CHARM Web Interface User Guide

CARM Solutions

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Table of Contents

(DRAFT)

1 Introduction

The CHARM Web Interface is a web-based graphical user interface (GUI) built on top of the CHARM Integration API, exposing all underlying functionality of the **CHARM risk management platform.**

The CHARM platform offers functionality related to AI-based credit scoring, pricing and risk management of SME credits. Users of the web interface are lender organization loan officers and credit analysts managers working with new and existing SME customers.

On a high level the CHARM Web interface contains the following functionality;

- User **authentication** and user **authorization,** allowing users to log in and out of the portal and access more or less functionality depending on their access settings.
- Ability to generate and visualize a **CHARM Scorecard** for a SME entity, a loan amount and an optional tenor. Scorecards are typically used during the initial stages of the credit application process for quick go-/no-go decisions. CHARM Scorecards can be viewed in the Web Interface or downloaded as PDF documents.
- Ability to generated and visualize **CHARM Credit Memos** to be used as the basis for creating an final proposal during the underwriting process. Credit Memos can view modified and viewed in the Web Interface, or downloaded as PDF documents. This functionality will no be part of the first MVP.
- Ability to modify the underling Score and Memo calculations via the **CHARM Configuration Center,** a user interface used for managing score cutoff values, interest rate spans, decision rule settings and more.
- Ability to print a **Portfolio monitoring and risk analysis report** based on loan ledger information and continuous re-scoring of entities. This report will help identify early risks and opportunities related to existing loans. This functionality will no be part of the first MVP.
- Basic administrative functionality including **user account management** and **metering data** visualization.

The purpose of the Web interface is to expose all relevant backend CHARM Platform functionality in an easy-to-use web-based graphical user interface. This web interface can be used as-is to support and augment existing manual workflows, or be used together with automated workflow integrations with the CHARM Integration API. .

2 Accessing the Web interface

The CHARM Web interface is reachable using any modern browser through the URL provided for your CHARM Platform installation.

2.1 Supported browser

The CARM Web interface is supported on the following browsers;

- Current versions of **Google Chrome.**
- Current versions of **Firefox.**
- Current versions of **Microsoft Edge.**

The Web interface is tested on the browsers listed above before major version releases, support in other browser versions (i.e Internet Explorer or Safari) is untested and unknown.

All access to the CARM Web interface is protected using HTTPS.

3 User authentication and authorization

The CHARM Web Interface bases user authentication on the following model;

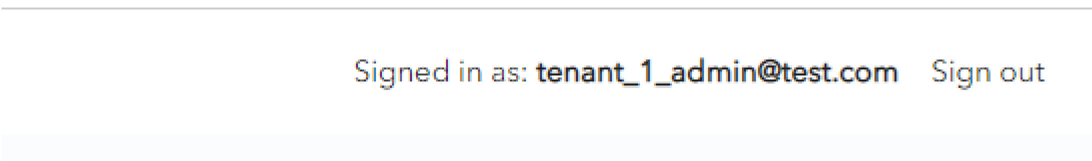
- Each user have a user account with a **user name** and a **password** used to log into the CARM Web interface. Passwords have to be at least 8 characters.
- Users can be of two types, **Normal users** and **Admin users**. Normal user can access most functionality, but Admin users can also manage user accounts and other
- All user accounts are managed within the CHARM platform, no provision for authentication against external registries or identity providers are currently available.

3.1 Logging in and out of the CARM Web interface

Users log in to the platform using the following dialog;

Here the username and password needs to be entered and the **Login button** pressed. If the username and password is correct the user will now be shown the *dashboard view* described in the next section..

Logging out is done from the right part of the top menu when logged in;



Pressing **Sign out** will log the user out of the CHARM Web interface and navigate back to the login screen.

If a user does not explicitly logs out the session will time out after 30 minutes of inactivity.

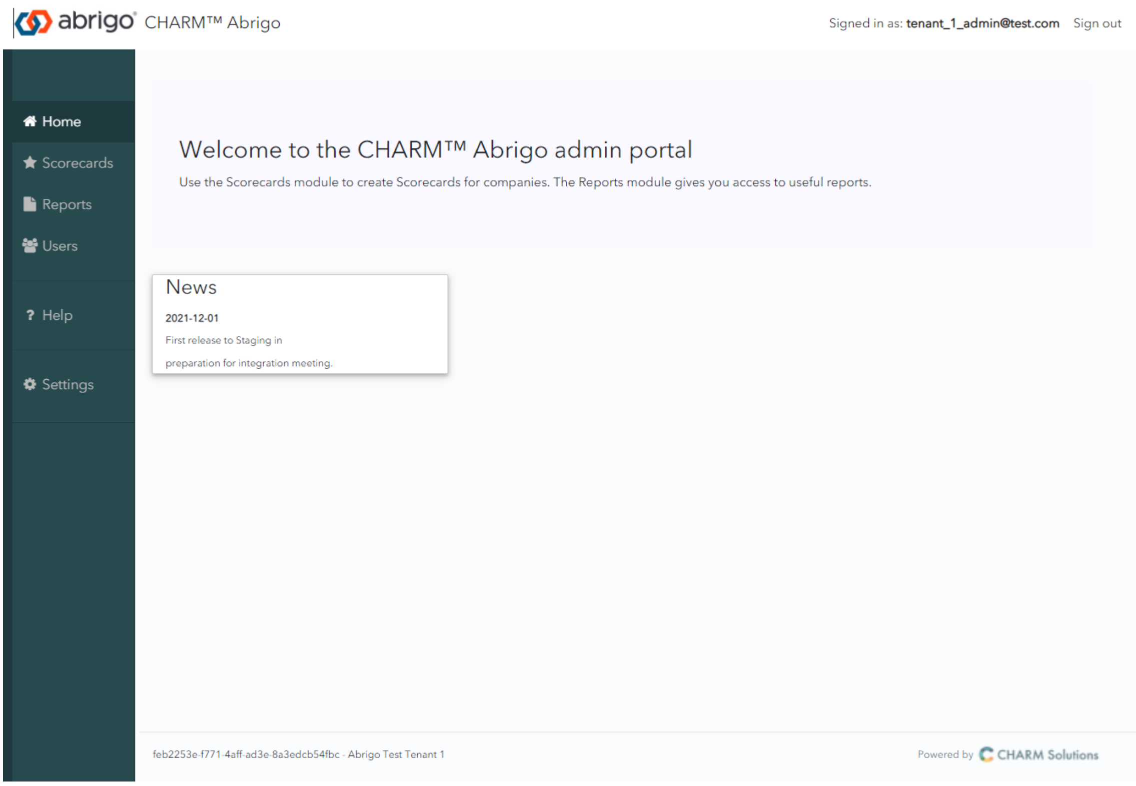
3.2 Normal user and Admin users

The following are the differences between Normal and Admin users in the CARM Web interface;

Action	Normal user	Admin user
Generate CHARM Scorecards for entities, see the result and download a PDF version	Yes	Yes
See my own historical Scorecards	Yes	Yes
See Scorecards generated by other user	No	Yes
Generate a CHARM Memo, see the result and download a PDF version	Yes	Yes
See my own historical Memos	Yes	Yes
See Memos generated by other user	No	Yes
Print Portfolio monitoring reports	Yes	Yes
View, add and remove CARM user accounts	No	Yes
View usage and metering data	No	Yes
Managem calculation settings in the Configuration Center	No	Yes

4 The dashboard view and menu structure

The first view the user sees after logging in is the dashboard view, with the left navigation menu and the header;



The dashboard view shows high-level important information relevant to the currently logged in user.

4.1 The left menu

The left navigational menu, visible on all CHARM Web Interface views when logged in, is used to navigate between the different functional module views in the interface. The following menu choices are available;

- **Home** - this menu item will navigate back to the *Dashboard view.*
- **Scorecard** - This menu item will open up the *Scorecard module* used to see historical Scorecards and generate new ones.
- **Memos -** This menu item will open up the *Memos module* used to see historical Memos and generate new ones.
- **Help** - This menu item will open up the *Help module, giving access to help and support information.*
- **Reports** - This menu item will open the *Reports module* used to generate and print Reports.

- **Settings** - This menu item will open the settings area used to access the *User management, Metering* and *Configuration settings* modules . Note that this menu item is only available for Admin users, it is not visible for Normal users.

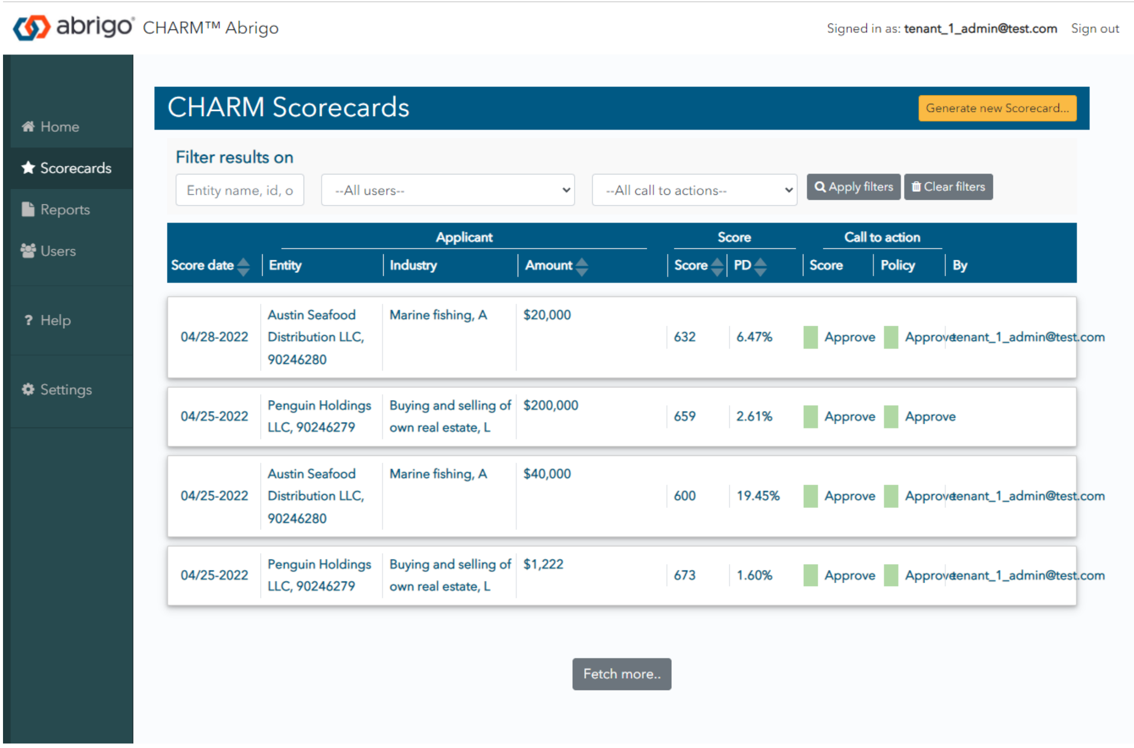
5 Working with Scorecards

When viewing or generating CHARM Scorecard the **Scorecards module** is used to list current and historical CARM Scorecards, generate new ones and examine individual Scorecards in detail.

A CHARM Scorecards is a detailed risk scoring of an entity based on data available before a formal loan application have been submitted. The purpose of the Scorecard is to give a quick, automated view of an entities risk profile, including system-generated call to actions based on machine learning models and credit decision rules.

5.1 The Scorecard Index view

The first view the user sees after opening the Pre-screening module is the *Scorecard Index View*;



This view shows a list of the 12 most recent Scorcards available for the currently logged in user, sorted by descending creation time. Normal users will only be presented with scores created by themselves, while Admin users will see the last scores created by all users.

Each score is presented as a *Scorecard row widget* showing high-level information about the generated score.

The card shows three layouts depending on the state of the Score generating process.

For a new Scorecard that is created, but where the but where data from external registries must be fetched before the score can be calculated the following card is shown, in the *Generating layout*;

TODO, screenshot

The user cannot interact with this Scorecard row, it just shows that score generation is in progress and will be completed as soon as all external data is collected. A Scorecard row can be in this state for several minutes. You don't have to stay in the Scorecard module or even be logged in to the portal for the scoring process to progress, this happens automatically in the background.

Once a Scorecard generation is completed the Scorecard row switches automatically to the following layout, the *Done layout*;

This card shows high-level details about the generated Scorecard. The following is shown;

- Basic **loan information** (company, industry, loan amount, tenor).
- The calculated **CHARM score.**
- the calculated **PD.**
- Information about who created the **Scorecard**, and when.
- **Call-to-action recommendations** on the Score calculation or the Credit Policy.

By clicking the card the user will be shown score details in the S**corecard details view** described later. section.

If the Scorecard generation fails for any reason the card layout switches to the following view, the *Fail layout*;

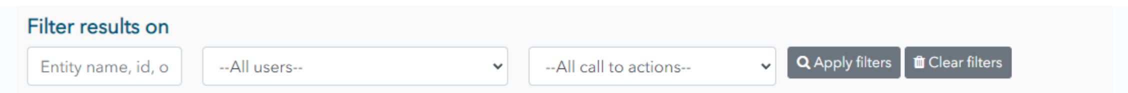
TODO, screenshot

This card shows that an error occurred when generating the Scorecard, for example because the entity id entered does not correspond to an existing company.

Pressing the **Trashcan icon will** remove the faulty Score from the index view.

5.1.1 Filtering the result

The pre-screening index view allows for filtering of the result set using a filter widget;



Using this filter a Score for a specific entity can be fetched by entering either a full entity id or part of an entity name in the search field and pressing the **Apply filters button.** This will filter the cards in the results view, updating the result.

In addition, Scorecards can be filtered on specific call-to-actions by Risk or Credit policy. Select a call to action in the dropdown and press the Apply filters button.

Normal users can only filter on company name or legal id, while Admin users can also *filter on user*, showing only Scores generated by a certain user. This is done by selecting the desired user in the drop-down and pressing the Apply filters button. The user dropdown is not visible for Normal users.

Pressing the **Trashcan icon** will clear any filters currently used.

5.1.2 Sorting the result

Scorecards can be sorted using the up and down arrows in the Scorecard list header;

Using this sorting can be done ascending or descending on;

- Score creation date
- Amount
- CHARM Score
- PDF

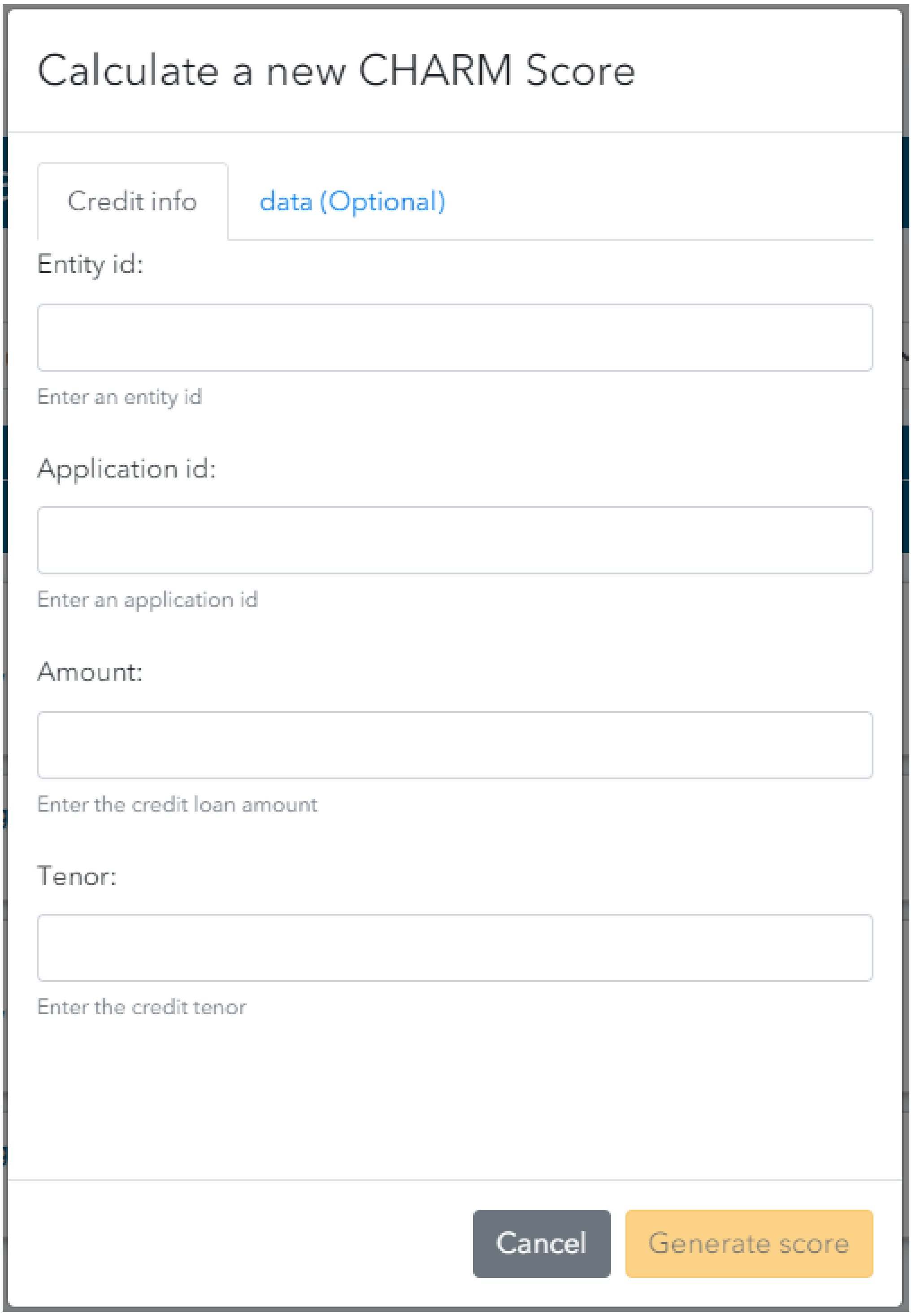
Default sort is Score creation date, descending

5.1.3 Loading more Scores

At the bottom of the grid the button Fetch more… will load 12 more Scorecard rows from the backend database and add them to the bottom of the list. This functionality allows for stepping through older results in a filtered set.

5.2 Creating a new CHARM Scorecard

Pressing the **Generate new Scorecard…** button in the Index view will open up the **Create Pre-screening dialog**;



In this view the user can enter the following;

- **Entity id** - The id of an Entity to create a Scorecard for. *This id is deployment-specific, typically identifying an entity in the CHARM customers LOS system.*
- **Application** - An optional id identifying a credit application for the Entity
- **Amount** - The desired loan amount in USD
- **Tenor** - The optional loan term in months

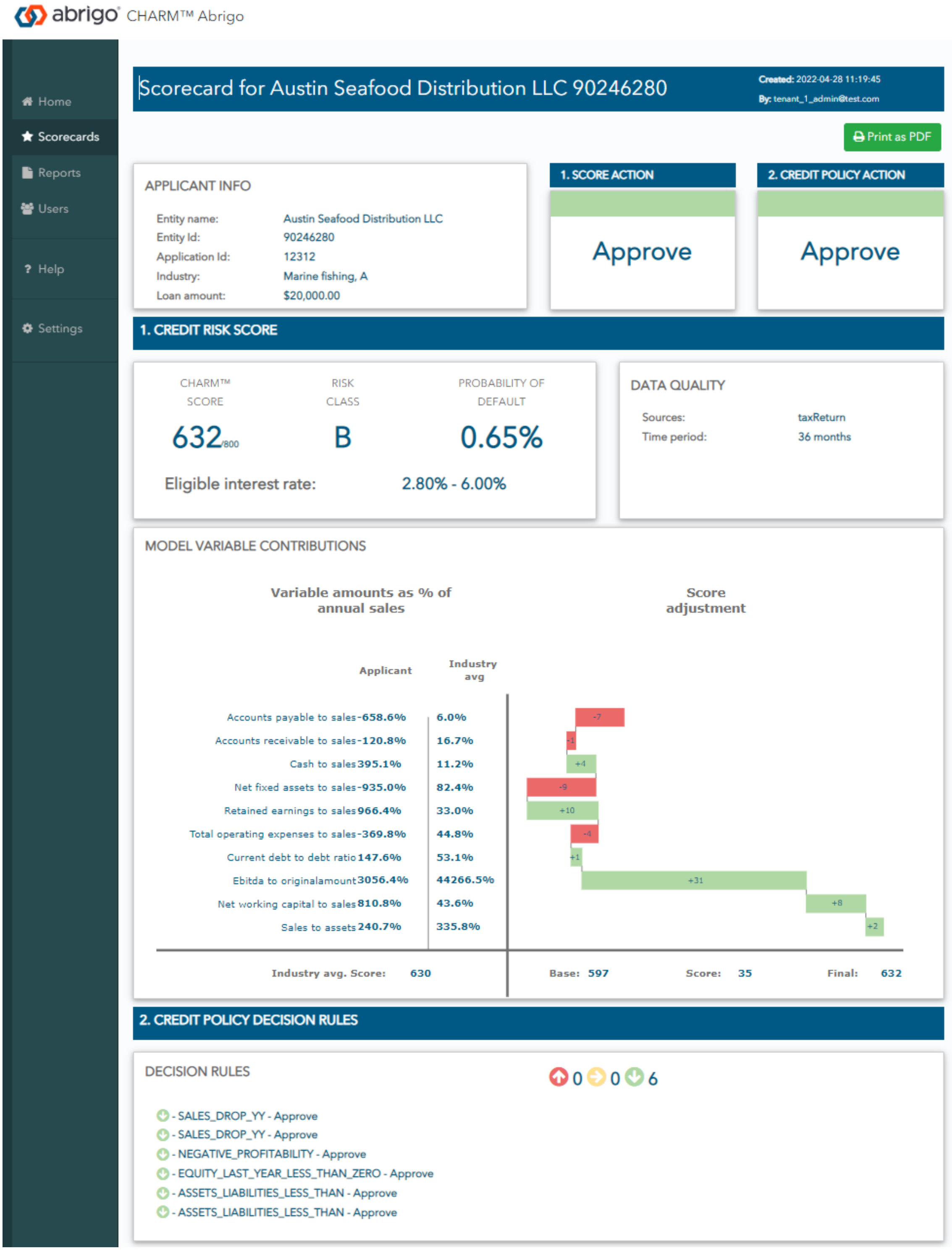
Pressing the **Generate Scorecard** button will add a new Scorecard row to the top of the index view and close the dialog. The new Scorecard row will either show *Generating* or *Done* depending on whether enough data exist in the CHARM Platform data lake for a Scorecard to be calculated directly, or if data will need to be fetched from external registries before the operation can be completed.

Once the CHARM Score is calculated the details view can be opened by clicking anywhere on the Scorecard row.

> Note that Scorecards are typically generated via an API integration with the CHARM Integration API, meaning they will just be available in the Web interface without the need to manually generate them using the generation dialog.

5.3 Seeing details about a pre-screening CARM score in the score details view

When a Scorecard row *Done* layout is clicked it is expanded into the **Scorecard details view**;



This view shows all details for calculated CHARM Score as a credit Scorecard.

It is divided into the following sections;

5.3.1 Applicant info section

This section show information about the loan case generating the CARM score. The following is shown;

- The name and id of the entity being scored
- The related credit application id, if relevant
- The industry name and code of the scored entity
- The loan amount used when calculating the Score

5.3.2 Call to action section

This section shows two recommended call-to-actions helping the user to decide on how to progress with the credit application. Two different versions are given one based on the underlying CHARM Score calculation, and one based on the configured Credit Policy.

The following call-to-actions are used;

- **Approve -** The recommendation is to Approve the application
- **Review -** The recommendations is to approve or deny the application after a manual review.
- **Deny -** The recommendation is to deny the application.

5.3.2.1 CHARM Score overview section

This section shows high-level information about the calculated CHARM Score. The following is shown;

- The final **CHARM score** as a number in the range between 400 and 800
- The identified **Risk class rating.**
- The calculated **PD** for the entity, as a percentage.
- A calculated **interest rate span**

5.3.2.2 Data quality section

This section show the quality of the data being used when calculating the Score, and will help in interpreting the result.

The following quality metrics are shown, with a quality level and value

- **Sources**, which data sources were used to generate the Score
- **Period**, how long was the span of available data used
- **Data age**, how old was the used.

For all metrics a value and a severity level is shown.

5.3.2.3 Variable contribution plot

This section show the contribution of the top 10 selection variables on the calculated CHARM Score. The contribution is shown as a waterfall bar chart with positive and negative variable weights contributions, showcasing how important various underlying variables have been in the generation of the final score.

Actual and industry average values are also shown for each Score.

5.3.2.4 Credit policy rules section

This section shows the list of currently enabled CHARM Credit Policy Rules (see later), including the current call-to-action for each based on whether they are triggered or not.

5.3.3 Printing a Scorecard as PDF

By pressing the Print as PDF button the Scorecard will be generated as a PDF document and downloaded to the users desktop.

> If it the first time the button is pressed the PDF generation will take a few seconds, during with the download button is disabled and a progress indicator shown. After the generation is complete the document will be downloaded.

6 Managing User accounts

TODO, screenshot + text

7 Modifying calculation rules in the Configuration Center

TODO, screenshot + text