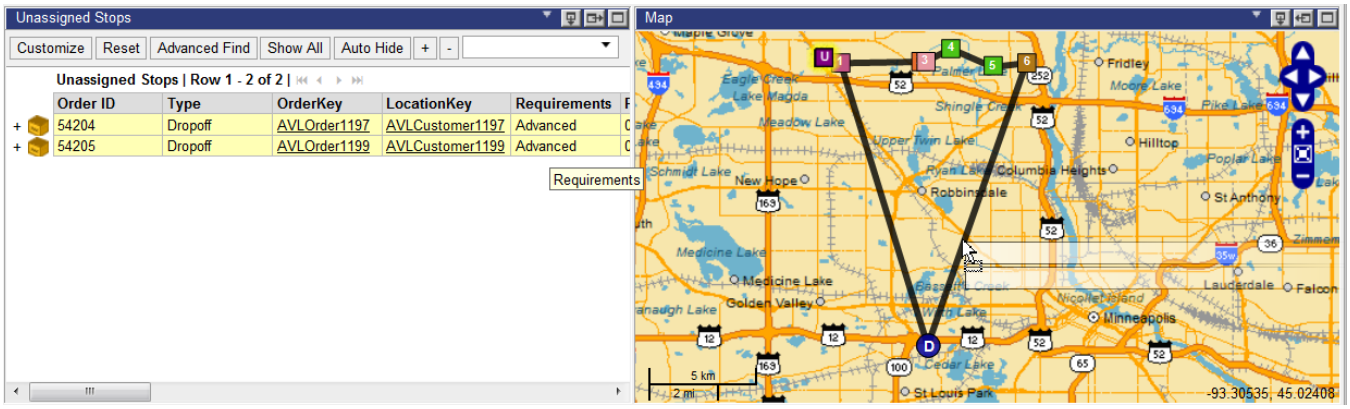
Map data © 1987-2017 HERE

- Drag and drop one or more stops or unassigned stops in a map route to the **Route** or **Route Detail** quadrants.



Map data © 1987-2017 HERE

- Drag and drop one or more stops or unassigned stops on a stop icon on the map or a stop on the **Routes** or **Route Detail** quadrants to add the selected stop(s) after the stop in the route



Map data © 1987-2017 HERE

- Drag and drop one or more stops or unassigned stops from the **Routes**, **Route Detail** or **Unassigned Stops** quadrants on a route line on the map.
- Drag and drop one or more stops or unassigned stops from the **Routes**, **Route Detail** or **Unassigned Stops** quadrants on a stop icon on the map. The system adds the stops after this stop in this route

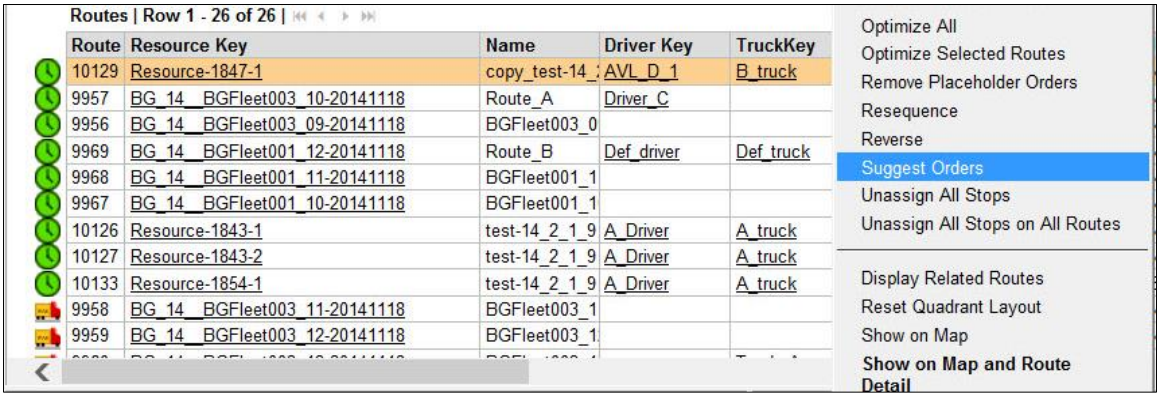
After any assignment, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the assignment. See the *Before and After Results* section for more information.

Suggesting Orders for Routes

Users can have Descartes Route Planner suggest orders for a particular route on the Dashboard using the **Suggest Order** right-click option on the following quadrants:

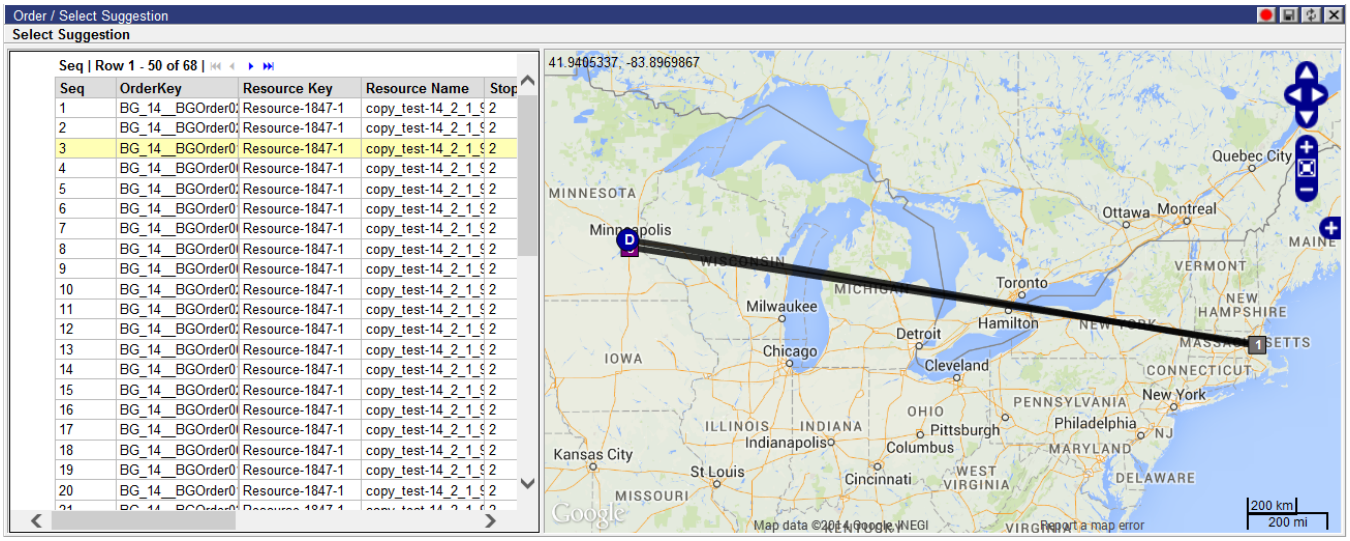
- Routes
- Route Detail 1, 2
- Route Violations
- Map
- Routes By Location

When the **Suggest Orders** option is applied for one or more routes, the application provides the user with a list of suggested assignments. Users can then select and apply one of the options.



To find and assign order suggestions for one or more routes:

1 Right-click on one or more routes in the **Routes**, **Route Detail**, **Routes By Location**, **Map** or **Route Violations** quadrant and select the **Suggest Orders** option. The **Select Suggestion** page appears.



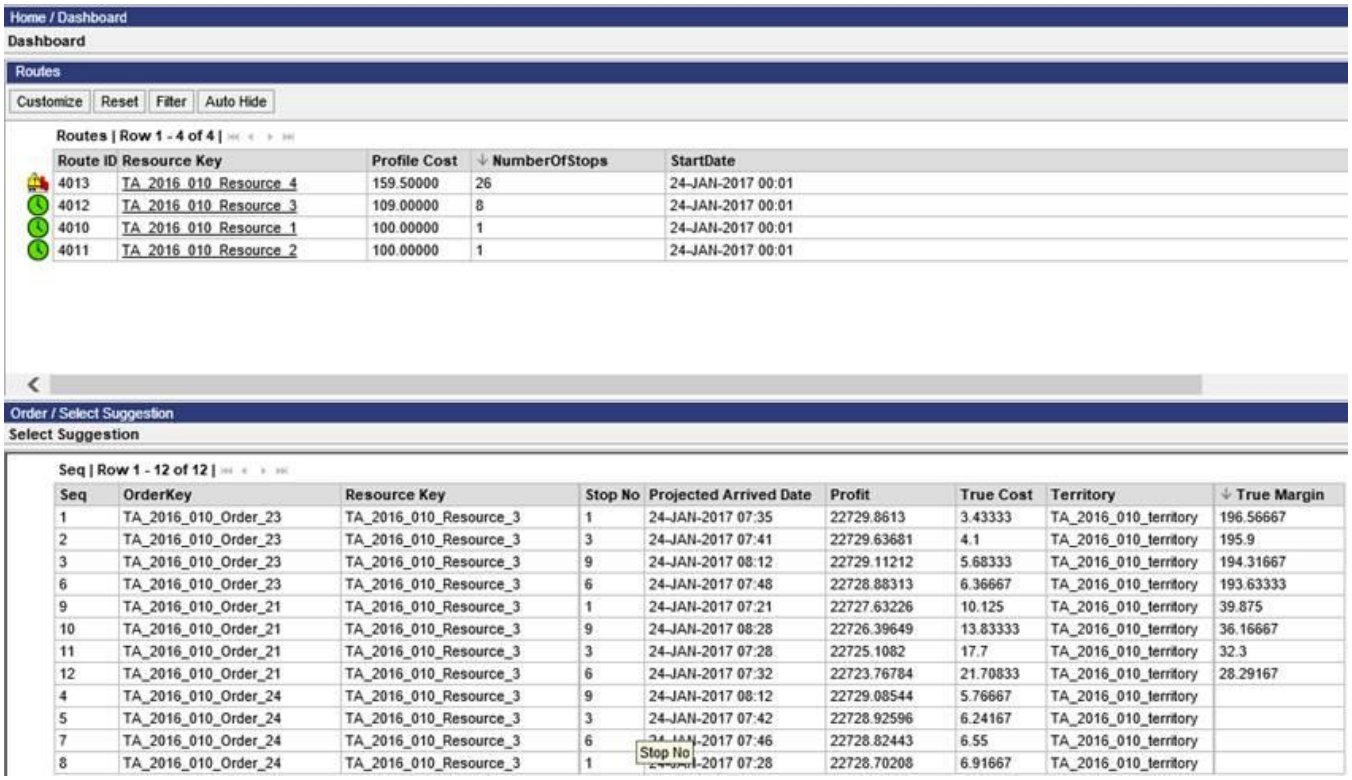
Map data © 2017 Google

From this page, users view the orders on the map. Drag an order from the list on to the map area or select one in the list, right-click and select the **Show on Map** right-click option.

2 To assign a suggested order, double-click on the desired order or right-click and choose the **Select** option from the right-click menu.

➲ **Note—** Users can only view or assign one order at a time.

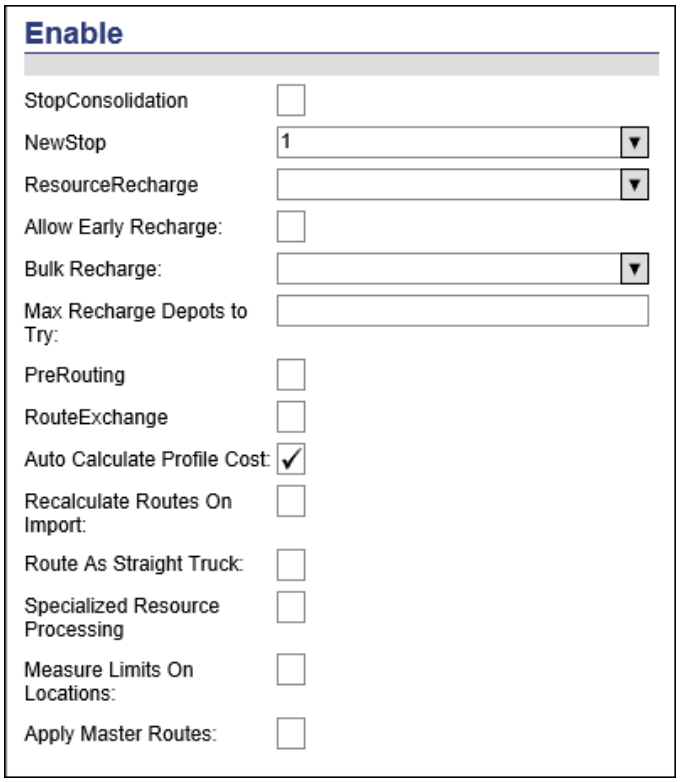
3 The order will be added to the route. Users can review the assignment details in the subsequent **Suggest Results** window.



The **Suggest** operation returns True Margin and True Cost values as part of the suggest results. These values are calculated using the Freight Allowance value on the **New**/**Edit Order** page, which represents the least expensive value between carrier and vendor costs.

- True Margin is calculated as follows: (Freight Allowance) – (new True Cost) + (old True Cost)
- True Cost is calculated as follows: (new True Cost) – (old True Cost)

In order to have the system populate these columns, the **Auto Calculate Profile Cost** schedule setting must be enabled.



The Max Suggestions, Max Suggests Per Order/Route and Max Suggest Per Day settings in the Suggest/Suggest Orders section of the **New/Edit Schedule** page also apply to the **Suggest Order** function.

After selecting a suggested order for assignment, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the suggest. See the *Before and After Results* section for more information.

Re-assigning Territories

A stops territory can be re-assigned to territories created by the Administrator or Planner.

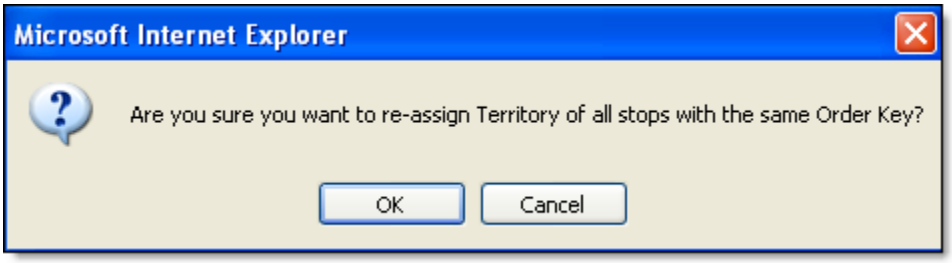
➲ **Note—** Territories can only be re-assigned if the schedule is set so that territories will always be assigned (Automatically assign territory). See the Assignment field definition section under *Viewing and Editing Schedule Details* in *Viewing and Managing Route Planner Data*.

To re-assign a territory:

1 From the **Route Detail** quadrant, right-click on the desired Stop to re-assign the territory.

2 Select **ReAssign Territories**.

The following message appears.



3 Click **OK** to reassign the territory. To reassign all territories in the quadrant, select the **Reassign Territory for All** option instead.

Moving and Editing Routes

Having created routing plans and reviewed the Routes, Routes can be moved and edited to accommodate the unique aspects of the organization's business environment.

Routing plans can be optimized by the following methods:

- unassigning Stops
- moving Stops within a Route
- moving Stops to another Route
- optimizing selected Route(s)
- moving Stops to another schedule
- moving Routes to another schedule

Moving Stops within a Route

Moving Stops within a Route lets users manually reorder Routes.

Using the List View

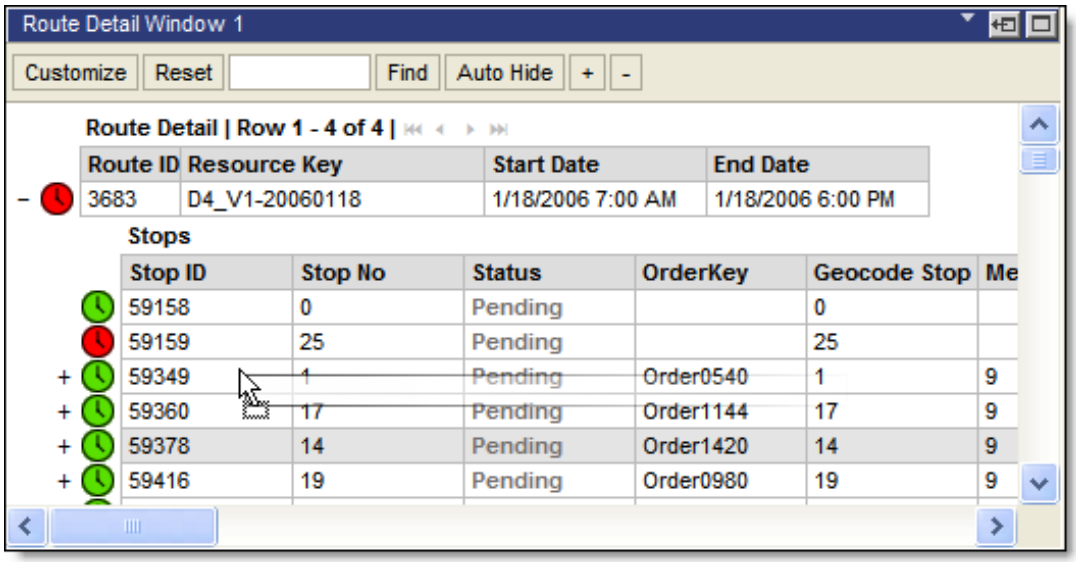
To move a Stop within a Route:

1 On the **Routes** quadrant, double-click on the Route to view on the **Map** and **Route Detail** quadrants.

2 Select the Stop(s) to move.

ⓘ **Tip—** You can select and move Stops that appear anywhere in the Route.

3 Drag the Stops to a new Location in the **Route Detail** view and drop them onto the Stop you want them to follow.



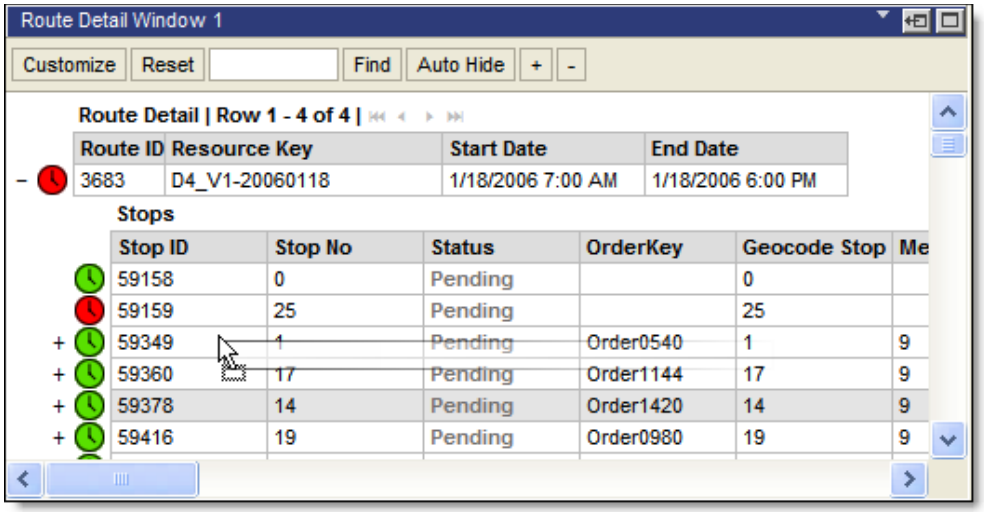
Descartes Route Planner updates the Route to reflect the new order.

Using the Tree View

To move a Stop within a Route:

1. Open the **Route Details** quadrant.
2. Select the Stop(s) to move.

   ⓘ **Tip—** You can select and move Stops that appear anywhere in the Route.
3. Drag the Stops to a new Location in the tree and drop them onto the Stop they should follow.



Descartes Route Planner updates the Route to reflect the new activity order.

Using the Map View

Follow the steps outlined in the *Resequencing a Route Using the Anchor Command* section.

Moving Stops to Another Route

Users can move Stops to another Route to better refine and balance the Routes.

Using the List View

To move a Stop to another Route:

1. On the **Routes** quadrant, double-click on the Route to remove the Stops from that Route.

   The list of Stops on the Route appears in the **Route Detail** quadrant. Make sure that the **Details** quadrant is displayed.

2. Select the Stops and activities to move and drag them to a new Route on the **Routes quadrant**.

   ⓘ **Tip—** You can select and move Stops that appear anywhere in the Route. You can also drag Stops within the **Route Detail** quadrant or between **Route Detail** quadrant.

   Descartes Route Planner updates the Routes, removing the Stops from their original Route and placing them in the new Route.

   See *Moving Stops Within a Route* for details on resequencing Routes that have Stops added.

Moving Stops to Another Schedule

Users can unassign Stops and activities from a Route and move them to another schedule.

➲ **Note—** Users can only move Stops and activities to another schedule from the list or tree view, not from the map view.

Using the List View

To move a Stop to another schedule:

1. On the **Routes quadrant**, double-click on the Route containing the Stop to move.

   The list of Stops on the Route appears in the **Route Detail** quadrant. Make sure the **Route Detail** quadrant is visible.

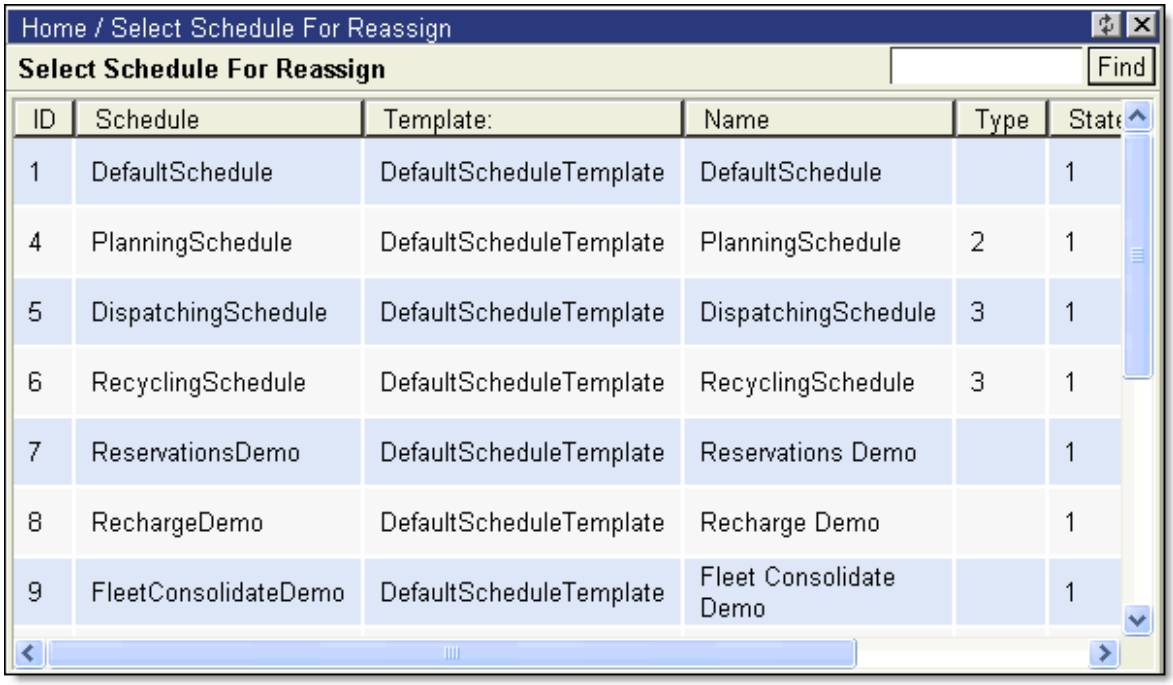
2 In the **Route Detail** quadrant, right-click on the Stop to move and select **Unassign Stop**(s).

ⓘ **Tip—** You can select a single Stop, several Stops that are side-by-side, Stops that are not side-by-side, or all Stops on the Route.

Descartes Routing and Scheduling removes the Stop from the Route and places it in the list of Unassigned Stops. The Grid view will no longer display the selected Stop.

3 In the **Unassigned Stops** quadrant, right-click on the Unassigned Stop and select **Reassign Schedule**.

The **Select Schedule for Reassign** dialog appears:



ID	Schedule	Template:	Name	Type	State
1	DefaultSchedule	DefaultScheduleTemplate	DefaultSchedule		1
4	PlanningSchedule	DefaultScheduleTemplate	PlanningSchedule	2	1
5	DispatchingSchedule	DefaultScheduleTemplate	DispatchingSchedule	3	1
6	RecyclingSchedule	DefaultScheduleTemplate	RecyclingSchedule	3	1
7	ReservationsDemo	DefaultScheduleTemplate	Reservations Demo		1
8	RechargeDemo	DefaultScheduleTemplate	Recharge Demo		1
9	FleetConsolidateDemo	DefaultScheduleTemplate	Fleet Consolidate Demo		1

4 Right-click on the desired schedule and select **Select**.

Descartes Route Planner removes the Stop from the current Unassigned Stops list and moves it to the Unassigned Stops list of the new schedule.

Or,

- Drag and drop an unassigned stop on a schedule in the **Favorite Schedule** quadrant to reassign it to the selected schedule
- Drag and drop a stop on a schedule in the **Favorite Schedule** quadrant to reassign the route to the selected schedule.

Moving Routes to Another Schedule

Once users have finished sequencing Routes, they can move them to another schedule. This process is usually used to transfer Routes from a Descartes Route Planner to a dispatcher.

➲ **Note—** Users can only move Routes to another schedule from the Routes quadrant.

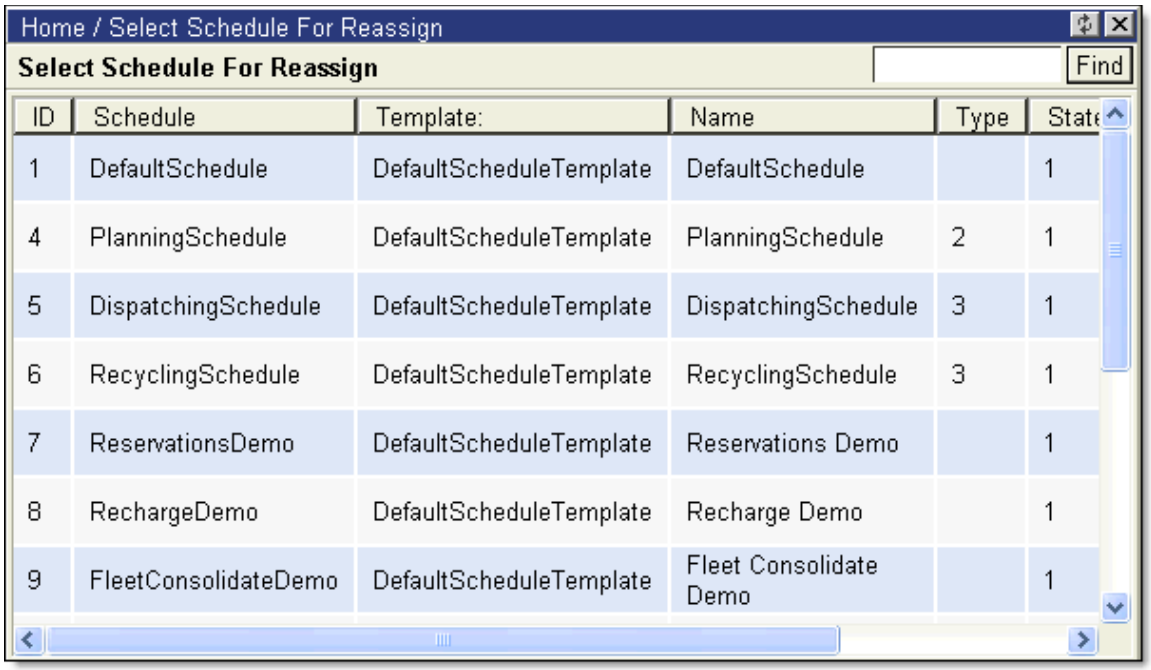
To move a Route to another schedule:

1 On the Routes quadrant, select the Routes you want to move to another schedule.

ⓘ **Tip—** You can select a single Route, several Routes that are side-by-side, Routes that are not side-by-side, or all Routes in the schedule.

2 Right-click on a desired Route and select **Reassign Schedule**.

The **Select Schedule for Reassign** dialog appears:



ID	Schedule	Template:	Name	Type	State
1	DefaultSchedule	DefaultScheduleTemplate	DefaultSchedule		1
4	PlanningSchedule	DefaultScheduleTemplate	PlanningSchedule	2	1
5	DispatchingSchedule	DefaultScheduleTemplate	DispatchingSchedule	3	1
6	RecyclingSchedule	DefaultScheduleTemplate	RecyclingSchedule	3	1
7	ReservationsDemo	DefaultScheduleTemplate	Reservations Demo		1
8	RechargeDemo	DefaultScheduleTemplate	Recharge Demo		1
9	FleetConsolidateDemo	DefaultScheduleTemplate	Fleet Consolidate Demo		1

3 Right-click on the desired schedule and select **Select**.

Descartes Route Planner moves the Route to the new schedule.

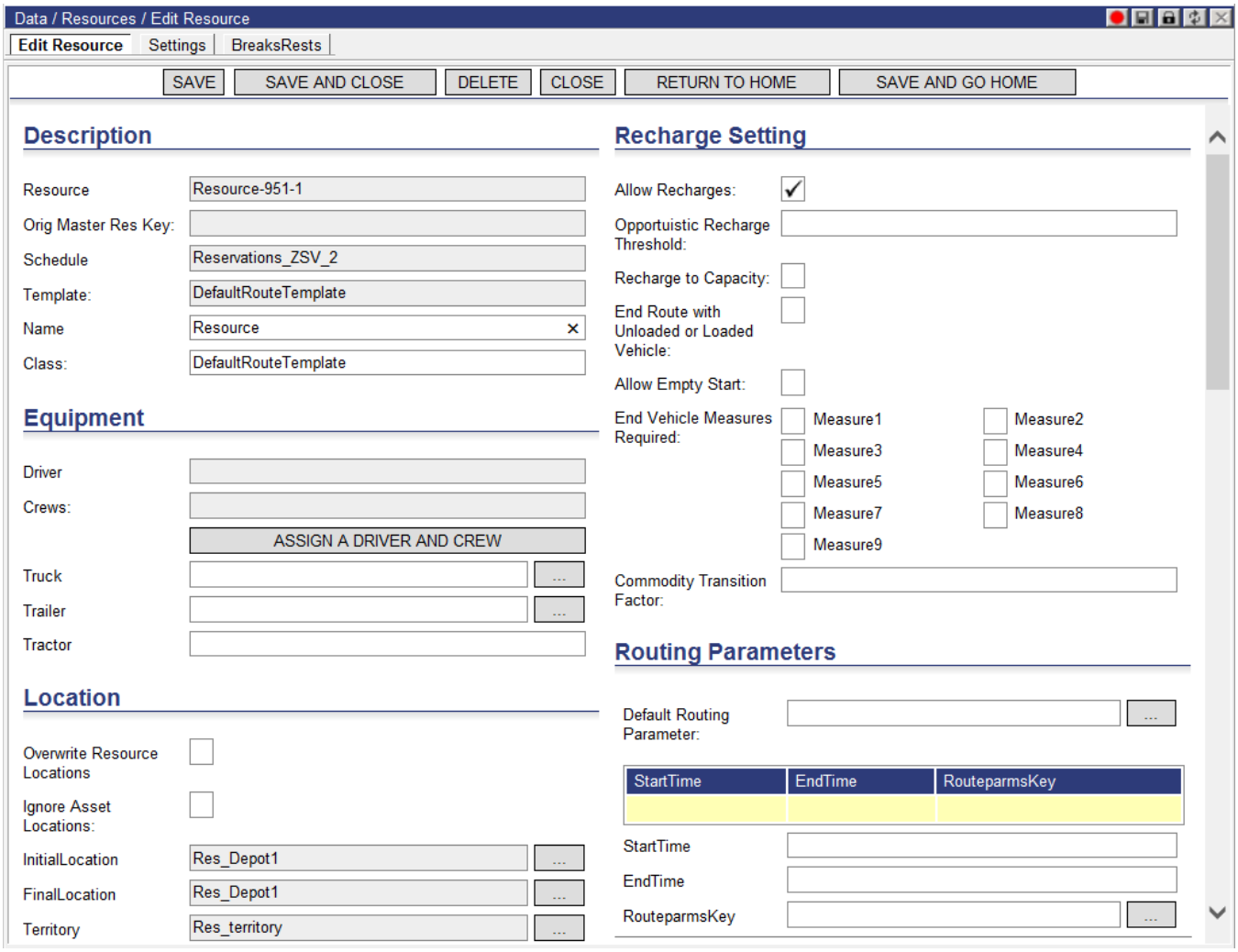
Editing Resource Attributes

From the **Routes** quadrant, the **Edit Resource** command allows users to modify the attributes for a resource associated with a particular route.

To edit the attributes for a Resource:

1 From the **Routes** quadrant, right-click on a route and select **Edit Resource**.

The following page appears:



2 Change the Resource attributes as necessary.

See the *Managing Resources* for details on Resource attributes.

3 When finished editing the Resource attributes, click the **Return to Home** button to return to the Dashboard.

Freezing Routes

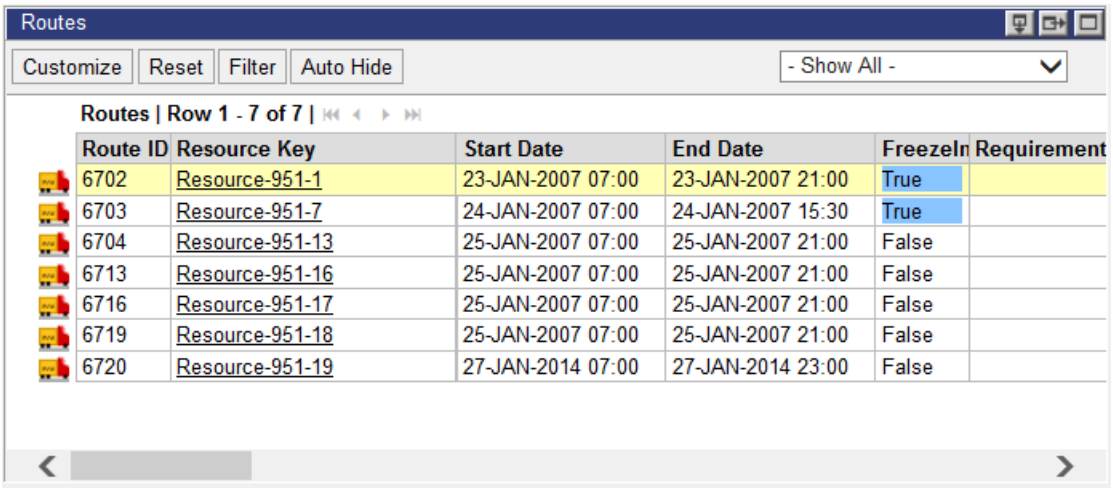
Users can choose to freeze a Route so that its information will not be optimized when optimization is performed.

To freeze Routes:

1 On the **Routes** quadrant, select the Routes you want to freeze on the schedule.

ⓘ **Tip—** You can select a single Route, several Routes that are side-by-side, Routes that are not side-by-side, or all Routes in the schedule.

2 Right-click on a selected Route and select **Freeze Route** from the right-click menu. The FreezeInd column displays as True as shown below.



Route ID	Resource Key	Start Date	End Date	FreezeIn	Requirement
6702	Resource-951-1	23-JAN-2007 07:00	23-JAN-2007 21:00	True	
6703	Resource-951-7	24-JAN-2007 07:00	24-JAN-2007 15:30	True	
6704	Resource-951-13	25-JAN-2007 07:00	25-JAN-2007 21:00	False	
6713	Resource-951-16	25-JAN-2007 07:00	25-JAN-2007 21:00	False	
6716	Resource-951-17	25-JAN-2007 07:00	25-JAN-2007 21:00	False	
6719	Resource-951-18	25-JAN-2007 07:00	25-JAN-2007 21:00	False	
6720	Resource-951-19	27-JAN-2014 07:00	27-JAN-2014 23:00	False	

➲ **Note—** If a frozen route is published and then a dispatcher tries to change it after it has been published, the route cannot be changed until it is unfrozen. See *Publishing Routes* for more information.

➲ **Note—** Using the quadrant **Filter** window, users can filter out frozen routes from the Dashboard with the FreezeInd filter attribute.

To unfreeze a route

- Right-click on a frozen route in the **Routes** quadrant and select **Unfreeze Route**. The FreezeInd column displays as **False.**

Locking Generated Time Windows for Routes

When users select the **Lock Gen Time Windows** right-click menu option, for a route in the **Routes**, **Route Detail** or **Routes by Location** quadrants where FWSchedule SetTWtoGenTW=1, the system will replace all existing time windows

with generated time windows based on arrival and departure values. When time windows are updated for the route, the system will return a violation if they fall outside the initial values.

Optimizing Routes

Users can choose from the following levels of optimization to perform on Routes:

- optimizing the schedule re-evaluates all existing Routes
- optimizing selected Routes re-evaluates only the selected Routes
- resequencing a Route re-evaluates a single selected Route

1. If the **Routes** quadrant is not already open, navigate back to the main quadrant page by selecting **Home**.
2. From the list of Routes in the **Routes** quadrant, select one or more Routes to optimize by clicking on them once. To select multiple Routes, use the CTRL or SHIFT + Click function that is standard in Windows applications.
3. If one or more Routes were selected to optimize, right-click on the Route and from the right-click menu, select **Optimize Selected Routes**.

   To optimize all Routes without having to select them individually, select **Optimize All.**

   A dialog box appears, asking for optimization confirmation.
4. Select **OK** to optimize the desired Routes.

Descartes Route Planner then optimizes all of the Unassigned Stops and existing Routes, according to the optimization parameters set up by the administrator. When an optimization for a route is performed, the system displays the selected time window and planned measures as part of a pickup or delivery in the Selected Window and Selected Window Measure fields.

Users can review the optimized Routes and make any necessary changes.

After optimization, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the optimize. See the *Before and After Results* section for more information.

Resequencing Routes

Resequencing Routes in Descartes Route Planner re-evaluates the Route and rearranges the Stops to produce the best Route.

To resequence a single Route:

1. On the main quadrant page, the **Routes** quadrant should be open.
2. Select the desired Route(s) to optimize by clicking them once.

3 Right-click on the desired Route and select **Resequence**.

Descartes Route Planner resequences the selected Route for optimal routing.

To resequence more than one Route at a time:

1 On the main quadrant page, the **Routes** quadrant should be open.

2 Select the desired Routes to optimize by clicking them once.

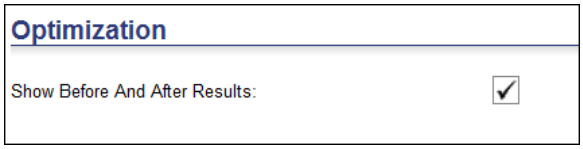
3 Right-click on the desired Routes and select **Resequence**.

Descartes Route Planner resequences each selected Route.

After a resequence, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the resequence. See the *Before and After Results* section for more information.

Before and After Results

Users can view and compare optimization results before and after certain processes are completed when the **Show Before And After Results** setting is enabled on the **Data Filters > Options** page.



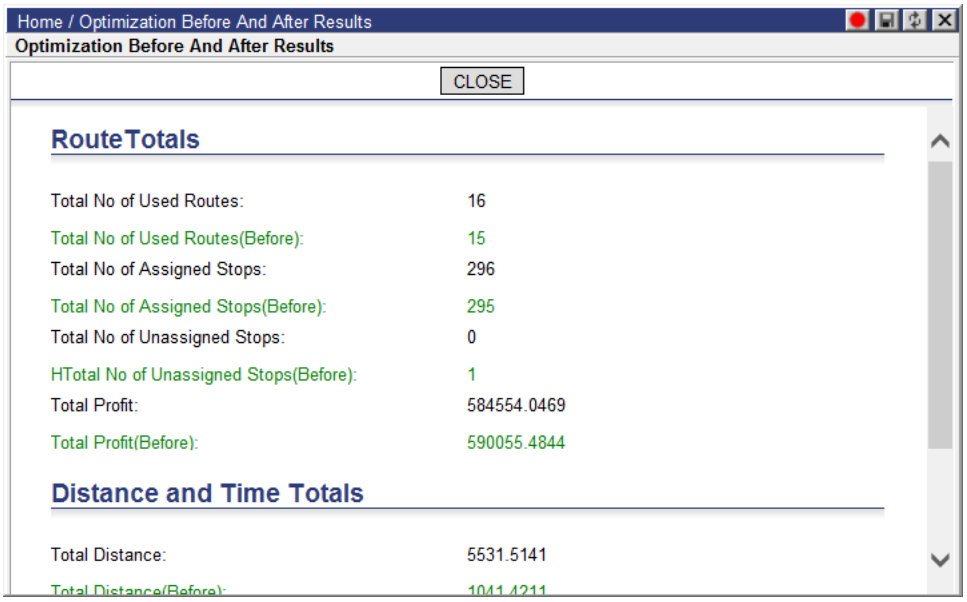
After each of the following actions, users can press **CTRL-G** on the Dashboard to display route, time and distance metrics before the operation and after the operation in the **Optimization Before and After Results** window.

- Optimize All, Optimize Selected, Optimize Selected Stops
- Drag and Drop (manual assignment)
- Unassign All Stops, Unassign All Stops on All Routes
- AutoAssign, AutoAssign All, AutoAssign to Selected
- Resequence
- Reverse
- Suggest, Suggest Orders
- Remove Placeholder Orders

The metrics displayed are:

- Total No of Used Routes
- Total No of Assigned Stops
- Total No of Unassigned Stops

- Total Profit
- Total Distance
- Total Time Driven
- Total Elapsed Time



If a filter is applied, the **Optimization Before And After Results** window will display the Route, Distance and Time Totals values accompanied by the number of *displayed* routes compared to the number of *total* routes depending on the filter.

Publishing and Tracking Stops Individually

With this functionality enabled via the **Application Configuration** page, users can publish stops individually and the system will provide tracking information regarding what has been published.

From the **Route Detail** quadrants, select one or more stops, right-click and select **Publish** from the right-click menu. This function sends the selected stops to external services.

Users can track associated stop and route publishing from the Publish column. When a published stop is unassigned, the flag on the stop is set back to 0. A stop's Published flag can change from 1 to 2 when either the order is updated or the order's sequence and times are changed.

Working with Resources

Resource options are found under the **Routes** quadrant, but they can be viewed and edited directly via **Data > Resources**.

See the *Glossary* for a definition of a Resource.

Resources can be edited either singly or in multiples. Edit a Resource by itself when making changes to only affect a single Resource. When across-the-board changes are desired for multiple Resources, they can be edited at the same time.

To edit a single Resource:

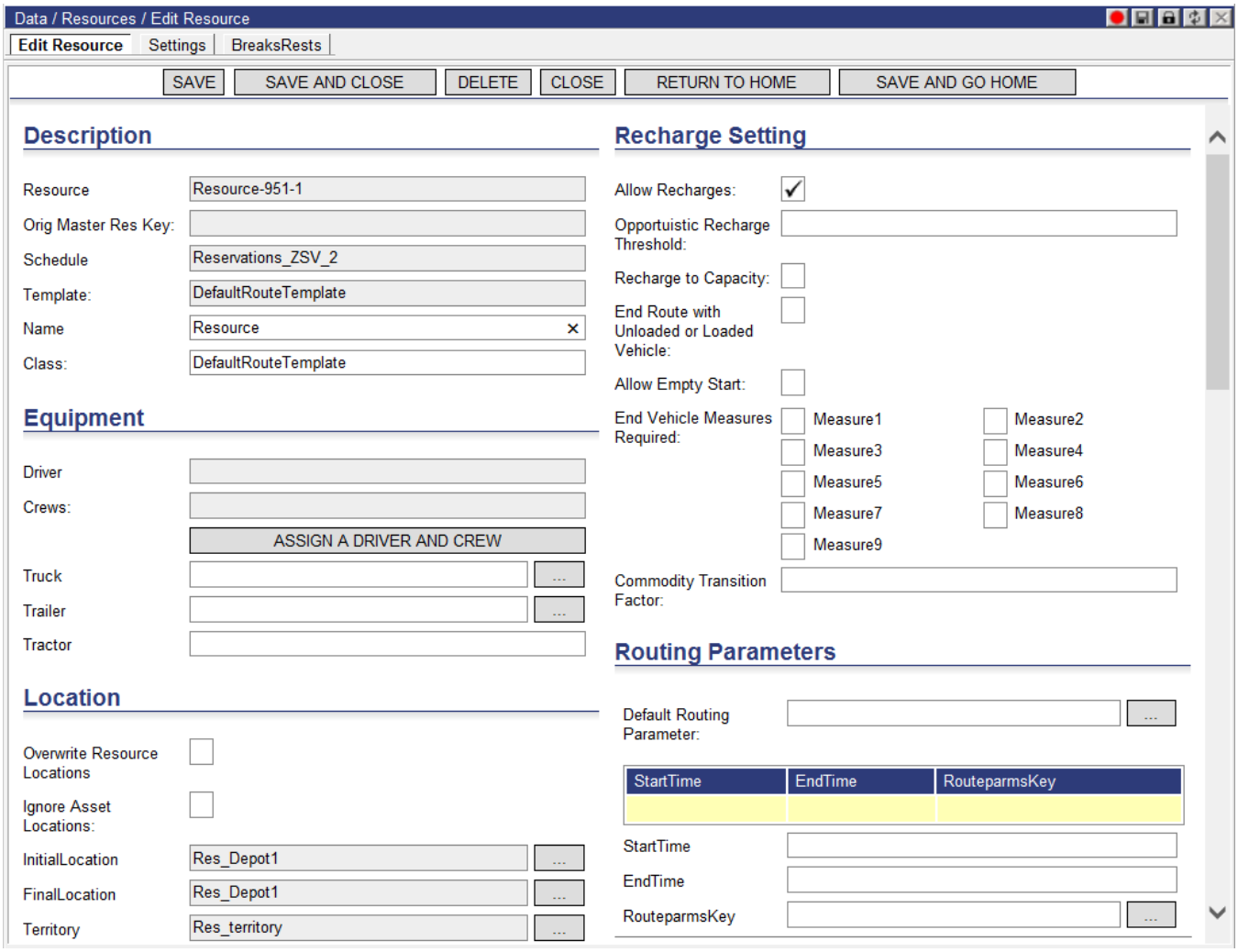
1 From the **Routes** quadrant, right-click on a Route and select **Edit Resource**.

Optionally:

1 Go to **Data > Resources**.

2 From the list, select the Resource to edit and double-click it or right-click on it and select **Edit**.

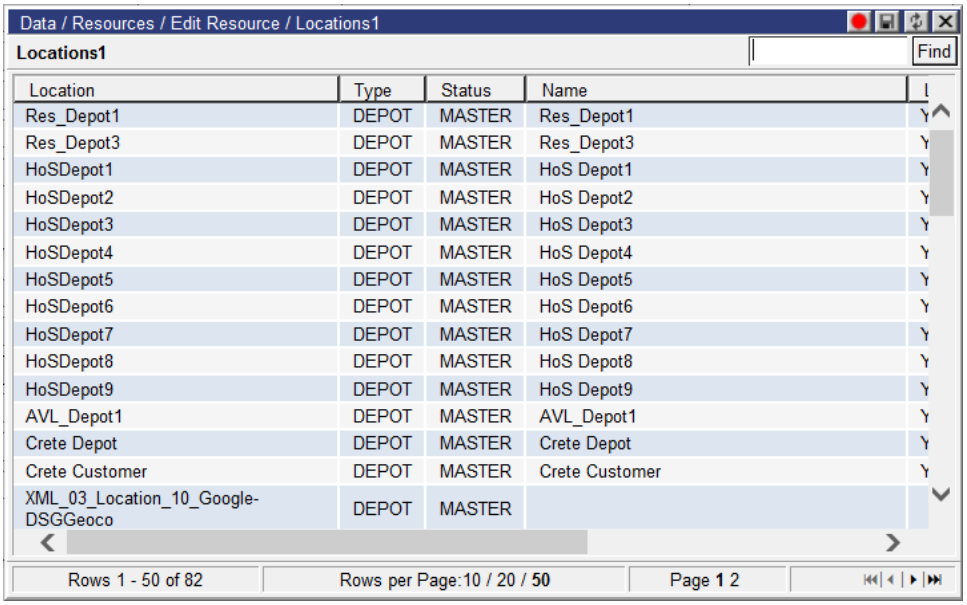
The following page appears:



Fields outlined in red are required.

In general, fields in gray are static and cannot be edited.

The two gray fields that can be edited are the **Initial Location** field and the **Final Location** field. Users can change these fields by clicking the ellipses buttons beside the field to open a page similar to the one below:



Select the Initial or Final Location to display in the associated field. When finished, double-click the desired Location. The page will close and the new Location will be populated in the Location field.

There are additional configuration options from the tabs at the top of the **Resource** page:

- Settings
- BreakRests

When finished making edits to the Resource, click one of the following options:

- **Save** – keeps changes and exits the page
- **Save and Close** – keeps the changes and exits back to the **Resource** list page
- **Delete** – deletes the Resource and exits the page
- **Close** – exits back to the **Resource** list page without saving changes
- **Return to Home** – exits back to the **Home/quadrant** page without saving changes
- **Save and Return to Home** – keeps the changes and exits back to the **Home/quadrant** page

Editing Multiple Resources

To edit multiple resources:

1. Select the desired resources, right-click and select **Edit Selected Resources**.

   The **Edit Multiple Resources** page appears. It is blank so that you can enter the new values for the selected resources.

2. Make edits as needed in the appropriate fields.
3. Click **Save** to save the new information for the selected resources. The new information is applied to the selected resources.

Resolving Route Violations

Once the Route plan has been created, and while Routes are being executed, users need to check for violations or problems in the Routes. Descartes Route Planner displays alert icons to notify users of any Routes and/or Stops which may have problems.

Icon	Alerts	
	**No Alerts**	
	**Missed Window/Time Window Jeopardy**	
	Missed Window	outside the time screen for the Route/activity
	Missed Resource Window	outside the time screen for the resource
	Time Window Jeopardy	Route/activity scheduled close to the time screen start or end
	**Capacity**	
	Capacity Exceeded	capacity of the resource has been exceeded
	**General Alert**	
	Too Many Stops	resource's distance has exceeded the maximum mileage allowed
	**Informational Alert**	
	Unresolved Location	latitude and longitude for the activity Location have not been verified

	Requirements Not Met	the capabilities of the resource do not fulfill the requirements of the order
	Wrong Preferred Route	activity is not assigned to the preferred Route identified by the order
	Wrong Route Position	activity is not assigned to the appropriate Route position
	Dispatched Out Of Sequence	activities have been serviced out of the scheduled sequence
	Dispatched Completed	the Dispatched stop has been completed
	Dispatched Untimed	the Dispatched stop is not completed on time

Viewing Route Alerts

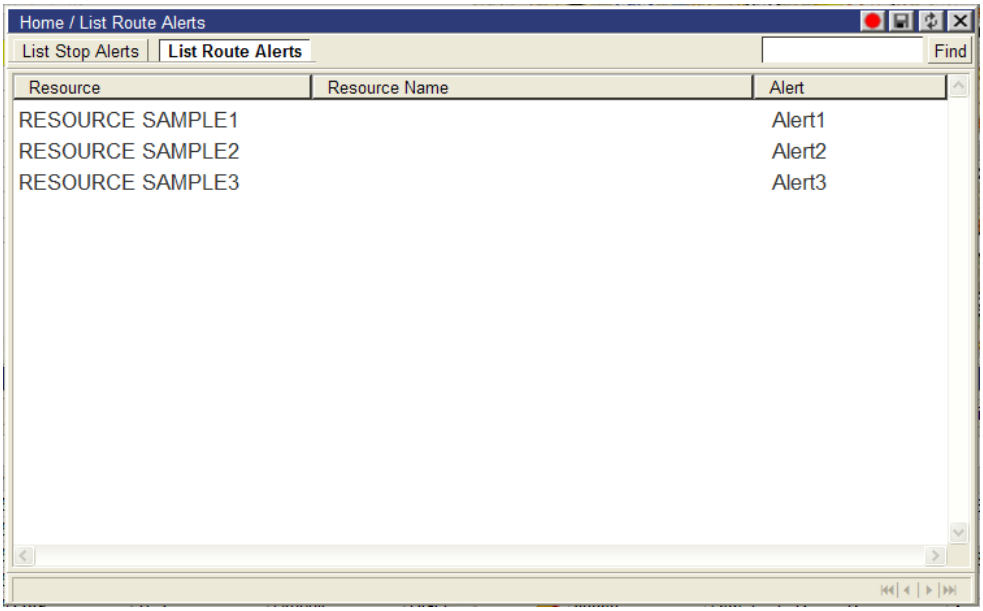
The **Alerts** column on the **Routes** quadrant displays a variety of icons representing different types of alerts. Routes may display only one icon, but may have multiple alerts associated with them.

To view details of the alerts for a Route:

1. Select the Routes to view alerts for.
2. Right-click on a Route and from the right-click menu, select **Alerts**.

   ⓘ **Tip—** The Alerts menu item is only available if alerts exist for at least one of the selected Routes.

   The **List Route Alerts** dialog appears, listing the alerts associated with the selected Route.



To view the alerts associated with Stops on this Route, switch to the **List Stop Alerts** page.

Viewing Stop Alerts

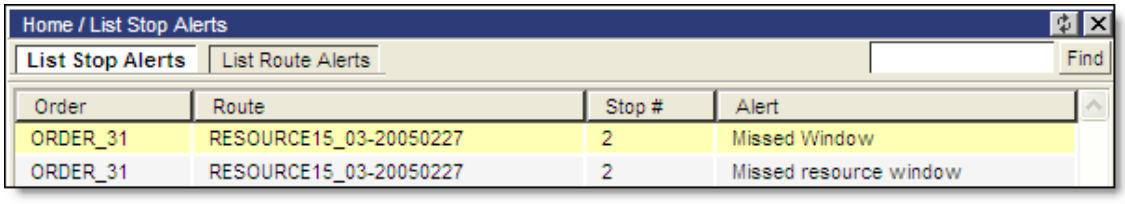
The **Alerts** column on the Grid displays a variety of icons representing different types of alerts associated with each Stop. Stops may display only one icon, but may have multiple alerts associated with them.

To view details of the alerts for a Stop:

1 On the Grid, right-click on a Stop and from the right-click menu, select **Alerts**.

ⓘ **Tip—** The Alerts menu item is only available if alerts exist for at least one of the selected Routes.

The **List Stop Alerts** dialog appears, listing the alerts associated with the selected Stop:



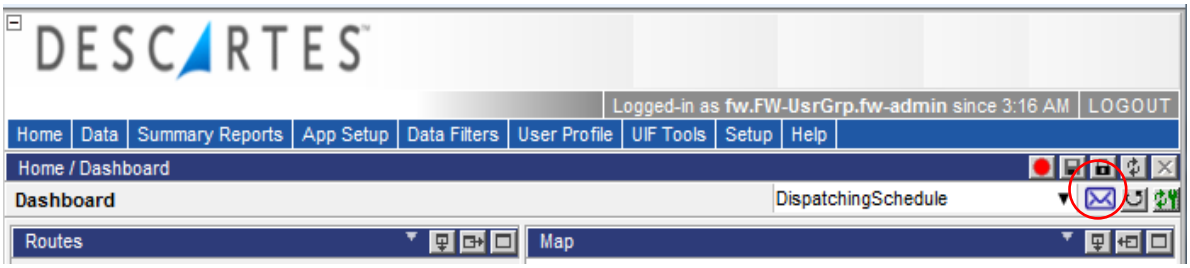
To view the alerts associated with the Route the Stops are on, switch to the **List Stop Alerts** page.

Viewing Text Messages

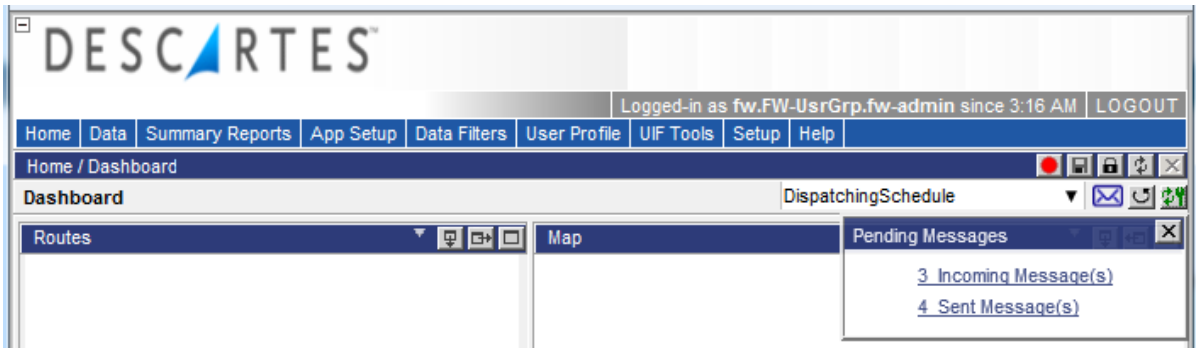
New functionality has been added to allow to keep track of unread incoming and unread sent text messages from the dashboard.

Message Icon

Unread messages for the schedule, both incoming (driver) and sent (dispatcher) are displayed via icon on the dashboard. When user selects a schedule containing unread messages, the Message Icon blinks on dashboard. If there are no unread messages for the schedule, Message Icon is static.



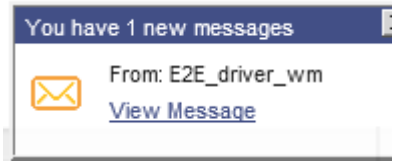
Click the Message Icon when it is blinking to see the number of unread messages in the Pending Messages tooltip.



The tooltip provides links that redirect user to the **Data > Messages** page. From the **Messages** page, users can display unread messages on the **View Message** page. After a message is viewed, the system automatically updates the number of unread messages for display on the **Messages** page, the dashboard and the tooltip/popup dialogs.

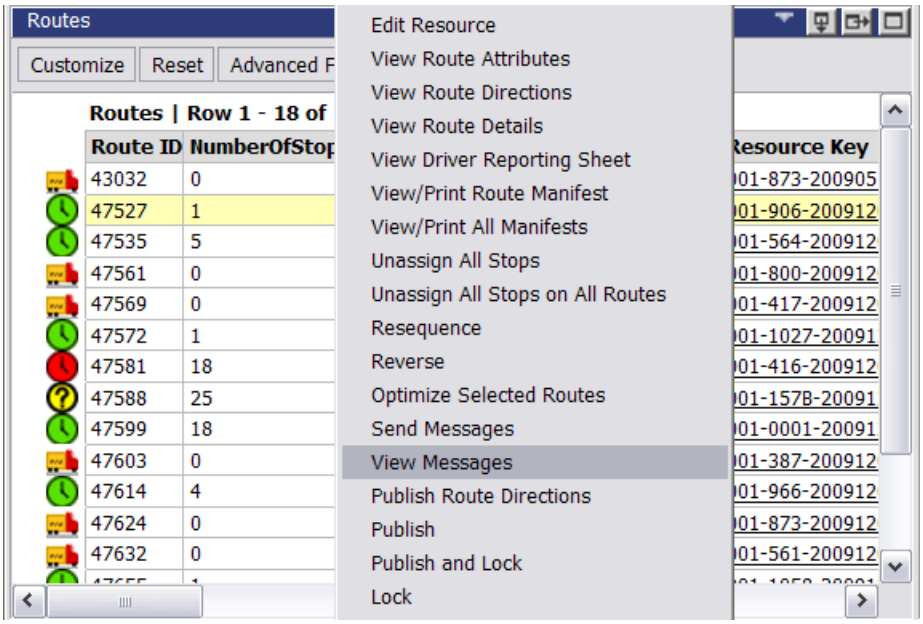
Popup

Users will receive a notification popup upon refresh with a new text message received after last refresh.



To view the message, click the link or go to **Data > Messages** page. To close the popup click **X**.

Users can also view all text messages sent and received on a particular route from the **Route** quadrant by right-clicking on a route and selecting the **View Messages** option from the right-click menu.



Updating Planned or Actual Order Amounts

Users can update the planned order amounts that are to be picked up or delivered, or update actual order amounts picked up and/or delivered during the execution of a route. The **Update Planned Amounts** and **Update Actual Amounts** can be accessed from the **Route Detail Window quadrants**.

Users can either update some or all OrderLines on the page. If one Stop contains one order with multiple line items and only a fraction of the line items are updated, then Descartes Route Planner will assume that the quantities delivered for the rest of the line items in the order are the same as the planned quantities.

Update Actual Amounts

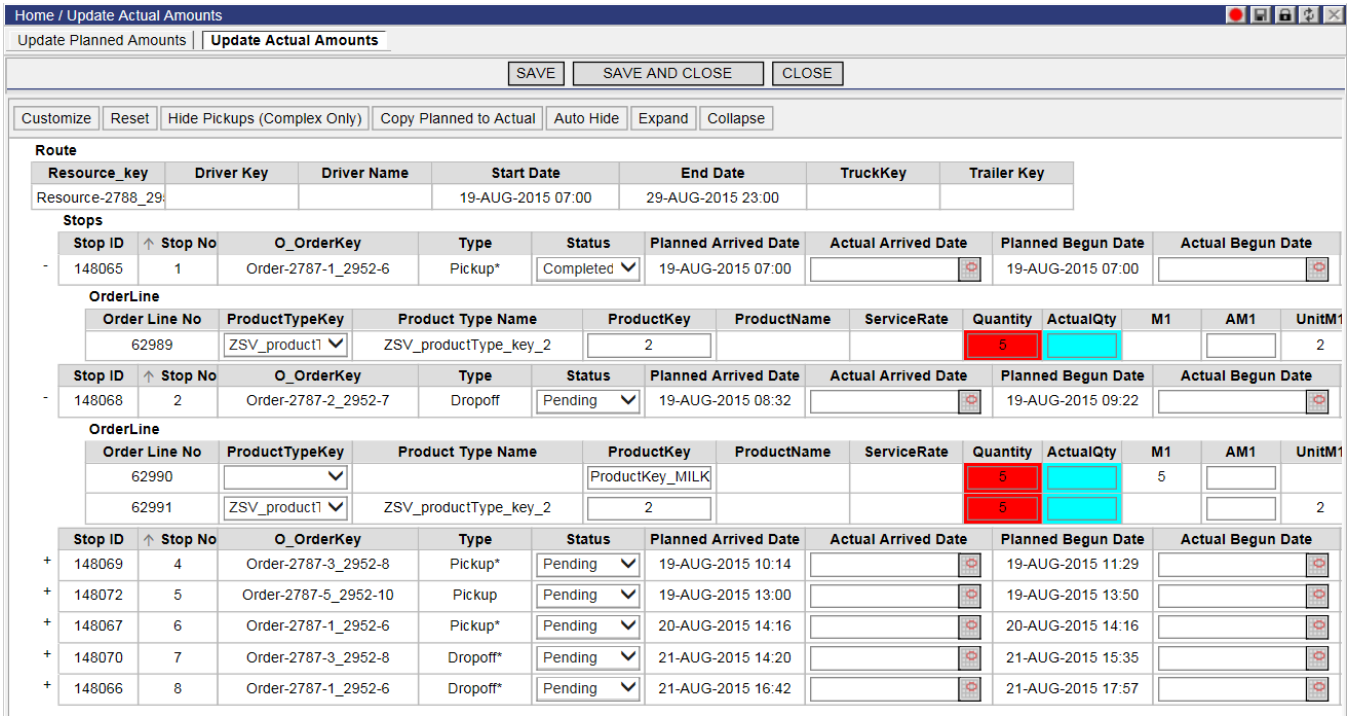
When updating actual amounts, the following can be updated:

- the Completion Date
- the Actual Quantity if a Product Type is assigned to the order line
- the Measures1 through 9 amount

To update the Planned Order Amounts:

1 In the **Route Detail1 (2)** quadrant, right-click on an order (stop) and select **Update Actual Amount**.

The **Update Actual Amounts** page appears.



2 Click **Customize** to choose the columns you want displayed by dragging the desired columns from the Available Columns.

3 The **Auto Hide** button will hide the toolbar from the page until the mouse cursor is hovered over the area. Click **Expand** to view all child nodes of stops on the page at once and **Collapse** to view only stop and route nodes.

4 Click **Hide Pickups (Complex Only)** to hide all complex pickups.

5 Click **Copy Planned to Actual** to copy the planned quantity in the Quantity column to the Actual Quantity column.

6 Enter the completion date in the Complete Date column or select a date from the calendar using the calendar icon.

7 If the quantity needs updated, enter the new quantity in the Actual Quantity column.

8 If the measure amounts need updated, enter the new measure amounts in each of the related M(x)A columns.

➲ **Note—** (x) refers to each of the measure numbers (1, 2, 3, etc.).

9 Users can right-click on a stop or order line node and select the **Field Data History** option from the right-click menu to view a list of field data for the selected stop or order line.

10 Repeat steps 2-4 for any additional order line that need updated.

11 Click **Save** to save the changes and then click **Close** to return to the **Home** page. If you do not want to save the changes, click **Close**.

➲ **Note—** Pickup Actual Quantity automatically updates the drop off Planned Quantity when known.

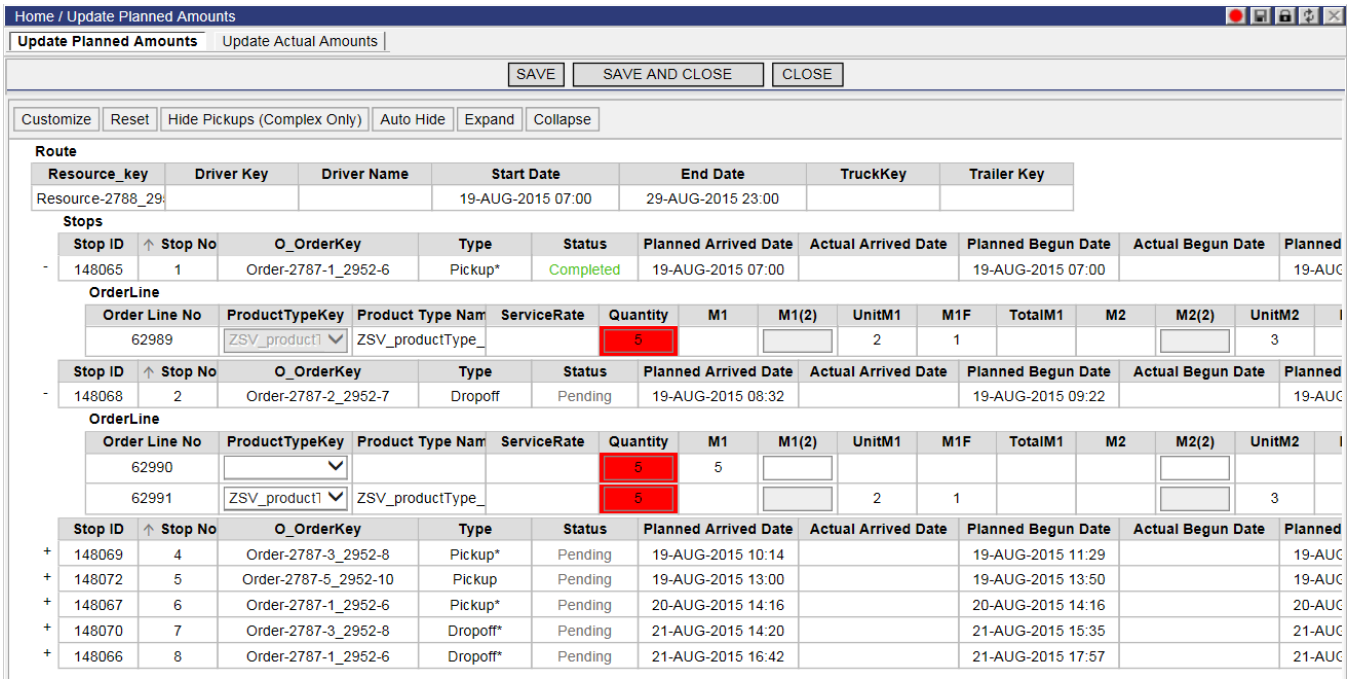
Update Planned Amounts

When updating planned order amounts, the following can be updated:

- Product Type
- Quantity field
- Measure field if Product Types are not used for the order line

To update the Planned Order Amounts:

1 In the **Route Detail1 (2)** quadrant, right-click on an order (stop) and select **Update Planned Amounts**.



2 Click **Customize** to choose the columns you want displayed by dragging the desired columns from the Available Columns.

3 The **Auto Hide** button will hide the toolbar from the page until the mouse cursor is hovered over the area. Click **Expand** to view all child nodes of stops on the page at once and **Collapse** to view only stop and route nodes.

4 Click **Hide Pickups (Complex Only)** to hide all complex pickups.

5 Do one of the following:

- If the line has a Product Type assigned to it, edit the amount in the Quantity column to update the quantity on the order.

➲ **Note—** If the Product Type needs to be updated, select a new Product Type from the drop-down list.

- If the line does not have a Product Type assigned to it, edit the amount in the M(x)(2) columns to update the measures on the order.

➲ **Note—** (x) refers to each of the measure numbers (1, 2, 3, etc.).

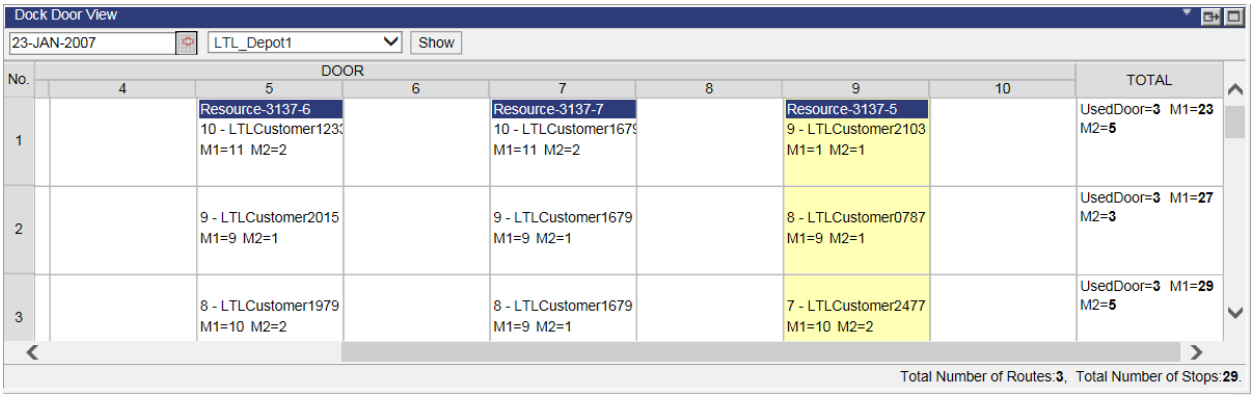
- Users can right-click on a stop or order line node and select the **Field Data History** option from the right-click menu to view a list of field data for the selected stop or order line.

6 Repeat step 2 for any additional order lines that need updated.

7 Click **Save** to save the changes and then click **Close** to return to the **Home** page. If you do not want to save the changes, click **Close**.

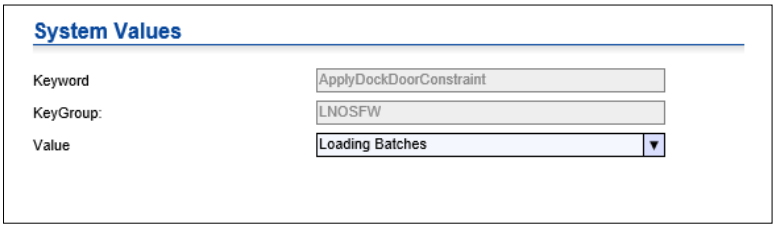
Dock Door Planning

The Dock Door Planning feature allows users to assign routes to a depot's dock doors in separate batches for each order. On the Dashboard, users can select a date and depot in the **Dock Door View** quadrant and then assign routes to doors via drag-and-drop or using automated assignment functionality.



The columns across the top of the quadrant (*X* axis) represent each door at the depot. The rows (*Y* axis) represent the loading batches in sequence. Loading batches are reserved for each stop of the route at the depot.

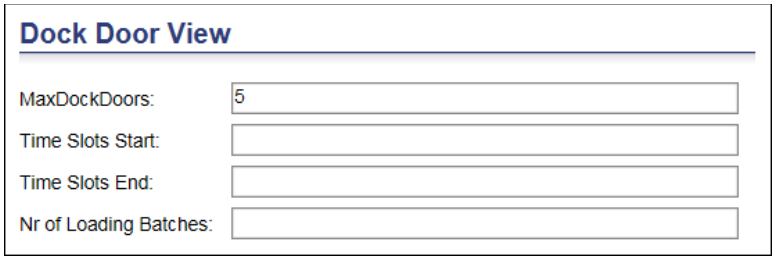
This feature is enabled by selecting the **Loading Batches** value for the ApplyDockDoorConstraint system value.



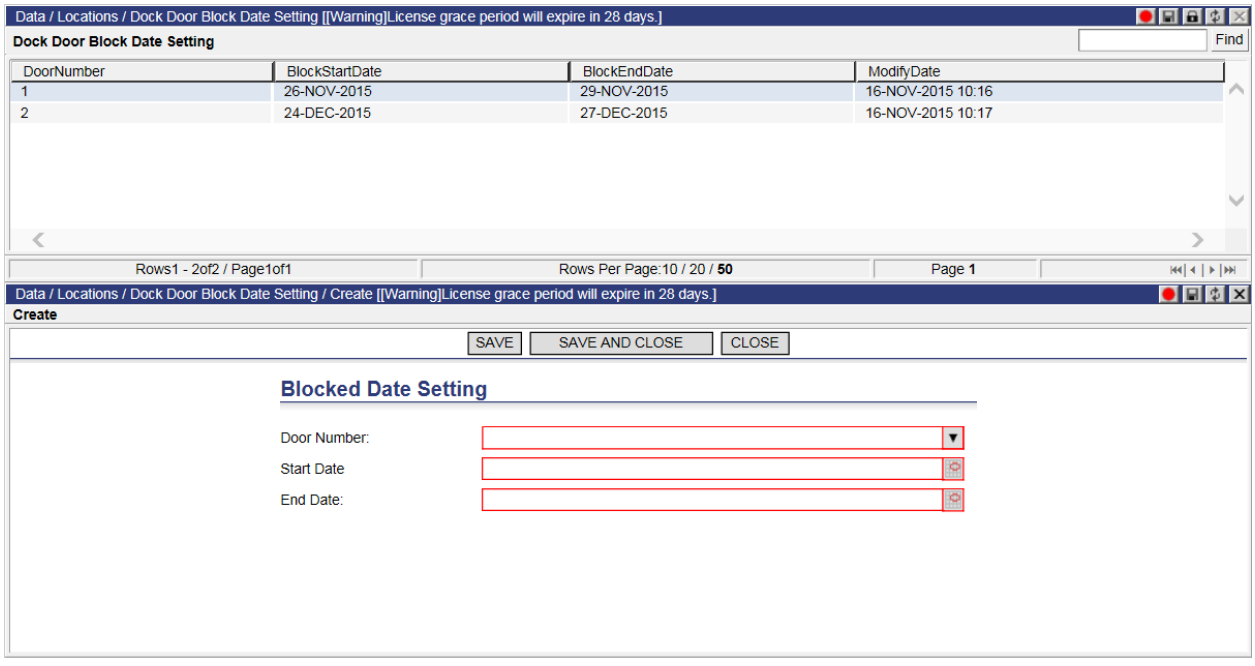
Depot Setup

To configure a depot for Dock Door Planning:

1. Select a depot location from the **Locations** list page. Click the **Settings** tab.
2. In the Dock Door View section, enter the maximum number of doors and loading batches to display in the **Dock Door View** quadrant. By default, 10 doors and 15 loading batches will appear in the **Dock Door View** quadrant. Time slot configuration will be implemented in a future version.



3. Click **Save**.
4. Next, if there are certain dates and times where a depot's doors are unavailable, users can right-click on the depot and select the **Dock Door Block Date Setting** option from the **Locations** list page right-click menu to create a date constraint.



5. Click the **Create** button if there are no blocked dates or right-click on the page and select **Create** from the right-click menu to display the **Create** page.

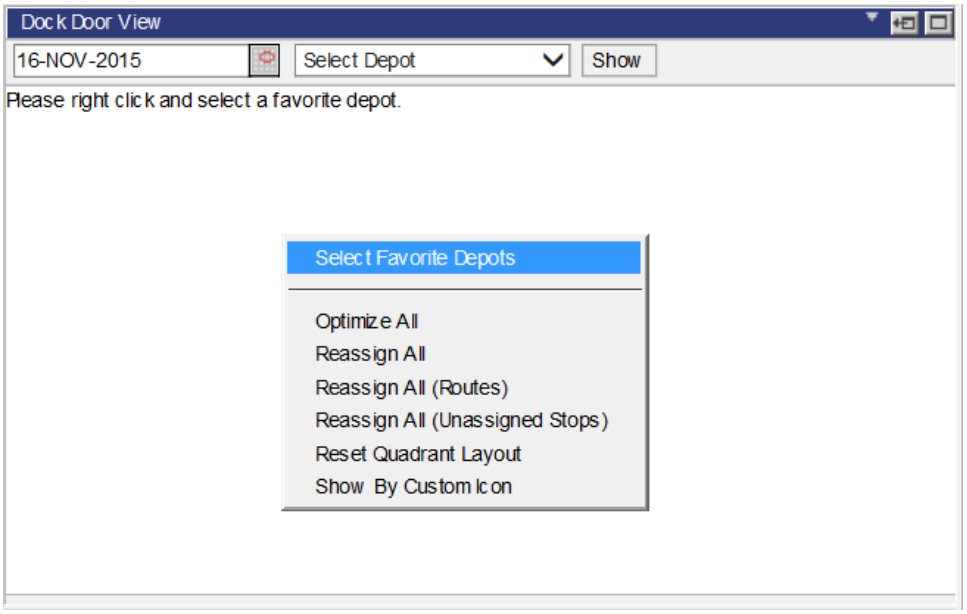
6 Select the Door Number to block and enter a start and end date.

7 Click **Save** or **Save and Close**.

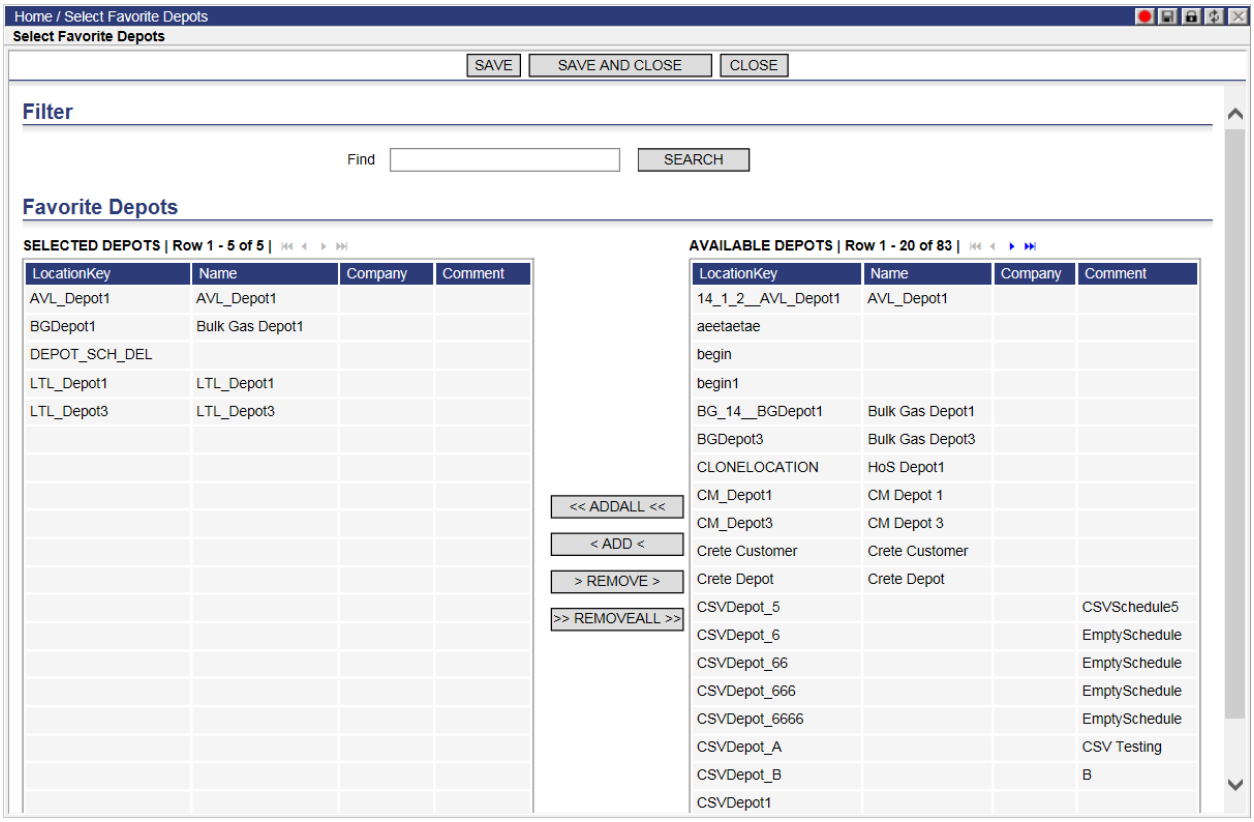
Dock Door View Quadrant Setup

Before users can begin assigning routes to doors, a list of favorite depots must be created to populate the depot drop-down on the **Dock Door View** quadrant.

1 Right-click in the **Dock Door View** quadrant and select the **Select Favorite Depots** right-click option.



The **Select Favorite Depots** page appears.



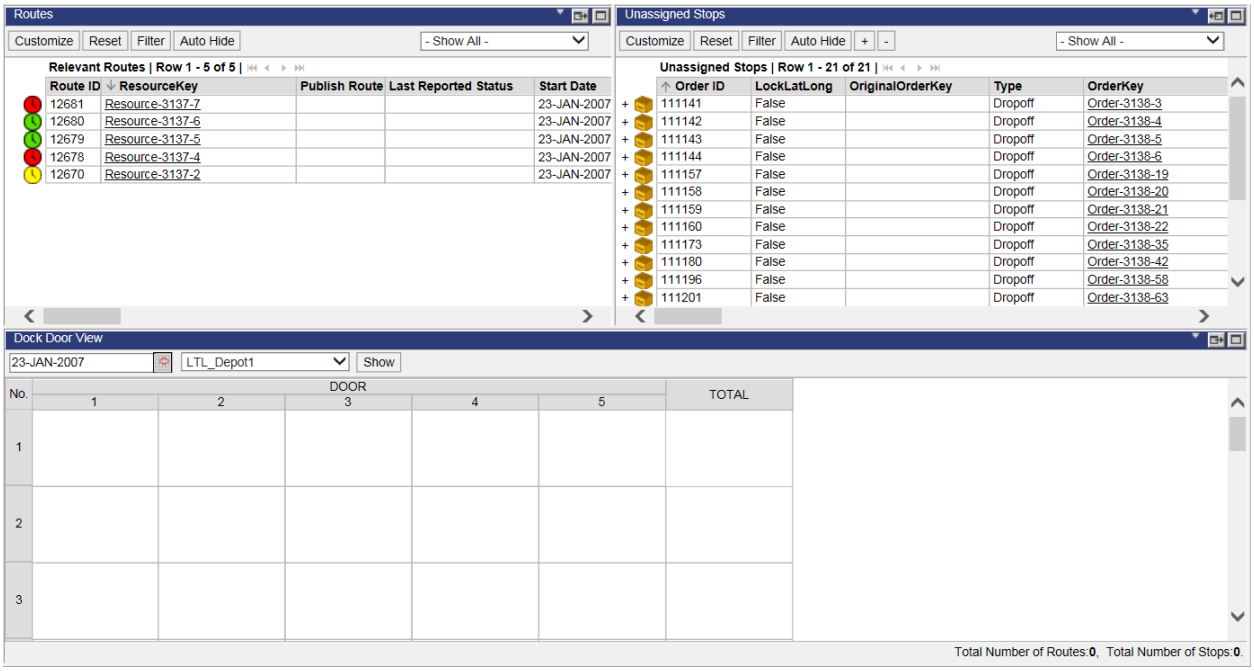
2. Select one or more depots from the Available Depots table and click **Add** to move them to the Selected Depots table. Click **Add All** to move all depots to the Selected Depots table.
3. Click **Save** or **Save and Close** when finished. The **Select Depot** drop-down is then populated with the selected depots.

Assigning Routes to Doors

Once the **Select Depot** drop-down is populated, users can begin assigning routes to depot doors.

1. From the **Dock Door View** quadrant, select a depot from the drop-down and use the calendar control to select a date.

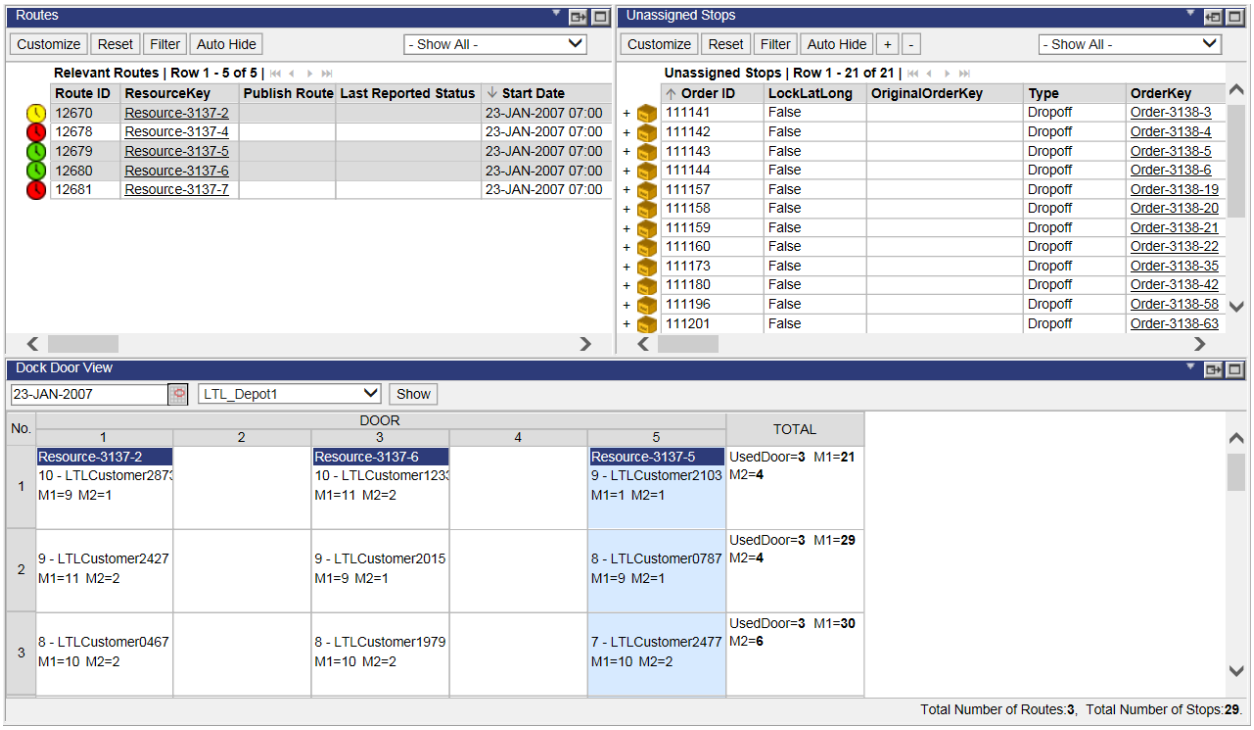
2 Click **Show**. The Dashboard refreshes, displaying the door grid layout for the depot in the **Dock Door View** quadrant and in the **Routes** quadrant, all routes related to the depot for the selected date.



3 To assign routes to dock doors for the depot, do one of the following:

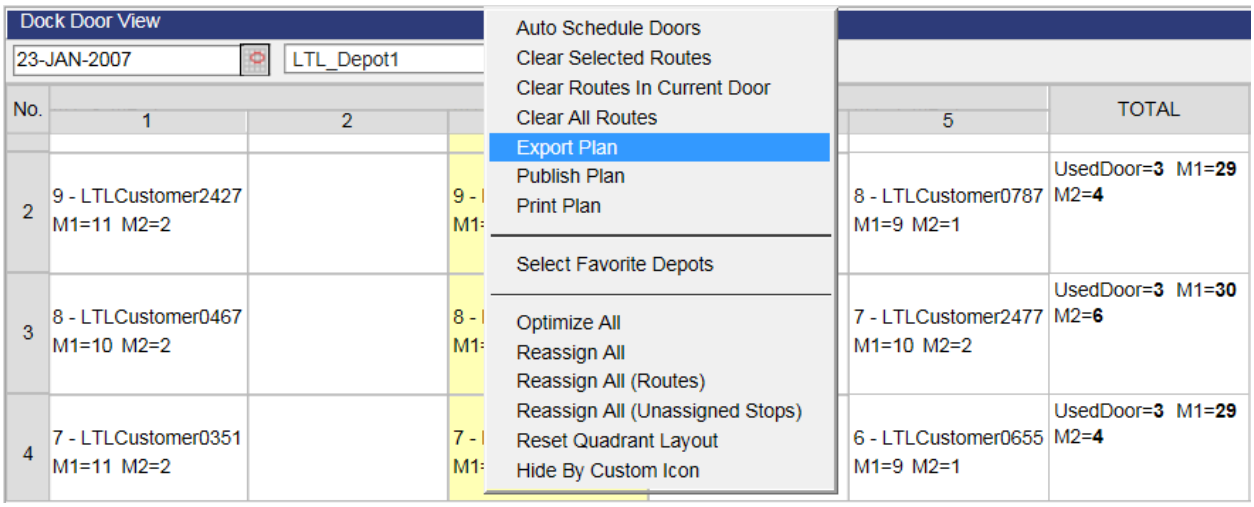
- Drag-and-drop routes from the **Routes** quadrant to doors in the **Dock Door View** quadrant. If no route is assigned to the door, the dropped route is added to the first loading batch. If one or more routes are already assigned to that door, the new route is assigned before or after the existing routes accordingly. If multiple routes are dragged to a door and dropped at once, the system will position the routes one after another for the same door.
- Right-click in the **Dock Door View** quadrant and select the **Auto Schedule Doors** option from the right-click menu. The system automatically assigns routes to doors efficiently, so that loading batches are spread out across as many doors as possible without queuing.

When a route is assigned to a door, stops relevant to the depot are listed in loading batches with customer and measure information displayed. In the Total column, the system displays the sum of total measures values and the number of doors used for each batch. Values for the Total Number of Routes and Stops currently assigned for the depot are displayed in the bottom right-hand portion of the quadrant.



Routes currently assigned to doors in the **Dock Door View** quadrant are highlighted in gray in the **Routes** quadrant.

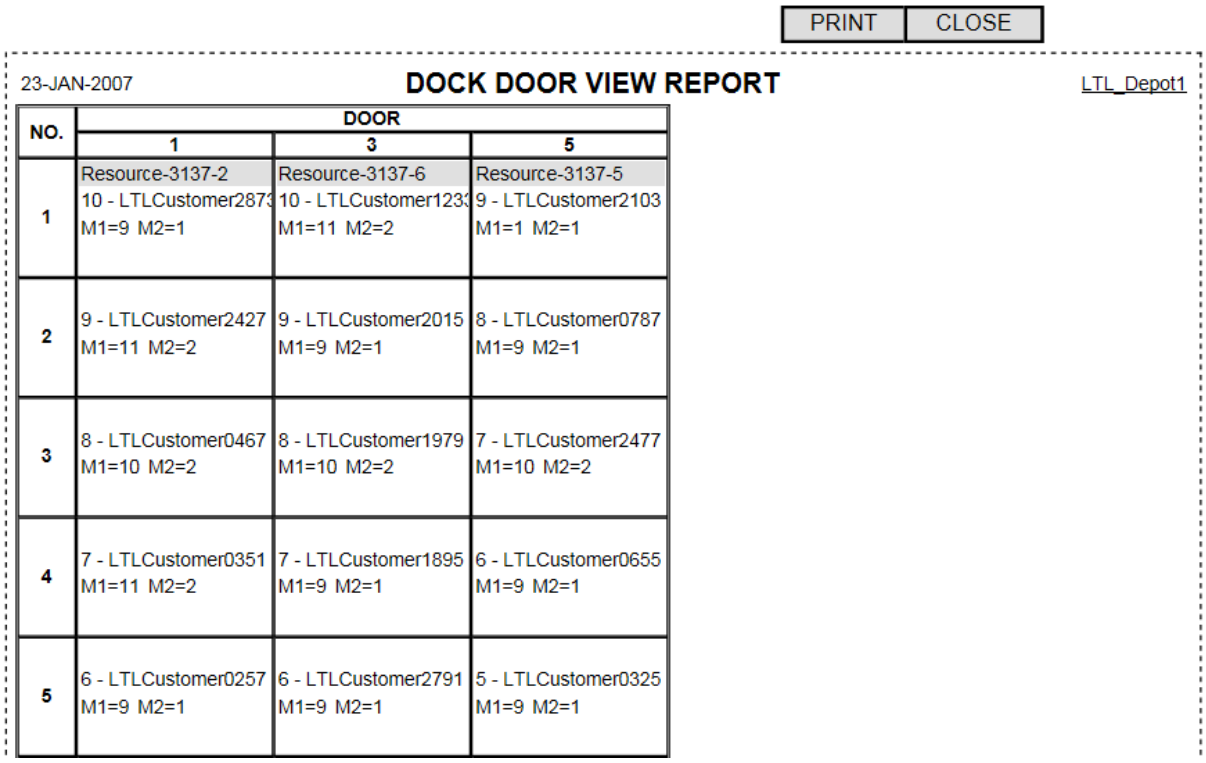
4 Once routes are assigned to doors in the quadrant, users can select additional options from the right-click menu in the **Dock Door View** quadrant:



- **Clear Selected Routes:** Unassigns all selected routes from doors. When routes are selected in the **Dock Door View** quadrant, they are highlighted in the **Routes** quadrant and vice-versa.
- **Clear Routes in Current Door:** Unassigns all routes assigned to the selected door.
- **Clear All Routes:** Unassigns all routes from all doors currently displayed.
- **Export Plan:** Exports the current Dock Door View plan to a CSV file.

	A	B	C	D	E	F	G	H	I
1	DATE	DEPOTKEY	DOORNUMBER	DOORSEQUENCE	RESOURCEKEY	ORDERKEY	LOCATIONKEY	MEASURE1	MEASURE2
2	2007-01-2	LTL_Depot1	5	1	Resource-3137-6	Order-3138-56	LTLCustomer1233	11	2
3	2007-01-2	LTL_Depot1	5	2	Resource-3137-6	Order-3138-44	LTLCustomer2015	9	1
4	2007-01-2	LTL_Depot1	5	3	Resource-3137-6	Order-3138-31	LTLCustomer1979	10	2
5	2007-01-2	LTL_Depot1	5	4	Resource-3137-6	Order-3138-43	LTLCustomer1895	9	1
6	2007-01-2	LTL_Depot1	5	5	Resource-3137-6	Order-3138-54	LTLCustomer2791	9	1
7	2007-01-2	LTL_Depot1	5	6	Resource-3137-6	Order-3138-40	LTLCustomer2895	5	1
8	2007-01-2	LTL_Depot1	5	7	Resource-3137-6	Order-3138-76	LTLCustomer2975	5	2
9	2007-01-2	LTL_Depot1	5	8	Resource-3137-6	Order-3138-71	LTLCustomer2979	5	1
10	2007-01-2	LTL_Depot1	5	9	Resource-3137-6	Order-3138-70	LTLCustomer0329	5	1
11	2007-01-2	LTL_Depot1	5	10	Resource-3137-6	Order-3138-18	LTLCustomer0705	9	1
12	2007-01-2	LTL_Depot1	7	1	Resource-3137-7	Order-3138-11	LTLCustomer1679	11	2
13	2007-01-2	LTL_Depot1	7	2	Resource-3137-7	Order-3138-8	LTLCustomer1679	9	1

- **Publish Plan:** Publishes the current Dock Door View plan to Descartes wGLN.
- **Print Plan:** Returns a Dock Door View Report formatted for printing.



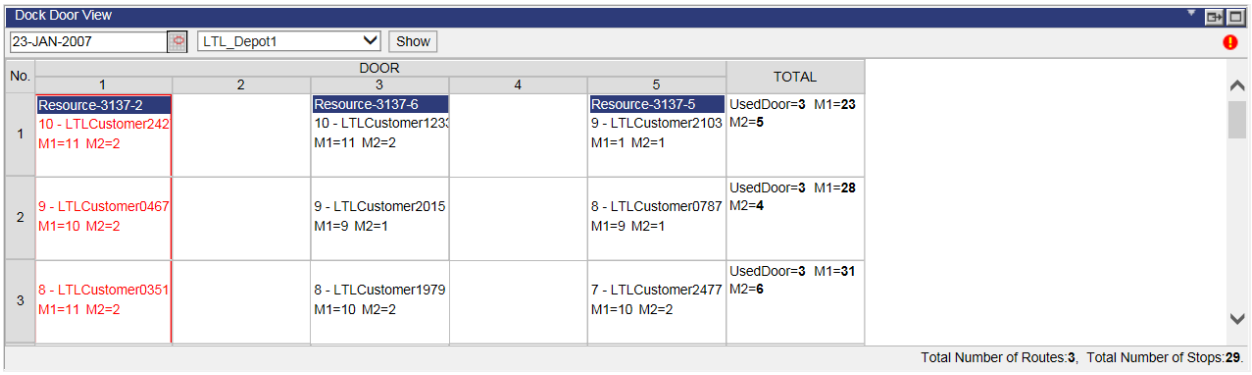
PRINT CLOSE

23-JAN-2007 **DOCK DOOR VIEW REPORT** LTL_Depot1

NO.	DOOR		
	1	3	5
1	Resource-3137-2 10 - LTLCustomer287 M1=9 M2=1	Resource-3137-6 10 - LTLCustomer123 M1=11 M2=2	Resource-3137-5 9 - LTLCustomer2103 M1=1 M2=1
2	9 - LTLCustomer2427 M1=11 M2=2	9 - LTLCustomer2015 M1=9 M2=1	8 - LTLCustomer0787 M1=9 M2=1
3	8 - LTLCustomer0467 M1=10 M2=2	8 - LTLCustomer1979 M1=10 M2=2	7 - LTLCustomer2477 M1=10 M2=2
4	7 - LTLCustomer0351 M1=11 M2=2	7 - LTLCustomer1895 M1=9 M2=1	6 - LTLCustomer0655 M1=9 M2=1
5	6 - LTLCustomer0257 M1=9 M2=1	6 - LTLCustomer2791 M1=9 M2=1	5 - LTLCustomer0325 M1=9 M2=1

Handling Changes to Depots and Assigned Routes

In certain cases, the information of depots with Dock Door View plans may need to be updated and the routes currently assigned to doors at these depots may need to change as well. When edits are performed to depots or routes that will affect these assignments, such as new blocked door dates or an additional stop assigned to a route, the system will highlight affected routes in the **Dock Door View** quadrant in red and display a blinking warning notification in the upper right-hand corner of the quadrant.



To accept the changes, users can click the warning notification. When clicked, quadrant data displays as normal. Descartes Route Planner handles changes to depots and their assignments in the **Dock Door View** quadrant as follows:

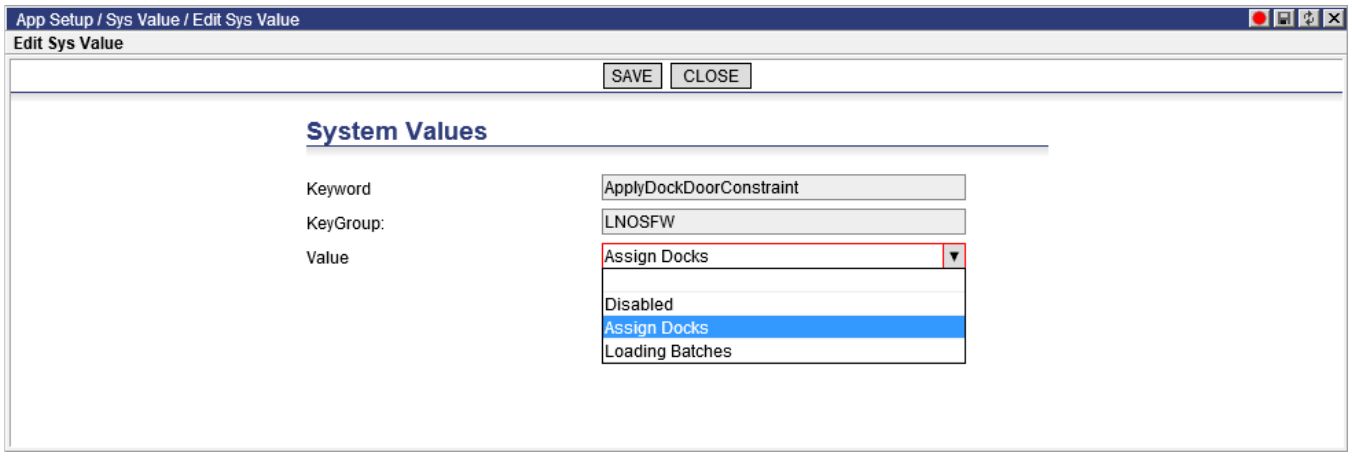
- **Optimization:** If an optimization process would change the sequence of stops for a route assigned to a Dock Door View plan, the system will refresh the **Dock Door View** quadrant and update the assignment. The affected route is displayed in red and the notification icon appears.
- **Assigning Stops:** If stops are added to a route assigned to a depot's Dock Door View plan, the system will refresh the **Dock Door View** quadrant and update the assignment. The sequence of the route remains; the route is shifted so that the new orders fit into the plan and the totals are adjusted. The affected route is displayed in red and the notification icon appears.
- **Unassigning Stops:** If stops are removed from a route assigned to a depot's Dock Door View plan, the system will refresh the **Dock Door View** quadrant and update the assignment. The route is shifted to compensate and the totals are adjusted. The affected route is displayed in red and the notification icon appears. If the removal of stops would result in an empty route, the route is automatically removed from the plan.
- **Initial Depot Change:** If a user changes the initial depot of a route assigned to a depot's Dock Door View plan, the route will no longer appear in the **Dock Door View** quadrant for the original depot when selected.

- **Reschedule:** If a route assigned to a depot's Dock Door View plan is moved to another schedule, the affected route is displayed in red and the notification icon appears. When users accept the changes, the route will appear grayed out in the **Dock Door View** quadrant in order to retain how the route was initially planned.

5	TOTAL
Resource-3137-5 9 - LTLCustomer2103 M1=1 M2=1	UsedDoor=**3** M1=**23** M2=**5**
8 - LTLCustomer0787 M1=9 M2=1	UsedDoor=**3** M1=**28** M2=**4**
7 - LTLCustomer2477 M1=10 M2=2	UsedDoor=**3** M1=**31** M2=**6**

Assign Docks Feature

The optimization engine can automatically handle scheduling of route starting times and recharges when the number of loading docks for a depot is limited. To enable this functionality, select the new **Assign Docks** option in the **ApplyDockDoorConstraint** system value.



For example, if 20 vehicles are scheduled to begin at a depot but the depot only has 10 doors (MaxDockDoors set to "10" for the depot location), the system will schedule only 10 of the 20 vehicles at the doors at the given time. The remaining 10 will be assigned to doors as they become available.

The Assign Docks functionality considers fixed loading times at the vehicle and location levels as well as variable loading times based on the product loaded on the vehicle.

Working with Assets

In Descartes Route Planner, a Resource is a combination of assets (Drivers, Trailers, Tractors, or any other equipment) that can be used to execute a route.

Assets must first be created in Descartes Route Planner before they are assigned to a Resource.

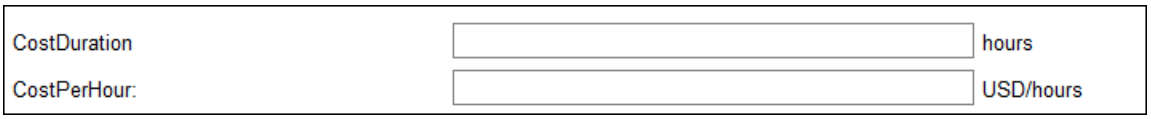
Cost Profiles, a set of costs to be used for calculation of the Route costs, can be assigned to Drivers, Trucks, and Trailers. The cost profiles should be created first before an asset is created.

Creating a Cost Profile

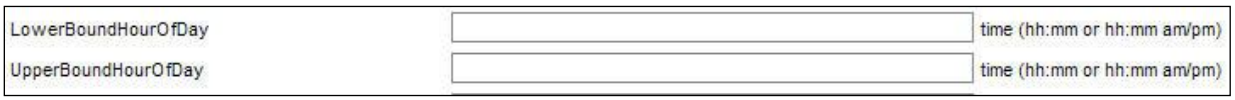
There are two ways to define the cost profile:

➲ **Note—** A cost profile can have both fixed and variable costs applied to it.

- **Fixed Costs** – A fixed cost can be created based on the startup cost.
- **Variable Costs** – Variable costs depend on the cost definition, a Route cost per unit or unit of time. There are three ways for defining variable costs:
  - Cost duration based on elapsed time – To define, a cost duration time is entered in the CostDuration field and then the amount per that time is entered in the CostPerHour field as shown here:

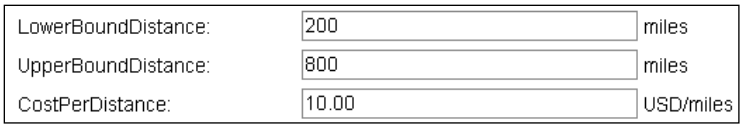


  - Cost based on a lower and upper bound time – To define, a time of day is entered in the LowerBoundHourOfDay field and in the UpperBoundHourOfDay field. A cost is then entered in the CostPerHour field as shown here:

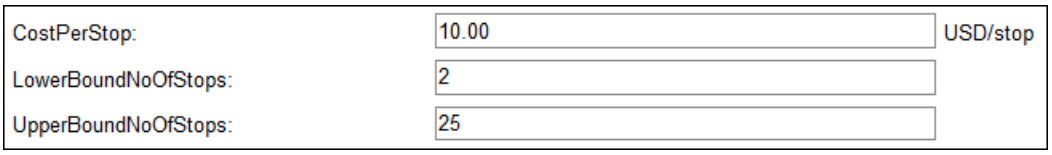


➲ **Note—** The Lower and Upper Bound Hour Of Day fields will auto-fill time inserted in the hh:mm format. For example, if a user entered '12' and did not type the colon within a few seconds, Descartes Route Planner fills in the rest to fit the format, as in '12:00'.

  - Cost based on lower and upper distance – To define, a starting distance is entered in the LowerBoundDistance field and an ending distance is entered in the UpperBoundDistance field. A cost is then entered in the CostPerDistance field as shown here:



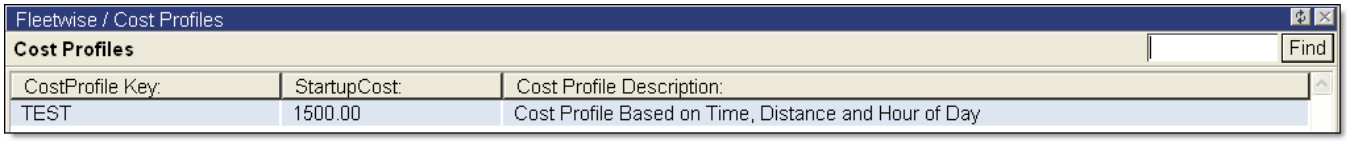
- Cost based on lower and upper number of stops – To define, a starting number of stops is entered in the LowerBoundNoOfStops field and an ending number of stops is entered in the UppBoundNoOfStops field. A cost is then entered in the CostPerStop field as shown here:



To create a Cost Profile:

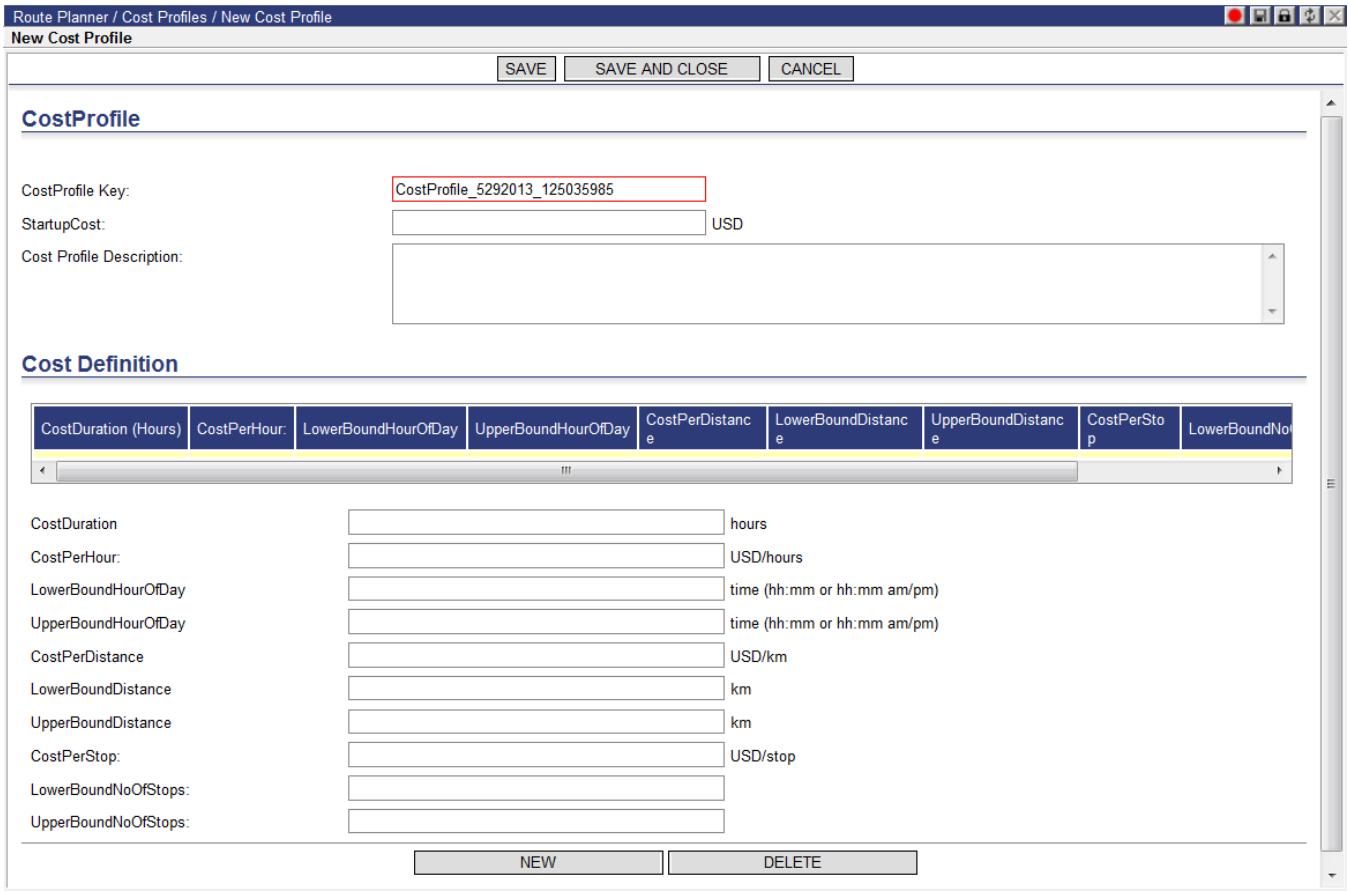
1 Select **Data > Cost Profile**.

The **Cost Profiles** list page appears:



2 Right-click on the **Cost Profiles** page and select **New**.

The **New Cost Profile** page appears:



3 If specifying a startup cost, enter the cost in the StartupCost field.

4 If specifying a cost definition, enter the cost and additional information in the appropriate fields. Refer to the above Variable Cost description of each type of cost definition for instructions on creating each type of cost definition.

To create additional cost definitions, click **New**.

5 Click **Save** to save the cost profile and return to the **Edit Cost Profile** page or click **Save and Close** to return to the **Cost Profiles** page.

➲ **Note—** Clicking **Delete** will delete the cost profile. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

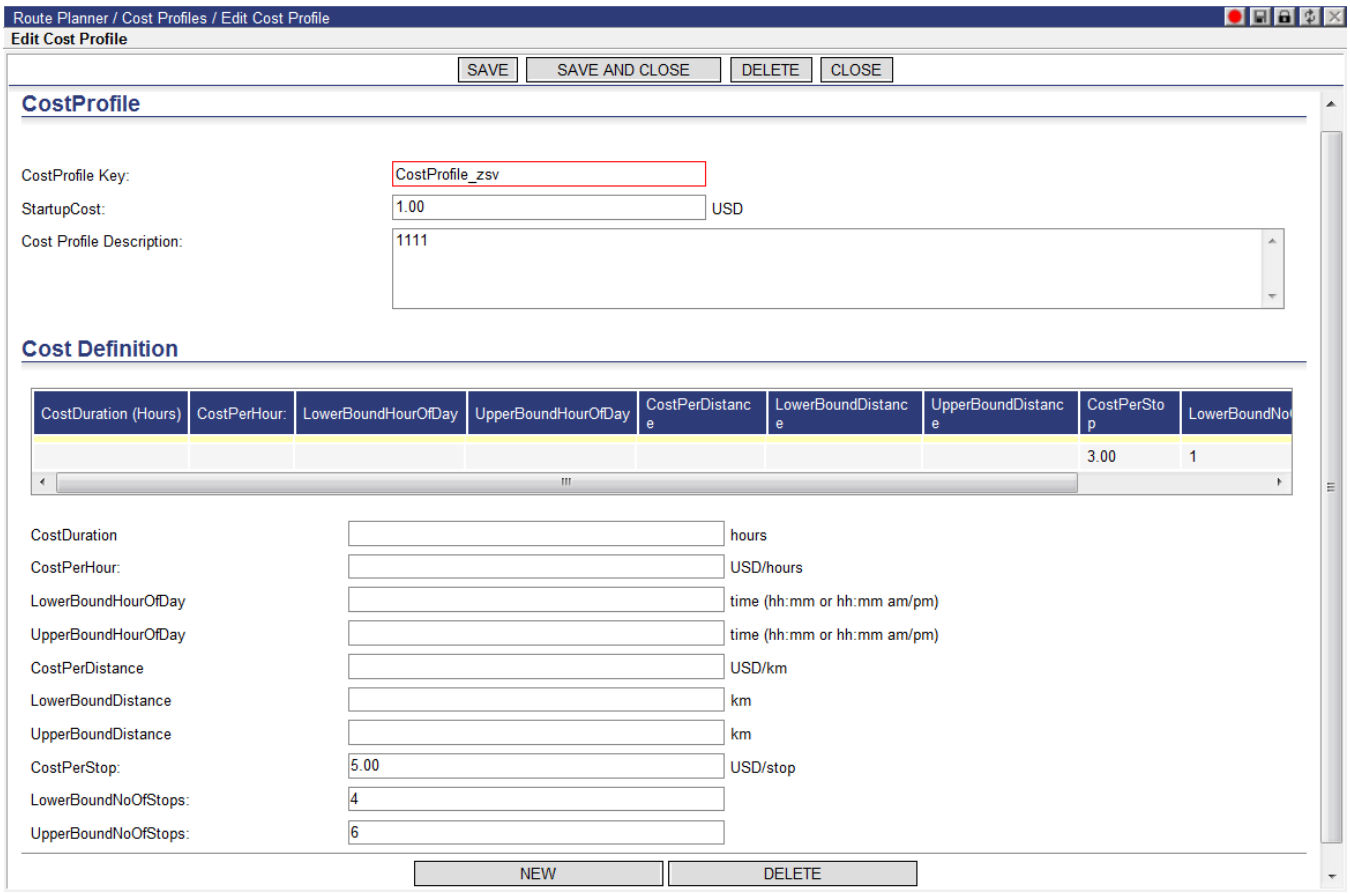
A cost profile can also be deleted on the **Cost Profiles** page by right-clicking on it and selecting **Delete**.

Editing a Cost Profile

To edit a Cost Profile:

1 Right-click on a cost profile and select **Edit**.

The **Edit Cost Profile** page appears:



2 Modify or add any additional information in the appropriate fields.

3 Click **Save** to save the cost profile and return to the **Edit Cost Profile** page or click **Save and Close** to return to the **Cost Profiles** page.

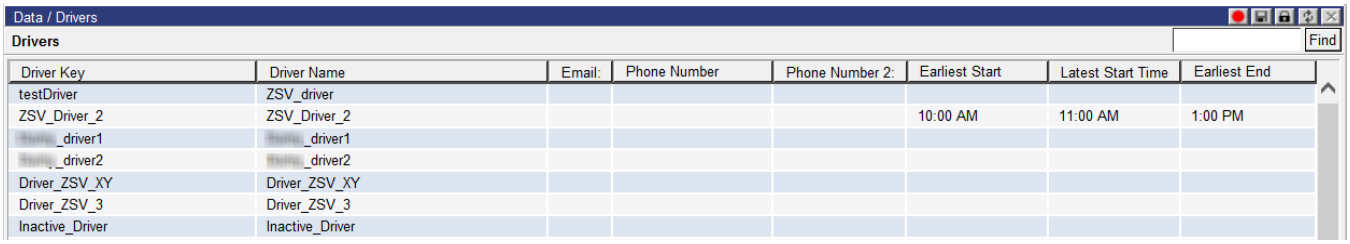
➲ **Note—** Clicking **Delete** will delete the cost profile. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

Creating a New Driver

To create a new driver:

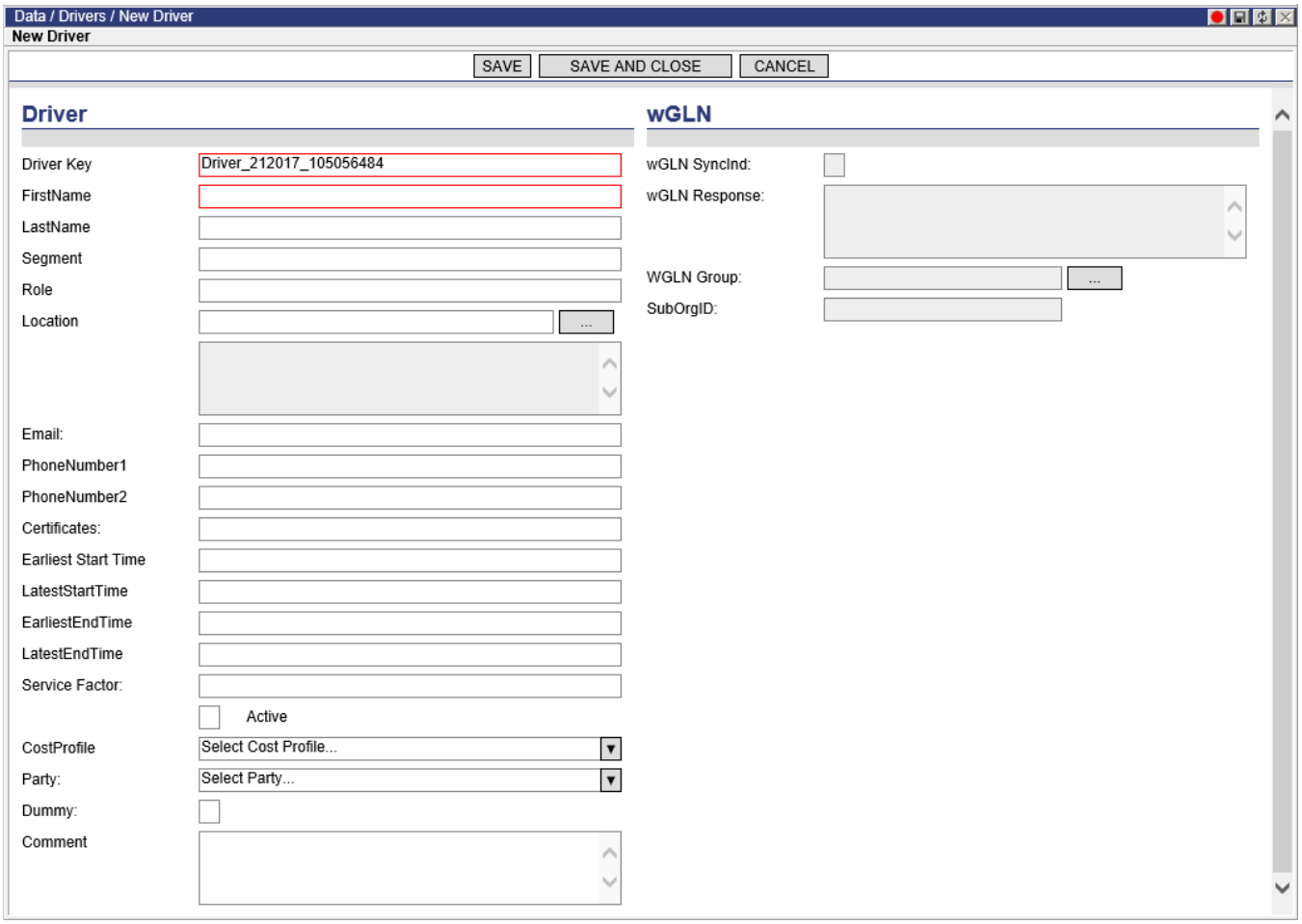
1 Select **Data > Assets > Drivers**.

The **Drivers** list page appears:



2 Right-click on the **Drivers** page and select **New**.

The **New Drivers** page appears:



3 In the FirstName and LastName fields, enter the driver's name.

4 To select a location for the driver, click the Location ellipsis button.

The **New Driver/Locations** page appears.

5 Right-click on the correct location and select **Select This Location**.

6 Enter any additional information in the appropriate fields.

➲ **Note—** When adding a date/time, enter the date/time or click the calendar button and select a date/time from the calendar.

7 If the driver is to be active (available for routes), select the **Active** checkbox.

8 If a cost profile is to be associated with this driver, select a cost profile from the Cost Profile drop-down list.

9 To associate this driver with a particular party, specify the party from the drop-down menu.

10 Click **Save** to save the driver and return to the **Edit Driver** page, or click **Save and Close** to save and return to the **Drivers** page.

➲ **Note—** Clicking **Delete** on the **Edit Driver** page will delete the driver. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

A driver can also be deleted on the **Drivers** page by right-clicking on it and selecting **Delete**.

Editing a Driver

To edit a driver:

1 Right-click on a driver and select **Edit**.

The **Edit Driver** page appears.

2 Modify or add any additional information in the appropriate fields.

3 Click **Save** to save the driver and return to the **Edit Driver** page, or click **Save and Close** to save and return to the **Drivers** page.

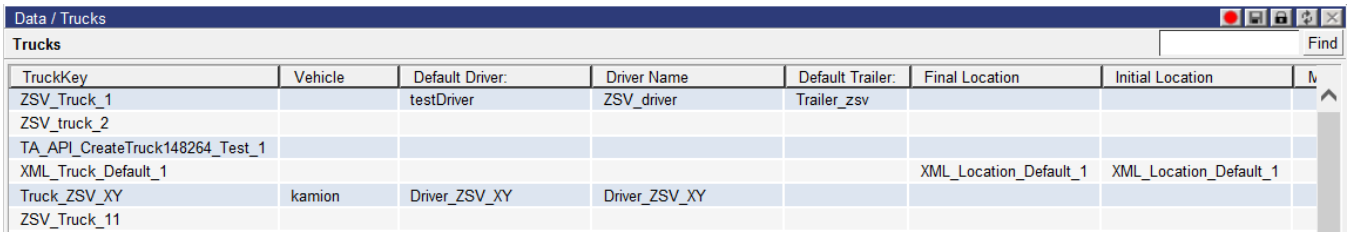
➲ **Note—** Clicking **Delete** will delete the driver. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

Creating a New Truck

To create a new truck:

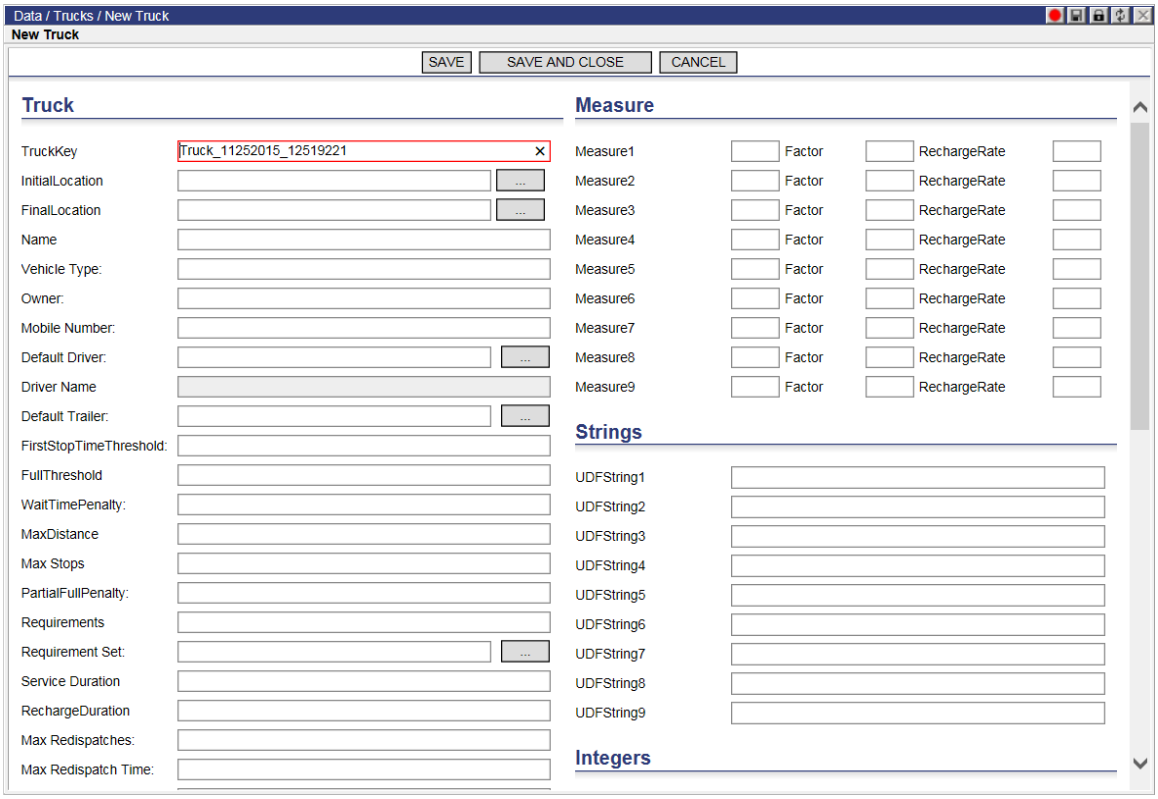
1 Select **Data > Assets > Trucks**.

The **Trucks** page appears:



2 Right-click on the **Trucks** page and select **New**.

The **New Truck** page appears:



3 If you do not want to use the auto-generated Truck key, enter in a new Truck key.

4 Enter any additional data in the appropriate fields.

5 Click **Save** to save the truck and return to the **Edit Truck** page, or click **Save and Close** to save and return to the **Trucks** page.

➲ **Note—** Clicking **Delete** on the **Edit Trucks** page will delete the truck. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

A truck can also be deleted on the **Trucks** page by right-clicking on it and selecting **Delete**.

Editing a Truck

To edit a truck:

1 Right-click on a truck and select **Edit**.

The **Edit Truck** page appears.

2 Modify or add any additional information in the appropriate fields.

3 Click **Save** to save the truck and return to the **Edit Truck** page, or click **Save and Close** to save and return to the **Trucks** page.

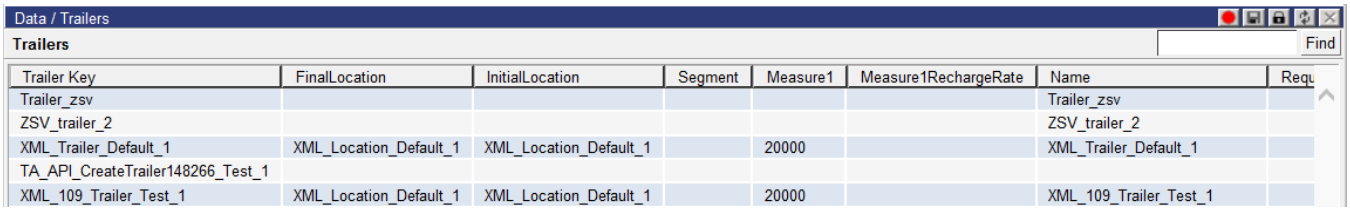
➲ **Note—** Clicking **Delete** will delete the truck. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

Creating a New Trailer

To create a new trailer:

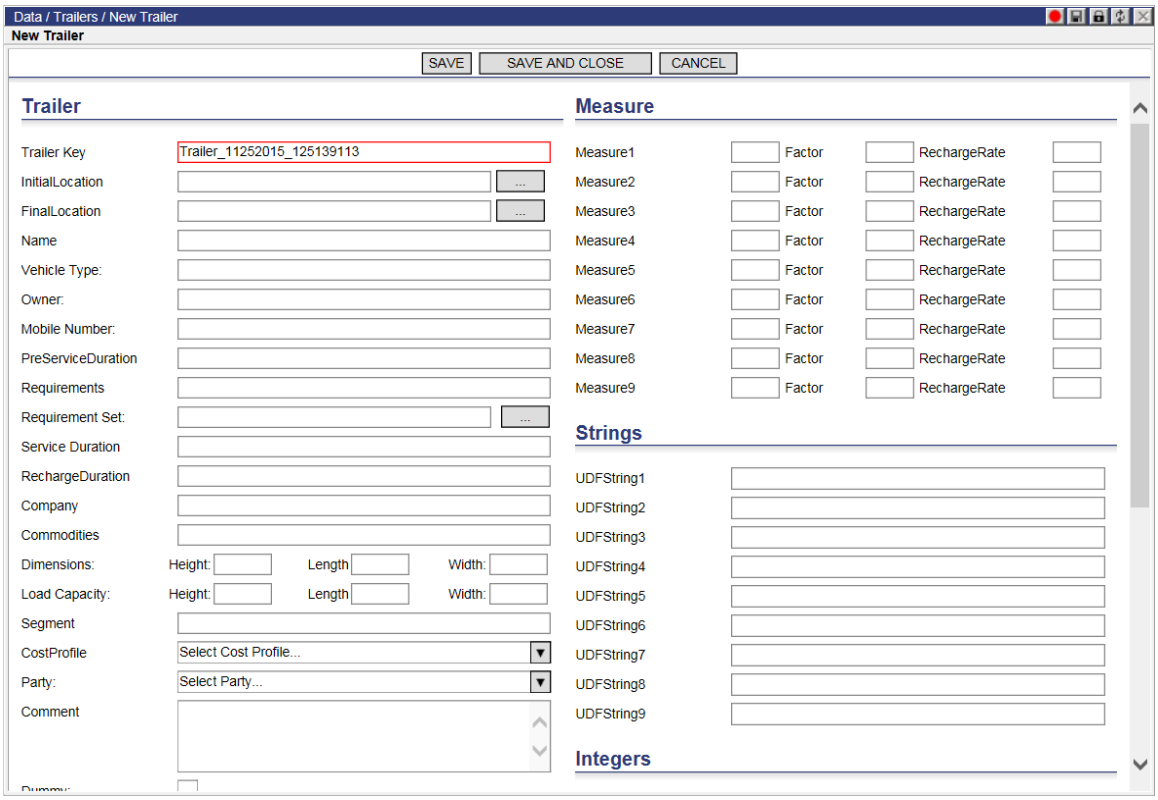
1 Select **Data > Assets > Trailers**.

The **Trailers** page appears:



2 Right-click on the **Trailers** page and select **New**.

The **New Trailer** page appears:



3 If you do not want to use the auto-generated Trailer key, enter in a new Trailer key.

4 Enter any additional data in the appropriate fields.

5 Click **Save** to save the trailer and return to the **Edit Trailer** page, or click **Save and Close** to save and return to the **Trailers** page.

➲ **Note—** Clicking **Delete** on the **Edit Trailers** page will delete the trailer. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

A trailer can also be deleted on the **Trailers** page by right-clicking on it and selecting **Delete**.

Editing a Trailer

To edit a trailer:

1 Right-click on a trailer and select **Edit**.

The **Edit Trailer** page appears:

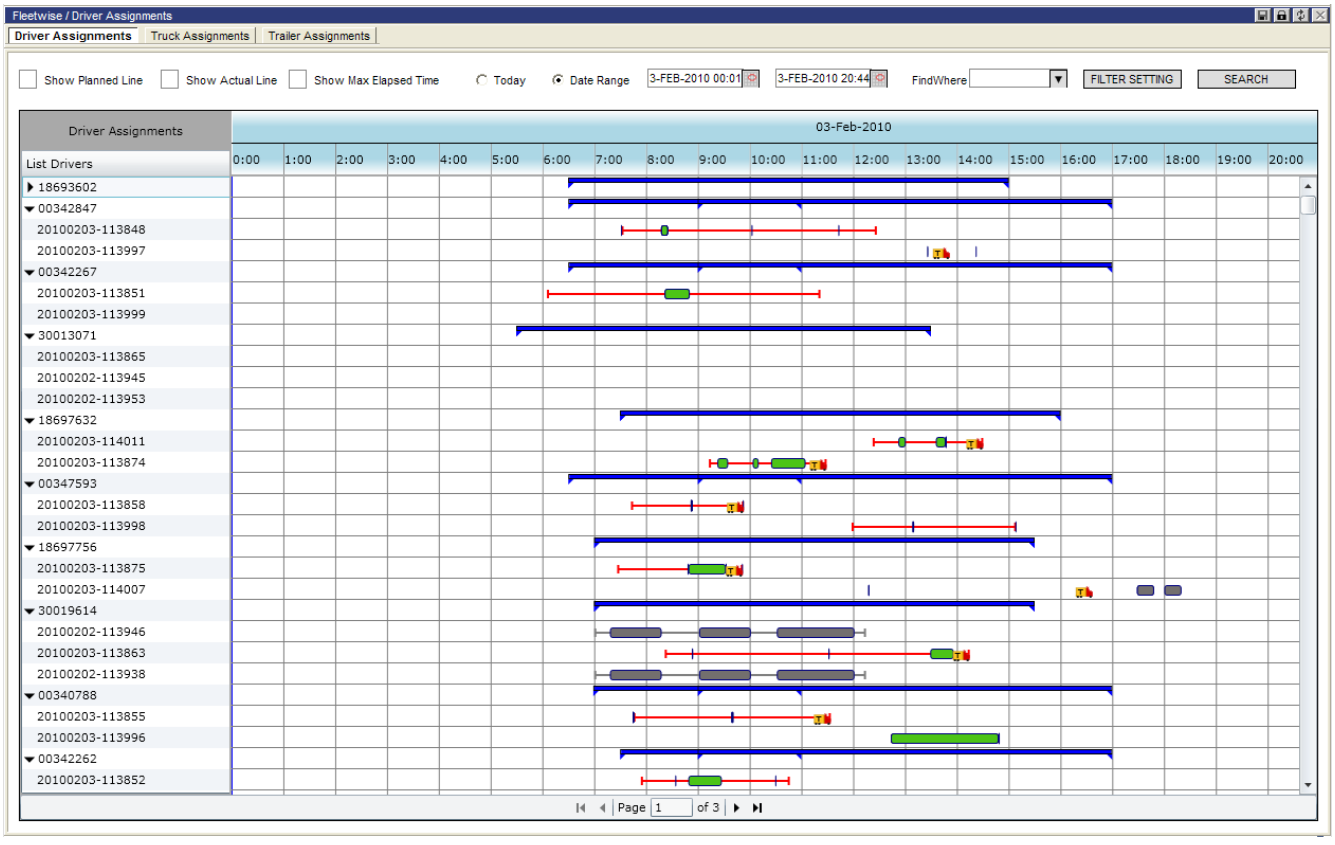
2 Modify or add any additional information in the appropriate fields.

3 Click **Save** to save the trailer and return to the **Edit Trailer** page, or click **Save and Close** to save and return to the **Trailers** page.

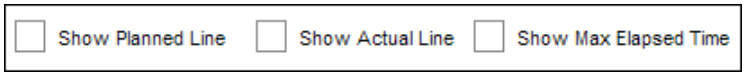
➲ **Note—** Clicking **Delete** will delete the trailer. A message will appear asking if you are sure you want to delete. Click **Ok** to delete.

Visualizing Assets

Users can visualize asset utilization and assignment from the **Driver**, **Truck** and **Trailer Assignments** pages. Selecting **Data > Assets > Driver Assignments** displays the page below. **Truck Assignments** and **Trailer Assignments** can be easily selected by clicking their corresponding tabs on the toolbar.



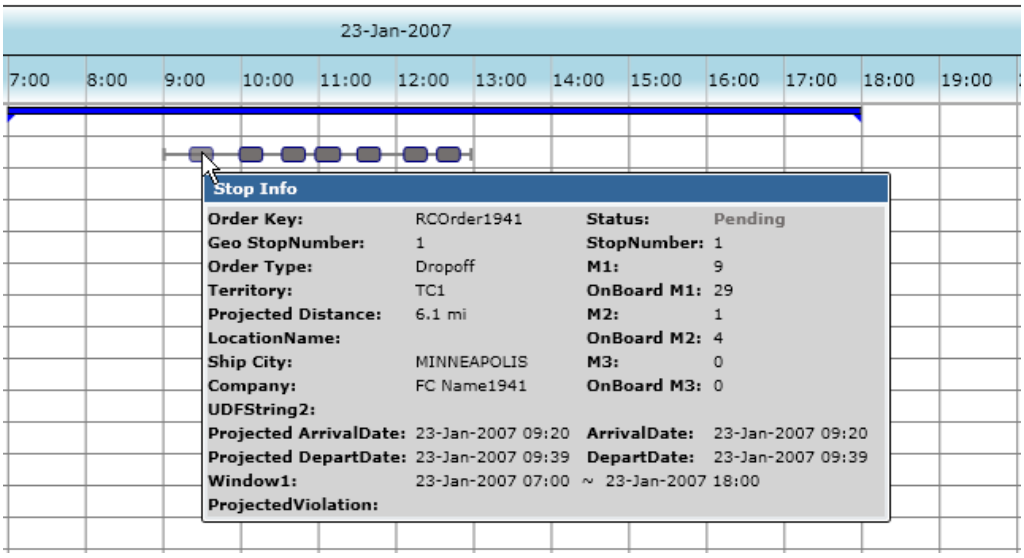
The asset assignment pages list drivers, trucks or trailers on the left and display the assignments to the right based on time. To search for assets, select the date range using the calendar buttons and the **Filter Setting** button to specify and save advanced searches.



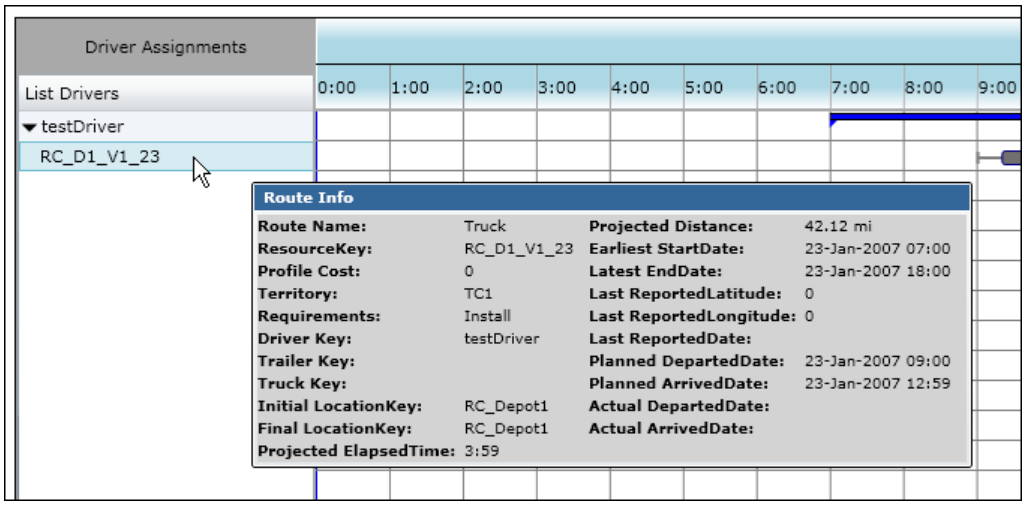
Use the **Show Planned Line**, **Show Actual Line** and **Show Max Elapsed Time** checkboxes to toggle planned line, actual line and elapsed time information along with the stop/assignment information on the chart.

Click the driver, truck or trailer to display all associated routes in the Assignments column and on the chart.

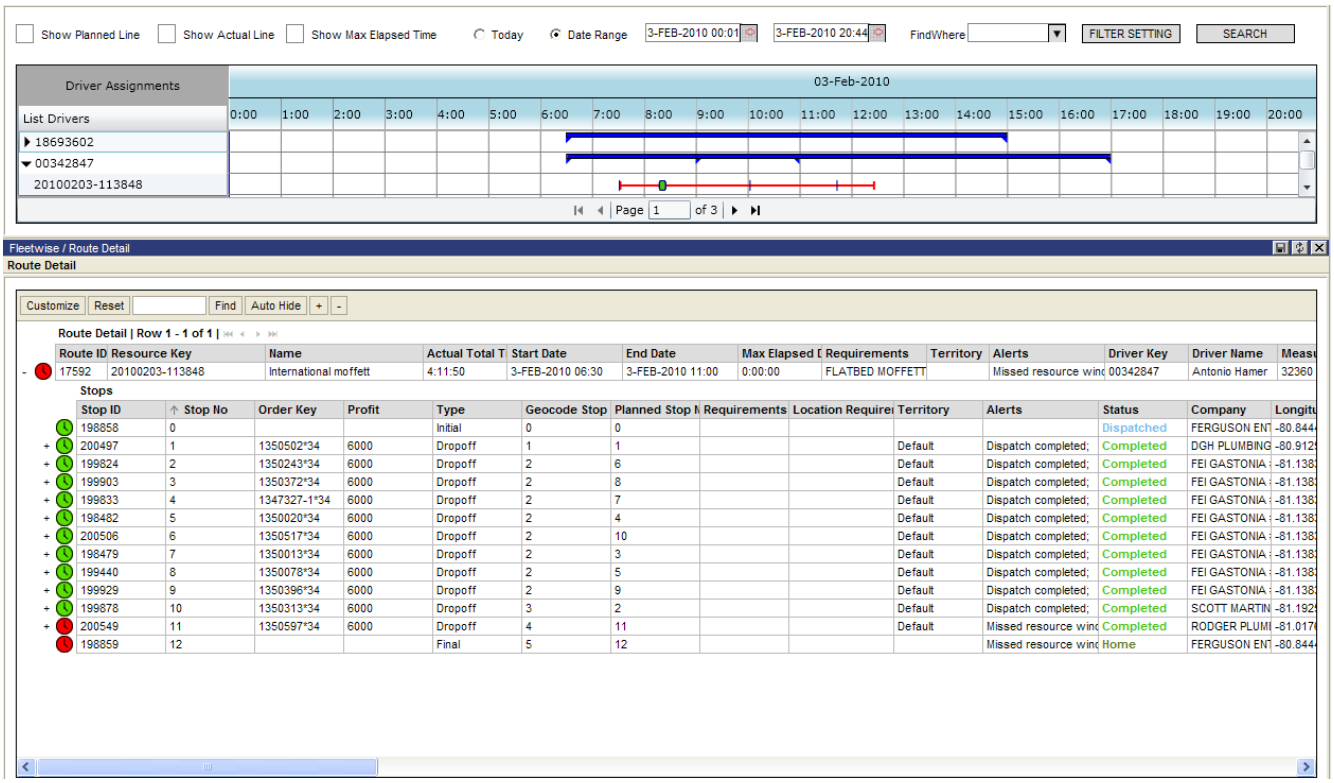
Each bubble on the chart represents a stop, colored by status. Hover the mouse over a particular stop in the chart to display the **Stop Info** tooltip.



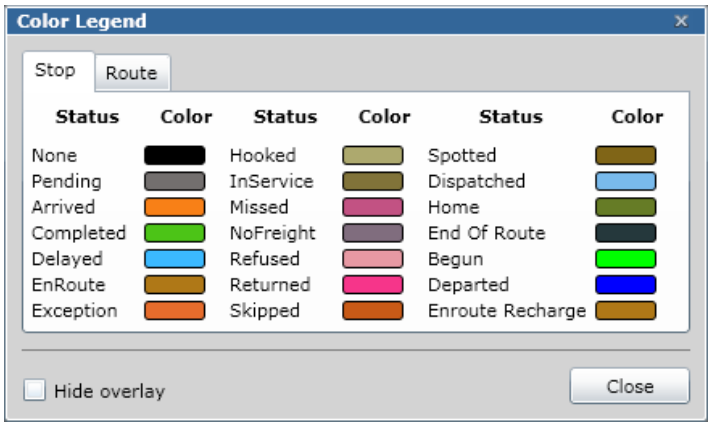
Hover the mouse over the route name in the Assignments column to display the **Route Info** tooltip.



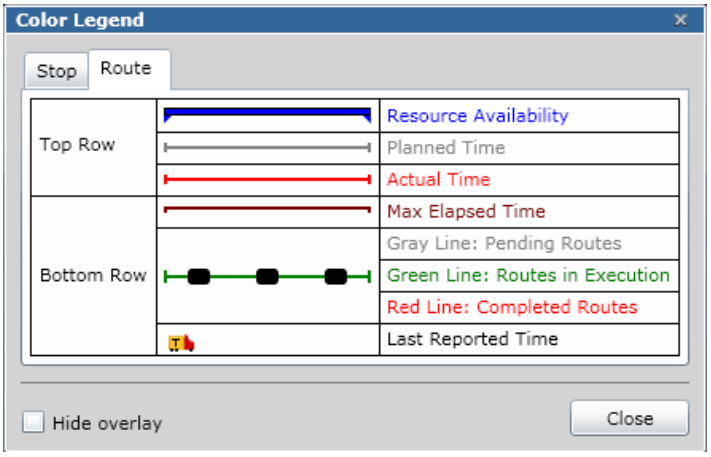
Users can display a **Route Detail** window by right-clicking on a route or stop and selecting **Route Detail** from the right-click menu.



To view the color legend for the chart, right-click on a stop or a route and select **Color Legend** from the right-click menu.



Use the **Stop** and **Route** tabs to navigate back and forth between legend types.



Select **Hide overlay** to remove the overlay that dims the chart when the **Color Legend** displays.

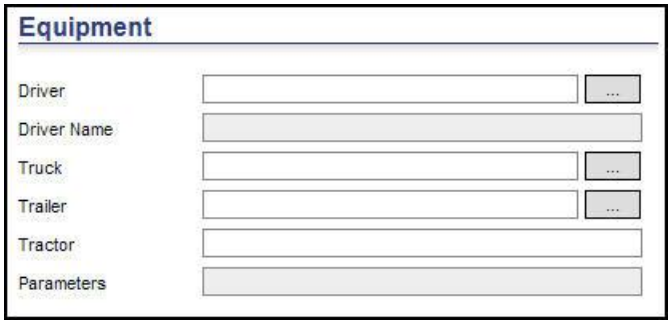
Assigning Assets

This functionality allows users to manually assign Drivers, Tractors or Trailers to Resources or Routes. Descartes Route Planner will check for overlapping of resources preventing users from overbooking an asset or Driver.

Assigning Assets via Edit Resource Page

To assign assets using the **Edit Resource** page:

1. Double-click or right-click on a resource on the **Resource** list page and select **Edit** from the right-click menu. The **Edit Resource page** appears.



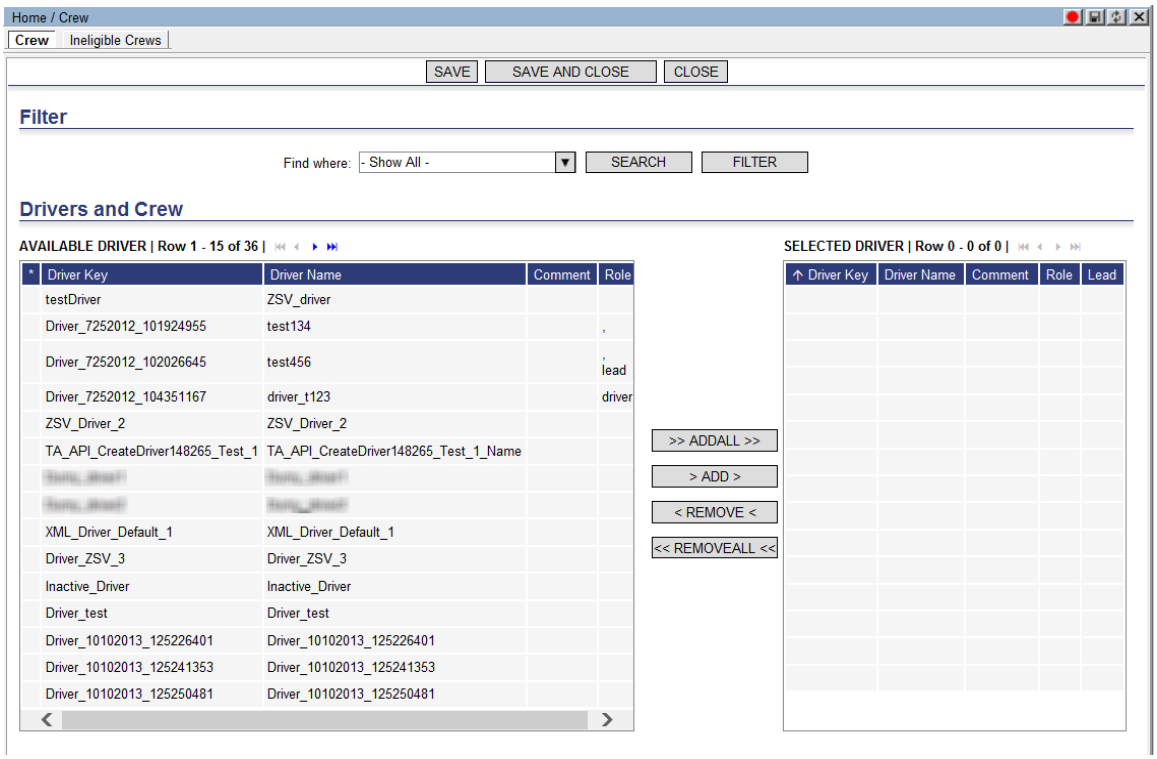
2. In the Equipment section, click ... to browse existing assets. The **Drivers**, **Trailers** or **Trucks** dialog box appears.
3. Double-click on an asset to add it to the resource.
4. Click **Save**.

Assigning a Driver/Crew to a Route

A driver or crew can be assigned to the route directly from the **Routes** quadrant.

To assign a crew to a route:

1 Right-click on a route in the **Routes** or **Route Detail** quadrants and select the **Assign Driver/Crew** right-click menu option. The **Crews** page appears.



2 Use the Filter to search for specific crew members based on fields in the FWDriver table. To add crew members, select one or more rows from the Available Driver section (left column) and click the **ADDALL** or **ADD** buttons. The selected items will display in the Selected Driver section (right column). To remove crew members, select one or more rows from the Selected Driver section and click the **REMOVE** or **REMOVEALL** buttons.

3 To designate the team lead, click the **Lead** radio button in the Selected Drivers section. This selection indicates which crew member is the official DriverKey value to use in the FWResource.DriverKey field.

➲ **Note—** If a DriverKey is already populated in the FWResource.DriverKey field, then the appropriate row in the Select Driver list will have the radio button active.

The Crew column on the **Routes** and **Route Detail** quadrants displays a hyperlink called Crew, which, when clicked, will also display the **Crew** page, allowing users to view, edit and save crew assignments as detailed above.

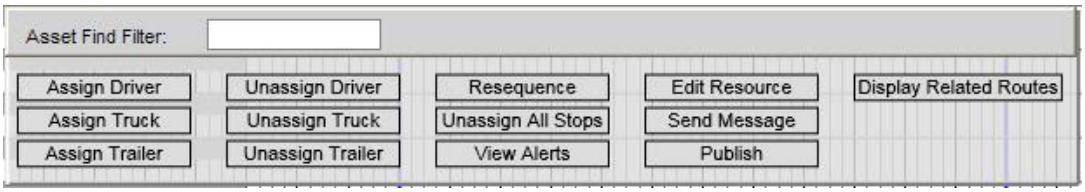
If only one crew member is assigned to a route, she or he is automatically marked as the leader.

Assigning Assets Using the Asset Gantt Chart

This option is the most complete Asset Assignment option since it allows users to have an overview of the asset assignment to routes, using drivers, trucks, and trailers assignment views and filters for date range and field values.

To assign assets from the Asset Gantt Chart:

1. Select **Data > Schedules > Asset Gantt Chart**. The Asset Gantt Chart appears.
2. Click on a route in the chart and select **Assign Driver**, **Assign Truck** or **Assign Trailer** from the menu. The respective asset dialog box appears.

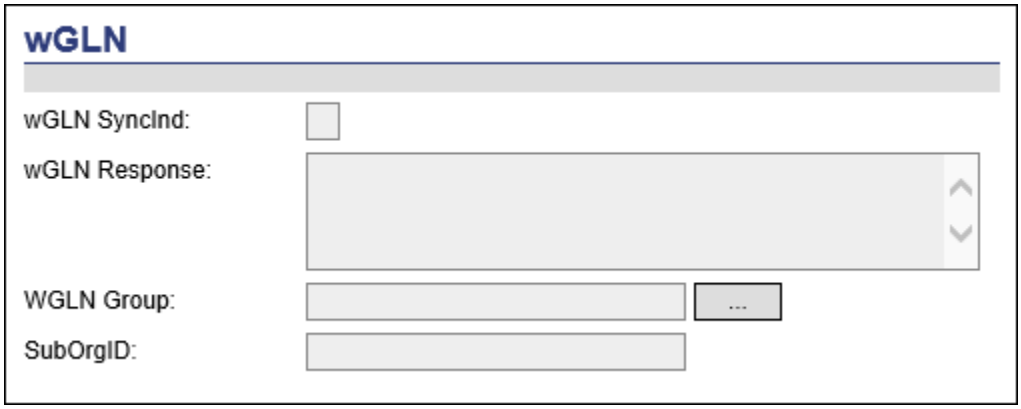


3. Double-click on an asset to add it to the route.

Syncing Asset Data with wGLN

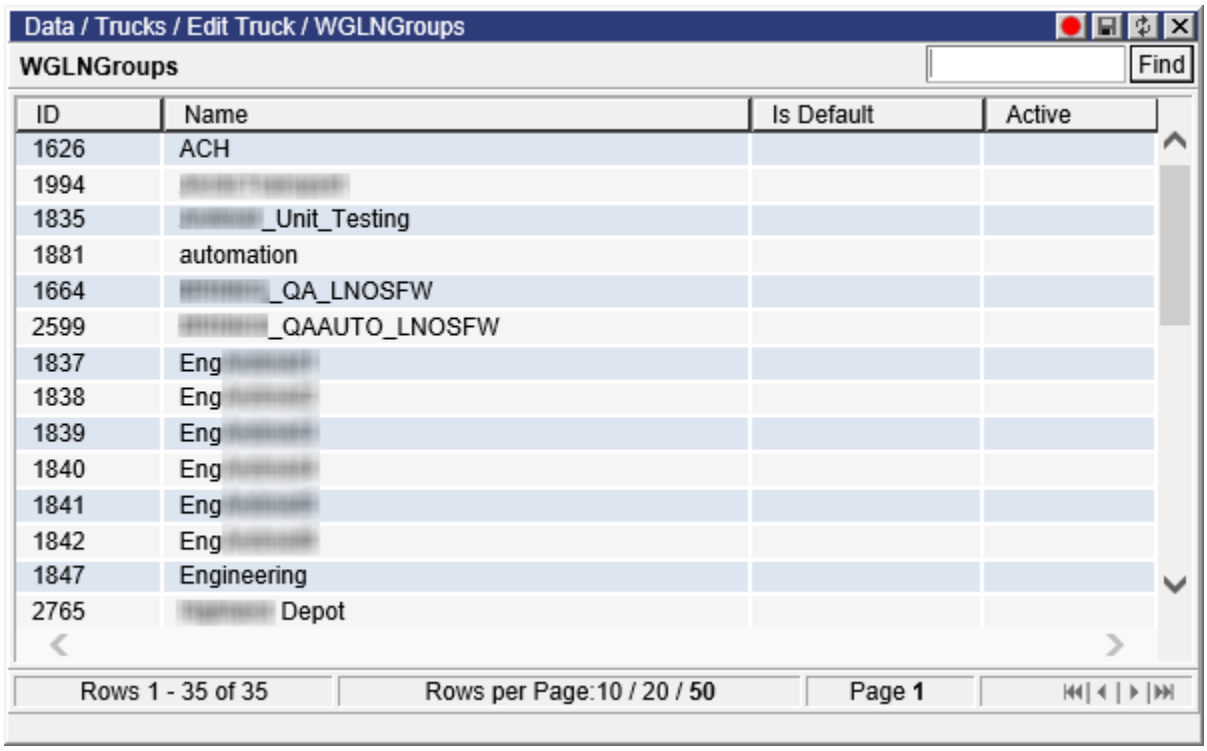
When creating or editing Assets, either Drivers, Trucks or Trailers, users have the option of syncing the transmission of asset data to the wGLN application.

The following section is found in the **New Driver**/**Edit Driver**, **New Truck**/**Edit Truck**and **New Trailer**/**Edit Trailer** pages.



1. Click the **wGLNSyncInd** checkbox to sync with the wGLN system, allowing the creation of asset.

2 Click the ellipsis button in the WGLN Group field to select the appropriate group from the **WGLNGroups** window.



3 Click **Save**. The wGLN Response field will contain the response from wGLN, notifying the user of success or failure.

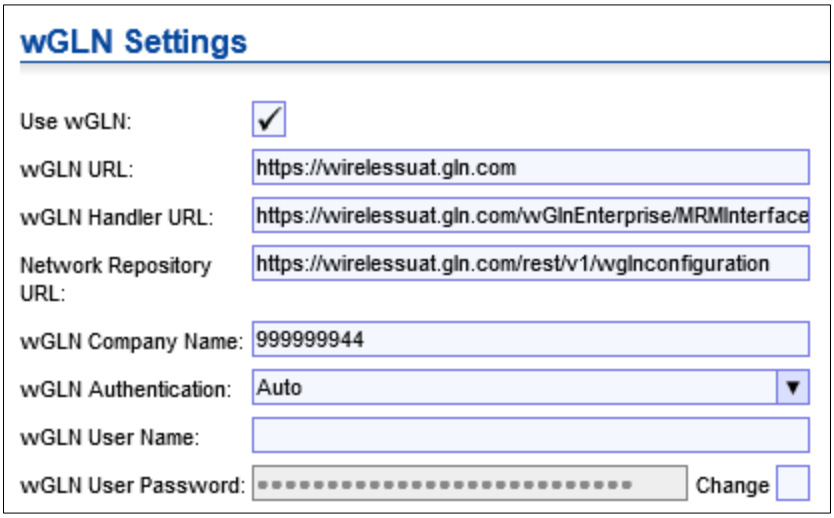
Please note the following regarding this feature:

- When an asset is created via the user interface, the system will automatically determine the groups available to the user and display those groups for selection in the Descartes **WGLN Groups** window when the ellipsis button of the Descartes WGLN Groups field is clicked.
- When posting assets through a listener, if a group is provided, it will be validated against Descartes wGLN. If the group does not exist, the system will return an error. If no group is provided, the system will sync to the default group in Descartes wGLN.
- When an asset's group is changed in Descartes Route Planner, the change will be synched to Descartes wGLN.

For the Descartes wGLN Asset Grouping feature to work properly, one of the following URLS must be configured in the wGLN Settings section of the **Application Configuration** page for the Network Repository URL. For more information please see the *Descartes Route Planner Admin Guide*.

- https://wirelessuat.gln.com/rest/v1/wglnconfiguration - test

- https://wireless.gln.com/rest/v1/wglnconfiguration – production



Publish Options from the List View

Assets can also be published to wGLN from the list view of **Drivers**, **Trucks** and **Trailers**.

To publish assets to wGLN:

1 From the list page of **Drivers**, **Trucks** or **Trailers**, right-click on a particular driver, truck or trailer. The right-click menu appears.

2 Do one of the following:

- Click **Publish to wGLN** to publish the data from the selected asset to wGLN.

Or,

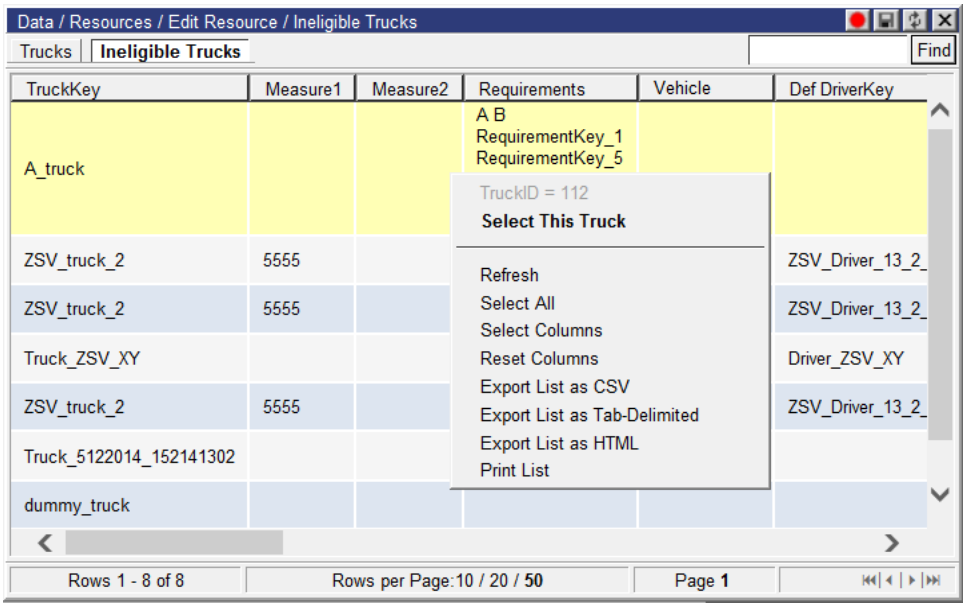
- Click **Publish all to wGLN** to publish the data from the entire list of assets to wGLN.

Specific routes can be published to wGLN by selecting the **Publish to wGLN** option directly from **Routes** or **Route Detail** quadrant.

➲ **Note—** Descartes Route Planner will only publish data to wGLN from assets via the right-click menu options if the wGLNSyncInd checkbox has been activated.

Assigning Assets from Ineligible Asset Lists

A list of assigned, "ineligible" assets displays in an additional tab when users attempt to assign an asset to a resource or route (**Ineligible Truck**, **Ineligible Trailer**, **Ineligible Crew**).



Users can assign these assets to a resource or route from the **Ineligible Crew**, **Ineligible Truck** and **Ineligible Trailer** list pages/windows by double-clicking the desired asset or choosing the **Select This [Asset]** from the right-click menu. The asset is assigned to the selected route and unassigned from any other overlapping routes.

For driver assets, if a new route already has a lead driver, the newly assigned driver is added as part of the crew. If the new route has no driver, the newly assigned driver is made lead.

This function will can also be applied for multiple routes on different dates.

Understanding True Costs on a Route

Once optimization of a Route has taken place, users can calculate true costs on the Route to determine the economics of their logistics problem. This information will give the user visibility of the total cost of the current plan by Route and by Schedule.

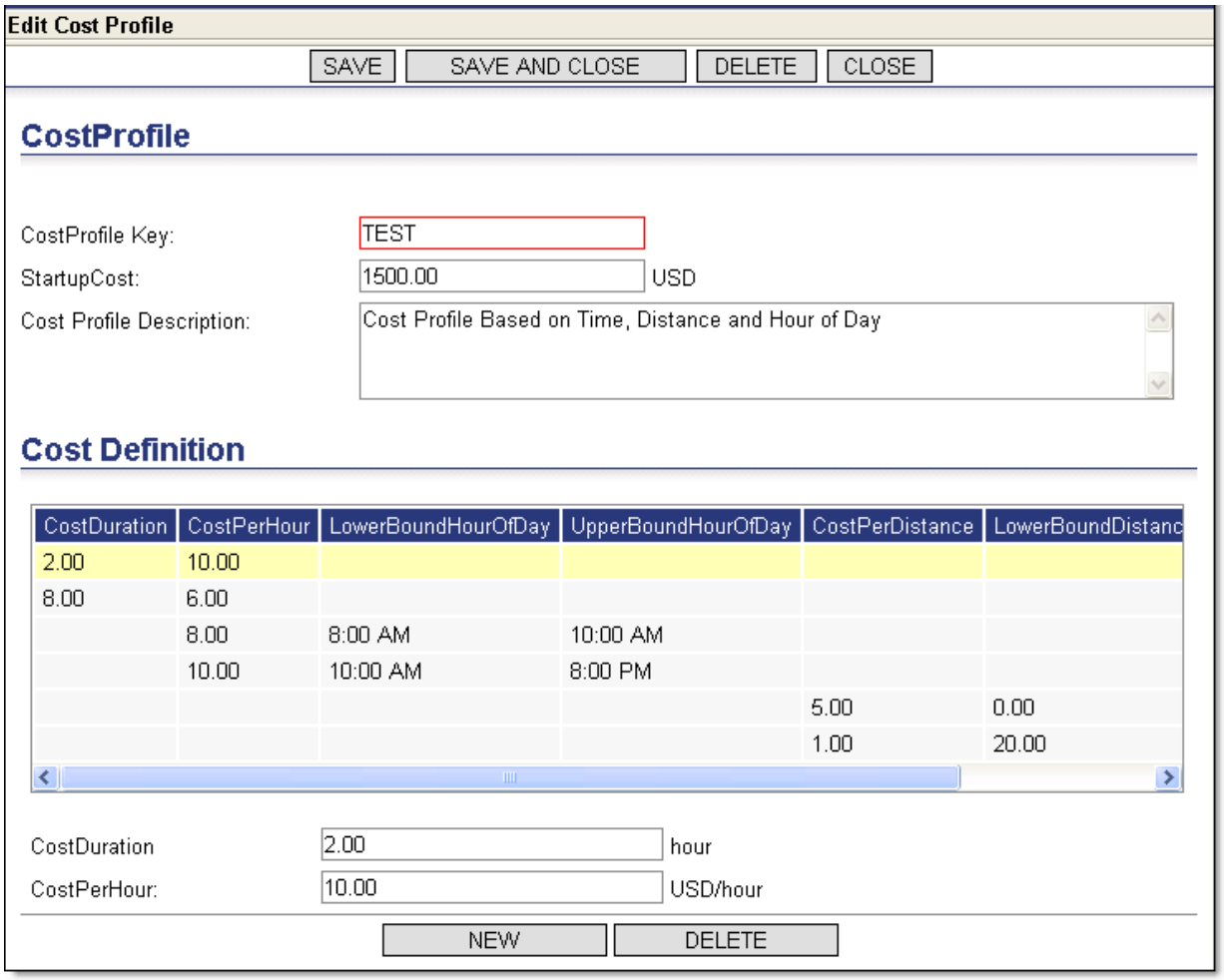
➲ **Note—** The true costs are for information purposes only.

True costs of a Route are determined by the following variables:

- Fixed Costs:
  - Start up cost of an asset
  - Fixed costs of an asset
- Variable Costs:
  - Cost per distance

- Cost per time
- Cost per Load Unit

The example below shows a cost profile setup and then what the true cost calculation would be based on the driver's work time when this cost profile has been applied.



The route's projected distance and projected elapsed time are as follows:

Route Detail | Row 1 - 1 of 1 |

	Freeze	Route	Projected Distanc	Projected Elapsed Tir	Profile Cost	AV
–	False	3722	59.57	10:11:32		

Stops

	Stop ID	Order Key	Status	AVL Statu	Requireme	Territo	Alert
	59289		Pending				
+	59502	RCOrder305	Pending		Repair	TC1	
+	59540	RCOrder247	Pending		Install	TC1	
+	59568	RCOrder078	Pending		Install	TC3	

The driver works from 7:01am till 17:11am on January 23 as shown below.

Projected Begun [	Projected Arrive	Projected Comp	Projected Departe	Projected
23-JAN-2007 07:01	23-JAN-2007 07:(	23-JAN-2007 07:(	23-JAN-2007 07:01	0.00
23-JAN-2007 08:00	23-JAN-2007 07:5	23-JAN-2007 08:1	23-JAN-2007 08:33	5.14
23-JAN-2007 08:55	23-JAN-2007 08:5	23-JAN-2007 09:1	23-JAN-2007 09:13	15.12
23-JAN-2007 09:20	23-JAN-2007 09:1	23-JAN-2007 09:1	23-JAN-2007 09:38	16.71
23-JAN-2007 09:52	23-JAN-2007 09:5	23-JAN-2007 10:1	23-JAN-2007 10:25	23.47
23-JAN-2007 10:34	23-JAN-2007 10:1	23-JAN-2007 10:5	23-JAN-2007 10:52	26.21
23-JAN-2007 11:06	23-JAN-2007 11:(	23-JAN-2007 11:1	23-JAN-2007 11:36	30.49
23-JAN-2007 11:45	23-JAN-2007 11:4	23-JAN-2007 12:(	23-JAN-2007 12:03	32.96
23-JAN-2007 12:06	23-JAN-2007 12:(	23-JAN-2007 12:1	23-JAN-2007 12:39	33.54
23-JAN-2007 12:52	23-JAN-2007 12:5	23-JAN-2007 13:1	23-JAN-2007 13:25	38.21
23-JAN-2007 13:30	23-JAN-2007 13:1	23-JAN-2007 13:4	23-JAN-2007 13:48	39.13
23-JAN-2007 13:54	23-JAN-2007 13:5	23-JAN-2007 14:1	23-JAN-2007 14:27	40.12
23-JAN-2007 14:44	23-JAN-2007 14:4	23-JAN-2007 15:(	23-JAN-2007 15:02	44.59
23-JAN-2007 15:06	23-JAN-2007 15:(	23-JAN-2007 15:1	23-JAN-2007 15:24	45.47
23-JAN-2007 15:37	23-JAN-2007 15:1	23-JAN-2007 15:5	23-JAN-2007 15:55	49.18
23-JAN-2007 16:06	23-JAN-2007 16:(	23-JAN-2007 16:1	23-JAN-2007 16:36	54.37
23-JAN-2007 16:44	23-JAN-2007 16:4	23-JAN-2007 17:(	23-JAN-2007 17:02	57.04
23-JAN-2007 17:11	23-JAN-2007 17:1	23-JAN-2007 17:1	23-JAN-2007 17:11	59.57

The cost calculation break-down should be:

Start Up Cost = 1,500

Time Cost Based on CostDuration:

Projected Elasped Time = 10:11:32

- Duration (hrs) * CostPerHour = (2*10 = 20)
- Duration (hrs) * CostPerHour = ((8-2) * 6 = 36)

The remaining time is free since there is no cost after the first eight (8) hours.

Time Cost Based on Hour of Day:

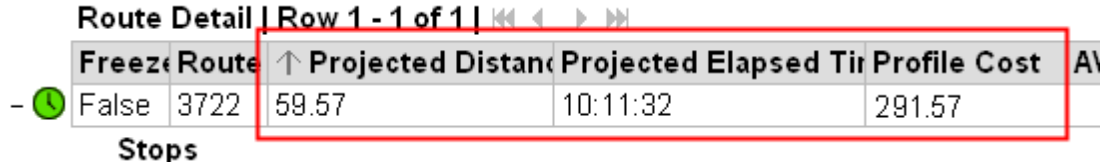
- 8:00 am – 10:00 am = (2 * 8 = 16.00)
- 10:00 am – 8:00 pm (only charge 10-17:11, total of 8 hours) = (8 * 10 = 80.00)

Distance Cost:

- 0 – 20 miles = (5 * 20 = 100)
- 20 – 1000 miles = ((59.57 – 20) *1 = 39.57)

Cost Total:

- (20 + 36) + (16 +80) + (100 + 39.57) = 291.57



Calculating a True Cost

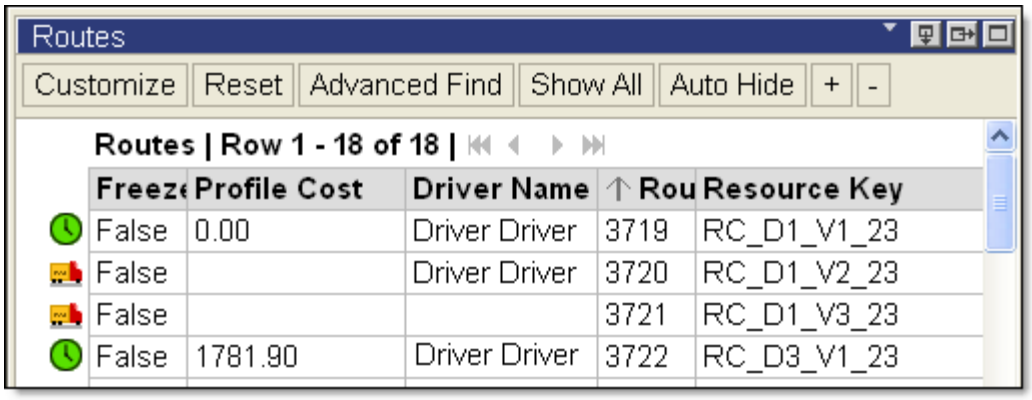
Once you have created your cost profile, driver/trailer and/or tractor, you can calculate the true cost.

To calculate the true cost:

- In the **Routes** quadrant on the **Home** page, right-click on a route or multiple routes and select **Calculate True Cost**.

The true cost displays in the Profile Cost column.

➲ **Note—** To see the calculated costs on the **Routes** quadrant, add **Profile Cost** from the available columns list to the selected columns list on the **Select Columns** page.

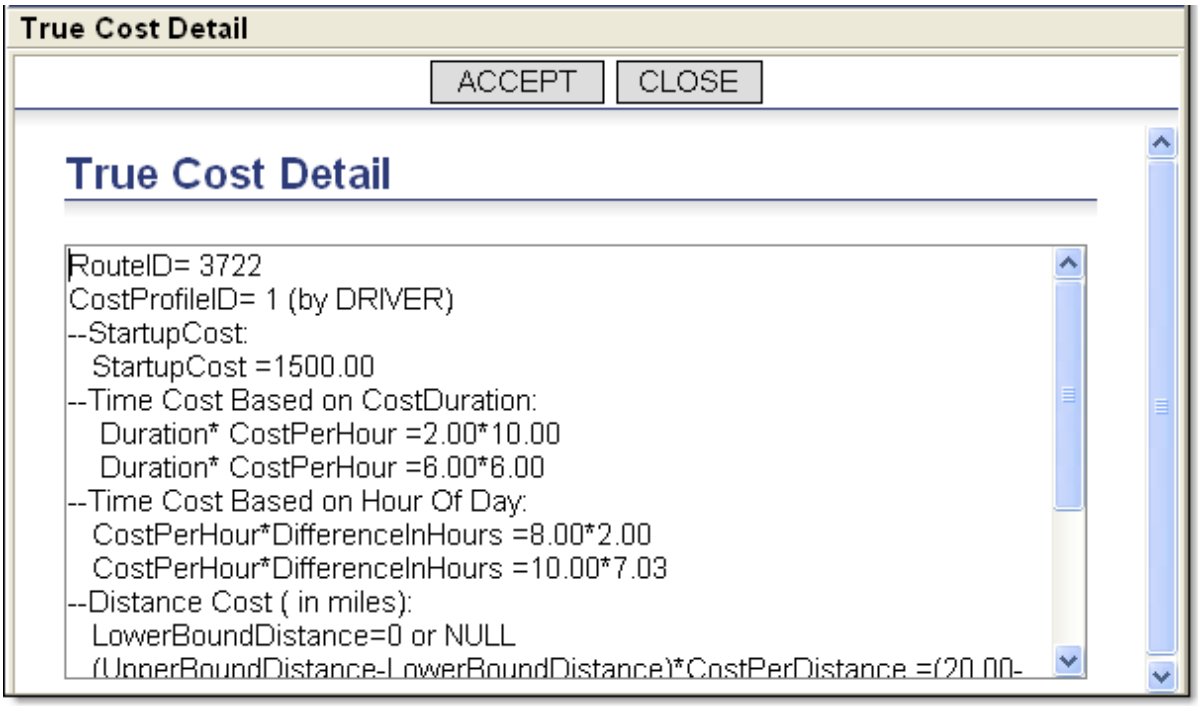


Viewing the True Cost Details

To view the true cost details:

1 Right-click on the route and select **Show True Cost Detail**.

The **True Cost Detail** page appears:

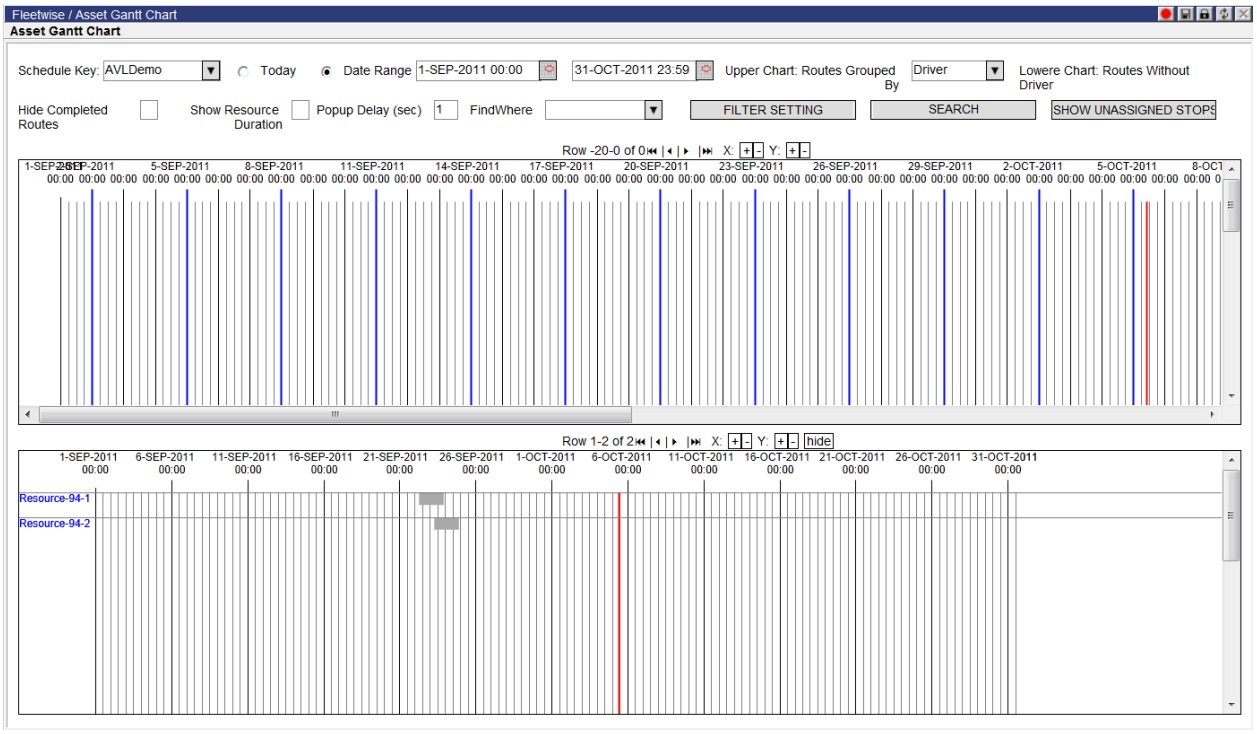


2 Click **Close** to return to the **Home** page.

Understanding the Asset Gantt Chart

To access the Asset Gantt Chart, select **Data > Schedules > Asset Gantt Chart**.

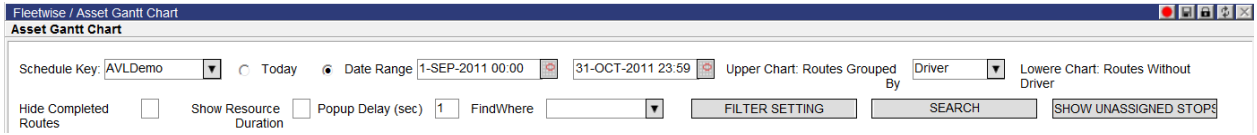
The **Asset Gantt Chart** page appears.



Each section of the **Asset Gantt Chart** page is described under *Features and Functions* below.

Features and Functions

Search Functions



The **Asset Gantt Chart** has the flexibility of searching routes based on:

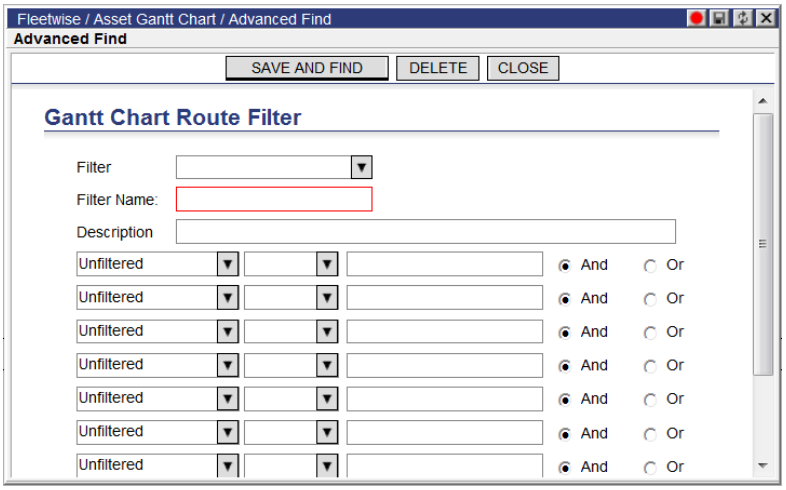
- **Date Range** – choices for selection are: **Today**, in which the current date is displayed in the date range fields; or **Date Range**, in which the user must select or enter the desired date range.
- **Find where** – displays a list of filter criteria, criteria actions, and a text field in which the user can filter the search.

- **Upper Chart: Routes Grouped By** – displays a given type of assets (driver, tractor, trailer, or none) that are already assigned. For example, for the driver asset, Group By Driver will show which routes the driver is on for each driver in the selected Schedule.

Clicking **Search** executes a search based on the selected criteria and refreshes the Gantt chart(s) with the information.

Filtering Options

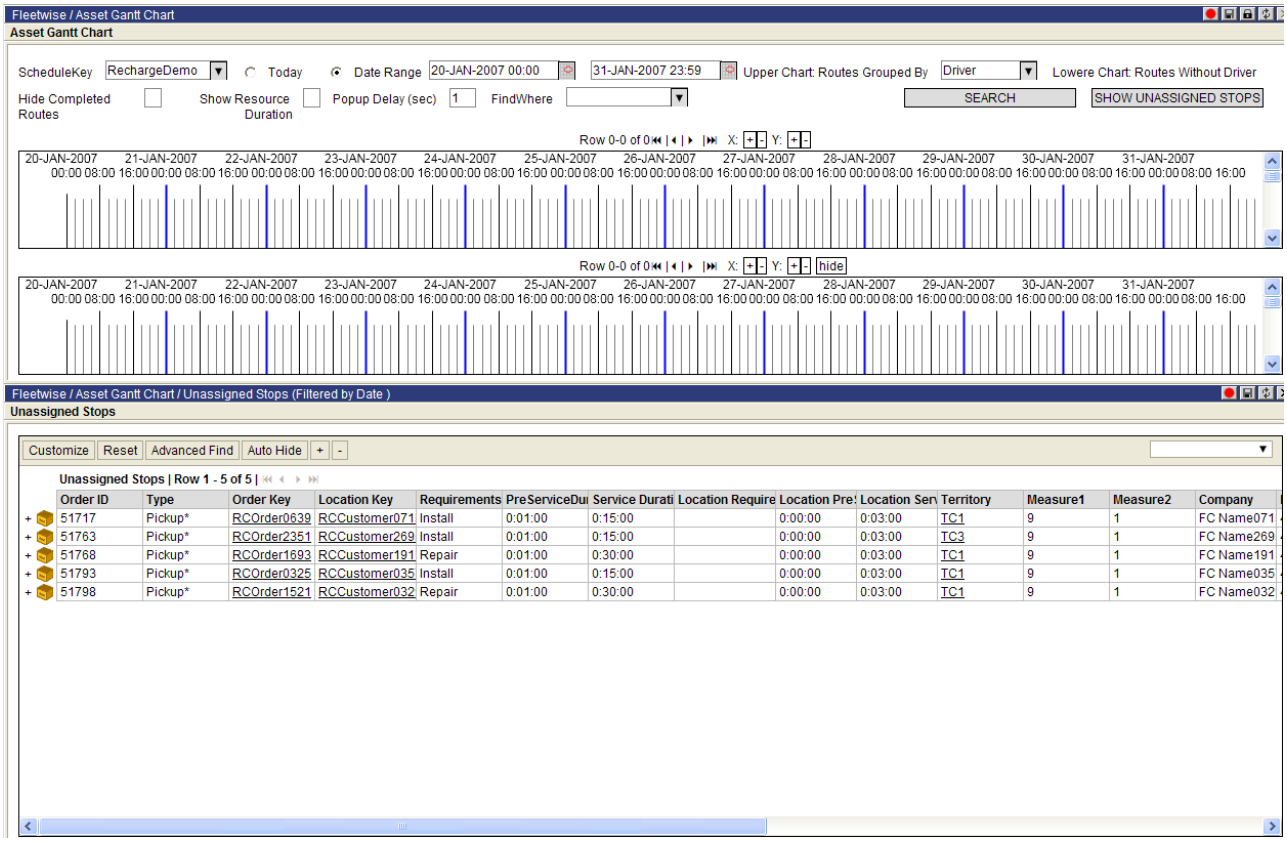
For advanced filtering, use the **Advanced Find** window to specify a route filter for data in the chart. Click **Filter Settings** to display the **Advanced Find** window.



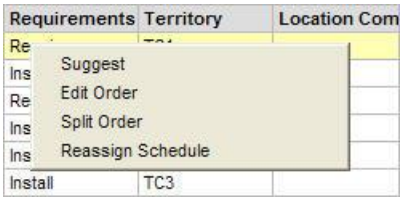
Enter your filter parameters and click **Save and Find**. Or, select a previously saved filter from the **Filter** drop-down and apply.

Showing Unassigned Stops

Clicking **Show Unassigned Stops** displays all unassigned stops for the selected Schedule key.



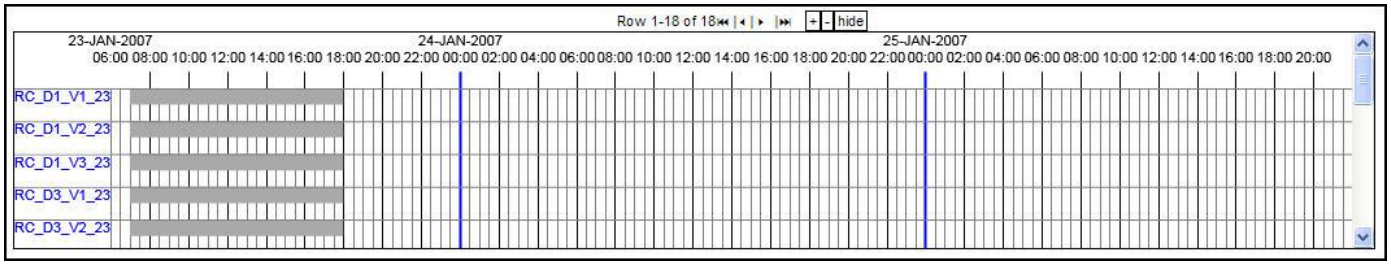
Right-click on an unassigned stop to display a menu of options.



- **Suggest—** Displays the **Select Suggest** dialog box. Double-click on an order to assign it to the stop.
- **Edit Order—** Displays the **Edit Order** page, allowing the user to edit the selected order. See *Editing an Order* for more information.
- **Split Order—** Displays the **Split Order** page, allowing the user to split the selected order. See *Splitting an Order* for more information.
- **Reassign Schedule—** Displays the **Select Schedule for Reassign** dialog box, allowing the user to choose a schedule from the list to reassign the stop.

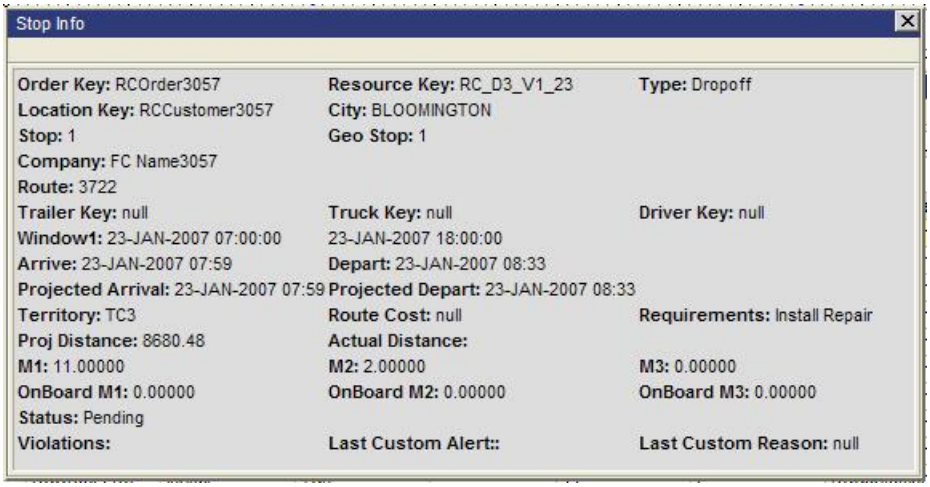
Users can also assign stops to routes displayed on the Gantt charts by drag and drop. For more information, see *Assigning Unassigned Stops to a Route*.

Viewing the Gantt Chart(s) Information



After the Gantt views have been updated with the filtered information, users can do the following:

- **Zoom in and out on the chart** – click **+** to zoom in on the asset's route dates and times and stops displayed on the chart, or click **-** to zoom out. The second chart in the screenshot above shows a zoomed in view.
- **Navigate the Gantt asset and row pages** - ( ) click one of the navigator buttons to navigate through the Gantt chart page-by-page. The four buttons in the list navigator are:
  - Jump to the first page
  - Jump to the previous page
  - Jump to the next page
  - Jump to the last page
- **Hide lower Gantt chart** – if the lower Gantt chart (Rows) is displayed, clicking **Hide** will hide it from view. Clicking **Show** will show the Gantt chart again.
- **Display Order details** - mouse-over a stop (order) on the Gantt chart to display the Stop details.



➲ **Note—** Clicking the 'S' key will keep the Stop details pop-up displayed on the page until you click another part of the window.

Clicking the 'D' key will keep the Stop details pop-up from displaying on the page.

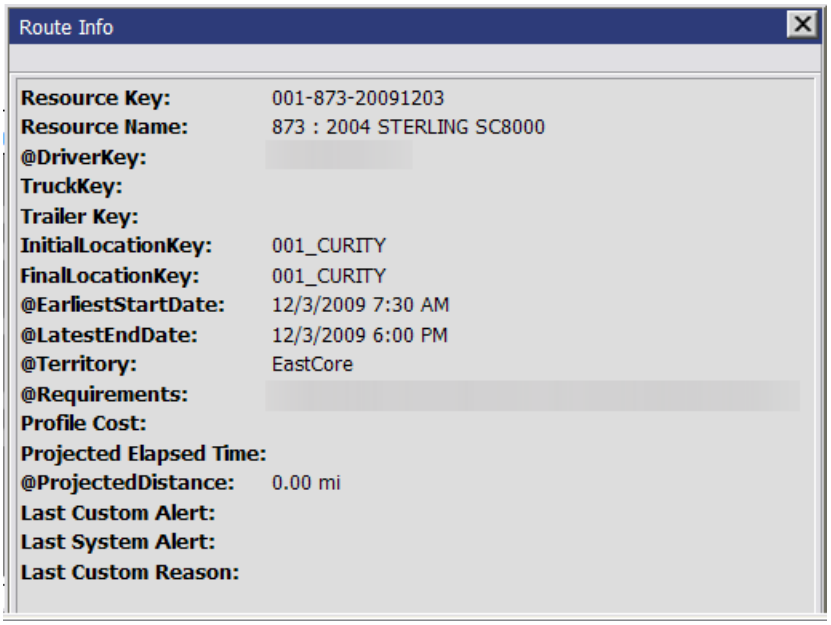
Clicking any other key will set the display behavior of the Stop details pop-up to the default setting.

The following information is presented in the mouse-over:

- Order Key
- Location Key
- Stop #
- GeoStop #
- Company Name
- Route
- Trailer Key
- Truck Key
- Driver Key
- Window Earliest Date
- Window Latest Date
- Window Earliest Time
- Window Latest Time
- Arrive
- Depart
- Projected Arrival Date
- Projected Depart Date
- Territory
- Route Cost
- Requirements
- Measure1, 2, and 3
- Type
- Status
- Violations
- Last Custom Alert
- Last Custom Reason

- **Display Route details** – click on a route on the Gantt chart to display the Route details and button options.

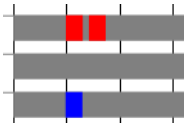
➲ **Note—** The Route details and options will *only* display if you left-click on the route. Clicking on a Stop on the route will execute the route.



The following information is presented in the pop-up:

- Resource Key
- Resource Name
- Driver Key
- Truck Key
- Trailer Key
- Earliest Start Date
- Latest End Date
- Territory
- Requirements
- Profile Cost
- Projected Elapsed Time
- Projected Distance
- Last Custom Alert
- Last Custom Reason

The color of the Stop rectangles should be displayed with the same color as the Alert clock color if it is pending, or the status color that is in use in the **Route Detail1** and **2** quadrants.



In addition to viewing assets and routes, the Gantt chart allows users to:

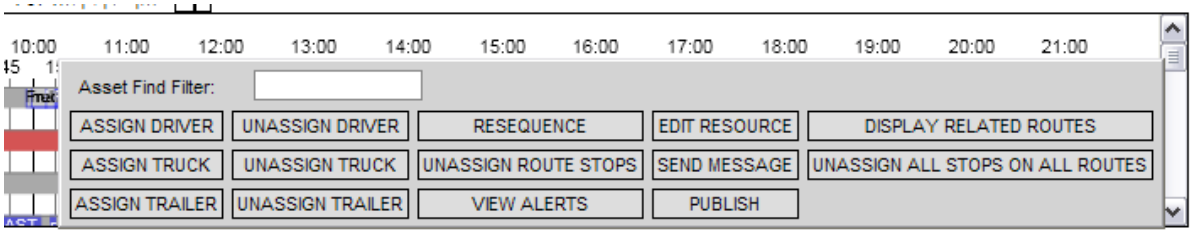
- assign assets (driver, tractor, or trailer) to one or more selected routes (**Assign Driver**, **Assign Truck**, **Assign Trailer** buttons), see *Assigning and Unassigning Assets on a Route*
- unassign an asset (**Unassign Driver**, **Unassign Truck**, **Unassign Trailer** buttons), see *Assigning and Unassigning an Asset on a Route*
- assign unassigned stops to routes, see *Assigning Unassigned Stops to a Route*
- drag and drop stops between routes, see *Dragging and Dropping Stops between Routes*
- resequence the route (**Resequence** button), see *Resequencing a Route*
- unassign stops from a route (**Unassign all Stops** button), see *Unassigning All Stops on a Route*

Assigning and Unassigning Assets on a Route

To assign an asset on a route:

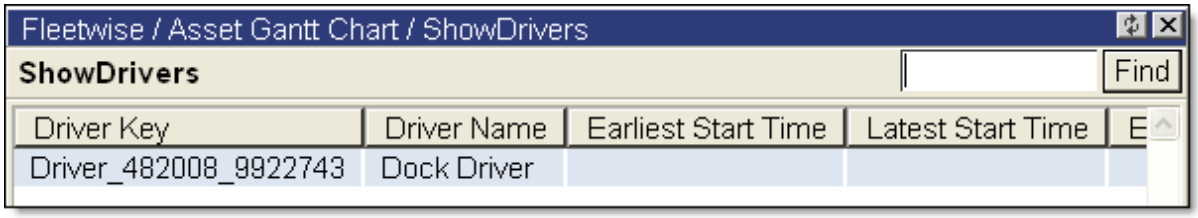
1 Click on a route in either of the Gantt charts.

A popup similar to the one below appears:

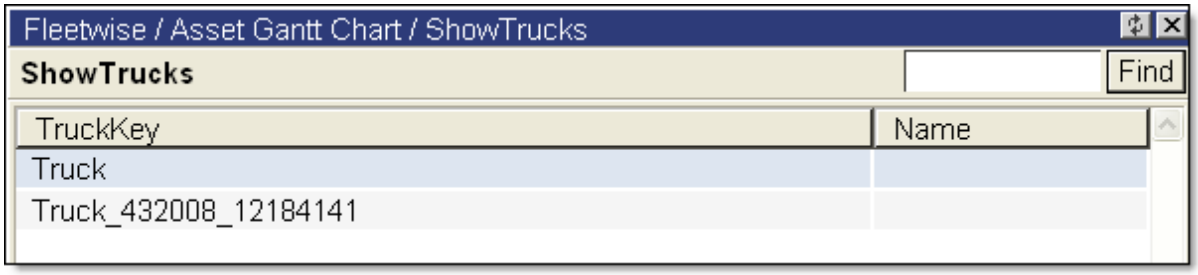


2 Click one of the following:

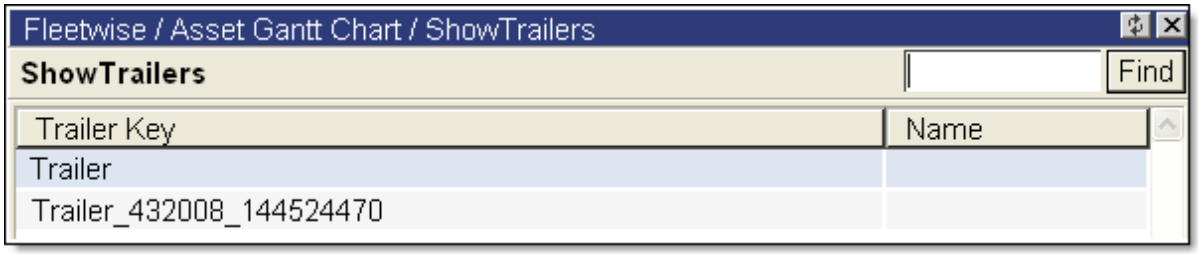
- **Assign Driver -** to assign a driver to a route. The **ShowDrivers** page appears:



- **Assign Truck -** to assign a truck to a route. The **ShowTrucks** page appears:



- **Assign Trailer -** to assign a trailer to a route. The **ShowTrailers** page appears:



3 Right-click on the desired asset and select **Select**.

The asset is now assigned to the route.

To unassign an asset from a route:

1 Click on a route in either of the Gantt charts to display a popup similar to the one under step 1 above for assigning an asset.

2 Click one of the following:

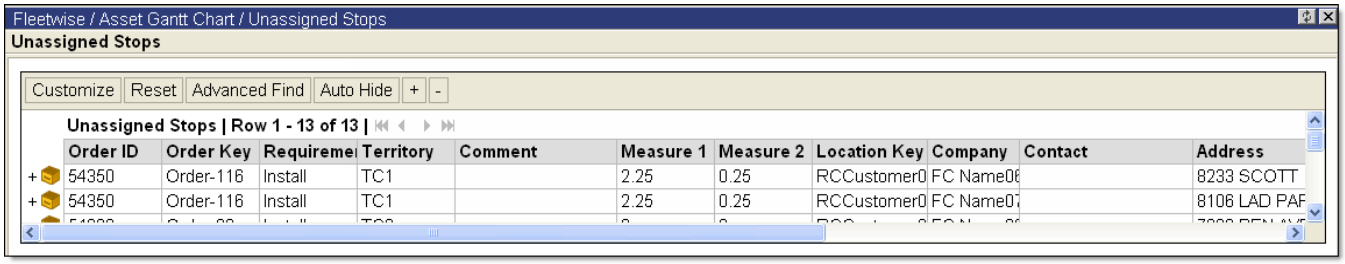
- **Unassign Driver -** to unassign a driver to a route
- **Unassign Truck -** to unassign a truck to a route
- **Unassign Trailer -** to unassign a trailer to a route

The asset is removed from the route.

Assigning Unassigned Stops to a Route

To assign an unassigned stop to a route:

1 Click **Show Unassigned Stops** to show the **Unassigned Stops** page.



2 Select a stop on the **Unassigned Stops** page and drag and drop it on the desired route displayed in the Gantt chart.

The stop is now assigned to that route.

Dragging and Dropping Stops between Routes

Users can drag and drop stops from one route onto another route on the Gantt charts.

To drag and drop a stop between routes:

- Select a stop on a route and drag and drop it onto another route.

Resequencing a Route

To resequence a route:

- Click on a route and select **Resequence**.
  The route is resequenced.

Unassigning All Stops from a Route

To unassign all stops from a route:

- Click on a route and select **Unassign All Stops**. Users will receive a confirmation dialog asking whether or not the currently applied data filter should remain applied.
  The stops are removed from the route and are moved to the **Unassigned Stops** page.

Viewing Alerts from a Route

To view custom alerts from a route:

- Click on a route and select **View Alerts**. A list of custom alerts related to the route appears.

Editing Resources on a Route

Users can access the Edit Resource page directly from the Gantt Chart.

To Edit Resources on a route:

- Click on a route and select **Edit Resources**. The Edit Resources page appears for the particular route.

Sending Messages from a Route

Users can send messages directly from the **Asset Gantt Chart** page.

To send a message from the **Asset Gantt Chart** page:

- Click on a route and select **Send Message**. The **New Messages** page appears.

Publishing Routes from the Route Bin

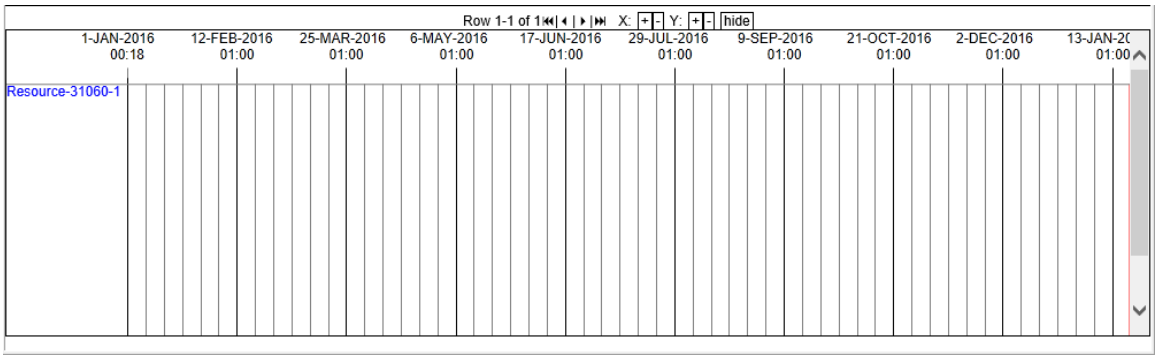
Users can publish routes directly from the **Asset Gantt Chart** page.

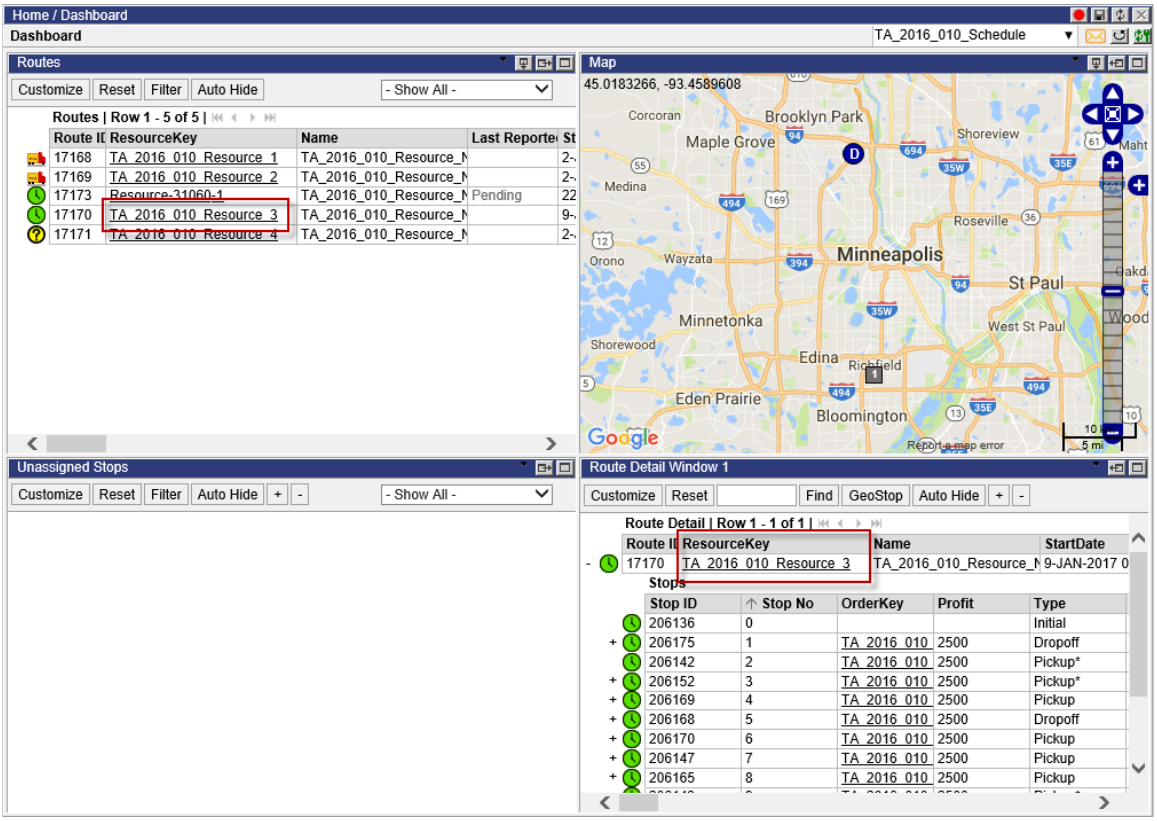
To publish routes:

- Click on a route and select **Publish**. A confirmation dialog box will appear when the route has been successfully published.

Resource Link to Dashboard Display of Route

The **Asset Gantt Chart** page allows users to click a resource name in the tables to open the route in the **Routes**, **Map** and **Route Detail Window** quadrants on the Dashboard.





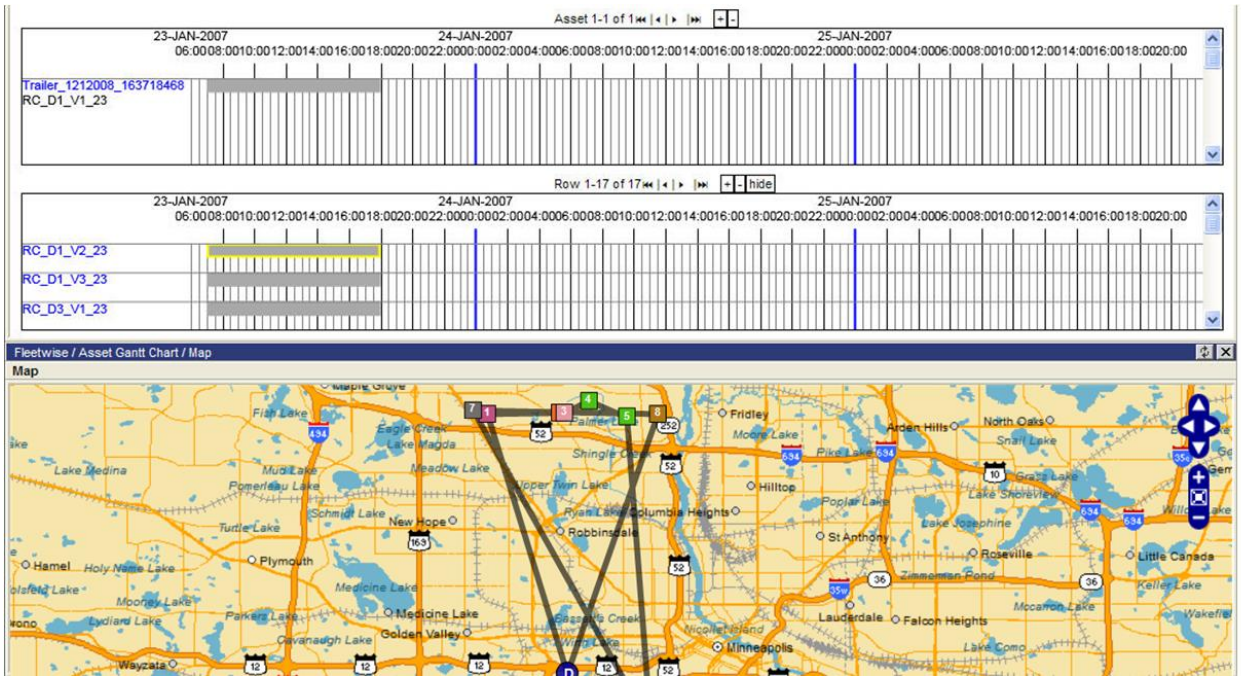
Map data © 2017 Google Inc.

Showing Related Routes

Users can generate a map showing related routes from the **Asset Gantt Chart** page.

To show related routes:

- Click on a route and select **Display Related Routes**. The **Asset Gantt Chart > Map** page will appear to scale within the **Asset Gantt Chart** page showing all related routes as shown below.



Map data © 1987-2017 HERE

Working with Master Routes

Master Routes are normal Descartes Route Planner routes that are specially marked as 'MasterRoute' in the database and have the limitation that they cannot be dispatched.

Master Routes have the following characteristics:

- a Master Route belongs to a schedule (e.g. DefaultSchedule) and each schedule can have its own master routes
- a Master Route serves as a template for instantiating normal (dispatchable) routes in the same schedule
- all database records related to a Master Route (order, location, activity, stop, and order line) are marked as such via a special field 'MasterRoute' in each of the tables
- Master Routes are only accessible from the **Data > Master Route Mgmt Mode** menu. The dashboard will be populated with Master Routes and related information only.

Viewing Master Routes

As with Routes, Descartes Route Planner provides three methods for viewing Master Routes. Each method emphasizes a different aspect of the Master Route, and users can easily switch between the various views. The three views are:

- list (Grid) view
- tree view
- map view

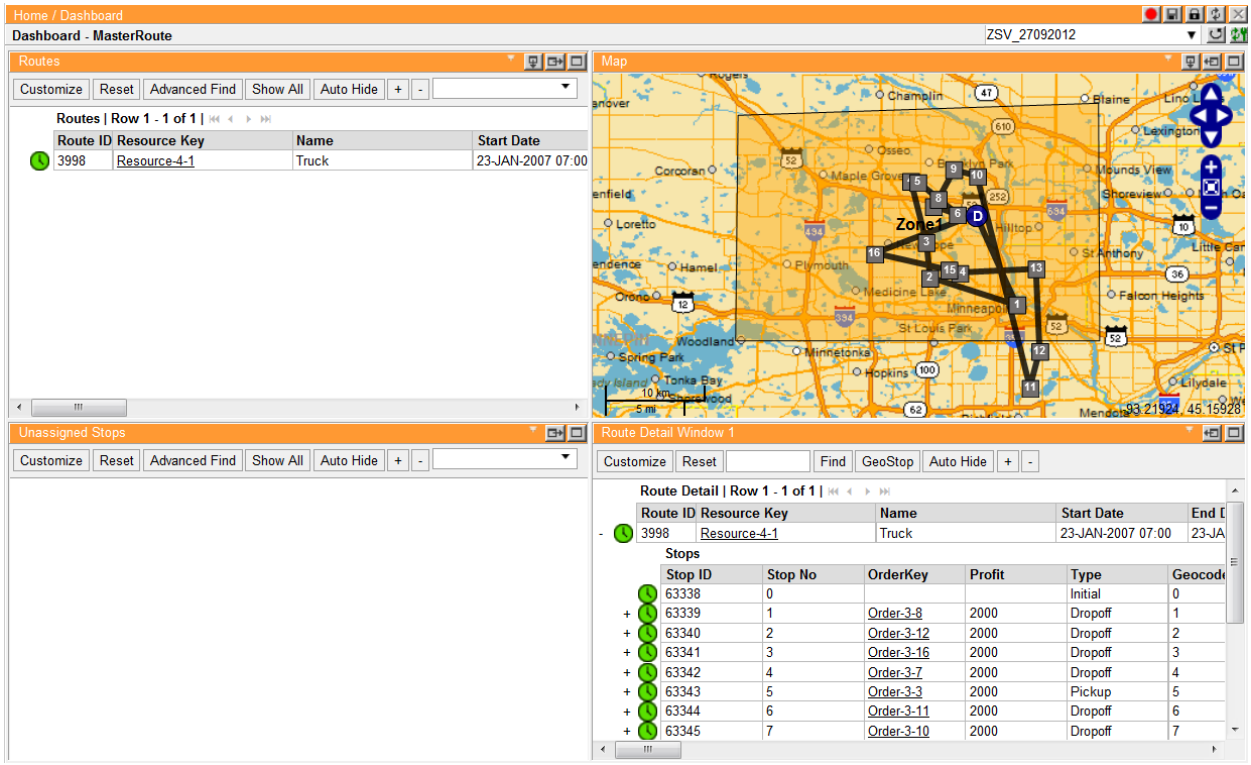
Users can drag and drop Stops within Routes in the List view and the tree view. Users can also drag Stops from the List view or the tree view to another Route in the **Routes** quadrant.

Users can assign Unassigned Stops to a Route by dragging them to the List view or the tree view.

➲ **Note—** Stops cannot be drag and dropped like other items can. Instead, use the **Anchor** command in the map view to rearrange Stops on a Route. See *Understanding the Descartes Route Planner Views* for details on different ways to view Route information.

To view Master Routes:

- From the main menu, select **Data > Master Route Mgmt Mode**. The dashboard is populated with existing Master Routes and related information only.



Map data © 1987-2017 HERE

The Master Route dashboard has the same viewing and editing functionality as Routes. For more information on the functionality, see *Working with Routes*.

To return to the Routes view:

- From the main menu, select **Data > Routing Mode**.

Creating Master Routes

There are four ways to create a Master Route:

- **Create Master Route from a Route** – Master Routes can be created from a Route in the Routes quadrant on the dashboard. In this case, the Route is copied and a Master Route is created from the copy.
- **Convert a Route to a Master Route** – A Route can be converted to a Master Route from the Routes quadrant on the dashboard. In this case, the Route is converted from a Route to a Master Route and is removed from the Routes quadrant on the dashboard and placed on the Routes quadrant on the Master Routes dashboard.
- **Import a Master Route** – Master Routes can be imported in from an external source.

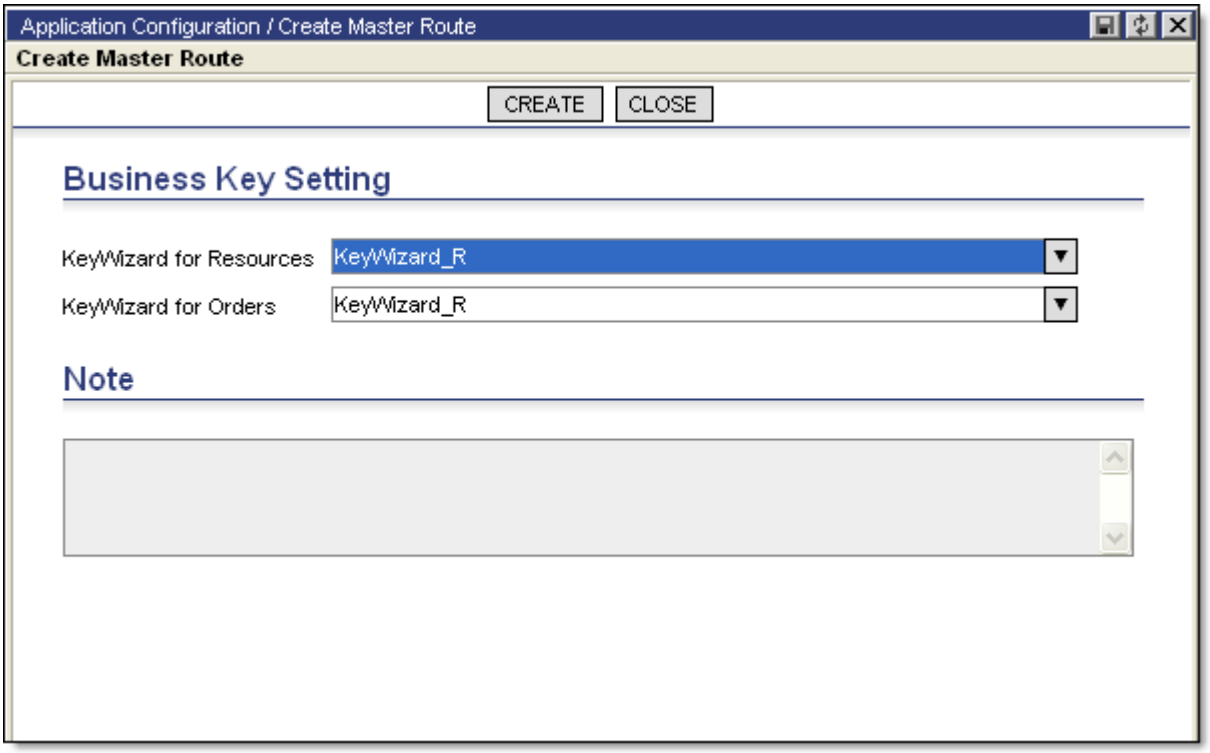
- **Create Master Route from Route Template Resources** – Master Routes can be created when creating Resources in Route Templates.

Create Master Route

To create a Master Route from a Route:

1 Right-click on a Route in the **Routes** quadrant and select **Create Master Route** from the right-click menu.

The following page appears:



2 Select a KeyWizard for the Resource.

3 Select a KeyWizard for the Orders.

4 Click **Create**. The Master Route(s) is created and the **Create Master Route** window is returned with the number of Master Routes created displayed in the **Notes** section.

5 Click **Close**.

To view the new Master Route:

- From the main menu, select Data > Master Route Management > Start.

➲ **Note—** Descartes Route Planner will remain on the Master Routes dashboard until you end Master Routes at which time it will return the Routes dashboard.

Convert to Master Route

To convert a Route to a Master Route:

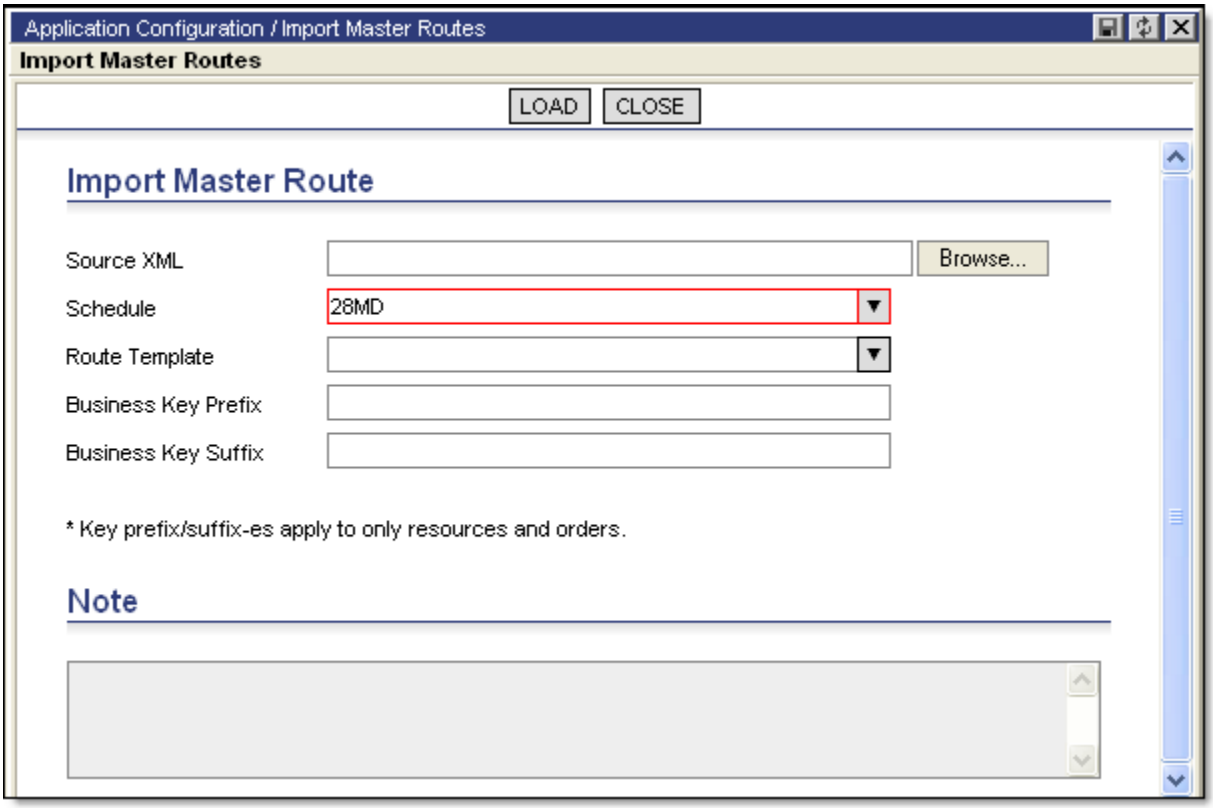
- Right-click on a Route in the Routes quadrant and select **Create Master Route** from the right-click menu. The Route is removed from the Routes quadrant and converted to a Master Route. It can be viewed on the Master Routes dashboard.

Import Master Routes

To import Master Routes:

1 From the Master Routes dashboard main menu, select **Data > Master Route Mgmt Mode > Import Master Routes**.

The following page appears:



2 Click **Browse...** to search for the xml source.

3 Select a schedule from the drop-down list.

4 Select a route template from the drop-down list.

5 Enter a business key prefix for the resources and orders.

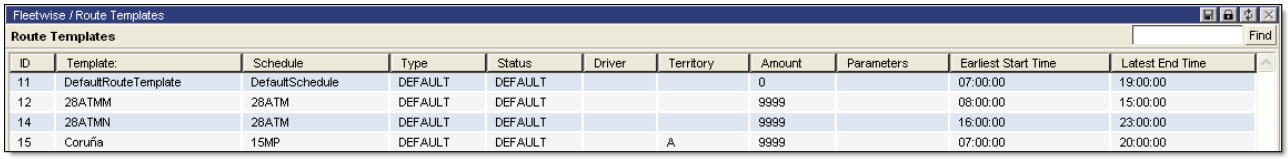
6 Enter a business key suffix for the resources and orders.

7 Click **Load**.

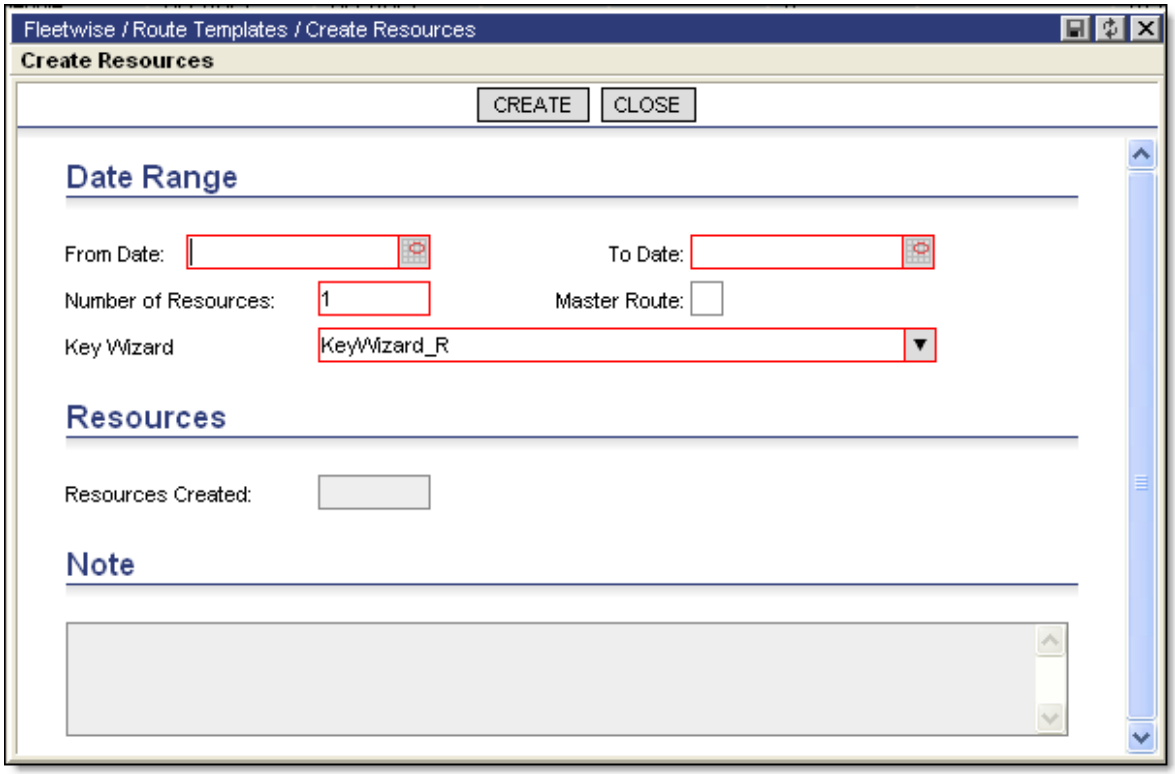
Create Master Routes from Route Template Resources

To create Master Routes from Resources created in the Route Template:

1 From the main menu, select **Data > Template > Route**. The **Route Templates** page is displayed.



2 Right-click on a Template and select **Create Resource**.



3 Enter the from date or click the calendar icon and select the date.

4 Enter the to date or click the calendar icon and select the date.

5 Enter the number of resources.

6 Select the **Master Route** checkbox.

7 Select a resource key to use from the drop-down list.

8 Click **Create**.

Setting up Master Route Settings

Users can specify an Order field name and value that can then be used during the assignment process. If specified, when multiple orders are available to be placed on multiple master routes, Descartes Route Planner will use the field name and value to determine which master routes the orders should be placed.

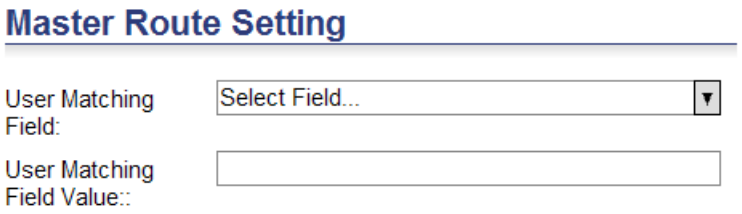
To set the Master Route settings:

1 From the main menu, select **Data > Resources**.

2 Right-click on the desired resource for the master routes and select **Edit**.

3 Click the **Settings** tab.

4 Under **Master Route Setting**, select a field from the User Matching Field drop-down list.



5 Enter a value in the User Matching Field Value field.

6 Click **Save** and then **Close** or **Return to Home**.

Setting Up Master Route Frequency

Users can specify a master route frequency to automate route creation based on date ranges.

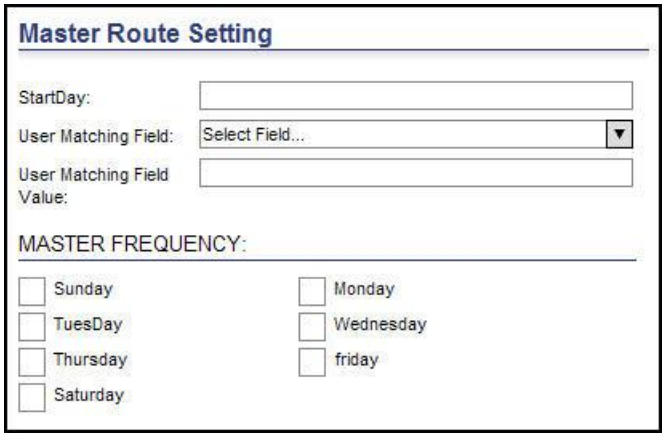
To set up Master Route frequency:

1 From the main menu, select **Data > Resources**.

2 Right-click on the desired resource for the master routes and select **Edit**.

3 Click the **Settings** tab.

4 Under **Master Frequency**, select the desired frequency dates.



➲ **Note—** The frequency must be set before creating routes from Master Routes.

5 Click **Save** and then **Close** or **Return to Home**.

Creating a Route from a Master Route

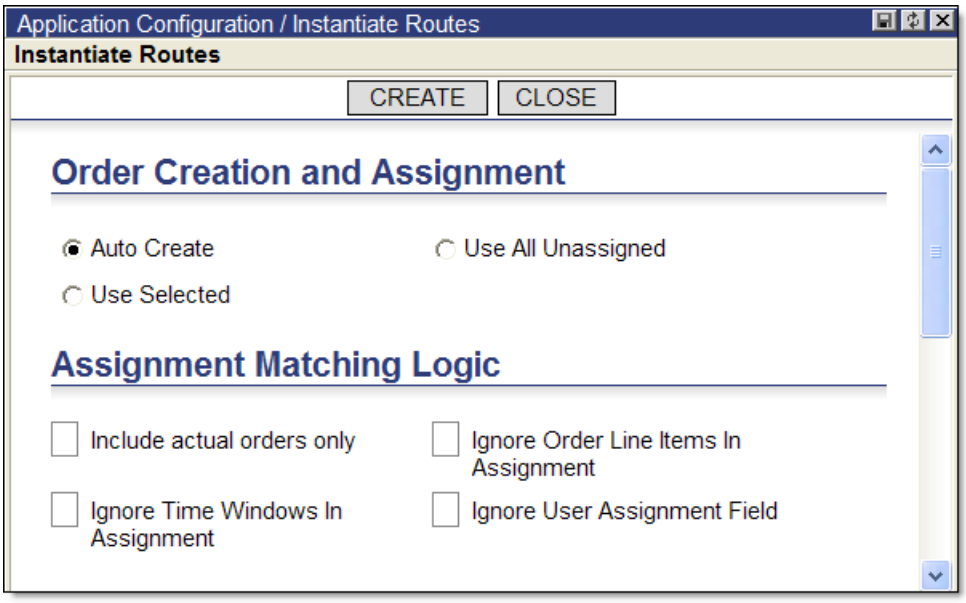
Routes can be created from a Master Route within the Master Routes Dashboard.

To create a Route from a Master Route:

1 Select a master route or set of master routes that need to be created.

2 Right-click and select **Create Routes** or **Create Routes for All**.

The **Instantiate Routes** dialog box appears.



3 Under **Order Creation and Assignment**, select one of the following options:

- **Auto Create** – Do not replace auto-created orders with real orders
- **Use Selected** – Limit the set of candidate orders satisfying the user-designated data set group
- **Use All Unassigned** - Take all unassigned orders of the current schedule as candidates for replacement

4 Under **Assignment Matching Logic**, select the options you want to match by.

➲ **Note—** Select **Ignore User Assignment Field** if you want to create routes based on the master frequency settings.

5 Select the a from and to date range for the orders.

6 Select a KeyWizard for the Resources and Orders from the drop-down lists.

7 If desired, enter a note.

8 Click **Create**.

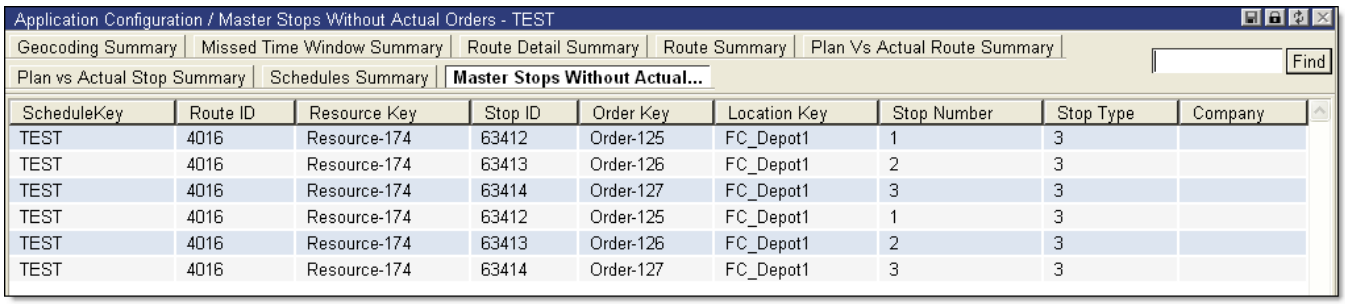
Viewing the Master Stops without Actual Orders Report

Users can use the **Master Stops without Actual Orders** report to review the number of master stops that do not have an actual order. This enables users to validate daily demand and check for discrepancies or errors that might have been introduced during the process.

To view the **Master Stops without Actual Orders** report:

- From the main menu, select Summary Reports > Master Stops without Actual Orders.

The **Master Stops without Actual Orders** page/report appears.

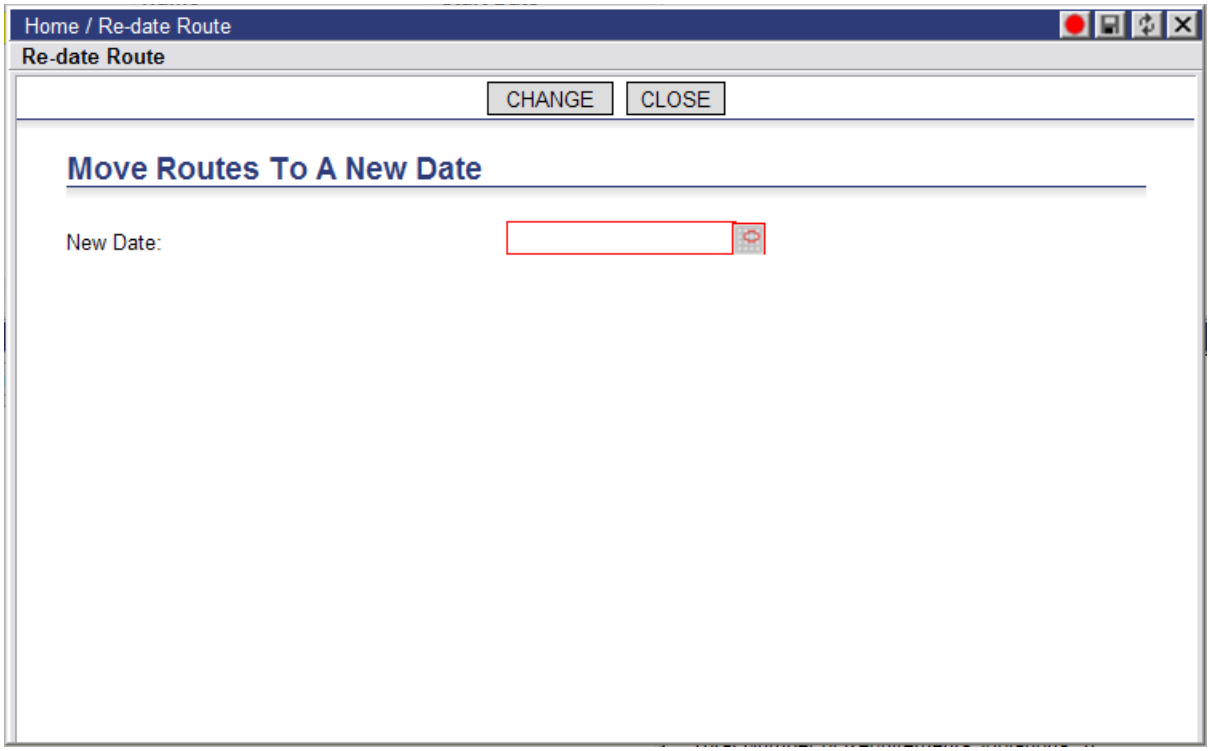


ScheduleKey	Route ID	Resource Key	Stop ID	Order Key	Location Key	Stop Number	Stop Type	Company
TEST	4016	Resource-174	63412	Order-125	FC_Depot1	1	3	
TEST	4016	Resource-174	63413	Order-126	FC_Depot1	2	3	
TEST	4016	Resource-174	63414	Order-127	FC_Depot1	3	3	
TEST	4016	Resource-174	63412	Order-125	FC_Depot1	1	3	
TEST	4016	Resource-174	63413	Order-126	FC_Depot1	2	3	
TEST	4016	Resource-174	63414	Order-127	FC_Depot1	3	3	

Re-date Per Route in Master Route Mode

Users can update the dates across the time windows of all orders assigned to a master route.

1 Right-click on a master route and select **Re-date Route** from the right-click menu. The **Re-date Route** window appears.



2 Select a date from the calendar on the New Date field and click **Change** to apply. This date affects the EarliestStartDate of the Resource and the earliest

WindowOpen/EarliestDate of the TimeWindows and will use these as a base to set the rest of the fields.

Managing Unassigned Stops

The process of assigning Unassigned Stops to Routes attempts to find the best Route for each Unassigned Stop being assigned. Users can use one of these options to handle Unassigned Stops:

- auto-assign Stops
- manually assign Unassigned Stops
- manually unassign Assigned Stops
- reassign Stops to another schedule

➲ **Note—** When users assign an order/stop to an empty route, the system will update the route's Earliest Start Time to the user's current time when the AllowResDateChangeOnAssign CtySysValue enabled. Routes are only updated if the route's date is today and current time is within route's time window. The current time is determined by client's system time. For example, if a route is created at 06:00 and an order is not assigned to the route until 07:30, the route's Earliest Start Time value will be updated to 07:30, the user's system time.

Auto-Assigning Stops

Auto-assigning Stops tries to assign Stops to the best Route. Users can also select a subset of Routes to auto-assign Unassigned Stops to.

Users can choose to auto-assign:

- all Stops to any available Route
- selected Stops to any available Route
- all Stops to selected Routes
- selected Stops to selected Routes

➲ **Note—** Descartes Route Planner may not be able to assign some Stops if it cannot find any Routes that can service the Stop without violating a business rule. Users can manually assign the remaining Unassigned Stops to a Route.

After assigning a stop, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the assignment. See the *Before and After Results* section for more information.

Auto-Assigning All Stops

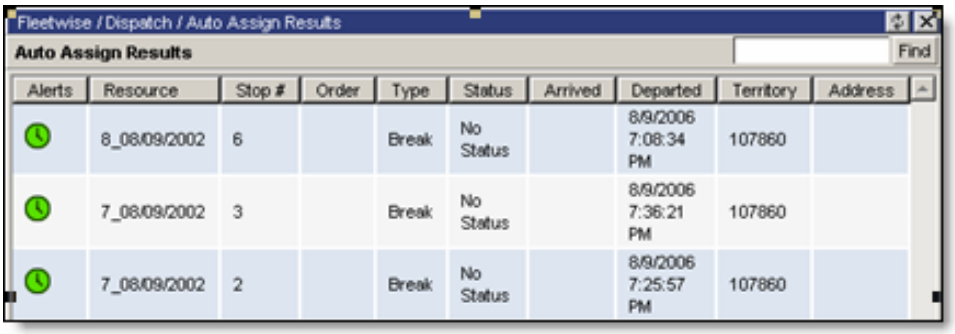
To auto-assign all Stops:

1 Right-click anywhere on the **Unassigned Stops** page and from the right-click menu, select **Auto Assign All**.

A confirmation dialog will appear asking for confirmation of the **Auto Assign All** process.

2 Select **OK** to continue with the **Auto Assign All** process, or **Cancel** to end the process with no changes.

If **OK** is selected, Descartes Route Planner will attempt to Auto Assign all Routes as configured. When finished, a results dialog will appear showing which Route(s) and Stop number(s) each Stop was assigned to. See *Viewing Auto Assign Results* for details on viewing the results.



Auto-Assigning Selected Stops

To auto-assign selected Stops:

1 Select the Stops to auto-assign.

2 Right-click on a desired Stop and from the right-click menu, select **Auto Assign**.

Descartes Route Planner attempts to assign the selected Stops to an existing Route.

When Descartes Route Planner is finished, the **Auto Assign Results** dialog appears, showing which Route and Stop number each Stop was assigned to. See *Viewing Auto Assign Results* for details on viewing the results.

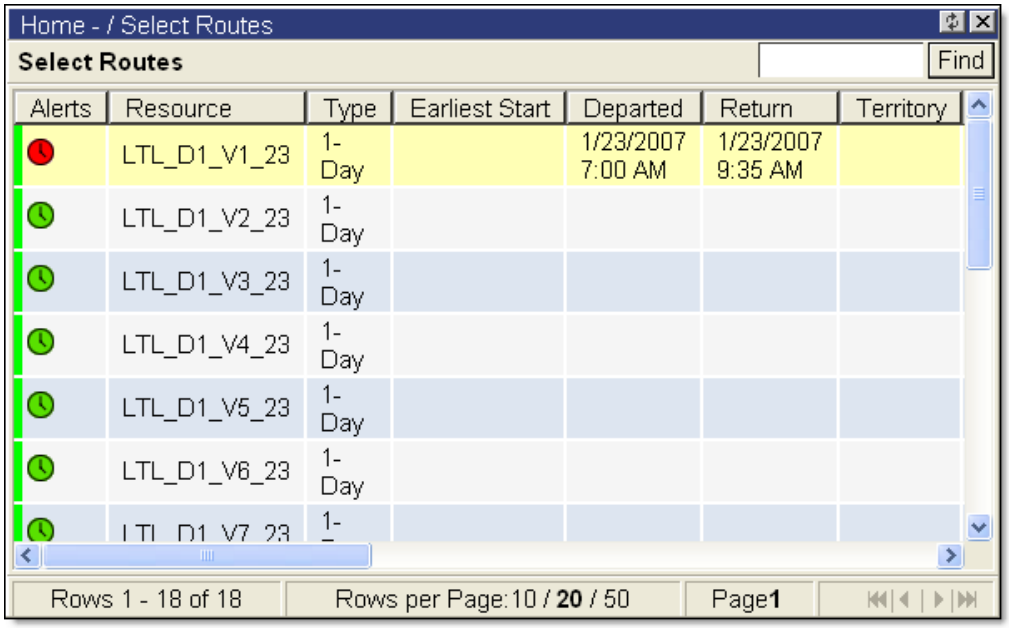
Auto-Assigning Stops to Selected Routes

To auto-assign Stops to selected Routes:

1 Select the Stops to auto-assign.

2 Right-click on a desired Stop and from the drop-down menu, select **Auto Assign to Selected**.

The **Select Routes** dialog appears:



3 Select the Route(s) to auto-assign the Stops to.

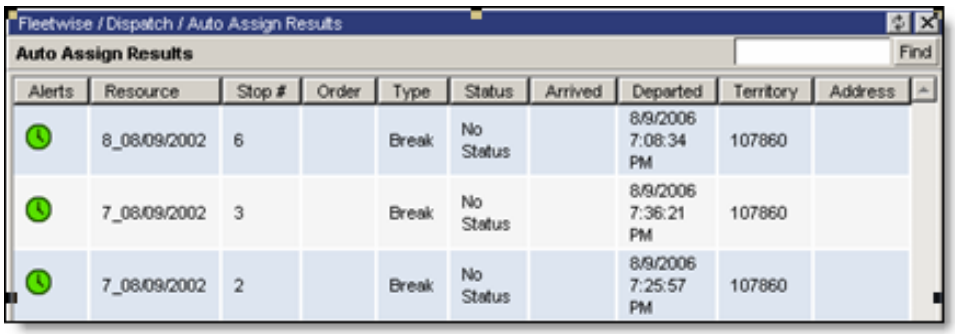
4 Right-click on a desired Route and from the right-click menu, select **Select**.

Descartes Route Planner attempts to assign the selected Stops to the selected Routes.

When Descartes Route Planner is finished, the **Auto Assign Results** dialog appears, showing which Route and Stop number each Stop was assigned to. See *Viewing Auto Assign Results* for details on viewing the results.

Viewing Auto Assign Results

The **Auto Assign Results** dialog (displayed below) displays all of the Routes that Stops have been assigned to. From this dialog, users can view the detailed results of an auto-assign.



To view results:

1. Display the details of a Stop by right-clicking on the desired Stop and from the right-click menu, selecting: **View Stop Details**.
   - Descartes Route Planner displays the Stops for each Route in the **Route Details** page. If the **Map** page is open, Descartes Route Planner also displays the Route on the map.
2. Repeat step one to view the details of other Stops listed in the **Auto Assign Results** dialog.
3. When finished viewing the result details, close the **Auto Assign Results** dialog.

Manually Assigning Unassigned Stops

Users can assign Unassigned Stops to a Route using any of the following methods. This section explains how to assign Stops using each view.

After assigning a stop, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the assignment. See the *Before and After Results* section for more information.

Using the Unassigned Stops Page

To add an Unassigned Stop to a Route:

1. Use the **Routes** quadrant to view the details of the Route to assign the Unassigned Stop to the route.
2. Switch to the **Unassigned Stops** quadrant.
3. Drag the Unassigned Stop to the **Routes** quadrant and drop it onto the desired Route.

   The Stop will then be added to the Route.

   ⓘ **Tip—** Unassigned Stops can also be moved using the drag and drop function from a Route listed in the Route Summary window.

Using the Map View

The map view provides tools for graphically managing Stops.

To view Unassigned Stops on the map:

1. Open the Route in the **Route Details** quadrant using one of the following methods:
   - double-clicking on the Route in the **Routes** quadrant
   - select the desired Route and from the right-click menu, select **Show on Map and Route Details**

- drag and drop the Route from the **Routes** quadrant to the **Route Detail** quadrant

2 Ensure that the **Map** quadrant is visible.

3 Right-click anywhere on the map and from the right-click menu, select **Show Unassigned Stops**.

Each Unassigned Stop will appear on the map as a purple box with a "U" in it as shown in the *Anchor Command* section.

To add an Unassigned Stop to a Route:

1 Right-click on the Stop before the point in the Route where the Unassigned Stop should be added.

2 Select **Anchor** from the right-click menu.

3 Click the Unassigned Stop.

A line connects the first Stop selected with the Unassigned Stop.

For screenshots of this process, see the *Resequencing a Route* section.

4 Right-click on the Unassigned Stop and select **Execute** from the right-click menu.

Descartes Route Planner adds the Stop and renumbers the rest of the Stops on the Route.

Manually Unassigning Assigned Stops

Users can unassign assigned stops by selecting one or more route stops in the **Route Detail** quadrant and using the drag and drop functionality to move the stops to the **Unassigned Stops** quadrant.

After unassigning a stop, users can press **CTRL-G** to display the **Optimization Before and After Results** to evaluate the route, time and distance totals before and after the removal. See the *Before and After Results* section for more information.

To manually unassign assigned stops:

1 Open the Route in the **Route Details** quadrant using one of the following methods:

- double-clicking on the Route in the **Routes** quadrant
- select the desired Route and from the right-click menu, select **Show on Map and Route Details**

- drag and drop the Route from the **Routes** quadrant to the **Route Detail** quadrant

2 Select one or more stops listed under the route in the **Route Detail** quadrant, drag and drop the stop(s) to the Unassigned Stops quadrant.

3 The stops are unassigned and added to the **Unassigned Stops** quadrant. The route is resequenced automatically.

Creating Itinerary Pool Points

There may be times when users need to create orders that may represent an itinerary of an Original order. This itinerary can be broken into legs. Each leg of this itinerary can be routed by different vehicles. These leg orders mimic cross docking operations.

An itinerary can be created from a double-ended order in the Order list or from orders in the **Unassigned Stops** quadrant.

➲ **Note—** Only double-ended orders will have the **Itinerary** option available to them. Orders can also *ONLY* be created for double-ended orders that are not already leg orders.

Two icons are used on the **Unassigned Stops** quadrant to represent the itinerary and the legs of the itinerary. They are:

-  - itinerary
-  - Itinerary leg

Once an itinerary is created, users can perform the following tasks:

- Create/edit a leg order – from the **Itinerary** page, a leg order can be added or edited, see **Creating/Editing a Leg Order** for more information.
- Remove a leg order or an Itinerary - from the **Itinerary** page, a leg order can be added or edited, see **Removing a Leg Order or Itinerary** for more information.
- Drag/drop leg orders – Once a leg order has been created, it can be dragged and dropped from the **Unassigned Stops** quadrant onto a route in the **Routes**, **Map**, or **Route Details1** and **2** quadrants.

  ➲ **Note—** Only itinerary legs can be dragged and dropped to a route.
- Unassign a leg order – a leg on a route can be unassigned from the route, see **Unassigning a Leg Order** for more information.
- Run auto-assign, auto-assign to selected or optimize selected on a leg order –
  - Auto Assign – Select a leg or set of legs, right-click and select **Auto Assign**. The results of the auto-assign will be displayed.

- Auto Assign to selected - Select a leg or set of legs, right-click and select **Auto Assign to Selected**. The results of the auto-assign to selected will be displayed.
- Optimize Selected on Orders or Routes - Select a leg or set of legs, right-click and select **Optimize Selected Stops**. The results of the optimization will be displayed.

➲ **Note—** Only itinerary legs can be auto-assigned or optimized.

- Run a suggest on a leg order - Select an itinerary, leg or set of legs, right-click and select **Suggest**. The results of the suggest will be displayed.
- Reassign schedule of a cross docked order – both a route with a cross docked order/leg and an unassigned leg order can be reassigned to a different schedule, see **Reassigning a Schedule of a Cross Docked Order** for more information.
- Show on map and route detail a cross-dock order – cross docked orders can be displayed on the **Map** quadrant and **Route Detail1** and **2** quadrants, see **Showing Cross Dock Orders on the Map and Route Detail Quadrants** for more information.
- Show unassigned stops on map with leg orders – unassigned stops with leg orders can be displayed on the map, see **Showing Unassigned Stops with Leg Orders** on the Map for more information.

Creating/Editing a Leg Order

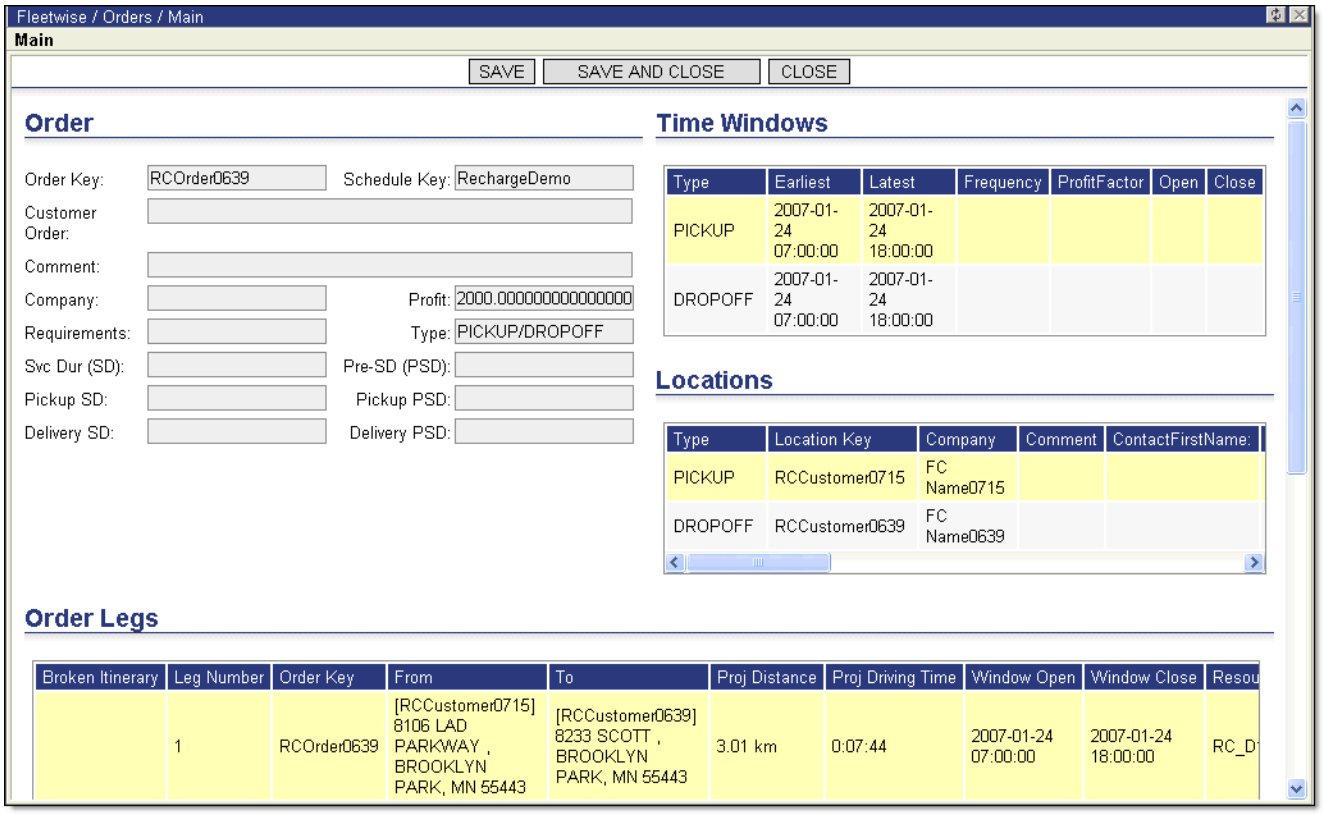
To create a leg order:

1 From **Data > Orders**, right-click on the desired order and select **Itinerary**.

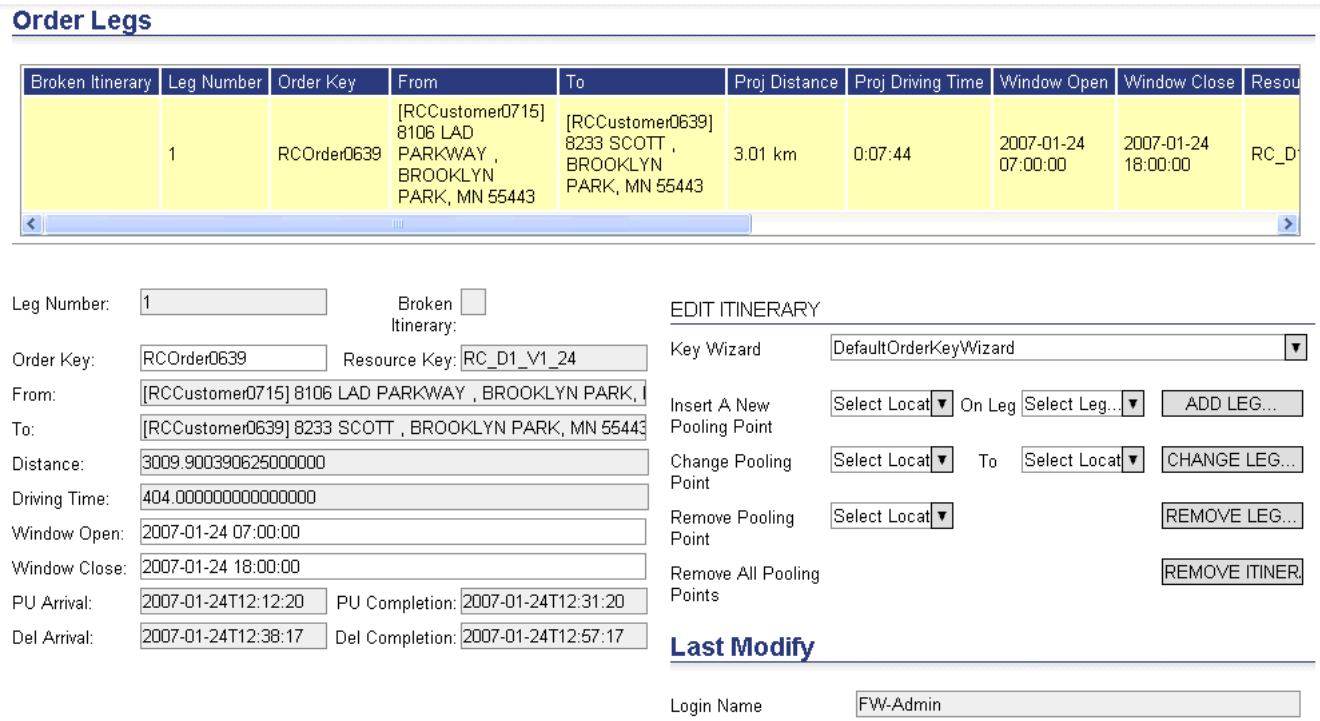
Or,

From the **Unassigned Stops** quadrant, right-click on the desired order and select **Itinerary**.

The **Itinerary** page appears.



2 Under **Edit Itinerary** (see screenshot below), select a Key Wizard from the drop-down list if the current key wizard is not correct.



3 From the **Insert A New Pooling Point** drop-down list, select a location for this pooling point.

4 From the **On Leg** drop-down list, select the leg for the new pooling point.

5 To add another leg, click **Add Leg** and then repeat steps 2-4.

6 Click **Save** to save the new leg and stay on this page, or click **Save and Close** to save the new leg and return to the **Order List** page.

➲ **Note—** When creating an itinerary, the original order of the unassigned stops is hidden.

To edit a leg order:

1 Under **Edit Itinerary**, select the pooling point location from the **Change Pooling Point** drop-down list.

2 In the **To** drop-down list, select the new pooling point location.

3 Click **Change Leg**.

4 Repeat steps 1-3 for any additional pooling point legs that need changed.

5 Click **Save** or **Save and Close**.

Removing a Leg Order or Itinerary

To remove a leg order:

1 Under **Edit Itinerary** on the **Itinerary** page, select the desired pool point location in the **Remove Pooling Point** drop-down list.

2 Click **Remove Leg**.

3 Click **Save** or **Save and Close**.

To remove an itinerary:

1 Click **Remove Itinerary**.

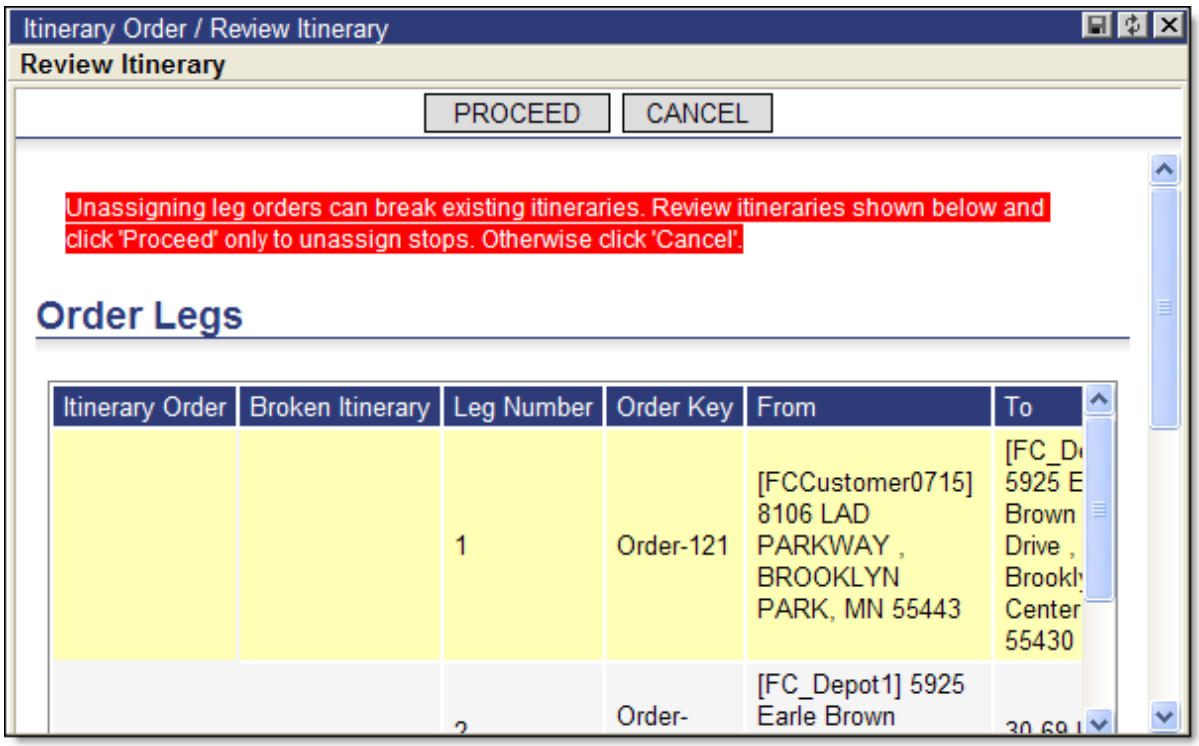
2 Click **Save** or **Save and Close**.

Unassigning a Leg Order

To unassign a leg order from a route:

1 In the **Map** quadrant or **Route Detail1 (2)** quadrant, right-click on the leg and select **Unassign Stop(s)**.

The **Review Itinerary** page appears showing information about its related leg orders.



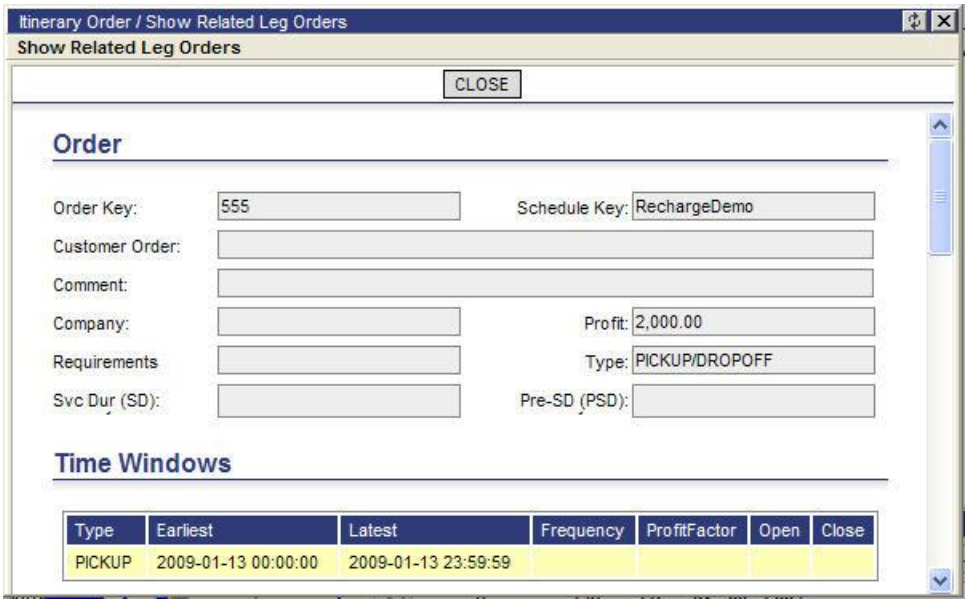
2 Review information and if acceptable, click **Proceed**.

➲ **Note—** Unassigning a leg could possibly break the itinerary, make sure that you either unassign all legs associated with the itinerary or unassign those that cause the itinerary to be broken.

Viewing Related Legs of an Itinerary

To view the related legs of an itinerary:

1 On the **Unassigned Stops** quadrant, right-click on a double-ended job and select **Show Related Leg Order** from the right-click menu. The **Show Related Leg Orders** dialog box appears.



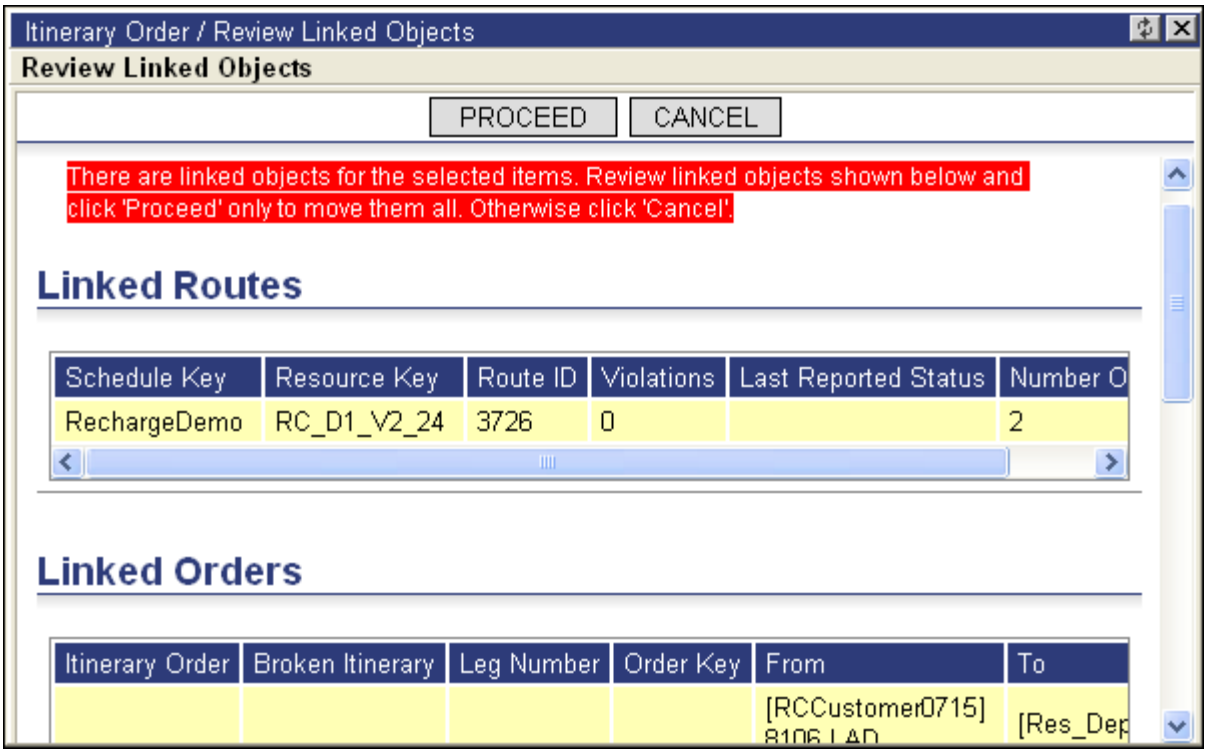
2 Click **Close** to return to the previous page.

Reassigning the Schedule of a Cross Docked Order

To reassign the schedule of a route with a leg order:

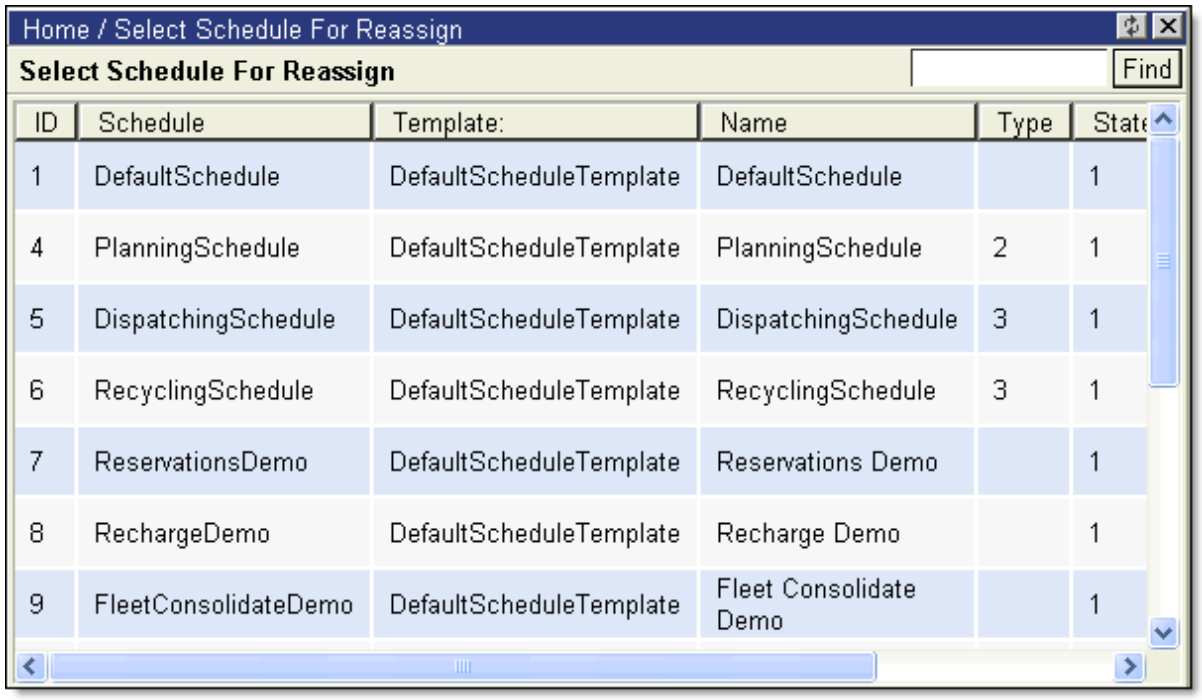
1 In the **Map** quadrant, right-click on the leg and select **Reassign Schedule**.

The **Review Linked Objects** dialog appears.



2 Review the linked objects and if okay, select **Proceed** to move them all to another schedule. If not okay to move, select **Cancel**.

When **Proceed** is selected, the **Select Schedule For Reassign** page appears.



3 Right-click on the desired schedule and select **Select**.

Or,

Double-click the desired schedule

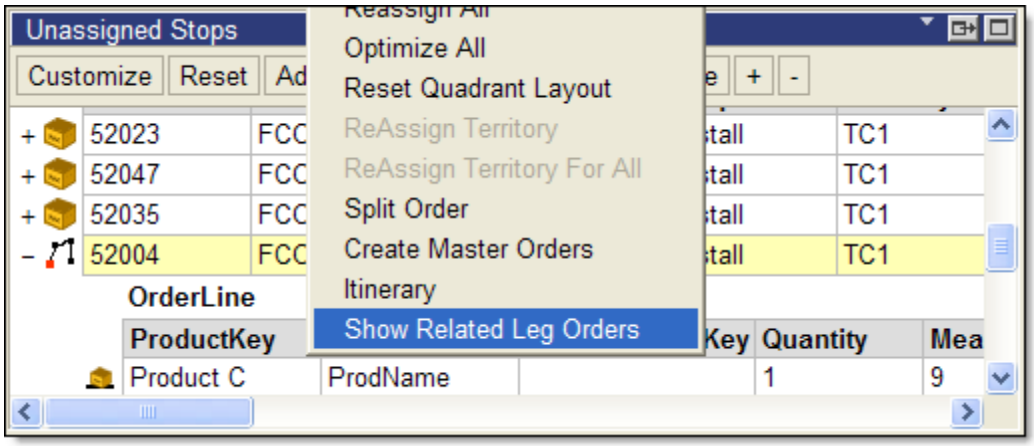
The route is reassigned.

Showing a Related Leg Order

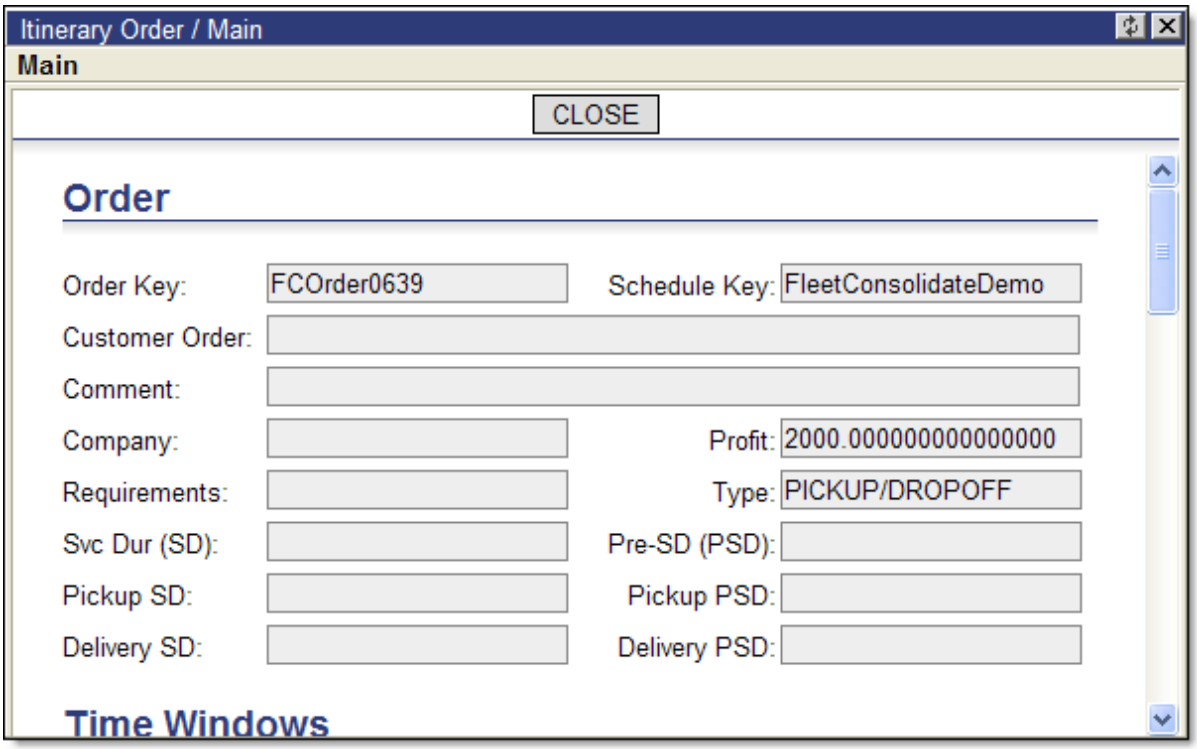
Users can view their related legs and view all information related to the itinerary order.

To show a related leg order:

- On the **Unassigned Stops** quadrant, right-click on an order leg (stop) and select **Show Related Leg Order**.



The **Itinerary Orders** page appears.

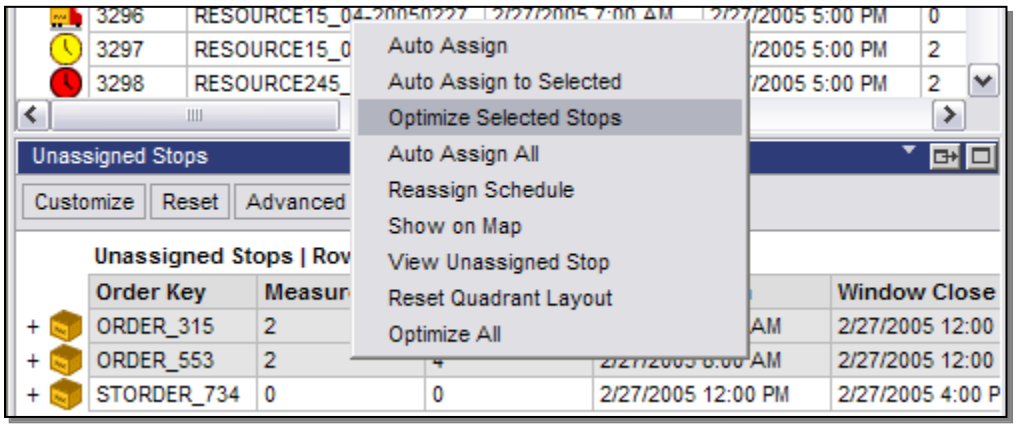


Optimizing Unassigned Stops

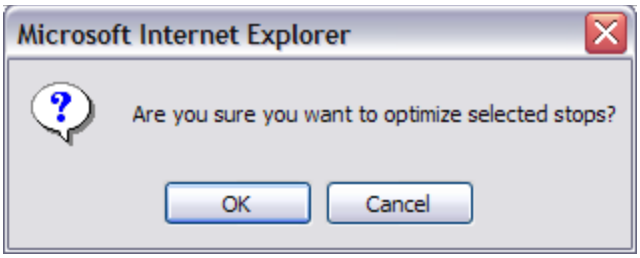
Users can optimize Unassigned Stops. Only Stops associated with the selected Route are considered. To Optimize the Stops:

1 From the **Unassigned Stops** page, select the desired Stops.

2 Right-click on the one of the Stops and from the drop-down menu, select **Optimize Selected Stops**.



A confirmation dialog appears requesting confirmation of the optimization request:



3 Select **OK** to continue the Optimization or **Cancel** to exit the optimization

Suggest Assignment for Unassigned Stops

The Suggest function allows for a mix of auto-assignment and manual assignment of Unassigned Stops. When the Suggest function is executed, the application provides the user with a list of suggested assignments from which the user can select the one that is most desirable.

When users select one or more routes from the **Routes** or **Route Detail** quadrants to display on the map, the system will retain the display for **Suggest** purposes so that, when a user selects **Suggest** for an unassigned stop, and then selects **Display on Map**, the system displays all previously selected routes on the map along with the suggested route containing the unassigned stop.

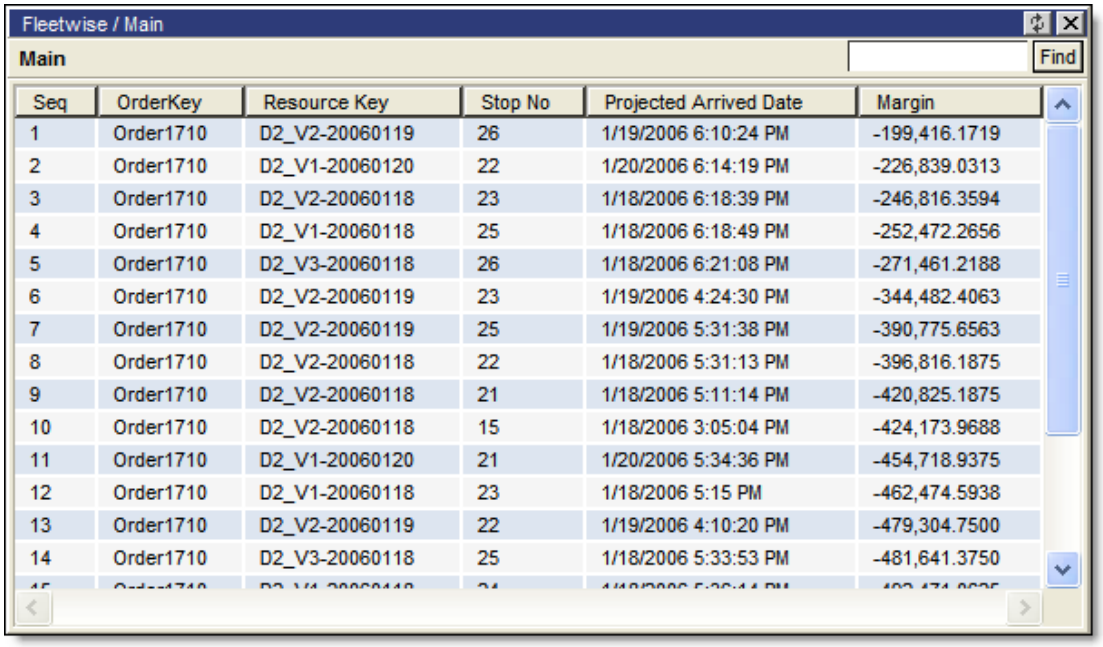
When user clicks one of suggestions and from right click menu selects **Show on Map** all previously selected (remembered) Routes are displayed as well as the Route containing the Unassigned Stop. If no routes are displayed on the map, only one route will appear on the map when the **Suggest** is performed.

To use the Suggest function:

1 Select one or more Stops from the **Unassigned Stops** quadrant.

2 Right-click one of the desired Stops and from the right-click menu, select **Suggest**.

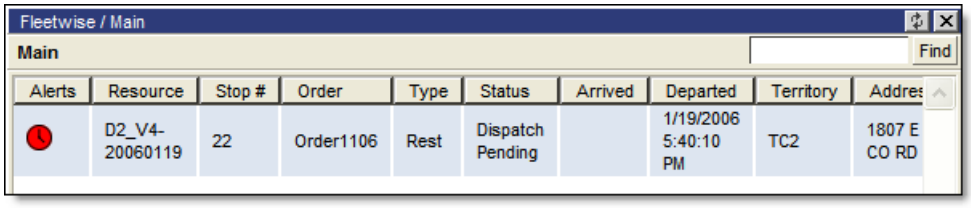
The length of time required to compile the suggestion list depends largely on the number of Stops selected for suggesting. When complete, a list similar to the one below appears:



Seq	OrderKey	Resource Key	Stop No	Projected Arrived Date	Margin
1	Order1710	D2_V2-20060119	26	1/19/2006 6:10:24 PM	-199,416.1719
2	Order1710	D2_V1-20060120	22	1/20/2006 6:14:19 PM	-226,839.0313
3	Order1710	D2_V2-20060118	23	1/18/2006 6:18:39 PM	-246,816.3594
4	Order1710	D2_V1-20060118	25	1/18/2006 6:18:49 PM	-252,472.2656
5	Order1710	D2_V3-20060118	26	1/18/2006 6:21:08 PM	-271,461.2188
6	Order1710	D2_V2-20060119	23	1/19/2006 4:24:30 PM	-344,482.4063
7	Order1710	D2_V2-20060119	25	1/19/2006 5:31:38 PM	-390,775.6563
8	Order1710	D2_V2-20060118	22	1/18/2006 5:31:13 PM	-396,816.1875
9	Order1710	D2_V2-20060118	21	1/18/2006 5:11:14 PM	-420,825.1875
10	Order1710	D2_V2-20060118	15	1/18/2006 3:05:04 PM	-424,173.9688
11	Order1710	D2_V1-20060120	21	1/20/2006 5:34:36 PM	-454,718.9375
12	Order1710	D2_V1-20060118	23	1/18/2006 5:15 PM	-462,474.5938
13	Order1710	D2_V2-20060119	22	1/19/2006 4:10:20 PM	-479,304.7500
14	Order1710	D2_V3-20060118	25	1/18/2006 5:33:53 PM	-481,641.3750

3 Select the desired suggested assignment by double-clicking.

A new page appears with the details concerning the assigned Stop details:

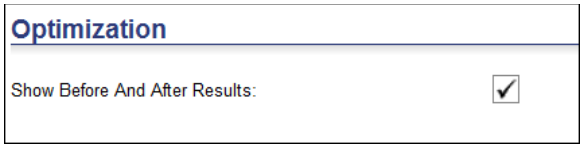


Alerts	Resource	Stop #	Order	Type	Status	Arrived	Departed	Territory	Addres
	D2_V4-20060119	22	Order1106	Rest	Dispatch Pending		1/19/2006 5:40:10 PM	TC2	1807 E CO RD

4 Click **X** to exit the window and return to the **Home** page.

Before and After Results

Users can view and compare optimization results before and after certain processes are completed when the **Show Before And After Results** setting is enabled on the **Data Filters > Options** page.

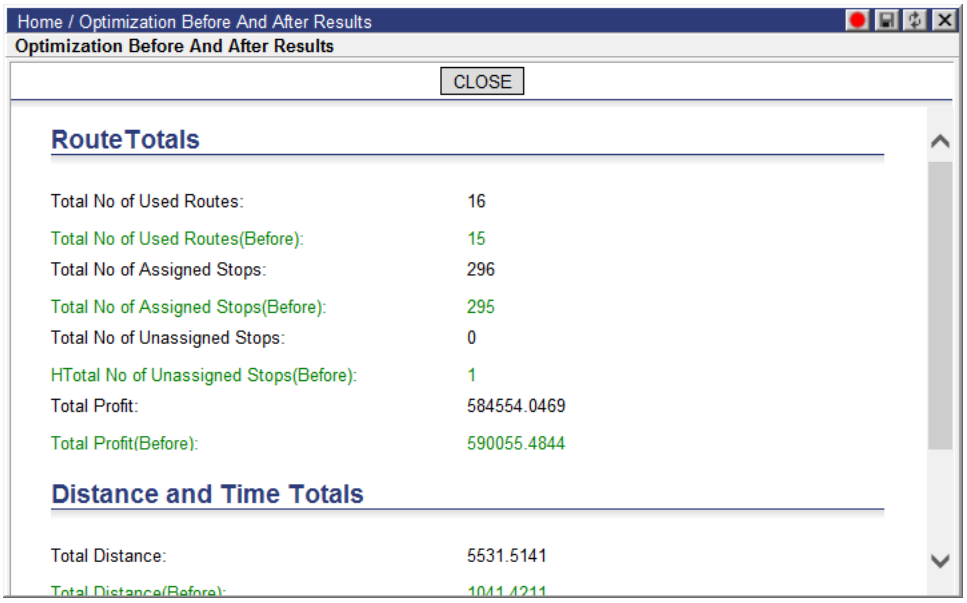


After each of the following actions, users can press **CTRL-G** on the Dashboard to display route, time and distance metrics before the operation and after the operation in the **Optimization Before and After Results** window.

- Optimize All, Optimize Selected, Optimize Selected Stops
- Drag and Drop (manual assignment)
- Unassign All Stops, Unassign All Stops on All Routes
- AutoAssign, AutoAssign All, AutoAssign to Selected
- Resequence
- Reverse
- Suggest, Suggest Orders
- Remove Placeholder Orders

The metrics displayed are:

- Total No of Used Routes
- Total No of Assigned Stops
- Total No of Unassigned Stops
- Total Profit
- Total Distance
- Total Time Driven
- Total Elapsed Time



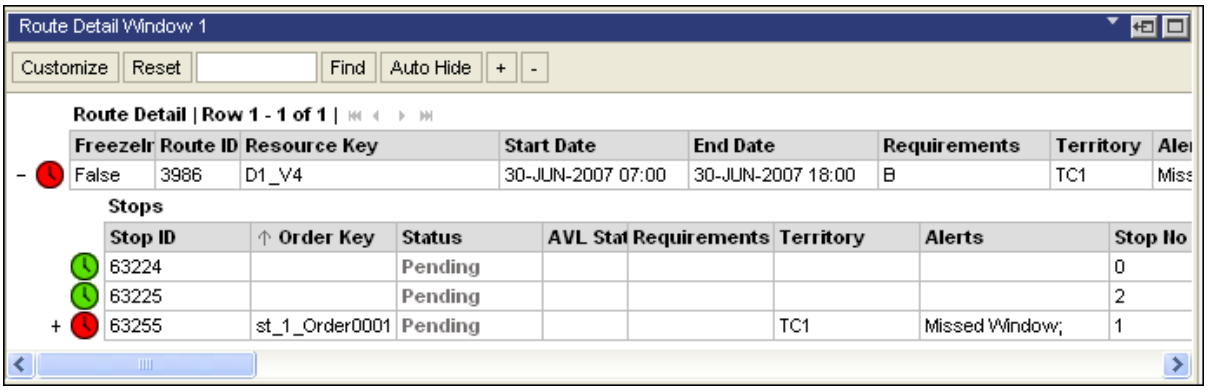
If a filter is applied, the **Optimization Before And After Results** window will display the Route, Distance and Time Totals values accompanied by the number of *displayed* routes compared to the number of *total* routes depending on the filter.

Viewing Existing Location's Geocode

Geocoding Locations are important because Descartes Route Planner makes Route calculations based on the latitude and longitude rather than the actual physical address.

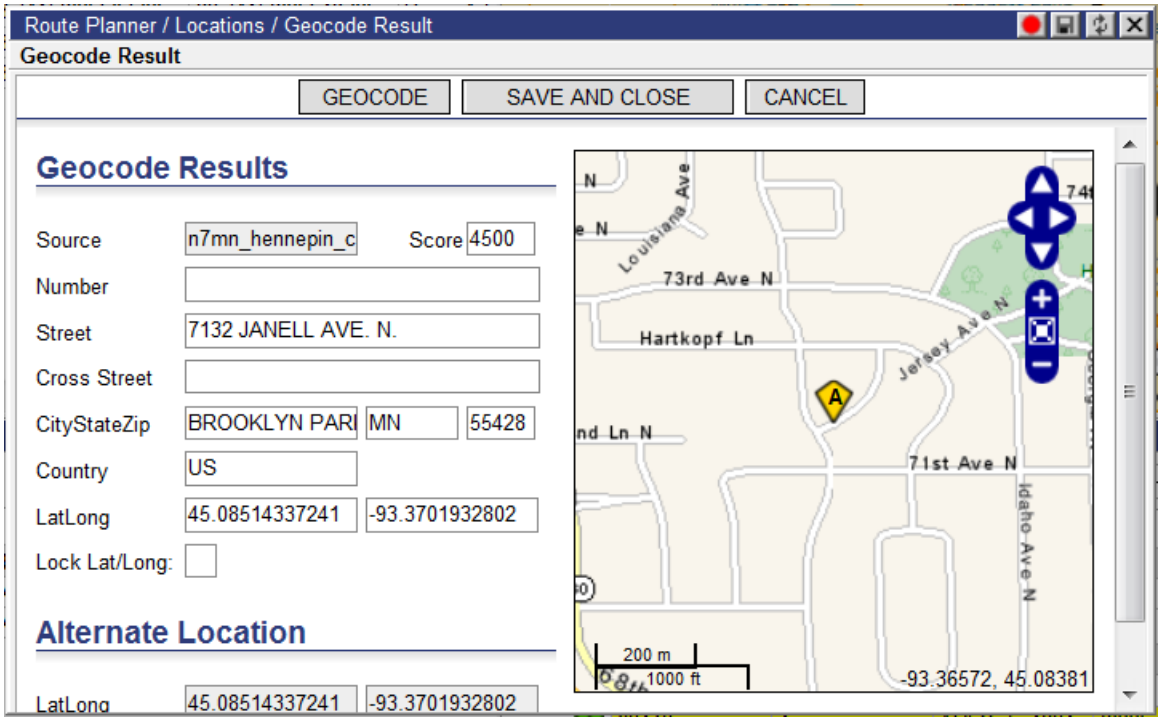
To view an existing Location's Geocode:

1 From the **Route Detail** page, click the + to expand the route details.



2 Right-click on a Stop and and select **View Geocode**.

The **Geocode Results** page appears.



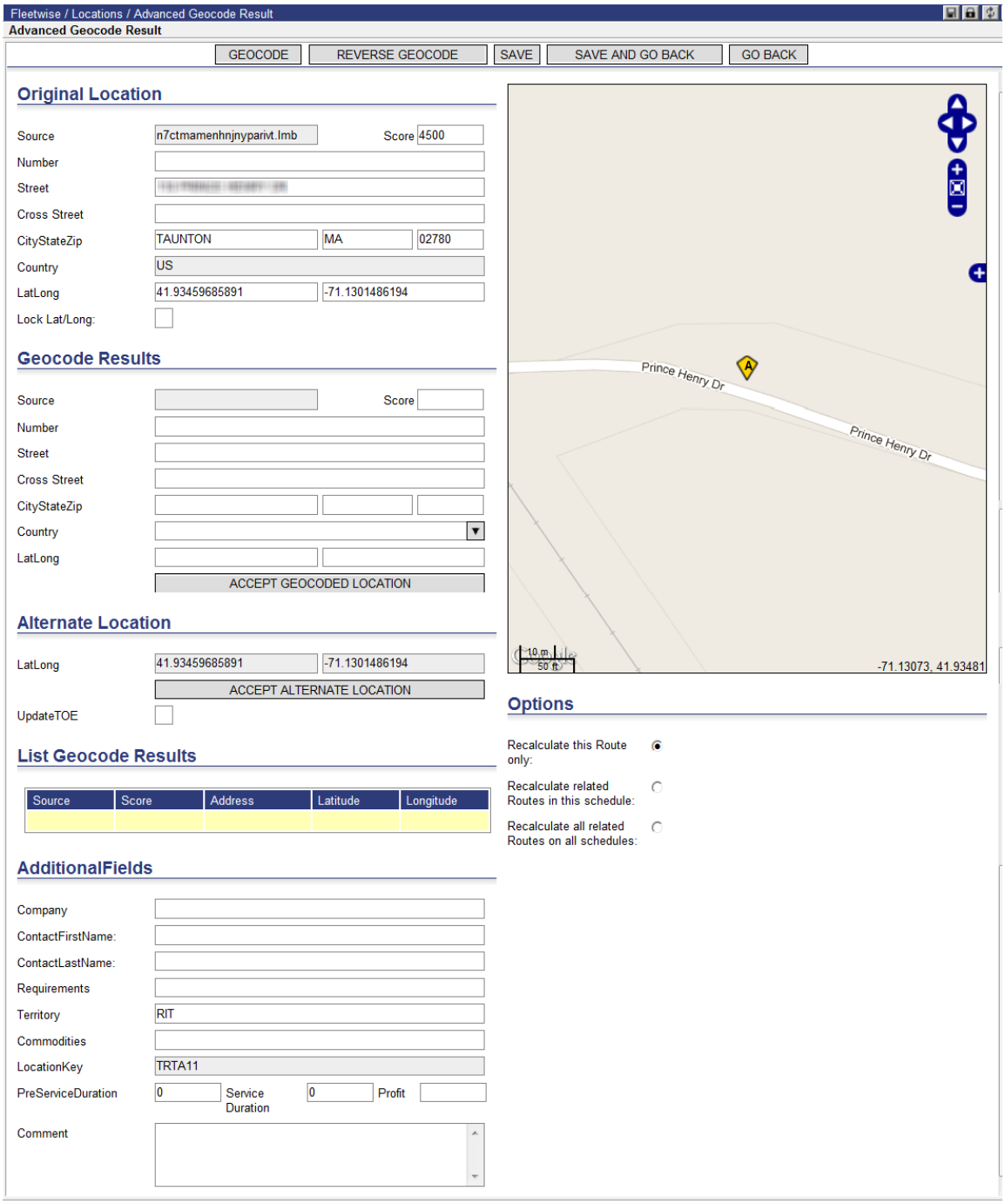
Map data © 1987-2017 HERE

Users can also opt to update the Transport Order Entry System at the same time by checking the **Update TOE** checkbox.

Or,

Right-click on a stop and select **View Advanced Geocode**.

The **Advanced Geocode Result** page appears.



Map data ©2017 Google

Geocoding New or Existing Locations Using Address

Geocoding allows you to enter a street address and then find the latitude and longitude and geocode based on the new location.

➲ **Note—** For an existing location, if the **Lock Lat/Long** check box is checked, then the location's lat/long fields will be locked. To geocode the location, uncheck the **Lock Lat/Long** check box.

To geocode a new or existing location:

1. From the **Route Detail** quadrant, right-click on a stop and select **View Advanced Geocode**.
2. Under **Geocode Results**, enter the street, city, state, and/or zip.
3. Click **Accept Geocoded Location**.
4. Click **Geocode**, and then click **Save** or **Save and Go Back**.

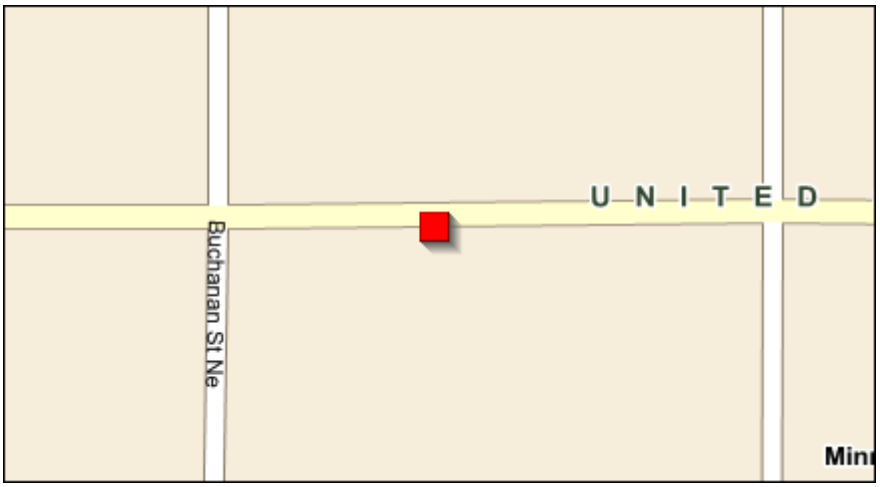
Reverse Geocoding Locations

Reverse geocoding allows you to select a new location on the map and then use that latitude and longitude to access the location's street address and geocode it.

To reverse geocode a location:

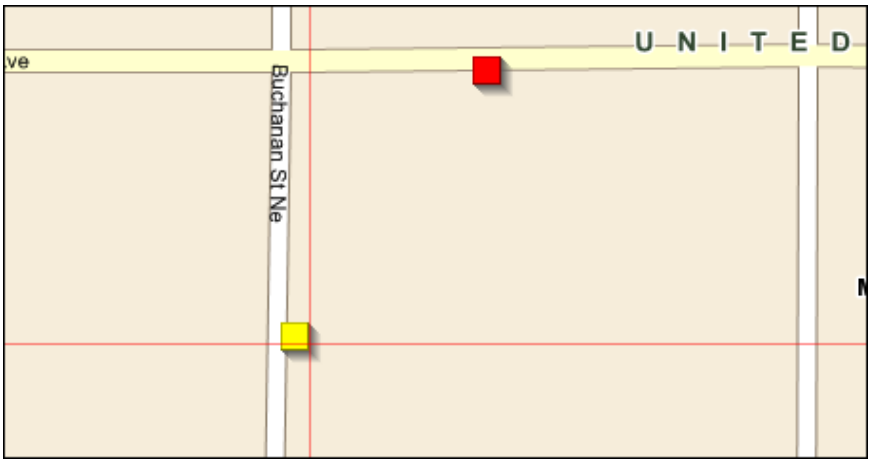
1. From the **Route Detail** quadrant, right-click on a stop and select **View Advanced Geocode**.

   On the map, the current location displays as a red square.

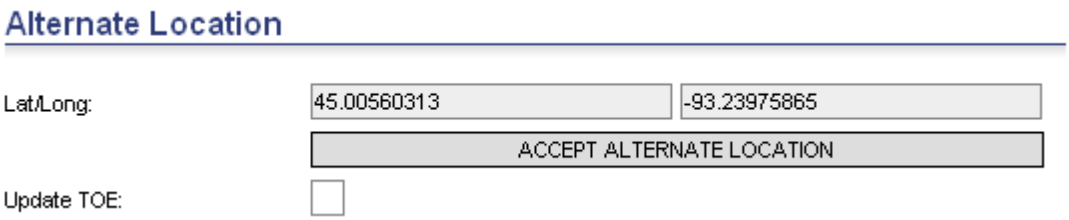


2. On the map, right-click on the new location.

   A yellow square notates the new location.



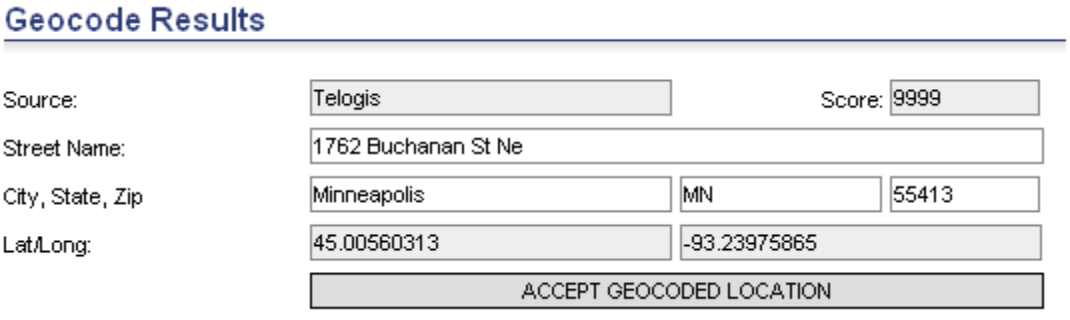
The new latitude and longitude are displayed under **Alternate Location**.



3 Click **Accept Alternate Location**.

4 Click **Reverse Geocode**.

The new location's street information is displayed under **Geocode Results**.



5 Click **Accept Geocoded Location**.

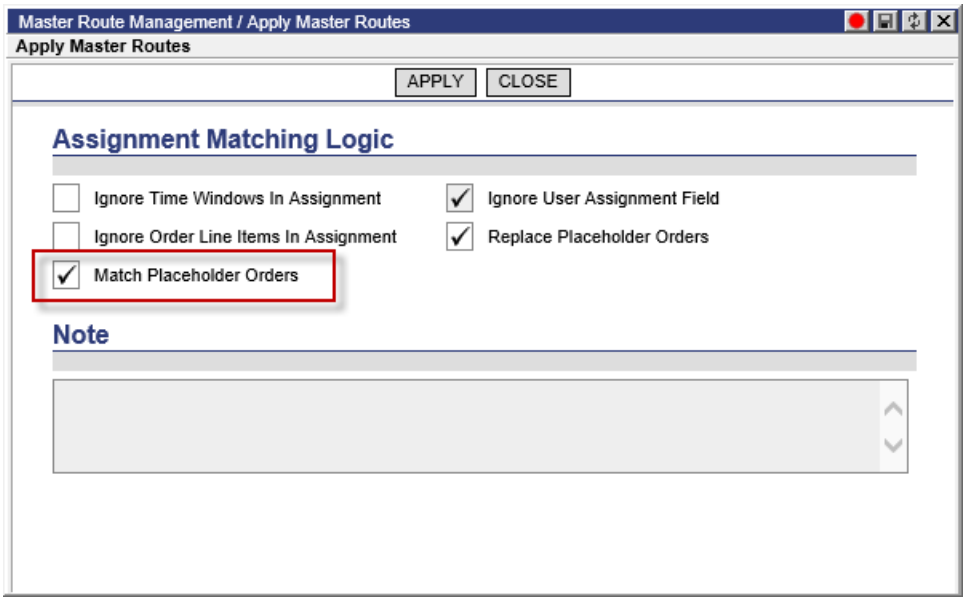
The new location is now the original location.

6 Click **Save** or **Save and Go Back**.

Apply Master Routes

When there is a set of routes created from master routes, users can select the **Apply Master Routes** right-click menu option for unassigned orders to assign some or all unassigned orders to these routes. When this option is selected, the system looks for routes generated from master routes, reads the identified master routes and continues to look for unassigned orders that match master orders. Matching orders are then assigned at proper positions on a route so that the resulting stop sequence mirrors that of the master route.

When selected, the **Apply Master Routes** window appears. From this window, users can select the **Match Placeholder Orders** option to have the system assign unassigned orders to matching placeholder orders regardless of which master routes they are from originally. If the route contains placeholder orders (an order created automatically when the route was created from its master route), the system deletes these orders and, at the same time, assigns real orders. In this way, placeholder orders are gradually replaced by real orders.



When the **Match Placeholder Orders** setting is enabled, the **Ignore User Assignment** field is designed to be enabled and read-only; the user matching field cannot be used for the new assignment logic.

Working with Routes in Execution

Publishing Routes

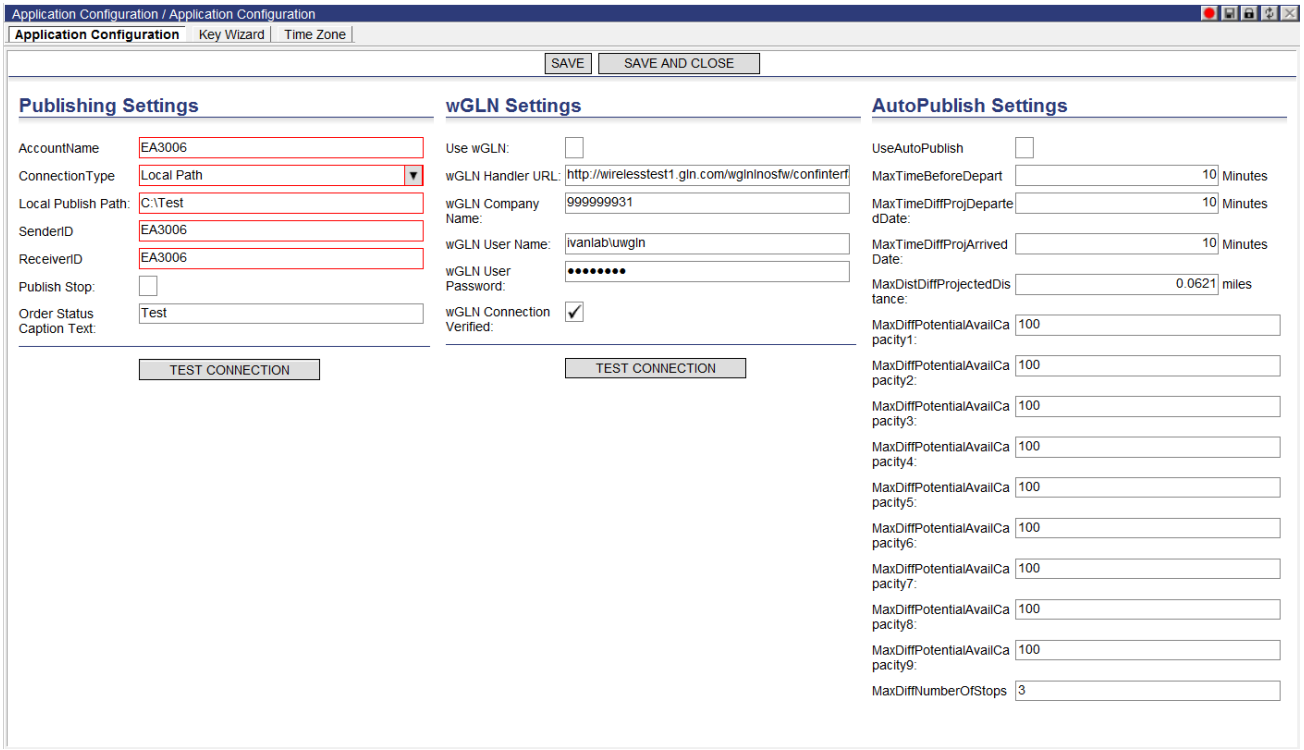
Routes can be published to a file. Publishing Routes to a file lets users share Routes with wireless applications and third parties interested in planning data. Publishing also lets users publish planned times to the Transport Order Entry system.

Before publishing a Route, the application must first be configured to specify the Location of the Route and the method used to execute the publication of a document.

To configure this Location:

1 From the main menu, select **App Setup > Application Configuration**.

The following page appears:



2 Specify the Connection type and Account name.

3 Click the **Save** button to keep the configuration and exit the page.

4 To save the configuration and test the connection, click the **Save and Test Connection button**. A pop-up screen appears with the results of the test.

Adding New Orders to Routes

New orders may come into Descartes Route Planner and need to be added to existing Routes. Each new order is represented by Stops, and these new Stops appear in the **Unassigned Stops** quadrant.

Once the Stops for the order appear on the **Unassigned Stops** list, they can be managed like any other Unassigned Stop.

The process of assigning Unassigned Stops to Routes attempts to find the best Route for each Unassigned Stop being assigned. Users can use one of these options to handle Unassigned Stops:

- auto-assign Unassigned Stops
- suggest assignments for Unassigned Stops
- to another schedule reassign Stops

Note— When users assign an order to an empty route, the system will update the route's Earliest Start Time to the user's current time when the AllowResDateChangeOnAssign CtySysValue enabled. Routes are only updated if the route's date is today and current time is within route's time window. The current time is determined by client's system time. For example, if a route is created at 06:00 and an order is not assigned to the route until 07:30, the route's Earliest Start Time value will be updated to 07:30, the user's system time.

See *Creating a New Order* for more details.

Using the Suggest Order Functionality

Users can also instruct the system to suggest orders for a particular route on the Dashboard using the **Suggest Order** right-click option. This alternative method returns a list of compatible orders, allowing users to display the orders on the map and select an assignment from the returned list.

For more information on this feature, see the *Suggesting Orders* section.

Managing Alerts

Descartes Route Planner users have the ability to create custom alert codes for reporting alerts. In addition to the ability to create alert codes, users will be able to do the following:

- Create, edit and delete alerts.
- View alerts from the Alerts Management page.
- Filter alerts based on the date or ScheduleKey.

The alerts will keep Route and Stop information as well as who reviewed or hid the alert.

Changing the Status of a Stop Manually

Users may encounter situations where the status of a Stop needs to be changed manually, instead of having the Stop status updated automatically by wireless communications from drivers.

➲ **Note—**The Schedule must be in an execute status.

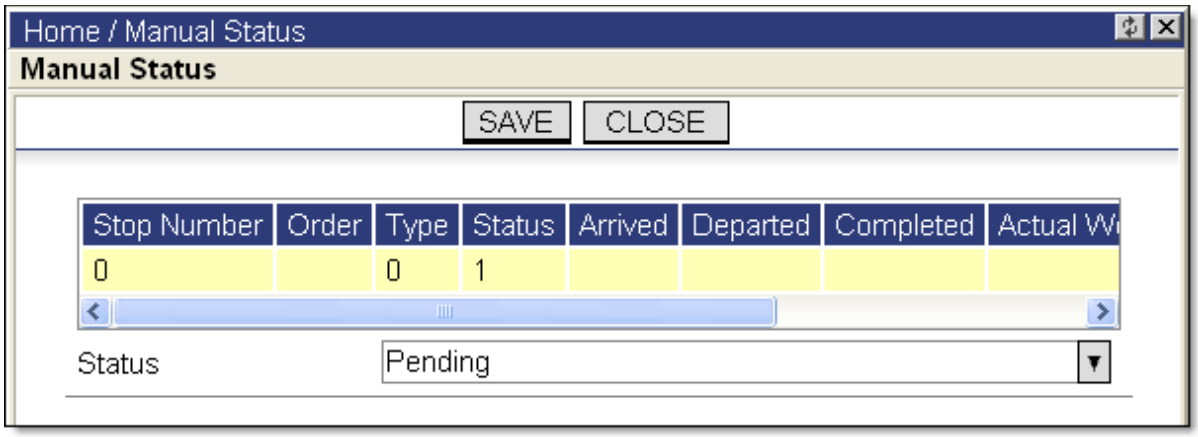
To change the status of a single Stop:

1 On the **Routes quadrant**, double-click on the route containing the stop to edit.

The list of Stops on the Route appears in the **Route Detail** Window.

2 Select one stop, right-click on the Stop and from the right-click menu, select **Manual Status**.

The **Manual Status** dialog appears:



3 Select the order to change.

4 Change the status details using the available fields.

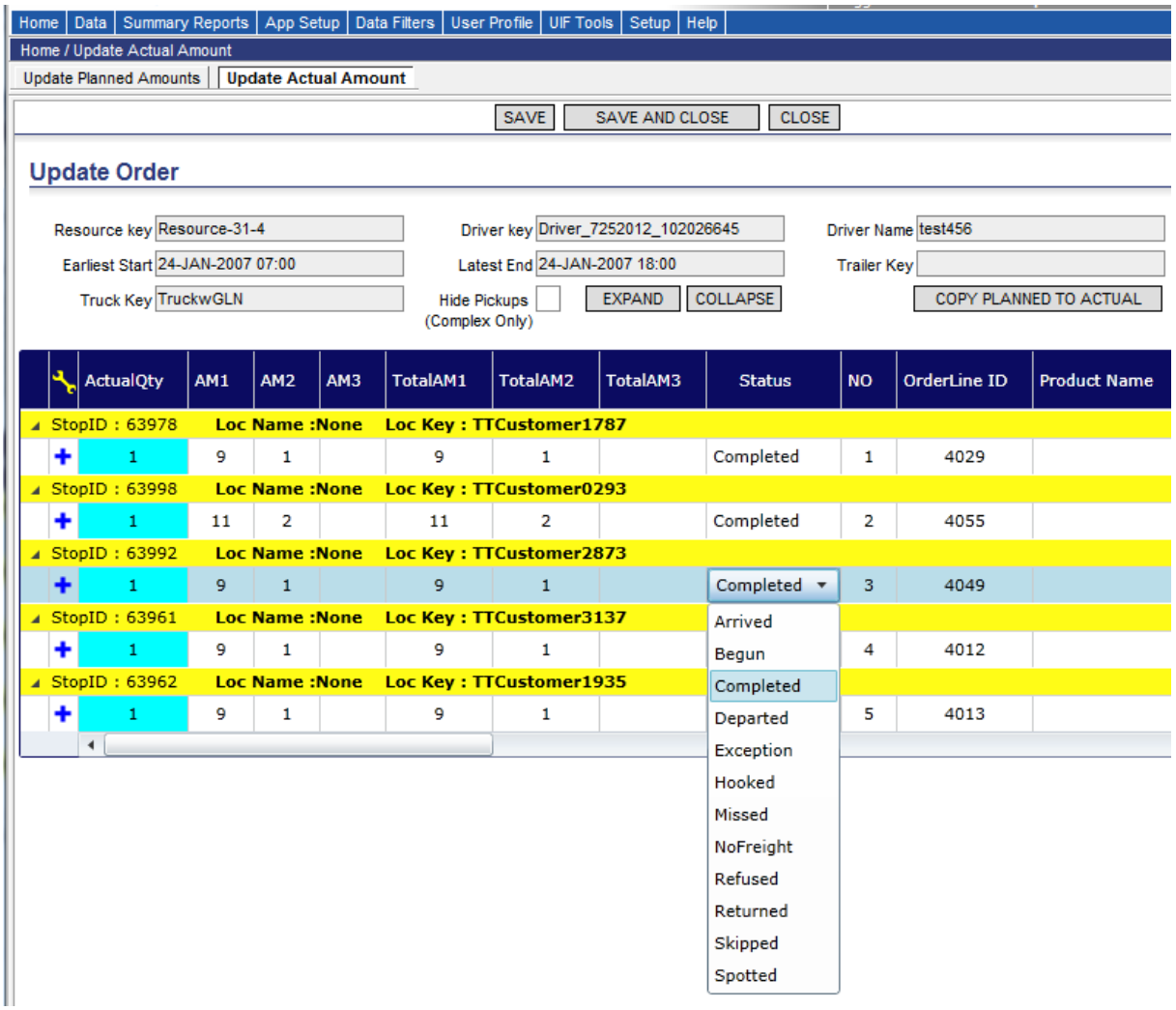
To change the status for multiple Stops:

1 In **Route Detail** quadrant, right-click on any stop and select Update Actual Amount from the right-click menu.

The **Update Order** page appears showing all stops for that route.

2 Click **Copy Planned to Actual**. This function enters values from the Plan to Actual Status column.

3 Click a value in the Status column to display a drop-down menu of status options. Select another status.



4 Repeat previous step for all Orders which need to have status changed.

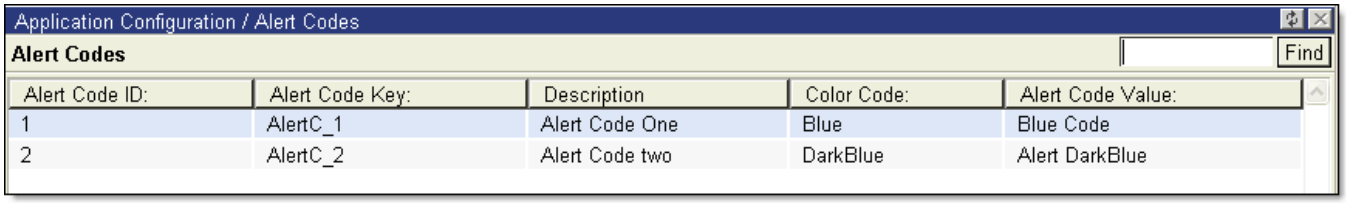
5 Click **Save and Close**.

Creating a Custom Alert Code

To create a custom alert code message:

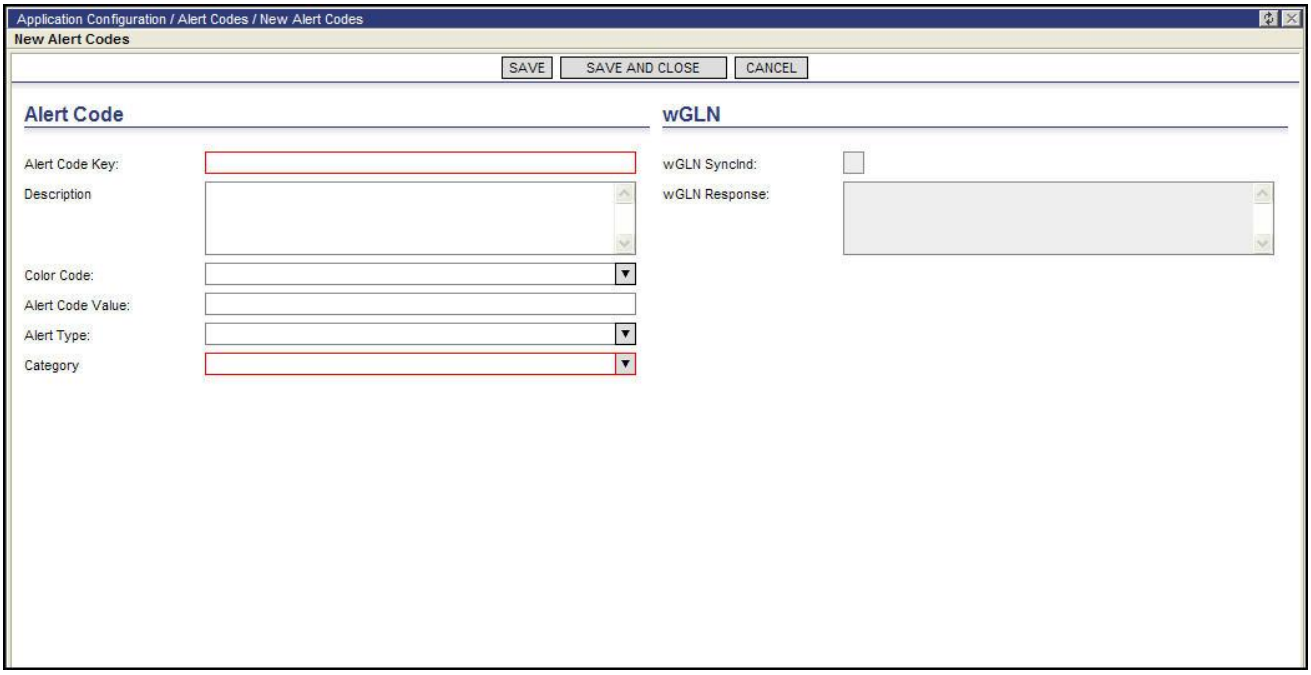
1 Select **App Setup > Alert Codes**.

The **Alert Codes** page appears.



2 Right-click in the **Alert Codes** page and select **New**.

The **New Alert Code** page appears.



3 Enter the alert code key and a description for this alert.

4 Select a color code for this alert and enter an alert code value.

5 Select an alert type and a category for this alert from the drop-down menu.

6 Click the wGLN Sunched checkbox if this alert code will be transmitted to wGLN. See *Syncing Asset Data with wGLN* in this guide and *Descartes wGLN Settings* in the *Descartes Route Planner 17.05 Administrators Guide* for more information on syncing wGLN with Descartes Route Planner and publishing items to wGLN from Descartes Route Planner.

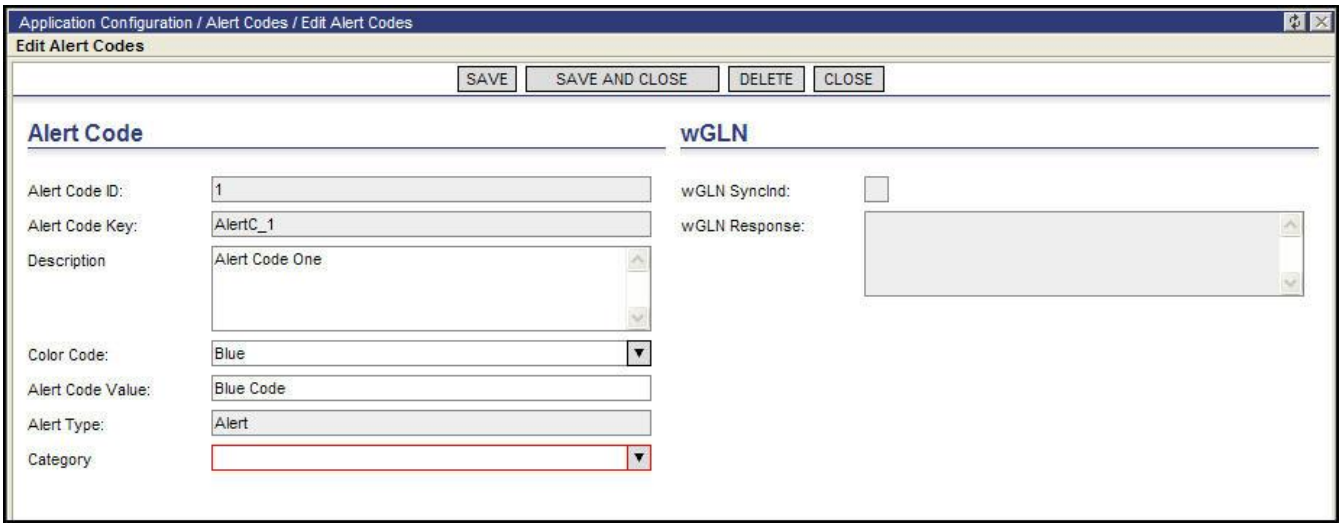
7 Click **Save** or **Save and Close** to save the alert. Click **Cancel** to discard.

Editing and Deleting Custom Alert Codes

To edit a Custom Alert Code:

1 Select **App Setup > Alert Codes**. The **Alert Codes** page appears.

2 Right-click on an alert code in the list and select Edit from the right-click menu. The **Edit Alert Codes** page appears.



3 Edit information as necessary.

4 Click **Save** or **Save and Close** to save the changes, Close to discard and **Delete** to remove the alert code entirely.

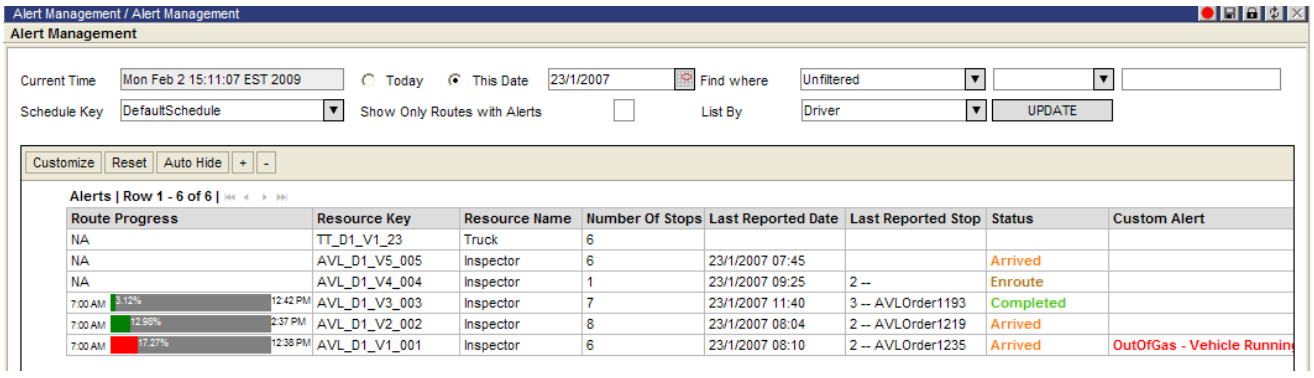
➲ **Note—** Alert codes can also be deleted from the **Alert Codes** page by right-clicking on a code and selecting **Delete** from the right-click menu.

Managing Alerts on the Alert Management Page

Users can view alerts, show route history on an alert, reverse the geocode of an alert and show a specific alert on the map all from the **Alert Management** page.

To access these options:

1 Select **Data > Alert Management**. The **Alert Management** page appears.



2 Use the drop-down menus to filter the results by the date, location and ScheduleKey to specify which routes to view and click **Update**. The specified routes will appear in the **Alerts** table.

3 Right-click on a route and select one of the following options from the right-click menu:

- **View Alerts—** Displays the **List Alerts for Routes** window, listing all alerts on the selected route.
- **Show Route History—** Displays the List Route History window, allowing the user to see the selected route's entire history.
- **Reverse Geocode—** Allows the user to use a new location's latitude and longitude to access the location's street address and geocode it. See Reverse Geocoding Locations for more information.
- **Show on Map—** Displays the selected route in the **Map** window.

Geofencing

Descartes Route Planner now supports Geofencing functionality in two ways:

- Route Geofencing
- Stop Geofencing

Route Geofencing

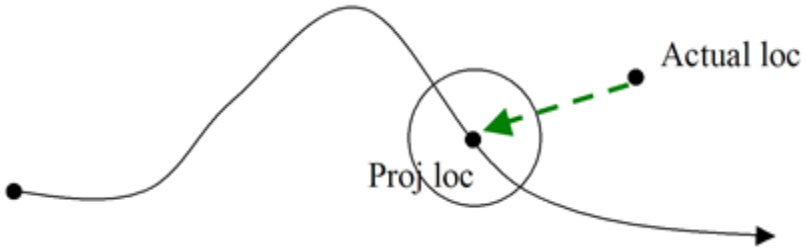
Using a user configured distance tolerance, geofencing can be applied at the Route level to monitor when a Route is getting outside of its planned trajectory.

A vehicle violates a route geofence when its last reported latitude/longitude (GPS message) lies outside of its projected Geofence.

- Projected Geofence is an imaginary circle centered at a Projected Vehicle Location at the time of the reported GPS.
- Projected Vehicle Location is calculated based on the elapsed time from the last visited stop and where it is supposed to be given the last reported date/time of the GPS message.
- The radius of the imaginary circle is set in the **Configuration** page described in the *Configuring Geofencing* section.

User Interface:

The Descartes Route Planner user interface (UI) displays a green animated arrow from the Last Reported Vehicle Location to the Projected Vehicle Location.



In Descartes Route Planner:

➲ **Note—** Users can choose to show or hide the last reported longitude/latitude by right clicking on a route and selecting Show/Clear All Last Known Locations.

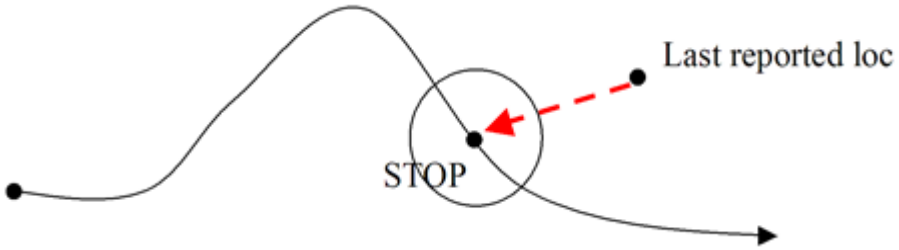
Stop Geofencing

Using a user configured distance tolerance, geofencing can be applied at the stop level to monitor when a vehicle is picking up or delivering at a location different from the plan.

- A vehicle violates a stop geofence restriction when its last reported longitude/latitude passed in a GPS or Status message lies outside of its geofence stop threshold centered at the planned stop of its Route.
- This violation represents a delivery or pickup at the wrong location.
- The radius of the imaginary circle is set in the **Configuration** page described in the *Configuring Geofencing* section.

User Interface:

The Descartes Route Planner UI displays a green animated arrow from the last reported vehicle location to the planned vehicle location or stop.



In Descartes Route Planner:

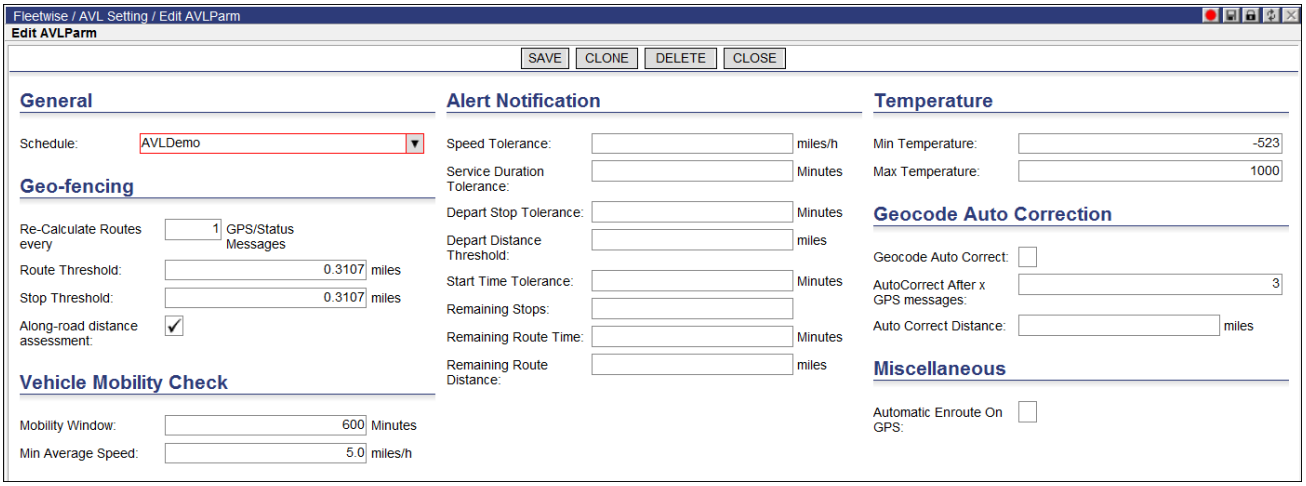
➲ **Note—** Users can choose to show or hide the last reported longitude/latitude by right clicking on a route and selecting Show/Clear All Last Known Locations.

Configuring Geofencing

Geofencing configuration is schedule specific. In other words, each schedule key will have its own Geofencing configuration.

To configure geofencing:

1 From the main menu, select **Data > Schedule > AVL**.



2 Edit the fields in each section as needed. The available configuration options are in six different sections of the page, described below.

3 Click **Save** to save the configuration, or **Delete** to delete the configuration.

General

- **Schedule** – The Schedule Key that will use this Descartes Automated Vehicle Locator (AVL)/Geofencing configuration.

➲ **Note—** The schedule key selected must be of Type-3 or Dispatching Type, otherwise the Geofencing menu options will not show when right-clicking on a route.

Geo-fencing

- **Re-calculate Routes every X GPS/Status messages -** This field specifies the maximum number of messages that Descartes Route Planner will use to update Projected Fields in the Route and the Stop when GPS messages are being published to Descartes Route Planner
- **Route Threshold** – Radius to utilize as a tolerance for Geofencing on the Route.
- **Stop Threshold** – Radius to utilize as a tolerance for Geofencing on the Stop.
- **Along the Road Distance Assessment** – This field specifies whether or not to use the Road Network when calculating the distance between the Reported Longitude/Latitude in a GPS or Status message and the Projected Path of the Route or actual location of the Order.

Vehicle Mobility Check

- **Mobility Window** – This field specifies the time window during which a vehicle's average speed is estimated.

- **Min. Average Speed** – This field specifies the minimum average speed allowed. If a vehicle's speed drops below the specified minimum average during the specified mobility window time, then Descartes Route Planner will update the route's AVLStatus to show a Mobility Vehicle Violation.

Alert Notification

This section allows the user to set the protocols for receiving automatic alerts as they occur when certain criteria has been met. A value of 0 in any of these fields will turn off the specific notification.

- **Speed Tolerance –** The maximum time the speed limit can be exceeded before raising an alert.
- **Service Duration Tolerance –** The maximum time a Service Duration can be exceeded before raising an alert.
- **Depart Stop Tolerance –** The maximum time a Route stays in a stop that has been completed before raising an alert.
- **Depart Distance Threshold –** Distance value specifying tolerance for moving activity by a Route. An alert is raised when the route has not reported any movement given the threshold.
- **Start Time Tolerance –** The maximum exceeding time a route is allowed to delay its start before raising an alert.
- **Remaining Stops –** This field defines the number (integer) of stops that are in pending before the route is completed. Pending equivalent status include:
  - Pending
  - Delayed
  - Enroute
  - Skipped
- **Remaining Route Time –** This field defines the number of maximum number of seconds before a route ends. If the remaining time of the route is less than this number, then an alert is generated.
- **Remaining Route Distance –** This field defines the number of maximum number of meters before a route ends. If the remaining distance of the route is less than this number, then an alert is generated.

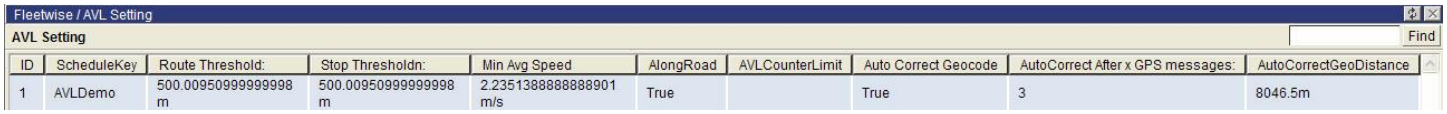
Temperature

- **Min Temperature** – This field specifies the minimum temperature allowed. If a vehicle's temperature drops below the specified minimum average during the specified mobility time window, then Descartes Route Planner will update the route's AVLStatus to show a Temperature Violation.
- **Max Temperature** - This field specifies the maximum temperature allowed. If a vehicle's temperature drops below the specified maximum average during the specified mobility time window, then Descartes Route Planner will update the route's AVLStatus to show a Temperature Violation.

Geocode AutoCorrection

When validating latitude and longitude from a GPS reading, Geocode Autocorrection is able to take the approximated and actual geocode values and automatically adjust any discrepancies.

- **Geocode AutoCorrect –** Click the checkbox to turn on Geocode AutoCorrection
- **AutoCorrect After x GPS Messages –** Defines the number of successful GPS readings before correcting latitude/longitude.
- **AutoCorrect Distance. –** Defines the distance threshold specifying candidate readings for autocorrection.



➲ **Note—** Once configured, the values in **Geocode AutoCorrect**, **AutoCorrect After x GPS Messages** and **AutoCorrect Distance** will appear in the columns Auto Correct Geocode, Auto Correct After x GPS Messages and AutoCorrectGeoDistance respectively on the AVL List and Location List pages as shown above.

Miscellaneous

- Automatic Enroute on GPS

Geofencing Refresh options

Users can configure the Refresh options for GeoFencing. These options are available only for schedules Type=3 (Dispatch type).

1 Go to **Data Filters > Options**.

2 In the Geofencing section of the **Options** page, enter the GeoFencing refresh interval that you would like to use (in seconds):

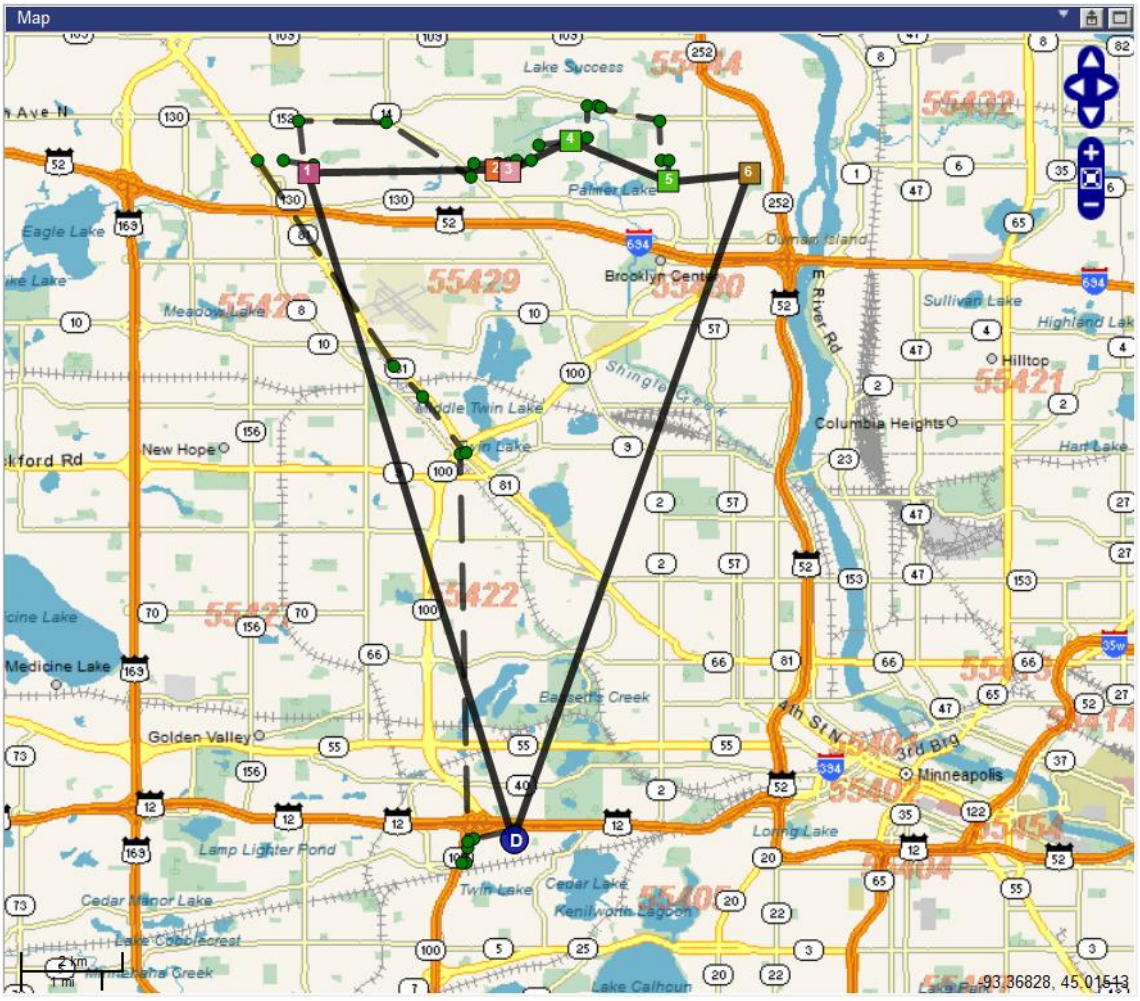
3 Click **Save**.

Users can turn on/off the GeoFencing refreshing timer by right-clicking on the Route displayed on the Map quadrant and turn it on/off.

BreadCrumb Trail

Descartes Route Planner can keep record of GPS messages sent from a Resource executing a route. These GPS messages are stored in a new table called FWGPSStatus, which allows Descartes Route Planner to use these GPS messages to calculate GeoFencing violations, and newly projected times in the route as well as display BreadCrumb Trails on the map.

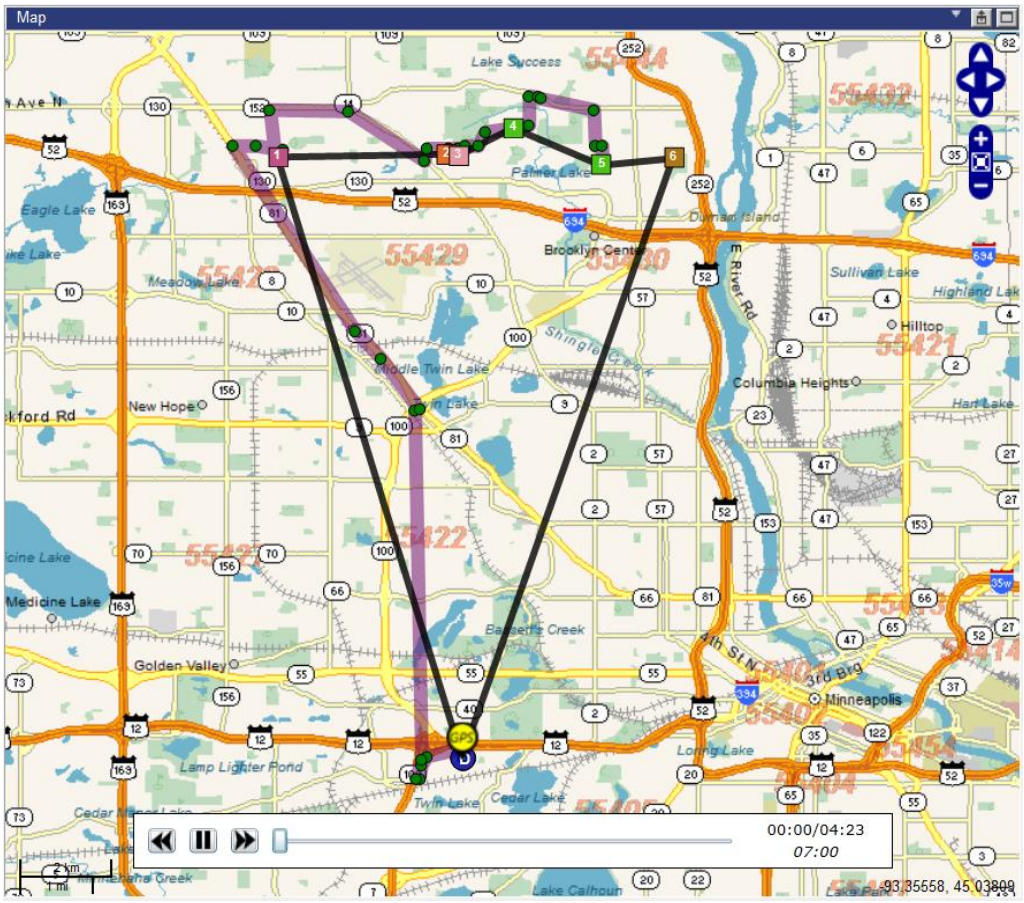
Show Select BreadCrumb Trail is a right-click menu option and will only be displayed if the displayed Route has GPS messages attached to it. This menu option is found when a route is displayed on the map by right-clicking on either a stop or a link of the route on the Map window:



Map data © 1987-2017 HERE

Users can replay the GPS message breadcrumb trail in sequence on the Map quadrant for a route.

1. Right-click on the route and select the **Show Selected BreadCrumb Trail** option from the right-click menu. The breadcrumb trail will display along the route.
2. Right-click on the route and select the **Play BreadCrumb Trail** option from the right-click menu. A yellow GPS icon will appear on the breadcrumb trail along with a set of video controls.



Map data © 1987-2017 HERE

3. Click the ▶ button to begin playing the breadcrumb trail. The GPS icon moves sequentially from marker to marker, as show in the video clip below.

4 When finished viewing, right-click on the map and select the **Close Player** right-click option to remove the video controls.

BreadCrumb Trail Status Colors

The BreadCrumb Trail can have a status associated with it.

For each stop, the stop marker will be color coded to represent the status of the stop.

Status	Color	Marker
Breadcrumb		
GPS Point	Green	
GPS Point/Unplanned Stop	Blue	
GPS Point/Ignition Off	Light Green	
Last GPS Point Received		
On Time	Green	
Late Depart Yard	Yellow	
Time Window Violation	Red	

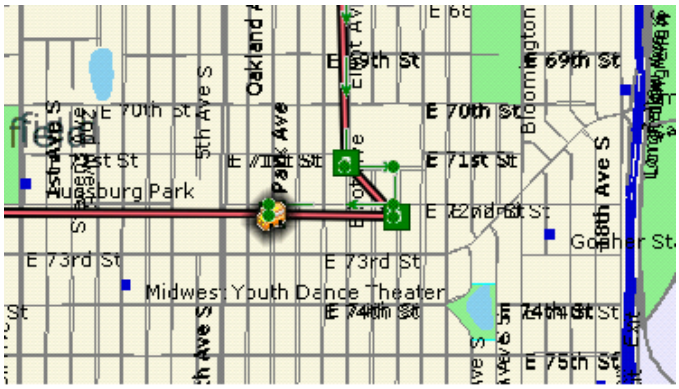
Unplanned	Blue	
Stops		
Depot	White "D"	
Time Window Violation	Red	
No Status	Teal - 0	
Pending	Teal - 1	
In Service	Teal - 8	
Arrived	Orange - 2	
Completed	Green - 3	
Hooked	Green - 7	
Spotted	Green - 14	
Dropped	Green - 19	
Delayed	Pink - 4	
En Route	Purple - 5	
Exception	Brown - 6	
No Freight	Brown – 10	
Refused	Brown - 11	
Returned	Brown - 12	
Skipped	White - 13	
Assigned	Aqua - 20	
Missed	Light Goldenrod	
Home	"D"	

Temperature GPS Warning Messages

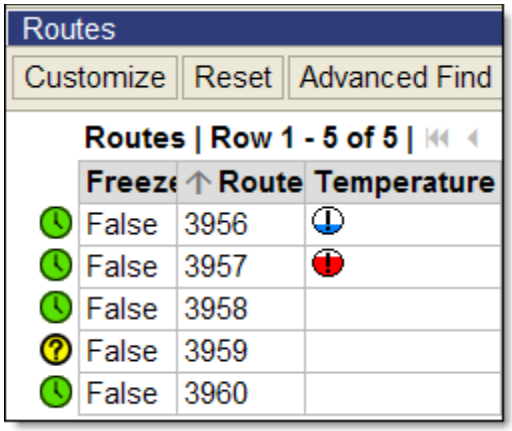
Descartes Route Planner can display when a vehicles temperature reading goes above a specified temperature or below a specified temperature based on the GPS status. The temperature readings will be displayed in the form of an icon on the GPS message itself or from the route header in the **Route** or **Route Detail** quadrants. This visibility will allow users to keep track of alerts or warnings that may require special attention.

The minimum and maximum temperatures are specified when users configure geofencing, see *Configuring Geofencing* for more details.

When a user clicks on a stop or GPS message, if the temperature reading is below the minimum or above the maximum, the truck's background on the map will change to black as shown below.



A user can also see when thermometer readings are violated in the **Routes** and **Route Detail** quadrants. The readings will be displayed in the Temperature column.



Reverse Geocoding on GPS Points

Users can perform reverse geocoding on a GPS location reported back to Descartes Route Planner via a wireless message and shown on the map as a green dot. With this option, they will be able to have geocoded addresses for unplanned customers or other locations.

To reverse geocode GPS points:

- On the **Map** quadrant, right-click on the route or green dot and select **Reverse Geocode**.

The geocoded address information is displayed on the Map.

Map data © 1987-2017 HERE

Viewing Status History

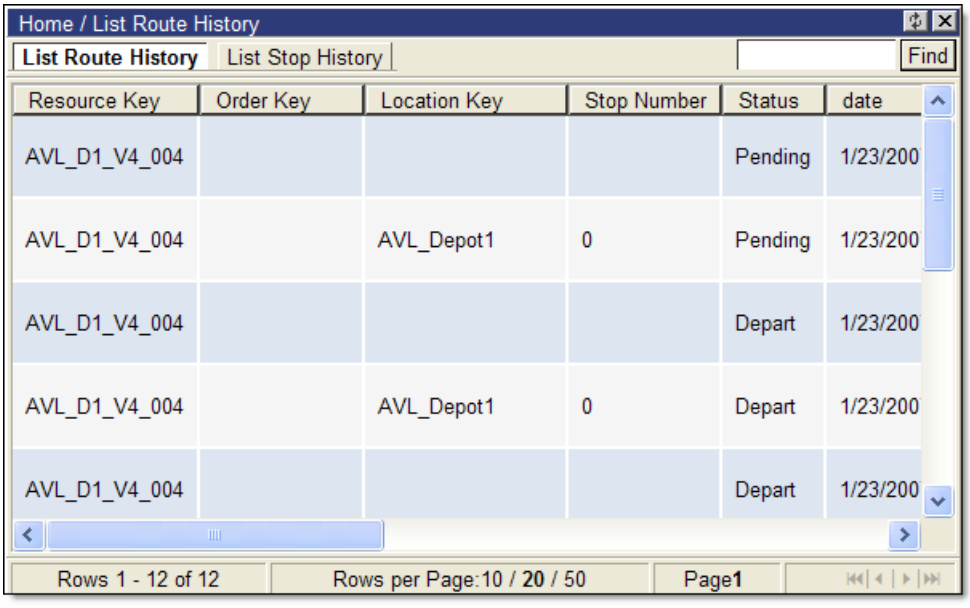
Descartes Route Planner users can view the status history for a route and/or stop.

Viewing Route History

To view the history for a Route:

- On the **Routes** or **Route Detail1** (**2**) quadrant, right-click on a Route and select **Status History**.

The **List Route History** dialog appears listing the history associated with the selected Route.



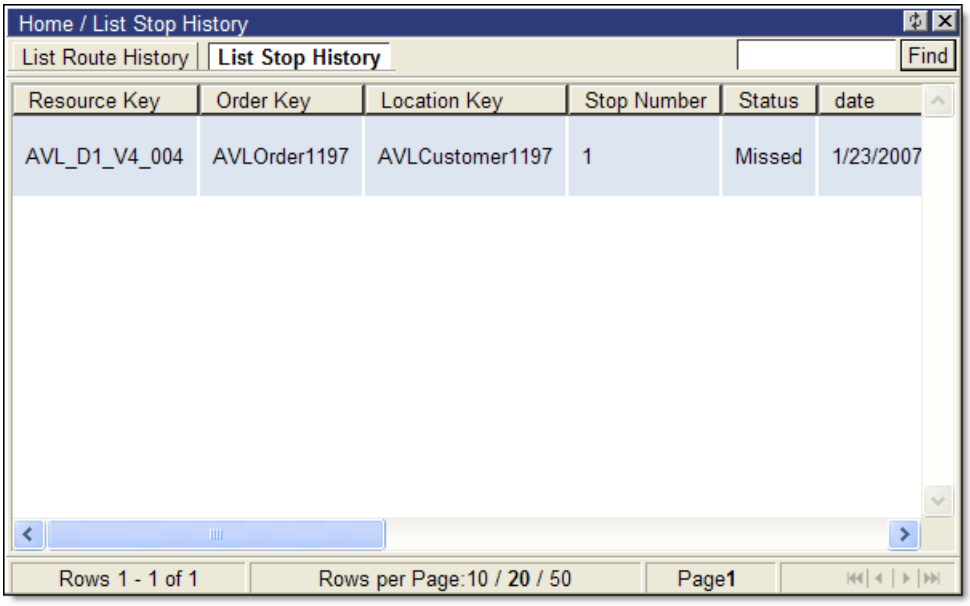
To view the history associated with Stops on this Route, click the **List Stop History** tab.

Viewing Stop History

To view the history for a Stop:

1. On the **Route Detail1** (**2**) quadrant, display the stops for the Route.
2. Right-click on a stop and select **Status History**.

   The **List Stop History** dialog appears listing the history associated with the selected Stop.



To view the history associated with this stop's route, click the **List Route History** tab.

Rescheduling Route Orders

There may be times at the end of a route that a driver may have reported orders with exceptions during the execution of the route. This exception might be due to a customer rejecting the order, or during a pickup the freight or product was not read, or a generic exception when the driver showed up at the order location. When this happens, users may want to reschedule the service of an order to a later time if required.

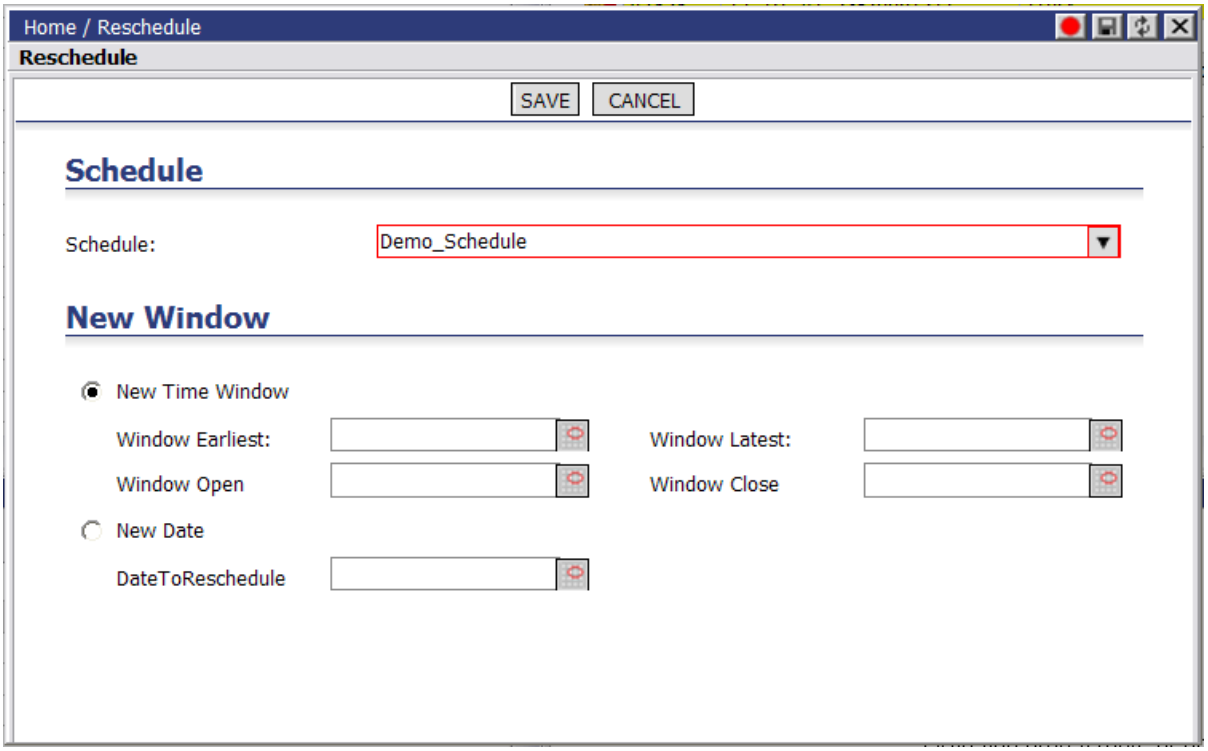
An order on an executed route that has not been closed, with one of the following statuses, can be rescheduled in Descartes Route Planner.

- **Missed** (9) – The stop has been missed and is equivalent to a completed stop. This will affect Times in the Route.
- **NoFreight** (10) – The stop was executed and no freight was found and is equivalent to a completed stop. Times in the Route will be recalculated.
- **Refused** (11) – The delivery or pickup of the goods were refused and is equivalent to a completed stop. Times in the Route will be recalculated.
- **Returned** (12) – The freight was returned and is equivalent to a completed stop. Times in the Route will be recalculated.
- **Exception** (6) – An exception was found at the stop and is equivalent to a completed stop. Times in the Route will be recalculated.
- **Arrived** (2) - Arrived at the stop. Times in the Route will be recalculated. Upon reschedule, stops on the route of will be reset to 'Missed'.
- **Departed** – Departed from the stop. Upon reschedule, stops on the route of will be reset to 'Missed'.

To reschedule an order:

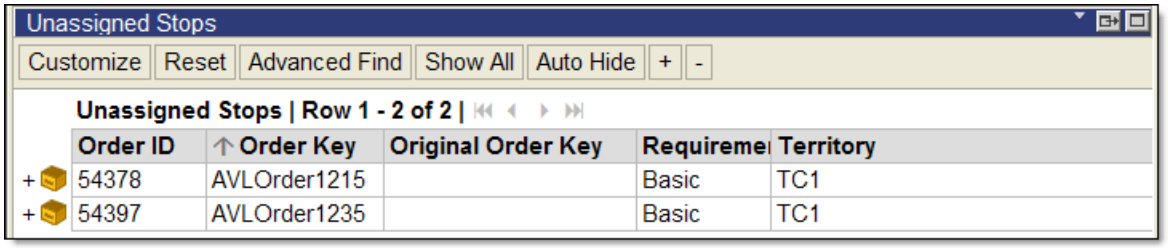
1 In the **Route Detail1** or **2** quadrant, right-click on the order and select **Reschedule**.

2 On the **Reschedule** dialog, enter a new ScheduleKey, date and/or a new window. If a new window is opened (one permitted), all new rescheduled orders will display this window. If a new date is entered, the system will find the order's first OpenDateTime or EarliestDate, then find the date difference and add that difference to all windows.



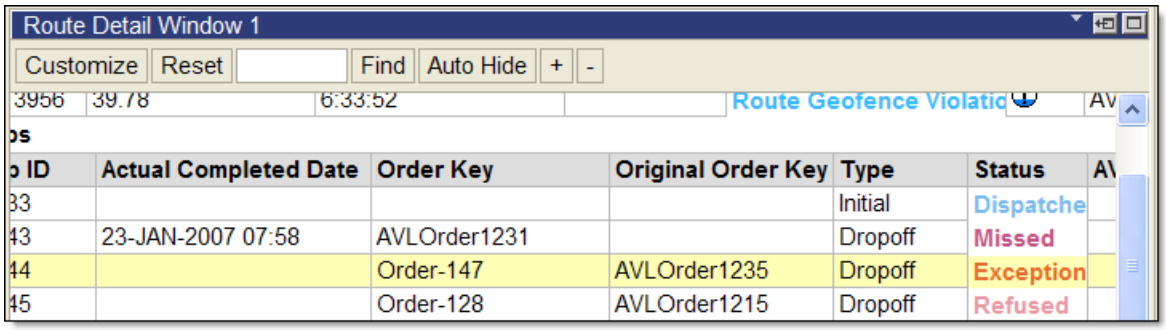
If no new ScheduleKey is entered, the order will remain in the original schedule.

When rescheduled, an exact copy of the order is made and placed in the Unassigned Stops quadrant as an unassigned order within the same schedule. The newly created order has the original Order Key value as its Order Key.



Order ID	Order Key	Original Order Key	Requireme	Territory
54378	AVLOrder1215		Basic	TC1
54397	AVLOrder1235		Basic	TC1

The original order remains assigned to the route without any changes except that its Order Key is now changed to an Order Key wizard generated key and the OriginalOrderKey is populated with the order's Original Order Key value.


Route Detail Window 1
Customize
Reset
Find
Auto Hide
+
-
3956
39.78
6:33:52
Route Geofence Violatic
AV
os
o ID
Actual Completed Date
Order Key
Original Order Key
Type
Status
AV
33
Initial
Dispatche
43
23-JAN-2007 07:58
AVLOrder1231
Dropoff
Missed
44
Order-147
AVLOrder1235
Dropoff
Exception
45
Order-128
AVLOrder1215
Dropoff
Refused

Reports

Summary Reports

The reports are:

- **Geocoding Summary** – This report shows users the geocoding information for each Stop ID/Location.

➲ **Note—** This report is only useful if you do not originally enter the latitude and longitude for a location.

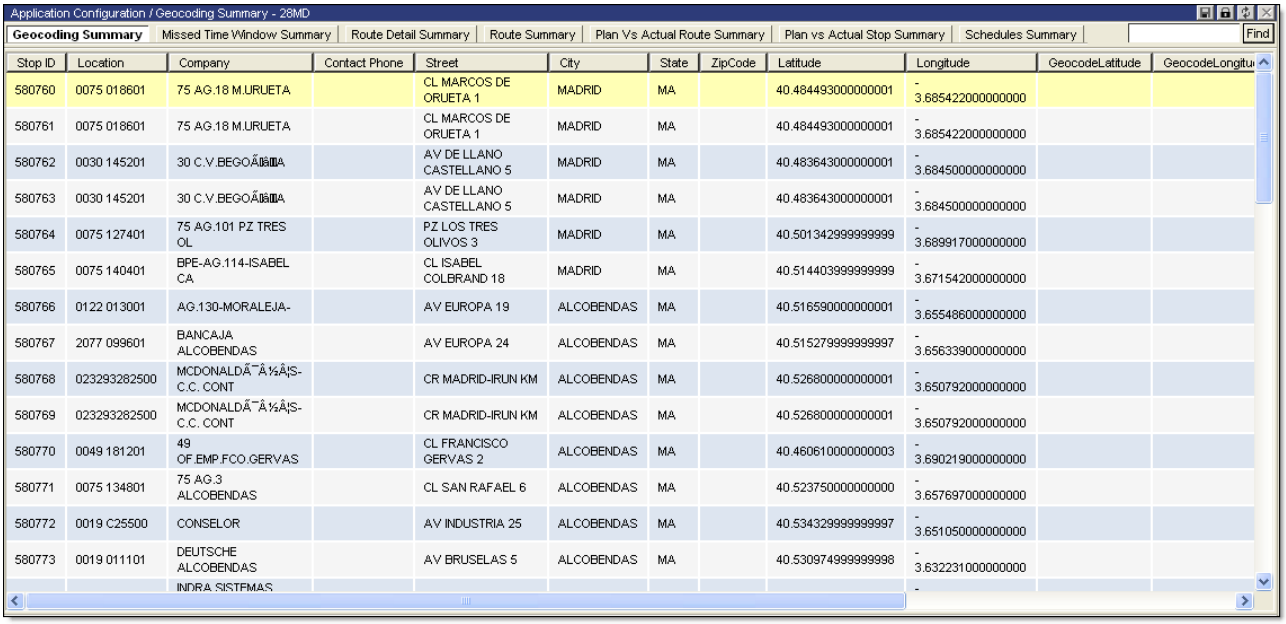
- **Missed Time Window Summary** – This report shows users how much they missed the time windows by.
- **Route Detail Summary** – This report lists the details for every stop on a route.
- **Route Summary** – This report lists the details for every route.
- **Plan vs. Actual Route Summary** – This report shows users the differences between what was planned for a route and what actually occurred with the route.
- **Plan vs. Actual Stop Summary** – This report shows users the differences between what was planned for a stop and what actually occurred at the stop.
- **Schedules Summary** – This report shows users all the KPI information for each schedule.
- **Master Stops Without Actual Orders** – This report allows users to review the number of master stops that do not have an actual order, validate the daily demand, and check for discrepancies or errors that might have been introduced during the process.

➲ **Note—** All reports are filtered by Route.

Geocoding Summary

To view the **Geocoding Summary** report:

- From the main menu, select **Summary Reports > Geocoding Summary**. The **Geocoding Summary** page is displayed.



Stop ID	Location	Company	Contact Phone	Street	City	State	ZipCode	Latitude	Longitude	GeocodeLatitude	GeocodeLongitu
580760	0075 018601	75 AG.18 M.URUETA		CL MARCOS DE ORUETA 1	MADRID	MA		40.484493000000001	-3.685422000000000		
580761	0075 018601	75 AG.18 M.URUETA		CL MARCOS DE ORUETA 1	MADRID	MA		40.484493000000001	-3.685422000000000		
580762	0030 145201	30 C.V.BEGOÃ‘A		AV DE LLANO CASTELLANO 5	MADRID	MA		40.483643000000001	-3.684500000000000		
580763	0030 145201	30 C.V.BEGOÃ‘A		AV DE LLANO CASTELLANO 5	MADRID	MA		40.483643000000001	-3.684500000000000		
580764	0075 127401	75 AG.101 PZ TRES OL		PZ LOS TRES OLIVOS 3	MADRID	MA		40.501342999999999	-3.689917000000000		
580765	0075 140401	BPE-AG.114-ISABEL CA		CL ISABEL COLBRAND 18	MADRID	MA		40.514403999999999	-3.671542000000000		
580766	0122 013001	AG.130-MORALEJA-		AV EUROPA 19	ALCOBENDAS	MA		40.516590000000001	-3.655486000000000		
580767	2077 099601	BANCAJA ALCOBENDAS		AV EUROPA 24	ALCOBENDAS	MA		40.515279999999997	-3.656339000000000		
580768	023293282500	MCDONALDÃ¯Â½Â¦S-C.C. CONT		CR MADRID-IRUN KM	ALCOBENDAS	MA		40.526800000000001	-3.650792000000000		
580769	023293282500	MCDONALDÃ¯Â½Â¦S-C.C. CONT		CR MADRID-IRUN KM	ALCOBENDAS	MA		40.526800000000001	-3.650792000000000		
580770	0049 181201	49 OF.EMP.FCO.GERVAS		CL FRANCISCO GERVAS 2	ALCOBENDAS	MA		40.460610000000003	-3.690219000000000		
580771	0075 134801	75 AG.3 ALCOBENDAS		CL SAN RAFAEL 6	ALCOBENDAS	MA		40.523750000000000	-3.657697000000000		
580772	0019 C25500	CONSELOR		AV INDUSTRIA 25	ALCOBENDAS	MA		40.534329999999997	-3.651050000000000		
580773	0019 011101	DEUTSCHE ALCOBENDAS		AV BRUSELAS 5	ALCOBENDAS	MA		40.530974999999998	-3.632231000000000		
		INDRA SISTEMAS							-		

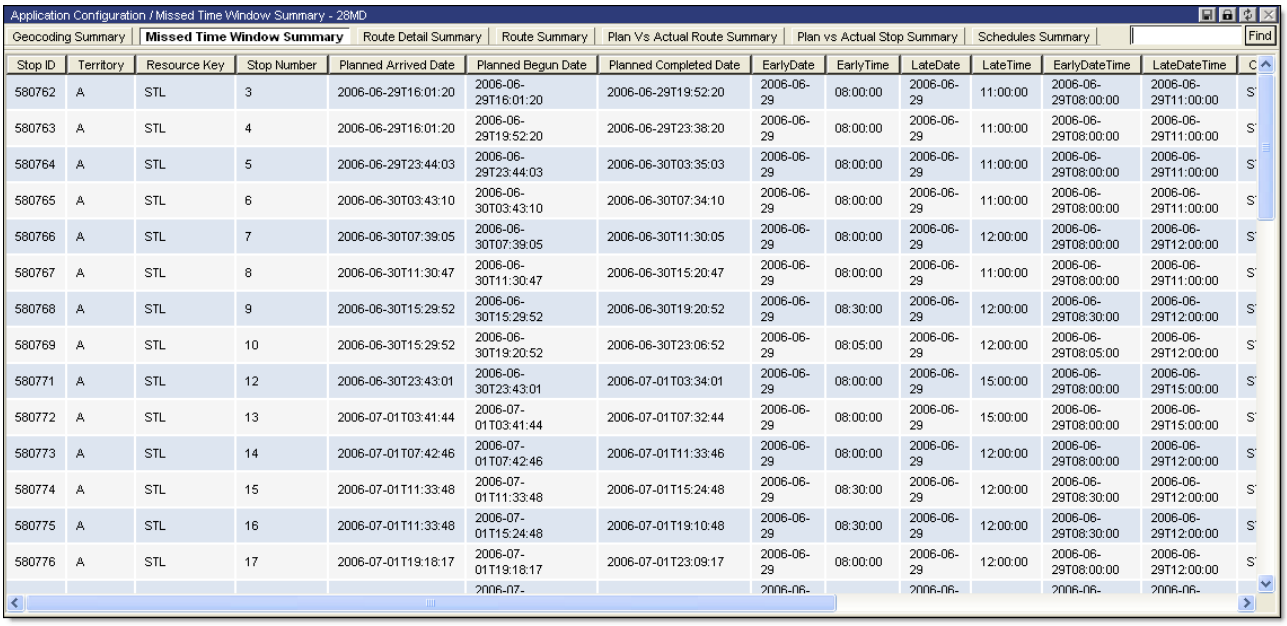
The **Geocoding Summary** report displays the following information:

- Stop ID
- Location
- Company
- Contact Phone
- Street
- City
- State
- Zip Code
- Latitude
- Longitude
- Geocode Latitude
- Geocode Longitude
- Geocode Quality
- Geocode Score
- Geocode Source
- Geocode Flags

Missed Time Window Summary

To view the **Missed Time Window Summary** report:

- From the main menu, select Summary Reports > Missed Time Window Summary. The Missed Time Window Summary page is displayed.



Stop ID	Territory	Resource Key	Stop Number	Planned Arrived Date	Planned Begun Date	Planned Completed Date	EarlyDate	EarlyTime	LateDate	LateTime	EarlyDateTime	LateDateTime
580762	A	STL	3	2006-06-29T16:01:20	2006-06-29T16:01:20	2006-06-29T19:52:20	2006-06-29	08:00:00	2006-06-29	11:00:00	2006-06-29T08:00:00	2006-06-29T11:00:00
580763	A	STL	4	2006-06-29T16:01:20	2006-06-29T19:52:20	2006-06-29T23:38:20	2006-06-29	08:00:00	2006-06-29	11:00:00	2006-06-29T08:00:00	2006-06-29T11:00:00
580764	A	STL	5	2006-06-29T23:44:03	2006-06-29T23:44:03	2006-06-30T03:35:03	2006-06-29	08:00:00	2006-06-29	11:00:00	2006-06-29T08:00:00	2006-06-29T11:00:00
580765	A	STL	6	2006-06-30T03:43:10	2006-06-30T03:43:10	2006-06-30T07:34:10	2006-06-29	08:00:00	2006-06-29	11:00:00	2006-06-29T08:00:00	2006-06-29T11:00:00
580766	A	STL	7	2006-06-30T07:39:05	2006-06-30T07:39:05	2006-06-30T11:30:05	2006-06-29	08:00:00	2006-06-29	12:00:00	2006-06-29T08:00:00	2006-06-29T12:00:00
580767	A	STL	8	2006-06-30T11:30:47	2006-06-30T11:30:47	2006-06-30T15:20:47	2006-06-29	08:00:00	2006-06-29	11:00:00	2006-06-29T08:00:00	2006-06-29T11:00:00
580768	A	STL	9	2006-06-30T15:29:52	2006-06-30T15:29:52	2006-06-30T19:20:52	2006-06-29	08:30:00	2006-06-29	12:00:00	2006-06-29T08:30:00	2006-06-29T12:00:00
580769	A	STL	10	2006-06-30T15:29:52	2006-06-30T19:20:52	2006-06-30T23:06:52	2006-06-29	08:05:00	2006-06-29	12:00:00	2006-06-29T08:05:00	2006-06-29T12:00:00
580771	A	STL	12	2006-06-30T23:43:01	2006-06-30T23:43:01	2006-07-01T03:34:01	2006-06-29	08:00:00	2006-06-29	15:00:00	2006-06-29T08:00:00	2006-06-29T15:00:00
580772	A	STL	13	2006-07-01T03:41:44	2006-07-01T03:41:44	2006-07-01T07:32:44	2006-06-29	08:00:00	2006-06-29	15:00:00	2006-06-29T08:00:00	2006-06-29T15:00:00
580773	A	STL	14	2006-07-01T07:42:46	2006-07-01T07:42:46	2006-07-01T11:33:46	2006-06-29	08:00:00	2006-06-29	12:00:00	2006-06-29T08:00:00	2006-06-29T12:00:00
580774	A	STL	15	2006-07-01T11:33:48	2006-07-01T11:33:48	2006-07-01T15:24:48	2006-06-29	08:30:00	2006-06-29	12:00:00	2006-06-29T08:30:00	2006-06-29T12:00:00
580775	A	STL	16	2006-07-01T11:33:48	2006-07-01T15:24:48	2006-07-01T19:10:48	2006-06-29	08:30:00	2006-06-29	12:00:00	2006-06-29T08:30:00	2006-06-29T12:00:00
580776	A	STL	17	2006-07-01T19:18:17	2006-07-01T19:18:17	2006-07-01T23:09:17	2006-06-29	08:00:00	2006-06-29	12:00:00	2006-06-29T08:00:00	2006-06-29T12:00:00

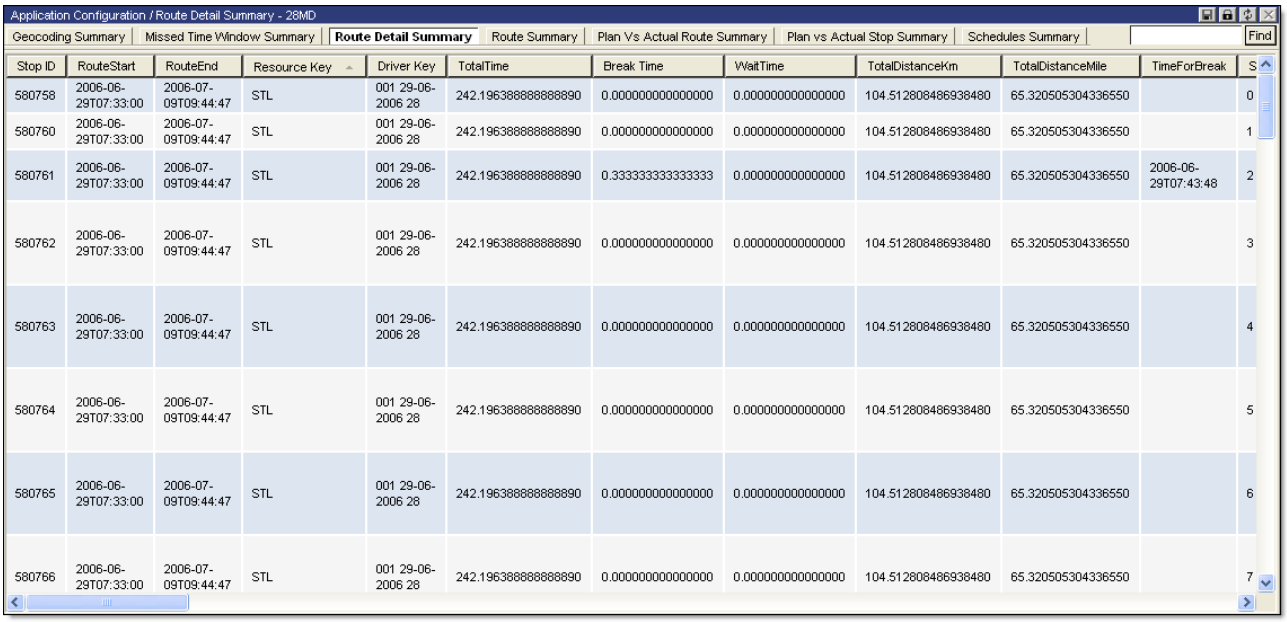
The **Missed Time Window Summary** report displays the following information:

- Stop ID
- Territory
- Resource Key
- Stop Number
- Planned Arrived Date
- Planned Begun Date
- Planned Completed Date
- Early Date
- Early Time
- Late Date
- Late Time
- Early Date Time
- Late Date Time
- Order Key
- Location Key
- Company
- Contact Phone
- Early Minutes
- Late Minutes

Route Detail Summary

To view the **Route Detail Summary** report:

- From the main menu, select Summary Reports > Route Detail Summary. The Route Detail Summary page is displayed.



Stop ID	RouteStart	RouteEnd	Resource Key	Driver Key	TotalTime	Break Time	WaitTime	TotalDistanceKm	TotalDistanceMile	TimeForBreak	S
580758	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.000000000000000	0.000000000000000	104.512808486938480	65.320505304336550		0
580760	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.000000000000000	0.000000000000000	104.512808486938480	65.320505304336550		1
580761	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.333333333333333	0.000000000000000	104.512808486938480	65.320505304336550	2006-06-29T07:43:48	2
580762	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.000000000000000	0.000000000000000	104.512808486938480	65.320505304336550		3
580763	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.000000000000000	0.000000000000000	104.512808486938480	65.320505304336550		4
580764	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.000000000000000	0.000000000000000	104.512808486938480	65.320505304336550		5
580765	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.000000000000000	0.000000000000000	104.512808486938480	65.320505304336550		6
580766	2006-06-29T07:33:00	2006-07-09T09:44:47	STL	001 29-06-2006 28	242.196388888888890	0.000000000000000	0.000000000000000	104.512808486938480	65.320505304336550		7

The **Route Detail Summary** report displays the following information:

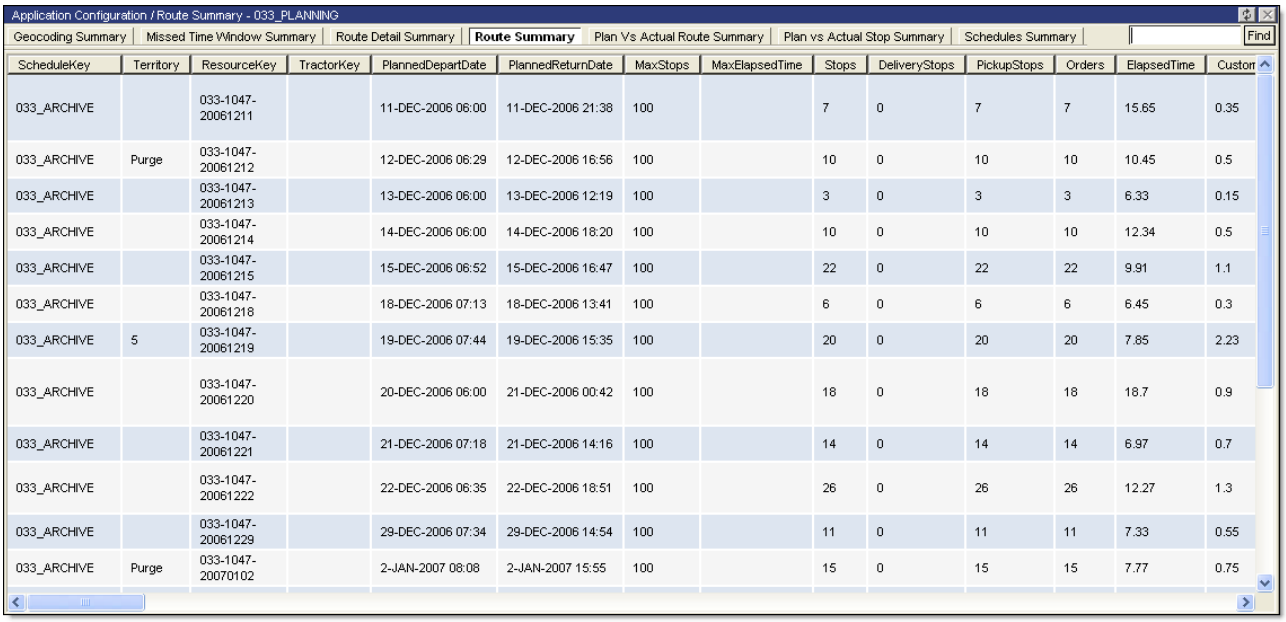
- Stop ID
- Route Start
- Route End
- Resource Key
- Driver Key
- Total Time
- Break Time
- Wait Time
- Total Distance Km
- Total Distance Mile
- Time for Break
- Stop Number
- Territory
- Location Key
- Company
- Ship Street Name
- Planned Depart Date
- UDF String1-9
- Order Key
- Window Type
- Measure1-3
- Requirements
- Order Service Time
- Stop Service Time
- Drive Time
- Elapsed Time
- Distance Km
- Distance Mile
- Not Served For Any Reason
- Location Not Resolved
- Previous Task Not Served
- Requirements Not Met

- Ship City
- Ship Date
- Ship Zip Code
- Contact Phone
- Latitude
- Geocode Quality
- Geocode Score
- Geocode Latitude
- Gecode Longitude
- Geocode Source
- Open Date
- Open Time
- Close Date
- Close Time
- Planned Arrived Date
- Planned Begun Date
- Planned Completed Date
- Job Time Window Missed
- Capacities Exceeded
- Too Many Stops
- Dispatch Out of Sequence
- Wrong Preferred Resource
- Near Time Window Close
- Wrong Route Position
- Dispatch Unassigned
- Dispatch Completed
- Dispatch Untimed
- Resource Time Constraint Missed
- Invalid Resource
- Exceeded Maximum Distance
- Too Many Prototype Children
- Stop Has Received Time Begun Update
- Arrived Time Set For Stop
- Violation Description

Route Summary

To view the **Route Summary** report:

- From the main menu, select **Summary Reports > Route Summary**. The **Route Summary** page is displayed.



ScheduleKey	Territory	ResourceKey	TractorKey	PlannedDepartDate	PlannedReturnDate	MaxStops	MaxElapsedTime	Stops	DeliveryStops	PickupStops	Orders	ElapsedTime	Custom
033_ARCHIVE		033-1047-20061211		11-DEC-2006 06:00	11-DEC-2006 21:38	100		7	0	7	7	15.65	0.35
033_ARCHIVE	Purge	033-1047-20061212		12-DEC-2006 06:29	12-DEC-2006 16:56	100		10	0	10	10	10.45	0.5
033_ARCHIVE		033-1047-20061213		13-DEC-2006 06:00	13-DEC-2006 12:19	100		3	0	3	3	6.33	0.15
033_ARCHIVE		033-1047-20061214		14-DEC-2006 06:00	14-DEC-2006 18:20	100		10	0	10	10	12.34	0.5
033_ARCHIVE		033-1047-20061215		15-DEC-2006 06:52	15-DEC-2006 16:47	100		22	0	22	22	9.91	1.1
033_ARCHIVE		033-1047-20061218		18-DEC-2006 07:13	18-DEC-2006 13:41	100		6	0	6	6	6.45	0.3
033_ARCHIVE	5	033-1047-20061219		19-DEC-2006 07:44	19-DEC-2006 15:35	100		20	0	20	20	7.85	2.23
033_ARCHIVE		033-1047-20061220		20-DEC-2006 06:00	21-DEC-2006 00:42	100		18	0	18	18	18.7	0.9
033_ARCHIVE		033-1047-20061221		21-DEC-2006 07:18	21-DEC-2006 14:16	100		14	0	14	14	6.97	0.7
033_ARCHIVE		033-1047-20061222		22-DEC-2006 06:35	22-DEC-2006 18:51	100		26	0	26	26	12.27	1.3
033_ARCHIVE		033-1047-20061229		29-DEC-2006 07:34	29-DEC-2006 14:54	100		11	0	11	11	7.33	0.55
033_ARCHIVE	Purge	033-1047-20070102		2-JAN-2007 08:08	2-JAN-2007 15:55	100		15	0	15	15	7.77	0.75

The **Route Summary** report displays the following information:

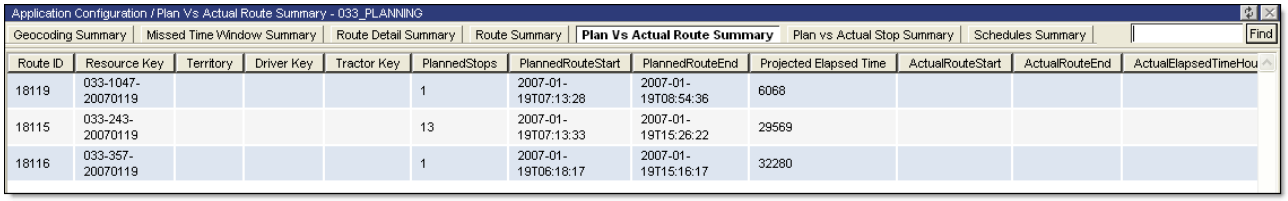
- Schedule Key
- Territory
- Resource Key
- Tractor Key
- Planned Depart Date
- Planned Return Date
- Max Stops
- Max Elapsed Time
- Stops
- Delivery Stops
- Pickup Stops
- Orders
- Elapsed Time
- Customer Parking Time
- Order Parking Time
- Stop Parking Time
- Customer Service Time
- Order Service Time
- Stop Service Time
- Drive Time
- Break Time
- Rest Time
- Slack Time
- Distance Km
- Distance Mile
- Recharges
- Distance Km Per Stop
- Distance Mile Per Stop
- Time Per Stop
- Total Measure 1 Delivery
- On Area Elapsed Time
- On Area Distance Km
- On Area Distance Mile
- On Area Stops Per Hour
- On Area Distance Km Per Stop
- On Area Distance Mile Per Stop
- Home Leg Elapsed Time
- Home Leg Distance Km
- Home Leg Distance Mile
- On Area Elapsed Time Percentage
- Home Leg Elapsed Time Percentage
- On Area Distance Percentage
- Home Leg Distance Percentage
- Max Stops Violations
- Measure1 Violations
- Resource Latest End Violations
- Resource Earliest Start Violations
- Max Elapsed Duration Violations
- Job Late Violations
- Job Early Violations
- Not Served for Any Reason
- Location Not Resolved
- Previous Task Not Served
- Requirements Not Met
- Job Time Window Missed
- Capacities Exceeded
- Too Many Stops
- Dispatch Out of Sequence

- Distance Km Per Order
- Distance Mile Per Order
- Time Per Order
- Drive Speed KmPH
- Drive Speed MPH
- Stops Per Hour
- Measure1-2 per Hour
- Measure1-2 per Km
- Measure1-2 per Mile
- Max Stops Util
- Elapsed Time Util
- Total Measure1-3
- Measure1 Cap
- Measure1 Util
- Wrong Preferred Resource
- Near Time Window Close
- Wrong Route Position
- Dispatch Unassigned
- Dispatch Completed
- Dispatch Untimed
- Resource Time Constraint Missed
- Invalid Resource
- Exceeded Maximum Distance
- Too Many Prototype Children
- Stop Has Received Time Begun Update
- Arrived Time Set for Stop
- Violation Description

Plan vs Actual Route Summary

To view the **Plan vs Actual Route Summary** report:

- From the main menu, select Summary Reports > Plan vs Actual Route Summary. The Plan vs Actual Route Summary page is displayed.



The **Plan vs Actual Route Summary** report displays the following information:

- Route ID
- Resource Key
- Territory
- Driver Key
- Tractor Key
- Planned Stops
- Arrived Stops
- Completed Stops
- Delayed Stops
- EnRoute Stops
- Exception Stops
- Missed Stops

- Planned Route Start
- Planned Route End
- Projected Elapsed Time
- Actual Route Start
- Actual Route End
- Actual Elapsed Time Hours
- Delta Route Start Minutes
- Delta Route End Minutes
- Delta Elapsed Time Minutes
- Pending Stops
- Refused Stops
- Returned Stops
- Skipped Stops
- Last Reported Status
- Projected Distance Km
- Projected Distance Mile
- Planned Measure1-3
- Actual Measure1
- Delta Measure1

Plan vs Actual Stop Summary

To view the **Plan vs Actual Stop Summary** report:

- From the main menu, select Summary Reports > Plan vs Actual Stop Summary. The Plan vs Actual Stop Summary page is displayed.

Stop ID	Order Key	Resource Key	Stop Number	Driver Key	Tractor Key	Location Key	Company	Territory	Stop Status	Window Earliest Date	WindowEarliestTime	Window
580760	STGP7380317	STL	1	001 29-06-2006 28		0075 018601	75 AG.18 M.URUETA		Pending	2006-06-29	08:00:00	2006-06-
580761	STGP7379914	STL	2	001 29-06-2006 28		0075 018601	75 AG.18 M.URUETA		Pending	2006-06-29	08:00:00	2006-06-
580762	STGP7379574	STL	3	001 29-06-2006 28		0030 145201	30 C.V.BEGOÃ‘A		Pending	2006-06-29	08:00:00	2006-06-
580763	STGP7379575	STL	4	001 29-06-2006 28		0030 145201	30 C.V.BEGOÃ‘A		Pending	2006-06-29	08:00:00	2006-06-
580764	STGP7380183	STL	5	001 29-06-2006 28		0075 127401	75 AG.101 PZ TRES OL		Pending	2006-06-29	08:00:00	2006-06-
580765	STGP7380243	STL	6	001 29-06-2006 28		0075 140401	BPE-AG.114-ISABEL CA		Pending	2006-06-29	08:00:00	2006-06-
580766	STGP7382412	STL	7	001 29-06-2006 28		0122 013001	AG.130-MORALEJA-		Pending	2006-06-29	08:00:00	2006-06-
580767	STGP7373349	STL	8	001 29-06-2006 28		2077 099601	BANCAJA ALCOBENDAS		Pending	2006-06-29	08:00:00	2006-06-
580768	STGP7378631	STL	9	001 29-06-2006 28		023293282500	MCDONALDÃ¯Â½Â¦S-C.C. CONT		Pending	2006-06-29	08:30:00	2006-06-
580769	STGP7377459	STL	10	001 29-06-2006 28		023293282500	MCDONALDÃ¯Â½Â¦S-C.C. CONT		Pending	2006-06-29	08:05:00	2006-06-
580770	STGP7373428	STL	11	001 29-06-2006 28		0049 181201	49 OF.EMP.FCO.GERVAS		Pending			
580771	STGP7380422	STL	12	001 29-06-2006 28		0075 134801	75 AG.3 ALCOBENDAS		Pending	2006-06-29	08:00:00	2006-06-
580772	STGP7382278	STL	13	001 29-06-2006 28		0019 C25500	CONSELOR		Pending	2006-06-29	08:00:00	2006-06-
580773	STGP7379667	STL	14	001 29-06-2006 28		0019 011101	DEUTSCHE ALCOBENDAS		Pending	2006-06-29	08:00:00	2006-06-
				001 29-06-			INDRA SISTEMAS					

The **Plan vs Actual Stop Summary** report displays the following information:

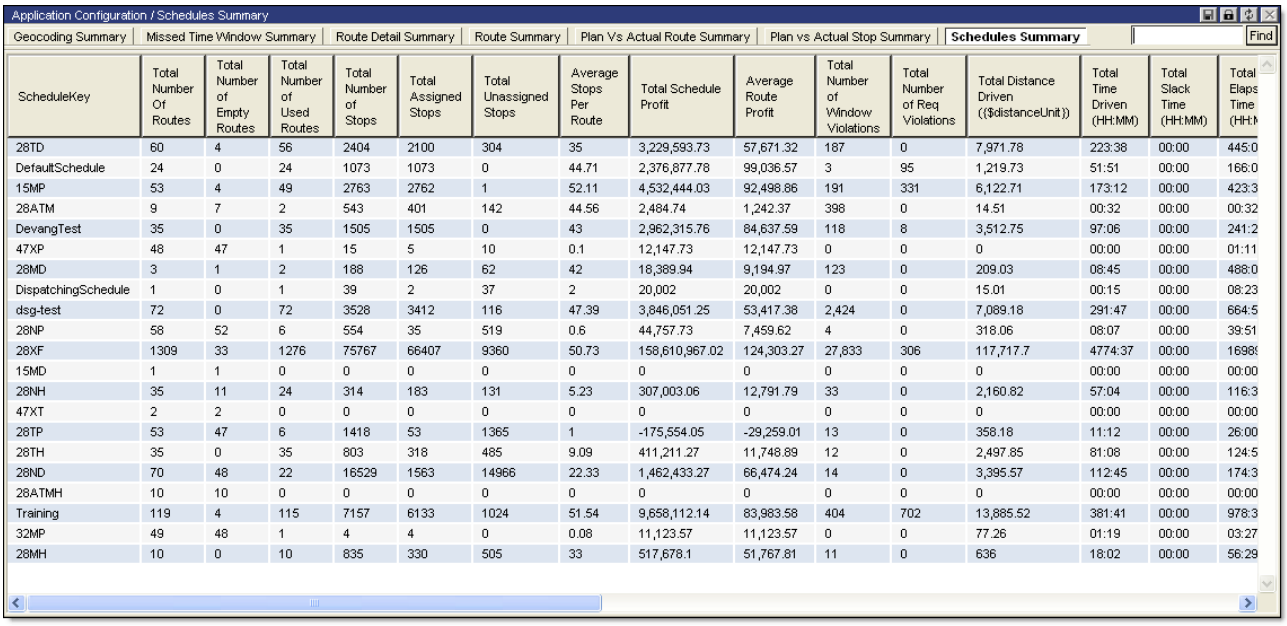
- Stop ID
- Order Key
- Completed Date
- Departed Date

- Resource Key
- Stop Number
- Driver Key
- Tractor Key
- Location Key
- Company
- Territory
- Stop Status
- Window Earliest Date
- Window Earliest Time
- Window Latest Date
- Window Latest Time
- Earliest Date Time
- Latest Date Time
- Planned Arrived Date
- Planned Begun Date
- Planned Completed Date
- Planned Departed Date
- Arrived Date
- Begun Date
- Arrived Delta Time Minutes
- Begun Delta Time Minutes
- Completed Delta time Minutes
- Departed Delta Time Minutes
- Planned Parking Time Minutes
- Planned Service Time Minutes
- Planned Packup Time Minutes
- Actual Parking Time Minutes
- Actual Service Time Minutes
- Actual Packup Time Minutes
- Parking Time Variance Minutes
- Service Time Variance Minutes
- Measure1-3
- Actual Measure1-3
- Delta Measure1-3
- Planned Late Violation
- Planned Early Violation
- Actual Late Violation
- Actual Early Violation

Schedule Summary

To view the **Schedule Summary** report:

- From the main menu, select **Summary Reports > Schedule Summary**. The **Schedule Summary** page is displayed.


Application Configuration / Schedules Summary

Geocoding Summary | Missed Time Window Summary | Route Detail Summary | Route Summary | Plan Vs Actual Route Summary | Plan vs Actual Stop Summary | Schedules Summary | Find

ScheduleKey	Total Number Of Routes	Total Number of Empty Routes	Total Number of Used Routes	Total Number of Stops	Total Assigned Stops	Total Unassigned Stops	Average Stops Per Route	Total Schedule Profit	Average Route Profit	Total Number of Window Violations	Total Number of Req Violations	Total Distance Driven ({$distanceUnit})	Total Time Driven (HH:MM)	Total Slack Time (HH:MM)	Total Elaps Time (HH:M
28TD	60	4	56	2404	2100	304	35	3,229,593.73	57,671.32	187	0	7,971.78	223:38	00:00	445:0
DefaultSchedule	24	0	24	1073	1073	0	44.71	2,376,877.78	99,036.57	3	95	1,219.73	51:51	00:00	166:0
15MP	53	4	49	2763	2762	1	52.11	4,532,444.03	92,498.86	191	331	6,122.71	173:12	00:00	423:3
28ATM	9	7	2	543	401	142	44.56	2,484.74	1,242.37	398	0	14.51	00:32	00:00	00:32
DevangTest	35	0	35	1505	1505	0	43	2,962,315.76	84,637.59	118	8	3,512.75	97:06	00:00	241:2
47XP	48	47	1	15	5	10	0.1	12,147.73	12,147.73	0	0	0	00:00	00:00	01:11
28MD	3	1	2	188	126	62	42	18,389.94	9,194.97	123	0	209.03	08:45	00:00	488:0
DispatchingSchedule	1	0	1	39	2	37	2	20,002	20,002	0	0	15.01	00:15	00:00	08:23
dsg-test	72	0	72	3528	3412	116	47.39	3,846,051.25	53,417.38	2,424	0	7,089.18	291:47	00:00	664:5
28NP	58	52	6	554	35	519	0.6	44,757.73	7,459.62	4	0	318.06	08:07	00:00	39:51
28XF	1309	33	1276	75767	66407	9360	50.73	158,610,967.02	124,303.27	27,833	306	117,717.7	4774:37	00:00	1698
15MD	1	1	0	0	0	0	0	0	0	0	0	0	00:00	00:00	00:00
28NH	35	11	24	314	183	131	5.23	307,003.06	12,791.79	33	0	2,160.82	57:04	00:00	116:3
47XT	2	2	0	0	0	0	0	0	0	0	0	0	00:00	00:00	00:00
28TP	53	47	6	1418	53	1365	1	-175,554.05	-29,259.01	13	0	358.18	11:12	00:00	26:00
28TH	35	0	35	803	318	485	9.09	411,211.27	11,748.89	12	0	2,497.85	81:08	00:00	124:5
28ND	70	48	22	16529	1563	14966	22.33	1,462,433.27	66,474.24	14	0	3,395.57	112:45	00:00	174:3
28ATMH	10	10	0	0	0	0	0	0	0	0	0	0	00:00	00:00	00:00
Training	119	4	115	7157	6133	1024	51.54	9,658,112.14	83,983.58	404	702	13,885.52	381:41	00:00	978:3
32MP	49	48	1	4	4	0	0.08	11,123.57	11,123.57	0	0	77.26	01:19	00:00	03:27
28MH	10	0	10	835	330	505	33	517,678.1	51,767.81	11	0	636	18:02	00:00	56:29

The **Schedule Summary** report displays the following information:

- Schedule Key
- Total Number of Routes
- Total Number of Empty Routes
- Total Number of Used Routes
- Total Number of Stops
- Total Assigned Stops
- Total Unassigned Stops
- Average Stops Per Route
- Total Schedule Profit
- Average Route Profit
- Total Number of Window Violations
- Total Slack Time (HH:MM)
- Total Elapsed Time (HH:MM)
- Total Waiting Time
- Total Services Time
- Average Distance per Route ({$distanceUnit}/Route)
- Average Distance per Stop ({$distanceUnit}/Stop)
- Average Distance per Order ({$distanceUnit}/Order)
- Average Elapsed Time per Stop (HH:MM/Stop)
- Average Driven Time per Stop (HH:MM/Stop)
- Average Route Speed ({$distanceUnit}/Hr)
- Total Available Capacity1

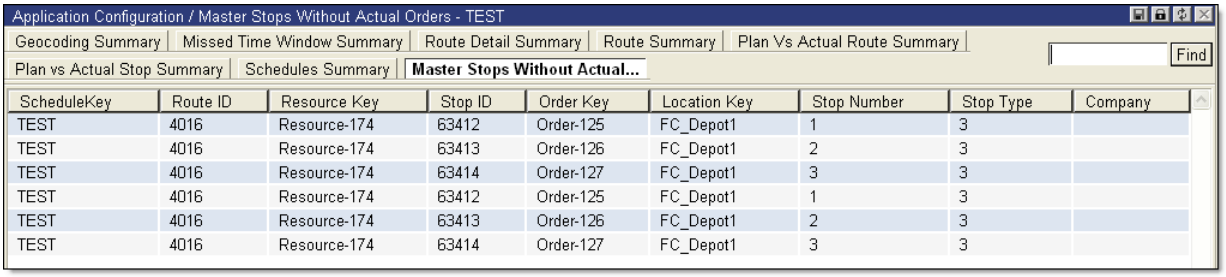
- Total Number of Req Violations
- Total Distance Driven ({$distanceUnit})
- Total Time Driven (HH:MM)
- Total Used Capacity1
- Proj Measure1 per Hour
- Proj Measured1 per Distance (/{$distanceUnit})

Master Stops Without Actual Orders

➲ **Note—** You must be in the Master Route Mgmt Mode to create the **Master Stops Without Actual Orders** report.

To view the **Master Stops Without Actual Orders** report:

- From the main menu, select Summary Reports > Master Stops Without Actual Orders. The Master Stops Without Actual Orders page is displayed.



ScheduleKey	Route ID	Resource Key	Stop ID	Order Key	Location Key	Stop Number	Stop Type	Company
TEST	4016	Resource-174	63412	Order-125	FC_Depot1	1	3	
TEST	4016	Resource-174	63413	Order-126	FC_Depot1	2	3	
TEST	4016	Resource-174	63414	Order-127	FC_Depot1	3	3	
TEST	4016	Resource-174	63412	Order-125	FC_Depot1	1	3	
TEST	4016	Resource-174	63413	Order-126	FC_Depot1	2	3	
TEST	4016	Resource-174	63414	Order-127	FC_Depot1	3	3	

The **Master Stops Without Actual Orders** report displays the following information:

- Schedule Key
- Route ID
- Resource Key
- Stop ID
- Order Key
- Location Key
- Stop Number
- Stop Type
- Company

Exporting and Printing Summary Reports

There are two ways that a **Summary** report can be exported:

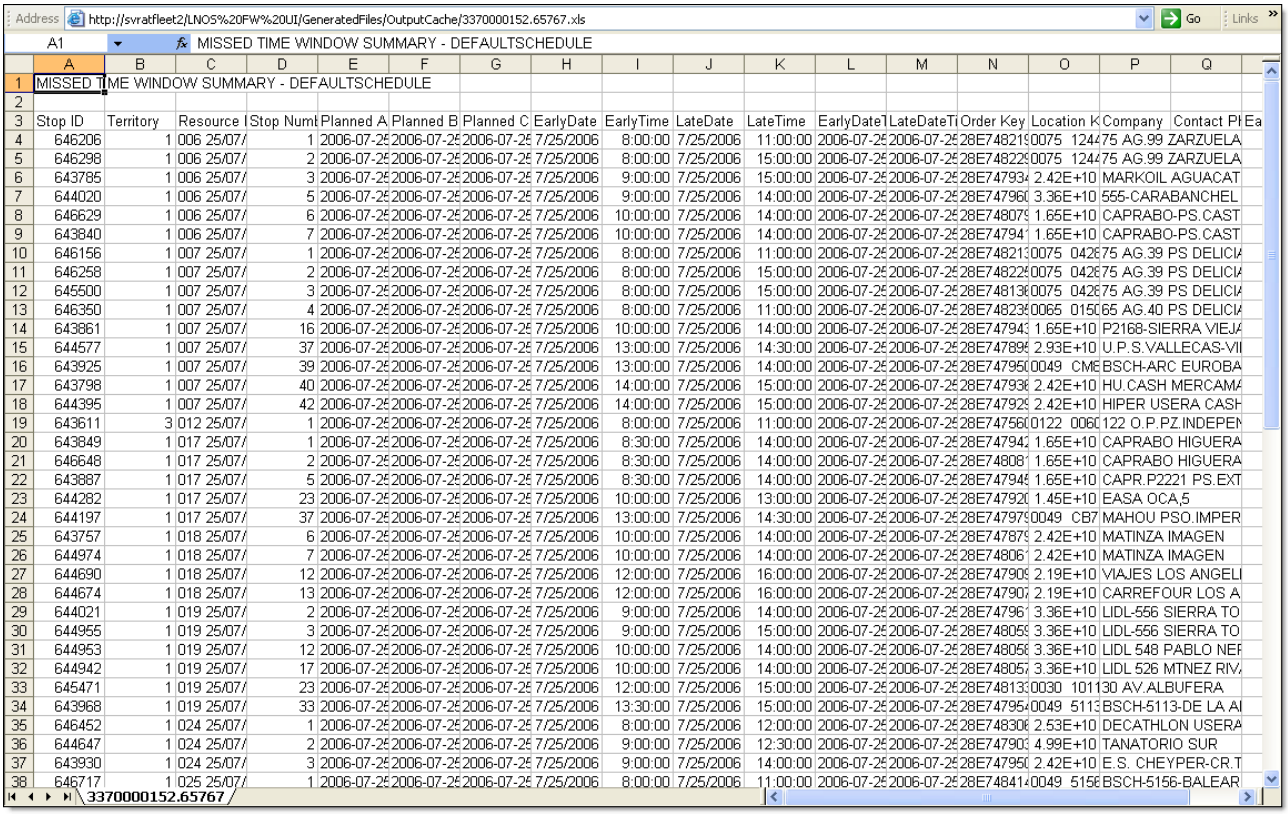
- tab-delimited
- HTML

Exporting as Tab-Delimited

Users can export a **Summary** report into a tab-delimited file which can then be saved as an Excel spreadsheet.

To export a **Summary** report as a tab-delimited report:

- Right-click on a report and select **Export as Tab-Delimited**. Descartes Route Planner exports the report information into a new browser window in Excel format.

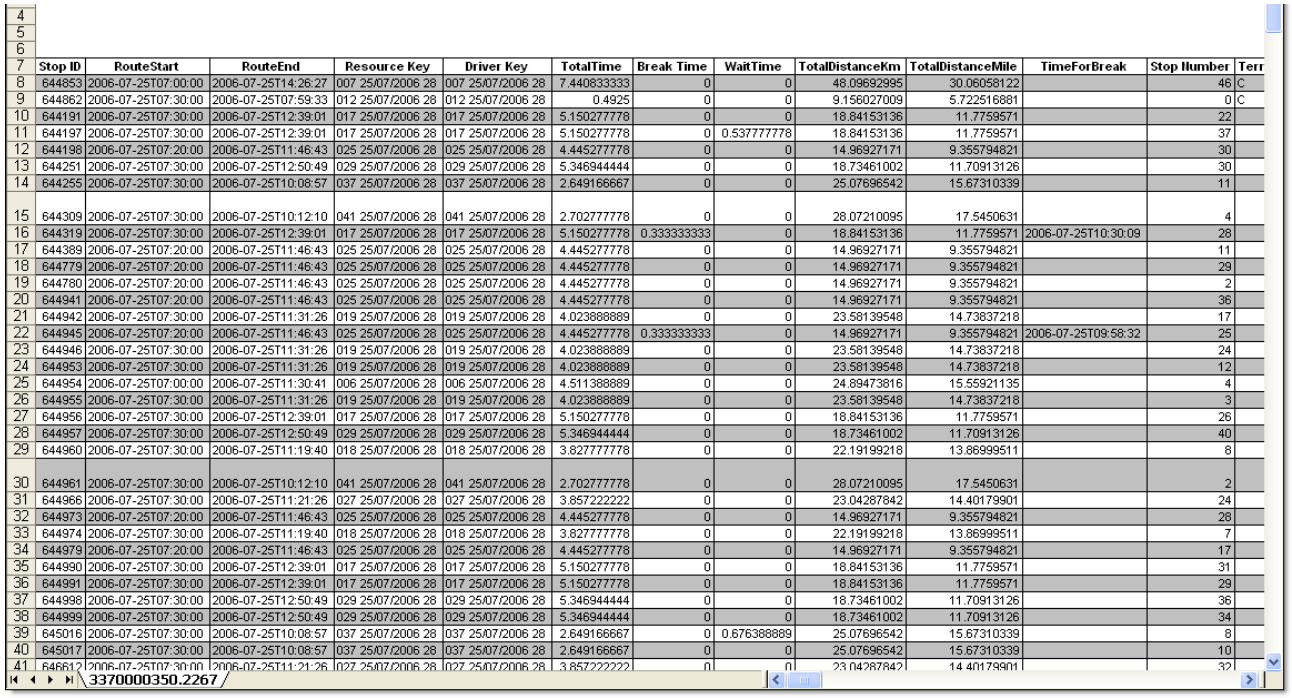


Exporting as HTML

Users can export a Summary report into an HTML file which can then be saved as an Excel spreadsheet.

To export a Summary report as an HTML report:

- Right-click on a report and select **Export as HTML**. Descartes Route Planner exports the report information into a new browser window in Excel format.



Stop ID	RouteStart	RouteEnd	Resource Key	Driver Key	TotalTime	Break Time	WaitTime	TotalDistanceKm	TotalDistanceMile	TimeForBreak	Stop Number	Terr
644853	2006-07-25T07:00:00	2006-07-25T14:26:27	007 25/07/2006 28	007 25/07/2006 28	7.440833333	0	0	48.09692995	30.06058122		46	C
644862	2006-07-25T07:30:00	2006-07-25T07:59:33	012 25/07/2006 28	012 25/07/2006 28	0.4925	0	0	9.156027009	5.722516881		0	C
644191	2006-07-25T07:30:00	2006-07-25T12:39:01	017 25/07/2006 28	017 25/07/2006 28	5.150277778	0	0	18.84153136	11.7759571		22	
644197	2006-07-25T07:30:00	2006-07-25T12:39:01	017 25/07/2006 28	017 25/07/2006 28	5.150277778	0	0.537777778	18.84153136	11.7759571		37	
644198	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0	0	14.96927171	9.355794821		30	
644251	2006-07-25T07:30:00	2006-07-25T12:50:49	029 25/07/2006 28	029 25/07/2006 28	5.346944444	0	0	18.73461002	11.70913126		30	
644255	2006-07-25T07:30:00	2006-07-25T10:08:57	037 25/07/2006 28	037 25/07/2006 28	2.649166667	0	0	25.07696542	15.67310339		11	
644309	2006-07-25T07:30:00	2006-07-25T10:12:10	041 25/07/2006 28	041 25/07/2006 28	2.702777778	0	0	28.07210095	17.5450631		4	
644319	2006-07-25T07:30:00	2006-07-25T12:39:01	017 25/07/2006 28	017 25/07/2006 28	5.150277778	0.333333333	0	18.84153136	11.7759571	2006-07-25T10:30:09	28	
644389	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0	0	14.96927171	9.355794821		11	
644779	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0	0	14.96927171	9.355794821		29	
644780	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0	0	14.96927171	9.355794821		2	
644941	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0	0	14.96927171	9.355794821		36	
644942	2006-07-25T07:30:00	2006-07-25T11:31:26	019 25/07/2006 28	019 25/07/2006 28	4.023888889	0	0	23.58139548	14.73837218		17	
644945	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0.333333333	0	14.96927171	9.355794821	2006-07-25T09:58:32	25	
644946	2006-07-25T07:30:00	2006-07-25T11:31:26	019 25/07/2006 28	019 25/07/2006 28	4.023888889	0	0	23.58139548	14.73837218		24	
644953	2006-07-25T07:30:00	2006-07-25T11:31:26	019 25/07/2006 28	019 25/07/2006 28	4.023888889	0	0	23.58139548	14.73837218		12	
644954	2006-07-25T07:00:00	2006-07-25T11:30:41	006 25/07/2006 28	006 25/07/2006 28	4.511388889	0	0	24.89473816	15.55921135		4	
644955	2006-07-25T07:30:00	2006-07-25T11:31:26	019 25/07/2006 28	019 25/07/2006 28	4.023888889	0	0	23.58139548	14.73837218		3	
644956	2006-07-25T07:30:00	2006-07-25T12:39:01	017 25/07/2006 28	017 25/07/2006 28	5.150277778	0	0	18.84153136	11.7759571		26	
644957	2006-07-25T07:30:00	2006-07-25T12:50:49	029 25/07/2006 28	029 25/07/2006 28	5.346944444	0	0	18.73461002	11.70913126		40	
644960	2006-07-25T07:30:00	2006-07-25T11:19:40	018 25/07/2006 28	018 25/07/2006 28	3.827777778	0	0	22.19199218	13.86999511		8	
644961	2006-07-25T07:30:00	2006-07-25T10:12:10	041 25/07/2006 28	041 25/07/2006 28	2.702777778	0	0	28.07210095	17.5450631		2	
644966	2006-07-25T07:30:00	2006-07-25T11:21:26	027 25/07/2006 28	027 25/07/2006 28	3.857222222	0	0	23.04287842	14.40179901		24	
644973	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0	0	14.96927171	9.355794821		28	
644974	2006-07-25T07:30:00	2006-07-25T11:19:40	018 25/07/2006 28	018 25/07/2006 28	3.827777778	0	0	22.19199218	13.86999511		7	
644979	2006-07-25T07:20:00	2006-07-25T11:46:43	025 25/07/2006 28	025 25/07/2006 28	4.445277778	0	0	14.96927171	9.355794821		17	
644990	2006-07-25T07:30:00	2006-07-25T12:39:01	017 25/07/2006 28	017 25/07/2006 28	5.150277778	0	0	18.84153136	11.7759571		31	
644991	2006-07-25T07:30:00	2006-07-25T12:39:01	017 25/07/2006 28	017 25/07/2006 28	5.150277778	0	0	18.84153136	11.7759571		29	
644998	2006-07-25T07:30:00	2006-07-25T12:50:49	029 25/07/2006 28	029 25/07/2006 28	5.346944444	0	0	18.73461002	11.70913126		36	
644999	2006-07-25T07:30:00	2006-07-25T12:50:49	029 25/07/2006 28	029 25/07/2006 28	5.346944444	0	0	18.73461002	11.70913126		34	
645016	2006-07-25T07:30:00	2006-07-25T10:08:57	037 25/07/2006 28	037 25/07/2006 28	2.649166667	0	0.676388889	25.07696542	15.67310339		8	
645017	2006-07-25T07:30:00	2006-07-25T10:08:57	037 25/07/2006 28	037 25/07/2006 28	2.649166667	0	0	25.07696542	15.67310339		10	
644612	2006-07-25T07:30:00	2006-07-25T11:21:26	027 25/07/2006 28	027 25/07/2006 28	3.857222222	0	0	23.04287842	14.40179901		32	

3370000350.2267

Printing a List

To print a report/list:

- Right-click on a report/list and select **Print List**. Descartes Route Planner exports the report information into a new browser window, which can then be printed out or saved.

Route Manifest

The Route Manifest provides the following information for a driver to use while driving the route:

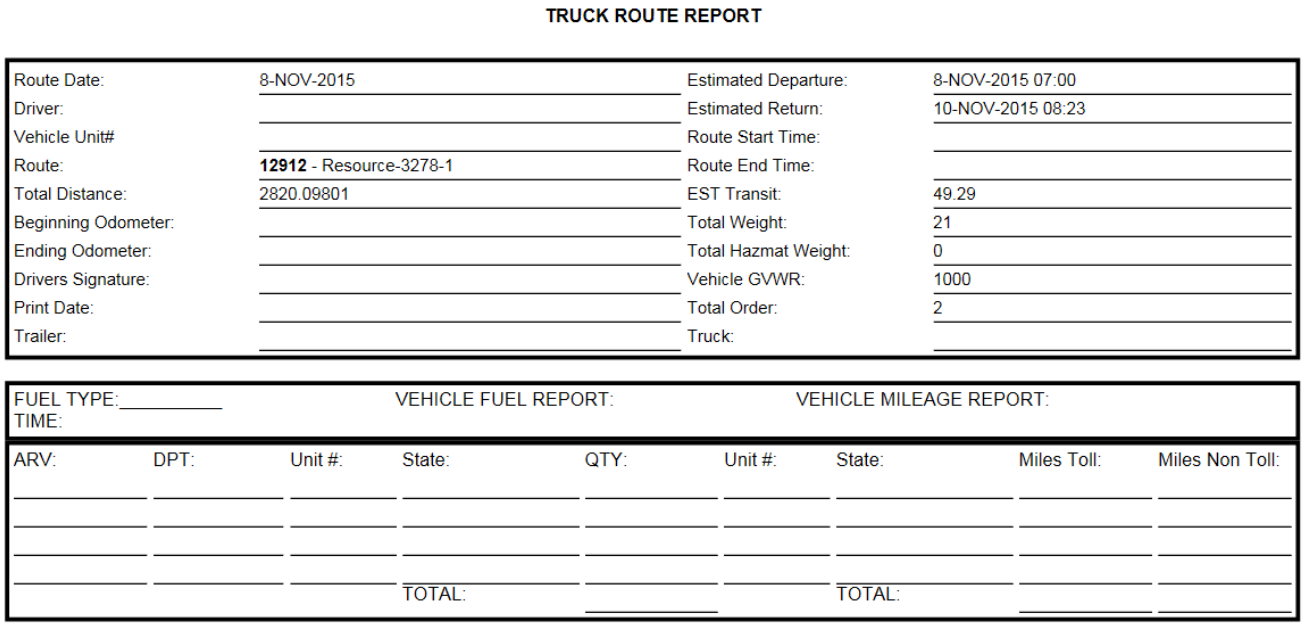
- stop number
- account number
- order number
- client name
- address
- measure1
- ETA and ETD
- earliest date and time
- latest date and time
- planned distance

- planned transit time
- Related truck UDF fields
- type (initial, drop-off, pickup, final)

Descartes Route Planner uses the custom DocRouteDetail.xml to render manifests, reading the Org/Schedule path and applying the XSL.

To view route manifests:

1 From the **Routes** quadrant, select the desired routes. Right-click and choose the **View Route Manifest** option from the right-click menu. Themanifest(s) display in a new Browser window.



TRUCK ROUTE REPORT

Route Date:	8-NOV-2015	Estimated Departure:	8-NOV-2015 07:00
Driver:		Estimated Return:	10-NOV-2015 08:23
Vehicle Unit#		Route Start Time:	
Route:	**12912** - Resource-3278-1	Route End Time:	
Total Distance:	2820.09801	EST Transit:	49.29
Beginning Odometer:		Total Weight:	21
Ending Odometer:		Total Hazmat Weight:	0
Drivers Signature:		Vehicle GVWR:	1000
Print Date:		Total Order:	2
Trailer:		Truck:	

FUEL TYPE:_____ TIME:

VEHICLE FUEL REPORT:

VEHICLE MILEAGE REPORT:

ARV:	DPT:	Unit #:	State:	QTY:	Unit #:	State:	Miles Toll:	Miles Non Toll:
			TOTAL:			TOTAL:		

2 To print the displayed manifest(s), click **Print** to display the **Print** window. Click **Close** to close the window.

To print all route manifests, right-click in the **Route** quadrant and select **Print All Manifests**. For multiple selected routes, the manifests will be printed in the order of the UI sort.

Driver Reporting Sheet

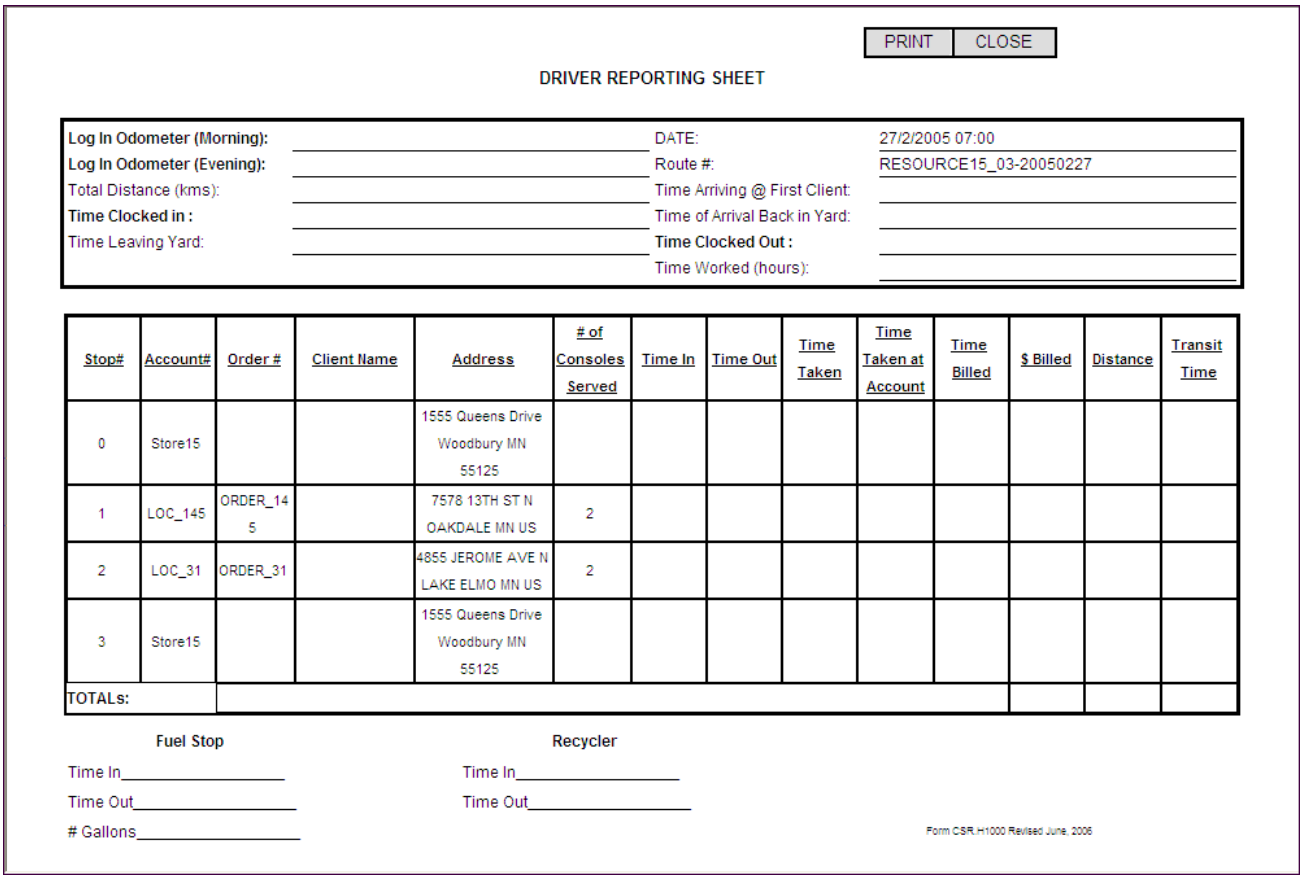
The **Driver Reporting Sheet** allows a driver the ability to keep track of the following:

- time in and out
- time taken

- time taken at account
- time billed
- amount billed
- distance
- transit time

To view the **Driver Reporting Sheet**:

1 From the Routes quadrant, right-click on the desired route and select **View Driver Reporting Sheet**. The **Driver Reporting Sheet** is displayed in a **Browser** window.



PRINT CLOSE

DRIVER REPORTING SHEET

Log In Odometer (Morning):		DATE:	27/2/2005 07:00
Log In Odometer (Evening):		Route #:	RESOURCE15_03-20050227
Total Distance (kms):		Time Arriving @ First Client:	
Time Clocked in :		Time of Arrival Back in Yard:	
Time Leaving Yard:		**Time Clocked Out :**	
		Time Worked (hours):	

Stop#	Account#	Order #	Client Name	Address	# of Consoles Served	Time In	Time Out	Time Taken	Time Taken at Account	Time Billed	$ Billed	Distance	Transit Time
0	Store15			1555 Queens Drive Woodbury MN 55125									
1	LOC_145	ORDER_145		7578 13TH ST N OAKDALE MN US	2								
2	LOC_31	ORDER_31		4855 JEROME AVE N LAKE ELMO MN US	2								
3	Store15			1555 Queens Drive Woodbury MN 55125									
TOTALs:													

Fuel Stop
Time In_____
Time Out_____
Gallons_____

Recycler
Time In_____
Time Out_____

Form CSR.H1000 Revised June, 2006

2 Click **Print** to display the **Print** window, and then click **Print** again.

Or

Click **Close** to close the window.

➲

Glossary

Administrator – A role definition that has access to all application functionality. The administrator manages the setup and flow of data within Descartes Route Planner.

Bucket - A service time window interval used to offer reservation slots to customers. Buckets are identified by date/time boundaries.

Dispatcher - A role definition that allows execution functionality in the system. Wireless and Status updates are included in this role's functionality.

LNOS Drawbridge – Descartes' core functionality for Publish/Subscribe mechanisms. It allows integration of documents across other LNOS-based Descartes applications as well as external applications.

LNOS – Logistics Network Operating System, acronym used for Descartes' standard development architecture.

Order - A movement request of goods from one geographic Location to another. An order in Descartes Route Planner can be either a transportation order or a bill of lading, and supports the information included in either type of document.

Planner - A role definition used for planning purposes. Some data editing capabilities are enabled for this role as well as all optimization commands.

Resource - A data definition of a physical unit that can actually perform the work. It is used in the planning and execution of orders. A resource has characteristics such as capacity, costs, availability, and restrictions, etc. For example, a truck or a truck/trailer/driver are both resources.

Rmpi – The Descartes Route Planner optimization engine.

Route - Routes are used to link a specific schedule with a specific resource. All the Resource settings are copied to the Route record and can be modified within a Route so that different settings can be used to build different Routes from the same resource and different Schedules.

➲ **Note—** Routes are created automatically by Descartes Route Planner, based on the schedule setting provided with the resource users create. Routes cannot exist without Schedules and resources.

Schedule – A group of entities that represent the different aspects of the schedule settings, Routes, and their Stops. A schedule is used to communicate the results of an optimization function for export or execution. A schedule is also a collection of logistics tables that can be combined to create a logistics plan. These tables include Schedules, Routes, Stops, and buckets. Different Schedules let users group these logistics tables, so that users can combine or split routing problems to suit user's business model.

Stop – A physical geographic point that represents a portion or entirety of an order. It holds all the planning information of an order.

Template - Users can set up templates that represent commonly used Schedules, Routes, and Stops in a user's organization, so that users can create Schedules, Routes, and Stops quickly and accurately.

Transportation Order - A movement request of goods from one geographic Location to another, specifying date and time, pickup and delivery locations, and quantities.

Transport Order Entry - Transport Order Entry System, sometimes referred to as TOE, enables external systems to communicate with FW via http. This application contains http listeners that enable interfaces the execution of multiple functions in o