

Automation Document Processing Lab

IBM Cloud Pak for Business Automation Demos and Labs 2024

Capture

IBM Automation Document Processing
V23.0.2 IFIX2

Lab Automation Document Processing

V 2.2

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1. Overview

1.1 Getting HELP during the lab

- For internal IBM, another good resources the Archive slack channel for questions: #cp4ba-adp-lab or <https://ibm-cloud.slack.com/archives/C01LVVBMWPN>
- For external participants besides the Slack channel, use the Webex chat if you are in a WebEx event or just speak up.
- For others, email sundeep.anne@ibm.com. This method will be slower and will be best effort. It may require jumping on a Webex meeting to provide help.
- Getting help after lab reach out to the following:
 - harrish.narayanan@ibm.com
 - matthias.jung@de.ibm.com
 - Sundeep.anne@ibm.com
 - bakercl@us.ibm.com
 - krishkirsh@us.ibm.com
 - rmsparks@us.ibm.com

1.2 Icons

The following symbols appear in this document at places where additional guidance is available.

Icon	Purpose	Explanation
	Important!	This symbol calls attention to a particular step or command. For example, it might alert you to type a command carefully because it is case sensitive.
	Information	This symbol indicates information that might not be necessary to complete a step but is helpful or good to know.
	Trouble-shooting	This symbol indicates that you can fix a specific problem by completing the associated troubleshooting information.

-

1.3 Abstract

Set up a capture solution in minutes. Introduce technical sellers to IBM Automation Document Processing. In this session, students will configure their own capture project. They will learn how to use machine learning classification for their sample documents, define fields for extraction, create validation rules, and use deep learning* (subject to environment configuration) to automate data extraction.

1.4 Introduction

Welcome to the Automation Document Processing lab. This lab will introduce you to Document Processing and provide you with an understanding how you can configure it for your customer opportunities.

Automation Document Processing provides a tailored solution that reads your documents (in English, French, Spanish, German, Dutch, Portuguese), extracts data, and refines and stores the data for use.

With the right business knowledge, you can design deep learning models without being a data scientist. The Document Processing Designer includes pre-trained deep learning models that you can use as a base for your own model. The pre-trained document types include bills of lading, invoices, and utility bills.

You can extract text, check boxes, forms, tables, barcodes, signature detection and even free text. With no or low code options, you can create an application that processes documents, extracts data, flags issues, and stores your documents and data. And the data enrichment capabilities ensure that the extracted data is standardized and ready for use in downstream integrations.

This lab will not cover all the available functionality available due to time constraints. Additional labs will be created in next Tech Jams to add to your knowledge and understanding of Document Processing.

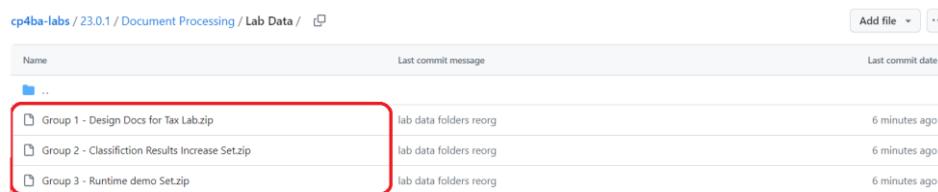
2 Getting started

Download the sample documents in the zip file. We will be using these sample documents during the labs You can find them here:

<https://github.com/IBM/ba-dl-tech-jam/tree/main/23.0.2/Document%20Processing/Lab%20Data>

_1. Click on “Group1 – Design Docs for Tax Lab.zip”.

_2. Then Click on Download



_3. Repeat above steps “Group 2 – Classification Results Increase Set.zip” and “Group 3 – Runtime Set.zip”

_4. Unzip the files and keep them in their designated folder.

You will notice the images are in various unique folders that will be referenced specifically in the different labs later. Please keep them in their proper folders.

2.1 IBM TechZone – Overview

What is IBM TechZone?

IBM Technology Zone (techzone.ibm.com) enables IBM teams and IBM Business Partners to provision technical “Show Me” live environments, Proof-of-Technologies, prototypes, and Minimum Viable Prototypes, which can be customized, shared with peers and clients to experience IBM Technology.

Learn more: <https://techzone.ibm.com/collection/onboarding#tab-1>

The TechZone leverages CP4BA Rapid Deployment Scripts. The National Market Top Team created Pak Installer to assist the technical sales teams with the progression of IBM Cloud Pak opportunities.

The goal is to provide the technical sales with a set of (easy to use) scripts that will aid in the installation of OpenShift and the IBM Cloud Pak's.

Also please rate the tile on the TechZone website. This will help the development and DBA SWAT Digital Labor team understand its value.



Note: If you have been assigned a pre-provisioned ADP environment as part of the IBM event, you can skip this section, “2.1.1 Reserve Environment”, and continue to section “2.2 Open IBM Cloud Environment”.

2.1.1 Reserve Environment

- _1. Navigate to:

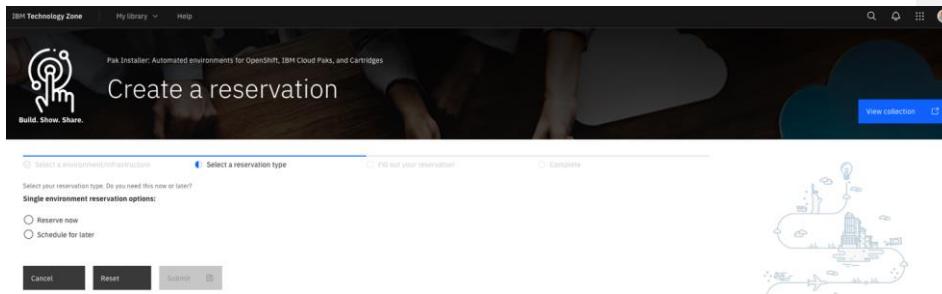
<https://techzone.ibm.com/collection/internal-ibm-cloud-pak-for-business-automation-demos-and-labs/environments>

The screenshot shows a grid of tiles representing different environments. The fourth tile from the left, labeled "Jam in a Box Env - v1.0", is highlighted with a red box. This tile contains the following information:

Mar 31, 2024 Ibmcloud 2	Mar 31, 2024 Ibmcloud 2	Apr 2, 2024 Ibmcloud 2	Apr 2, 2024 Ibmcloud 2
CP4BA Bring-Up Lab - US-East Only [v0.1 - updated 2024.03.19] NEW CP4BA Bring-Up Lab version 0.1 + modified vm_map_string: changed the staging starting the VMs	CP4BA Bring-Up Lab - US-East Only [v0.2 - updated 2024.03.19] NEW CP4BA Bring-Up Lab version 0.2: took copy of the VMs while shut down, before shut down paused the OCP updates	Jam in a Box Env - v0.1 - updated 2024.03.28 NEW Jam in a Box Environment Version 0.1: New 23.0.2 IF002 deployment with Client Onboarding installed	Jam in a Box Env - v1.0 - updated 2024.04.02 NEW Jam in a Box Environment Version 0.1: New 23.0.2 IF002 deployment with Client Onboarding installed Version 1.0: Added network policy for ADP, cleanup of bastion host
Visibility IBMer, Business Partners	Visibility IBMer, Business Partners	Visibility IBMer, Business Partners	Visibility IBMer, Business Partners
Reserve	Reserve	Reserve	Reserve

- _2. Click **Jam in a Box Env -v1.0** tile (at the right most end of the screen) and click on **Reserve**

- _3. On Create a reservation screen **select option** for when to start



- _4. Create a Reservation

Based on the reservation type you are making, provide the required information

Customer Demo : Need a short customer-facing demonstration

Practice/Self-Education: Need to gain experience

Standard proof of concept: Need an environment for a standard product usecase.

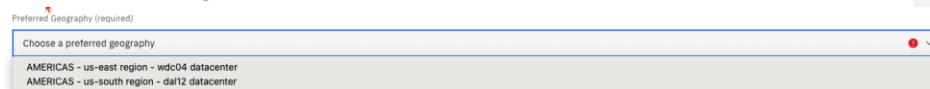
Custom Proof of concept: Need a complex, customized environment.

Testing: Need to test a specific function, configuration, or customization.

- _5. For this lab **Select Testing option** which will give you 3 days plus the option to extend it for another week. Otherwise, you will need a legitimate opportunity to leverage another reservation type.

- _6. **Enter <some description>** in the Purpose description box.

- _7. For Preferred Geography (required) select your preferred data center location



- _8. Select a date a time if you picked something different then "Testing" for the reservation. (if not already chosen for you)

- _9. On the right hand pane, click on the option "I agree" and click on the "Submit" button.

Automation Document Processing Lab

The screenshot shows the 'Create a reservation' interface. At the top, it says 'INTERNAL - IBM Cloud Pak for Business Automation - Demos and Labs'. Below that, there are tabs for 'View collection' and 'INTERNAL - IBM Cloud Pak for Business Automation - Demos and Labs'. The main form has fields for 'Name' (set to 'Jam in a Box Env - US-East Only [v0.1 - updated 2024.03.28]') and 'Name this reservation, This will help identify it in your reservation list.' Under 'Purpose', 'Practice / Self-Education' is selected. Other options like 'Customer Demo', 'Proof-of-Technology', and 'Test' are also listed. A note at the bottom states: 'Please ensure to select the correct purpose as this can NOT be updated or changed after this reservation has been created. Review the [Reservation Duration Policy](#) to understand default durations allowed for specific infrastructures based on purpose.' At the bottom right, there's a checkbox for 'I agree to IBM Technology Zone's [Terms & Conditions](#) and [End User Security Policies](#)' and a 'Submit' button.

_10. Once “Cloud Pak Services Running” is Complete upon receiving this email then your environment is ready. Once the start-up process is complete you can click on the links identified in the email. However, it is recommended that you review your reservation information from the IBM Technology Zone – My reservation site.



In the emails pay attention to the Step and Status. The system is not up totally until the Step labeled “Cloud Pak Services Running” has a status of “Complete”.

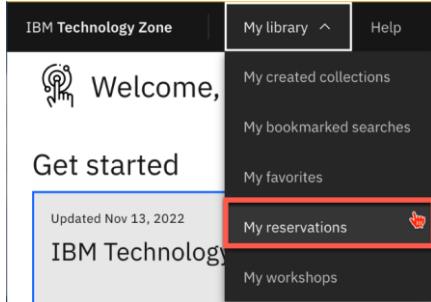


If after receiving email and a few hours have passed and your environment is not up, check [Appendix A – Troubleshooting](#) for possible fix.

_11. Click My reservations



_12. Once you get the email from the IBM Technology Zone site, you can access your environment reservation(s) by **clicking** on the **My library** then **My Reservations**



You can also access directly using the link below

<https://techzone.ibm.com/my/reservations>

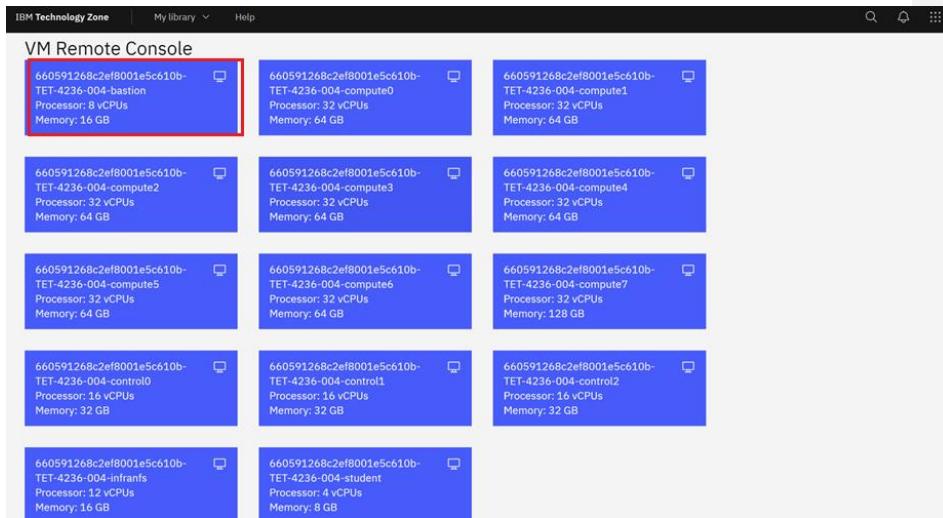
2.2 Open your IBM Cloud Environment

Once the environment is created, you can open the reservation shown like in the below screenshot

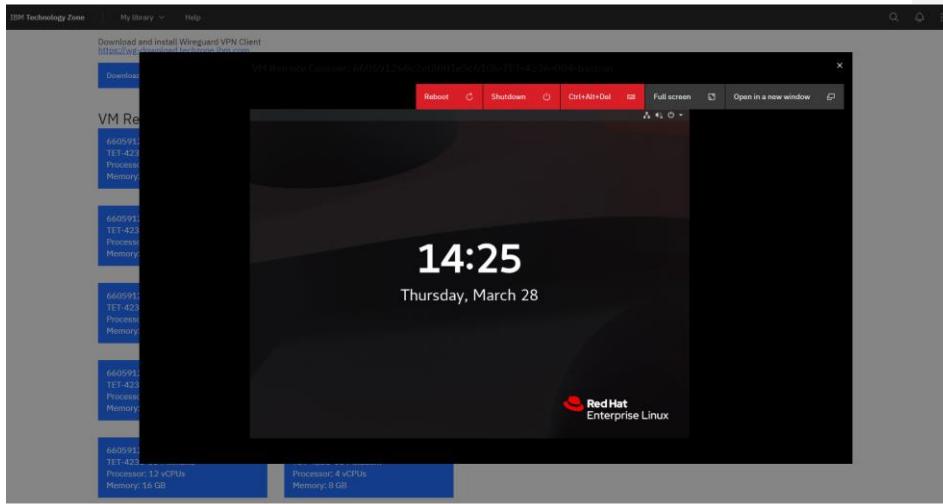
A screenshot of the IBM Cloud reservation details page. The title is 'Jam in a Box Env - US-East Only [v0.1 - updated 2024.03.28]'. It shows a clock icon and a pencil. Below the title, it says 'Need to gain experience.' and shows 'Date: Mar 20, 2024 11:47 AM' and 'Mar 28, 2024 2:08 PM'. There are buttons for 'Expires in: 25 minutes' and 'Extend limit: 2'. The status is 'Ready'. The page is divided into sections: 'Purpose' (Practice / Self-Education, Opportunity Product(s)), 'Environment' (Note: Optimized by IBM Turbonomic, Reservation ID: 660591268c2ef8001e5c610b, Request method: vmware-template, Cloud Account: 1T2VMWARE-ITZNA3-WDC06, Region: us-east, Customer data: false, Idle runtime limit: 10800, VMware Web Console: https://vm...), 'Opportunity ID(s)' (Type: IBM Cloud, Transaction ID: 31f0751b-4c32-42bc-b019-7c9c52a13878, Geo: americas, Datacenter: wdc06), and 'Opportunity description' (Need to gain experience.).

_1.

- _2. Here scroll down and you can see the VM consoles, and now choose the bastion host, the first tile ->

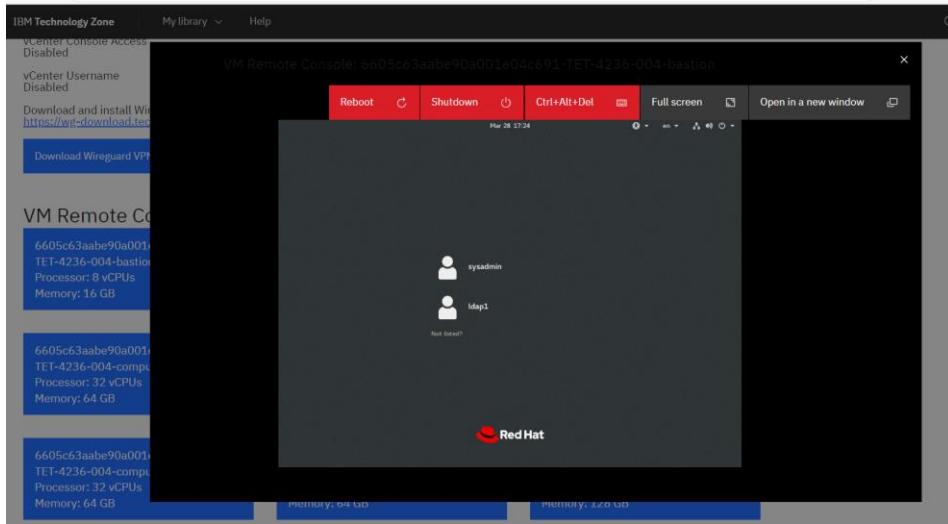


- _3. Opening the first tile, In the bastion host you will see the below screen with a console window -

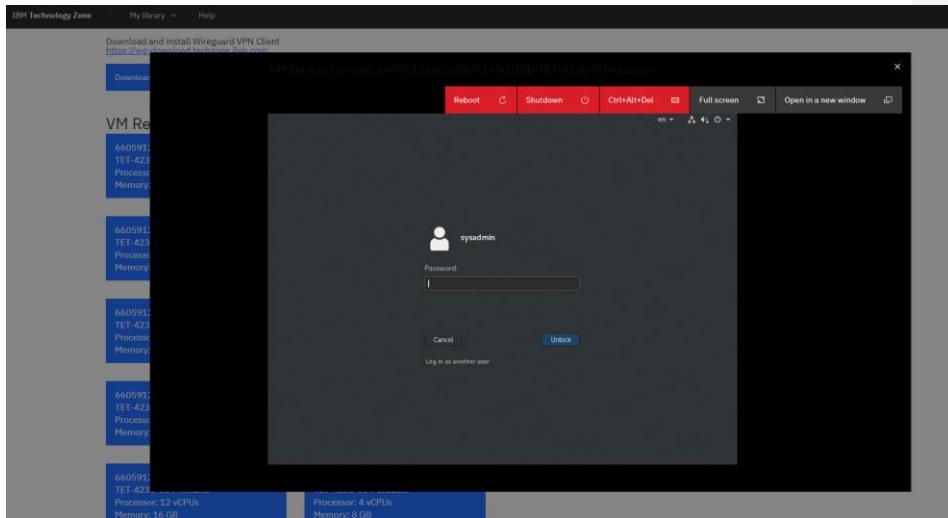


- _4. Click in the middle and drag it upwards so that you could see the “username” to logon as below screen.

Automation Document Processing Lab



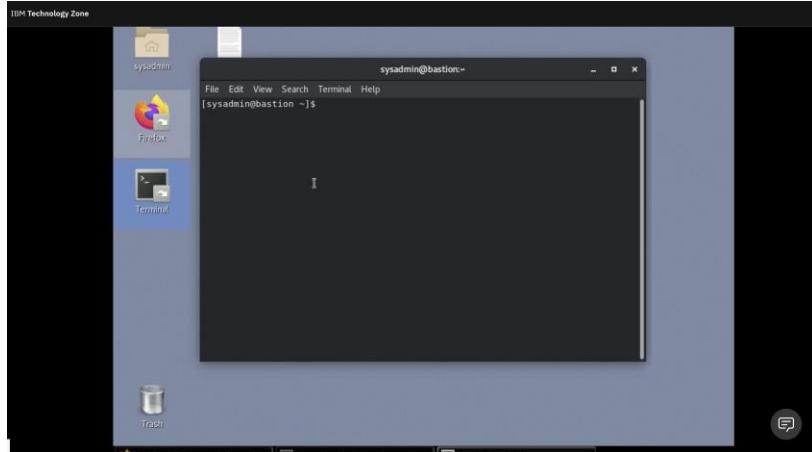
_5. Choose the user as “sysadmin” and the password is “ibmrhocp”.



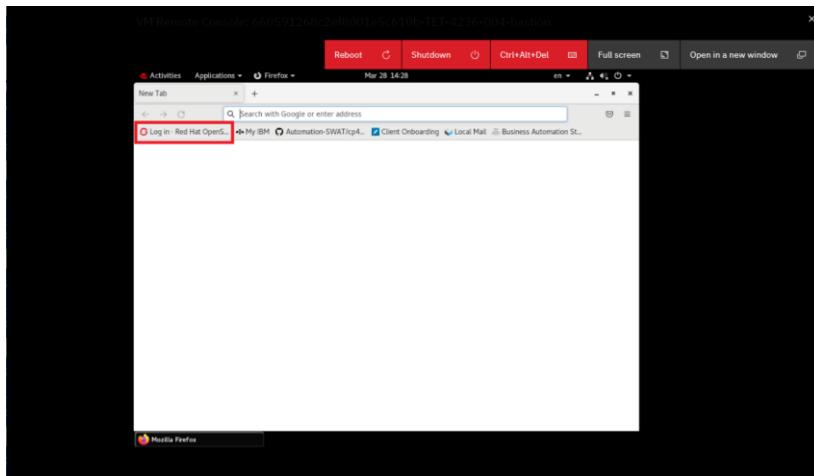
_6. Once logged in, open the terminal, and issue the below commands one after another to restart the SDS service

- sudo systemctl stop sds
- sudo systemctl start sds

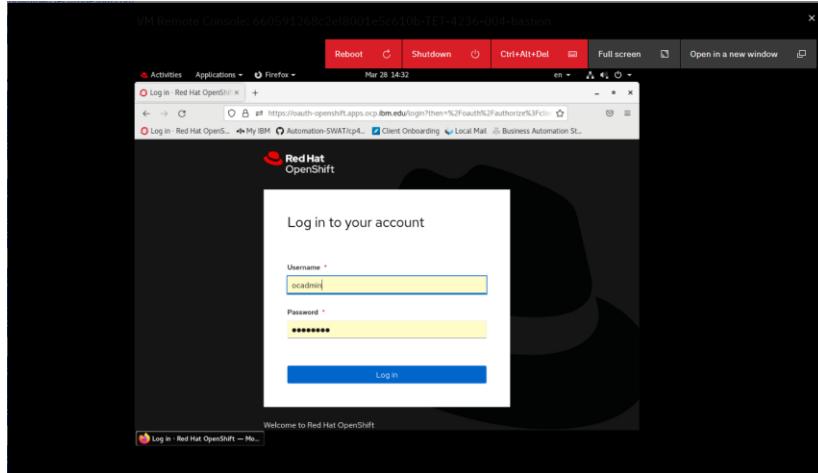
Note: Once you ran above commands Wait until the command executes and cursor blinks on the next line.



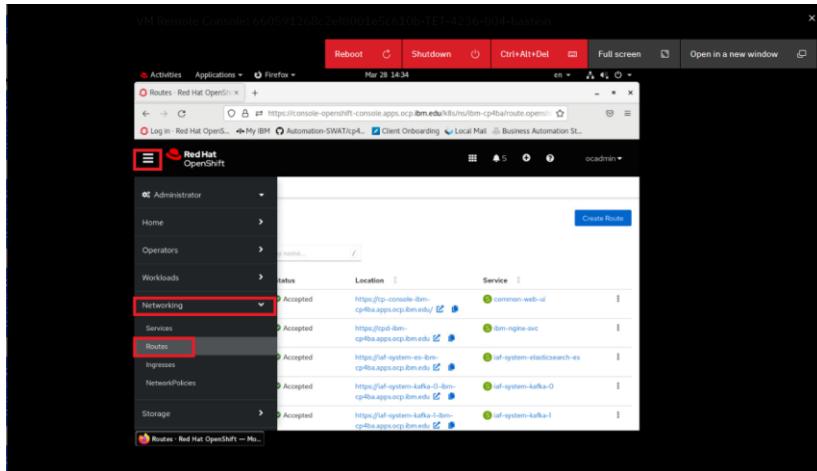
_7. Now, double click on the Firefox and open the browser and click on the bookmark highlighted in red rectangle as shown below.



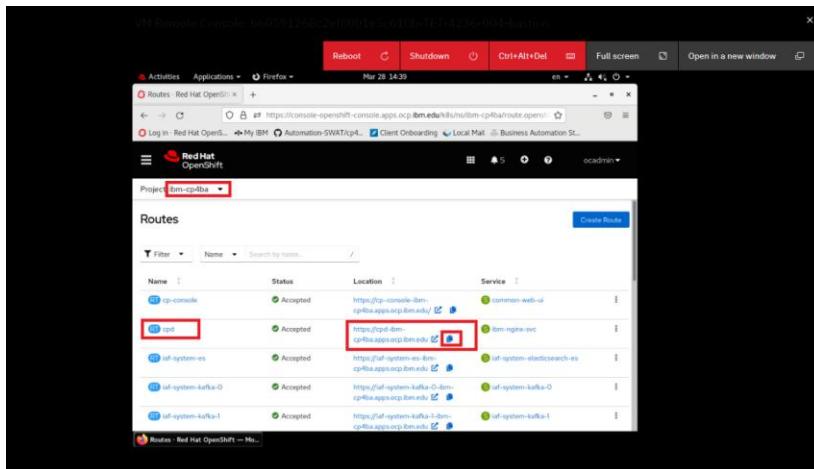
_8. Once in the screen, login as “ocadmin” and the password is “Cp4badm1n” and click login and would take it to the overview screen.



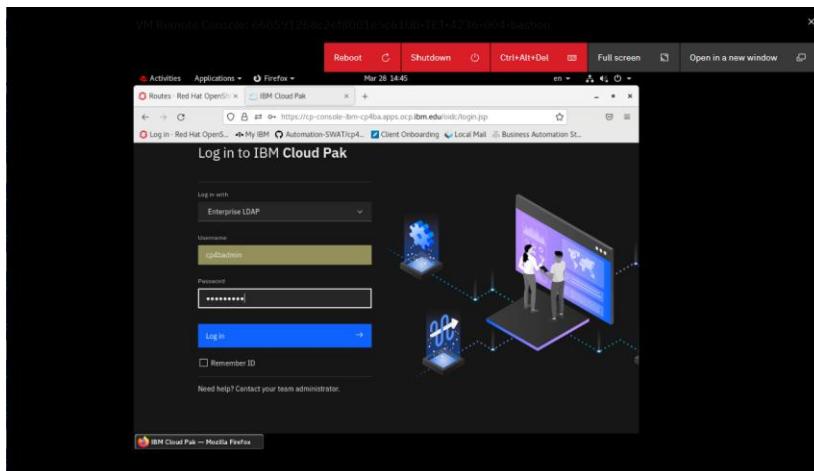
_9. Now click on the hamburger symbol (three lines on the top right corner of the page header), there click on the Networking -> Routes



_10. This will take you into the Routes screen, here you could check the "cpd" route ensure that the project is in "ibm-cp4ba" at the top right side below the header.



- _11. In the center screen, you can notice the URL and the copy link, click on the copy link and open another tab and paste it on the address text item, this would open the cloudpak login page. Here in the login page, choose the option as Enterprise LDAP for “Login with” and the user as “cp4badm” and password as “Cp4badm1n”.



- _12. You will be presented with the “Welcome! Let’s get started” screen. **Click** Maybe later button.



Note you will see this screen several times throughout the lab. You can always select Maybe later while doing this lab.

3 Lab Overview

The lab will focus on the design time tasks for Automation Document Processing (ADP). Despite the push for the digitization of content for many years, there are still a lot of paper documents that require workers to read and interpret the information – whether it is structured data, such as tax forms, or semi-structured data, such as invoices, utility bills, and so on. This lab describes how to set up an automate document processing pipeline using ADP.

3.1 How does ADP work?

Document Processing Designer

You use the Designer interface to create a set of document types and related fields that comprise your Document Processing project. Document Processing Designer combines an intuitive interface with a set of AI and deep learning tools that identify and learn the document types that matter to your organization. For each document type, you designate which pieces of information to extract as data for that document to be used by downstream applications. You can also apply tools to clean up and standardize the data as it is extracted.

Deployment tools

After you build the Document Processing project in the Designer, you deploy the project to make it available for building your document processing application. The deployment process is also used to configure the repository to receive the processed documents from your end-user application by making the capabilities and artifacts available for integration into an application and into the destination repository.

Application templates and toolkits

You use the no- or low-code application building capabilities of Application Designer, customized templates and toolkits, and the AI model of your Document Processing project to create a document processing end-user application. This application recognizes your documents, extracts your relevant data, and presents issues to fix before sending the documents to storage and using the data in other systems.

Document processing application and document management

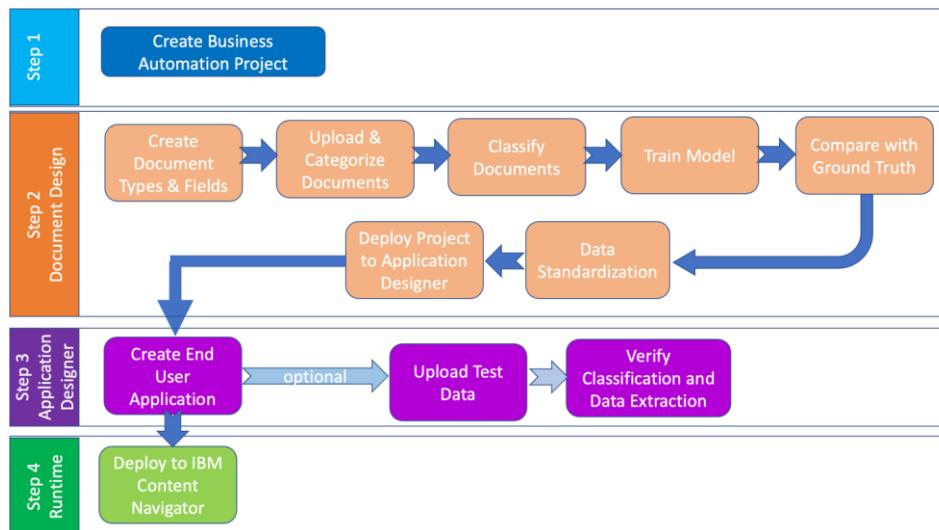
The application that you build uses the AI and deep learning to automatically detect, extract, and standardize the data in all your documents. Any anomalies are flagged according to your customized model and the priority that you set so that your document processing user can correct issues before the documents are finalized.

When you deploy your document processing application, you connect it to a content repository that manages the document types and the extracted data for each document. The solution is fully integrated with IBM FileNet® Content Manager, simplifying document and data storage by applying your existing filing architecture and business rules to each processed document. The content and metadata are automatically saved in FileNet within the appropriate document class.

End result

Your document types are stored in the content repository, with appropriate retention and access controls. An associated JSON file reflects all the extracted data for the document. Properties are set on the document with the data definition-controlled values. Your extracted data is cleaned, standardized, and ready for use in other applications.

The following diagram shows the tasks required to configure and deploy a new ADP project.



Step1 – Create an ADP Business Automation Project

Each document processing project requires a separate repository in your Git organization. Coordinate with your Git administrator to create the repository for your project.

Step 2 – Document Design

This step shows the high-level tasks that will be needed to complete to train the system to recognize document types, successfully extract fields and tables, configure the fields in FileNet and finally deploying your ADP project to the application designer so you can configure the end-user interfaces.

Step 3 – Application Designer

The application designer is where you would configure end-user interfaces such as the classification and verification screens. The lab will not go in a lot of details on how to configure the interfaces. It will instead show you how to create an application, and test processing a batch of documents through the system. To get more information on creating/using the Business Automation Application (BAA) look at the SWAT Jam Lab for BAA.

Step 4 – Runtime

End-users would be using the runtime IBM Content Navigator interface to process documents or batches, classify document and verify extracted field data in the verification screen.

4 Create Document Processing Project

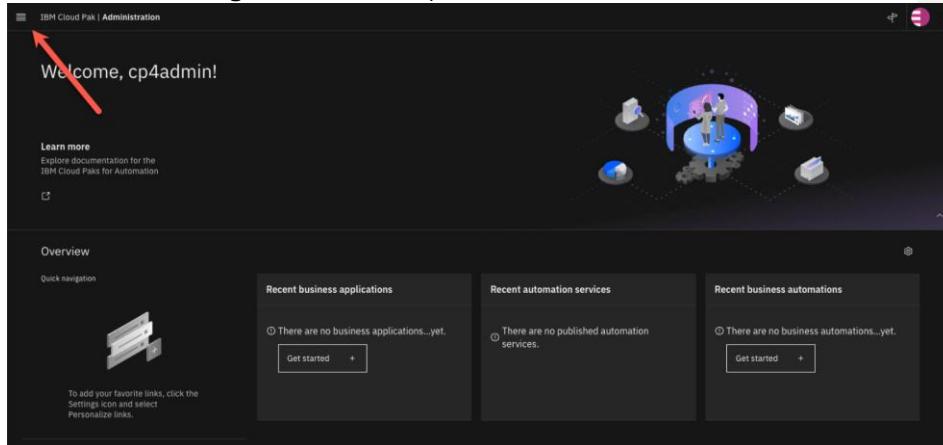
Step 1

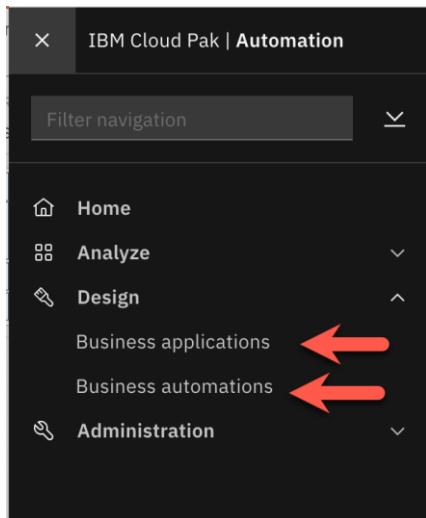
Create Business Automation Project

Cloud Pak for Business Automation Studio is the single authoring and development environment for the IBM Cloud Pak for Business Automation platform that accelerates digital transformation. Business Automation Studio provides an entry point to various designers to help you reach your goals.

There are two distinct parts to the Business Automation Studio configuration.

- _1. Click on the hamburger menu at the top left next to IBM Automation.





Business automations provides the Document Processing configuration of the document classes, and the **Business applications** provides the user interfaces.

Within the Business Automations you can create or reuse automations. An automation is a collection of artifacts that fulfills a business purpose. You can publish some automation artifacts as automation services that you can call and reuse in a consistent way. Also in Business Automation, you use the **Document Designer** interface within Automations to create a set of document types and related fields that comprise your Document Processing project.

The Document Processing Designer combines an intuitive interface with a set of AI and deep learning tools that identify and learn the document types that matter to an organization. For each document type, you designate which pieces of information to extract as data for that document to be used by downstream applications. You can also apply tools to clean up and standardize the data as it is extracted.

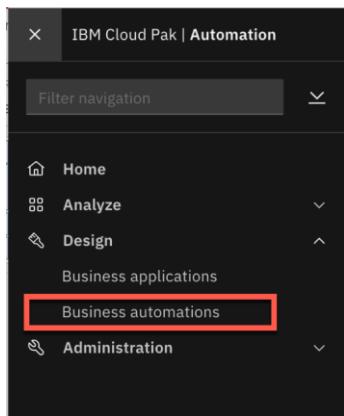
Within **Business Applications** you can quickly create user interfaces that integrate tasks, data, and automations. You can start with a template to ensure consistency. You can also use toolkits to share artifacts from existing applications.

We will start with the Business Automations.

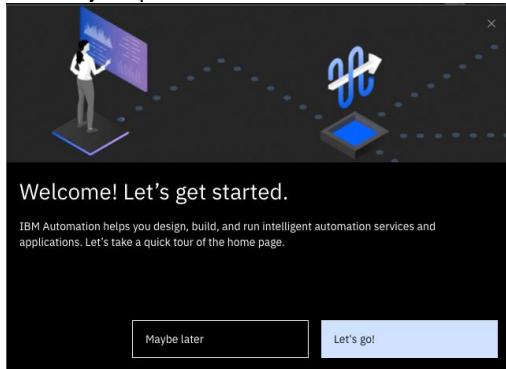
Once logged in to the IBM Automation Server, you should see the Welcome screen.



- _2. Click on **Drop down arrow** next to Design then **Select Business Automations**.



You may be presented with an overview screen. **Select Maybe Later**.



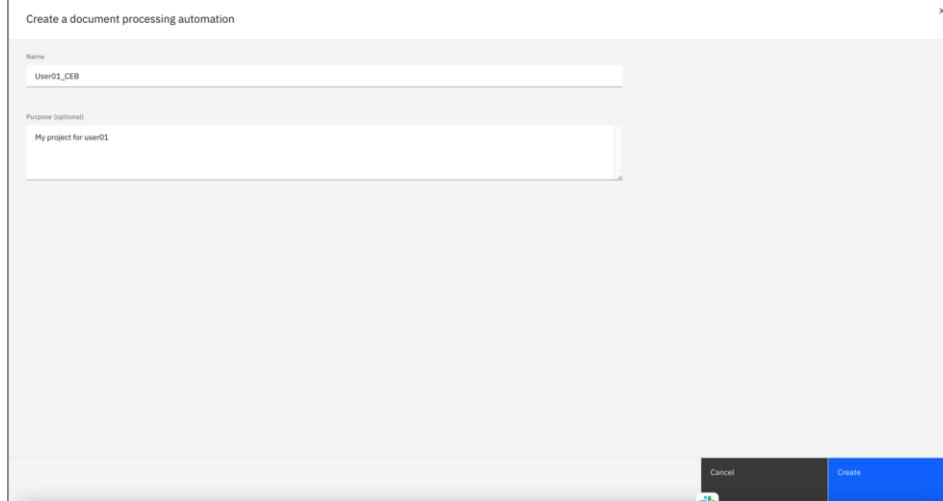
Then following screen appears.

The screenshot shows the 'Business automations' page in the IBM Cloud Pak | Automation interface. At the top, there is a navigation bar with the title 'IBM Cloud Pak | Automation'. Below the title, the page header reads 'Business automations'. A descriptive text block states: 'Create or reuse automations. An automation is a collection of artifacts that fulfills a business purpose. You can publish some automation artifacts as automation services that you can call and reuse in a consistent way.' Below this text is a 'Learn more' link. A 'Create' button with a dropdown arrow is located at the top left, followed by an 'Import' button and a download icon. The main content area is titled 'Published automation services' and contains four categories with right-pointing arrows: 'Decision', 'Document processing', 'Workflow', and 'External'. The entire screenshot is set against a light gray background.

- _6. Click on the **Create** twisty and select **Document processing automations**.

This screenshot shows the same 'Business automations' page as above, but with a red arrow pointing down to the 'Create' button's dropdown menu. The menu is open, revealing several options: 'Decision automations', 'Document processing automations', 'Workflow', and 'External'. The 'Document processing automations' option is highlighted with a red box. The rest of the interface remains consistent with the first screenshot, including the header, descriptive text, and other menu items.

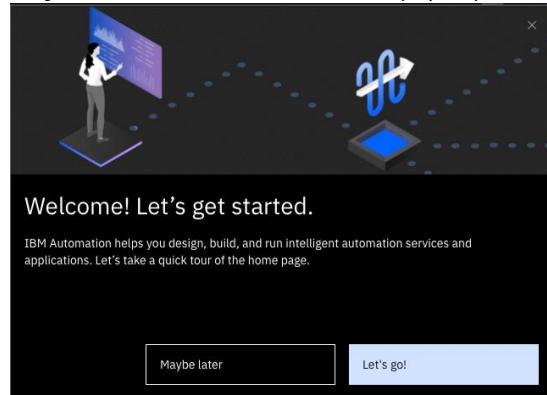
- _7. In the Create a document processing automation window **enter a name** for the project. Optional, enter a purpose.



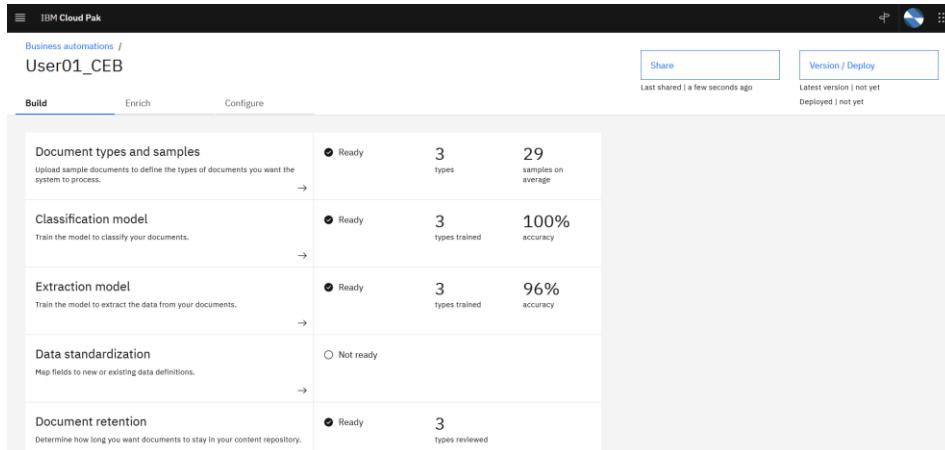
- _8. Click on **Create** in the lower right-hand corner.



You may see the *Welcome Let's get started* throughout the lab simply **click** **Maybe later** whenever this window pops up.



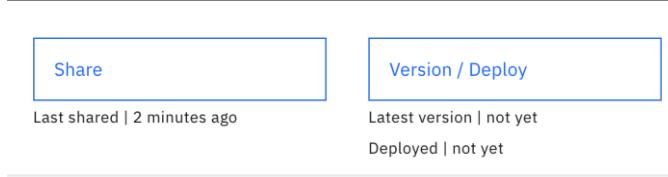
4.1 Reviewing the interface.



The screenshot shows the IBM Cloud Pak Business automations interface. At the top, there's a navigation bar with 'IBM Cloud Pak' and a search bar. Below it, the path 'Business automations / User01_CEB' is displayed. On the left, there are three tabs: 'Build' (which is selected), 'Enrich', and 'Configure'. The main area contains five sections: 'Document types and samples', 'Classification model', 'Extraction model', 'Data standardization', and 'Document retention'. Each section has a status indicator (Ready or Not ready), counts of items (e.g., 3 types, 29 samples on average), and accuracy percentages (e.g., 100%, 96%). To the right of these sections are two buttons: 'Share' and 'Version / Deploy'. Below the 'Share' button, it says 'Last shared | a few seconds ago'. Below the 'Version / Deploy' button, it says 'Latest version | not yet' and 'Deployed | not yet'.

Upon opening the project, there are three major sections: **Build** tab, **Enrich** tab, and **Configure** tab.

On the top right, you find the *Share* and *Version/ Deploy* buttons.



The *Share* button is used to save your configuration to your GitHub repository.

The *Version / Deploy* button is used to create a snapshot, or version of your configuration. Like the *Share* button, the *Version* button will save your configuration, but will also create a version of it while retaining your previous version.

Once you have created a version of your configuration, you can also use this button to *Deploy* your version to the Business Applications area of ADP. You need to do this before you can go into the Business Application tile and configure your user interfaces.

4.1.1 Build Tab

This is what you will be spending most of your time on. The BUILD tab shows the guided configuration for building a Document Processing project. It shows the five steps required.

Document types and samples: Here you will define the document types that can be recognized by this automation and upload sample documents for training. By default, any project will be pre-populated with three pre-trained document types (Bill of Lading, Invoice, and Utility Bill).

Classification model: classification: Here we will teach the system how to recognize the different document types.

Extraction model: Here we will teach the system how to extract information for each document type based on the classification.

Data Standardization: This allows further refinement of the extracted information. For example, we want to standardize all dates to be formatted as YYYY/MM/DD. Having a standardized data format will help with any subsequent automation process.

Document retention: This allows us to define how long we want our documents to be kept in the system. Documents that have exceeded the retention period will be automatically expunged. This could be important for regulatory compliance or for managing the overall storage size.

4.1.2 Enrich Tab

1. Click on the ENRICH tab.

Enrich provides a quick way to define your document types and the fields you wish to extract. In this section, we can define additional enrich rules. An example of an enrich rule is to specify the expected format for an invoice number (all numerical) or a driver's license. The more we can tell document processing about how different data will be formatted, the higher the chance it will recognize the information.

Automation Document Processing Lab

The screenshot shows the 'IBM Cloud Pak | Automation' interface. At the top, there are tabs for 'Build', 'Enrich' (which is selected), and 'Configure'. Below the tabs, there are two cards: 'Document types' and 'Field types and enrichments'. The 'Field types and enrichments' card is highlighted with a blue border. At the bottom right of the screen, there are 'Share' and 'Version / Deploy' buttons.

- _2. Click on **FIELD TYPES AND ENRICHMENTS** to begin. In this tile, you will see some of the pre-configured fields in the *SYSTEM LIBRARY* (*sys*). Customers can use these fields in their document type field definitions as needed.

The screenshot shows the 'IBM Cloud Pak | Administration' interface under 'Business automations / Clandis Baker Project / Field types and enrichments'. On the left, there's a sidebar with 'Field type libraries' like 'sys', 'QMT', and 'CBP'. The main area shows a table of 'Field types' with columns 'Field type' and 'Value type'. On the right, a detailed view for the 'Address block' field type is displayed, showing sections for 'General', 'Validator', and 'Value format'.

- _3. Click on <your project name> in the bread crumb trail at the top to go back to the Build tab.

The screenshot shows the 'Field types and enrichments' page with a red arrow pointing to the breadcrumb trail 'Business automations / User01_CEB /'.

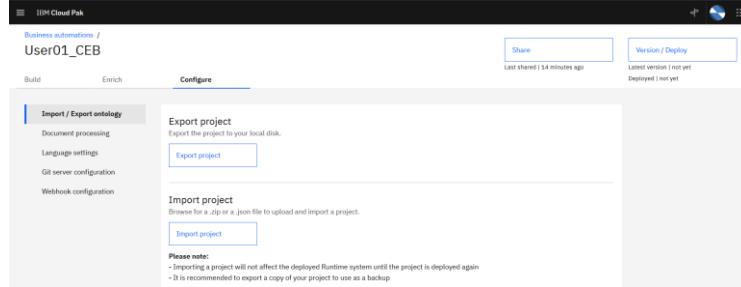
4.1.3 Configure Tab

- _4. Click on **Configure** Tab

This is where we can configure other operational aspects of the project, The export project creates a .zip file that contains the document types, field types and enrichments, which you can use to start training with new sample files. You can also decide to include the training model and the sample training files in your

export if you want to move your entire project to a new instance of Document Processing for example. To import a project, select the .zip file to import. When you import a .zip file you have two options: overwrite the existing project or merge the existing project. If you merge the existing project, document types, field types, enrichments, and sample training files are imported unless there is a conflict.

Models are not imported.



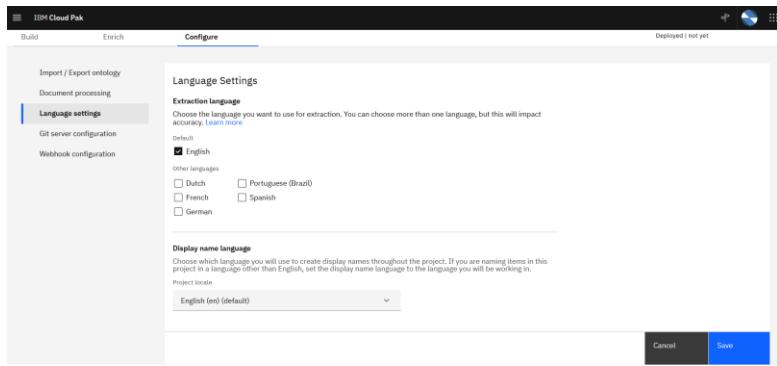
In Extraction language, select which languages are used in the documents that you plan to process. You can choose English, Dutch, French, German, Brazilian Portuguese, or Spanish.

Make sure to choose only the language or languages that are likely to be used in your document sets. Choosing more than one language can affect the accuracy of your document processing model.

In Display name language, select the language that you use to enter display names for fields and document types. These are the names that are displayed in the Designer and in the applications.

The display name language is also used in the Content Engine as the localized string locale setting for document classes and properties. Document Processing project deployment supports only one language per project. If your organization has multiple projects with different language settings, these projects cannot be deployed to the same Content Engine server if they share common properties. For example, when you define data definitions during data standardization, you cannot map a field to an existing data definition that was created in a different language.

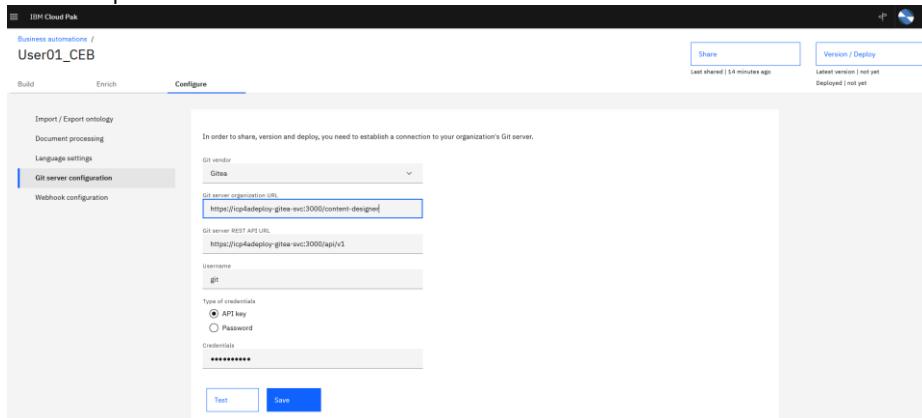
Automation Document Processing Lab



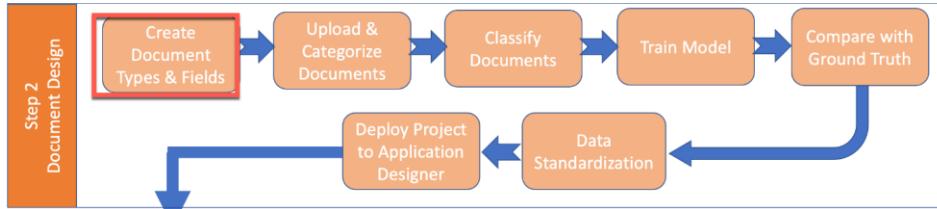
The Git server configuration is where you create a connection to the Git server for the first project that you create in Document Processing Designer. This setting applies to all subsequent projects that you create.

Here, first choose the Git Vendor as “Gitea” then the Git server organization URL as <https://simple-gitea-gitea.apps.ocp.ibm.edu/Automation-SWAT> and the User name as “cp4badmin” and the password as “Cp4badm1n”. Now first click on the “Test” button, it should succeed. Once it is successful, click on the “Save” button, this should also succeed.

After that on the top right corner you shall see the “Share” button, do click on it. This is required so that we would be able to create a version.



5 Configure a Wage and Tax document type.



Before we use the guided configuration, you will configure some additional document types and fields used to extract data prior to uploading sample documents.

To do this lab, we will use the ENRICH tab to add fields to a newly created Wage and Tax document type.

5.1 Create Wage and Tax document type.

- _1. Click on **Build tab** to return to the start page.

Section	Status	Details
Document types and samples	Ready	3 types, 29 samples on average
Classification model	Ready	3 types trained, 100% accuracy
Extraction model	Ready	3 types trained, 96% accuracy
Data standardization	Not ready	
Document retention	Ready	3 types reviewed

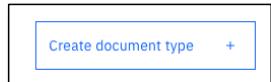
- _2. Click on the **ENRICH tab**

- _3. Click on **DOCUMENT TYPES**



We will now create a document type for Wage and Tax documents and fields to extract data from them.

- _4. Click on the **CREATE DOCUMENT TYPE** button in the top right corner.



- _5. The Add document type window pops up. **Enter Wage and Tax** for the display name. There is no need to enter a symbolic name, ADP will use the display name as a base and remove the spaces. There's no need to add description in this lab unless you want to.

Add document type ×

Display name 12/50

This is the name that will show up for you in the system. You can use characters from any language.

Symbolic name 10/50

This name will be used to identify the document type in the code.

Classification confidence threshold %
 - +

Set a confidence level to be aware of documents that fall under the desired threshold. Documents under this threshold will show a warning.

Description (optional) 0/512

Max 512 characters

Fixed format ①

Feedback documents ①

Percentage of corrected documents to use in retraining ①
 - +

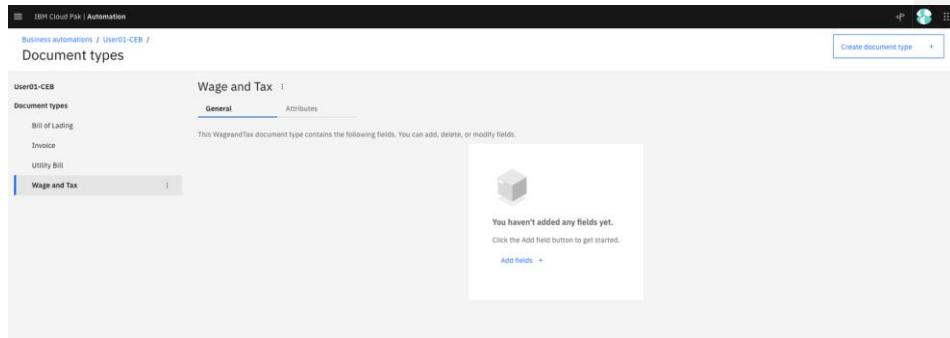
Cancel Add



Note: Notice the option for "Fixed-format document type". If your form is static in nature or has a fixed structure that does not change, select this option so you will not have to provide as many samples. In our use case Wage and Tax documents have a variety of formats and are not static.

- _6. Click the **ADD** button.

You should now see your new document type (class) in the list of classes on the left.



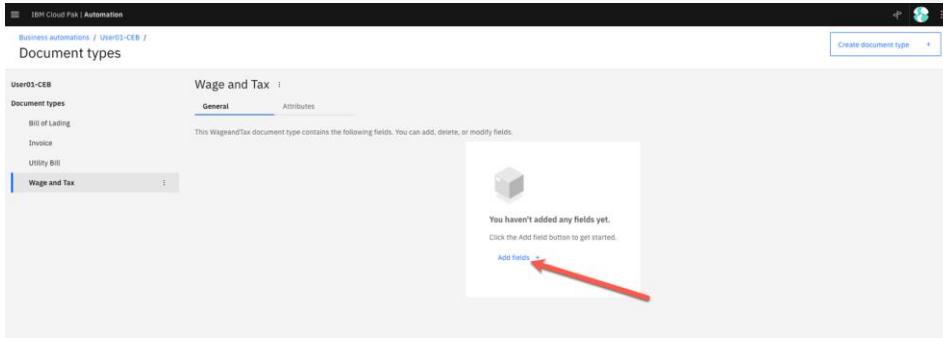
The screenshot shows the 'Document types' section of the IBM Cloud Pak for Automation interface. On the left, a sidebar lists document types: Bill of Lading, Invoice, Utility Bill, and Wage and Tax (which is selected). The main area is titled 'Wage and Tax' and contains tabs for 'General' and 'Attributes'. A message states: 'This WageandTax document type contains the following fields. You can add, delete, or modify fields.' Below this is a note: 'You haven't added any fields yet.' followed by the instruction 'Click the Add field button to get started.' A blue arrow points to the 'Add fields' button at the bottom of this message.

_7. Select your **Wage and Tax doc type**. On the right, you should see an empty table of fields.

5.2 Create Field

We can now add some fields to the class. From examination of the forms, we can see there are different fields names, or they are not consistent across the forms. We'll need to add these different "aliases" during this process.

_1. Click ADD FIELDS



The screenshot shows the 'Wage and Tax' document type configuration page. It has the same layout as the previous screenshot, with the 'General' tab active and the message: 'You haven't added any fields yet. Click the Add field button to get started.' A prominent red arrow points to the 'Add fields' button at the bottom of this message.

_2. Enter the following values under the GENERAL Settings header

Automation Document Processing Lab

The screenshot shows the 'Create field' page in the IBM Cloud Pak | Automation interface. The top navigation bar includes 'IBM Cloud Pak | Automation', 'Business automations / User01_CEB / Document Types /', and 'Create field'. Below this, a sub-header says 'Document type: Purchase Orders'. On the right are 'Cancel' and 'Next' buttons. The main area is titled 'General Settings' with tabs for 'General' (selected), 'Field patterns', and 'Value settings'. Under 'General', there are fields for 'Display name' (containing 'Ex: Employee's name, Le nom de l'employé'), 'Symbolic name' (containing 'Enter a name'), 'Field type' (set to 'sys:String'), and checkboxes for 'This field is required' and 'This field contains sensitive information'. There are also sections for 'Description (optional)' and 'Aliases'.

- Display Name: **Federal Income Tax Withheld**
- Field Type:
 - **Sys:Decimal**
- Is this field required: **Yes**
- In Aliases enter other possible names. Case and punctuation are very important when creating aliases. Enter the alias listed below. These are representations of what it looks like on the different forms. **Press** the “+” after entering each one or **press Enter** key:
 - **2 Federal income tax withheld**
 - **2. Federal income tax**



Note: the number two has a period after it

You should now see the following:

The screenshot shows the 'Create field' page with the 'General' tab selected. The 'Display name' field now contains 'Federal Income Tax Withheld'. The 'Symbolic name' field contains 'FederalIncomeTaxWithheld'. The 'Field type' is still 'sys:Decimal'. The 'Aliases' section now contains two entries: '(2 Federal income tax withheld)' and '(2. Federal income tax)'. The 'This field is required' checkbox is checked.

- _3. Click the **NEXT** button.



Field patterns are regular expressions that can be associated with a field to help identify and extract fields. A regular expression is a sequence of characters that define a search pattern. The use of regular expression patterns and extractors is optional. Regular expression patterns can provide extra information to potentially improve the accuracy in extracting the correct fields. Python syntax is used for defining the regular expressions. You will not be adding any field patterns in this lab.

- _4. Click **NEXT** again on the Field patterns screen. You should now be on the **VALUE SETTINGS** page. This is where you can set up validators, formatters, and converters.



Value Settings for a specific field; if the potential values follow a rule that can be expressed in a regular expression, you can specify an extractor. This pattern can match all the variations of your values. For example, the expected value for a Start Date field might be in a date format. You can create a regular expression pattern for US Date and then associate the extractor of US Date to your field.

Also, sometimes you want to extract a value that does not have a corresponding key in the document, but you know the pattern of the value. You can define the extractor and denote that the value might be anywhere in the document without attaching to the field name. This designation allows for the presence of a field name to be optional. For example, you want to extract the employee ID number, which can be described with a regular expression pattern. However, some documents show the employee number with a field name Employee ID, while other documents show the employee number without a corresponding field. You can specify the Extractor and be able to extract the employee ID number in both types of documents.

- _5. The decimal data type can contain only integers to the left and right of a decimal point. But some of our data may contain commas between the integers and we only need two integers after the decimal point. Let's add a converter that will remove all extra punctuation and limit the number of integers after the decimal point to two. Click on the **Edit** button.

The screenshot shows the 'Value settings' page for a document type named 'Federal Income Tax Withheld'. The 'Converters' tab is active, and the 'Edit' button is highlighted with a red box.

6. Click on Converters tab then click on blue button Add converter

The screenshot shows the 'Set up field enrichments' screen for the 'Federal Income Tax Withheld' document type. The 'Converters' tab is selected, and the 'Add converter' button is highlighted with a red box.

7. You will be presented with the Add converter screen. Click on Select existing.
 This populates the converter name, description, Decimal point, and Max digits after decimal point for you. If you wanted to change the decimal point from a period to a comma you could do it here as they do in other countries outside the United States. **Click the blue Add button.**

Automation Document Processing Lab

The screenshot shows the 'Add converter' dialog. At the top, there are two radio buttons: 'Create new' and 'Select existing'. The 'Select existing' button is selected and highlighted with a red box. Below it, a dropdown menu is open, showing 'Decimal Converter' as the current selection. There are also fields for 'Converter name' (set to 'Decimal Converter') and 'Description (optional)' (set to 'Decimal Converter'). Under 'Decimal point', there is a dropdown set to a dot ('.'). Below that, 'Max digits after decimal point' is set to '2'. At the bottom right of the dialog, there is a blue 'Add' button, which is also highlighted with a red box.

- _8. You will then be presented with Converter details information screen. On this screen you can also test your converters to make sure they are behaving like you intended. **Click on Done** at the top right. refer [Enrichments-Converters](#) for more details.

Note: for Decimal Cleans values such as currency to remove extra non-numeric characters and convert to the decimal format that you want. Available for the Decimal field type.

The screenshot shows the 'Converter details' page. On the left, there is a table with columns for 'Converter name' (set to 'Decimal Converter'), 'Description' (set to 'Decimal Converter'), 'Type' (set to 'Decimal Converter'), 'Decimal point' (set to a dot '.'), and 'Max digits after decimal point' (set to '2'). Below the table, it says 'Inherited from sys.Decimal'. On the right, there is a section titled 'Test all converters'. It has a 'Sample value' input field with placeholder text 'Enter the sample value to test the converters with' and a 'Test' button. Below that is a 'Converted result' section with a message 'No results yet' and a note 'Converted result will be displayed here after clicking the Test button.' At the top right of the page, there is a 'Done' button, which is highlighted with a red box.

_9. Click Create your screen should look like this with your first field created.

Name	Type	Required	Sensitive
Federal Income Tax Withheld	Decimal	true	false

Once it is created you will go back to the Document type page.

5.3 Create the Employee Name Address field.

_1. Click Add fields.

Give it the following parameters:

- Display name: **Employee Name and Address**
- Field Type = **sys:String**
- Required = **yes**
- Enter the following other possible names (aliases):
 - ***Employee name and address***
 - ***e Employee's first name and initial Last name Suff***
 - ***e Employee's name, address, and ZIP code***
 - ***e/f Employee's name, address, and ZIP code***
 - ***e. Employee Name & Address***
 - ***e Employee's first name and initial***

By default, the system will use the field name as an alias. So, you do not have to add it. For example, below, Employee Name and Address (field name), would be automatically used as an alias even if you do not add it to the list

- _2. **Click Next** no field patterns will be created.
- _3. **Click Next** no value settings will be created.
- _4. **Click Create** to finish creating the Employee Name and Address.

5.4 Create Employee Social Security Number Field

- _1. **Click on ADD FIELDS**



Enter the following values in the GENERAL page.

- Display Name: **Employee Social Security Number**
- Field Type: **sys:Social Security Number**
- Is value required: **Yes**
- Other possible names (aliases). Remember, press RETURN or hit the ‘+’ button on your keyboard between each entry:
 - **a Employee's social security number**
 - **a Employee's social security no.**
 - **a Employee's SSA number**
 - **a. Employee Social Security Number**
 - **Employee social security number**

Your screen should now look like the image below:

- _2. **Click NEXT**
- _3. **Click NEXT** again on the Field Patterns screen.
- _4. **Click Create** on the Value settings.
- _5. Create the following additional Fields.

The following table contains the values to use when adding the additional fields.

Follow the steps from the previous section to add the following fields. Don't forget to add your converter for datatypes of Sys:Decimal.

Display Name	Description	Type	Mandatory	Aliases
Employer Identification Number		sys:String	N	<ul style="list-style-type: none"> • b Employer identification number (EIN) • b Employer's FED ID number • b. Employer ID number • Employer identification number
Employers Name and Address		sys:String	N	<ul style="list-style-type: none"> • c Employer's name, address, and ZIP code • c Employer's Name & Address • Employers name and address
Social Security Wages		sys:Decimal	N	<ul style="list-style-type: none"> • Social security wages • 3 Social security wages
Wages Tips Other Compensation		Sys:Decimal	N	<ul style="list-style-type: none"> • 1 Wages, tips, other compensation • Wages, tips, other comp. • 1 Wages, tips, other comp. • 1. Wages tips, other comp • Wages tips other compensation

Reference for various field types:



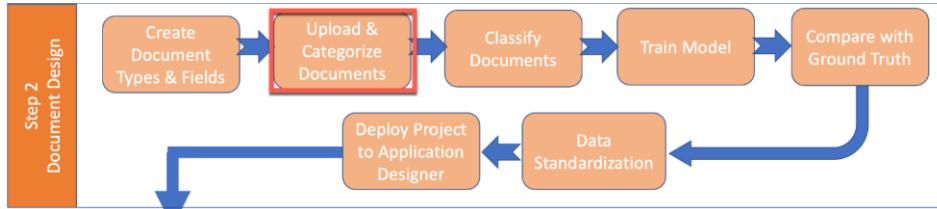
Note: The basic default field types included in ADP are found here in the documentation

<https://www.ibm.com/docs/en/cloud-paks/cp-biz-automation/22.0.1?topic=enrichments-field-types-document-processing>

- _6. Click on the <name of your project> in the breadcrumb link in the top left of your screen. In the following example the name of the project is <User01_CEB>. This will take you back to the Enrich tab, Then Click the Build tab.

Name	Type	Required	Sensitive
Employee Name and Address	String	true	false
Employee Social Security Number	SocialSecurityNumber	true	false
Employer Identification Number	String	false	false
Employers Name and Address	String	false	false
Federal Income Tax Withheld	Decimal	true	false
Social Security Wages	Decimal	false	false
Wages Tips Other Compensation	Decimal	false	false

6 Document Types and Samples Overview



At this point in the process, we have created a new document type and configured the field names we want to extract off the document. For the system to know what to extract from your documents, it needs to be able to classify the documents. In this lab, we will teach the system to recognize the various document types on your system.

In the first part of the classification lab, you will explore the system's ability to automatically group similar documents together. This can be used to discover document types in a file share for example. You can also upload documents and have the system tell you what it finds. You would then use this information to create document types so you can classify the documents and data extract fields.

The project template comes pre-loaded with three document types: Bill of Lading, Invoice, and Utility Bill. In the last step we added a new document type Wages and Tax. In the BUILD tab of your project, you should now be seeing 4 document types. The three pre-loaded documents already have documents in them. You will be adding documents to the Wage and Tax document type. Your actual screen may vary from the following screen shot.

You will be asked to review the document categories the system finds and create the appropriate document types as needed.

6.1 Categorize documents.

For categorizing, we will have the system help us group similar documents together. To get started,

_1. Click anywhere in the Document types and samples box.

The screenshot shows the IBM Cloud Pak Business Automation interface. In the top left, it says "IBM Cloud Pak" and "Business automation / User01_CEB". On the right, there are "Share" and "Version / Deploy" buttons. Below this, there are tabs for "Build", "Enrich", and "Configure". The main area has a red box around the "Document types and samples" section. This section contains a sub-instruction: "Upload sample documents to define the types of documents you want the system to process." It also displays statistics: "Ready" (4 types, 22 samples on average), "Retrain" (3 types trained, 100% accuracy), and "Extraction model" (3 types trained, 96% accuracy). Other sections include "Data standardization" (Not ready) and "Document retention" (Ready, 4 types reviewed).

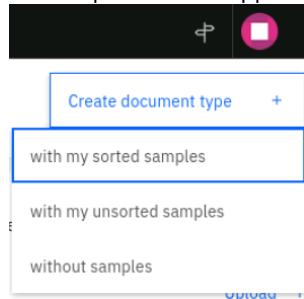
The CATEGORIZE feature analyzes each document and tries to find similarities between them. Based on these similarities, the system will divide the samples into categories for you to review. You can add documents or entire categories into either an existing document class or create new classes as needed.

Let's see what that looks like.

_2. Click on CREATE DOCUMENT TYPE in the top right of the screen.



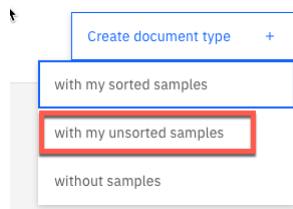
The drop down that appears:



If you have the same document types already separated into folders, you can choose the first option, *with my sorted samples*. The system would simply ingest the documents from each folder into a different group.

For this exercise, we will select the second option, *with my unsorted samples* and let the system sort the documents for us. Use this option when you don't know how many different document types there are.

_3. Select the second option titled **with my unsorted samples.**



You should have already downloaded the files from [Section 2](#) to your laptop. You can select upload and grab all the files from where they were downloaded to on your laptop. Make sure you have already unzipped them.

_4. Click Upload to get document samples.

From the downloaded sample documents open the folder name [Group 1 – Design Docs for Tax Lab.](#)

Note: this will take several minutes, good time for some coffee or a stretch. Make sure to check ALL documents have been uploaded there are two pages or 12 items to verify.

At the bottom of the window, you can select the number of items to display in the window or click on the arrows to move to the next page

Upload sample documents that represent the different types of documents you want the system to classify. Include at least 6 samples of each type of document.				
<input type="text"/> Search sample documents Upload 				
<input type="checkbox"/>	Document name	Status	Date Added	Added by
<input type="checkbox"/>	Mortgage Agreement1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	Mortgage Agreement2.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	Mortgage Agreement3.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	Mortgage Agreement4.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	Mortgage Agreement5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	TR_FW2_1001_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	TR_FW2_2000_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	TR_FW2_3000_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	TR_FW2_3001_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
<input type="checkbox"/>	TR_FW2_4000_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin

_5. Click on the blue CATEGORIZE button on the top right corner.

The screenshot shows a web-based application titled "IBM Cloud Pak Business Automation / Document types and samples / Create document types". A blue "Categorize" button is visible in the top right corner. The main area displays a table of uploaded documents:

Document name	Status	Date Added	Added by
Mortgage Agreement1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
Mortgage Agreement2.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
Mortgage Agreement3.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
Mortgage Agreement4.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
Mortgage Agreement5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
TB_PW2_1001_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
TB_PW2_2000_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
TB_PW2_3000_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
TB_PW2_3001_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin
TB_PW2_4000_0000_PS.pdf	✓ Ready	Feb 22, 2024 11:53 AM	op4admin

At the bottom, there are buttons for "Darks per page" (10), "1 - 10 of 12 items", and "1 ~ of 2 pages".



Note: The results may vary based on the documents uploaded, what the system already has learned, the version of ADP and more. Please look at this lab exercise from a high level. The categories you will be presented are the system's best guess on how they should be separated.

You will need to:

- Review the categories to see if the documents were separated correctly.
- Move documents into either a NEW document type or into an EXISTING document type.
- There should be 3 types in the samples you were provided.
 - Wage and Tax
 - Utility bills
 - Mortgage Agreements
- You will need to assign either an entire category (i.e., all sample documents) or individual documents in each category to the Wage and Tax and Utility bills document types which already exist on your system.
- You will need to create a new document type for Mortgage Agreements.

After a few seconds, the system will mark the documents with a status of ready as seen in the above image.

- _6. Click on each of the categories to see what was grouped together as shown below.

You can Click on any document to see a preview of it. This will help ensure the documents are correctly grouped.



NOTE: The names of the files are not used in any way in this process. The files were merely named this way to make it easier for you to quickly ascertain whether the documents were grouped correctly.

The screenshot shows the 'Create document types' page in IBM Cloud Pak. On the left, there's a sidebar with 'Categories (3)' and 'Document types (4)'. Under 'Categories', 'Category 1' is selected. Under 'Document types', 'Bill of Lading', 'Invoice', 'Utility Bill', and 'Wage and Tax' are listed. The main area shows 'Category 1 sample documents (2)' with a table:

Document name	Status	Date Added	Added by
UBILLCable_001_1_1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
UBILLCable_002_1_1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin

The screenshot shows the same 'Create document types' page, but 'Category 2' is now selected in the sidebar. The main area shows 'Category 2 sample documents (5)' with a table:

Document name	Status	Date Added	Added by
Mortgage Agreement1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
Mortgage Agreement2.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
Mortgage Agreement3.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
Mortgage Agreement4.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
Mortgage Agreement5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin

Automation Document Processing Lab

IBM Cloud Pak
Business automations / User01_CEB / Document types and samples / Create document types

Review each category, verify the documents, and assign each category to a new or pre-trained document type. [Learn more](#)

Categories (3)
Category 1
Category 2
Category 3
Document types (4)
Bill of Lading
Invoice
Utility Bill
Wage and Tax

Upload unsaved documents Review categories

Category 3 sample documents (5)

Document name	Status	Date Added	Added by
TR_FW2_1000_0000_P5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
TR_FW2_2000_0000_P5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
TR_FW2_3000_0000_P5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
TR_FW2_3001_0000_P5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
TR_FW2_4000_0000_P5.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin

Update categories Back Finish



At the time of writing this documentation ADP was able to categorize the sample set into each category. This is not always the case, sometimes document types will be combined into one category, so it's very important to look at each category and verify documents.

- _7. If all documents within a category are correct as illustrated in the following screen shot, **Click on the 3 dots** at the end of the category name.

IBM Cloud Pak
Business automations / User01_CEB / Document types and samples / Create document types

Review each category, verify the documents, and assign each category to a new or pre-trained document type. [Learn more](#)

Categories (3)
Category 1
Category 2
Category 3
Document types (4)
Bill of Lading
Invoice
Utility Bill
Wage and Tax

Upload unsaved documents Review categories

Category 1 sample documents (2)

Document name	Status	Date Added	Added by
UBILLCode_001_1_3_1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
UBILLCode_002_1_3_1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin

Update categories Back Finish

8. Select Assign to document type

IBM Cloud Pak
Business automations / User01_CEB / Document types and samples / Create document types

Review each category, verify the documents, and assign each category to a new or pre-trained document type. [Learn more](#)

Categories (3)
Category 1
Category 2
Category 3
Document types (4)
Bill of Lading
Invoice
Utility Bill
Wage and Tax

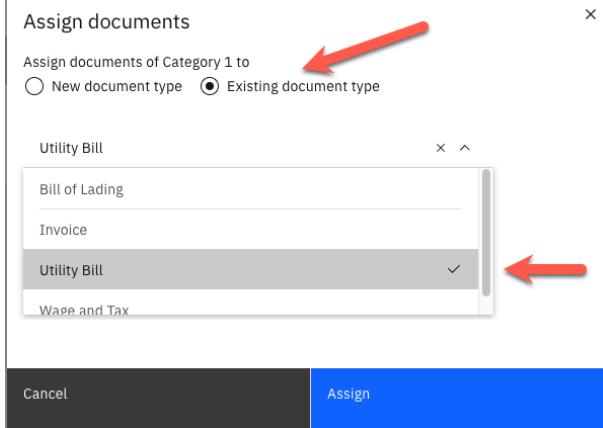
Upload unsaved documents Review categories

Category 1 sample documents (2)

Document name	Status	Date Added	Added by
UBILLCode_001_1_3_1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin
UBILLCode_002_1_3_1.pdf	✓ Ready	Feb 22, 2024 11:53 AM	cp4admin

Update categories Back Finish

- _9. Select Existing Document type then the appropriate document type from the drop-down list.

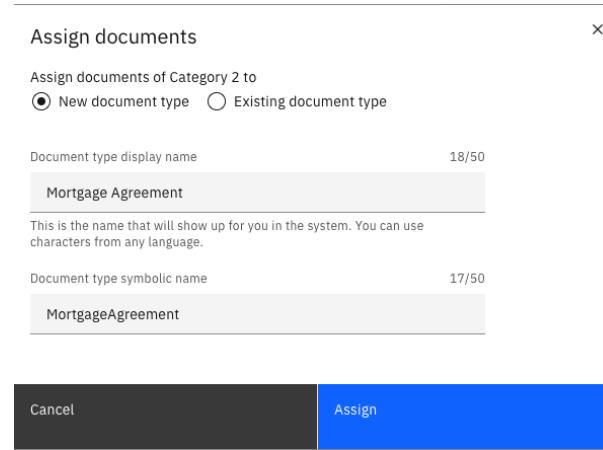


- _10. Click Assign to close the dialog box.

- _11. Select the next Category 2 and Click on the 3 dots and Select Assign to document type to a document class.

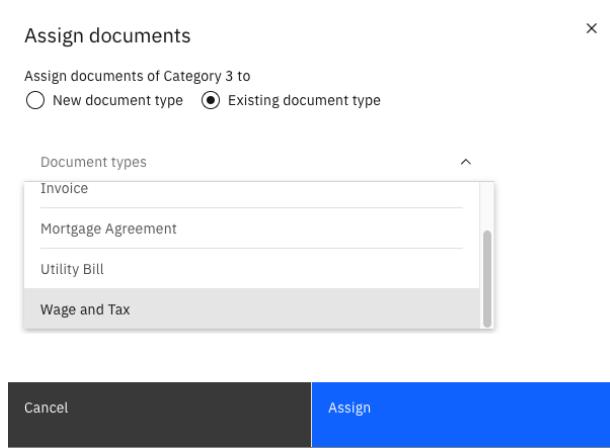
- _12. This time Select a New Document Type. Since we have not defined a mortgage agreement document type yet.

- _13. Enter Mortgage Agreement in the field



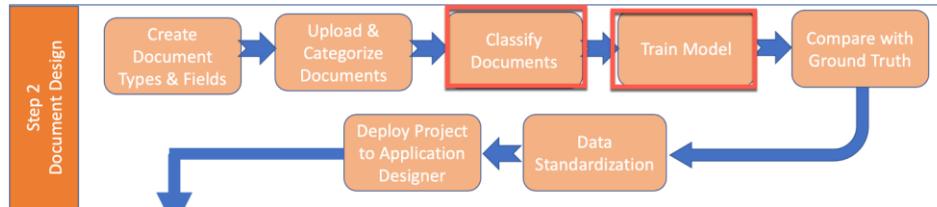
- _14. Click Assign to have the system automatically rename and move the category into the Document Types section.

- _15. Now for Category 3, **Click on 3 dots** and **Select Assign document type**.
- _16. **Click Existing document type** and **Select Wage and Tax** from the drop down and then **Click on Assign**.



- _17. Once you confirmed all documents are correctly classified into the correct document type, **Click Finish**

7 Train classification



Now that we have documents uploaded in the system, we are ready to train the classification. Note that although you don't need a ton of document samples to train (minimum of 5), you are going to get better accuracy if the system has a deeper understanding of the documents, so more could be better.

In this lab, we curated some documents samples for you. In normal circumstances, you would need to do this yourself. Make sure the documents you upload to train classification are good documents.

- Clean documents
- High resolution
- Representative of the document type(s)
- Accurately grouped and uploaded to Document Processing

This is NOT the time to try and trick the system. Uploading a document that doesn't recognize well would not help the system recognize the types of words, phrases, and concepts it needs to learn to classify documents correctly.

The most common error is introducing a sample document into the incorrect document type, usually by uploading them to the wrong document type. If that happens, you are introducing conflict into the classification. For example, an invoice added to Tax Forms may confuse the system and result in it thinking invoices are tax forms and vice versa. Once that happens, you need to clean your documents and retrain the system.

- _1. Click on **<your project name>** in the cookie trail to return to the start page.
- _2. Click anywhere in the **CLASSIFICATION MODEL** line

The screenshot shows the IBM Cloud Pak interface for a business automation project named 'User01_CEB'. The 'Build' tab is selected. In the 'Document types and samples' section, there are four items:

- Classification model**: Status: Ready, 5 types, 20 samples on average. A red box highlights this item.
- Extraction model**: Status: Retrain, 3 types trained, 100% accuracy.
- Data standardization**: Status: Not ready.
- Document retention**: Status: Ready, 5 types reviewed.

At the top right, there are 'Share' and 'Version / Deploy' buttons. Below them, status indicators show 'Last shared 1 hour ago', 'Latest version not yet deployed', and 'Deployed not yet'.

Once we open the classification model, we will be presented with details on how to perform the retraining. There are four basic steps – Confirm inputs, Review Samples, Review Training Results, and Test Trained model.

On the Confirm inputs screen here we can confirm all the documents that will be used in this training exercise. We can also use the opportunity to remove documents that are no longer relevant or upload additional documents.

- _3. **Click Next** this will move from the Confirm inputs to the **Review Samples** step. Notice three documents have green icons next to them. These green icons show these documents have test samples already assigned. The new document types (Mortgage Agreement and Wage and Tax) do not have any test samples assigned yet therefore there's no green icons since we haven't assigned test sets yet.

Automation Document Processing Lab

This screenshot shows the IBM Cloud Pak for Automation interface. The top navigation bar includes 'IBM Cloud Pak | Automation', 'Business automation / User01-CEB / Classification model', 'Accuracy 84.8%', and buttons for 'Back', 'Train', 'Confirm inputs', 'Review samples', 'Review training results', and 'Test trained model (optional)'. A message box at the top states: 'Changes were made since you last trained your model. Retrain the model to get updated training results and accuracy.' The 'Document types' sidebar lists 'Bill of Lading', 'Invoice', 'Utility Bill', and 'Mortgage Agreement' (selected). The main area shows 'Mortgage Agreement sample documents (5)' with a 'Training/test ratio in %' of '100/0'. The 'Training set (5)' contains files: Mortgage Agreement1.pdf, Mortgage Agreement2.pdf, Mortgage Agreement3.pdf, Mortgage Agreement4.pdf, and Mortgage Agreement5.pdf. The 'Test set (0)' contains no files.

- _4. For the Mortgage Agreement move two documents to the Test set by **checking** and **click on the arrow** in between columns.

This screenshot shows the same interface after moving two documents from the Training set to the Test set. The accuracy is still 84.8%. The 'Document types' sidebar shows Mortgage Agreement selected. The main area shows 'Mortgage Agreement sample documents (5)' with a 'Training/test ratio in %' of '60/40'. The 'Training set (3)' contains files: Mortgage Agreement3.pdf, Mortgage Agreement4.pdf, and Mortgage Agreement5.pdf. The 'Test set (2)' contains files: Mortgage Agreement1.pdf and Mortgage Agreement2.pdf.

- _5. Select **Wage and Tax** on the Document types. This time let the ADP system Auto generate the 60/40 split to the test set. **Click Auto generate split**

Automation Document Processing Lab

Classification model | Accuracy 100%

Last trained: 5 months ago

Confirm inputs | Review samples | Review training results | Test trained model (Optional)

Changes were made since you last trained your model. Retrain the model to get updated training results and accuracy.

This document type will not be trained because you have no documents in the test set. Please make sure you have at least 1 document in each set.

Document types

- Bill of Lading
- Invoice
- Mortgage Agreement
- Utility Bill
- Wage and Tax

Wage and Tax sample documents (5) | Training/test ratio in % 100/0 | Auto generate 70/30 split

Training set (5) | 100% of total samples

Test set (0) | 0% of total samples

There are no documents in the test set. Include at least 1 document in the test set to view training results.



The suggested split is 60/40 – that is, 60% of the available sample documents should be used for training, and we will validate the training results with 30% of the sample documents. This split is only a suggestion, and we can adjust it, but 70/30 is a good starting point.

Business automations / User01-CEB / Classification model | Accuracy 84.8%

Last trained: a day ago

Confirm inputs | Review samples | Review training results | Test trained model (Optional)

Changes were made since you last trained your model. Retrain the model to get updated training results and accuracy.

Review your training and test sets. A good practice is to assign 70% of your samples to the training set and 30% to the test set. The test set is used to generate the model training results. Learn more

Document types

- Bill of Lading
- Invoice
- Mortgage Agreement
- Utility Bill
- Wage and Tax

Wage and Tax sample documents (5) | Training/test ratio in % 60/40 | Auto generate 70/30 split

Training set (3) | 60% of total samples

Test set (2) | 40% of total samples

Automation Document Processing Lab

- _6. Click on TRAIN to launch the training. This may take a several minutes. You will see a progress bar has training progresses.

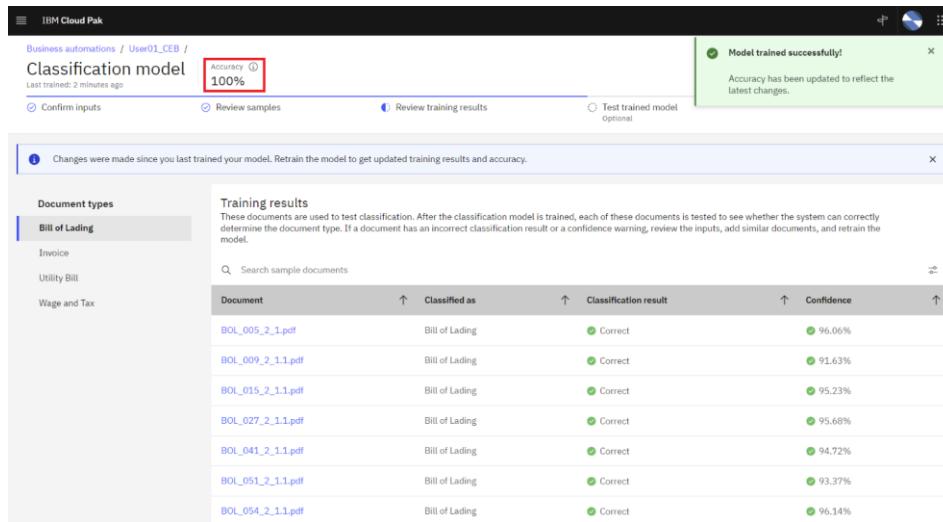


Once complete, you will be able to see the training results.



What's happening: All the samples are run through multiple machine learning algorithms. These machine learning algorithms learn from the ground truth, the association between the sample documents (the OCR text) and the document types. The yielding models are then evaluated with the documents in test set. The model-predicted document types on these documents are compared with the human-provided answers to compute the accuracy. The top three accurate models are presented to the user, with the most accurate one being selected by default.

You should see something like the following:



The screenshot shows the IBM Cloud Pak for Automation interface. On the left, there's a sidebar with categories: Document types (Invoice, Utility Bill, Wage and Tax), and a search bar. The main area is titled 'Classification model' and shows a progress bar at 100% completion. A green notification box says 'Model trained successfully!' with the subtext 'Accuracy has been updated to reflect the latest changes.' Below this, a message box says 'Changes were made since you last trained your model. Retrain the model to get updated training results and accuracy.' The 'Bill of Lading' tab is selected under 'Document types'. The 'Training results' section contains a table with the following data:

Document	Classified as	Classification result	Confidence
BOL_005_2_1.pdf	Bill of Lading	Correct	96,06%
BOL_009_2_1.1.pdf	Bill of Lading	Correct	91,63%
BOL_015_2_1.1.pdf	Bill of Lading	Correct	95,23%
BOL_027_2_1.1.pdf	Bill of Lading	Correct	95,68%
BOL_041_2_1.1.pdf	Bill of Lading	Correct	94,72%
BOL_051_2_1.1.pdf	Bill of Lading	Correct	93,37%
BOL_054_2_1.1.pdf	Bill of Lading	Correct	96,14%

- _7. Click on each of the document types. Notice the confidence levels. You can notice either or both Mortgage Agreement or Wage and Tax have a confidence of low. Low Confidence means we probably need to add more documents to our document class to get better confidence values.



You can easily see where the system may be struggling with Wage and Tax and Mortgage Agreement. You should look for document types that don't match the actual file or have a low confidence. Remember the more documents you give to train, the better the results.

- _8. **Click on Next.** This is the Test trained model. Here you can try and test other documents to see if they classified correctly. This step is optional but would be useful to try out the AI model to determine whether additional samples are necessary.

- _9. **Click Done**

7.1 How do I improve my results?

7.1.1 Option 1 – Add more samples.

To improve results, you would normally want to add more samples of the document ensuring they are clean and representative document to improve the system's understanding of the document.

- _1. **Click anywhere on Document Types and Samples.**
- _2. **Click on Wage and Tax type.**
- _3. **Click on Upload**

- _4. From the zip files you downloaded and unzipped earlier upload all the files from the directory *Group 2 - Classification Results Increase Set*.
- _5. Go back to the **Build** tab then let's retrain the Classification Module again.
- _6. **Click anywhere on Classification model.**
- _7. **Click on Wage and Tax.**

The screenshot shows the IBM Cloud Pak interface with the URL [Business automation / UserS1_CEB](#). The page title is "Document types and samples". On the left, there is a sidebar with "Document types" listed: Bill of Lading, Purchase Order, Invoice, Receipt, Mortgage Agreement, Utility Bill, and Wage and Tax. The "Wage and Tax" item is selected and highlighted in blue. The main content area is titled "Wage and Tax sample documents (5)". It includes a sub-instruction: "Review your existing and pre-trained document types. You can upload sample documents to refine each document type or create new document types. [Learn more](#)". Below this is a search bar labeled "Search sample documents". A table lists five documents with columns: "Document name", "Status", "Date Added", and "Added by". Each row has a checkbox next to the document name. The "Upload" button is located at the top right of the table. The table data is as follows:

Document name	Status	Date Added	Added by
TR_FW2_3001_0000_PS.pdf	✓ Ready	Sep 19, 2023 11:18 PM	cpadmin
TR_FW2_2000_0000_PS.pdf	✓ Ready	Sep 19, 2023 11:18 PM	cpadmin
TR_FW2_3000_0000_PS.pdf	✓ Ready	Sep 19, 2023 11:18 PM	cpadmin
TR_FW2_3001_0000_PS.pdf	✓ Ready	Sep 19, 2023 11:18 PM	cpadmin
TR_FW2_4000_0000_PS.pdf	✓ Ready	Sep 19, 2023 11:18 PM	cpadmin

_8. Click Next button. Also click on the Auto generate split.

The screenshot shows the 'Classification model' page in the IBM Cloud Pak for Integration interface. At the top, it displays 'Accuracy: 100%' and 'Last trained an hour ago'. Below this, there are tabs for 'Confirm inputs', 'Review samples', 'Review training results', and 'Train'. A message box at the top left says 'Changes were made since you last trained your model. Retrain the model to get updated training results and accuracy.' On the left, a sidebar lists 'Document types' including Bill of Lading, Invoice, Mortgage Agreement, Utility Bill, and Wage and Tax, with 'Wage and Tax' selected. The main area shows 'Wage and Tax sample documents (10)' with a 'Training/test ratio in %' of '70/30'. Two sections are shown: 'Training set (7)' containing 7 documents and 'Test set (3)' containing 3 documents. A red box highlights the 'Auto generate 70/30 split' button located in the top right corner of the main content area.

_9. Click Train button.

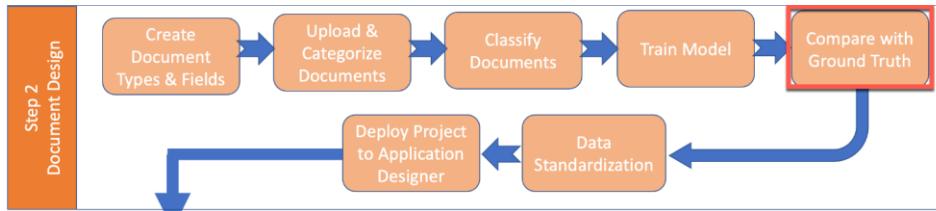
_10. Now look at the confidence score for **Wage and Tax**.

_11. Click Next and then Click Done

7.1.2 Option 2 – Review all uploaded samples.

- remove those that are not a clear representation.
- remove those that are poor quality documents.
- carefully confirm that none of the samples contain multiple document types in the file. This is a common occurrence. A document is listed as a Purchase Order, but in the back pages, also contains other document types in that same file. This confuses the system.

8 Data extraction



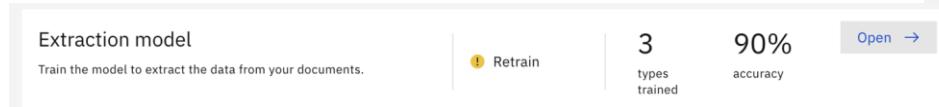
At this point, we have defined a document type, told the system which fields we want off the document and trained the system on how to recognize (classify) the document. In the Data Extraction portion of the lab, we will upload new Wage and Tax documents to Document Processing and see how our earlier configuration of the document type and related fields are working. This is comparing a new document extracted elements with the ground truth.

Once we open Extraction model, we will be presented with details on how to perform the retraining. There are five basic steps – Review samples, Add fields, Teach the model, Review the trained model, and Test the model.

- _1. From the guided configuration screen, **Click** anywhere in the **Extraction model** box.



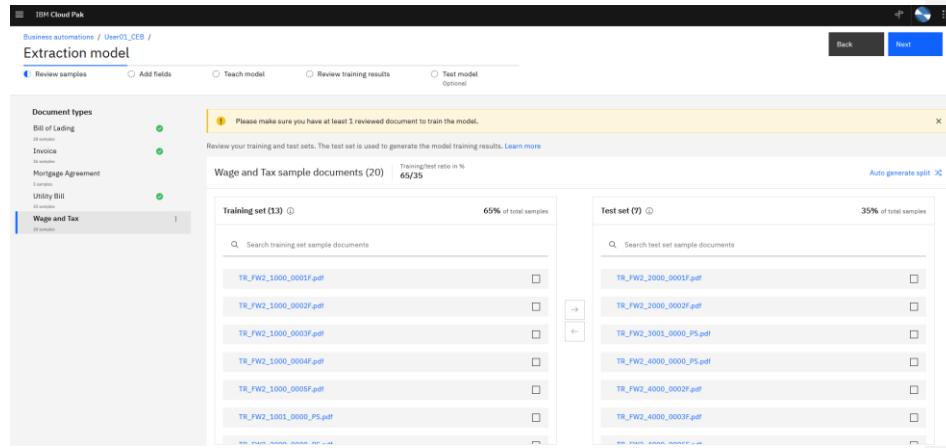
Note: the status will reset to Retrain if it detects something may have changed. This is just a reminder that if you indeed changed something, you may benefit from retraining the model.



- _2. Next **Click** on the **Wage and Tax** document type under the Document Types section.

Like in the classification step, ADP needs to have the documents divided into a training and test sets. In general, *deep learning*-based AI requires a larger number of sample documents to achieve a reasonable result. But since our environment does not have GPU, deep learning is not turned on.

You should have something that looks like what you see in the following screen shot.



_3. Again, lets train with a Auto generate spilt. **Click Auto generate split.**

_4. Click on the **NEXT** button at the top.



You will now be on the Add fields bread crumb. If there were more fields to add we could do it here. But since we have already added all the fields needed, proceed to the next step.

_5. **Click the Next button.** You are now at the "Teach model" bread crumb.

Teach the model is where you will spend most of your time. We can see that our documents are "not ready", so we'll need to teach the model with new documents.

6. Click on Teach Samples.

The screenshot shows the 'Teach model' step in the extraction model workflow. On the left, there's a sidebar with 'Document types' including Bill of Lading, Deed of Assignment, Invoice, Mortgage Agreement, Utility Bill, and Wage Tax. The 'Wage Tax' option is selected. The main area displays a list of 'Wage and Tax sample documents (12)' with their status as 'Not ready' and fields reviewed as 0/7. At the top right, there are 'Back' and 'Train model' buttons, and a 'Teach samples' button which is highlighted with a red box.

Document name	Status	Fields reviewed	Date added
✓ TR_FW2_1000_0004F.pdf	Not ready	0/7	Sep 19, 2023 11:47 PM
✓ TR_FW2_1000_0005F.pdf	Not ready	0/7	Sep 19, 2023 11:47 PM
✓ TR_FW2_1001_0000_PS.pdf	Not ready	0/7	Sep 19, 2023 11:38 PM
✓ TR_FW2_2000_0000_PS.pdf	Not ready	0/7	Sep 19, 2023 11:38 PM
✓ TR_FW2_2000_0004F.pdf	Not ready	0/7	Sep 19, 2023 11:47 PM
✓ TR_FW2_2000_0005F.pdf	Not ready	0/7	Sep 19, 2023 11:47 PM
✓ TR_FW2_3000_0000_PS.pdf	Not ready	0/7	Sep 19, 2023 11:38 PM
✓ TR_FW2_3001_0000_PS.pdf	Not ready	0/7	Sep 19, 2023 11:38 PM
✓ TR_FW2_4000_0000_PS.pdf	Not ready	0/7	Sep 19, 2023 11:47 PM



Note: Your individual results may vary based on the exact documents you upload, how you configure your fields etc. Therefore, general guidance is given here versus exact step by step instructions.

7. We will now review the fields that were extracted, correct any that may be wrong and add others.

You should now see the field data extracted by the system. Nothing has been trained yet. All it is doing is using the field name and aliases we entered when we created the document class to locate data. Now, you need to correct and improve the model.

Automation Document Processing Lab

IBM Cloud Pak | Administration

← Back TR_FW2_1001_0000_PS.pdf | Not ready

Show detected fields Keyboard shortcuts on

Match data underlined in blue to the selected field or draw your own boxes around data in the document.

Sort by: Date created

Field Name	Value Captured
Federal Income Tax Withheld	Text
Field label (optional)	
Draw	Captured field label
Field value	
Draw	Captured field value

Pending aliases | View all aliases (3)
None ⓘ

Save selection

Employee Name and Address
Required

Employee Social Security Number
Required

Employer Identification Number

Employers Name and Address

Social Security Wages

Mark this document as ready for training.

Previous sample Next sample



Note: You may see different results than shown on the image above. Depending on how the algorithms interpreted the results you could see either type of extraction.

IBM Cloud Pak | Administration

← Back TR_FW2_1000_0001F.pdf | Not ready

Show detected fields Keyboard shortcuts on

Match data underlined in blue to the selected field or draw your own boxes around data in the document.

Sort by: Date created

Field Name	Value Captured
Federal Income Tax Wit...	Text
Field label (optional)	
Federal income tax withheld	1800.00
Field value	
Federal income tax withheld	1800.00

Recommended matches ⓘ

Matches are ranked in order of confidence. Choose one and save or dismiss to draw your own.

Field label Field value

Federal income tax withheld 1800.00

2 Federal income tax withheld 1800.00

Edit selection Dismiss Seeing duplicates ⓘ

Pending aliases | View all aliases (3)
Detected alias already exists ⓘ

Save selection

Employee Name and A... Required

Employee Social Securi... Required

Let's spend some time showing how to go about correcting these issues to help the system learn how to extract the values accurately.

8.1 Correcting extracted values

Let's start with the Federal Income Tax withheld field (i.e., The first one in the 'Fields to extract' list). Again, you may see different results based on your forms and how the different algorithms behaved on that particular document during extraction.

1. ADP may have already preselected the first field like in the first screen shot below. But ADP can also show the characters it recognized on the page with blue lines (second screen shot below) If your result is like the first screen shot then **Click** blue button **Save section**. Otherwise, if you got blue lines **Click** on the **number** below the heading "**Federal Income tax withheld**" in the image.

The screenshot shows the IBM Cloud Pak Administration interface with the following details:

- Form:** TR_FW2_1000_0001F.pdf
- Table:** Extracted Fields
- Rows:**
 - Field Name:** Federal Income Tax Withheld
Value Captured: 1800.00
 - Field Name:** Social Security Wages
Value Captured: 1113.33
 - Field Name:** Medicare Wages and Tips
Value Captured: 261.00
 - Field Name:** Allocated Tips
Value Captured: 400.00
 - Field Name:** Dependent Care Benefits
Value Captured: 543.21
 - Field Name:** Nonqualified Plans
Value Captured: 256.00
 - Field Name:** Other
Value Captured: 532.00
 - Field Name:** Local Income Tax
Value Captured: 500.00
- Buttons:**
 - Save selection** (highlighted with a red box)
 - Edit selection**
 - Dismiss**
 - Seeing duplicates?**

Commented [MJ1]: Section difficult to understand. We need to mention, that users need to click on all the properties on the right and make sure everyone has a green checkmark on it.

Where errors occur, draw the rectangle to assist detection. Save the selection if its right.

If fields not present, can be selected on the three dots menu.

We also need to inform users that they should abort it after they understood the principle, and not waste precious time.

Automation Document Processing Lab

The screenshot shows a W-2 form for Michael Robert David Smithson III, Employee ID 14-023285, with OMB No. 1545-0008. The form includes fields for employer information, employee details, and tax withholdings. To the right, a 'Field Matching' tool is open, displaying captured values for various fields like 'Federal Income Tax Withheld' and 'Social Security Tax'. A 'Save Selection' button is visible at the bottom of the tool.

- _2. Again, depending on your specific results. If ADP was able to find the field and will ask if you want to save match of value captured along with the field label. **Select Save Selection**. Otherwise, If your results were the recognized characters with blue lines then in the pop up window that comes up **select Save match**

This screenshot is similar to the previous one, but it shows a 'Save match' dialog box overlaid on the field matching tool. The dialog box has options for 'Save match', 'Cancel', and 'Cancel'. The rest of the interface and form content are identical to the first screenshot.

Notice a green check mark signifies this field is complete.

Automation Document Processing Lab

The screenshot shows a W-2 form for the year 2020. The form includes fields for employee information, wages, taxes withheld, and employer details. To the right of the form, a 'Field Name' and 'Value Captured' table is displayed. A red box highlights a row for 'Federal Income Tax Withheld' with a value of '123456789.99'. Three ellipses (...) are shown next to the green checkmark in the 'Required' column, indicating options to clear or update the data.

The 3 ellipses next the green check mark allow you to clear the data or update ADP to there is no field with this data in the current view.

- _3. Move to Employee Name and Address field by clicking in the grey area on that field name. In our two possible outcomes depending on the algorithms. ADP did pick up the address but missed the name. Or the algorithm may have picked up the address and not the name. Or it may have gotten the correct field.

If the field is not correct **Click** on the **Dismiss** button.

Now under the Field label **select Draw** button and using your mouse grab or lasso around **“Employee’s first name and initial”**.

This screenshot shows the same W-2 form and field editor as the previous one. The 'Employee's first name and initial' field has been selected with a mouse lasso. A 'Draw' button is visible in the top right corner of the field editor. The right panel displays recommended matches, with one entry for '4326 Aldrich Rd Minneapolis, MN 55412' highlighted. The 'Field label' dropdown shows 'Employee's first name and initial'.

If you got the blue lines, you would notice that only the “e Employee’s first name and initial” have blue marks. In this case the values for name and address where not located. Using Draw button and using your mouse grab or lasso around “Employee’s first name and initial”.

- _4. We are interested in getting the “Employee’s First Name” data and address for the field value. **Click** on the **Draw** button under Field value. Using your mouse select the appropriate values for Name and address (green box), then **Click Save selection**

The screenshot shows the ADP Client File Administration interface with the W-2 Wage and Tax Statement form. The 'Employee's first name and initial' field is highlighted with a green box. The 'Save selection' button is highlighted with a red box.

22222	a Employee's social security number 577-22-3048	OMB No. 1545-0008
b Employer identification number (EIN) 46-002285	1 Wages, tips, other compensation 18000.00	2 Federal income tax withheld 1800.00
e Employer's name, address, and ZIP code Test and Rest, Inc. 563 Stoney Brook Rd Minneapolis, MN 55411	3 Social security wages 17700.00	4 Social security tax withheld 1113.33
d Contract number 210220 A13	5 Medicare wages and tips 18000.00	6 Medicare tax withheld 261.00
f Employee's address and ZIP code Employee's name and initial Last name Benjamin P. Charles 4326 Aldrich Rd Minneapolis, MN 55412	7 Social security tips 400.00	8 Allocated tips 400.00
g Dependent care benefits 543.21	9 Nonqualified plans 300.00	10 Other 256.00
h State, employer's state ID number MN 795037	11 Savings, Retirement, Thrift plan 320.00	12 Local wages, tips, etc. 20000.00
i State wages, tips, etc. 18000.00	13 State income tax 1260.00	14 Other Test form 532.00
j Local income tax 500.00	k Local wages, tips, etc. 17700.00	l Local income tax 425.00
m Local tax department MPLS	n	o

W-2 Wage and Tax Statement **2020** Department of the Treasury—Internal Revenue Service
Copy 1—For State, City, or Local Tax Department

- _5. For the Employee Social Security field if it looks good, **Click on Save selection**. Or if the blue lines are present instead **select** the value displayed to populate the field and **Click Save match** then **Click on Save selection**.
- _6. Continue to process for the remaining fields, using either method as described above, clicking on the Save selection if ADP picked up the correct field label and field value or select the blue line values to populate both the field label and field value or finally if both fields are wrong use the *Dismiss* and use blue lines if Key Value Pair (KVP) is correct or drawing a box around needed label or value.

- _7. Once complete **check the box** next to “Mark this document as ready for training” at the bottom

The screenshot shows the IBM Cloud Pak Administration interface. On the left, a W-2 Wage and Tax Statement form is displayed. On the right, a matching tool is open, showing recommended matches for fields like "Wages, tips, other compensation". A red arrow points to the checkbox labeled "Mark this document as ready for training" at the bottom of the matching tool window.

- !** _8. Review ALL other fields carefully. **Do not leave any incorrect values.** You can adjust or delete values as needed by clicking on Edit selection. If you leave incorrect values, the system will assume they are correct and LEARN them as if they were good values.

_9. Repeat steps for Next Sample

Over the course of next few samples you may find that ADP has extracted the wrong results, perhaps getting a value that is above when it should have been below. If this is the case and you pick you a blue underline data, but the results are wrong. Simply use the draw box for the Field Label and Field Value.



Note: When completing the remaining documents, you may run across ADP finding the fields but perhaps on the second image or third image on the page. Try to keep all Key Value Pairs (KVP) on the same image.

_10. Once complete review of all the sample documents **Click on the Back link**

The screenshot shows the IBM Cloud Pak Administration interface with two sample W-2 forms displayed side-by-side. The left form is titled "Form W-2 Wage and Tax Statement" and the right form is also titled "Form W-2 Wage and Tax Statement". Both forms are for the year 2020 and OMB No. 1545-0008. The forms contain various fields such as Employee Name, Address, Social Security Number, and tax withholdings. To the right of the forms is a "Ready for training" interface with a search bar, dropdown menus for employee names, employer identification numbers, and social security wages, and a "Field label (optional)" input field containing "Wages tips, othe comp". A checkbox at the bottom is checked with the text "Mark this document as ready for training." Below the interface are buttons for "Previous sample" and "Next sample".

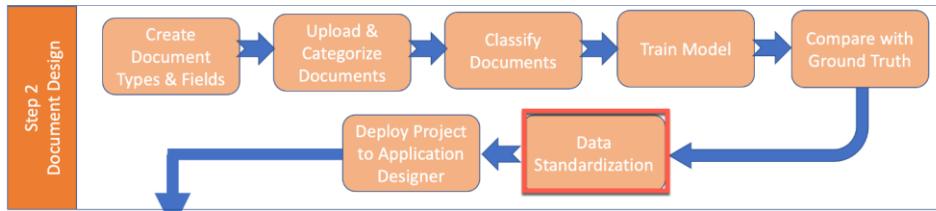
8.2 Train extraction model

We will be performing the quick training in this lab due not having a GPU in our TechZone architecture. A GPU is only needed in a development environment and is not needed in either a production or runtime environment. The Deep Learning capabilities have been disabled on this training environment. You can find instructions in the Appendix for when you have access to a server with it enabled.

_1. Click Train button.

This will take several minutes. (Good time for a break)

9 Data standardization



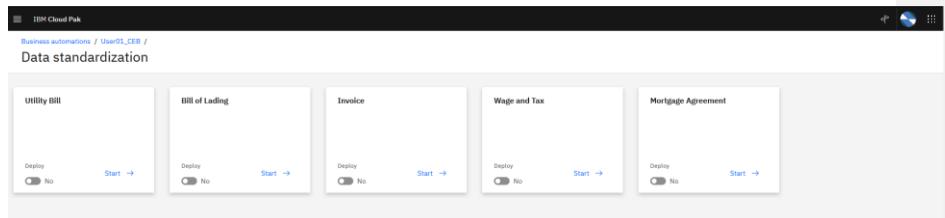
Next, we may need to standardize the data that will be presented in the user interface and how it will be stored in the FileNet repository for example. Data standardization is the process of defining attributes for a data field in a standardized way. This is done using data definitions. These definitions can be used across projects, and across different applications within the Cloud Pak for Automation. Each data definition has a title, description, and a datatype. We can also set a data definition as required or not. When a document is ingested into ADP, it results in a list of Key Value Pairs' (KVP) for that document. The Designer maps some of these KVP's to fields and teaches the model on how to extract the fields from the full list of KVP's. The designer then maps some of those fields to data definitions for a particular document type. Only the fields that have been mapped to data definitions will become Content Process Engine properties.

- _1. Return to the guided configuration flow and **Click** anywhere in the **Data standardization** box

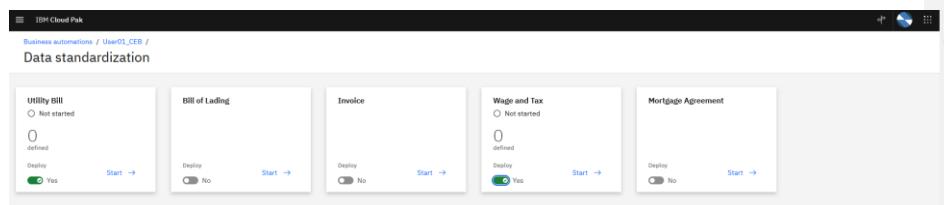
The screenshot shows the 'Build' tab of the guided configuration flow. It includes sections for 'Document types and samples', 'Classification model', 'Extraction model', 'Data standardization' (which is highlighted with a red border), and 'Document retention'. Each section provides status information such as 'Ready' or 'Retrain' and counts of types trained or reviewed. The top right corner shows sharing and deployment options.

Here, you will see a list of available document types. Only the ones which have Deployed turned on will be visible in the verify interface and will have fields stored in FileNet.

Automation Document Processing Lab



_2. Ensure the Utility Bill and Wages and Tax and Deploy is toggled to Yes

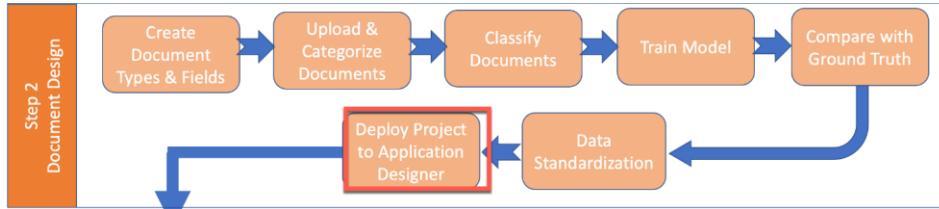


_3. Click on Start on either selected deployment.

This is where we begin defining the data field attribute definitions. You could create a new data definition and configure them. We will NOT be creating/defining any data fields for this lab.

_4. Return to the guided configuration screen by Clicking on <your project> name at the top of the screen.

10 Version and deploy your project



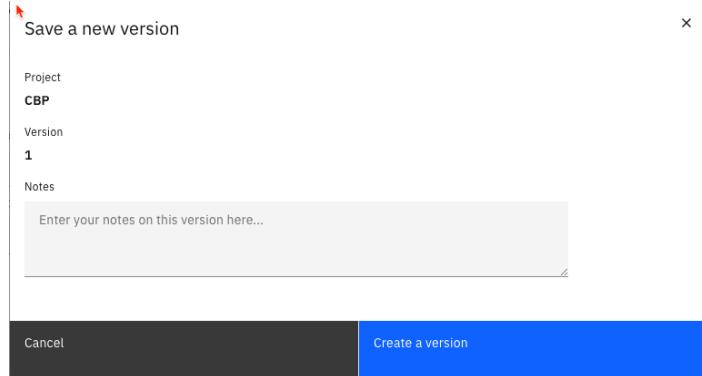
At this point in our Designer project, we have defined a document type, labeled the fields we want from the document, trained (classified) the system to recognize the document type, reviewed the extracted fields we wanted and standardized (mapped) the document fields to our output.

Now that we completed the configuration of the content extraction project, we need to save and deploy the design project to the application side. This will allow you to test your project using a client runtime interface.

- _1. If not already there, return to the guided home screen by clicking on your project name. Then **Click Version / Deploy**

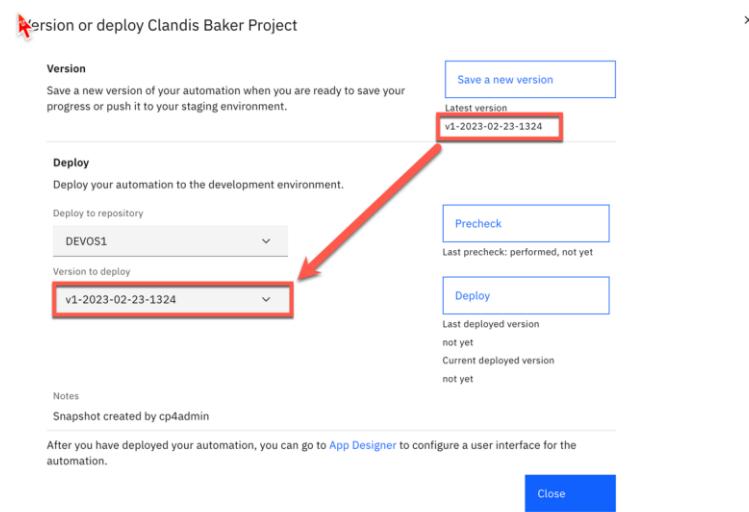
The screenshot shows the IBM Cloud Pak interface for a project named 'User01_CEB'. The top navigation bar includes 'IBM Cloud Pak', 'Business automations / User01_CEB', and a user icon. Below the navigation is a toolbar with 'Build', 'Enrich', and 'Configure' buttons. On the right, there are 'Share' and 'Version / Deploy' buttons. The main content area displays several sections: 'Document types and samples' (Ready, 5 types, 23 samples on average), 'Classification model' (Retrain, 5 types trained, 100% accuracy), 'Extraction model' (Ready, 4 types trained), 'Data standardization' (Not ready, 0 types reviewed), and 'Document retention' (Ready, 5 types reviewed). The 'Version / Deploy' button is highlighted in blue at the top right of the main content area.

_2. Click **Save a new version**. A Save a new version window pops up.



_3. Click on **Create a version**.

_4. Once the version is saved, you should see the version in the Version to deploy drop down list



... also, in the top corner has the “Latest Version.”

_5. Click on the **Deploy button**. This will also take a minute or two to deploy.

Once completed, you should have a notice that the project was deployed.

Version or deploy Clandis Baker Project

Version
Save a new version
Latest version
v1-2023-02-23-1324

Deploy
Deploy your automation to the development environment.

Deploy to repository
DEVOS1

Version to deploy
v1-2023-02-23-1324

Notes
Snapshot created by cp4admin

Precheck
Last prechecks performed, 02/23/2023

Deploy
Last deployed version
v1-2023-02-23-1324
Current deployed version
v1-2023-02-23-1324

Close



Note that you do not have to remain in the deploy screen while it is versioning or deploying. You can always click the button and then go back into any other screen if you like. It will run in the background. If you do this, just keep an eye on the top right of your screen for deployment status.

6. Click Close button.

Once deployed, proceed to the next steps.

From the home screen you can see the latest version and deployment

IBM Cloud Pak

Business automations / User01_CEB

Build Enrich Configure

Document types and samples
Upload sample documents to define the types of documents you want the system to process.

Classification model
Train the model to classify your documents.

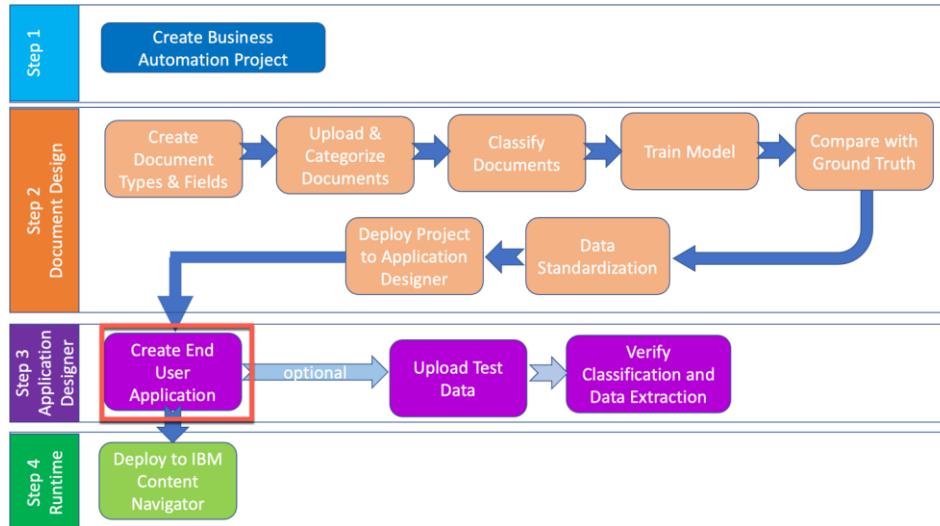
Extraction model
Train the model to extract the data from your documents.

Data standardization
Map fields to new or existing data definitions.

Document retention
Determine how long you want documents to stay in your content repository.

Share Version / Deploy
Last shared | a few seconds ago
Latest version | v1 | 3 minutes ago Deployed | v1 | a minute ago

11 Application designer



At this point we have designed or built a project that consists of document types, data or file types and methods to extract the desired data. The next major section of this lab is to build the user interface using the Application Designer. IBM provides two application templates for Document Processing

1. Batch Document Processing template – used to process batches of documents.
2. Document Processing Template – used to process single documents.

The lab will have you create a new batch processing application. We will quickly explore the various tabs in the interface, preview what the IBM Content Navigator (ICN) client would look like using the Preview feature and then publish our application to ICN where we will process a batch of documents.

Changes to the application itself will not be in the scope of this lab.

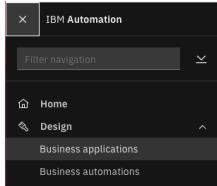
11.1 Create your Runtime Application.

- _1. Return to the starting screen by **clicking the hamburger** in the top left.



and selecting **Business Applications**

Automation Document Processing Lab



_2. From the **Create** drop down list, **select Application**

A screenshot of the IBM Cloud Pak Administration interface under the 'Business applications' section. The left sidebar shows 'Create' and 'Import' buttons, and a dropdown menu with 'Application', 'Template', and 'Toolkit'. The main area displays three template cards: 'Request Approval template', 'Onboarding Application template', and 'Exception Handling template'. Each card includes a description, last update date (02/20/2023), and a 'Last updated' link.

_3. Select **Enter your <application name>** in the Name field.

A screenshot of the 'Create a business application' dialog box. The 'Name' field contains 'user01 Application'. The 'Purpose (optional)' field is empty. In the 'Create from template (optional)' section, a dropdown menu lists several templates, with 'Batch Document Processing template (BCAT)' highlighted and selected. At the bottom right, there are 'Cancel' and 'Next' buttons.

_4. In the Create Form Template in drop down **select Batch Document Processing template (BCAT)**.

Create a business application

Name
User01 Application

Purpose (optional)
Describe the purpose of the application

Create from template (optional)

- Batch Document Processing template (BCAT)
- Exception Handling template (EHT)
- Onboarding Application template (OAT)
- Request Approval template (RAT)
- Document Processing template (CAT)

Batch Document Processing template (BCAT)

Cancel Next



You could have selected the Document Processing Template if you only wanted to process a single document at a time, but in this lab, you will process several documents in a batch.

- _5. Click **Next**
- _6. You will be presented with the Create an application window. In the Select repository **pick DEVOS1**

Automation Document Processing Lab

Create an application

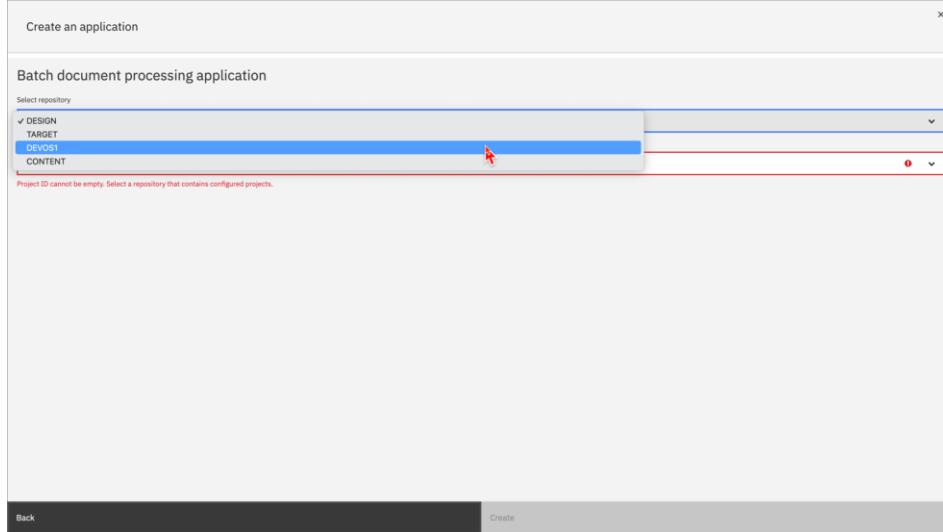
Batch document processing application

Select repository

✓ DESIGN
TARGET
DEV01
CONTENT

Project ID cannot be empty. Select a repository that contains configured projects.

Back Create



_7. In the Project ID drop down **pick <your project name>**.

Create an application

Batch document processing application

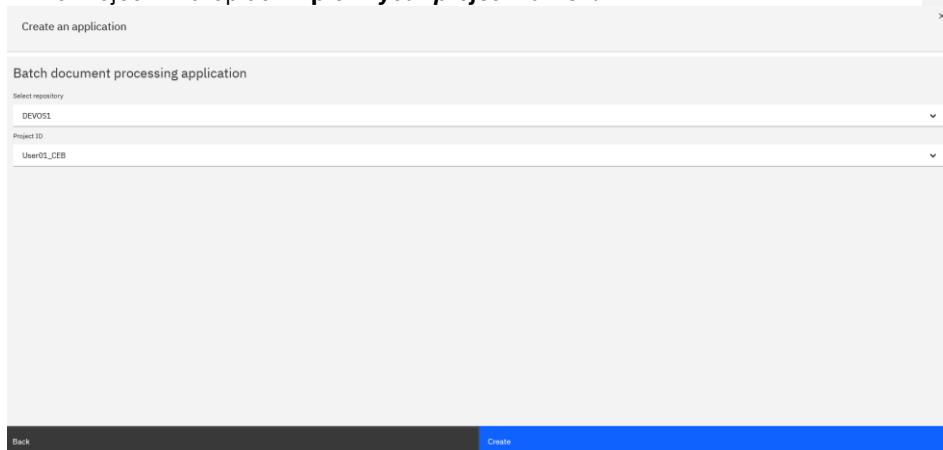
Select repository

DEV01

Project ID

User01_CEB

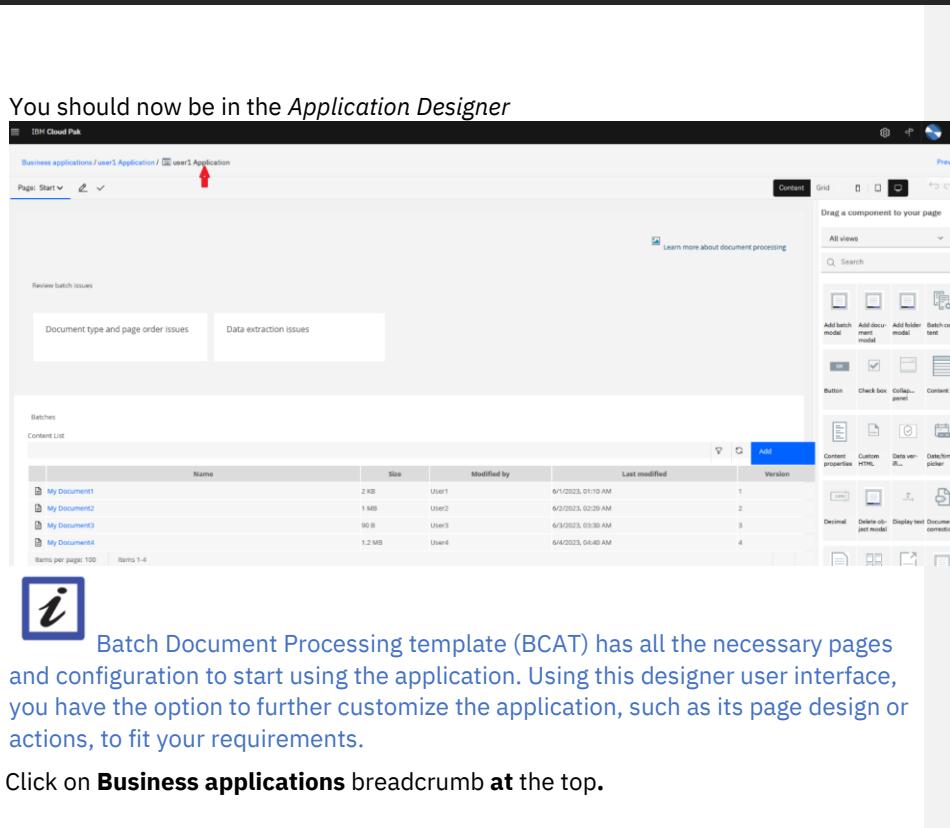
Back Create



Note it may take a minute or two before this update and you can see your project

_8. Click **Create**

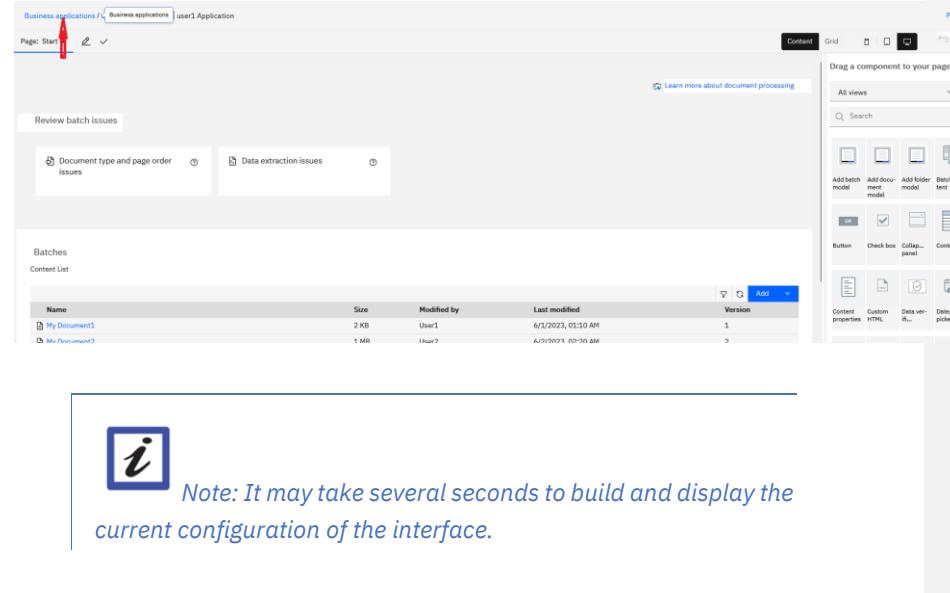
You should now be in the *Application Designer*



The screenshot shows the IBM Cloud Pak interface for the 'user1 Application'. A red arrow points to the 'Business applications' breadcrumb in the top navigation bar. The main content area displays a 'Content List' for 'Batches' with four items: 'My Document1', 'My Document2', 'My Document3', and 'My Document4'. To the right is a 'Drag a component to your page' panel containing various UI components like 'Add batch model', 'Check box', 'Content properties', etc.

i Batch Document Processing template (BCAT) has all the necessary pages and configuration to start using the application. Using this designer user interface, you have the option to further customize the application, such as its page design or actions, to fit your requirements.

_9. Click on **Business applications** breadcrumb at the top.

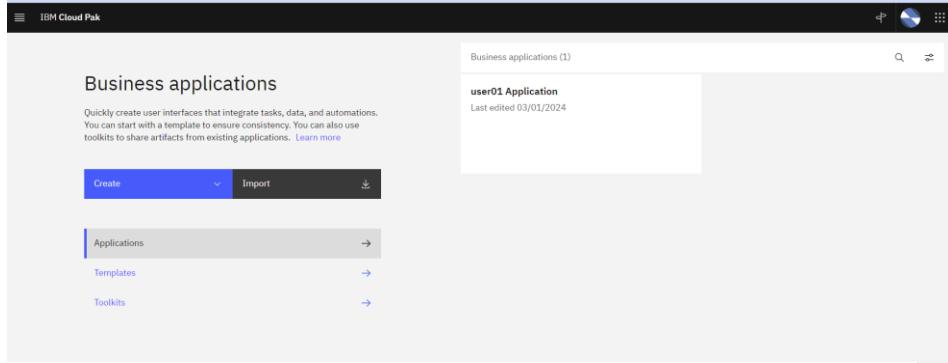


The screenshot shows the same 'user1 Application' interface as before, but with a red arrow pointing to the 'Business applications' breadcrumb in the top navigation bar. The content area and component panel are identical to the previous screenshot.

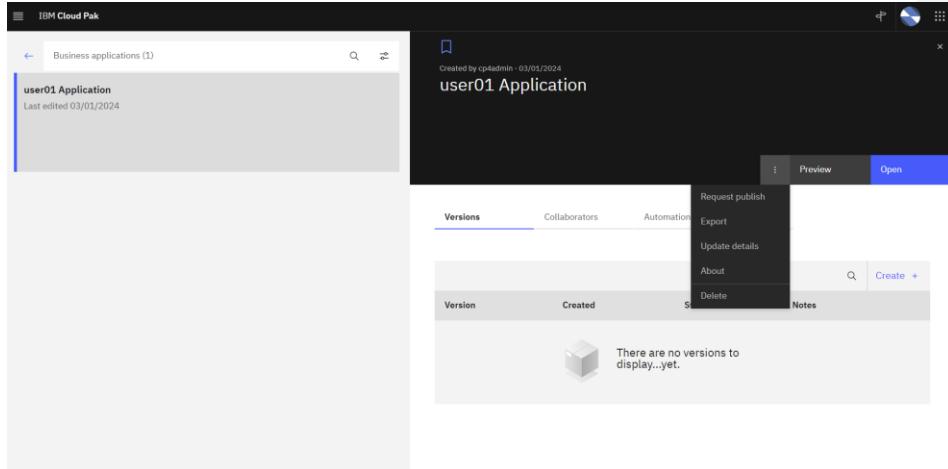
i

Note: It may take several seconds to build and display the current configuration of the interface.

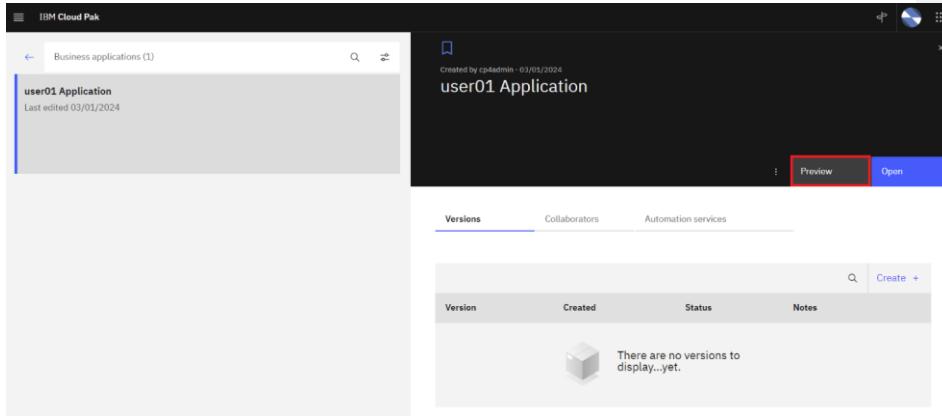
- _10. From this screen you can also select preview to see the pre-configured interface. The open takes you the application where you can modify the look and feel. If you hover anywhere in the box it will turn grey and **Click**.



- _11. From this screen if you **click** on the **3 dots** you can save versions, export application, or delete the application. Just wanted to show this for future reference.



_12. Click on Preview



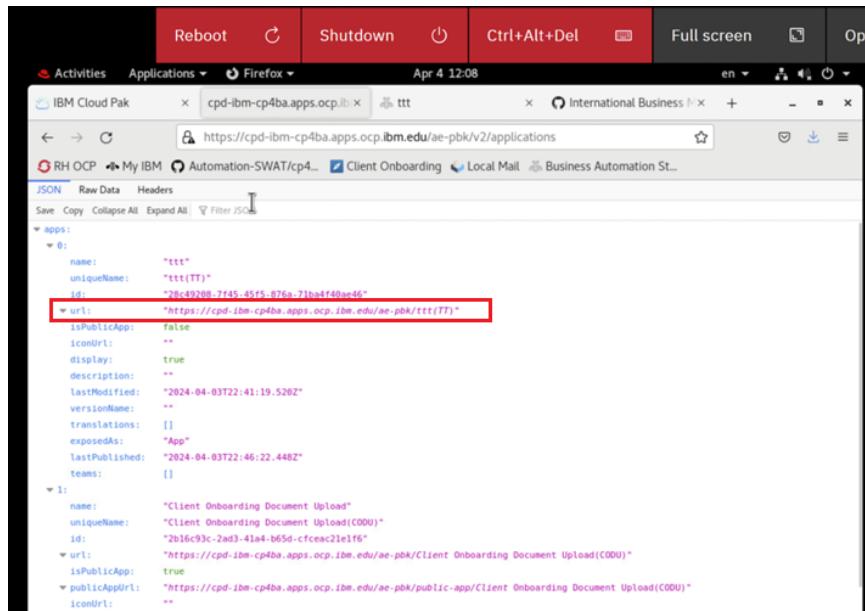
Note: You may have popup blocker turned on in your browser. Your browser will need to have this option off for the Preview.

The Preview allow you to validate its execution.

Previewing your application is a vital step in the creation process. You can preview your application at various points throughout your development. Maybe you want to preview a small interaction within your application or test the entire experience of your application after you complete development.

_13. Suppose the Preview takes time more than some 9 minutes or throws exception like “Unable to connect to server”. Then, open a new browser and type the url -> <https://cpd-ibm-cp4ba.apps.ocp.ibm.edu/ae-pbk/v2/applications>. This should look like below –

Automation Document Processing Lab

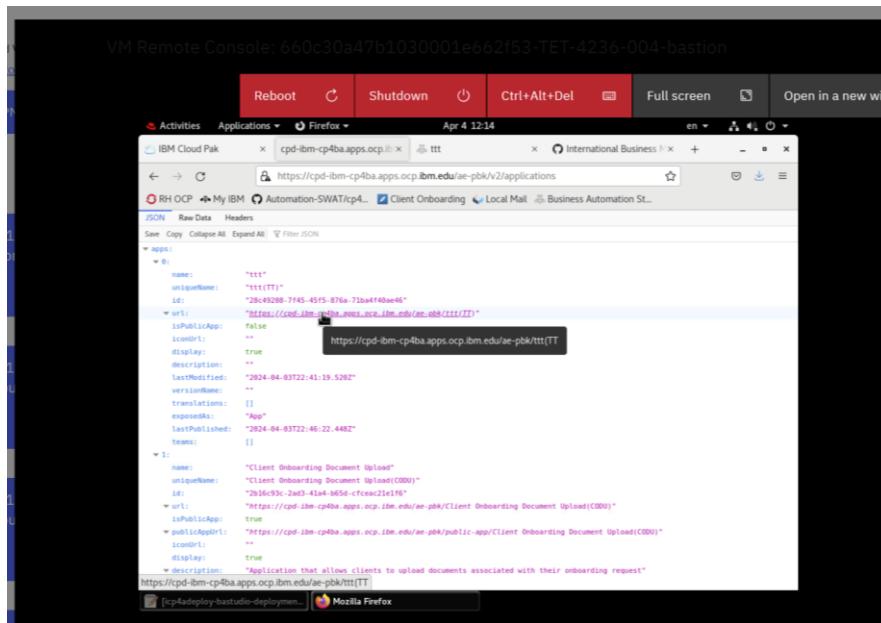


The screenshot shows a Firefox browser window with the URL <https://cpd-ibm-cp4ba.apps.ocp.ibm.edu/ae-pbk/v2/applications>. The page displays a JSON response for a newly created application:

```
JSON Raw Data Headers
Save Copy Collapse All Expand All Filter JSON

{
  "apps": [
    {
      "id": "28c49200-7f45-45f5-876a-71bna4f40ne46",
      "name": "ttt",
      "uniqueName": "ttt(TT)",
      "url": "https://cpd-ibm-cp4ba.apps.ocp.ibm.edu/ae-pbk/ttt(TT)" // URL highlighted with a red box
    }
  ]
}
```

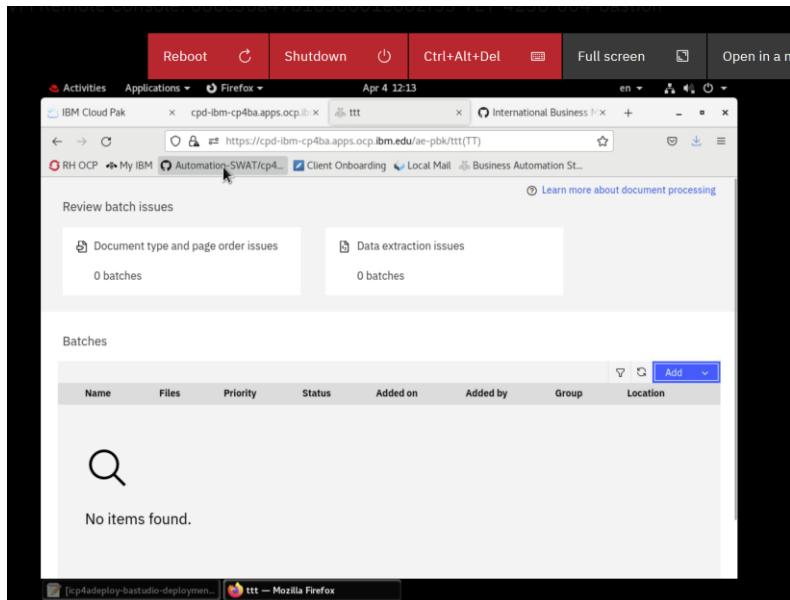
Here you could notice the application of ADP that is being created, if you refer to the above snapshot, you could notice that there is an application called “ttt” and notice the url. Copy the URL and paste it in a new browser window.



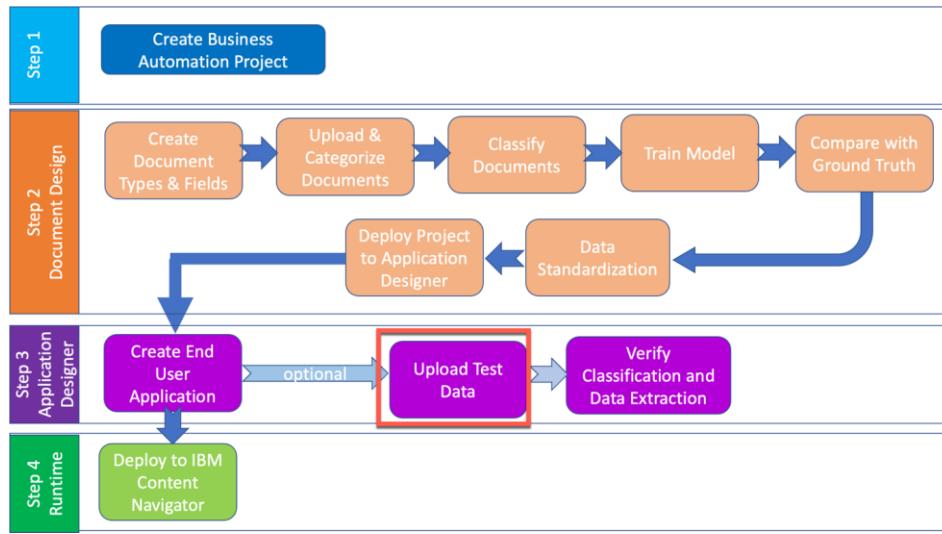
The screenshot shows a VM Remote Console interface for a bastion host. The browser window displays a JSON object representing an application. The JSON structure is as follows:

```
VM Remote Console: 660c30a47b1030001e662f53-TET-4236-004-bastion
Reboot Shutdown Ctrl+Alt+Del Full screen Open in a new window
Activities Applications Firefox Activities Applications Firefox
See Copy Collapse All Expand All Filter JSON
https://cpd-ibm-cp4ba.apps.ocp.ibm.edu/ae-pbk/v2/applications
{
  "apps": [
    {
      "name": "ttt",
      "uniqueName": "ttt(ttt)",
      "id": "28e49208-7f45-45f5-876a-71baef40aae4",
      "url": "https://cpd-ibm-cp4ba.apps.ocp.ibm.edu/ae-pbk/ttt(ttt)",
      "isPublicApp": false,
      "iconUrl": "",
      "display": true,
      "description": "",
      "lastModified": "2024-04-03T22:41:19.528Z",
      "versionName": "",
      "translations": [],
      "exposedAs": "App",
      "lastPublished": "2024-04-03T22:46:22.448Z",
      "teams": []
    },
    {
      "name": "Client Onboarding Document Upload",
      "uniqueName": "Client Onboarding Document Upload(CODU)",
      "id": "2816d93c-2ed3-41a4-bd8d-cfccc21a1f6",
      "url": "https://cpd-ibm-cp4ba.apps.ocp.ibm.edu/ae-pbk/Client Onboarding Document Upload(CODU)",
      "isPublicApp": true,
      "publicAppUrl": "https://cpd-ibm-cp4ba.apps.ocp.ibm.edu/ae-pbk/public-app/Client Onboarding Document Upload(CODU)",
      "iconUrl": "",
      "display": true,
      "description": "Application that allows clients to upload documents associated with their onboarding request"
    }
  ]
}
```

_14. Now, the url would take you to the actual application page instead of the preview page. Here you could use it in place for the coming sections.



11.2 Upload documents for processing

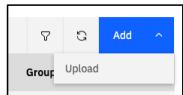


- _1. Below pasted snapshot is the preview of the application. Normally, this preview would work in “incognito mode” of Chrome or “InPrivate mode window” of Edge browser. Additionally, any popup blocker must be disabled or configured to allow open the pop-up window. You should be in the default application user interface for ADP it opens a new tab in your browser.

The screenshot shows the ADP application interface. At the top, there's a navigation bar with links for 'Review batch issues', 'Document type and page order issues' (0 batches), 'Data extraction issues' (0 batches), and 'Learn more about document processing'. Below the navigation bar is a section titled 'Batches' with a search icon. A message says 'No items found.' To the right of the search bar is a table header with columns: Name, Files, Priority, Status, Added on, Added by, Group, and Location. There is a 'Add' button at the top right of the table area.

There are two key screens you will work with: “*Document type and page order issues*” and the “*Data extraction issues*”. First, we need to upload some test documents and have them processed.

- _2. Click on **Add**, then **Upload**.



- _3. Enter a **name** for your batch in the Display Name field and set the **Priority to High** as seen in the image below.

A screenshot of a form titled 'Upload new batch'. It has several input fields: 'Display Name' (Batch 1), 'Description' (empty), and 'Priority' (High). The 'Priority' field has a dropdown arrow indicating it can be changed.

- _4. Click **Select files**.

Navigate to the samples folder previously downloaded from [Section 2](#) and use the *Group 3 - Runtime Demo Set* folder documents. Select all the files in the folder.

_5. Click **Open**

You will see a window that will give the operator a chance to manually classify the documents before they are ingested. By clicking on one of the files you will be presented with an option to manually classify the documents. In the example below would be how to manually classify a document.

Add Files

To manually specify document type, first select the files in the table. Use the classify option, to assign the document type for selected file(s). If a file is not manually classified, the system will auto-classify it.

1 Items selected		Classify	Auto Classify	Deselect
	File Name	Document Type		
<input checked="" type="checkbox"/>	B_PO_5.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_1000_0001F.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_4000_0011F.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_4001_0001S.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_4001_0010F.pdf	Auto Classify		

Cancel

Add

We are not going to do this but instead let ADP auto classify them.

Add Files

To manually specify document type, first select the files in the table. Use the classify option, to assign the document type for selected file(s). If a file is not manually classified, the system will auto-classify it.

Filter List		Document Type		
	File Name	Document Type		
<input type="checkbox"/>	B_PO_5.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_1000_0001F.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_4000_0011F.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_4001_0001S.pdf	Auto Classify		
<input type="checkbox"/>	DE_FW2_4001_0010F.pdf	Auto Classify		

Cancel

Add

6. Click on the Add button.

The screenshot shows the 'Review batch issues' section with two tiles: 'Document type and page order issues' (0 batches) and 'Data extraction issues' (0 batches). Below this is a table titled 'Batches' with one item: Batch01, which has 5 files, a high priority, and a status showing 3 of 5 files processed. An 'Add' button is visible at the top right of the table.

A progress bar will be displayed indicating when all documents have been uploaded.

7. Click the 3 dots at the end of the line.

The screenshot is similar to the previous one, showing the 'Review batch issues' section and a table of batches. A red arrow points to the three-dot menu icon next to the 'Batch01' entry in the table.

8. Click Submit

In the screen shot below, you see we have a document issues (status) and we now have 1 batch in the “Document type and page order issue” tile.

The screenshot shows the 'Review batch issues' section with the 'Document type and page order issues' tile highlighted by a red box. A red arrow points to the 'Add' button in the table below.

11.3 Correct any classification errors.

1. Click on the Document type and page order issues tile to open the batch.

Batch Document Processing Application / Document type and page order issues							
Name	Priority	Status	Added on	Added by	Group	Location	
Batch 1	High	Document issues	01/13/2021, 08:44 am	CEAdmin			
Items per page: 100 1-1 of 1 items							

- _2. Click on **<your batch name>** to open it.

You should now see all the documents you uploaded in your batch. The ones with issues will have a red checkmark for documents that have a low confidence document type and a red exclamation mark for documents it could not classify.

Batch01

[Cancel](#) [Save changes](#) [Submit](#)

Commented [MJ2]: The GUI has changed it seems, the section needs to be adapted. Also the description is using a pre-trained model, and results differ completely, if users didn't finish the Data extraction.
We need to use a different (Solution type) document type for the GUI, so we have more predictable results. That we can also train then.

- _3. Most of the document types are correct but it looks like a PO got mixed into our batch so we can **Click** on the **Trash can** to delete it from the batch. And **select OK** to delete it.

The screenshot shows the 'Batch01' interface. On the left, there's a list of documents with a red box highlighting the 'Issues (1 of 1)' section. On the right, a detailed view of a purchase order is shown, with a red box highlighting the vendor information.

PURCHASE ORDER

RUBE'S Meat Co.

VENDOR:

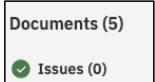
Chicken Run Ranch
24 Quarry Street
Bramley Village NE23 1DD
UK
019-2054-6466

SAMP TO:

Rube's Meat Co.
44 Pennington Road
Bramley Village NE23 2SU
UK
078-7878-2017

SHIPPING METHOD	SHIPPING TERMS	DELIVERY DATE			
C.I.F.		24 March 2020			
GIFT	ITEM #	DESCRIPTION	JOB	UNIT PRICE	LINE TOTAL
200 PCS	01	Whole Chickens		£1.50	£300.00
100 Packs	02	One Day Old Chick		£1.00	£100.00
					TOTAL £602.00

- _4. Review all documents to ensure everything is correct. If the system no longer detects any issues, you should see a green checkmark near the top of the document list.



- _5. Click **Save Changes** and then **Submit** to save your changes and have the batch processed.

The system will start reprocessing the documents now that they have been classified correctly.

- _6. Click on the blue **Batch Document Processing Application** link at the top to return to the previous preview menu.

Batch Document Processing Application /
Document type and page order issues

11.4 Correct extraction issues

The following instructions are based on a pre-trained sample application. Not what you will see in your untrained application.



Important Note: The project you are using for this has been configured but NOT run through the training (Deep Learning). So, the results will not reflect what they should be. IN A NORMAL SCENARIO, ON A CLUSTER WITH GPU AND DEEP LEARNING ENABLED, YOU WOULD HAVE TRAINED YOUR MODEL BEFORE DEPLOYING IT AND WOULD BENEFIT FROM HIGHER EXTRACTION RATES. the purpose of this lab is to teach you the tools but won't show you the trained results.

It may take a few seconds for your batch to advance to the next step. If your batch needs further attention, you will see it appear in the Data extraction issues tile.

_1. Click on the **Data extraction issues** tile to open it.

The screenshot shows a single tile with the title "Data extraction issues" and a sub-count "1 batches".

_2. Click on <your Batch name> to open it.

The screenshot shows a list titled "Name" with one item: "Batch 1".

After opening we see all the documents that have been processed but one looks to have extraction issues.

The screenshot shows a table listing documents. One document, "BAO_FW2_1000_0003F.pdf", is highlighted with a red border, indicating it has extraction issues. The table includes columns for Name, Issues, Status, Modified on, and Modified by.

Name	Issues	Status	Modified on	Modified by
BAO_FW2_1000_0003F.pdf	1	⚠ Data issues	03/04/2023	cp4admin
TR_FW2_1000_0003F.pdf		Issues reviewed	03/04/2023	cp4admin
TR_FW2_2000_0003F.pdf		Issues reviewed	03/04/2023	cp4admin
TR_FW2_4000_0002F.pdf		Issues reviewed	03/04/2023	cp4admin

_3. Click on the bad document to open it. Zoom in a bit to get a better picture of the document.

Automation Document Processing Lab

The screenshot shows a document processing application interface. On the left, there is a preview of a W-2 form from 2020. The right side displays the extracted data from the form. The extracted data includes:

- Federal Income Tax Withheld:** 9000.00
- Employee Social Security Number:** (none)
- Employer Identification Number:** (none)
- Employers Name and Address:** Bricks and Mortar 343 Jackson Ave Costa Mesa, CA 90394
- Social Security Wages:** 75000.00
- Wages Tips Other Compensation:** (none)
- Employee Name and Address:** Last name Suff, Stella K. James 343 Twisting Way Red Beach, CA 90354 Employee's address and ZIP code

Take a moment to discover the image viewer features.

Image viewer features at top:

The screenshot shows a document processing application interface. On the left, there is a preview of a W-2 form from 2020. The right side displays the extracted data from the form. The extracted data includes:

- Employee Name & Address:** 343 Twisting Way, Red Beach, CA 90354
- Social Security Wages:** 132099.00
- Social Security Tax Withheld:** 83239.80
- State Income Tax Withheld:** 2531.00
- Local Income Tax Withheld:** 421.00
- Other:** 20000.00
- Code:** AA
- Code:** 521.00

- Rotate image.
- Visual effect adjustment
- Invert

Image viewer features at bottom:

The screenshot shows a document processing interface. On the left, there is a thumbnail view of the W-2 form. The main area displays the W-2 form with various fields filled in. To the right of the form, there is a panel titled "Extracted data" which lists several fields and their values. Below the extracted data, there is a section for "Similar fields". At the bottom of the interface, there is a toolbar with icons for zooming, navigating, and saving, along with a page number indicator "1 / 1".

Field	Value
Federal Income Tax Withheld	9000.00
Social Security Wages	75000.00
Wages Tips Other Compensation	(none)
Employee Name and Address	Last name: Swift, First name: Stella K., Middle name: James, Street: 343 Jackson Ave, City: Costa Mesa, State: CA, ZIP code: 90354

- Page and thumbnail's view
- Fit to window.
- Zoom and Magnify

Field features

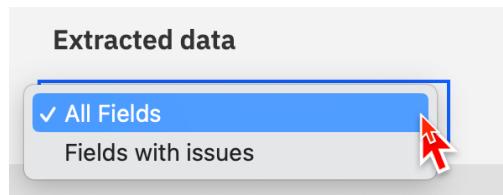
The screenshot shows a W-2 form on the left and its corresponding extracted data on the right. The extracted data panel has a dropdown menu at the top labeled 'Extracted data' with options 'All Fields' (selected) and 'Fields with issues'. Below this, various fields are listed with their extracted values. Some fields have a red validation error icon next to them. The extracted data includes:

- Federal Income Tax Withheld:** 9000.00
- Employee Social Security Number:** (none)
- Employer Identification Number:** (none)
- Employers Name and Address:** Bricks and Mortar 343 Jackson Ave Costa Mesa, CA 90394
- Social Security Wages:** 75000.00
- Wages Tips Other Compensation:** (none)
- Employee Name and Address:** Last name: Swift, First name: Stella K., Middle name: James, Street: 343 Twisting Way, City: Red Beach, State: CA, Zip: 90354

- Show all fields.
- Show fields with issues.

Also note that fields that do have issues have a notification icon next to them. For example, Wages Tips Other Compensation field picked up correctly but has a low confidence based on the extraction results.

4. Under Extracted data click on the drop down twisty.



5. Click on the ALL Fields.

This view shows all the fields that we defined earlier. Fields with an asterisk are mandatory fields.

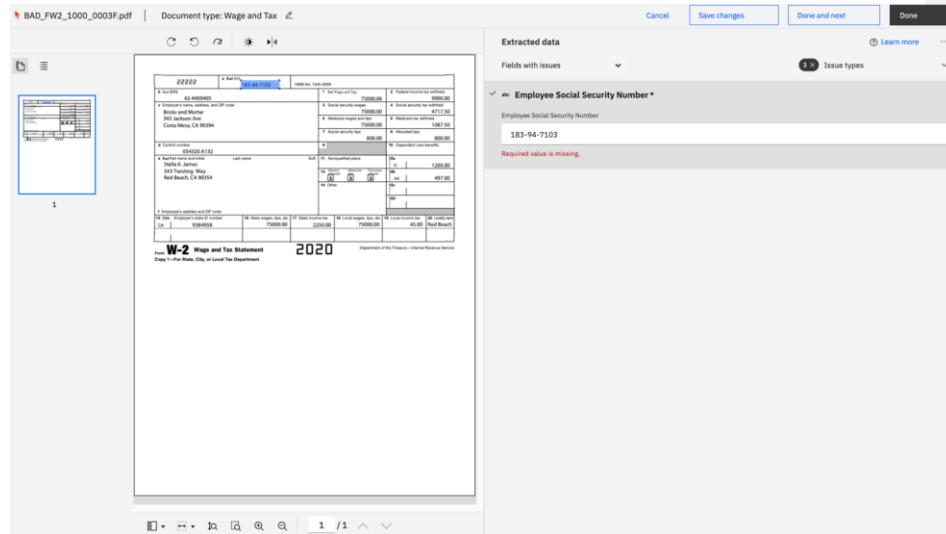
Change the Extracted data back to **Fields with issues**.



The Employee Social Security Number is a mandatory field. For purposes of

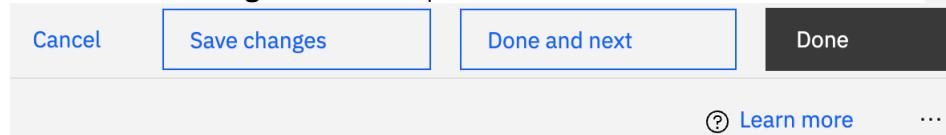
this lab it was changed to “Bad SSN”. Since you did not make that phrase an alias ADP was not able to pick it up.

- _6. Click on Employee Social Security Number and with your mouse select the SSN under “Bad SSN”.



Also the Wages Tips Other Compensation did not have a correct alias defined. But since it was not a required field, you can continue to process.

- _7.. Click on Save Changes box at the top.



- _8. For the remaining fields there are no extraction issues that ADP picked up for mandatory fields. You may see some low confidence characters. If so, Click on Dismiss for each field with a yellow validation warning.

- _9. Click on Done and next.

- _10. All documents have been processed Click on Submit at the top to complete the batch.

12 Optional Export/Import Project.

If you would like to save your project and perhaps use it later, you can do this lab.
From the Business Automations

- _1. From the Business Automations screen **select Document Processing**.

The screenshot shows the IBM Cloud Pak interface for Business Automations. In the center, there is a card for 'User01_CEB' with the status 'Last edited 09/20/2023'. Below the card, there are two main sections: 'Published automation services' and 'External'. Under 'Published automation services', the 'Document processing' service is highlighted with a blue border. At the bottom of the page, there is a navigation bar with 'Create', 'Import', and other options.

- _2. Select <your project name> Click open

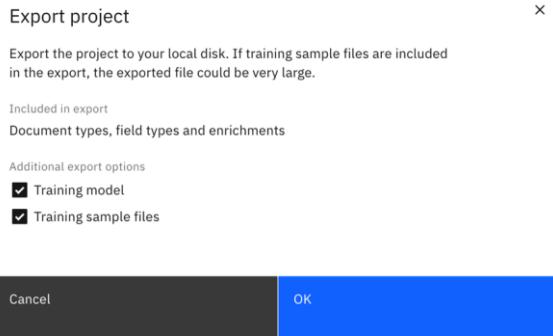
The screenshot shows the same interface as the previous one, but the 'User01_CEB' project is now open. The card for 'User01_CEB' has a grey background and a blue 'Open' button at the bottom right. The rest of the interface remains the same, with the 'Document processing' service still highlighted in the 'Published automation services' section.

- _3. From the Main screen select the Configure tab

The screenshot shows the main screen for the 'User01_CEB' project. The top navigation bar has tabs for 'Build', 'Enrich', and 'Configure', with 'Configure' being the active tab. On the left, there is a sidebar with sections for 'Import / Export ontology' (which is currently selected), 'Document processing', 'Language settings', 'Git server configuration', and 'Webhook configuration'. On the right, there are two buttons: 'Share' and 'Version / Deploy'. Below the sidebar, there are two sections: 'Export project' (with a 'Export project' button) and 'Import project' (with a 'Import project' button). The overall layout is clean and modern.

- _4. Select Export Project

_5. On Export Project window **check Training Module** and **Training Sample files**



_6. Click on OK

_7. A project-export-<date-time>.zip will be download via browser to local machine.

END OF ADP LAB

Appendix A - Troubleshooting

TechZone Pending Status taking Long Time

Operator shows Pending status in a namespace – OLM know issue.

An operator fails to install and continuously shows Pending status.

For fix visit below link.

<https://www.ibm.com/docs/en/cpf?topic=ii-operator-shows-pending-status-in-namespace-olm-known-issue>

Other issue could be the deployment itself had an issue. Two things to do in this case.

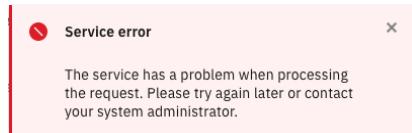
1. Open a support ticket by clicking on the 3 dots on the tile.

The screenshot shows a 'My reservations' page with three tiles. The middle tile, titled 'Jam in a Box Env - v1.0 - updated 2024.04.02', has a red box around its context menu. The menu items are: 'Reservation details', 'View collection', and 'Support'. The 'Support' option is highlighted with a red border.

Name	Purpose	Type	Description	Available on	Expires on	Status
Template Builder WDC06	Customer Demo	IBM Cloud	Template Builder	Apr 4, 2024 7:47 AM	May 11, 2024 9:18 AM	Ready
Jam in a Box Env - v1.0 - updated 2024.04.02	Practice / Self-Education	IBM Cloud	Jam in a Box Env - v1.0 - updated 2024.04.02	Apr 2, 2024 12:21 PM	Apr 6, 2024 3:35 PM	Ready
Jam in a Box Env - v1.0 - updated 2024.04.02	Practice / Self-Education	IBM Cloud	Jam in a Box Env - v1.0 - updated 2024.04.02	Apr 2, 2024 11:15 AM	Apr 6, 2024 2:15 PM	Ready

2. IBM Internal can also access support via SLAC Channel at #itz-techzone-support
3. Delete tile and try to deploy again.

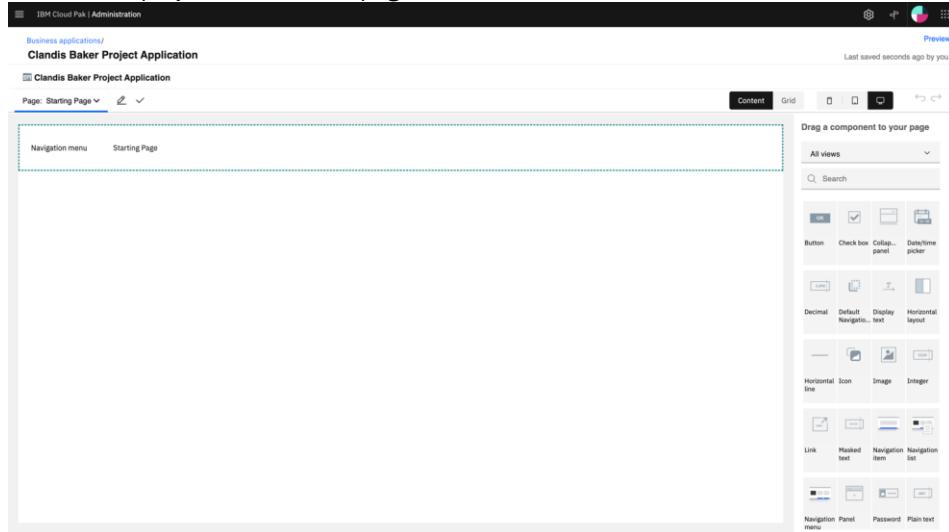
Service Error



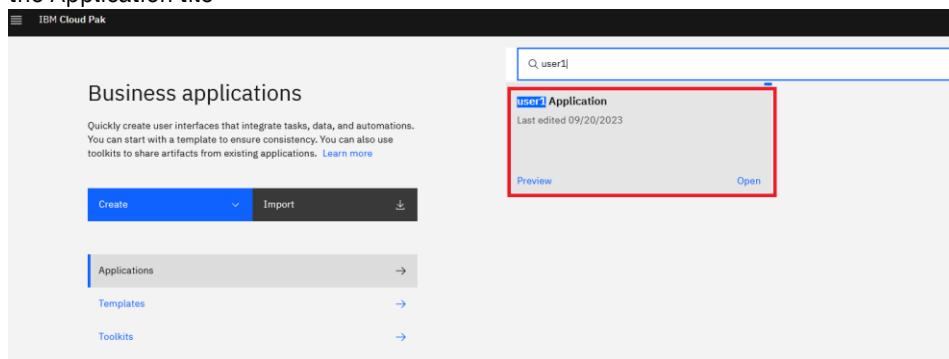
There was trouble communicating most of the time you can simply ignore and continue on.

Application Blank

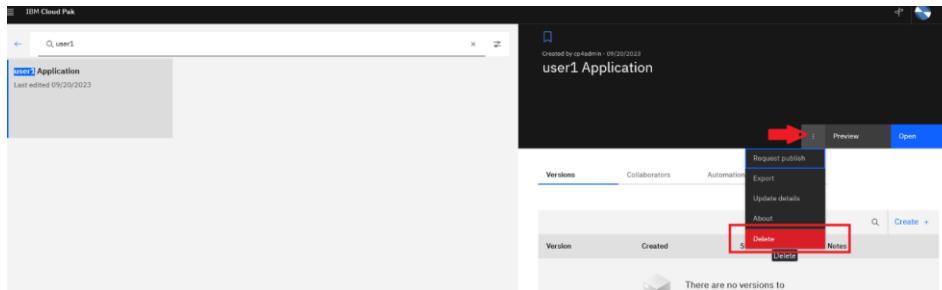
During creating of Business Application setup, sometimes on first time after project has been deployed. The Starter page is blank.



If this happens delete the application and try again. To delete the application, Click on the Application tile



Then Click on the 3 dots and Select Delete



Connection issue with Workstation to Cloud.

If issues with connection from workstation to cloud after it's been working. Reboot your workstation.

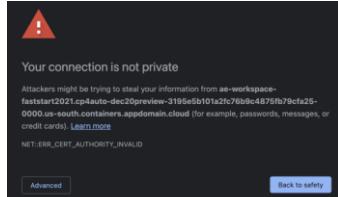
Opening an Incognito Window

When you open a new incognito window, you will need to accept certificates before logging in to ADP. Customers shouldn't have this issue because they will have their own certificates instead of the self-signed certificates used in this environment.

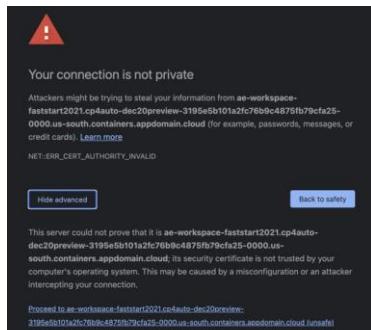
In your incognito window, go to the following URLs located in this Box:

Open the Generate Security Tokens Box note and click all 3 of the links listed. This will reset the self-signed security certificates.

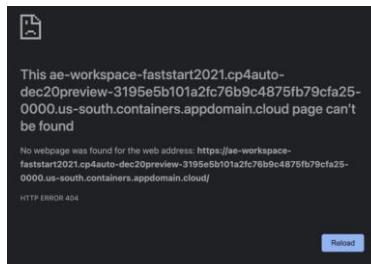
For each URL, your browser window will show a message like this:



Click Advanced, and the browser window will look something like this:



Click the “Proceed to...” link. You’ll see a message like this in your browser window:

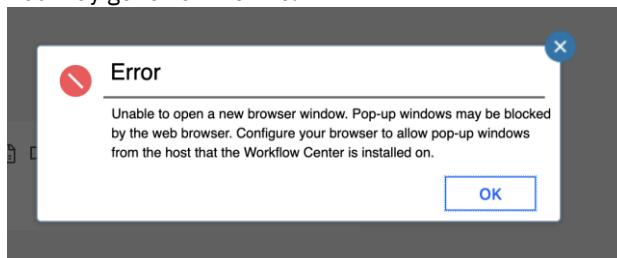


Ignore the error and proceed to the next link.

After doing this for each of the URLs above, log in to BAStudio

Popup Blocked when trying to Preview Application.

You may get error like this:



You will need to grant access to pop up windows in your browser.

Appendix B - BAW & ADP Integration Sample

For the End to End demo BAW was integrated with ADP. This link explains how to accomplish.

<https://github.com/IBM/baw-adp-integration-sample>

Appendix C - Badge Information.

Badge quiz page - <https://learn.ibm.com/user/policy.php>