DRIVER 2.1 User Manual

Django Administrator Interface

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Introduction

This document provides usage instructions for the Django Administrator Interface, which will be referred to as the admin interface, of the DRIVER web application. DRIVER is designed to collect and analyze data about traffic crashes that occur at a particular place. The admin interface allows a specific set of users known as Administrators to log in and manage content, permissions, and users who can access the application.

The Administrator also has the ability to add the Geographic Boundaries and various languages which can be seen on the User Panel as well as in the admin interface.

The admin interface, thus allows the Administrator to view how many users have registered in the application with how many groups/permissions. It also allows the Administrator to add new users, permissions, add/edit the schema, etc. Along with this, the Administrator can accept or reject a role request through here.

Thus, the admin interface allows the Administrator to control the application.

This is a draft document and is subject to revisions.

Authentication and Home Page

The admin interface may be accessed through "<URL to DRIVER web application>/admin/". Upon accessing the site, the user will be directed to a login interface as shown in Figure 1. This interface requires a username and password combination in order for the user to login. Users who have been granted the Administrator role may use their credentials to log into the interface. Other DRIVER user roles such as the Analyst and Public will not be able to login, in which case the login form will show an error message. Upon logging into the system, the home page will then be shown on the screen. Figure 2 shows the home page of the admin interface. The home page shows all the databases which are needed to maintain the DRIVER web application.

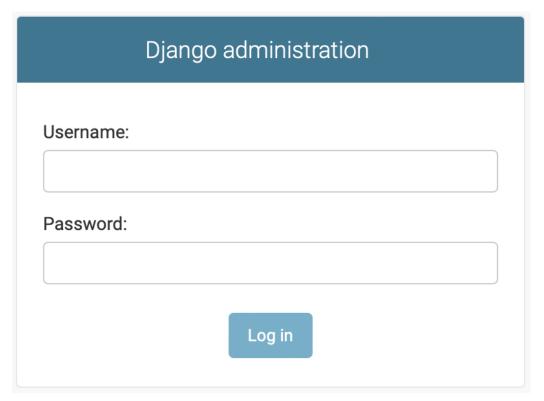


Figure 1: Django Administrator Interface Login Form

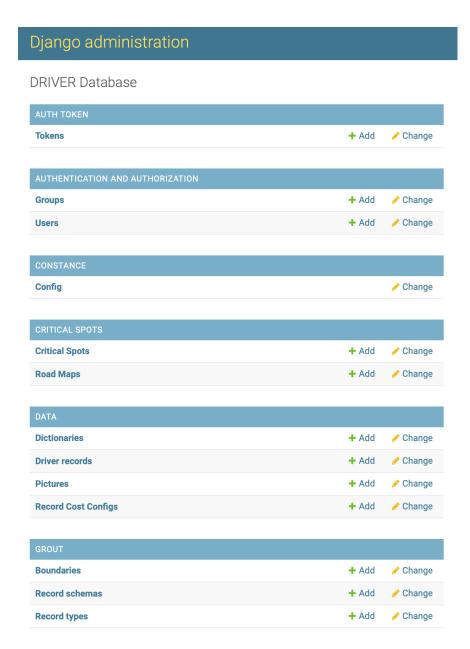


Figure 2: Admin interface home page

Record Schema for Incidents

The Record Schema for Incidents is a user interface that allows the Administrator to add/edit the details (schema) which will reflect as the Incident Input Form in the User Panel. Only the Administrator has the ability to add or make any changes to this Schema. The Incident Input Form will reflect whatever changes made to the Record Schema which will be shown in the next section.

Related Content for Incidents

Related Content is used to logically separate and organize additional data found inside the Incident Record Schema into categories that make sense to the user. These categories should be able to capture important information relevant to an incident. The categories can then be further customized with specific input fields and data types using the schema editor.

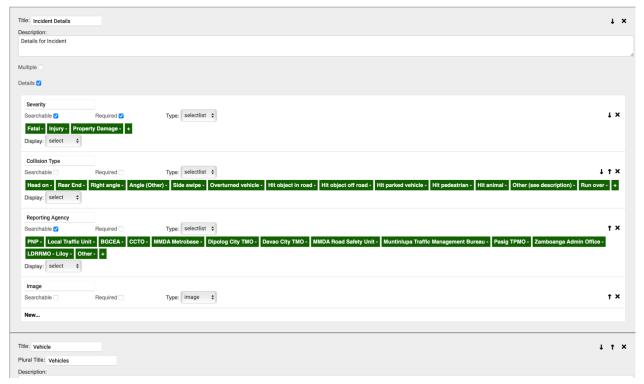


Figure 3: Related content for incident

The Related Content for Incidents appears as the Incident Input Form in the User Panel. Figure 3 shows a screenshot of the Incident Input Form from the DRIVER web application. The form reflects the record schema set for the incident record type.



Figure 4: Incident input form from the DRIVER web app

Adding New Related Content

To add a new content to the record schema, click on the 'New' button as shown in Figure 5. Enter details such as the table title and description. If the user should be able to enter multiple items of this related content, check the 'Multiple' checkbox. For example, if multiple vehicles could be involved in an incident,

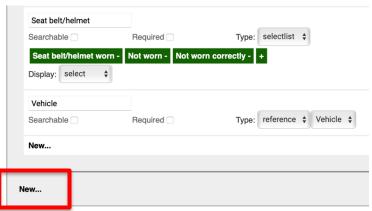


Figure 5: Add new related content

the user would need to be able to record more than one vehicle, so the 'Multiple' option should be checked. This is shown in Figure 6.

Title: Insert title Description: Multiple Details New		
Description: Multiple Details		
Multiple Details	Title: Insert title	
Details	Description:	
Details		
Details		
Details		
	Multiple	
New	Details	
New		
	New	

Figure 6: Add new related content

Editing Related Content Types

Once a new type has been created, the properties and options should be defined for the Related Content. To begin editing properties under the Related Content, modify the different property fields such as the property name, property type, display and options. Figure 7 shows an example of a possible set of properties and options for the *Person* Related Content, i.e. *Involvement, Gender, Age, Injury, Alcohol/Drugs, and Seat belt/helmet*.

Fitle: Person			
Plural Title: People			
Description:			
A person involved in the	incident		
Multiple 🗸			
Details			
Involvement			
Searchable <a>	Required	Type: selectlist \$	
Pedestrian - Witnes Display: select \$	ss - Passenger - Driver -	•	
Gender			
Searchable <	Required	Type: selectlist \$	
Male - Female - O Display: select \$	ther - +		
Age			
Searchable	Required	Type: integer \$	
Injury			
Searchable	Required	Type: selectlist \$	
Fatal - Serious -	Minor - Not Injured - +		
Display: select \$			
Alcohol/drugs			
Searchable	Required	Type: selectlist \$	
Alcohol suspected -	Drugs suspected - +		
Display: select \$			
Seat belt/helmet			
Searchable	Required	Type: selectlist \$	
Seat belt/helmet wor	n - Not worn - Not worn co	orrectly - +	
Display: select \$			

Figure 7: Edit related content

The following screen is where the schema for a Related Content is defined. This includes property names, property types, and the order of property display. There are six main types of properties: *text, integer, selectlist, reference, number, and image*. Refer to the chart in Appendix A for descriptions of all property types.

When a related content is created, the schema appears blank, as shown below.

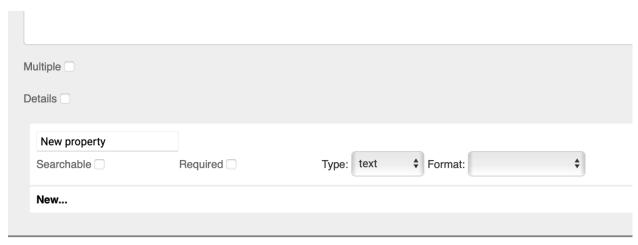


Figure 8: Add new property

- 1. Click 'New to add the first property to the Related Content.
- 2. Add the necessary property attributes such as property type, format, and options.
- 3. Click 'Save' when finished to save the property.

Clicking on the 'Save' button automatically updates the schema with the new data structure. These new properties and options would show up immediately in the DRIVER web application.

See the examples below for how to enter each field type.

General Editor Options

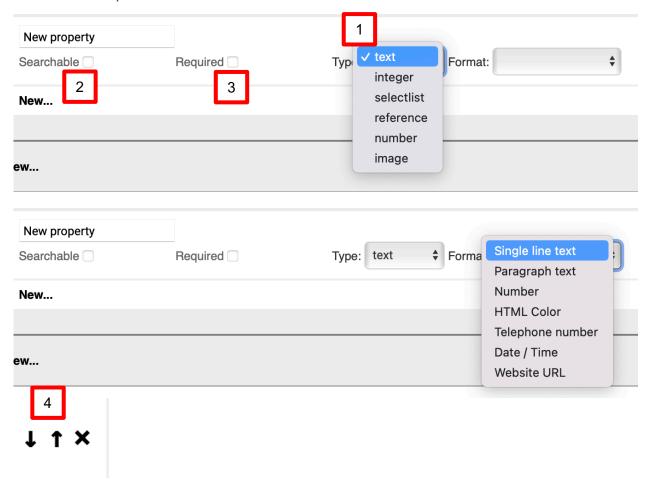


Figure 9: General editor options

- 1) Drop-down to select the type of property. Property types are *text, integer, selectlist, reference, number,* and *image.* See Appendix A for full descriptions and options.
- 2) Checking 'Searchable' box will make data from this field show up in searches
 - a. text Data will be returned in keyword searches
 - b. selectlist Data values will be filterable via a drop-down menu
- 3) Checking the 'Required' box will make the property required when encoding a crash record. The user only be able to save a record once all required fields are completed.
- 4) Buttons that allow reordering or deleting of the property. Moving the property up or down in the list will change its place in the order displayed to the user. 'X' removes the property.

Text Field Options

The below image depicts the multiple text fields options which the Administrator can select while adding a text field.



Figure 10: Text field options in the schema

- 1. Title of the text field. The user will see this as the name of the property.
- 2. The drop-down menu for options to select the format of text field. This drop-down changes the type of text field that is presented to the user. See Appendix A for full descriptions of text options.

Paragraph Text

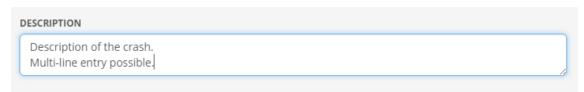


Figure 11: Paragraph text

The above image shows that a user can add a multi-line text or Paragraph Text by selecting this field from the Text Options.

Select List Options

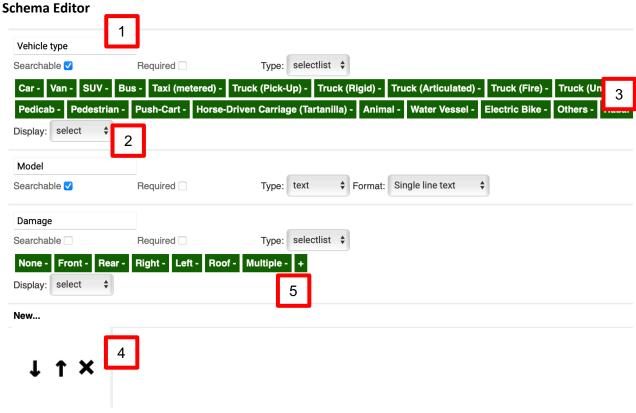


Figure 12: Selectlist options

- 1. Title of the Select List field. The user will see this as the name of the field
- 2. The type of Select List to display. Select List has two options (see Appendix A for details):
 - a. Select List
 - b. Checkbox
- 3. Field options contain all the options that users are presented in the Select List.
- 4. Buttons used to manipulate the fields and their order in the Select List. 'Move Up' and 'Move Down' change the order of the option. 'Delete' removes the option.
- 5. Buttons to add another option value, delete the last option value, or delete all the values.

Field Display

Select List

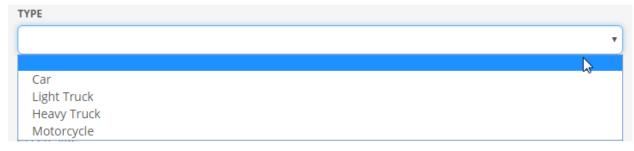


Figure 13: Field display of selectlist

Checkbox

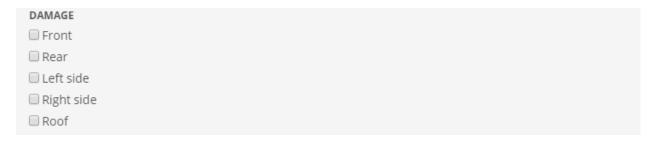


Figure 14: Field display of checkbox

Image Uploader Options

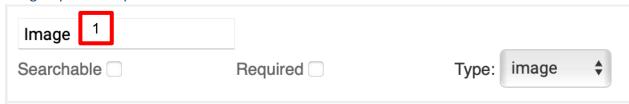


Figure 15: Image type options

1. Title of the Image Uploader field. The users will see this as the name of the field.

Field Display



Figure 16: Field display of image uploader

Cost Aggregation Settings

The Record Cost Config section allows the Administrator to add cost as per the Related Content Type added in the Schema. Once the Related Content Type is selected, the Administrator then needs to select the field for which cost aggregation settings are to be applied. After selecting the fields, dropdown(s) will come automatically which will allow the Administrator to add the cost of each field. Along with this, the Prefix and/or Suffix can also be added as per the requirement. These values will be calculated at the backend and will be shown under the "Total Economic Loss and Societal Harm" section in the User Panel.

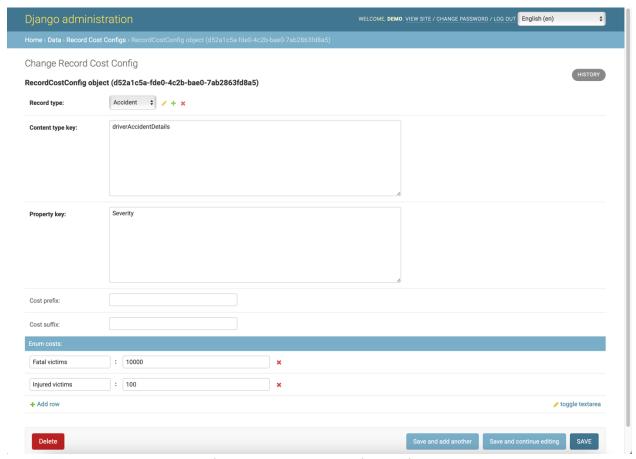


Figure 19 - Cost Aggregation Settings

Preview

The Administrator gets an overview of the form from the Preview button. The Preview will help the Administrator get a view of how the form will look in the User Panel.

The below image shows the Preview of the Incident.

Incident Input Form Preview

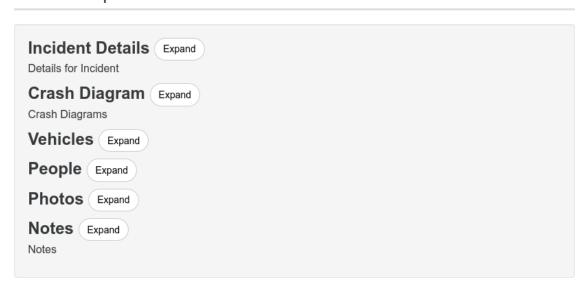


Figure 20 - Incident Input Form Preview

Language

The DRIVER application allows the Administrators to add and edit a new language or some fields of the existing language.

The Administrator can see the list of languages using the "View all Language" tab in the Language section of the side navigation bar. Here, languages added for both Ashlar Editor (Admin Panel) and the User Panel can be seen. If the user wants to download any file, they can click on the name in the "file" column and the file can be downloaded. The default column tells which file is set as default i.e. the name against which true is displayed in this column, that particular language is set as the default language of the application. When clicked on "Edit", the user will be redirected to the Edit page. Along with this, the "Delete" option is also provided. When clicked on this, the particular language will be deleted from the system. The Delete functionality is not applicable for the default language.







Figure 21 - View all Languages

Adding a New Language

This button allows the Administrator to add a new language to the system or edit an existing one. To add a new language, the Administrator has to select the panel i.e. Ashlar editor (Admin Panel) or User Panel, select the language, add the file, and check the check box if they want to keep this language as

the default. A Sample File option is also provided, which will get activated upon selecting the Panel. This option allows the user to download a sample file for the particular panel. Once all the details are filled up, the particular language file will be uploaded to the system and will also appear in the dropdown as one of the languages for the users.

Editing the Language

The Administrator can edit the details in the already existing language by selecting the panel, language, adding the file, and checking/unchecking the Default opinion.



Figure 22 - Add/Edit Language

Geographies

The DRIVER web application allows users to filter data by geographic areas. The schema editor is where users are able to upload shapefiles (.shp file extension) to define the filterable geographic areas. The list of geographies can be accessed from the left-hand menu navigation.

Adding Geographic Layers

Just like Related Content, click 'View All Geographies' to see the current list and 'Add New Geographies' or 'Add new Shapefile' to add a new geographic layer.

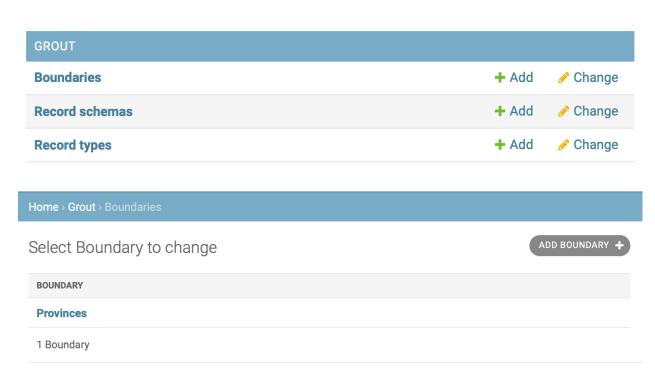


Figure 23 - View all Geographies

After clicking 'Add new Shapefile', the editor brings up fields to specify the details of the geography layer. The editor also provides a dialogue box to upload the shapefile. Because the shapefile format requires several different files to function properly, the files should be packaged into a folder and zipped.

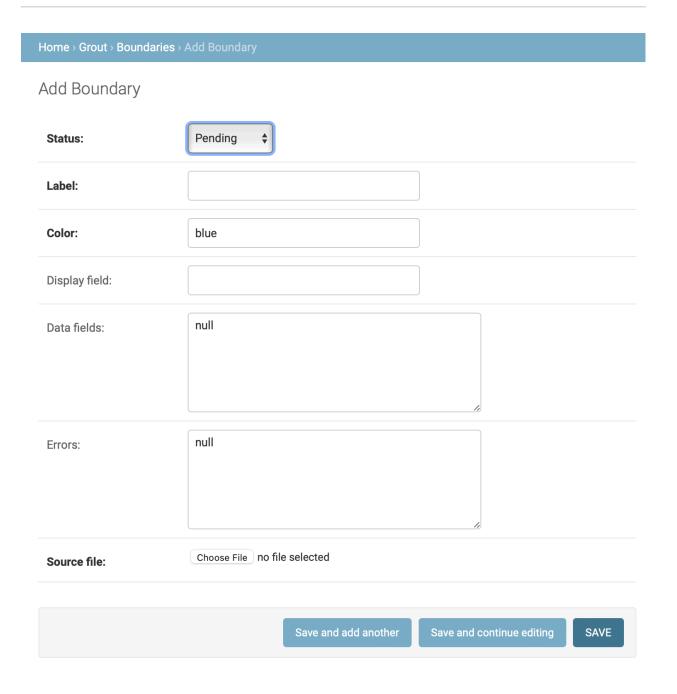


Figure 24 - Add new Geography - 1

- 1. Enter a label for the geography layer. This will display as the name of the geography layer on the Map view
- 2. Choose the zipped folder containing the shapefile with the dialogue box
- 3. Click 'Upload' to load in the shapefile
- 4. Select the proper field from the 'Display Field' drop-down menu (explanation below)
- 5. Select a color for the geography layer

6. Click 'Upload' finalize the addition of the geography layer

Uploading the shapefile is a simple six-step process. Geographic boundaries used for filtering are made up of smaller polygons. Those polygons need labels when they are presented to the user for filtering. The Schema Editor takes a field from the shapefile to use as the label of the component polygons. The first time 'Upload' is clicked, the editor loads all the shapefile's fields and displays them in the 'Display Field' drop-down menu. The values in the field that is selected in this drop-down menu will be used as the labels of the polygons.

For example, below is a boundary shapefile containing many smaller internal polygons. The window shows all the fields associated with the polygon highlighted in red.

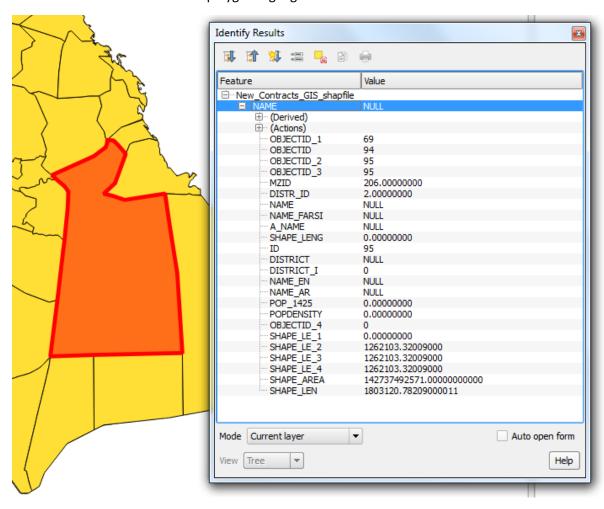


Figure 25 - Geography Files

When the user clicks 'Upload' the first time, the 'Display Field' drop-down becomes active and shows all of the fields found in the shapefile. The drop-down below contains the same fields as the table above.



Figure 26 - Display Field (select after upload)

For this example, 'MZID' is used as the label of the field. When the shapefile is loaded into the map view, the values in 'MZID' are used as the labels of the polygons. As seen below, the value for 'MZID' is now used to filter the Maintenance Contract geography: 206 corresponds to the polygon selected.

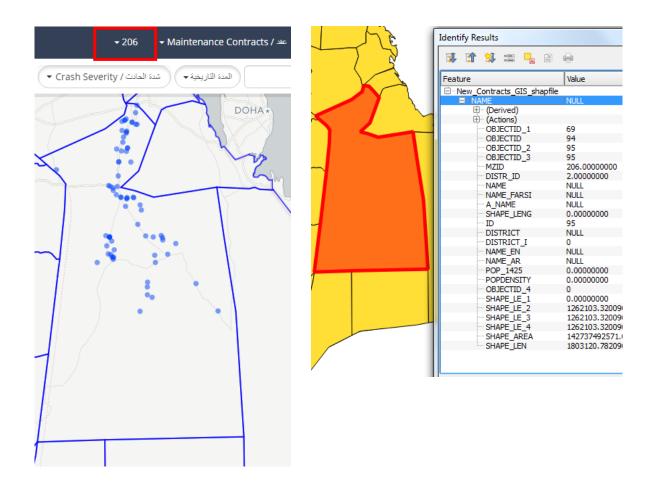


Figure 27 - Geography displayed on Map and it's relevant files

Edit Geography

The Administrator can edit the geography by clicking on the "Edit" button against the geography name. Here, the Geography Label, Display Field (select after upload) and Geography Color can be changed but the Geography file cannot be uploaded.

Delete

The Geography can be deleted by clicking the "Delete" button against the particular geography.

User Management

The Django admin interface includes tools for managing users. Users may register via a single sign-on integration (currently with Google), or an administrator may create a user and send them a temporary password.

Managing Users

If an administrator is logged in to the Django admin interface, there is a "Users" button the homepage. Clicking this button will display a complete list of users. From this screen, the administrator may filter by user type, edit user information and role, view more details about a user, or delete the user.

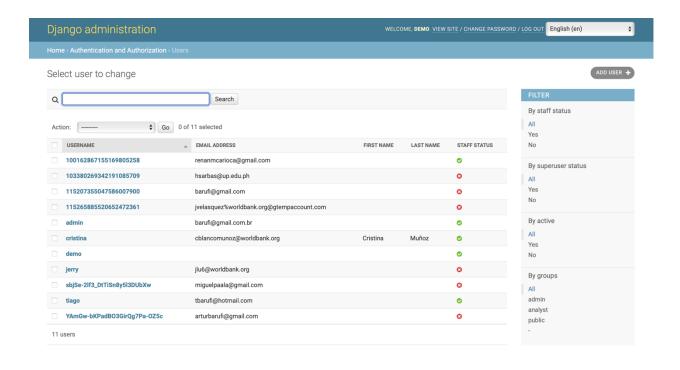


Figure 17: Managing users

User Roles and Permissions

There are three roles with differing permissions in DRIVER. Roles and permissions were defined in order to provide different levels of functionality to different types of users.

Admin

The admin role has access to the most functionality in the application, including login capability to the database design editor software. Admins can modify the structure of the database, add new fields, make fields required, upload geographic boundaries, and manage users. In DRIVER, admins may export user access logs for analysis.

Analyst

The analyst role includes permissions to view and edit all data in DRIVER. Analysts may add, edit, and delete incidents and interventions, and have access to all event information, including details associated with an incident such as people and vehicle information.

Public

Public users may register to view basic incident data. They may not edit any data, and can not view person or vehicle information.

New Users

To create a new user, the administrator simply clicks the "Add new user" button, which brings them to an interface with a new user form. Enter a username, email address, and password, and choose an appropriate role. After creating the user with this method, the administrator must alert the user to the credentials. Single sign-on integration is preferred for increased security.

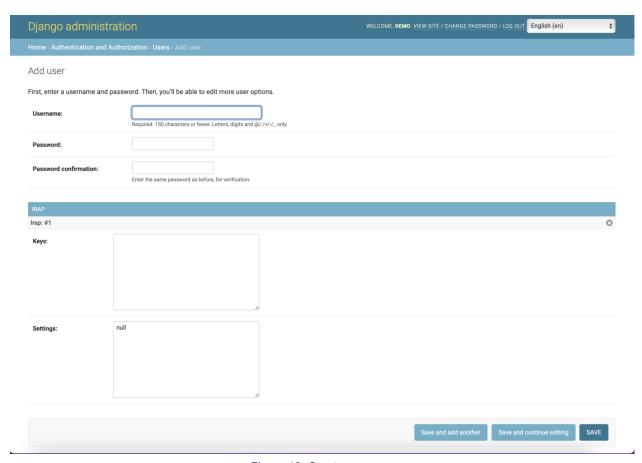


Figure 18: Create new user

Administrators may also change the role of an existing user. For example, the user registers with a Google account and they are automatically granted a "Public" role. An administrator may elevate them to "Analyst" or "Admin" roles at that point.

Statistics Configurations

Black Spots / Critical Spots

To access the black spot configuration, click the "Critical Spots" button under the CRITICAL SPOTS section of the Django Admin Interface. Then set the title, roadmap, size, effective start, effective end, and record type. Click the "Calculate" button after setting all the required input.



Figure 20: Critical spots

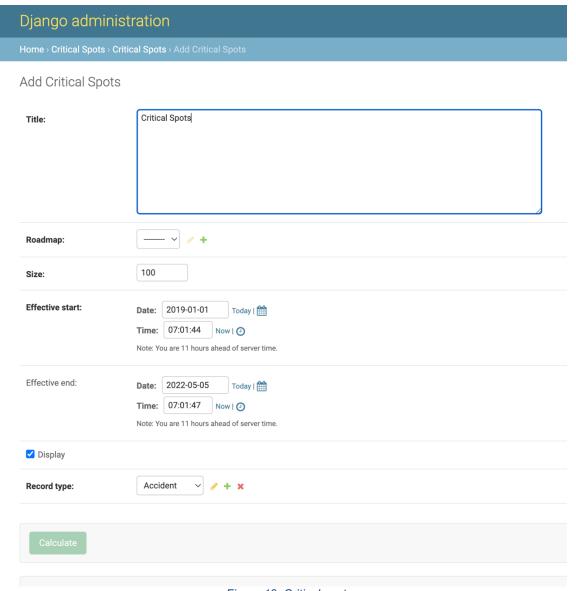


Figure 19: Critical spots

Economic Loss and Societal Harm

To set costs for economic loss and societal harm, expand the Incidents navigation tab and click on "Record Cost Configs" and select RecordCostConfig object. The interface provides formatting options for record type, content type, the field to associate with costs, and the currency. Only option-type fields are available for associating costs.



Figure 22: Record cost configs

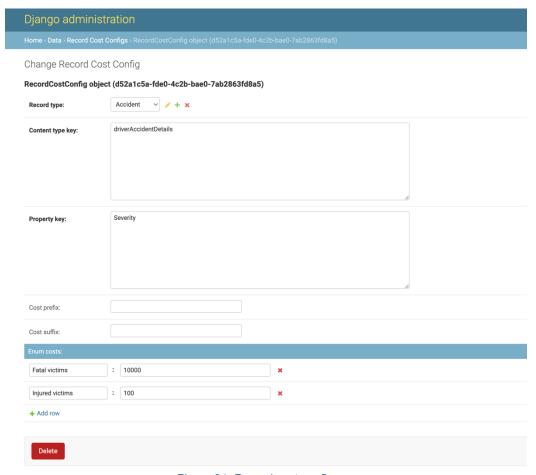


Figure 21: Record cost configs