IBM Cloud Pak for Business Automation Demos and Labs 2024

End to End Demo for Cloud Pak for Business Automation Using Client Onboarding Scenario

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1 Introduction

This lab is based on the use case of a simplified version of a **Client Onboarding solution** as part of **Focus Corp.'s service business**. Although intended to be realistic, it is fictitious, simplified and is meant to showcase key aspects of the Cloud Pak for Business Automation in an easy and quick way.
This scenario highlights selected business functions and technical integration points across the Cloud Pak for Business Automation. It showcases how combining these platform capabilities can be used to build an end-to-end business solution that helps to digitize all aspects of business operations.
This lab focuses on the business user experience executing a client onboarding from start to finish, not developing the solution itself.

1.1 Cloud Pak for Business Automation

IBM Cloud Pak for Business Automation is a set of integrated market-leading software, running on top of Red Hat OpenShift designed to help you solve your toughest operational challenges. It can be deployed on-premises, on the cloud, or in a hybrid way.
With AI-generated recommendations, analytics to measure impact, and business-friendly low-code tooling, IBM Cloud Pak for Business Automation helps customers to significantly reduce the amount of time spent on manual processes. Specialized business automation capabilities — for content, decisions, RPA, workflows, and document processing — are built on top of powerful automation services. Using the process mining and operational intelligence capability, you can get insights into how your processes run, visualize issues, pinpoint fixes, and prioritize actions.
A single business automation capability may contain multiple products. For example, Document processing encompasses IBM Datacap and IBM Automation Document Processing and Decision management encompasses IBM Operational Decision Manager and IBM Automation Decision Services.
IBM Robotic Process Automation while shown as part of Automation Foundation is directly featured in the Cloud Pak for Business Automation. While the server part of IBM Robotic Process Automation is containerized, and can therefore run on OpenShift, it is one of the few capabilities that requires Windows. Both for the authoring environment and for executing the bots.
The products are integrated in many ways. Automation Services and an Automation Service catalog, APIs and reusable UI libraries are the core ones. Currently Workflow and Automation Decision Services from the Decision capability can publish automation services while Automation Application Designer and Workflow can consume automation services. Automation services allow discovery and usage of services within the Cloud Pak without the need to consider technical aspects like offering product, protocols, authentication/authorization etc. This makes them especially suitable to no-code consumption through business users.

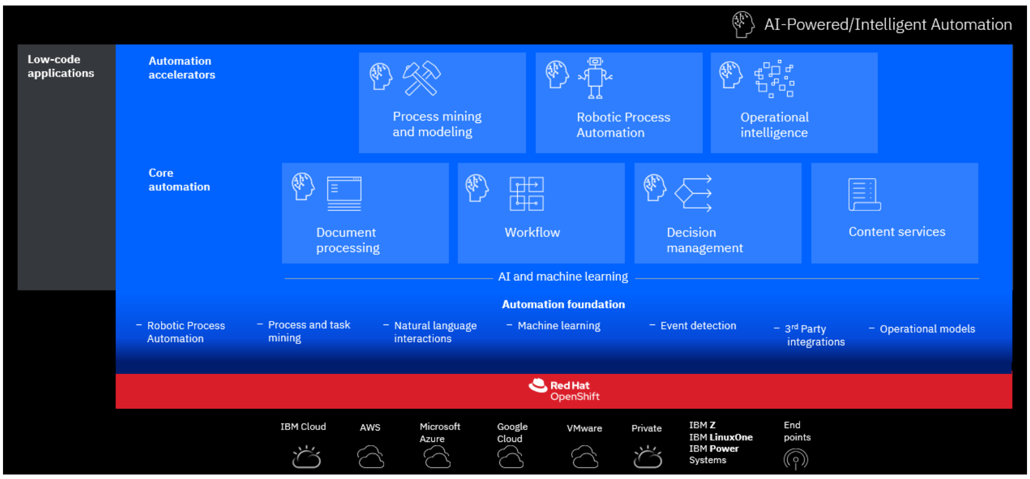


Figure 1: Marchitecture of the IBM Cloud Pak for Business Automation

1.2 Business Scenario

The overall Client Onboarding solution consists of a multi-page front-office intake app and a workflow that orchestrates all back-office activities (both automatic and system ones) to either onboard the client or reject their onboarding request.

The client representative initially works with the Client Onboarding app. This app has been created by the business using the low-code IBM Automation Application Designer. It leverages services created by IT in the other capabilities of the platform.

When a client calls, the client representative collects all required information about the client and the services the client wants to subscribe to before they submit the onboarding request to the back-office part of the solution. While the app can be used by multiple client representatives at the same time, each of them completes their own onboarding request independently.

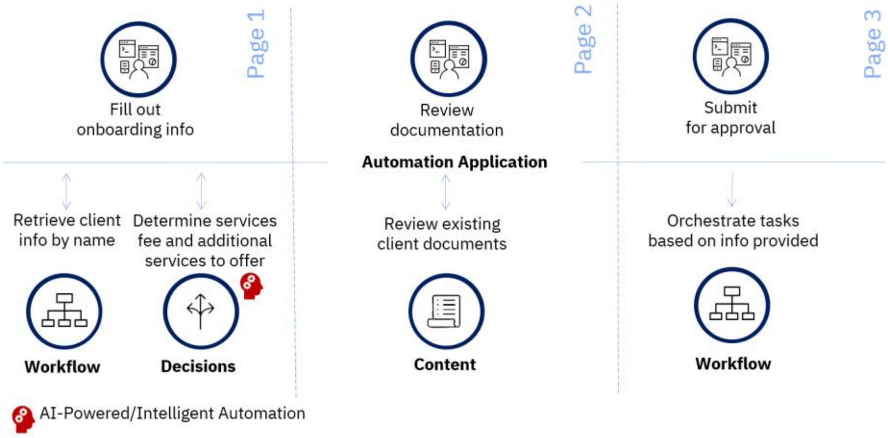


Figure 2: High-Level Client Onboarding Application Architecture

Figure 2 in the upper half gives a high-level overview of the three pages of the intake app designed using IBM Automation Application Designer and the purpose of the pages. The lower half depicts how the pages interact with other capabilities of the Cloud Pak for Business Automation to fulfil their purposes.

1. On the first page, the client representative can manually enter all client onboarding information or lookup the information for a known client. For the lookup the Automation Application calls out to Workflow. Additionally, once services to be onboarded have been selected, the fee for these services and potential upsell services are determined by calling out to Decisions. The red icon indicates that this place utilizes AI-Powered/Intelligent Automation with prescriptive rules and potentially predictive ML models that may be hosted on an external machine learning server.
2. On the second page, the client representative can review the documents that are already available for the client and change the status for those required for the onboarding request. For this the app uses Content capabilities.
3. On the third page, a message is displayed that confirms the successful submission of the onboarding request and incudes a reference ID that is associated to that request. The submission of the onboarding request triggers the back-office workflow in Workflow.

Depending on various factors the back-office workflow using the Workflow capability may involve the client, an account manager, and/or the client representative.

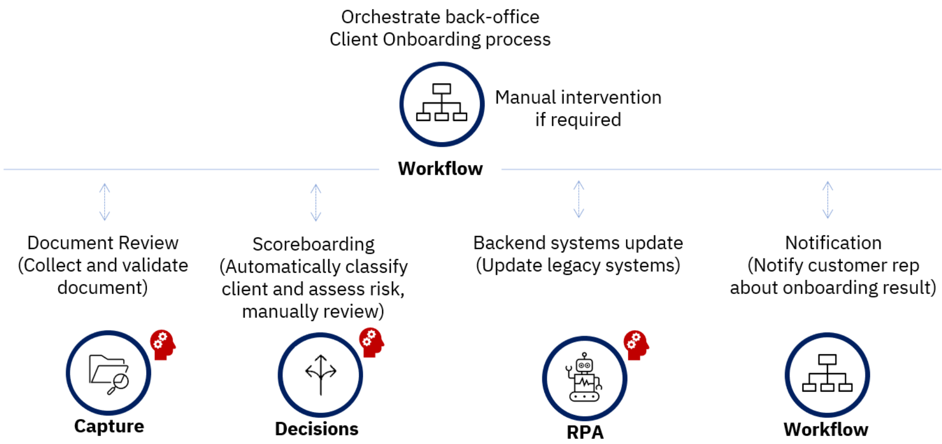


Figure 3: High-Level Client Onboarding Back-Office Solution Architecture

Figure 3 depicts that Workflow orchestrates various activities, both human-driven knowledge work and system activities, to perform the actual client onboarding in the back-office. The Case capability in Workflow is specifically suited as it supports semi-structured use-cases. The red icon symbolizes again where AI-Powered/Intelligent Automation capabilities are applied. These are built into the respective capability or can be provided by a potentially externally hosted machine model. Depending on the circumstances of the onboarding request one or multiple of the activities are executed or skipped. These activities are grouped into four stages:

1. The activities performed in the **Document Review** stage depend on the availability or non-availability of documents required for the onboarding request. If all documents are available and they have all been verified by the client representative, no activity is required, and the stage is automatically completed. If documents are missing the client receives an email with information about what documents are missing including a link to a web page to upload them. Once a document is received the Capture capability is triggered to determine the type of document and to extract the required data. IBM Automation Document Processing with its advanced AI-infused features is used for this purpose. If the extracted data is as expected the Workflow proceeds to the next stage. If not, the client receives another email with the details giving them the opportunity to upload additional documents.
2. The first activity in the **Scoreboarding** stage uses rules and machine learning models from Decisions to categorize the client into a segment 1 or segment 2 client (using prescriptive rules), determines if the onboarding request is a low or high-risk request, and computes an assessment confidence (both based on using a predictive model). If the confidence is equal or higher than 80%, the decision to accept (low risk) or reject (high risk) the client onboarding request is performed automatically. When the scoreboarding confidence is lower than 80%, a second activity is assigned to an account manager who must manually assess the onboarding request through a task in Workflow.
3. The third stage **Backend Systems Update** consists of an activity to update two legacy system of records of Focus Corp. As these systems don't have APIs available, an IBM Robotic Process Automation (RPA) bot is utilized.
4. In the fourth and final stage, **Notification**, the client representative is informed of the onboarding result for the onboarding request they have initiated using a task in Workflow which completes the onboarding request.

Throughout the stages of the workflow the client is notified about status changes and activities needed to be performed by them through email.

1.3 Lab Setup Instructions

1. Access the document that lists the available systems and URLs along with login instructions (for a Tech Jam event these are provided at the bottom of the labs page in the GitHub associated with the event).
   For this lab, you will need to access the **Client Onboarding Desktop,** the **Business Performance Center,** and **Local Mail Client** using the URLs provided.

2. Download the files **Old Utility Bill - Legacy Consulting.pdf** and **Current Utility Bill - Legacy Consulting.pdf** from the **Lab Data** folder of the lab to your computer. The files will later be uploaded as part of the first exercise which is to onboard Legacy Consulting.

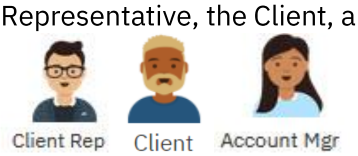
2 Exercise: Onboarding a Client with Low Confidence Level (Manual Intervention)

2.1 Introduction

In this exercise, Legacy Consulting wants to subscribe to two services from Focus Corp.'s healthcare services.
You will first take the role of the client representative, a Focus Corp. employee, who is on the phone with Legacy Consulting for this request. Initially, you collect all the required information. As part of that you will notice that a utility bill is not on file for Legacy Consulting. It is required to validate the client address. You will submit the onboarding request after letting the client know that they will receive an email with upload instructions for the pending document.
Because of the missing utility bill, you will switch into the role of the client to upload it. You will experience that uploading a utility bill with an outdated address will fail the validation resulting in an additional email letting you know that fact. Uploading a more recent utility bill will pass the validation and progress the internal processing of your onboarding request.
With all documents being present and having been validated, a scoreboarding activity will classify Legacy Consulting as a Segment 2 client with a high-risk profile and an assessment confidence of less than 80%. Under these circumstances, the request cannot be handled automatically and will require manual handling by an account manager. The client is notified about this via email.
You will take over the role of the account manager to manually review the request. As the default risk is too high, you will reject the onboarding request. The client will be informed via email as will be the client representative via a notification task as they initiated the onboarded request.
This path through the onboarding scenario exemplifies that often for complex, high value, high risk decisions or those where a machine generated decision has low confidence, knowledge workers need to get involved and need to make the final decision. The decision made by a human can then be used to further train the machine learning model so for future cases even more automation is possible.

2.2 Exercise Instructions

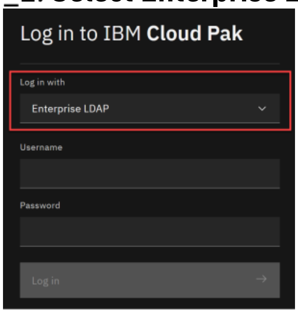
You will use the same user to perform all tasks even when assuming the different roles of Client Representative, Client, and Account Manager. To remind you which role you currently perform, most screens show an icon and label in the top right corner. In this flow the ones for the Client Representative, the Client, and the Account Manager.



2.2.1 Taking the call from Legacy Consulting and collecting base information

_1. Navigate to the **Client Onboarding Desktop** (see section 1.3 Lab Setup Instructions, item 1)

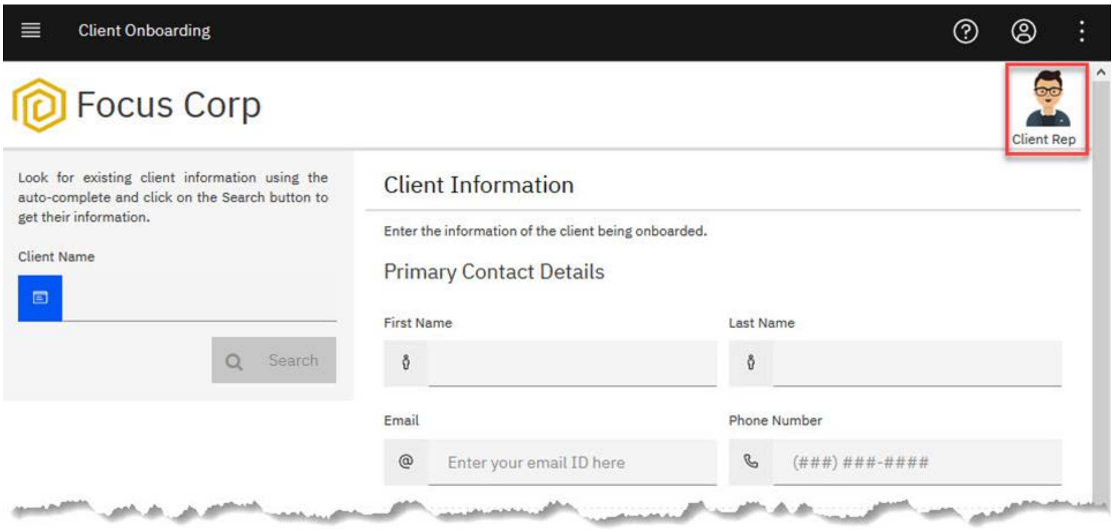
_2. **Select Enterprise LDAP** in the ***Login in with*** dropdown on the *Log in to IBM Cloud Pak* page



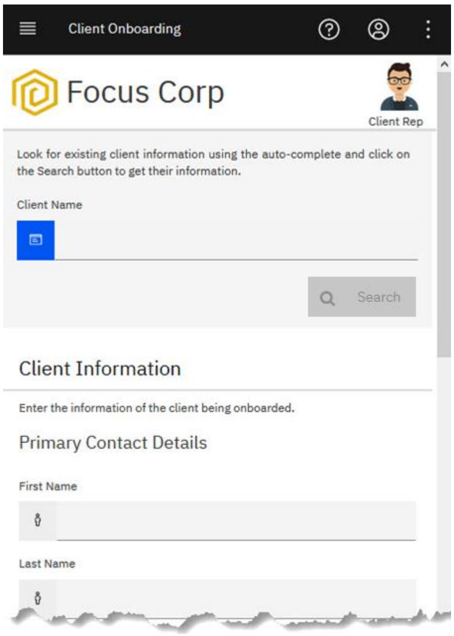
_3. **Login** with the username and password that has been assigned to you

_4. As the **Client Representative** (see icon in the top right corner) **explore** the first page of the Client Onboarding app

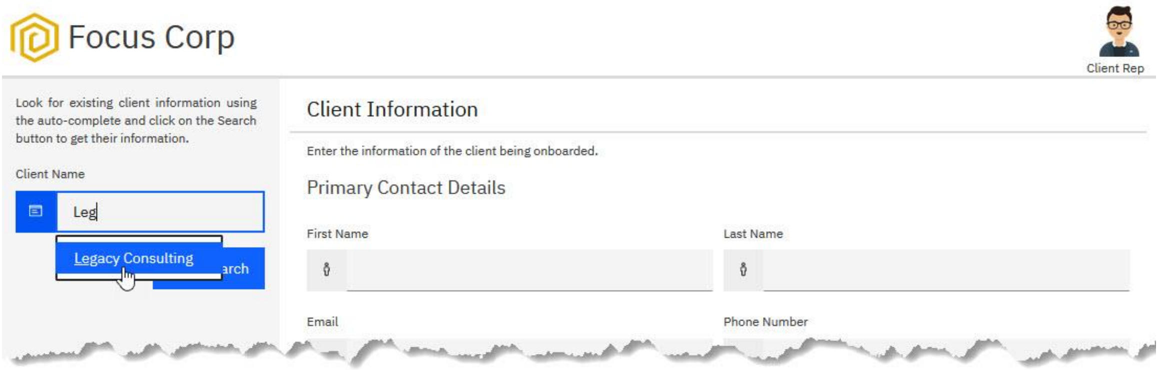
It provides means to search for an existing client by name, enter various information about the client, a selector for the industry for which Focus Corp. offers services, a list of services the client can sign up for, and the ability to calculate the services fee and upsell recommendations based on the selection.



When you resize the browser window you will observe that the page is responsive. That means that a single app can be designed that it can easily be used on a large screen like a desktop/laptop, on a tablet, or even mobile phones.

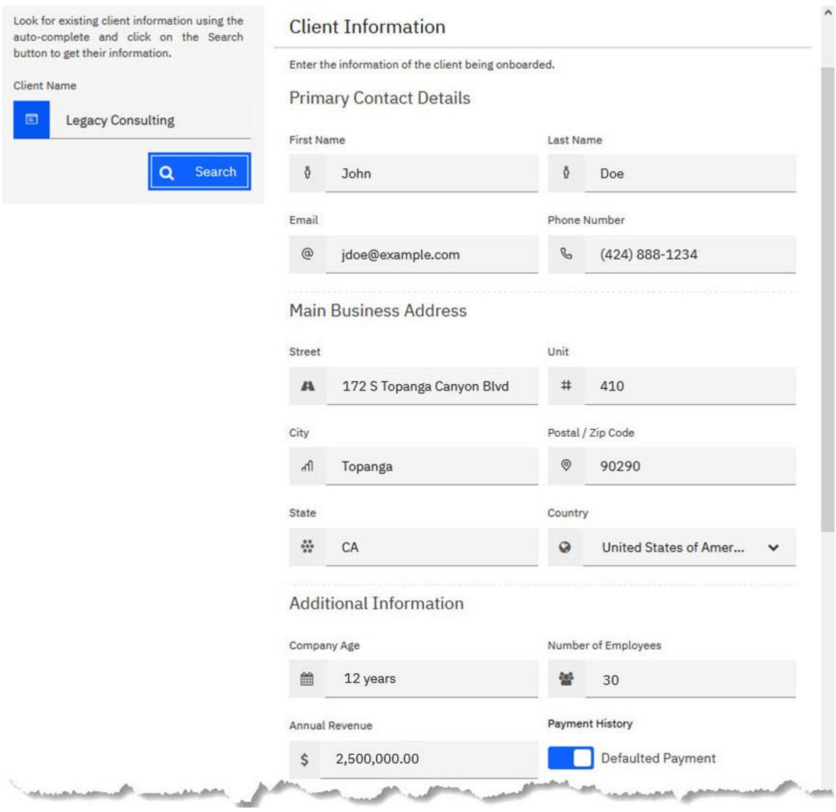


_5. **Type *Leg*** in the **Client Name** field in the left panel to search for **Legacy Consulting** which is an existing client of Focus Corp

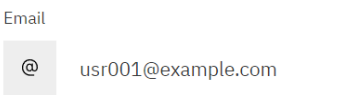


_6. **Click** on **Legacy Consulting** once the type-ahead feature offers it

_7. **Click** on **Search** to load the details for the client. It retrieves the client details using integration with the Workflow capability. Observe that the Search button becomes active once you entered something in the text field and leave it or select the proposed entry from the pop-up window.



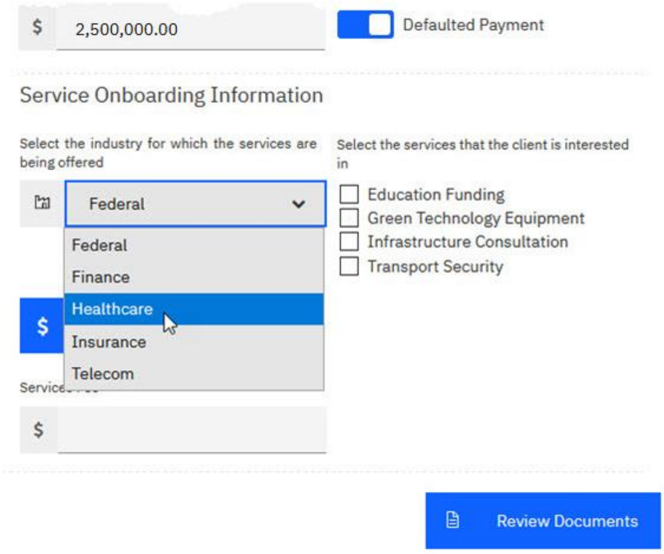
_8. The **Email** field is pre-populated with the local email address of your user and is made read-only



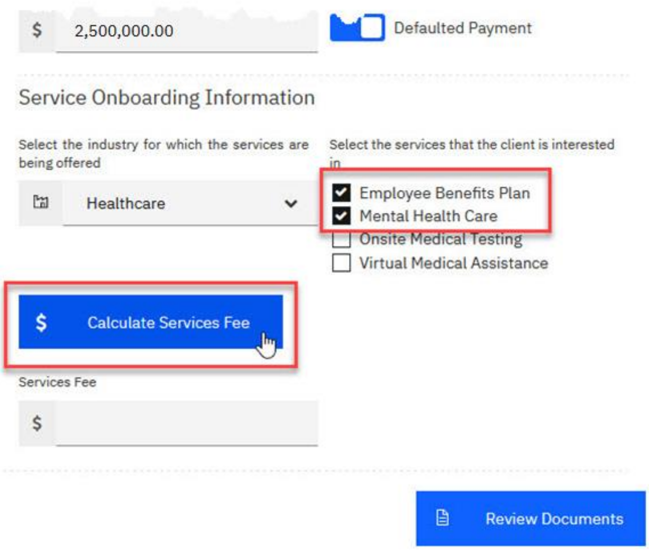
> Only in case the environment you are using is configured to use an external email server, the Email field is editable.
> If the Email field is editable, you can **optionally replace** the **Email** with an email address of your choice that you can use to receive client emails associated with the scenario.

_9. **Select Healthcare** in the **Industry** drop-down list as Legacy Consulting requests to onboard to two services in that domain

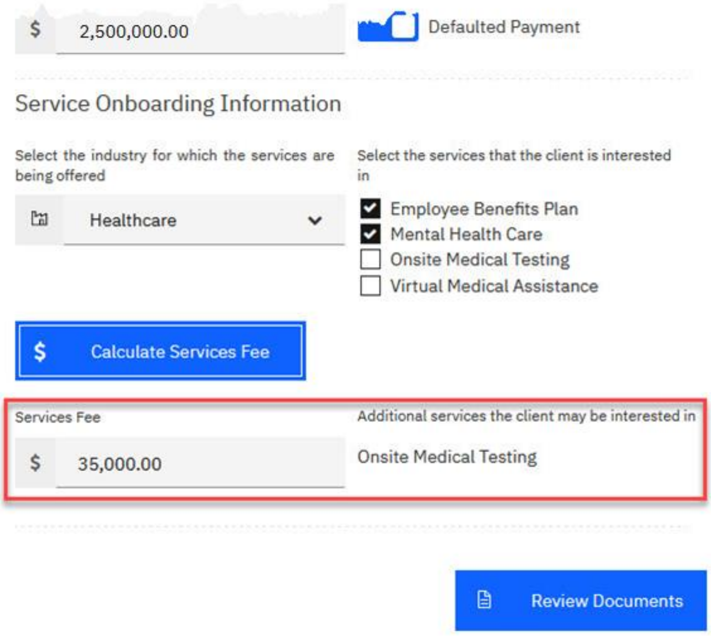
> Selecting an entry from the drop-down dynamically changes the options in the services to onboard.



_10. **Check Employee Benefits Plan** and **Mental Health Care** as the services that Legacy Consulting wants to onboard to

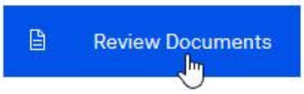


_11. **Click Calculate Services Fee** to calculate the fees and get upsell recommendations



The fees are calculated by an external service pricing engine build using prescriptive rules. The additional services that the client representative could offer as upsell opportunity to the client are currently also based on prescriptive rules but could also be generated based on a machine learning model.

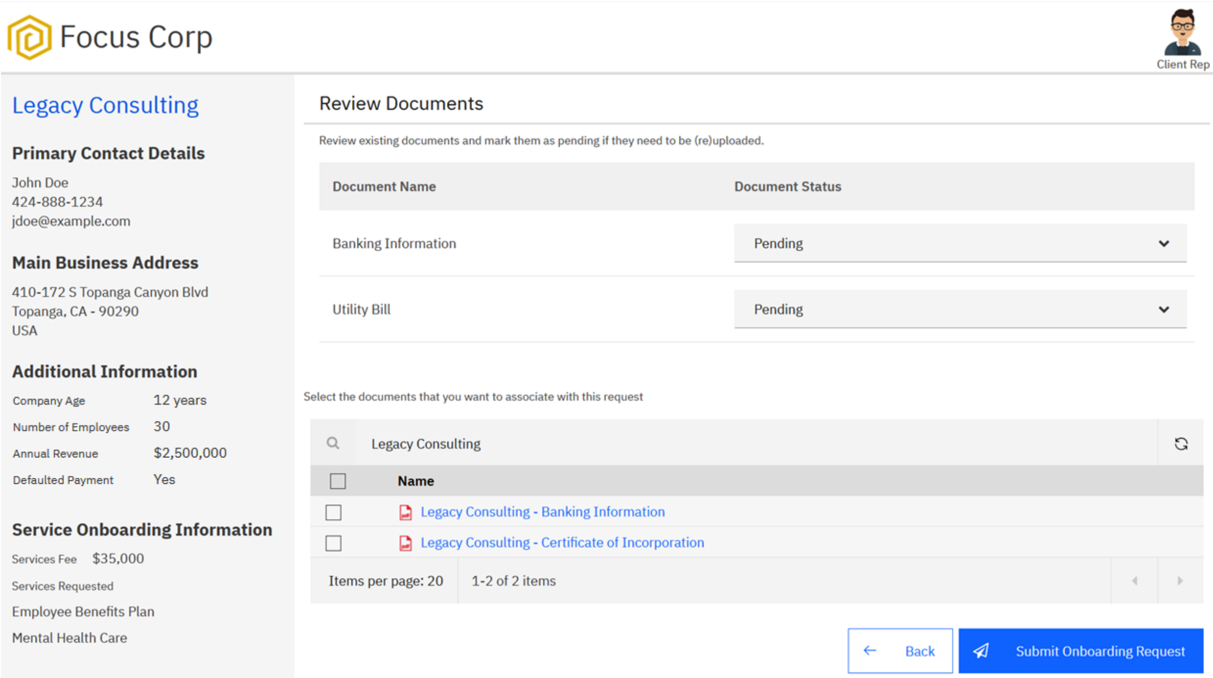
_12. **Click Review Documents** to navigate to the next page



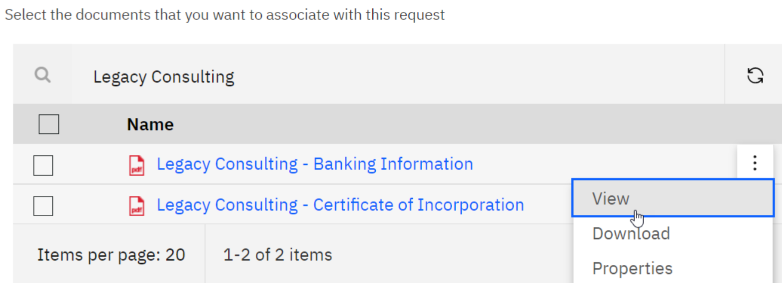
2.2.2 Verifying required documents and submitting the onboarding request

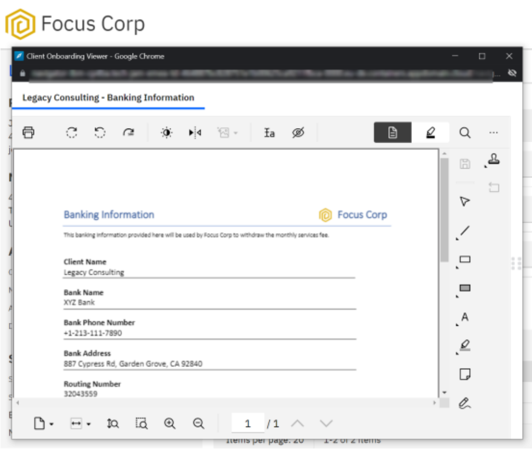
_13. **Explore** the second page of the Client Onboarding app

The left pane lists all information provided on the previous page. In the right pane, all documents that may be relevant to this onboarding request are listed with their individual status of either Pending (Default), Verified, or Not Required. At the bottom a list of all potentially relevant documents Focus Corp. already has for Legacy Consulting is shown.



_14. **View** the **Legacy Consulting – Banking Information** document by **clicking** the **three dots** at the right end of the row that appear when you hover over the line and **selecting View**. This opens the document in the integrated viewer. Afterwards **close** the viewer **window** again.



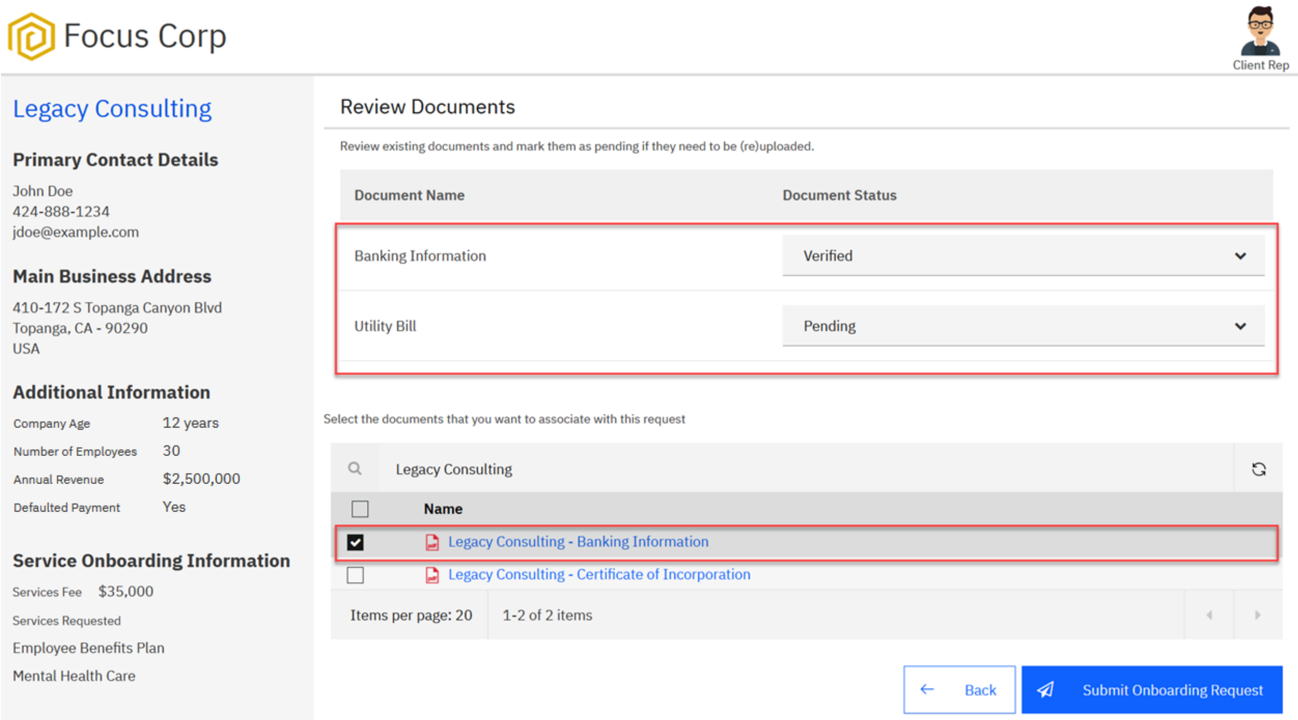


_15. **Select Verified** for **Banking Information**

_16. Keep **Pending** for **Utility Bill** as we have no utility bill on file

> Focus Corp. recently made the change to require a utility bill to verify the client address. As we don't have one for Legacy Consulting, Legacy Consulting will need to upload one after the client representative has completed their onboarding request.

_17. **Check the box for the banking information document** (Legacy Consulting – Banking Information) in the document list at the bottom to make this document part of the request when you submit the onboarding request



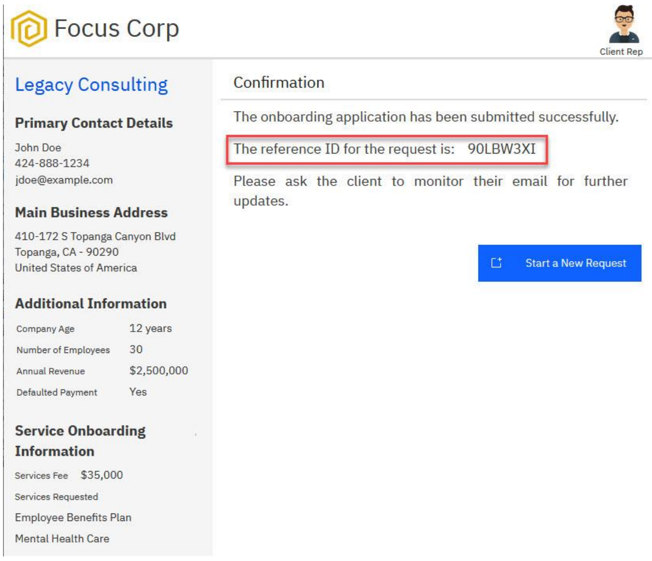
_18. **Click Submit Onboarding Request** to complete Legacy Consulting's request and navigate to the final confirmation page

> The submission may take a few seconds during which you might notice a little spinner icon next to the Client Rep icon. Please wait until you are taken to the third page.

2.2.3 Onboarding request confirmation page

_19. **Explore** the third page of the Client Onboarding app

The left pane again lists all information provided on the first page. The right-hand side provides a reference ID for the request that the client representative can share with the client and a comment that an email was sent to the client about their request.



_20. **Note down** the **Reference ID** for future reference

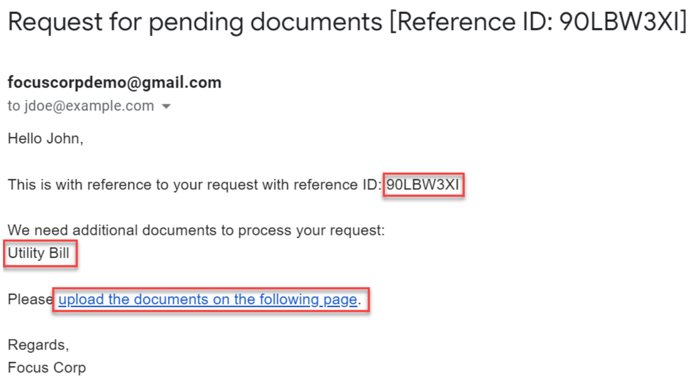
_21. **Click** on **Start a New Request** to get back to the first page so you will be able to onboard the next client in the next exercise

2.2.4 Checking the automatic email to Legacy Consulting & Uploading Utility Bill

_22. **Open the email client in a browser using the URL provided** to you (see section 1.3 Lab Setup Instructions, item 1)

> If you specified your own email address on the first page, **open or bring to the front** your **email client.**

_23. **Check** your inbox for an email (the sender depends on the configuration of the environment you are using)



The email contains the reference ID as displayed on the final page of the Client Onboarding app. It lets you know that the Utility Bill is required to further process your onboarding request. It contains a link for you to get to a web page to upload the document. The link takes you to an application built using Business Automation Application and this application requires no authentication as public access is enabled for it.

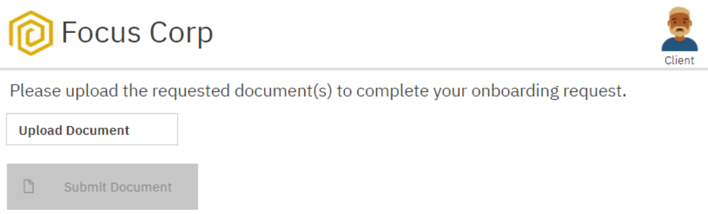
_24. **Click** on the **link** in the email to open the upload page.

> If you have not previously provided an email address proceed as follows:
> - Copy the URL of the front-office intake app (should end with desktop=ClientOnboarding)
> - Open a new tab in the browser you are using
> - Paste the previously copied URL and replace "/icn/navigator/?desktop=ClientOnboarding" with "/ae-workspace/public-app/Client%20Onboarding%20Document%20Upload(CODU)?ReferenceID=<Your Reference ID>" where <Your Reference ID> is the reference id shown on the last page of the front-office intake app that you noted down.
> - Save the URL for future use.

_25. **Explore** Focus Corp.'s Client Document Upload page

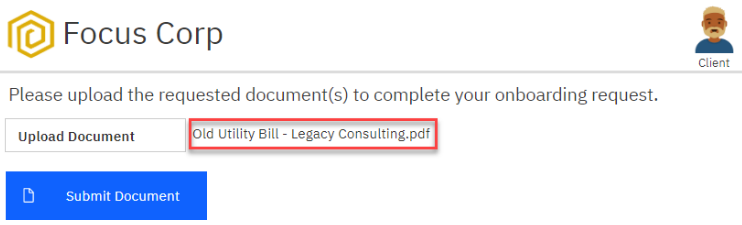
The icon in the top right shows that you are still in the role of the client. The page is simple to use, providing only a control to select a file to upload and a submit button that becomes active once a document is selected.

> You don't have to provide your reference id manually as it is included in the URL and will be automatically sent to the server.



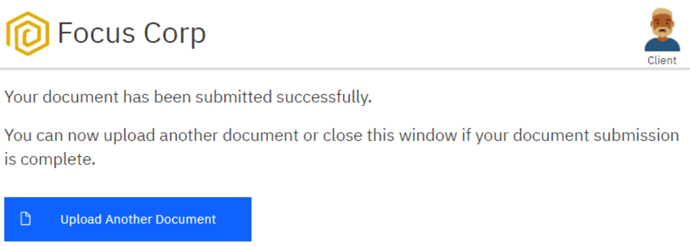
_26. **Click** on the **Upload Document** control and select **Old Utility Bill - Legacy Consulting.pdf** from the location where you downloaded the documents to before

> This utility bill contains an old address of Legacy Consulting which does not match the address the client representative captured in the onboarding request.



_27. **Click** the **Submit Document** button to upload the document to the server

_28. After a short moment you will see a confirmation page that lets you know that the file was successfully uploaded



_29. **Close** the Client Document Upload browser tab

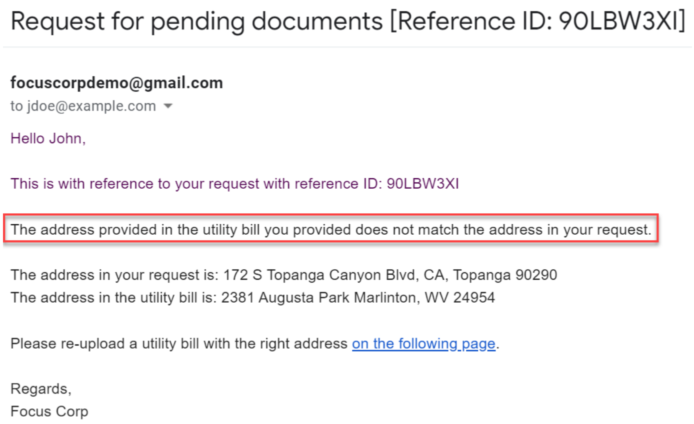
2.2.5 Checking the automatic email to Legacy Consulting & Uploading a second Utility Bill

_30. O**pen the email client in a browser using the URL provided** to you

> If you specified your own email address on the first page, **open or bring to the front** your **email client**.

_31. **Check** your inbox for another email (the sender depends on the configuration of the environment you are using)

> If it did not arrive yet, give it a moment as the uploaded document may still be processed.



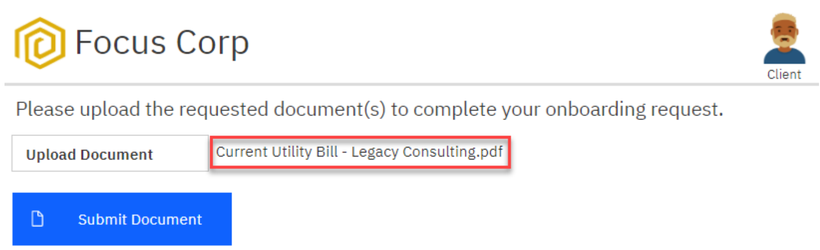
The email again contains the reference ID as displayed on the final page of the Client Onboarding app. It lets you know that the address in the Utility Bill that you have uploaded does not match the address as stored in the onboarding request. It contains a link for you to get back to the Client Document Upload web page to re-upload a utility bill with the correct address on it.

_32. **Click** on the **link** in the email to open the upload page again

> If you have not previously provided an email address, use the URL you have previously constructed and saved.

_33. **Click** on the **Upload Document** control and this time select **Current Utility Bill - Legacy Consulting.pdf** from the location where you downloaded the documents to before

> This utility bill contains the address of Legacy Consulting which matches the address the client representative captured.



_34. **Click** the **Submit Document** button to upload the document to the server

_35. You will again see a confirmation page that lets you know that the file was successfully uploaded

_36. **Close** the Client Document Upload browser tab again

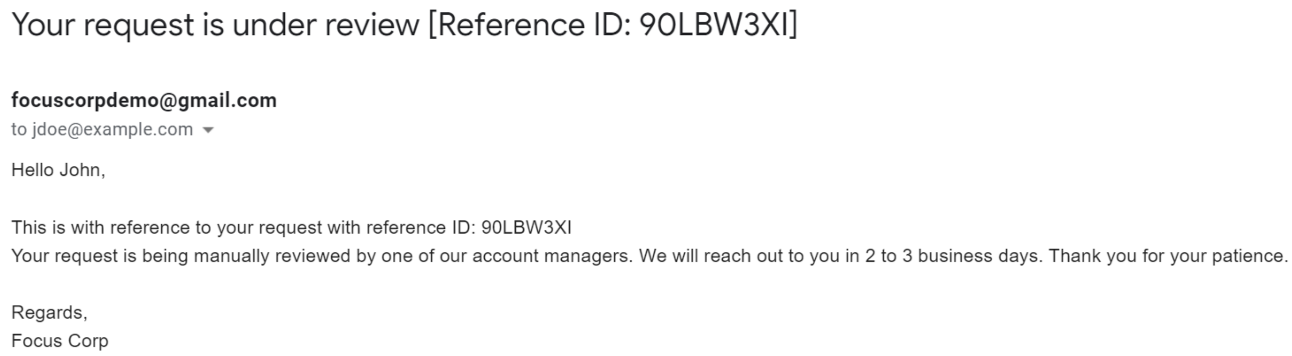
2.2.1 Checking the automatic email to Legacy Consulting about manual handling

_37. **Open the email client in a browser using the URL provided** to you

> If you specified your own email address on the first page, **open or bring to the front** your **email client**.

_38. **Check** your inbox for a third email (the sender depends on the configuration of the environment you are using)

> If it did not arrive yet, give it a moment as the uploaded document may still be processed or proceed to the next chapter as this is informational only.



_39. The email again contains the reference ID as displayed on the final page of the Client Onboarding app. It lets you know that your onboarding request is being handled manually by an account manager and that you can expect a result within 2-3 business days.

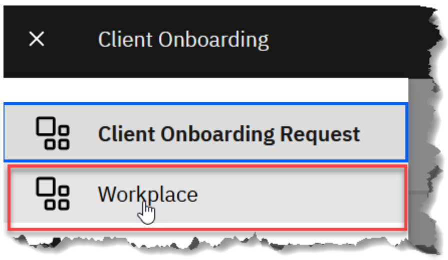
2.2.2 Checking the Review Client Onboarding Request task for the Account Mgr

Having completed the upload of the missing utility bill as the client and being notified about the manual review, you are now taking the role of a Focus Corp. account manager.

_40. **Open** or **bring back in focus** the browser tab of the **Client Onboarding front-office intake app**

_41. **Click** on the **hamburger menu icon** in the top left corner and **select Workplace** to switch from the Client Onboarding app to your general workplace. After a short moment it shows the tasks available to you.

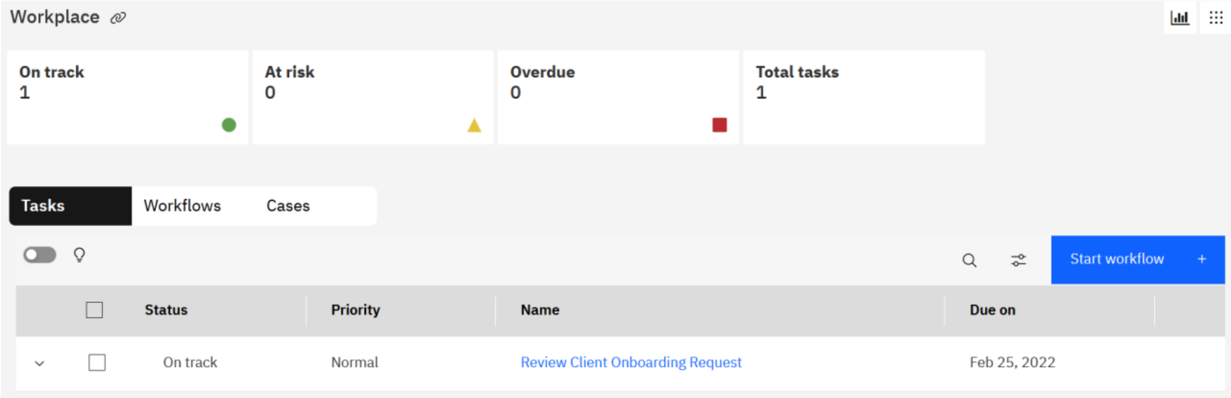
> Workplace is the next generation end-user client that complements the existing Process Portal and Case Client. It allows launching processes and cases and unifies access to all kinds of tasks. Its Task prioritization feature is another example of AI built into the product. When enabled it uses AI and historic runtime data to automatically order the tasks in the task list in terms of skill and impact, leading to workforce efficiency improvements.



> When you complete a task, the task may still be shown for some seconds in the task list. It will disappear when the task list auto-refreshes itself.

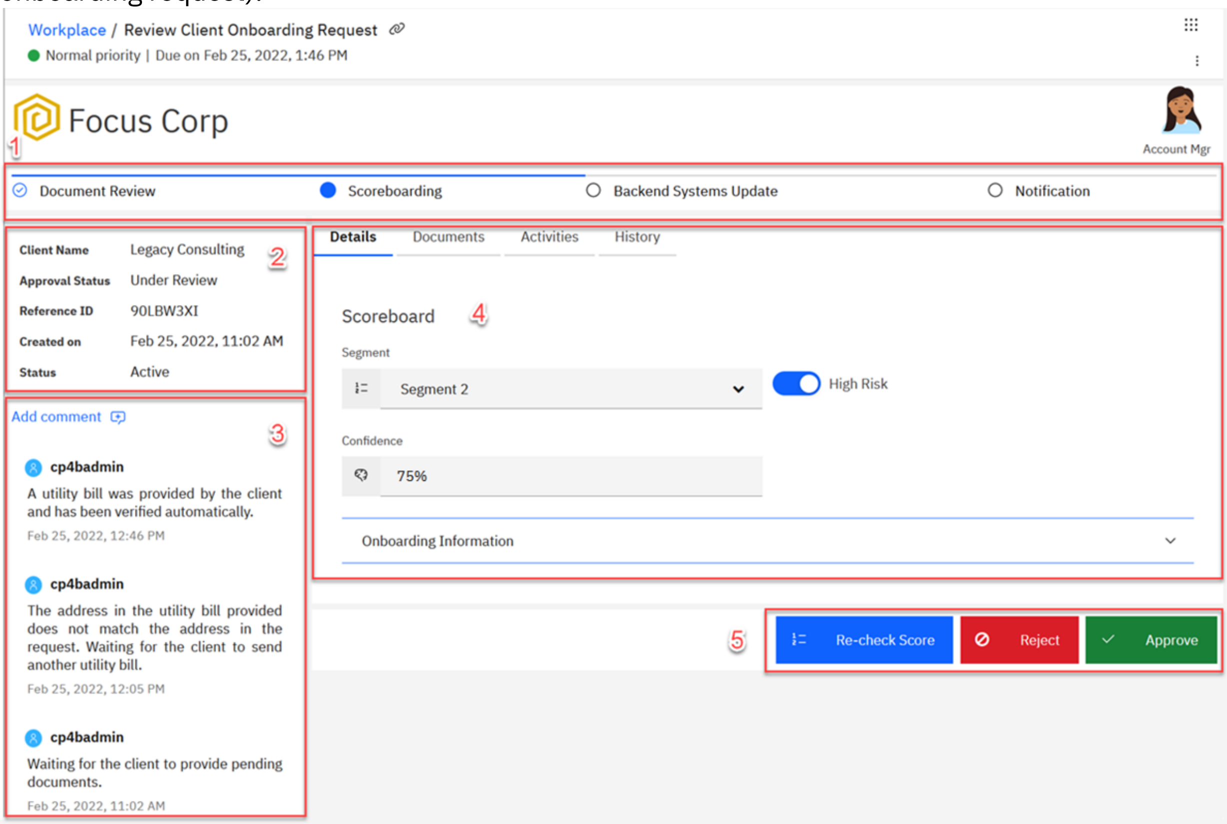
_42. **Open** the **task** that is available to you by **clicking on it**

> If the task is not showing up after some time, please check for any emails with document upload instructions. In case stuck please reach out to one of the instructors for help.
> Depending on the network latency it may take a moment until the task page is loaded.



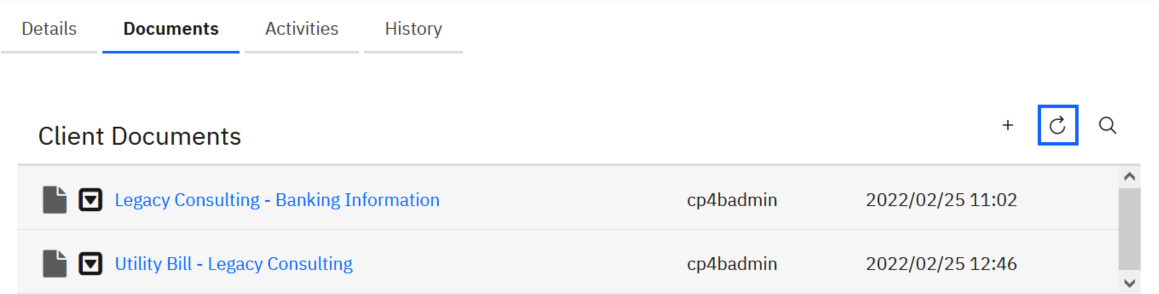
_43. **Explore** the task page

The icon in the top right signifies that you are performing this task as an Account Manager. At the top (1) the four stages of the request processing are shown. This task is part of the scoreboarding stage where you as the account manager have to manually assess those onboarding requests that have a confidence below 80%. The first panel on the left (2) provides a summary of the request, mainly the Client Name, Reference ID and the Approval Status. The panel below (3) contains comments related to the request, for example that all required documents have been verified. The main panel on the right (4) has four tabs. On the Details tab the scoreboard is shown that contains the segmentation, Legacy Consulting belonging to the Segment 2 clients, the risk assessment, here High Risk, and the Confidence for the risk assessment, here with 75% being below the threshold to take an automatic decision based on the risk (the actual values may differ slightly in your onboarding request).



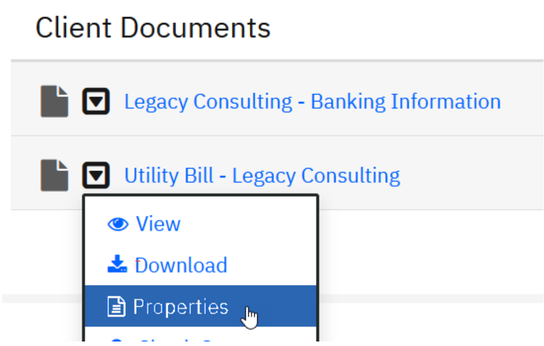
_44. **Explore** the **Documents tab**

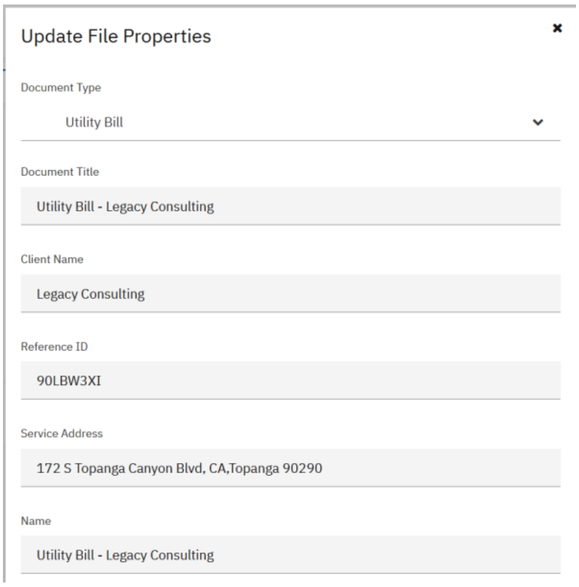
The **Documents** tab shows the document (Legacy Consulting - Banking Information) that you had previously selected on the Review Documents page of the Client Onboarding app. It has been made part of the actual onboarding request. In addition, the utility bill uploaded by the client that passed the validation is also part of the onboarding request.



_45. For the **Utility Bill click** on the downwards **arrow** and **select Properties** to bring up the properties of this document.

The properties shown reflect those values that got extracted when the document was uploaded. These values were also used to compare the address stored in the client onboarding request to the one in the utility bill.

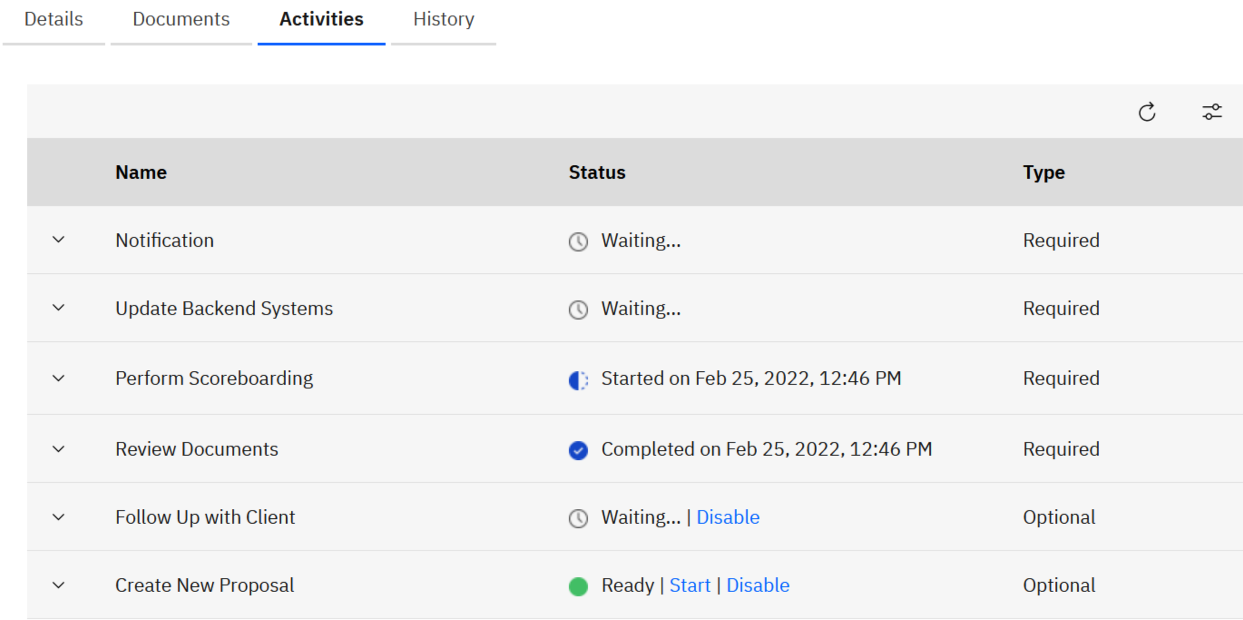




> If the properties don't show in a similar way as shown on the right-hand side, please close the properties view and re-open it.

_46. **Explore** the **Activities tab**

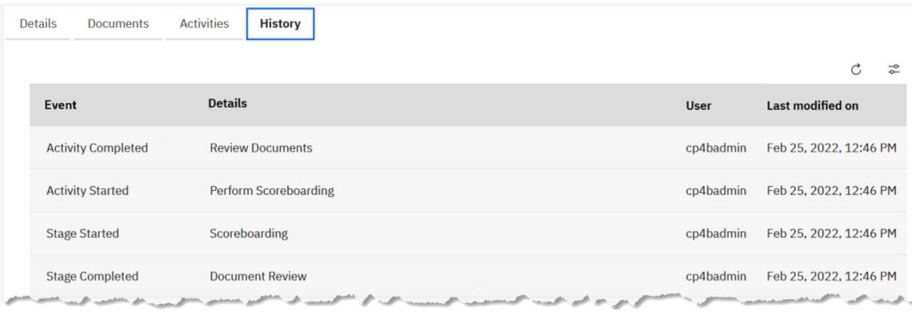
The **Activities** tab shows the status and type of all activities of the client onboarding request. Since this is a case in the Workflow system, you can have a mix of required, optional, and discretionary activities defined in the case.
The optional Create New Proposal activity is ready to be started by the account manager. For example, if they plan to reject this specific client onboarding request, they may still decide to make a different onboarding proposal (e.g. for a higher fee) to the client.
The second optional activity, Follow Up with Client, is not yet enabled. The customer representative will be able to start it in the final Notification stage to initiate any follow up work with client.



Name	Status	Type
Notification	Waiting...	Required
Update Backend Systems	Waiting...	Required
Perform Scoreboarding	Started on Feb 25, 2022, 12:46 PM	Required
Review Documents	Completed on Feb 25, 2022, 12:46 PM	Required
Follow Up with Client	Waiting... | Disable	Optional
Create New Proposal	Ready | Start | Disable	Optional

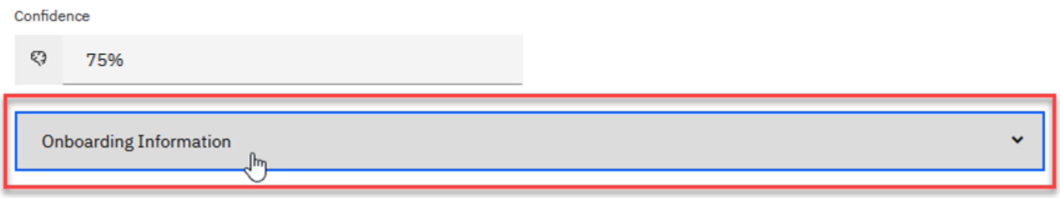
_47. **Explore** the **History tab**

The **History** tab shows information about different types of events that happened for the client onboarding request.

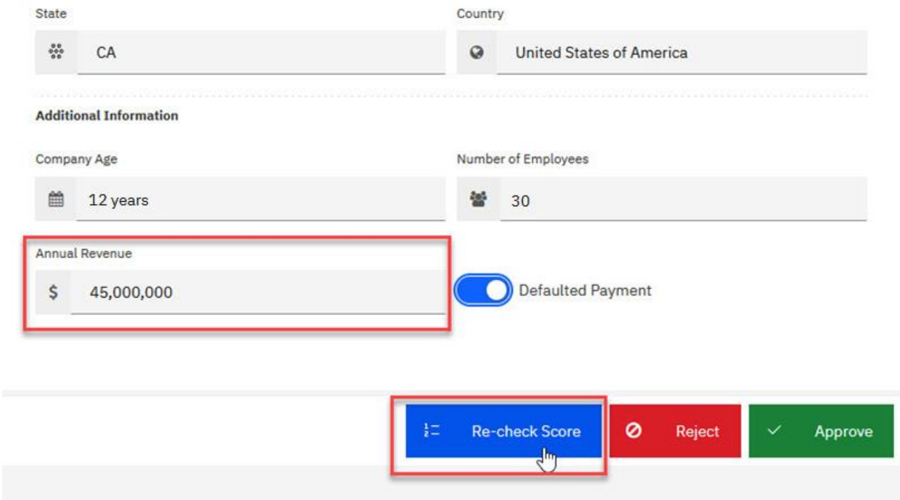


Event	Details	User	Last modified on
Activity Completed	Review Documents	cp4badmin	Feb 25, 2022, 12:46 PM
Activity Started	Perform Scoreboarding	cp4badmin	Feb 25, 2022, 12:46 PM
Stage Started	Scoreboarding	cp4badmin	Feb 25, 2022, 12:46 PM
Stage Completed	Document Review	cp4badmin	Feb 25, 2022, 12:46 PM

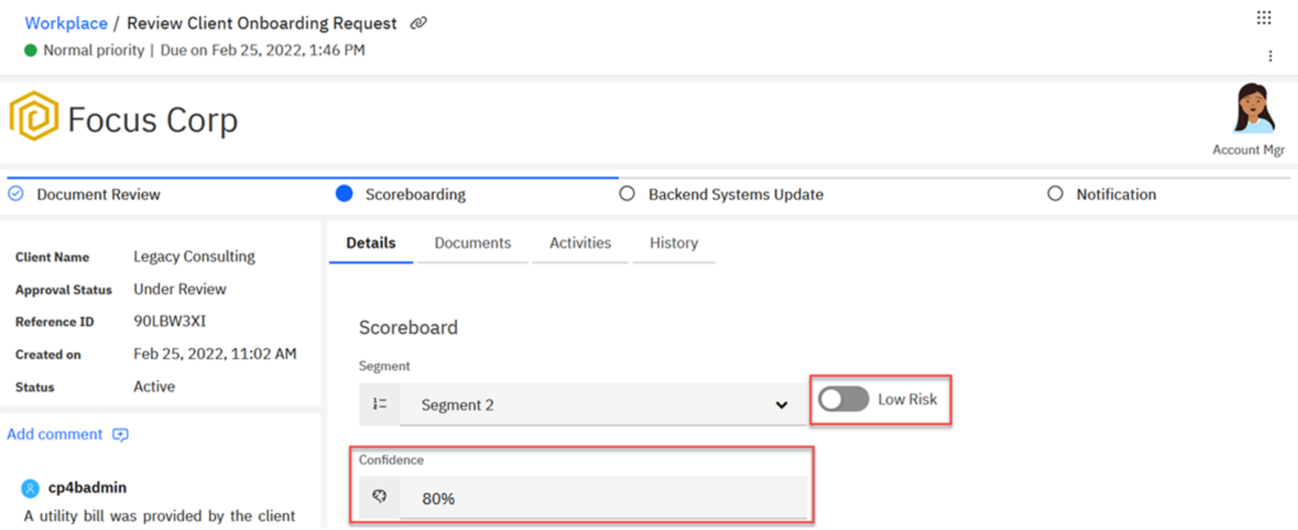
_48. **Go back** to the **Details** tab and **Expand** the **Onboarding Information** section by clicking on the section header



_49. **Modify** the **Annual Revenue** to be **$45,000,000** instead of $2,500,000



_50. **Click Re-check Score** (5) to reevaluate the scoreboard and **observe** that the **risk** changed to low, and the **confidence** was computed to be 80%



_51. Optionally, change the Annual Revenue back to $2,500,000 and perform the scoreboarding a final time by clicking Re-check Score

_52. **Click Reject** (5) to reject the onboarding request by Legacy Consulting as you the account manager consider the risk to be too high

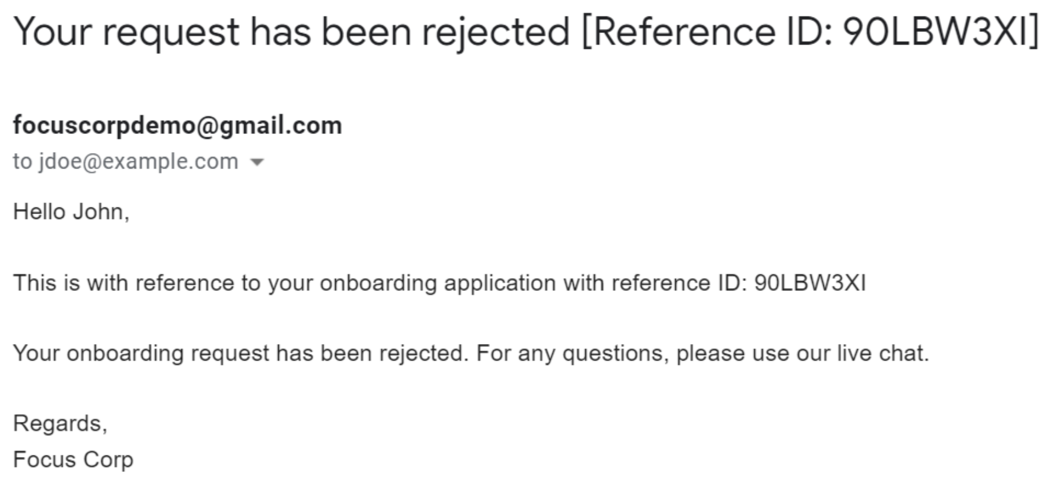
This will trigger an email to be sent to the client with the final onboarding decision.

2.2.3 Checking the automatic email to Legacy Consulting about onboarding rejection

_53. **Open the email client in a browser using the URL provided** to you

> If you specified your own email address on the first page, **open or bring to the front** your **email client**.

_54. **Check** your inbox for a fourth email (the sender depends on the configuration of the environment you are using)



Your request has been rejected [Reference ID: 90LBW3XI]

focuscorpdemo@gmail.com
to jdoe@example.com

Hello John,

This is with reference to your onboarding application with reference ID: 90LBW3XI

Your onboarding request has been rejected. For any questions, please use our live chat.

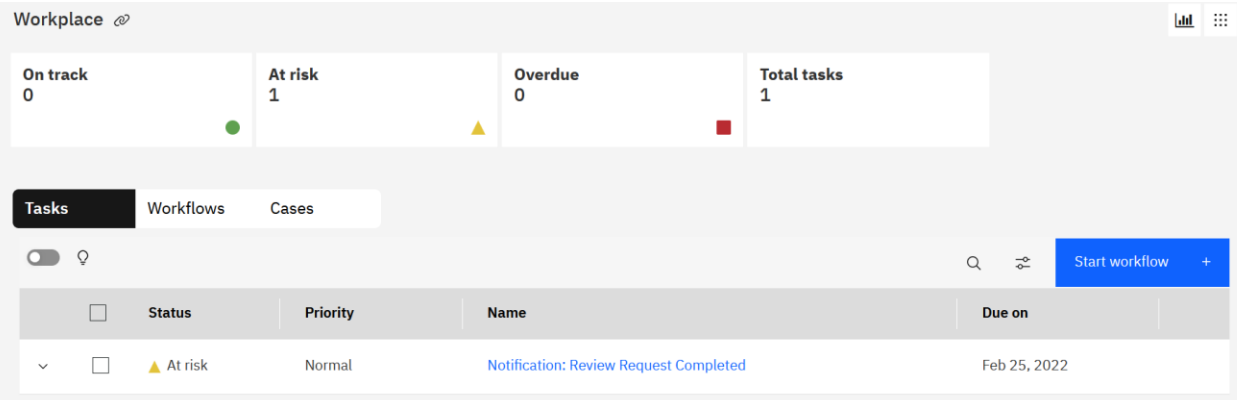
Regards,
Focus Corp

_55. **Check** the **email** that contains the reference ID as displayed on the final page of the Client Onboarding app. It lets you know that your onboarding request has been rejected.

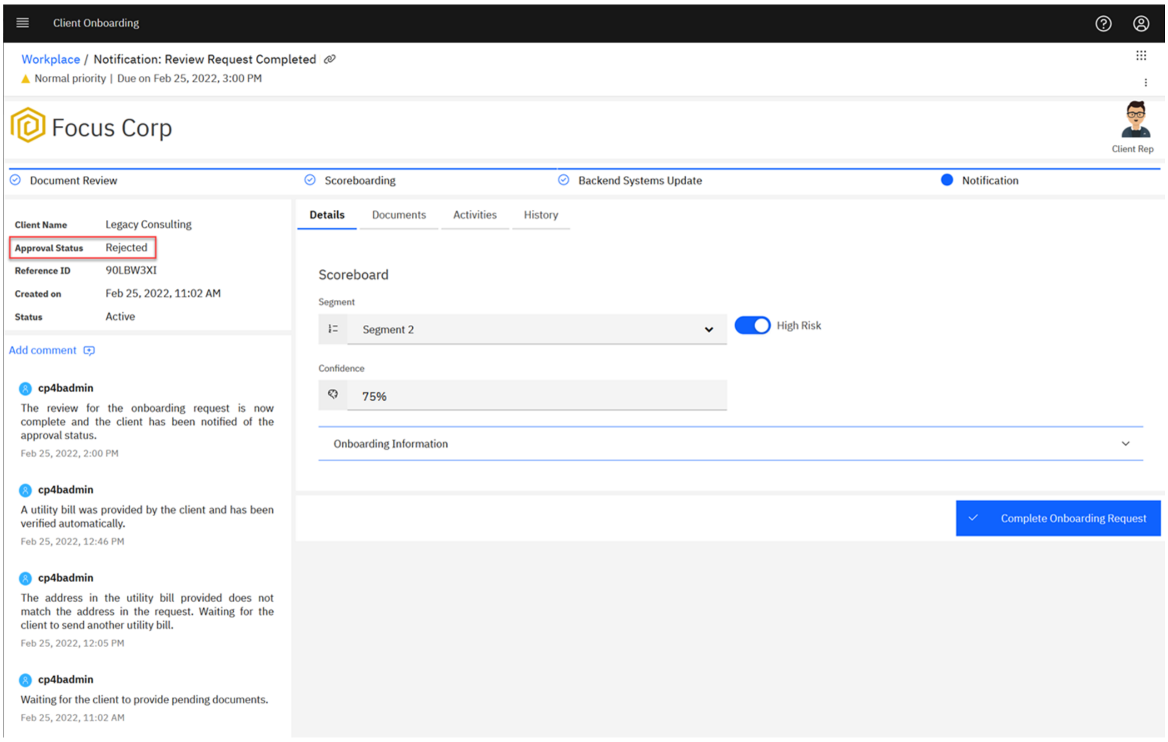
2.2.4 Checking the Client Rep notification about rejected onboarding

_56. **Switch** back from the email client to the **browser** window containing the **Client Onboarding app**

_57. **Open** the **task** that is available to you as client representative by **clicking on it**



_58. **Observe** the **Approval Status** task page that shows that the client onboarding request was **rejected**



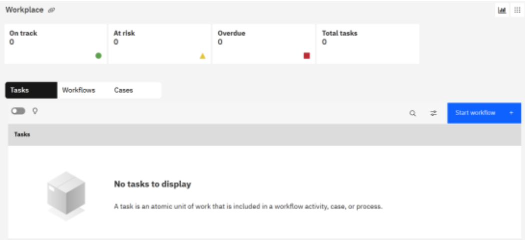
_59. **Checking** the **Activities tab**

> All required activities except the one you are in are completed now.
> In addition to the optional activity **Create New Proposal** that has been ready before, now the optional activity **Follow Up with Client** is also ready. The client representative may decide to connect with the client as their onboarding request was rejected to discuss how they could still be onboarded or explain the decision. Alternatively, the client representative may decide to create a new proposal for Legacy Consulting to still allow them to onboard to services from Focus Corp. but for example with different subscriptions fees.
> Yet these activities are optional, as the customer representative may choose not to perform any of them but just complete the notification.

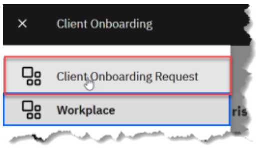
Details | Documents | **Activities** | History

Name	Status	Type
Notification	Started on Feb 25, 2022, 2:00 PM	Required
Perform Scoreboarding	Completed on Feb 25, 2022, 2:00 PM	Required
Review Documents	Completed on Feb 25, 2022, 12:46 PM	Required
Update Backend Systems	Completed on Feb 25, 2022, 2:00 PM	Required
Create New Proposal	Ready | Start | Disable	Optional
Follow Up with Client	Ready | Start | Disable	Optional

_60. **Click Complete Onboarding Request** to complete the task. This closes the task and brings you back to the now empty work list for the client representative



_61. **Click** on the **hamburger menu icon** in the top left corner and **select Client Onboarding Request** to switch back to the Client Onboarding app



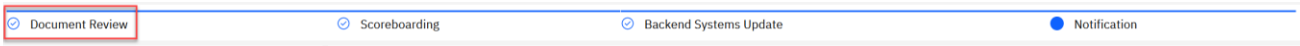
> This completes the part of the exercise where you actively perform steps.

2.2.5 Review of Stages Performed Automatically

> This section provides information on how different aspects that happen automatically as part of the Client Onboarding are performed. You will not actively need to perform any steps, just read about them. In chapter 3 you will again work directly with the Client Onboarding solution.

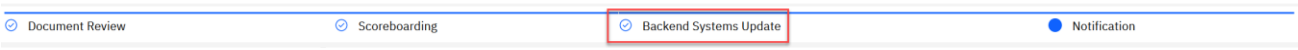
As part of the above client onboarding workflow, you worked on the second (Scoreboarding) and fourth (Notification) stage of the request processing. The first (Document Review) and the third (Backend Systems Update) stages were automatically completed, and no manual activities were needed to be performed.

2.2.5.1 Document Review



The first stage during processing the onboarding request is the **Document Review** stage. For the above request you have specified in the front-office intake app that only one of the two required documents are verified while the second (utility bill) was pending.
This caused the client to receive an email about the utility bill document they need to upload. While the onboarding request was started and the Document Review stage became active, it only contains an automatic activity that waits for a utility bill being added to the case.
With the client uploading a valid utility bill that is attached to the request, the automatic activity gets started, performs some processing, and completes. This makes the Document Review stage complete as well. The verification of the utility bill is done by matching the extracted address from it with the address stored in the onboarding request. Only if both match the utility bill is accepted otherwise as seen another email is sent to upload a utility bill with the correct address.

2.2.5.2 Backend Systems Update



As part of the **Backend Systems Update** stage, Focus Corp. needs to update some of its legacy systems of record:

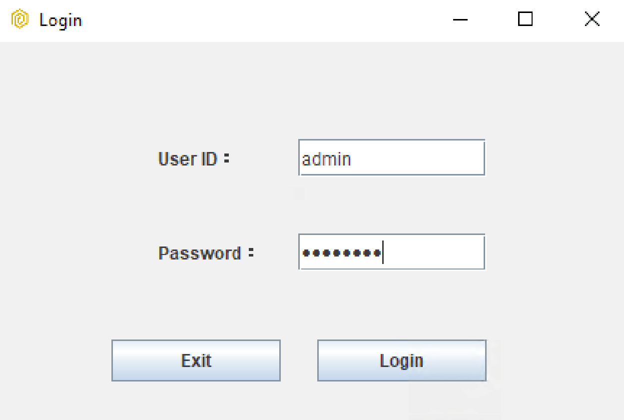
- The first is the Client Management System. It offers a Java rich client to add or update data.
- The second is the Service Management System. It offers a web interface to interact with it.

As Focus Corp. strives for a high level of automation, they want to update the legacy systems automatically without involving a user. This also helps to remove the risk of potential human errors when copying and pasting information from one system to another. Therefore, they apply IBM Robotic Process Automation (RPA).

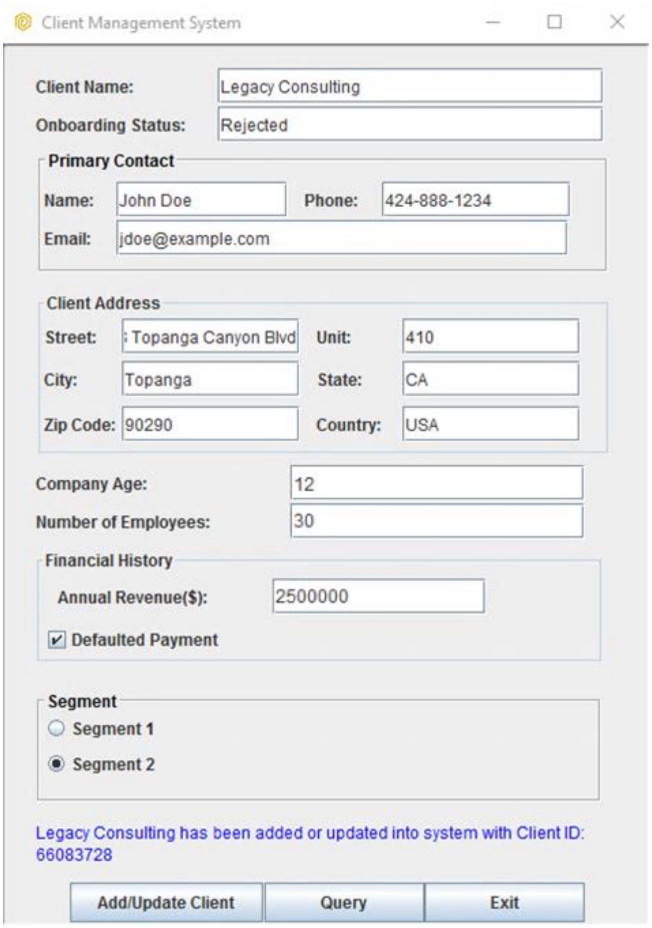
The execution of the RPA bot happens automatically in the background. To get an impression how the bot operates the following screenshots explain the steps performed.

The first step is to create a client record or update an existing client record in the Client Management System and to retrieve the Client ID for the client:

- The bot **starts** the **Client Management System** (with a Java UI) and **logs into it**



- The bot enters all values from the Client Onboarding solution into the respective fields, clicks on the **Add/Update Client** button, and retrieves the **Client ID** from the output text



- Finally, it **closes** the Client Management System by **clicking** on **Exit**

As we rejected the onboarding request in the Scoreboarding stage, the bot does not need to record the services the client wants to onboard to in the Service Management System.

> These two System of Records in our scenario are just mockups of potential real client systems. They represent systems that don't offer APIs at all to programmatically interact with them or where parts like updates are just exposed through the native UI and not an API. Such systems can easily be automated using the RPA capability.

3 Exercise: Onboarding a Client with High Confidence Level (Fully Automated)

3.1 Introduction

In this exercise, Automation Elite Inc. wants to subscribe to one service from Focus Corp.'s financial services.

You will again take over the role of the client representative, a Focus Corp. employee, who is on the phone with Automation Elite Inc. for this request. Initially, you collect all the required information before you submit the request.

Based on the information contained in the submission, the scoreboarding activity will classify Automation Elite Inc. as a Segment 1 client with a low risk profile and an assessment confidence equal or greater than 80%. Therefore, this onboarding request will be handled automatically without a manual review required by the account manager. The client will be informed about the decision via email while you, as the client representative, will get a notification task as you initiated the onboarding request.

This path through the onboarding scenario exemplifies one of the main goals when embarking on an automation journey, which is to automate business transactions as much as possible reducing the number of involved employees and therefore reducing cost, time required and manual errors.

3.2 Exercise Instructions

You will use the user assigned to you to perform all tasks as the client representative.

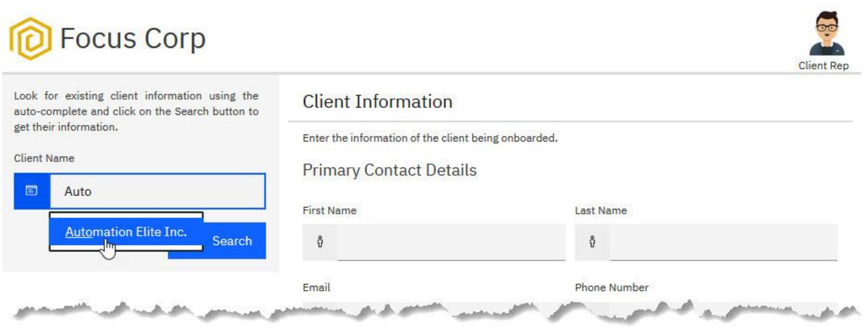
To remind you which role you currently perform, most screens show a Client Rep icon and label in the top right corner.

For this exercise, you will only assume the role of the Client Rep.

3.2.1 Taking the call from Automation Elite Inc. and collecting base information

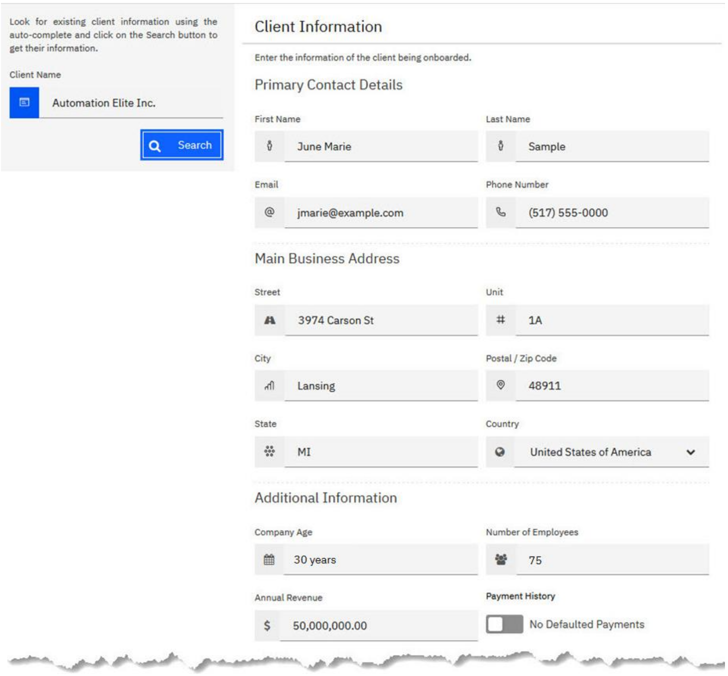
_62. If not already shown **navigate** back to the **Client Onboarding Desktop**

_63. As the **Client Representative type *Auto*** in the **Client Name** text field in the left panel to search for **Automation Elite Inc.** which is also an existing client of Focus Corp.

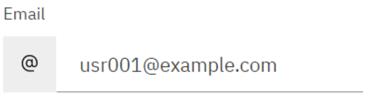


_64. **Click** on **Automation Elite Inc.** once the type-ahead feature offers it

_65. **Click** on **Search** that got enabled when selecting Automation Elite Inc. to load the details for the client into the panel on the right. It retrieves the client details using integration with the Workflow capability.



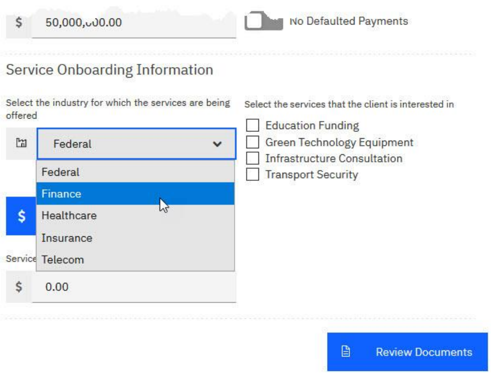
_66. The **Email** field is pre-populated with the local email address of your user and is made read-only



> Only in case the environment you are using is configured to use an external email server, the Email field is editable.
> If the Email field is editable, you can **optionally replace** the **Email** with an email address of your choice that you can use to receive client emails associated with the scenario.

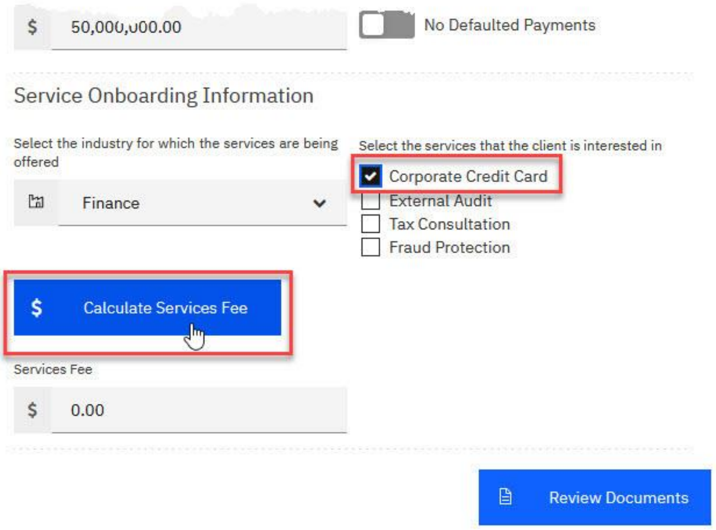
_67. **Select Finance** in the **Industry** drop-down list as Automation Elite Inc. requests to onboard to one service in that domain

> Selecting an entry from the drop-down dynamically changes the options in the services to onboard.

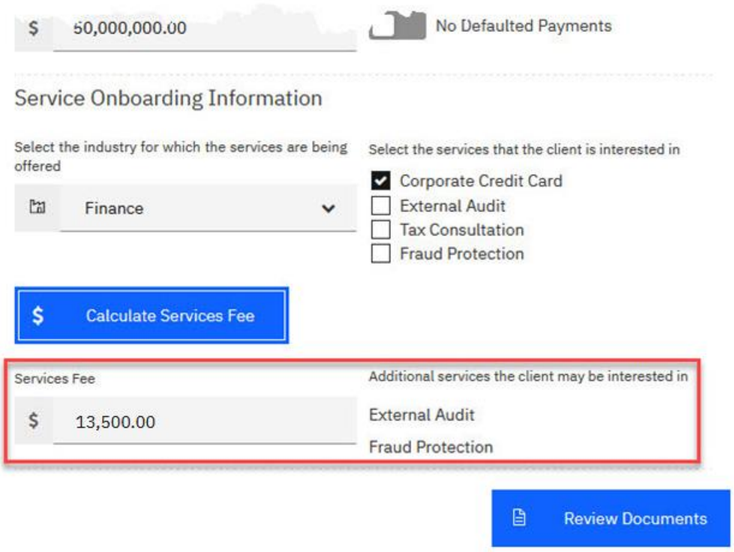


_68. **Check Corporate Credit Card** as the service that Automation Elite Inc. wants to onboard to

_69. **Click Calculate Services Fee** to calculate the fees and get potential upsell recommendations



> The fees are calculated by an external service pricing engine build using prescriptive rules. The additional services that the client representative could offer as upsell opportunity to the client are currently also based on prescriptive rules but could also be generated based on a machine learning model.

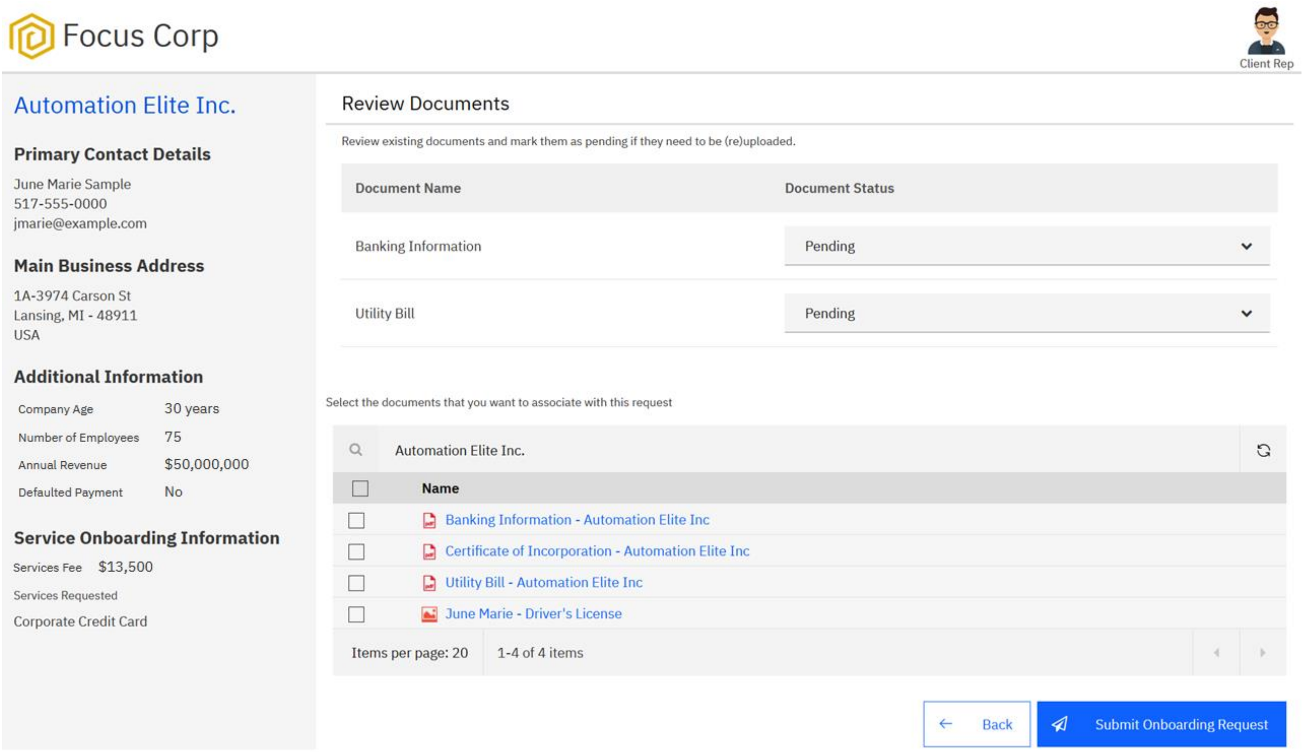


_70. **Click Review Documents** to navigate to the next page

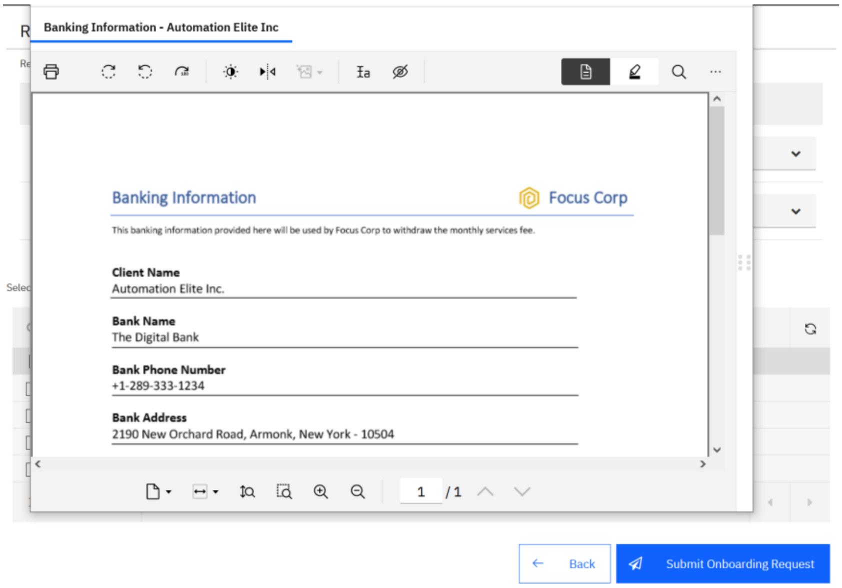
3.2.2 Verifying required documents and submitting the onboarding request

_71. **Explore** the **second page** of the Client Onboarding app

The left pane lists all information provided on the previous page. On the right pane all documents that may be relevant to this onboarding request are listed with their individual status of either Pending (Default), Verified, or Not Required. At the bottom a list of all potentially relevant documents Focus Corp. already has for Automation Elite Inc. is shown.

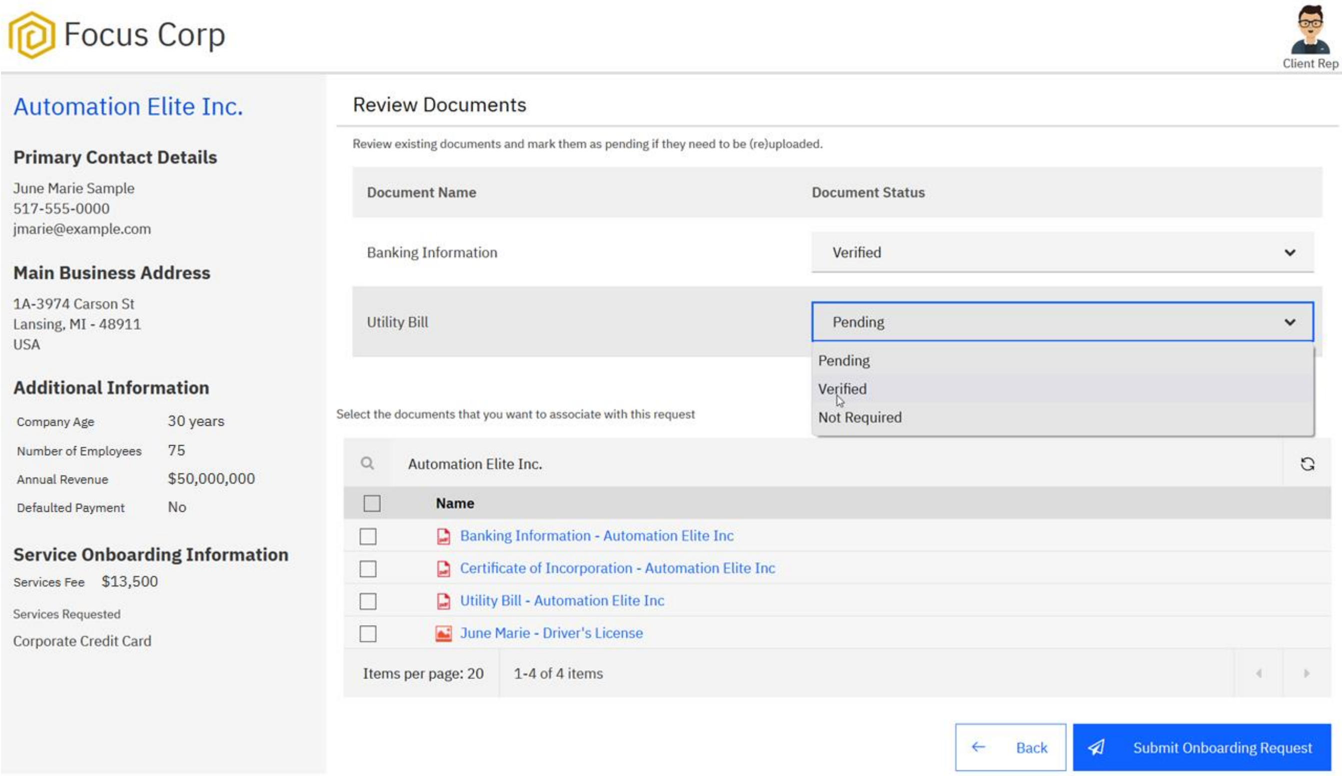


_72. **View** the **Banking Information – Automation Elite Inc.pdf** document by **clicking** the **three dots** at the right end of the row that appear when you hover over the line and **selecting View**. This opens the document in the integrated viewer. Afterwards **close** the viewer **window** again.

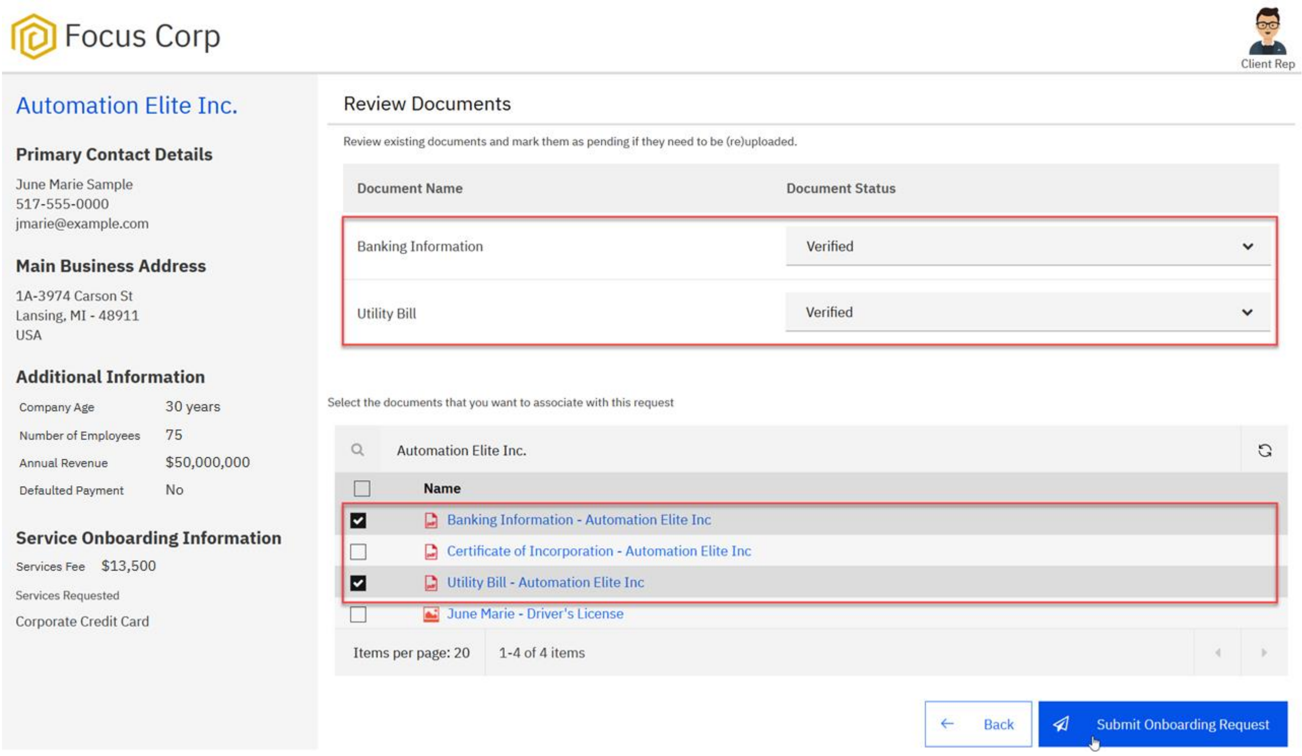


_73. **Select Verified** for **Banking Information and Utility Bill**

This reflects the documents required for the selected service and the fact that these two documents are already available.



_74. **Check the boxes for the two documents Banking Information - Automation Elite Inc.pdf** and **Utility Bill – Automation lite Inc.** in the document list at the bottom to make these two documents part of the request when you submit the onboarding request



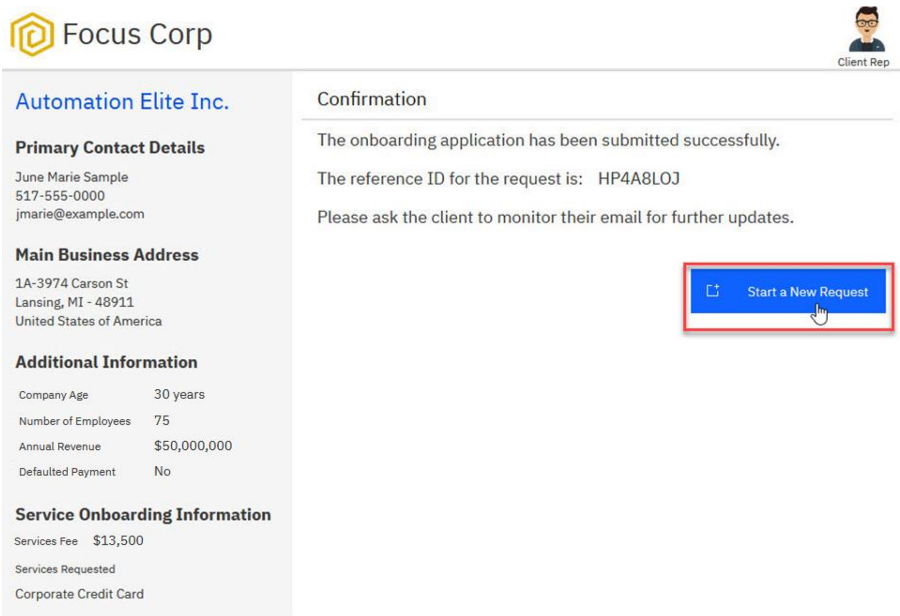
_75. **Click Submit Onboarding Request** to complete Automation Elite Inc.'s request and navigate to the final confirmation page

The submission may take a few seconds during which you might notice a little spinner icon next to the Client Rep icon. Please wait until you are taken to the third page.

3.2.3 Onboarding request confirmation page

_76. **Explore** the **third page** of the Client Onboarding app

The left pane again lists all information provided on the first page. The right-hand side provides a reference ID for the request that the client rep can share with the client and a comment that an email was sent to the client about their request.



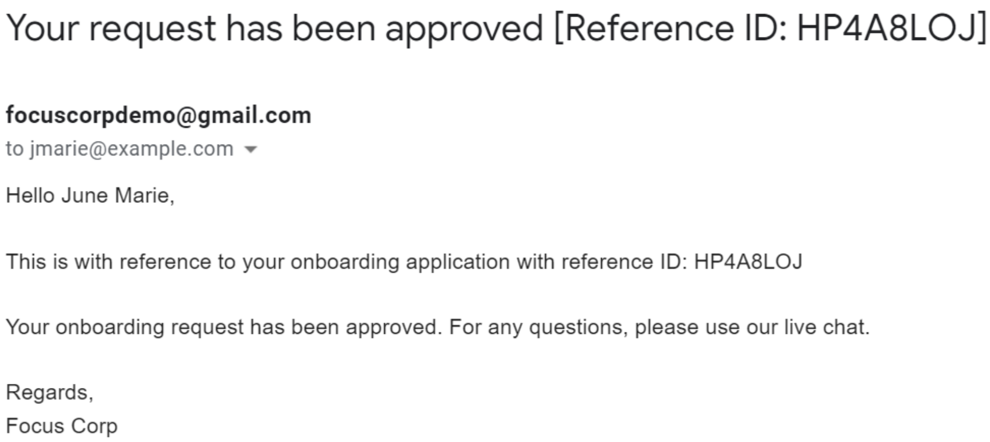
_77. **Click** on **Start a New Request** to get back to the first page to be able to continue onboarding more clients to Focus Corp.'s services

3.2.4 Checking the automatic email to Automation Elite Inc.

_78. **Open the email client in a browser using the URL provided** to you.

> If you specified your own email address on the first page, **open or bring to the front** your **email client**.

_79. **Check** your inbox for another email (the sender depends on the configuration of the environment you are using)

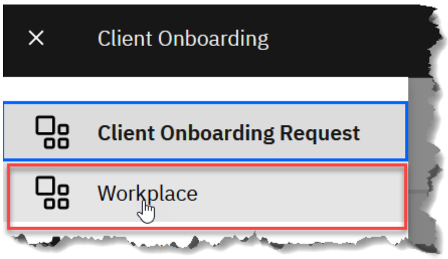


The email contains the reference ID as displayed on the final page of the Client Onboarding app. It lets you know that your onboarding request has been approved.

3.2.5 Checking the Client Rep notification about automated onboarding

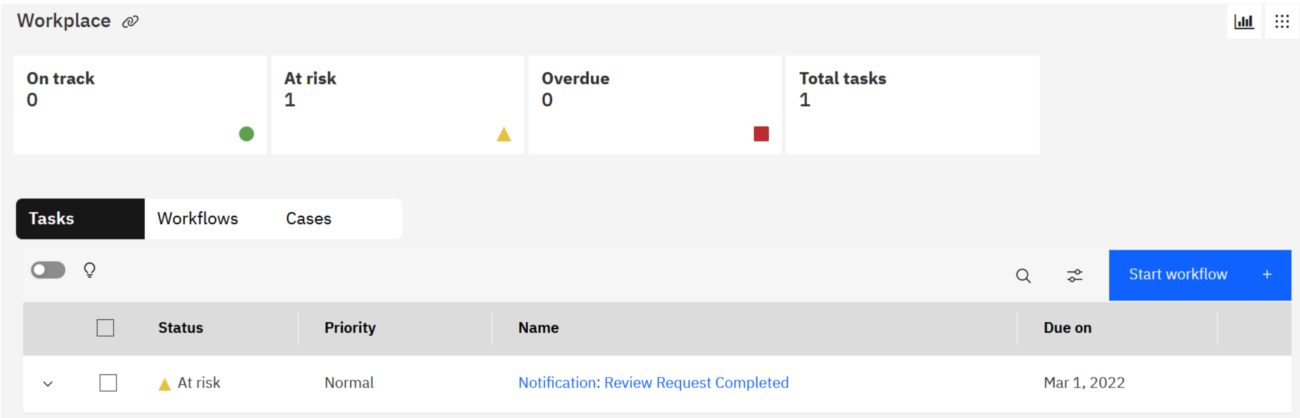
_80. **Switch** back from the email client to the browser window containing the **Client Onboarding app**

_81. **Click** on the **hamburger menu icon** in the top left corner and **select Workplace** to switch from the Client Onboarding app to your general workplace. After a short moment it shows the tasks available to you.



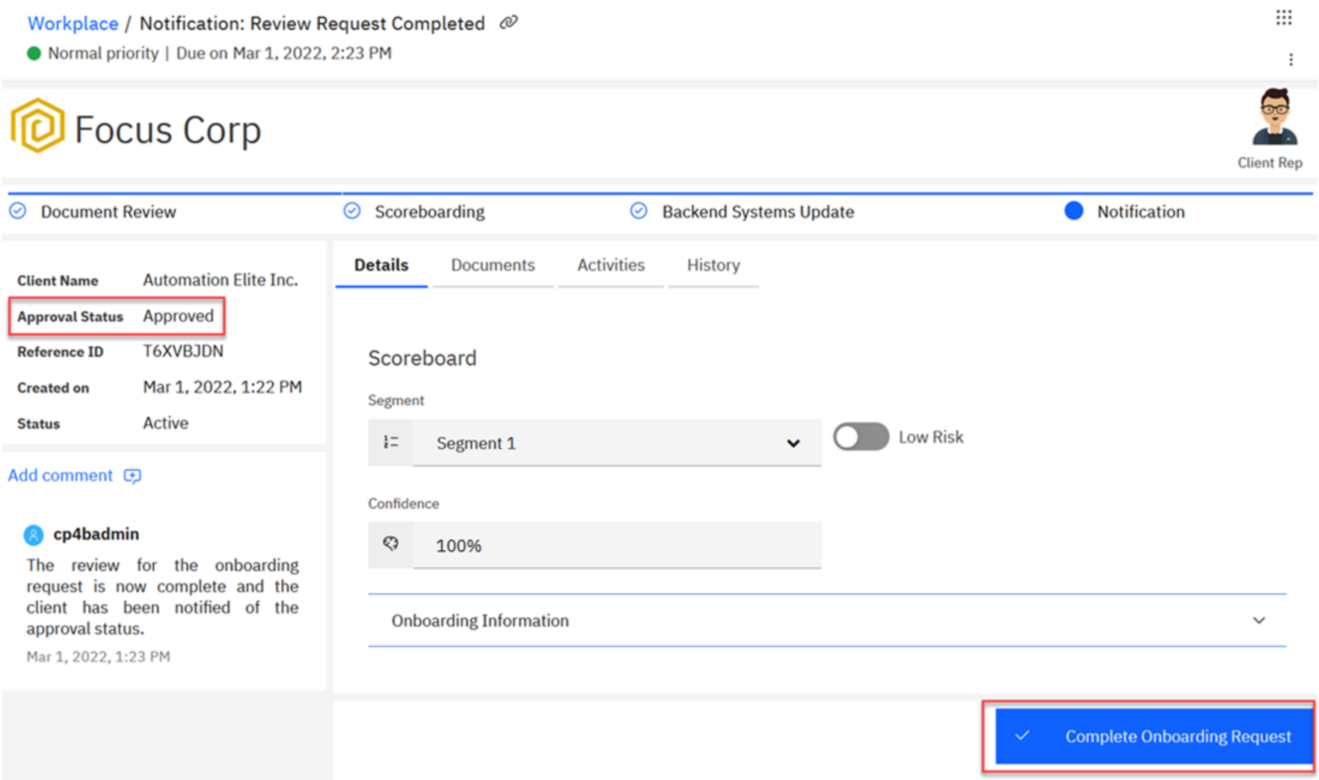
When you complete a task, the task may still be shown for some seconds in the task list. It will disappear when the task list auto-refreshes itself.

_82. **Open** the **task** that is available to you as client rep by **clicking on it**



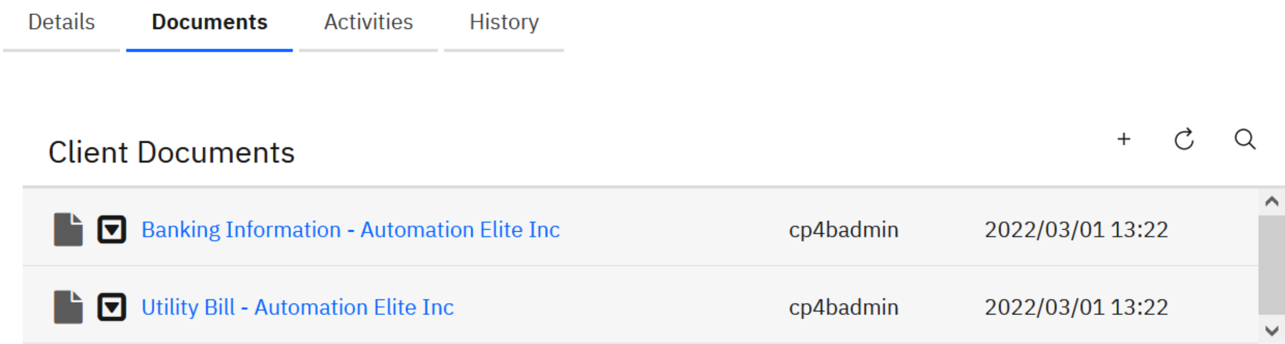
Depending on the network latency it may take a moment until the task page is loaded.

_83. **Observe** the **Approval Status** task page that shows that the client onboarding request was **Approved**



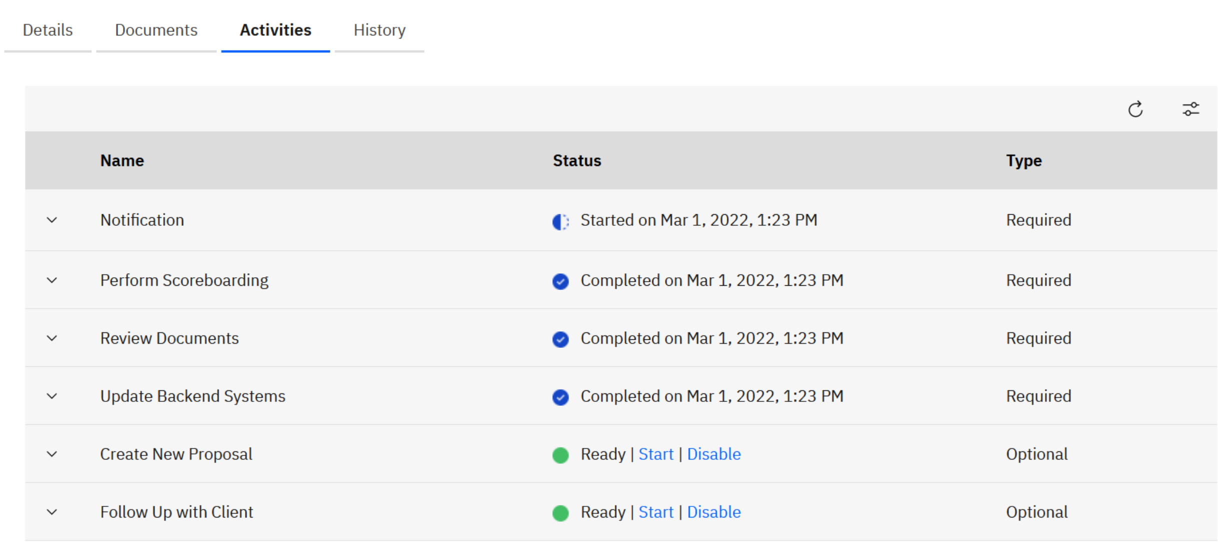
_84. **Explore** the Documents, Activities, and History tabs

The **Documents** tab shows all documents that you had previously selected on the Review Documents page of the Client Onboarding app. They have been made part of the actual onboarding request.



The **Activities** tab shows the status and type of all activities of the request. Since this is a case in the Workflow system, any discretionary activities defined in the case would be available here so that they can be started by the client representative.

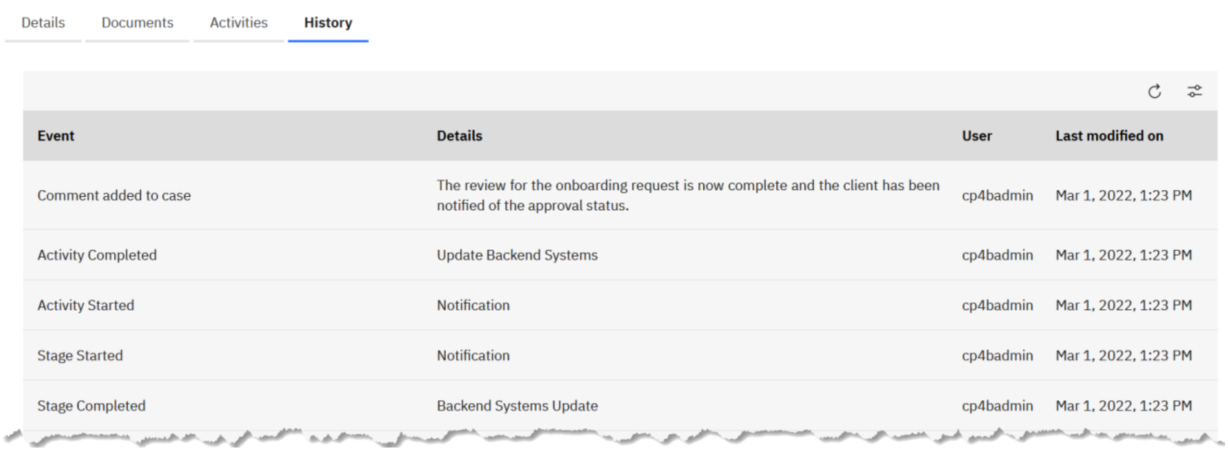
> All required activities except the one you are in are completed now.
> Two optional activities **Create New Proposal** and **Follow Up with Client** are ready. The client representative may decide to connect with the client as their onboarding request was approved to discuss the next steps to utilize the service. In addition, the client representative may also decide to create a new proposal for Automation Elite Inc. to upsell additional services.
> Yet these activities are optional, as the customer representative may choose not to perform any of them but just complete the notification task.



Details | Documents | **Activities** | History

Name	Status	Type
Notification	Started on Mar 1, 2022, 1:23 PM	Required
Perform Scoreboarding	Completed on Mar 1, 2022, 1:23 PM	Required
Review Documents	Completed on Mar 1, 2022, 1:23 PM	Required
Update Backend Systems	Completed on Mar 1, 2022, 1:23 PM	Required
Create New Proposal	Ready | Start | Disable	Optional
Follow Up with Client	Ready | Start | Disable	Optional

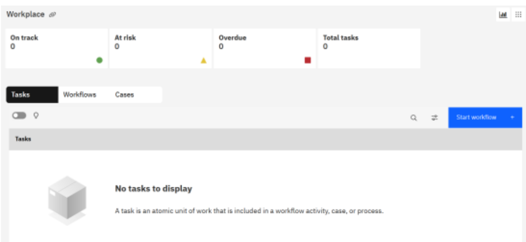
The **History** tab shows information about different types of events that happened for the request.



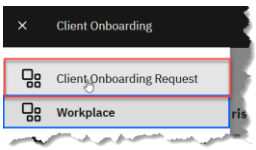
Details | Documents | Activities | **History**

Event	Details	User	Last modified on
Comment added to case	The review for the onboarding request is now complete and the client has been notified of the approval status.	cp4badmin	Mar 1, 2022, 1:23 PM
Activity Completed	Update Backend Systems	cp4badmin	Mar 1, 2022, 1:23 PM
Activity Started	Notification	cp4badmin	Mar 1, 2022, 1:23 PM
Stage Started	Notification	cp4badmin	Mar 1, 2022, 1:23 PM
Stage Completed	Backend Systems Update	cp4badmin	Mar 1, 2022, 1:23 PM

_85. **Click Complete Onboarding Request** to complete the task. This closes the task, brings you back to the now empty work list for the client rep and completes the fully automated onboarding for a low risk, high confidence client like Automation Elite Inc.



_86. **Click** on the **hamburger menu icon** in the top left corner and **select Client Onboarding Request** to switch back to the Client Onboarding app



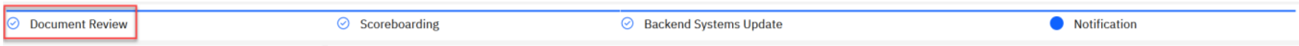
This completes the part of the exercise where you actively perform steps.

3.2.6 Review of Stages Performed Automatically

As part of the above fully automated client onboarding workflow you directly worked on the fourth stage (Notification) of the request processing. The three stages before that were already automatically completed and did not need manual activities.

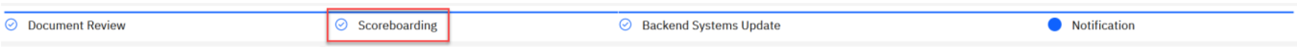
> This section provides information on how different aspects that happen automatically as part of the Client Onboarding are performed. You will not actively need to perform any steps, just read through them. In chapter four you will again work directly with the Client Onboarding solution.

3.2.6.1 Document Review



The first stage during processing the onboarding request is the Document Review stage. For the above request you have specified in the front-office intake app that the two required documents are already verified. Therefore, this stage completes automatically.

3.2.6.2 Scoreboarding

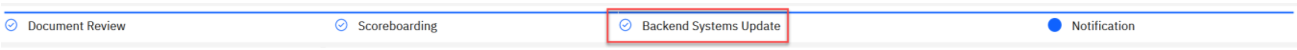


As described before, the Scoreboarding stage consists of two activities:

- The first activity automatically applies prescriptive rules and an AI model. It determines the segment this client belongs to, the risk associated with onboarding the client and the confidence of the assessment.
- The second activity is to manually review the onboarding request. However, in the request you created, the calculated confidence of the assessment is equal or above 80%. Therefore, the second activity to manually review the request by an account manager is skipped.

For your request the client has been automatically onboarded, and the Scoreboarding stage has been automatically completed.

3.2.6.3 Backend Systems Update



As looked at before in the Backend Systems Update stage, Focus Corp. needs to update some of its legacy systems of record:

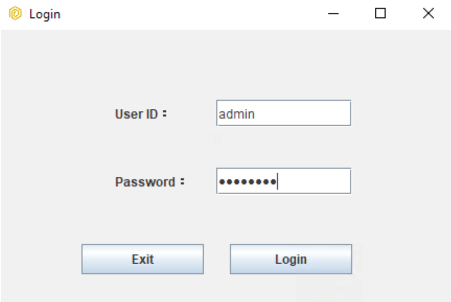
- The first is the Client Management System. It offers a Java rich client to add or update data.
- The second is the Service Management System. It offers a web interface to interact with it.

Striving for a high level of automation Focus Corp. wants to update the legacy systems automatically without involving a user. This also helps to remove the risk of potential human errors when copying and pasting information from one system to another. Therefore, they apply IBM Robotic Process Automation (RPA).

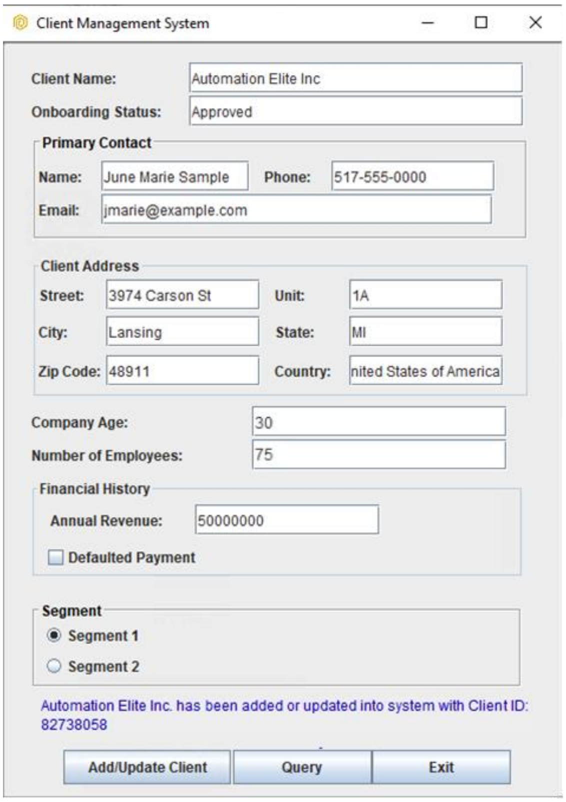
The execution of the RPA bot happens automatically in the background. To get an impression how the bot operates in this case where the client was onboarded the following screenshots explain the steps performed.

The first step is to create a client record or updating an existing client record in the Client Management System and to retrieve the Client ID for the client:

- The bot **starts** the **Client Management System** (with a Java UI) and **logs into it**.



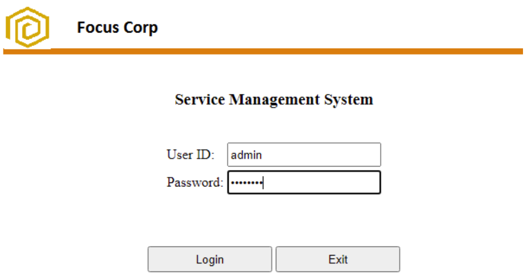
- The bot enters all values from the Client Onboarding solution into the respective fields and clicks on the **Add/Update Client** button and retrieves the **Client ID** from the output text.



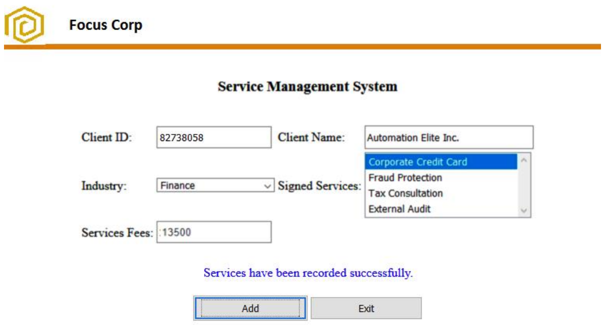
- Finally, it **closes** the Client Management System by **clicking** on **Exit**.

The second step is to record the services the client wants to onboard to in the Service Management System. This only applies when the onboarding request has been accepted, as it has been for Automation Elite Inc. during the Scoreboarding stage.

- The bot **starts** a **browser**, **navigates** to the **home URL** for the **Service Management System**, and **logs into it**.



- The bot **enters** the **Client ID** retrieved from the Client Management System as well as the **client name, industry, services** to be signed up to, and **services fees** from the Client Onboarding solution into the respective fields and clicks **Add**.



- Finally, the bot **clicks Exit** to **logout** from the Service Management System and **closes** the **browser window**.

> These two System of Records in our scenario are just mockups of potential real client systems. They represent systems that don’t offer APIs at all to programmatically interact with them or where parts like updates are just exposed through the native UI and not an API. Such systems can easily be automated using the RPA capability.

4 Exercise: Explore the Business Performance Center Dashboard

4.1 Introduction

In this final exercise you switch into the role of the business owner of the Client Onboarding business of Focus Corp. You need to understand how your business performs and what actions to take to expand your business or course correct if needed.

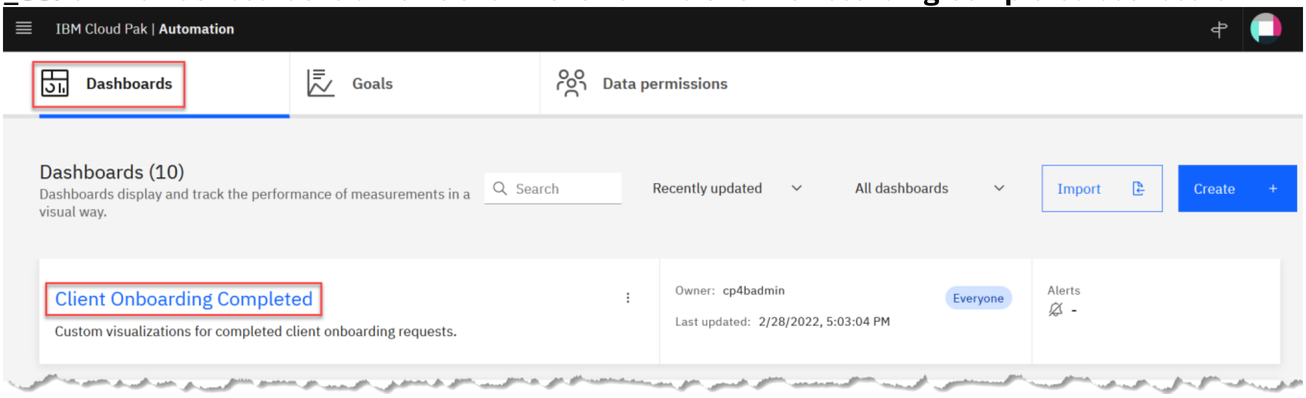
For this purpose, you will make use of **Business Performance Center** (BPC) as part of **IBM Business Automation Insights** (BAI). BPC provides easy to use and meaningful dashboards to visualize business relevant KPIs for lines of business to have a near real-time view on their business operations.

4.2 Exercise Instructions

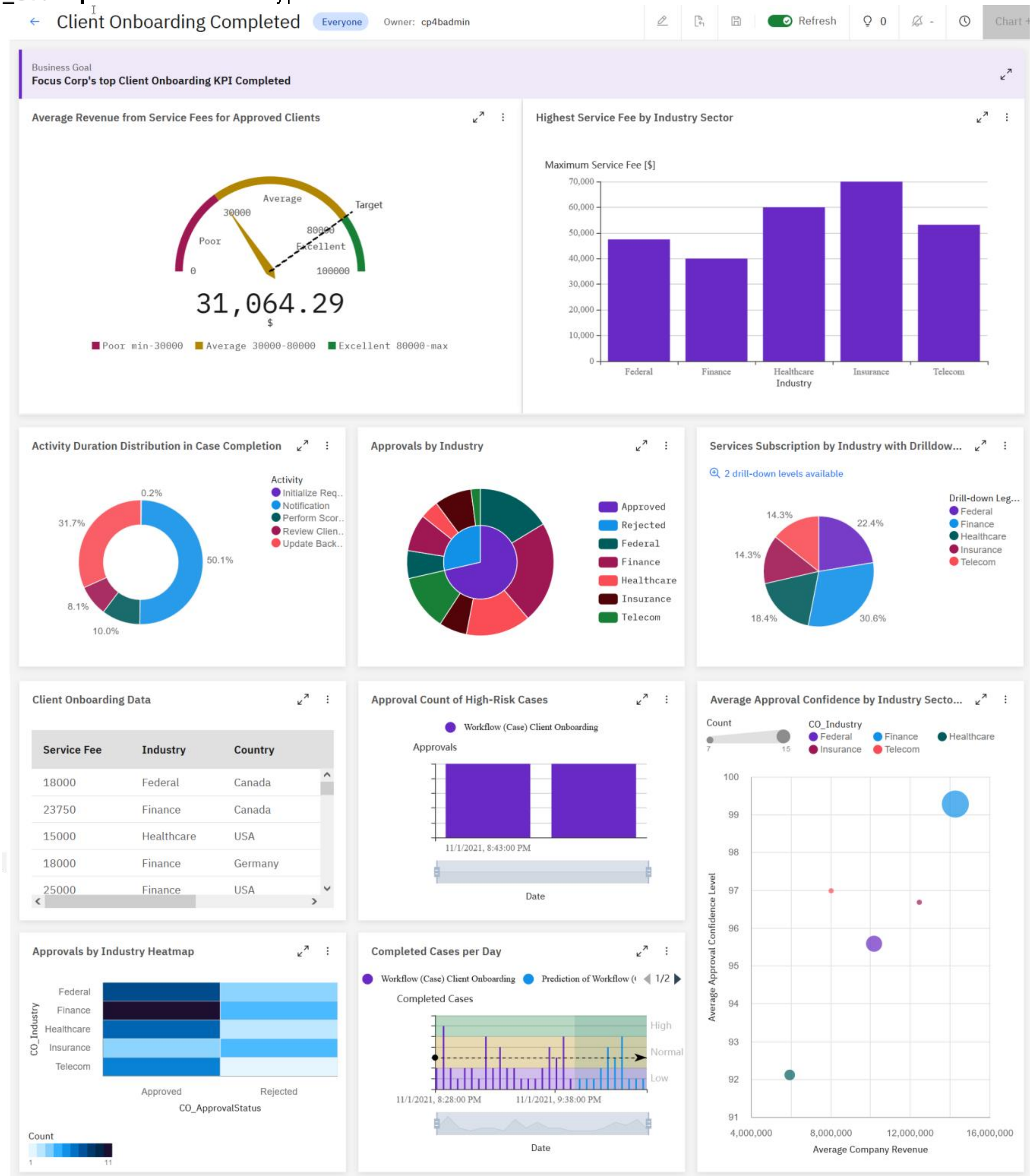
You continue to use the same user to access the BPC dashboard. You will see live data, so it may differ from the screenshot shown and may change over time as you and other participants perform onboarding requests.

_87. **Open** the **Business Performance Center** (BPC) using the link for your environment (see section 1.3 Lab Setup Instructions, item 1)

_88. On the **Dashboards tab** that is shown **click** on the **Client Onboarding Completed** dashboard



_89. **Explore** the different types of charts and information in the dashboard



Some examples of how to use the data based on the screenshot above are:

- In the **Approvals by Industry** chart (second row, center) hover over the two segments in the inner circle to see which segment shows the approved and which the rejected onboarding requests and their respective percentage. You can then hover over the segment in the outer circle to see from which industries these are coming and their percentage. You might for example see that your business is weak in the insurance sector (brown color above) with a significantly high number of onboarding requests being rejected. This may lead you to investigate this issue more deeply and start an advertisement campaign.

- This is especially true looking at the **Highest Service Fee by Industry Sector** chart (first row, right) which indicates that in the Insurance industry you earn the highest service fees.
- In case the **Approval Count of High-Risk Cases** chart (second in the third row) shows a high and potentially increasing number of approvals for high-risk onboarding request, you might want to investigate the cause of this. One reason might be that the machine learning model needs to be retrained or the threshold for the confidence needs to change. Another reason could be that your account managers approve too many high-risk onboarding requests to not lose business which may have a negative effect on the risk profile of your business.
- The **Completed Cases per Day** chart (second in the third row) can help you to see the distribution of completed onboarding request per day over a period of time. It also provides you a forecast based on past activity. This can enable you to plan your budgets and capacity.

5 Outlook

The Client Onboarding scenario is ever evolving. While it is already very comprehensive some interesting aspects are not yet implemented:

- **Business Insights into how Client Onboarding is performing**

  Focus Corp. would want to have operational dashboards available for their managers to get operational details on the execution of the solution components to understand metrics such as task distribution, time taken by services, number of decisions executed and so on.

- **Client Onboarding to Focus Corp's Services Online**

  Currently the client must call Focus Corp. to place their onboarding request by talking to a customer representative. Focus Corp. may want to allow clients to request onboarding themselves by filling in a form. In addition to the ability to upload missing documents online, Focus Corp. may want to offer a self-service capability on their web site.
  In a future version of the end-to-end scenario, we might incorporate a Chat bot capability based on Watson Assistant to facilitate such requirements.

- **Analyzing the Client Onboarding solution using IBM Process Mining**

  Focus Corp. is always looking for improvement opportunities to streamline their business activities. **IBM Process Mining** provides various means of analyzing execution logs of performed business processes to generate insights on how to improve them.

  One of the challenges is having access to execution data to derive meaningful insights from. IBM Process Mining provides built-in capabilities to extract these from the Workflow capability as a part of Cloud Pak for Business Automation.

- **Utilizing the capabilities of other IBM Cloud Paks**

  Focus Corp. has multiple custom Systems of Records and packaged solutions that should be connected to the client onboarding solution. Similarly, as this is a very critical business application, Focus Corp. needs to ensure that it is constantly available, outages are avoided, or that it can at least be recovered instantly. As the solution accesses critical client data and internal information, it needs to be secured against any threads and attacks. Finally, as Focus Corp. is seeing the value of using machine learning they want to expand on it introducing proper governance etc.
  In a future version of the end-to-end scenario, we expect to address these by integrating capabilities from the

  - IBM Cloud Pak for Integration to address connecting various systems
  - IBM Cloud Pak for Watson AIOps to automate IT operations and deliver actionable insights
  - IBM Cloud Pak for Security to gain insights into threats and risks and respond faster
  - IBM Cloud Pak for Data to scale AI-powered transformation easily by unifying data and tools in a single solution

This completes the lab to experience how IBM Cloud Pak for Business Automation can be used in a simplified version of a Client Onboarding solution as part of Focus Corp's service business.

Congratulations on completing the lab!

> We love to hear your **feedback**.
> Depending on the venue, please provide feedback via the Slack channel, during the Webex calls, by sending an email to the author (Olaf.Hahnl@de.ibm.com), and through the survey at the end of the event.