Last Update: October 1, 2024

Enterprise Route Management

Configure Web Application

**Prepared for:**

ERM Customers

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1. Overview

The Route Planner application uses a configuration file that controls many aspects of the application. These configurations include:

* Field visibility and order in all tables
* Editability of fields
* Controls specific functionality

If there is a configuration value found in the file that is not listed in this document, it should not be changed.

* 1. Configuration Files

There are two configuration files for the web application:

* config.json
  + This holds system and general application configuration values.
* config\_data.json
  + This holds all configuration values dealing with how data and tables are displayed.

They can be found under the root folder of the web application (normally named routeplanner).

1. Config.json
   1. Environment

The Environment section contains URLs and IDs for the ArcGIS Enterprise environment that ERM is hosted on. See the *ERM Application Deployment Guide* for instructions on updating values.

* 1. Preferences

The Preferences section contains controls for general functionality of the application.

* "alternateBasemap"
  + See the [Basemap Configuration](https://github.com/EsriPS/enterprise-route-management/blob/master/Configuration/Basemap%20Configuration.docx) document for details
* "timePickerDefaultHour"
  + Sets the default time on Create Plan Page
* "allowMaxWeightRecalculation”
  + If set to true, when user manually assigns orders to a route whose weight exceeds the max weight on the route, application will ask if they want to automatically increase max weight of route.
* "showEmptyCollections"
  + When set to true, the Collections tab will be hidden if there are 0 or 1 collections for a plan.
* "useOrderPairs"
  + When set to true, the application will assume that all orders are part of a pair (Pickup and Delivery). Certain functionality will be altered, such as not allowing manual re-sequencing.
* "showDashboardControls"
  + When set to true, the Create Dashboard and Open Dashboard buttons will be available. See [Dashboard Deployment Guide](https://github.com/EsriPS/enterprise-route-management/blob/master/Install-Deployment/ERM%20Dashboard%20Deployment%20Guide.docx) for more detail.
* “editTimeIntervalMilliseconds”
  + Interval in milliseconds for when Plan edits are saved. Any edits made are not written back to the feature layer until end of the interval.
* “quickGPCheckInterval”, “slowGPCheckInterval”
  + A delay added onto the end of Create Plan, Refresh, Solve, Commit, Create Dashboard for when it checks that the geoprocessing service is complete.
    - Note that these values may need to be increased to give your BSI code time to complete.
  + “quickGPCheckInterval” applies to Refresh and Commit.
  + “slowGPCheckInterval” applies to the other functions.
* "allowClearAssignedOrders"
  + Controls the visibility of the Clear Assigned Orders button on Routes tab
* “allowAssignPickupOrders”
  + Controls if users can manually assign Pickup orders. When set to false, the selection box for Pickups will be disabled and logic will prevent user from manually adding or moving between routes.
* “allowAssignLoadedCompletedExceptionOrders”
  + Controls if users can manually assign orders that are in progress (as determined by GeoOrderState value). Usually updated with Workforce.
  + When set to false, any order with a GeoOrderState value will have its selection box disabled so it cannot be manually removed or reassigned.
  + Recommended to always have set to false.
* “showDateTimeTextDescription”
  + When set to true, some time stamps will have a text description, such as “16 minutes ago” or “within the last hour”. When set to false, always get specific time stamp.
* “timeUnits”
  + Defines units of time that fields with “fieldTypeTime” are stored in. Minutes, Hours, Days are valid values.
* “displayDays”
  + Affects fields configured with “fieldTypeTime” type. When true, format will be DD:HH:MM. When false, format will be HH:MM.
* “showOrderAssignmentSuccessMessage”
  + When set to false, will not see a success message when manually assigning, reassigning, or removing orders. This can improve productivity if making lots of manual changes.
* “allowReloadPlan”
  + When set to true, the Reload Plan button will be visible. When run, this will pull in any changes from the Plan feature service without having to run a Refresh or close/open plan. This is most applicable when using Workforce, if you want to quickly pull in any changes drivers have made without pulling in updates from the business system.
* “alternateReloadPlanButtonText”
  + Allows the Reload Plan button to have different text.
* “allowAssignedOrderResequencing”
  + Defines whether a user can drag assigned orders around to re-sequence the visit order.
  + Note that if “useOrderPairs” = true, order re-sequencing will be disabled regardless of what “allowAssignedOrderResequencing” is set to.
* “rowToolTipValue”
  + When the user hovers over a row in any table, a tooltip shows the value for the selected attribute. Can set which attribute is shown in this section.
  + If "rowToolTipValue" section is not present, no tooltips are shown.
  + If "rowToolTipValue" present but table name (eg "orders") is not present or is empty string, tooltip will not be shown on that table.
    - “collections” – sets value for collections table.
    - “orders” – sets value for orders tables (Unassigned Orders tab, assigned orders under routes, orders listed when opening Collection).
    - “routes” – sets value for route table.
    - “collectionOrders” – sets value for orders when you open a collection.
    - “plans” – sets value for All Plans table.
* “planningMode”
  + Only applicable when using Pickups and Deliveries (Order Pairs) in a Dynamic capacity based on GeoOrderState. By default, it is off with a value of “”.
  + To activate set = dynamic
  + When active, Route Planner will actively scan orders to make sure there are not broken pairs. When Plans have several hundred or thousands of orders, this can cause performance degradation.
* “maxItemsBeforeEnableDropdownFilter”
  + How many items a dropdown list needs to have to show the filter textbox at top of list.
  + Graphical user interface

    Description automatically generated with medium confidence
* “persistSelectionOnSearch”
  + When set to true, any selection will be persisted when Search is run.
    - For example, user has selected four unassigned orders. They use the Search tool to find another with specific attribute. When they click View Order from Search, the four previously selected orders will still be selected, along with their new order.
* “allowRefreshPlan”
  + When set to false the Refresh Plan button will be hidden when a plan is open.
* "allPlansTableDefaultSortField"
  + Default field that All Plans table is sorted by. If left blank will show in same order as Registry table which reflects the order that plans were created.
* "allPlansTableDefaultSortDescending"
  + Default setting for how records in All Plans table are sorted. Set to true for descending or false for ascending. Only applicable if default sort field is set.
* "ordersTableDefaultSortField"
  + The default field that Orders table is sorted by. If left blank will be sorted by ObjectID.
  + Orders controls Unassigned Orders, and Orders viewed under Collections. Assigned Orders are always sorted by their sequence number.
* "ordersTableDefaultSortDescending”
  + Default setting for how records in Orders table are sorted. Set to true for descending or false for ascending. Only applicable if default sort field is set.
* "routesTableDefaultSortField”
  + The default field that Routes table is sorted by. If left blank will be sorted by ObjectID.
* "routesTableDefaultSortDescending”
  + Default setting for how records in Routes table are sorted. Set to true for descending or false for ascending. Only applicable if default sort field is set.
* "collectionsTableDefaultSortField”
  + The default field that Collections table is sorted by. If left blank will be sorted by ObjectID.
* "collectionsTableDefaultSortDescending”
  + Default setting for how records in Collections table are sorted. Set to true for descending or false for ascending. Only applicable if default sort field is set.
* "unassignedOrdersAssignmentRules"
  + Controls which options are available for Assignment Rules with Unassigned Orders.
  + Must be from this list of valid options: "Override", "Exclude", "Anchor first", "Anchor last"
* "assignedOrdersAssignmentRules"
  + Controls which options are available for Assignment Rules with Assigned Orders.
  + Must be from this list of valid options: "Override", "Anchor first", "Anchor last", "Preserve route", "Preserve route and relative sequence"
* “showSaveOutputLayerCheckBox”
  + Shows option to generate analysis files with solve to help with debugging issues.

A screenshot of a computer

AI-generated content may be incorrect.

* + If option is exposed, system will ignore the includeNetworkAnalysisLyrInVRPResult setting in the ERM API config.
  1. Solve Modes

The parameters listed here control the different solve options available and which value is set as the default.

* “primarySolveMode”
  + Sets which solve mode is used when you click the Optimize button without going into the dropdown
  + By default it is blank. This will set to Optimize Routes.
  + This mode sends all unassigned orders along with any orders on selected/all routes to the VRP. Does not change Assignment Rules for any orders.
  + All valid values:
    - optimize\_routes
    - optimize\_assigned\_orders
    - resequence\_routes
    - validate\_routes
* “useSolveModes”
  + Controls visibility of available solve modes when user clicks the dropdown arrow on the Optimize button
    - showOptimizeRoutes
      * Exposes the “Optimize Routes” solve mode option in the Run Route Optimization dropdown menu.
      * This mode sends all unassigned orders along with any orders on selected/all routes to the VRP. Does not change Assignment Rules for any orders.
    - showOptimizeAssigned
      * Exposes the “Optimize Assigned Orders” solve mode option in the Run Route Optimization dropdown menu.
      * This mode sends only the orders already assigned to routes to the VRP. If a subset of routes is selected, only orders on those routes are sent. No unassigned orders are included with the solve.
    - showResequenceRoutes
      * Exposes the “Resequence Routes” solve mode option in the Run Route Optimization dropdown menu.
      * This mode sends only orders already assigned to routes to the VRP and treats them all as if their Assignment Rule = Preserve Route. If a subset of routes is selected, only orders on those routes are sent. No unassigned orders are included with the solve. The Assignment Rule adjustment is virtual, no values are changed in the Plan.
    - showValidateRoutes
      * Exposes the “Validate Routes” solve mode option in the Run Route Optimization dropdown menu.
      * This mode sends only orders already assigned to routes to the VRP and treats them all as if their Assignment Rule = Preserve Route and Relative Sequence. If a subset of routes is selected, only orders on those routes are sent. No unassigned orders are included with the solve. The Assignment Rule adjustment is virtual, no values are changed in the Plan.
* “resequence routes”
  + Exposes the “Resequence Routes” solve mode option in the Run Route Optimization dropdown menu.
  + This mode sends only orders already assigned to routes to the VRP and treats them all as if their Assignment Rule = Preserve Route. If a subset of routes is selected, only orders on those routes are sent. No unassigned orders are included with the solve. The Assignment Rule adjustment is virtual, no values are changed in the Plan.
* “validate routes”
  + Exposes the “Validate Routes” solve mode option in the Run Route Optimization dropdown menu.
  + This mode sends only orders already assigned to routes to the VRP and treats them all as if their Assignment Rule = Preserve Route and Relative Sequence. If a subset of routes is selected, only orders on those routes are sent. No unassigned orders are included with the solve. The Assignment Rule adjustment is virtual, no values are changed in the Plan.
  1. Selection Highlight

Parameters allow for changing the properties of the selection color and opacity for both Routes and Orders.

A screenshot of a computer code

Description automatically generated

* “routeHighlightOptions”
  + Controls properties on route lines.
* “orderHighlightOptions”
  + Controls properties on order points.
* “fillOpacity”
  + The opacity of the fill (area within the halo). This will be multiplied with the opacity specified in color.
  + Valid values 0-1.
* “haloOpacity”
  + The opacity of the highlight halo. This will be multiplied with any opacity specified in color.
  + Valid values 0-1.
* “color”
  + First 3 values sets RGB color code.
  + Fourth is transparency value that Opacity is multiplied by. Recommend to leave at 1 and change only the Opacity values.

1. Config\_data.json
   1. Tables and Fields

The content of each of the tables can be customized.

* "planTableFields"
  + This section controls the configuration for the All Plans table
* “collections”
  + This section controls the configuration of the Collections table
* “orders”
  + This section controls the configuration of the Orders table. This includes Unassigned Orders, Assigned Orders, and Orders viewed under Collections.
* “routes”
  + This section controls the configuration of the Routes table.
  1. Name, Alias, and Width

These are basic configuration for each field.

* “name”
  + This must match the name of the field in the feature service.
* “alias”
  + How the field is visible to the user. Does not need to match the alias of the field in the feature service.
* “width”
  + How wide the field column will be by default.
  1. Visibility

By default, all fields are visible. There are two tags to use to control visibility.

* “hidden”
  + When true, the field is turned off by default but the user can turn on in the Hide/Show section
* “hiddenAlways”
  + When true, the user never sees the field. Note that the application will still see the field so if it is used for any calculations hiding always will not affect functionality.
  1. Sequence

To change the sequence (order) of how the fields appear in the table, simply change the order they are listed under each table section.

* 1. Editable

Each field in each table can be controlled individually to define if the user can edit.

* “editable”
  + If true, the user can edit. If not defined the field will be editable.

|  |  |
| --- | --- |
| i | The Batch Edit options for Assignment Rule and Specialties is also controlled by the editable setting. If the fields are not editable the Batch Edit option for that field will be disabled. |

* + 1. Edit by Order Type

If using more than one delivery type, whether fields are editable can be controlled by type. The “default” value is if an order is not defined as listed type.

"name": "assignmentrule",

"alias": "Assignment Rule",

"editable": {

"byRowField": {

"stoptype": {

"Delivery": true,

"Pickup": true

},

"default": true

}

.

.

"name": "assignmentrule",

"alias": "Assignment Rule",

"editable": true,

.

.

.

* 1. Edit Location

In the “orders” table, there is a unique field “\_editLocation” that controls whether the user can edit the physical location of an order point. And what type of edit can be made. Each type can be further divided by order type.

* “map”
  + If set to true, user will have option of moving order location by clicking on the map.
* “list”
  + If set to true, user will have option to choose from a list of locations and can select to move order to that point.
  + The MDM\_Locations feature service must also have points for the list to be populated.

|  |  |
| --- | --- |
|  | "name": "\_editLocation",  "alias": "Location",  "editableType": {  "byRowField": {  "stoptype": {  "map": {  "Delivery": true,  "Pickup": false  },  "list": {  "Delivery": true,  "Pickup": false  }  },  "default": true  }  .  . |
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* 1. Type

For fields, a type can be defined. If the type is not listed below, it is only reflecting the type in the feature service and is a placeholder for possible future functionality.

* “fieldTypeTime”
  + If field has this type, Route Planner will convert to display in HH:MM or DD:HH:MM format.
  + Is used in conjunction with “timeUnits” and “displayDays” settings.
  + For example, 130 would become 02:10.
  1. Popups

The attributes that are displayed in popups when you click on a feature in the map are configured in the “popupTemplates” section. There is a section for “orders” and “routes”.

* “title”
  + Text and field displayed at top of popup.
* “fieldInfos”
  + Which fields are displayed in the body of the popup. Can add as many fields as needed.
  + “fieldname” matches the field name in the feature service
  + “label” is what is shown in the popup, comparable to alias.
* “outfields”
  + This will be set to OrderID for Orders and RouteName for Routes. Values should not be changed, are needed to pass values between map and table with the View in Table functionality.

"orders": {

"title": "Order ID: {consignee}",

"content": [

{

"type": "fields",

"fieldInfos": [

{

"fieldName": "specialty",

"label": "Specialty"

},

{

"fieldName": "routename",

"label": "Route Name"

}

]

}

],

"outFields": ["orderid"]

},

.

.

.

* 1. Layer Index

In the data section, there is a place to set the index values for the different layers. These are based on the ERM\_Plan\_Template feature service.

* "planRoutesLayerId"
* "planOrdersLayerId"
* "planCollectionsLayerId"
* "planSpecialtiesLayerId"
* "planZonesLayerId"
* "planMetadataLayerId"
* "orderPairsLayerId"

1. Revision History

|  |  |  |
| --- | --- | --- |
| Date | Description | Editor |
| 9/16/2020 | Initial version | Mike Nelson |
| 3/3/2021 | Update for interval config | Mike Nelson |
| 3/22/2021 | Detail on interval config and Clear Assigned Orders | Mike Nelson |
| 4/8/2021 | Added detail on showDateTimeTextDescription, allowAssignPickupOrders and allowAssignLoadedCompletedExceptionOrders | Mike Nelson |
| 4/29/2021 | Added values for the Time Display configuration | Mike Nelson |
| 5/21/2021 | Updates for Reload Plan and Show Message | Mike Nelson |
| 5/24/2021 | New section with layer index details | Mike Nelson |
| 8/18/2021 | Updates for v 3.2 – new solve modes | Mike Nelson |
| 12/10/2021 | Updates for v3.3 – default solve mode, row tool tip and allow resequencing parameters | Mike Nelson |
| 1/10/2024 | Updates for v4.1 – persistSelectionOnSearch | Mike Nelson |
| 6/14/2024 | Updates for v4.2   * allowRefreshPlan * remove routeOrders * add new default sort values * settings for available Assignment Rules * batch edit controlled by editable setting | Mike Nelson |
| 7/1/2024 | Update for “outFields” with popup configuration | Mike Nelson |
|  | Updates for 4.3   * Selection highlight configuration | Mike Nelson |