Version 1.5

RICOH

QR Read and Route

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1 Preface

This guide provides the details on how to use the QR Read and route workflow

About This Guide

This guide is divided into following primary sections:

1. **Introduction**

   This section lays the foundation for understanding the workflow specification

2. **Cloud Service Connection**

   This section describes how to do service Coordination with external cloud Services like Box, Dropbox, Google Drive, OneDrive for Business, SharePoint Online, RICOH Content Manager

3. **Configuring Default Values**

   This section contains step-by-step instructions on how to configure default settings related to QR Read and Route Application in User Site

4. **Operation of QR Read and Route Application**

   This section contains step-by-step instructions on how to operate QR Read and Route application on MFP Operation panel

5. **Limitations**

   Product Limitations

6. **Appendix**

   This section contains additional reference materials

Note: The operation panel screen shot images and User Site images provided in this document are for illustrative purposes only. These images may not reflect the exact image you experience on your multi-functional printer (MFP device).

2 Introduction

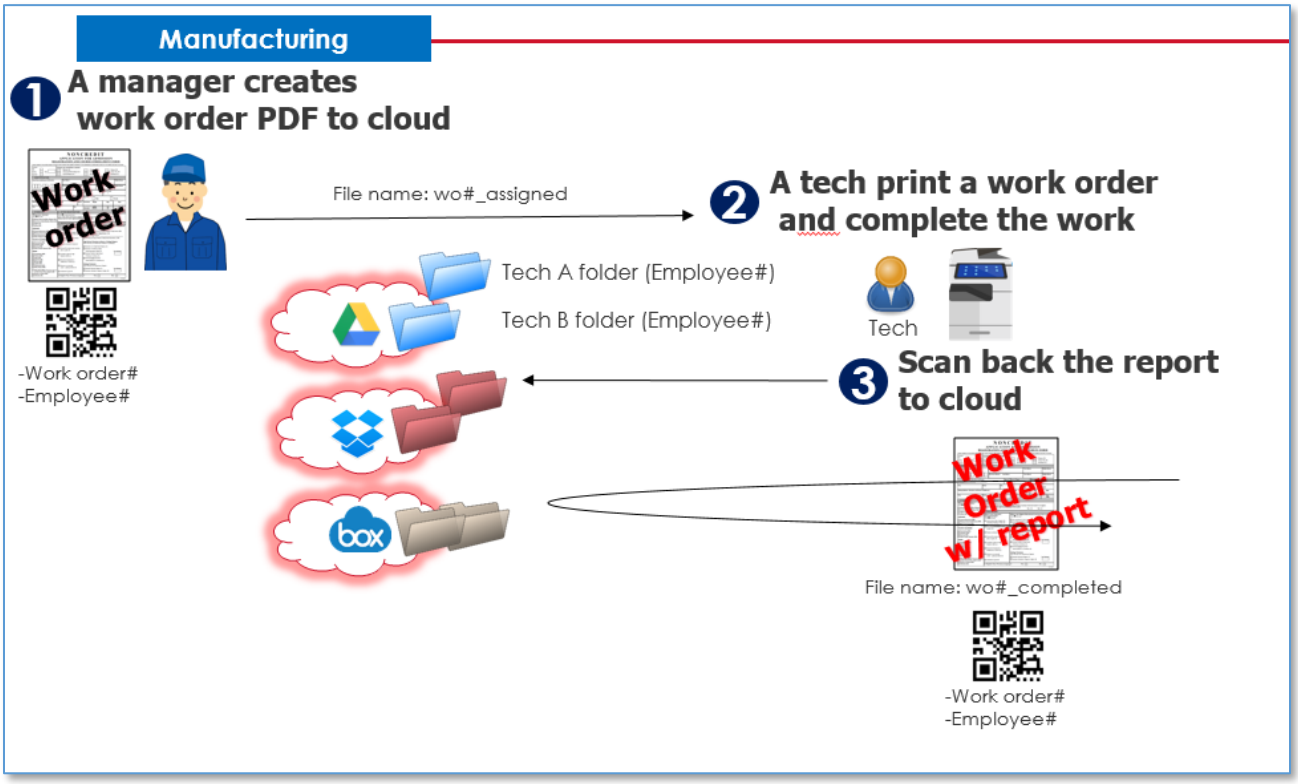
What is QR Read and Route workflow?

QR Read and Route is a workflow application developed on Ricoh Smart Integration Platform.

A typical use case for this workflow is displayed here:

This use case is related to manufacturing, Manager creates a Work Order, which also has a QR Code or Datamatrix Code. QR Code/Datamatrix code has Work Order number and Employee number. Employee then prints this workorder, after completing the workorder, he or she completes filling the work order. Then Employee scans the document using Smart QR Code Scan and Route application

Workflow uploads the document to cloud service of choice (Box, Dropbox, Google Drive, OneDrive for Business or SharePoint online) into the folder named Employee number. Also, filename is set as Workorder#_completed.



Note: Document with QR Code is generated by Customer's line of business application. Also make sure the data in QR Code matches the QR Code data format mentioned in the next page.

Workflow Specification

Folder	Folder Browse and select root folder
Bar Code Type	QR Code Datamatrix
Bar Code Data Format	**Employee Number:Work Order Number** **Example:** 12345:72828
OCR	Off, PDF, PDFA, WORD, EXCEL Default: Off
OCR Language	English, French, Spanish, Portuguese Brazilian
File Name	File Name is created using the Formula entered in the user Site. **Default File Name Formula:** _[workorder_number] & "_completed" Workorder_number is from QR Code.

Default values can be configured for Folder, Bar Code Type, OCR, File Name Formula and Scan Settings

3 Cloud Service Connection

What is Cloud Service Connection?

Before using QR Read and Route, user need to establish connection (authentication) with Cloud service of choice. As of now following Cloud Services are supported.

1. Box
2. Dropbox
3. Google
4. OneDrive for Business
5. SharePoint online
6. RICOH Content Manager

For each Cloud Service there is a separate QR Read and Route application available On MFP Operation Panel.

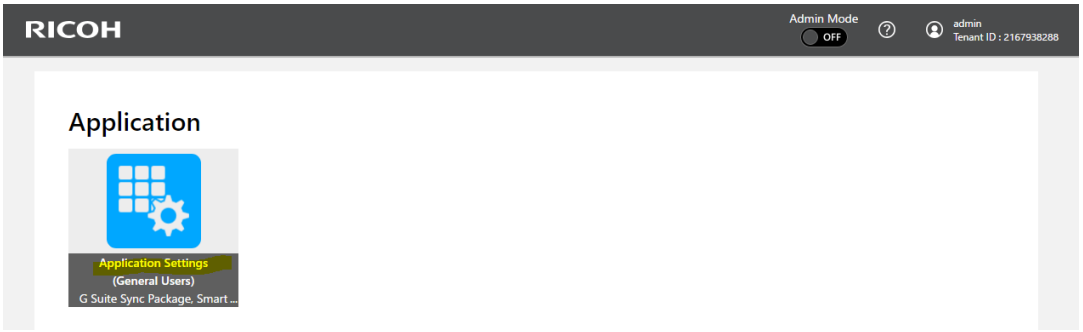
Refer to Smart Integration Cloud Service Coordination User Guide for step-by-step instructions.

4 Configuring default Values

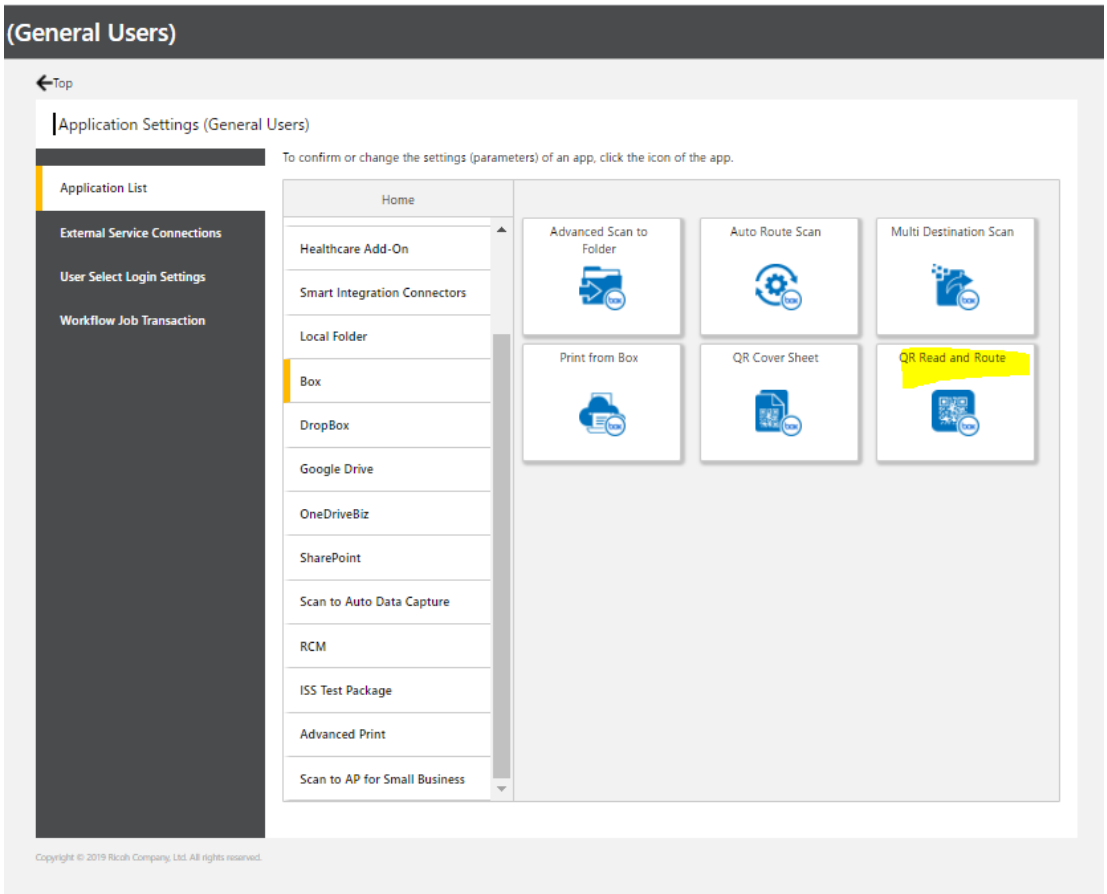
Smart Integration User Configuration Site URL

https://na.accounts.ricoh.com/portal/login.html

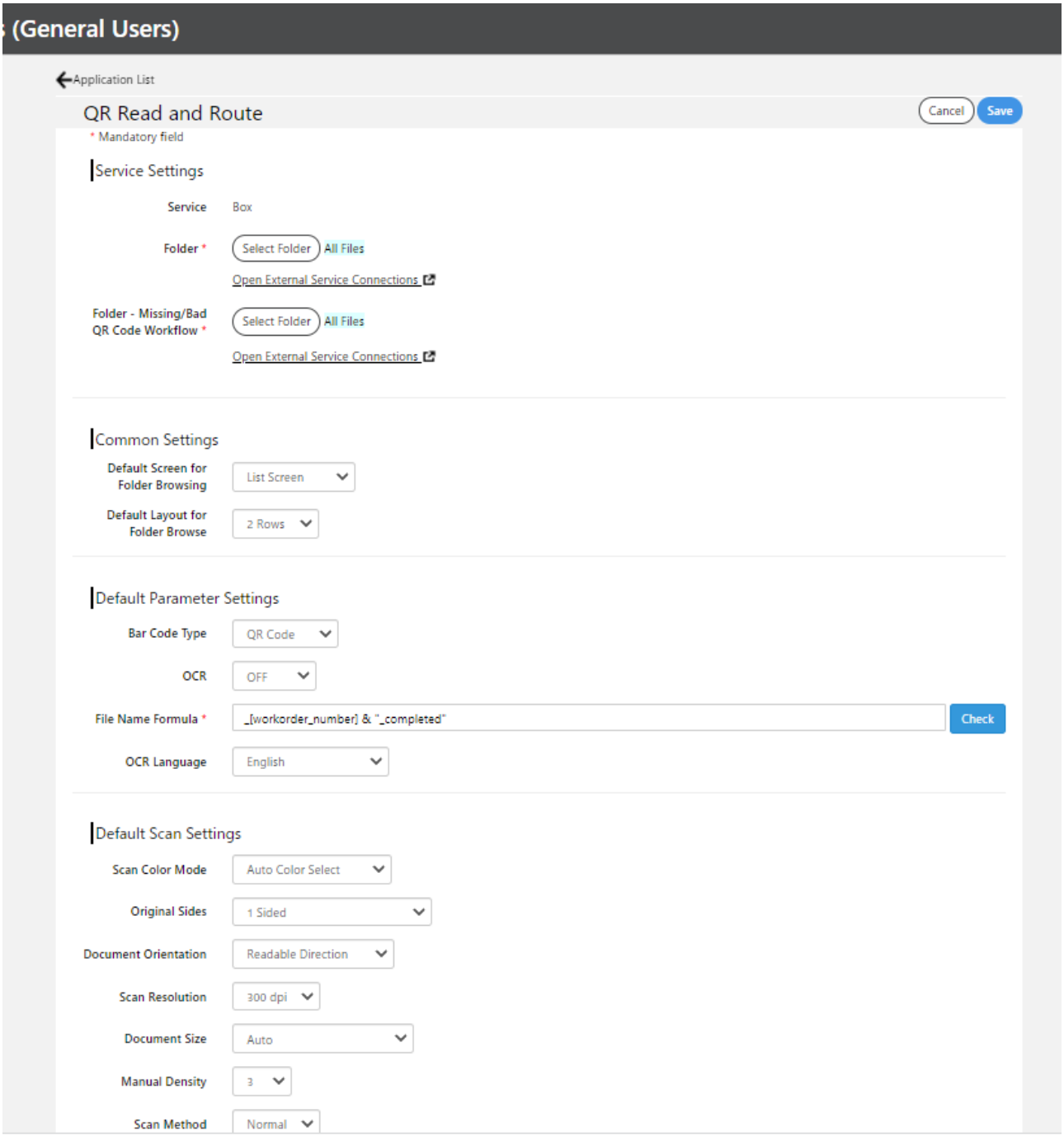
To configure QR Read and Route, it is necessary to login to workplace, if you are an admin, turn off 'Admin Mode', use the user mode to configure application settings.



Click on 'Set Personal application settings'

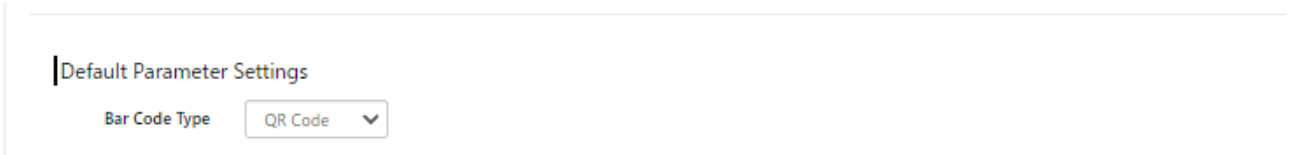


Click on 'Smart QR Read and Route'. This will display a page where all necessary parameters can be configured.



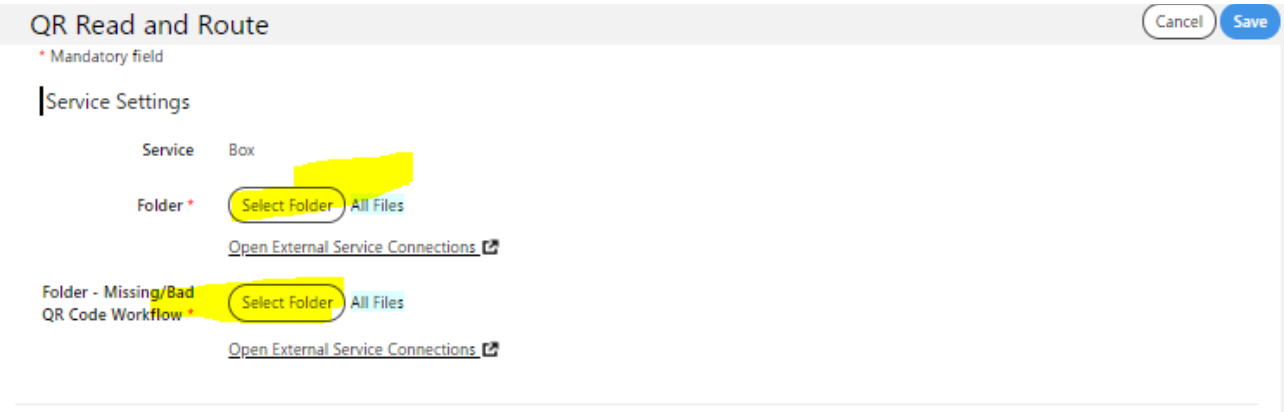
Settings available for Smart QR Read and Route

Bar Code Type



Bar Code Types supported: QR Code and Datamatrix

Selecting Default Root Folders



Click on Select Folder to set default root folder for Scanned documents.

Root Folders

Label	Description
Folder	Root folder for Successfully scanned & processed documents
Folder – Missing/Bad QR Code Workflow	Root folder for a document, which contains invalid data format in QR code/Datamatrix. Failed document will be stored under '**temp'** directory under selected root folder.

File Name Formula

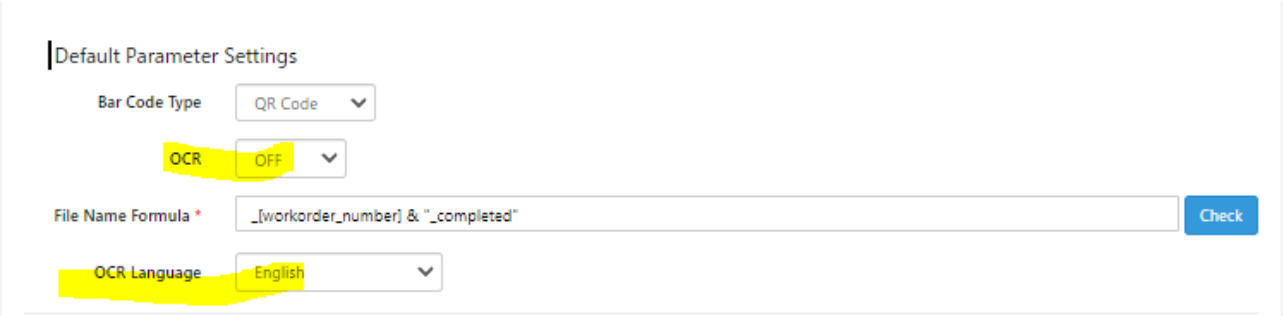
Default Formula:

_[workorder_number] & "completed"

Note: Refer to Appendix for Functions related to formula. Click on 'Check' button to validate the formula.

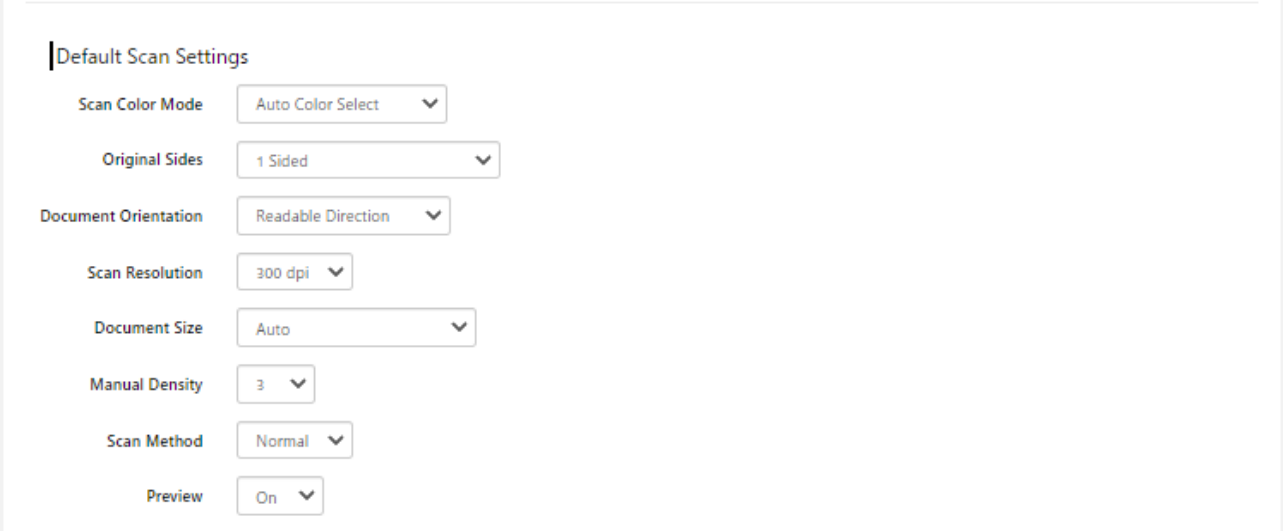
OCR & OCR Language

Default value for OCR and OCR Language can be configured.



Scan Settings

Default Scan settings can be configured here



Note: For a better QR Code/Datamatrix recognition, set the Manual Density to 3

5 Operation of QR Read and Route Application

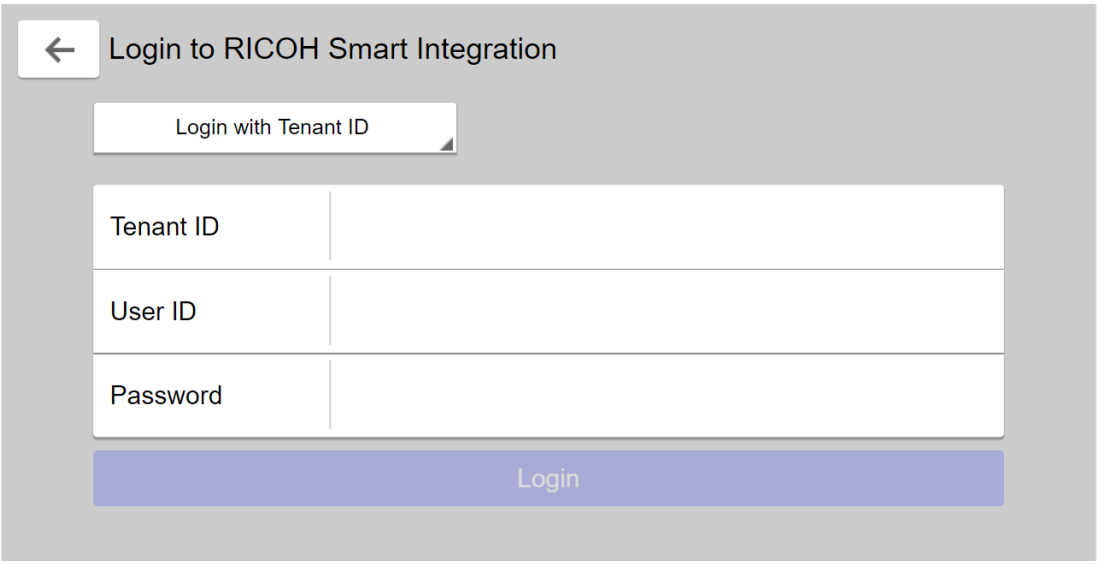
Smart Integration MFP BrowserNX URL

https://www.na.smart-integration.ricoh.com/si-apps/pub/index.html

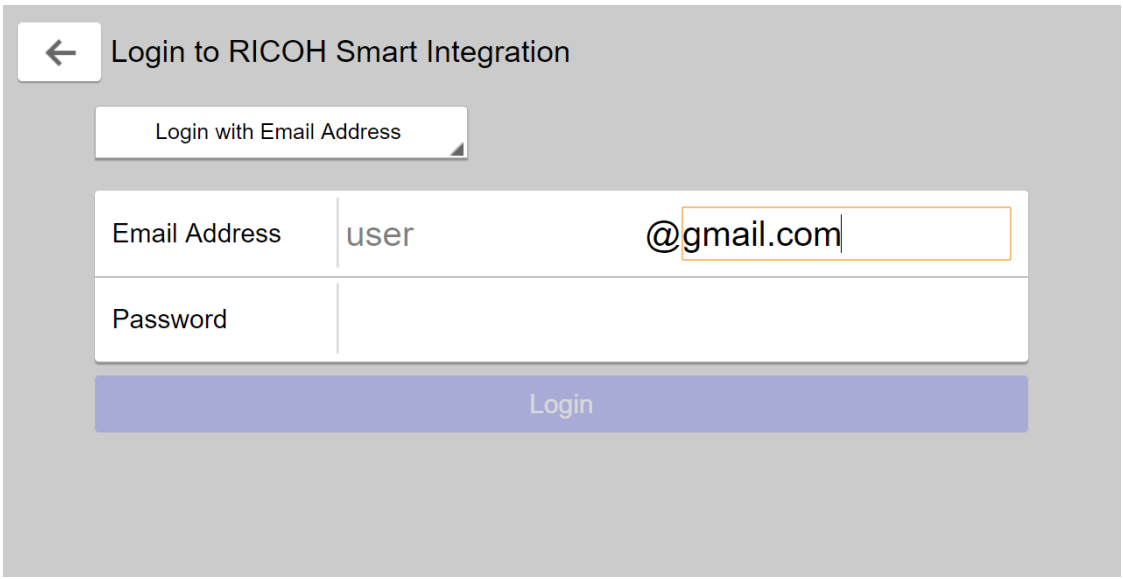
Ricoh Smart Integration Initial Login

Above URL is available as Bookmark ICON on MFP. Very first time, administrator need to login to the site either using Tenant ID, User ID and Password or Email address and password.

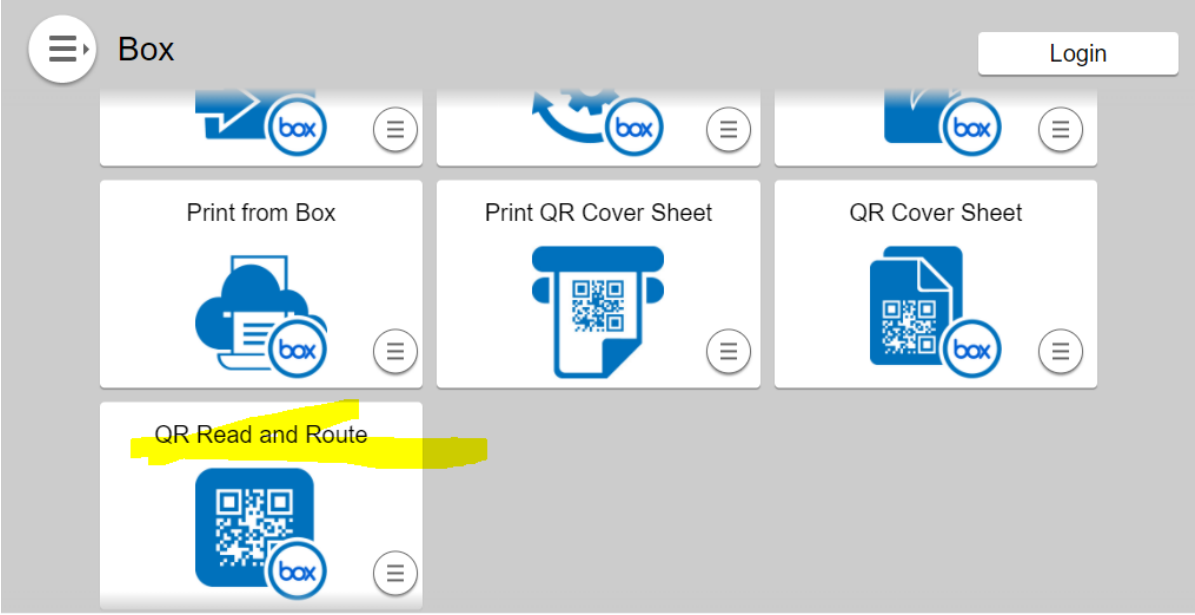
Option 1: Login with Tenant ID



Option 2: Login with Email Address

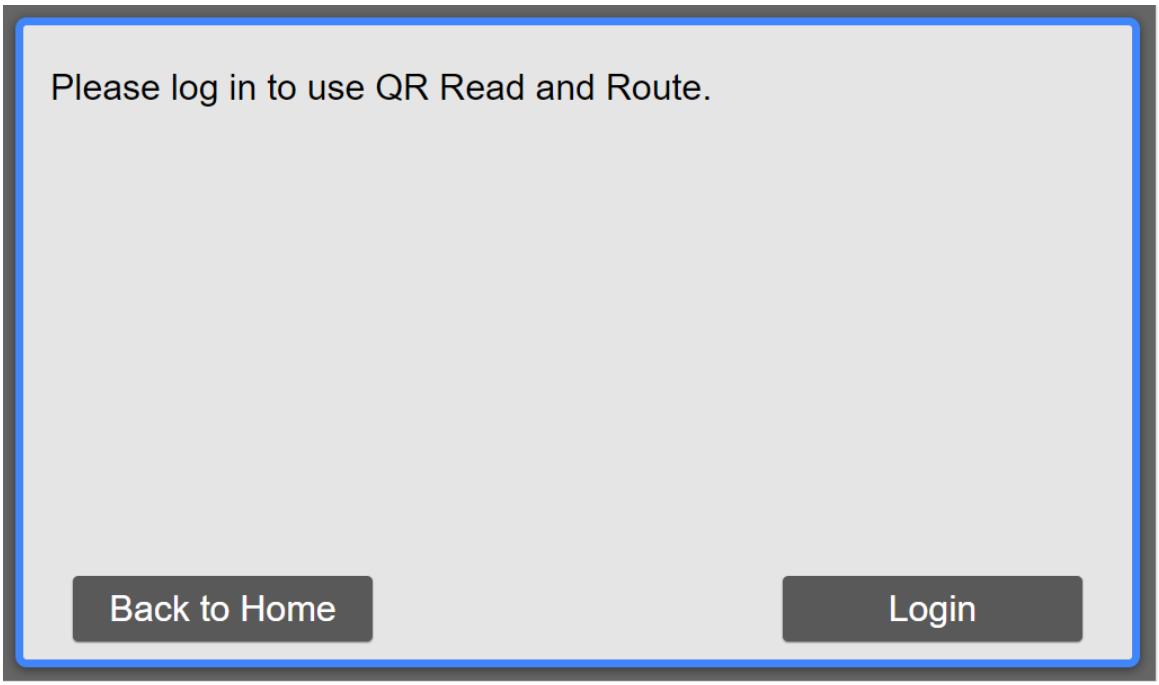


After administrator login subscribed application will be displayed



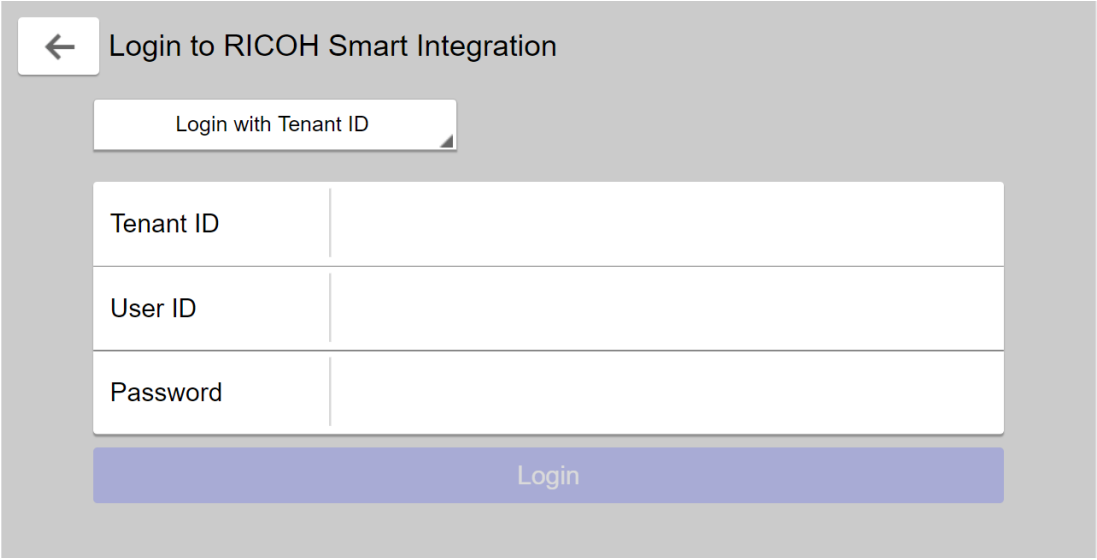
Select 'QR Read and Route' application.

End User is requested to Login. Press 'Login' Button to Login.

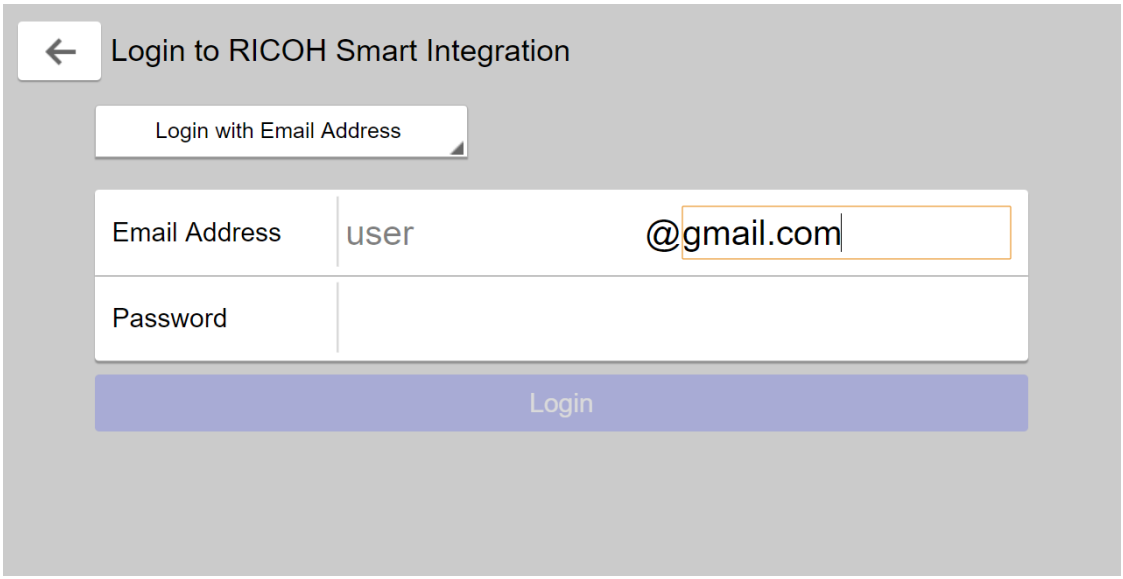


Users need to login to the site either using Tenant ID, User ID and Password or Email address and password.

Option 1: Login with Tenant ID



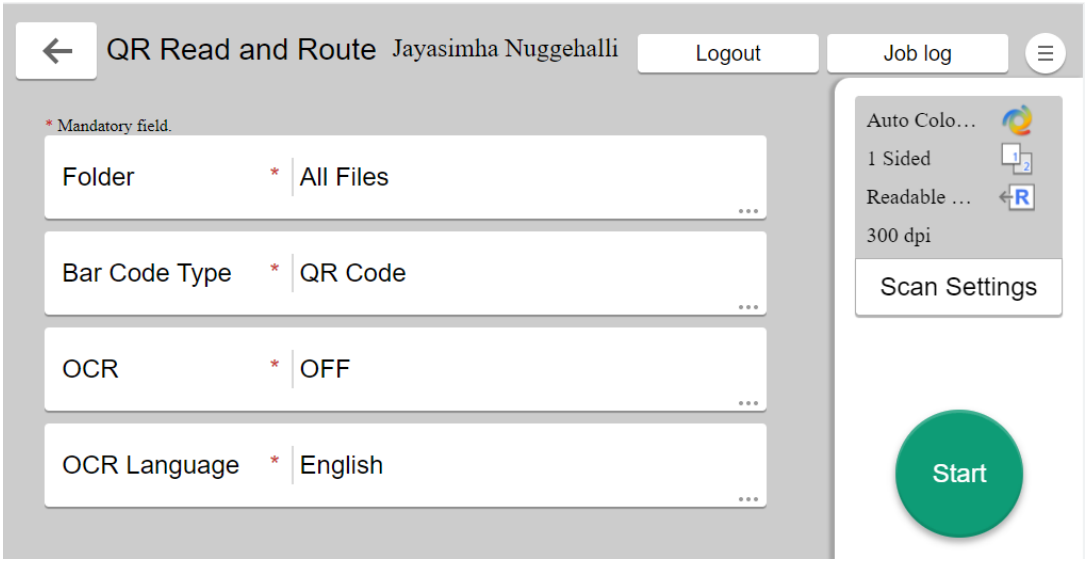
Option 2: Login with Email Address



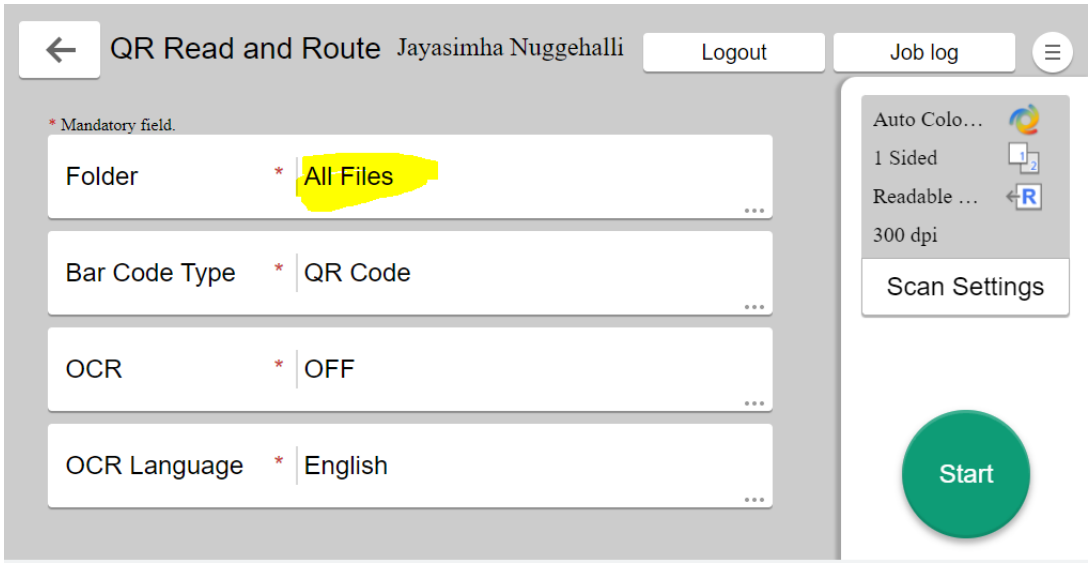
After successful user login 'QR Read and Route' Application Screen is displayed

Following Settings are available:

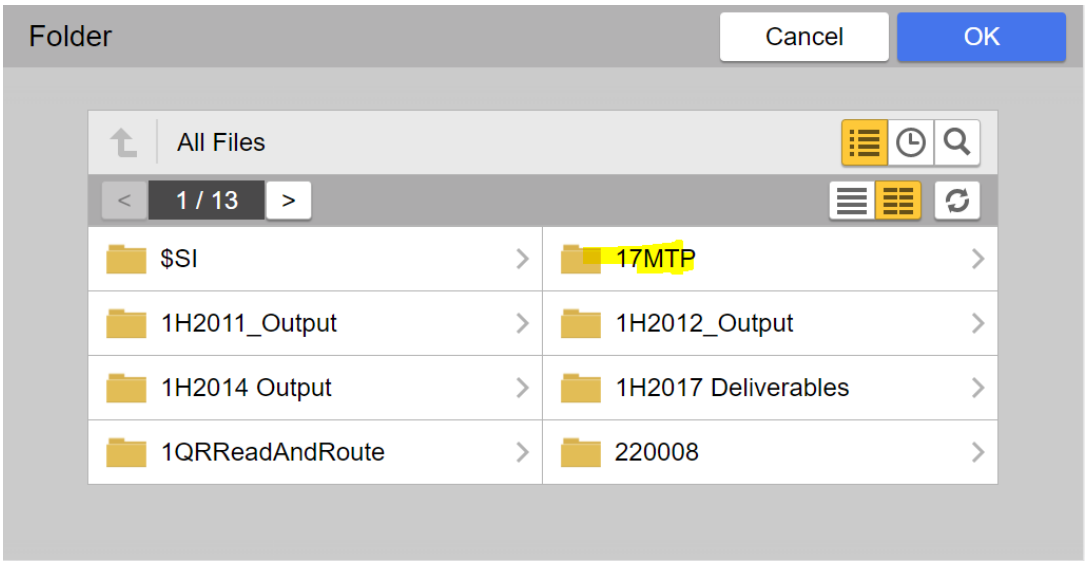
A. Folder [Root Folder for Scanned Documents, a sub folder under the root folder is created based on the data in QR Code]
B. Barcode Type: QR Code, Datamatrix
C. OCR [Off, PDF, PDFA,WORD,EXCEL]
D. OCR Language [English, French, Spanish, Portuguese Brazilian]



Folder

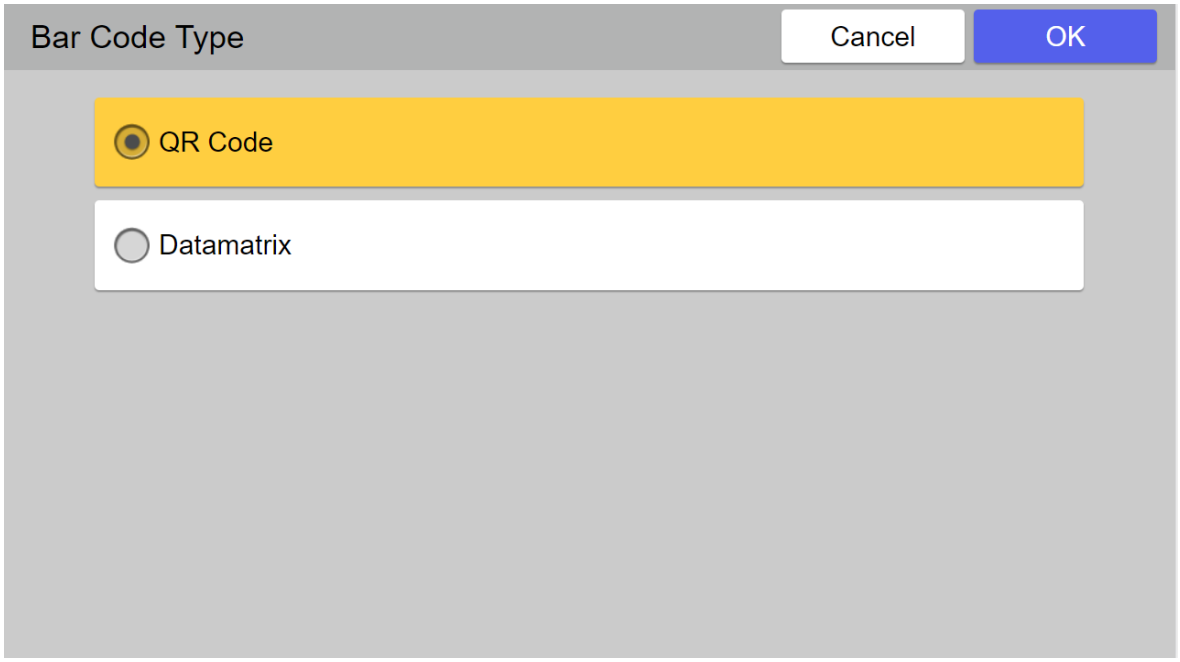


Touch on 'All files' to open folder browsing dialog and then select desired folder



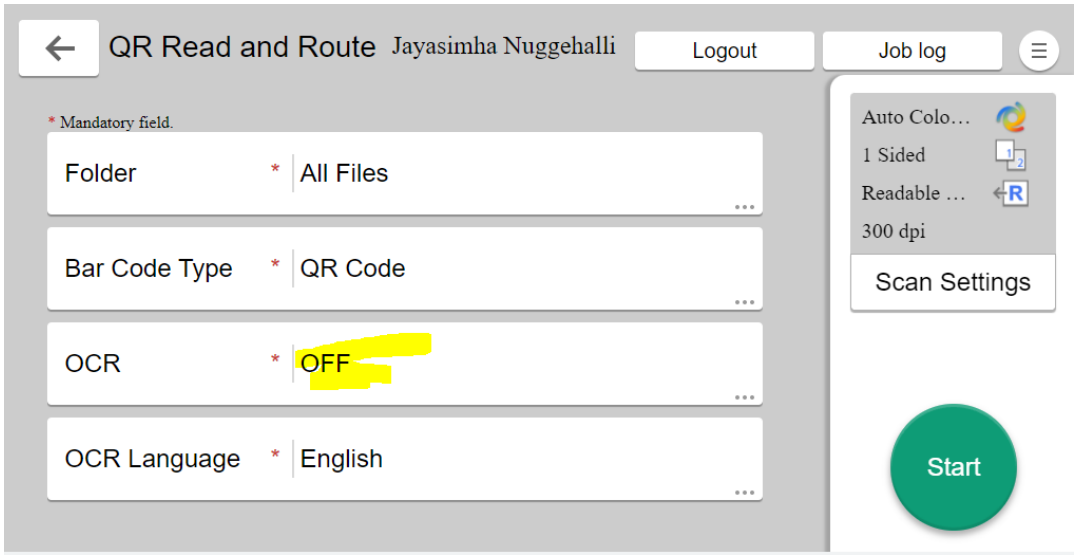
Bar Code Type

Touching on Bar Code Type, selection field displays available Bar Code Options

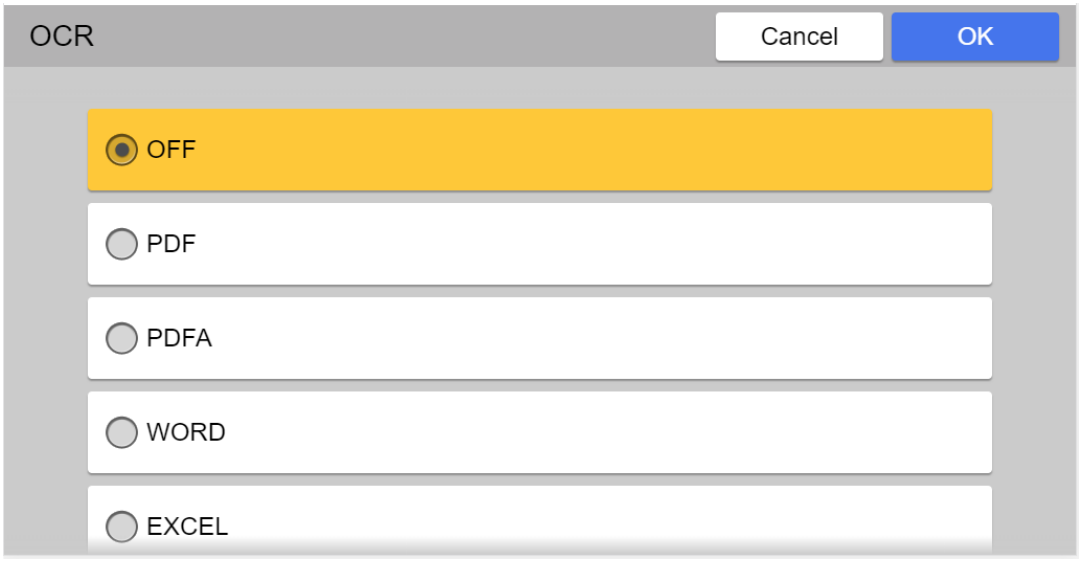


Select the desired Barcode type which is available on the document to be scanned.

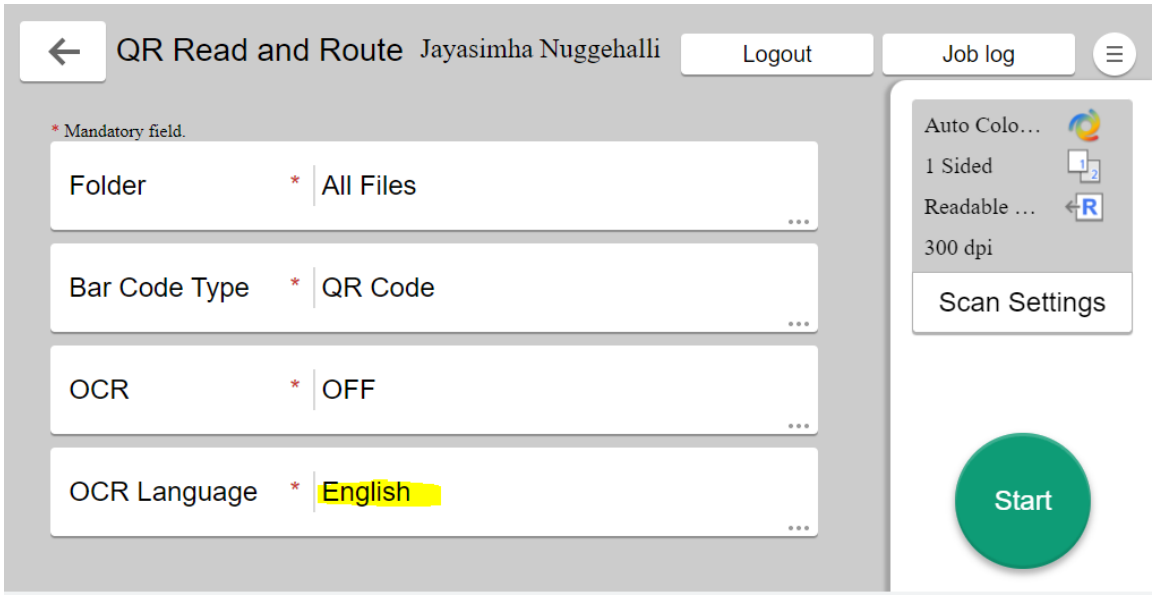
OCR



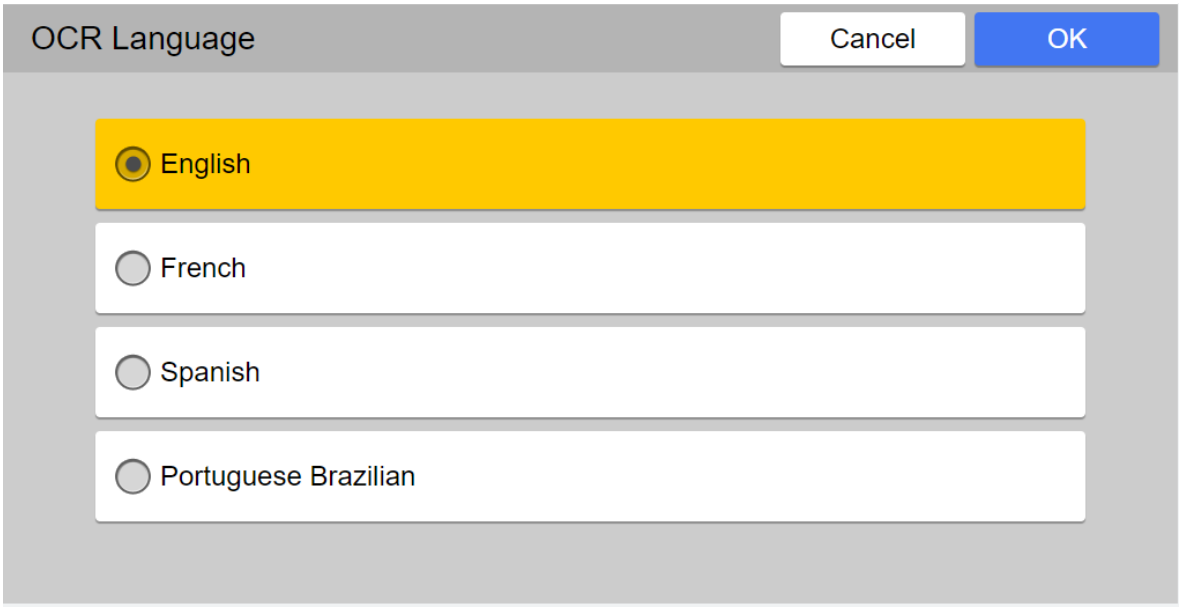
Touch on OCR to select available options



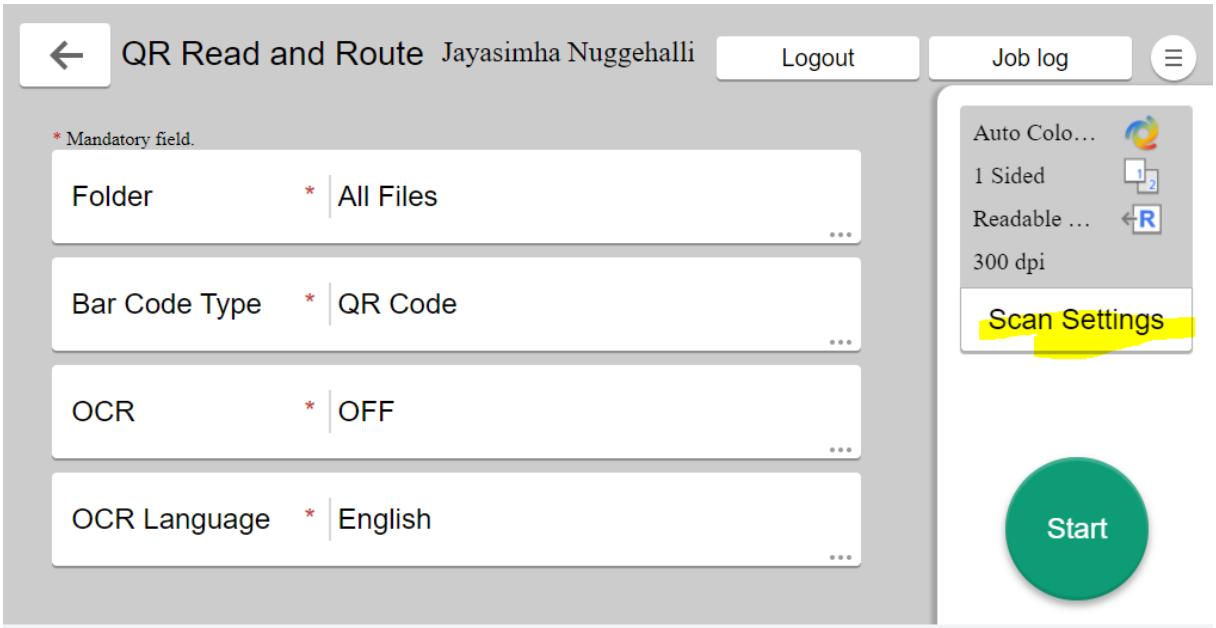
OCR Language



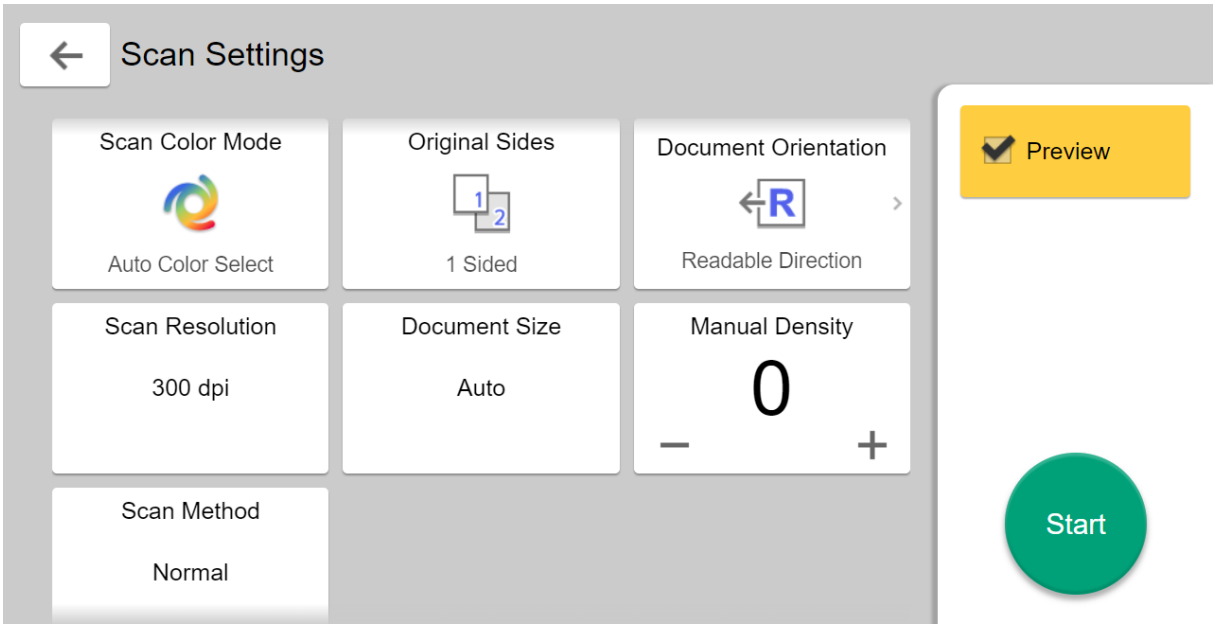
Touch on OCR Language to select available options

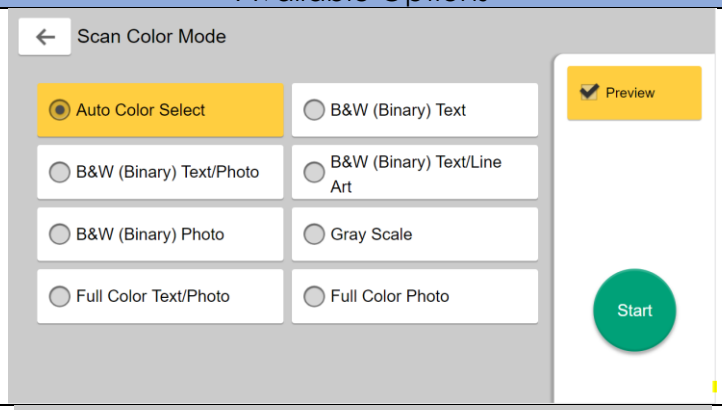
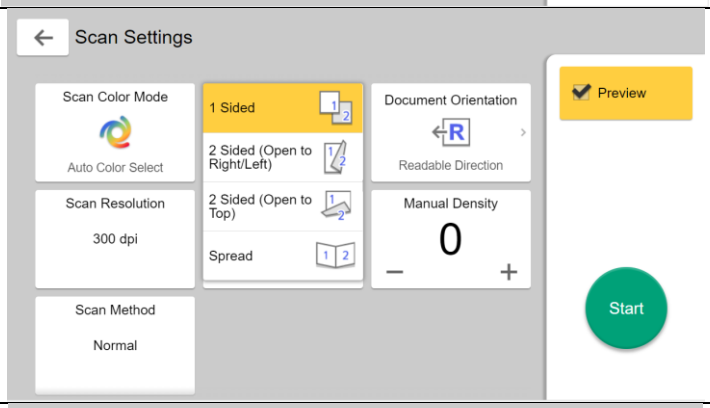
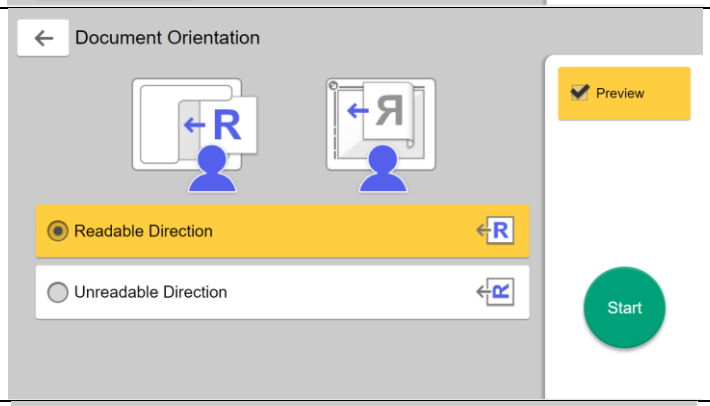
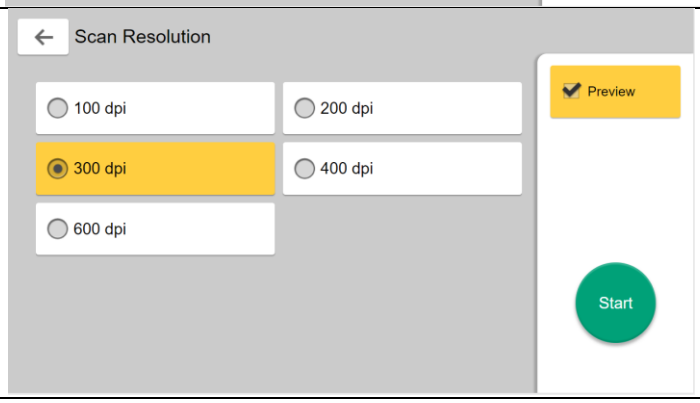


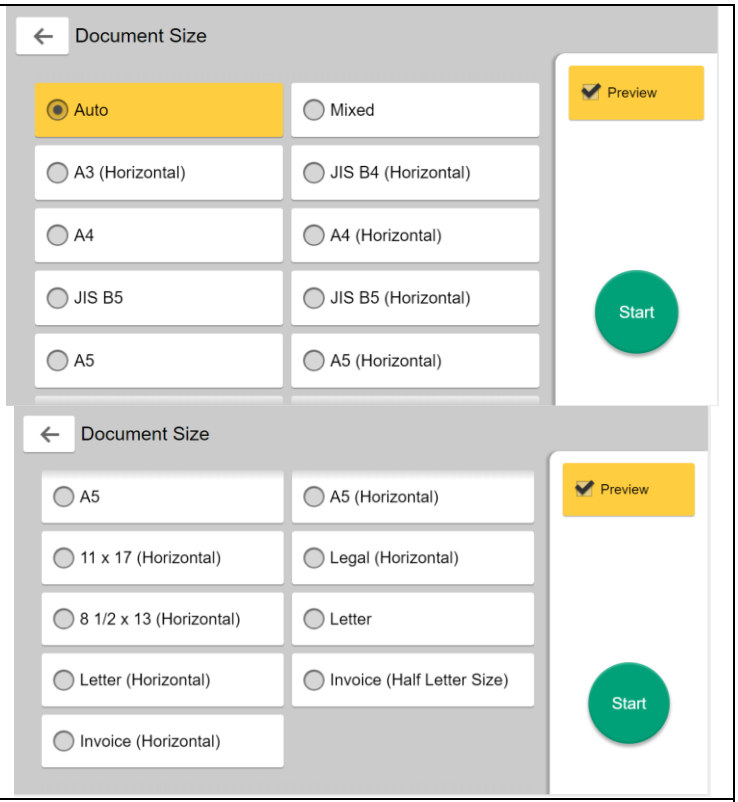
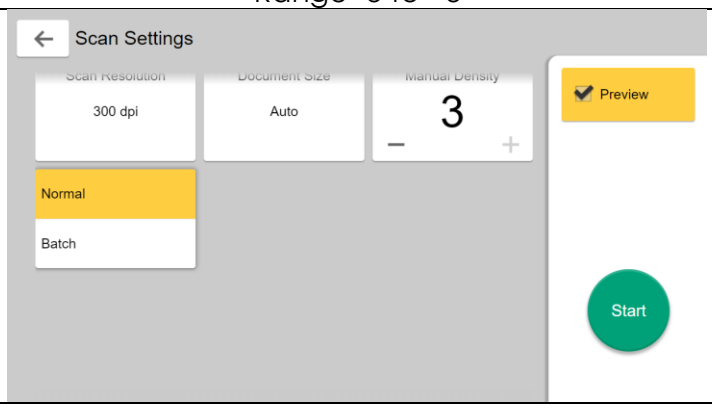
Scan Settings



Touch on 'Scan Settings' to display Scan Settings Screen

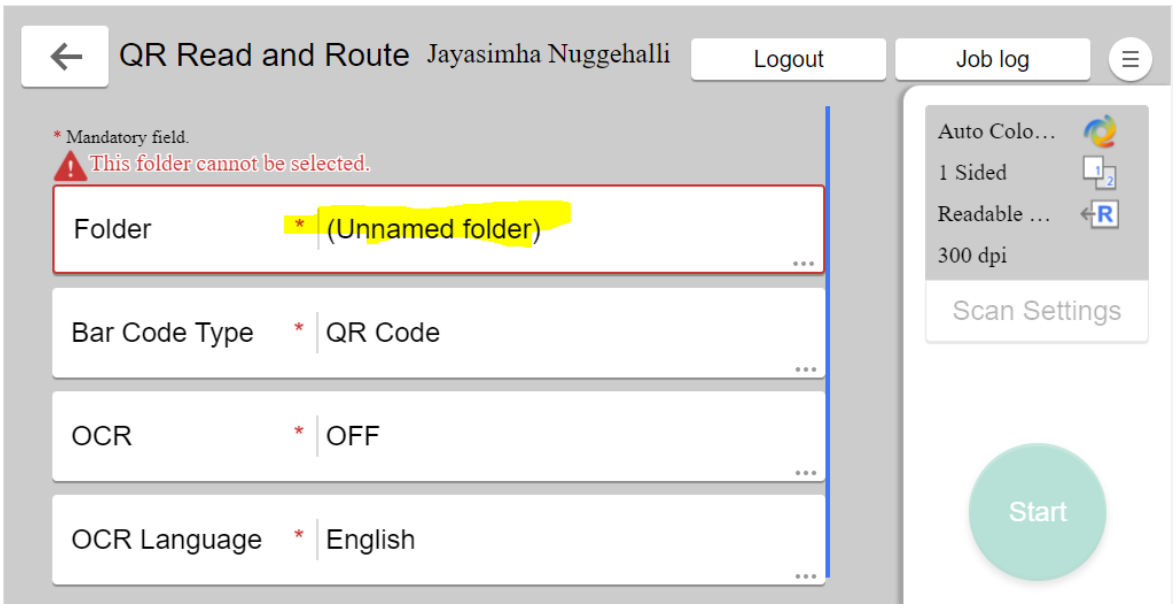


Scan Settings	Available Options
Scan Color mode	
Original Sides	
Document Orientation	
Scan Resolution	

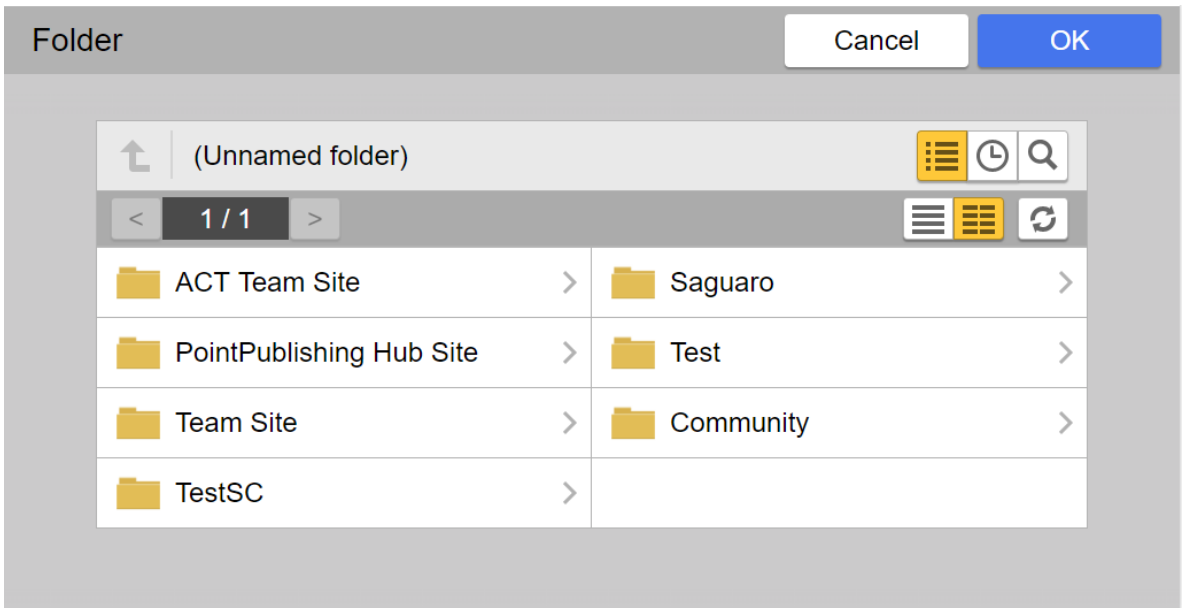
Document size	
Manual Density	Range -3 to +3
Scan Method	

6 SharePoint QR Read and Route

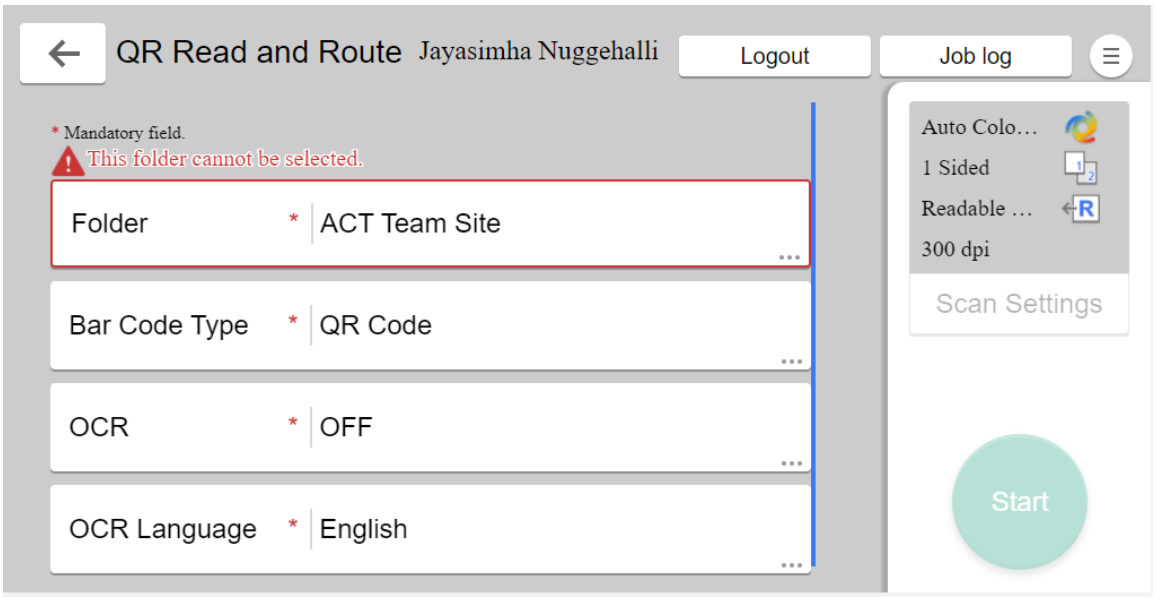
Note: Box, Dropbox, Google Drive, OneDrive for Business services, have a root folder. So, if user does not select folder, document gets scanned to root folder or default folder set in User Site. In the case of SharePoint, it is necessary to Select a Site and Library/Folder under the site, by browsing.



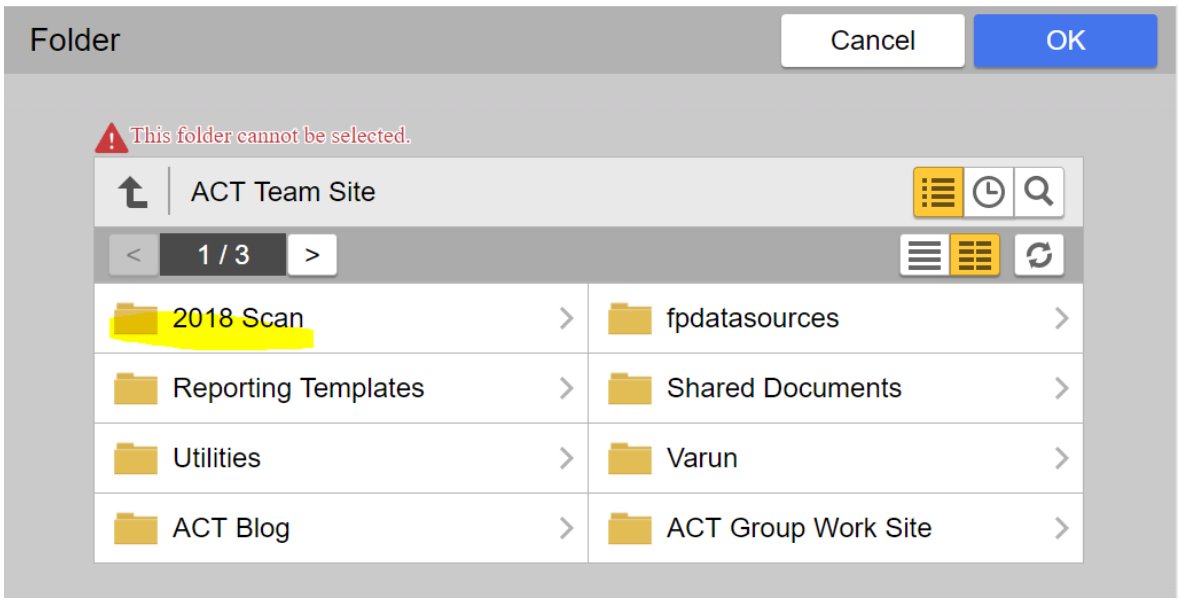
Touch on '(unnamed Folder)



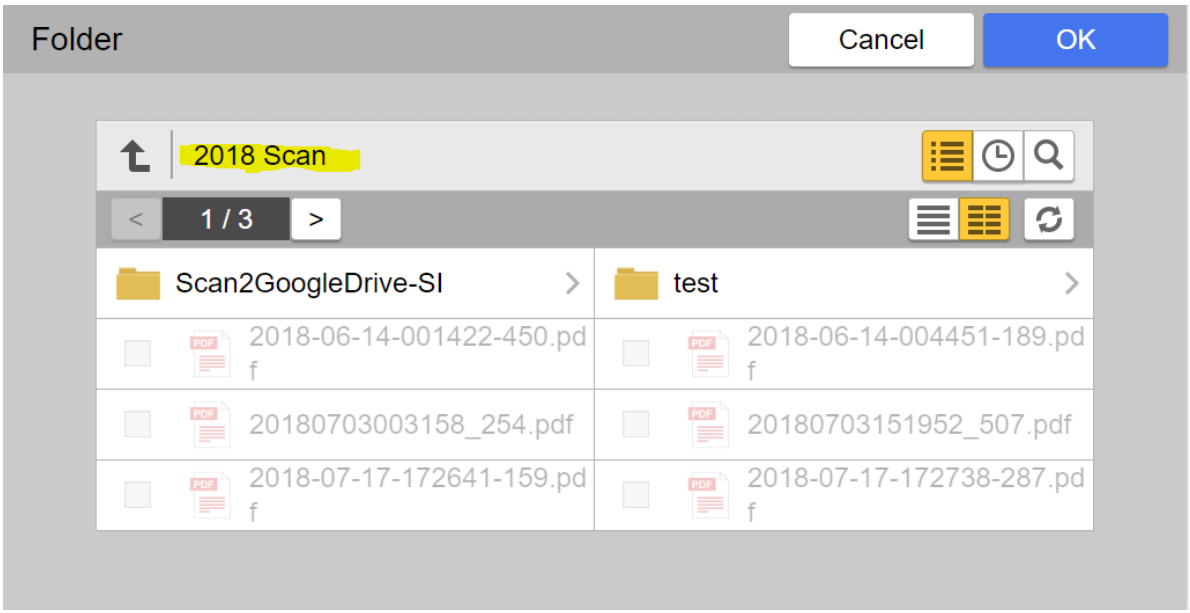
The first level listed here are sites. Document cannot be uploaded to Site; users need to select a Library/folder under a site. If users select a site, following message is displayed.



Please select a Folder listed under a site.



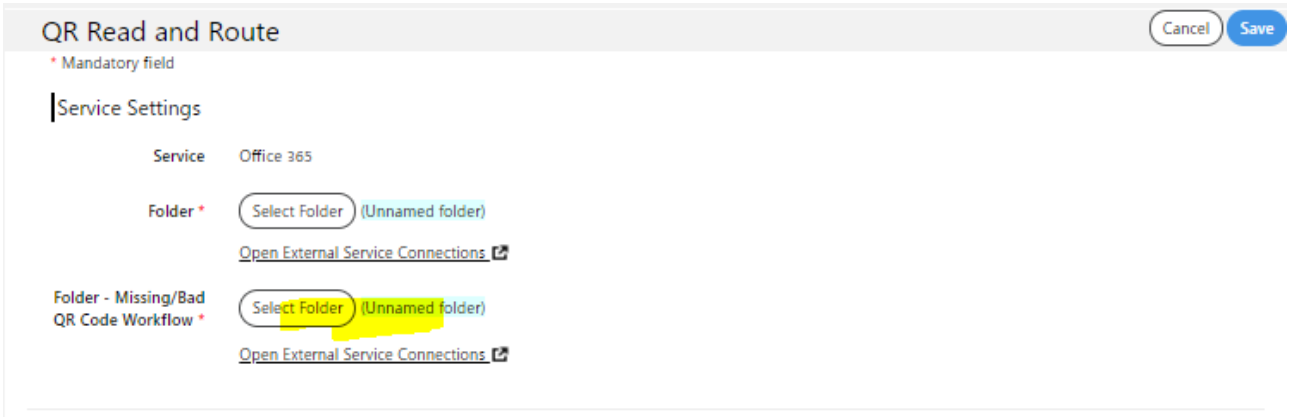
Touch on one of the folders, then touch on 'OK'



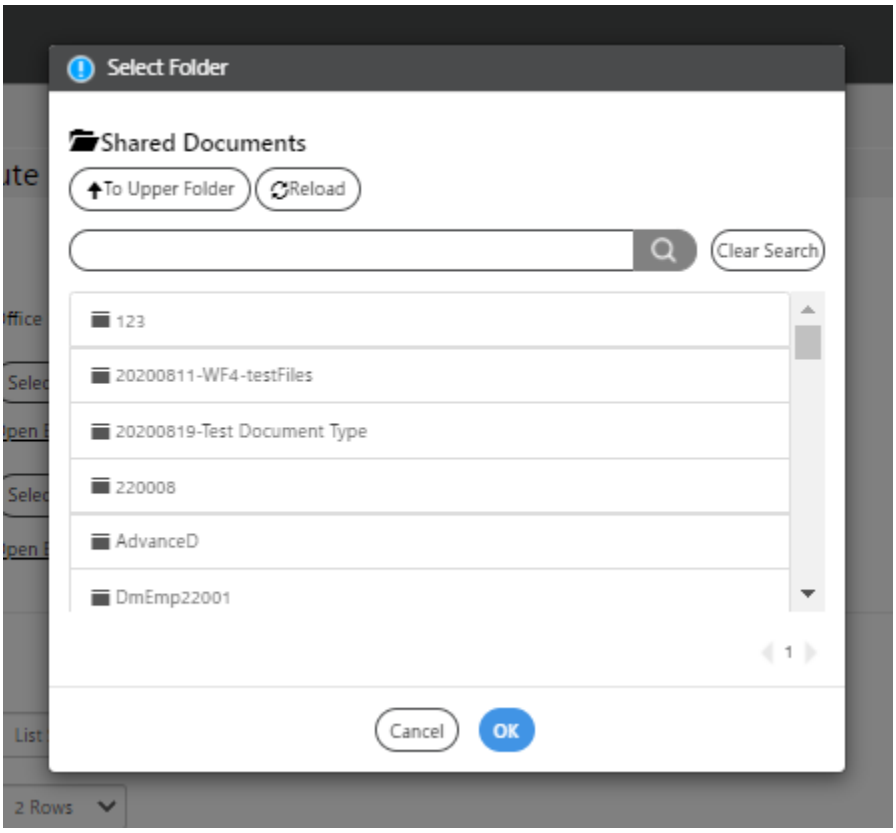
Configuring Default Error Folders in User Site

Since there is no root folder in SharePoint, it is mandatory to configure the Folders for documents, when they fail process due to invalid QR code data format or Missing/Bad QR Code. This is done in User Configuration Site.

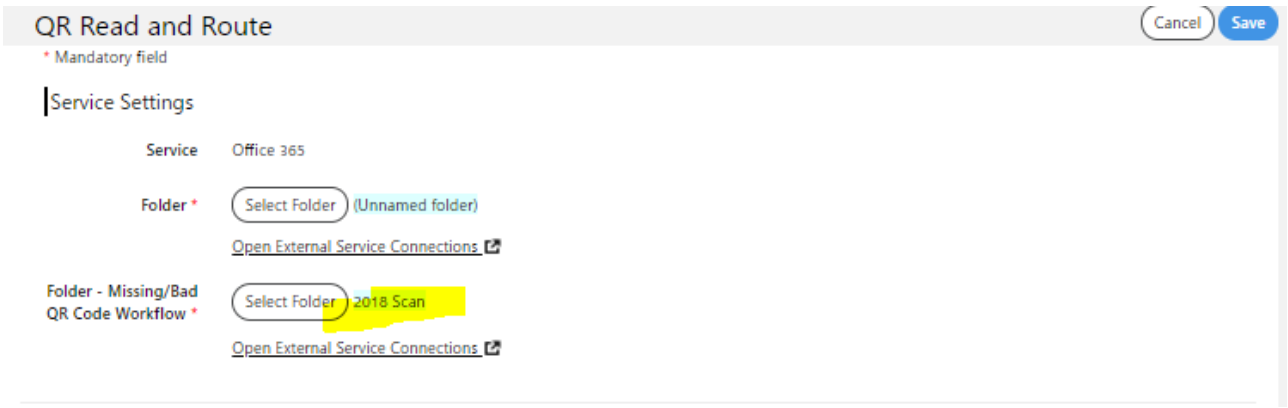
https://www.na.smart-integration.ricoh.com/



Click on 'Select Folder' to open Folder Browsing Dialog. Click on Site and then a desired folder and Click 'OK' to select folder.



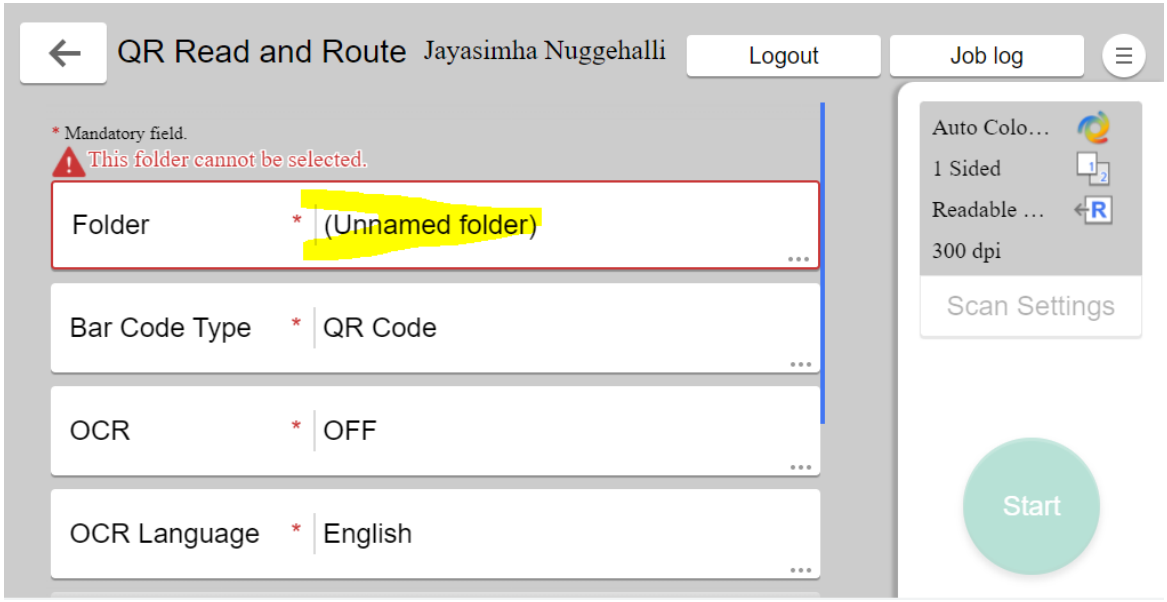
Once Configured, Selected folder is displayed.



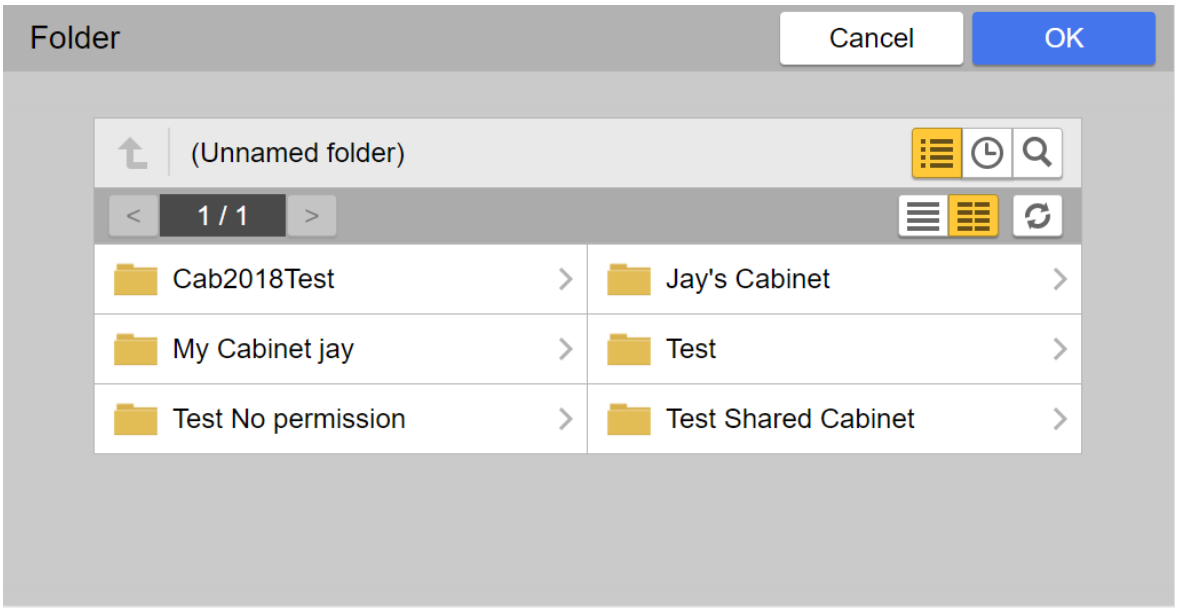
7 RICOH Content Manager QR Read and Route

Note:

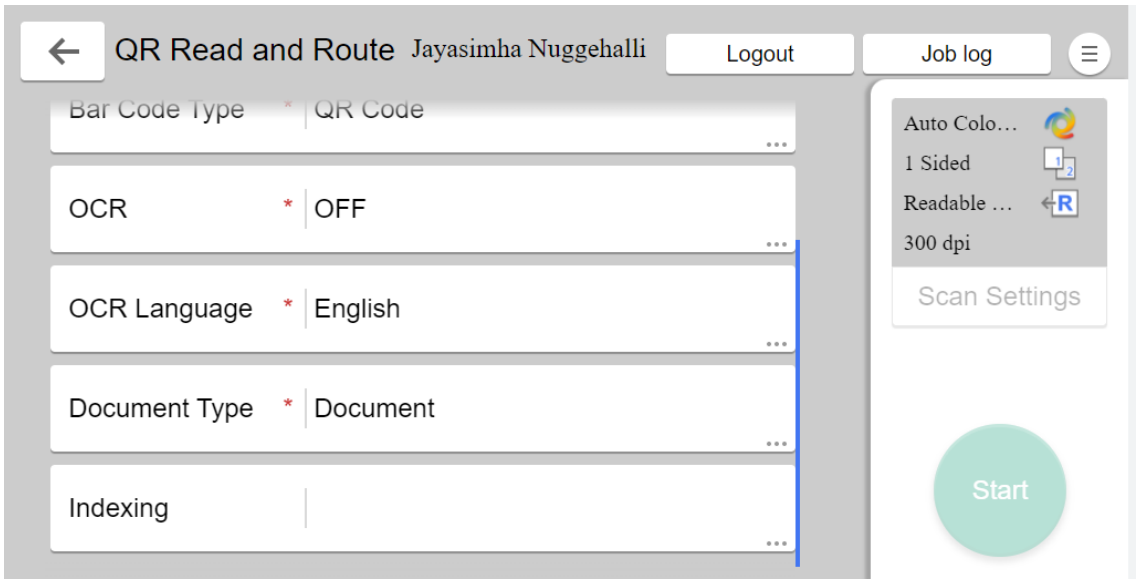
1. Box, Dropbox, Google Drive, OneDrive for Business services, have a root folder. So, if user does not select folder, document gets scanned to root folder or default folder set in User Site. In the case of Ricoh Content Manager, it is necessary to Select a Cabinet first by browsing.
2. RICOH Content Manager Supports Indexing feature, User can select a Document Type and also set index values, based on what is configured in RICOH Content Manager



Touch on '(unnamed Folder)



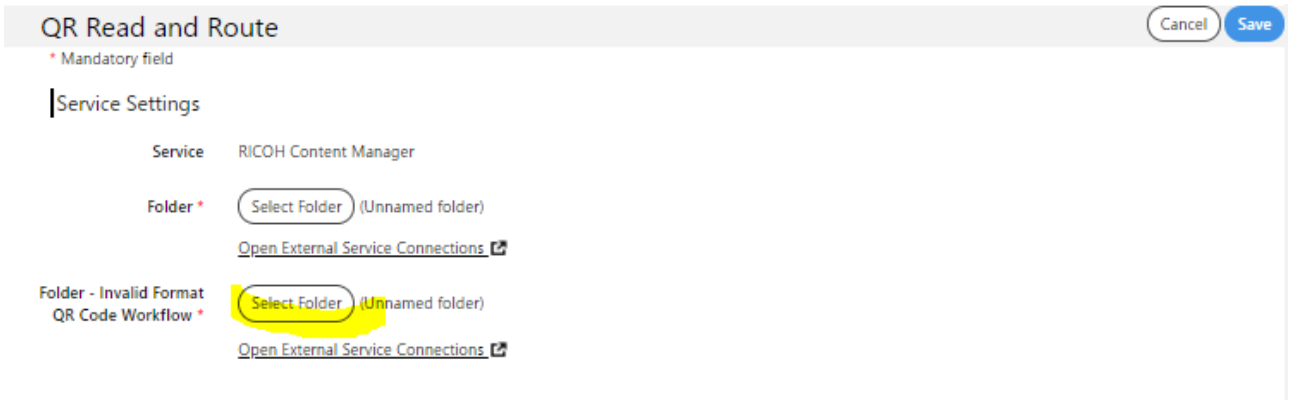
The first level listed here are Cabinets. Users need to select Cabinet or a folder under Cabinet. Please touch on 'Cabinet' then touch on 'OK'.



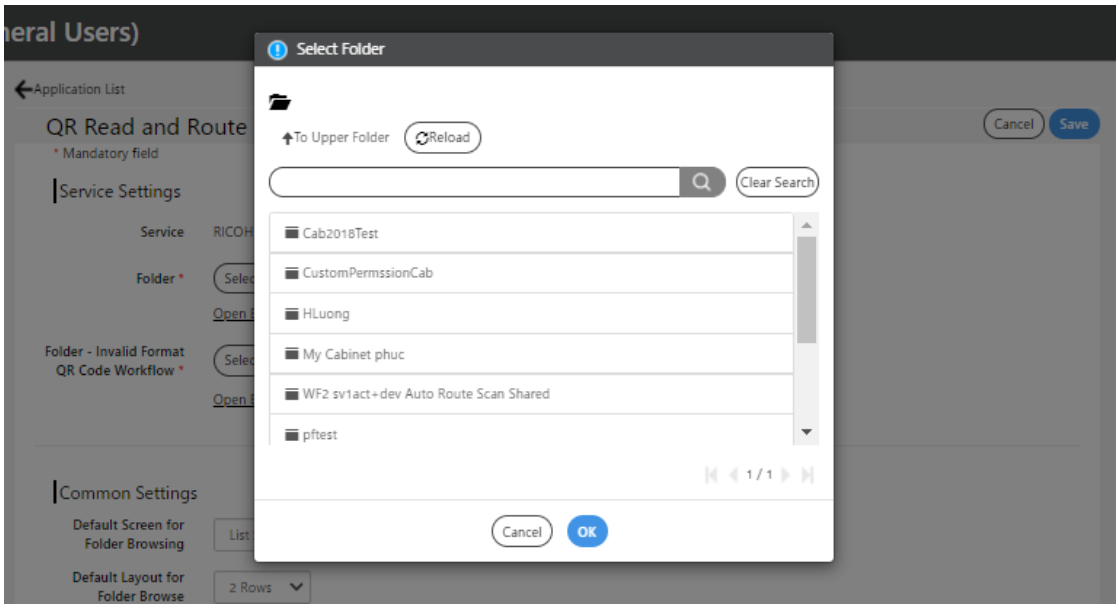
Configuring Default Error Folders in User Site

Since there is no root folder in RICOH Content Manager, it is mandatory to configure the Folders for documents, when they fail process due to invalid QR code data format or Missing/Bad QR Code. This is done in User Configuration Site.

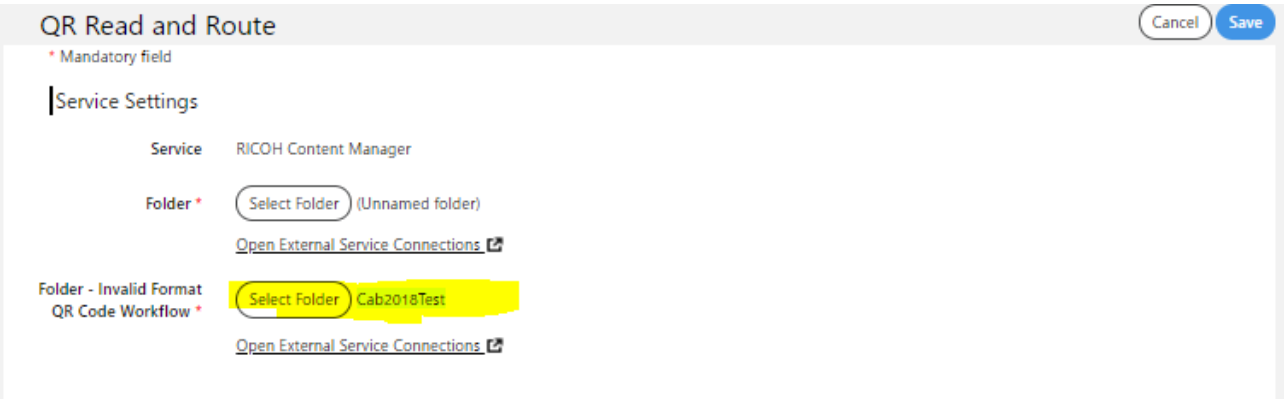
https://www.na.smart-integration.ricoh.com/site/home



Click on 'Select Folder' to open Folder Browsing Dialog. Click on Site and then a desired folder and Click 'OK' to select folder.



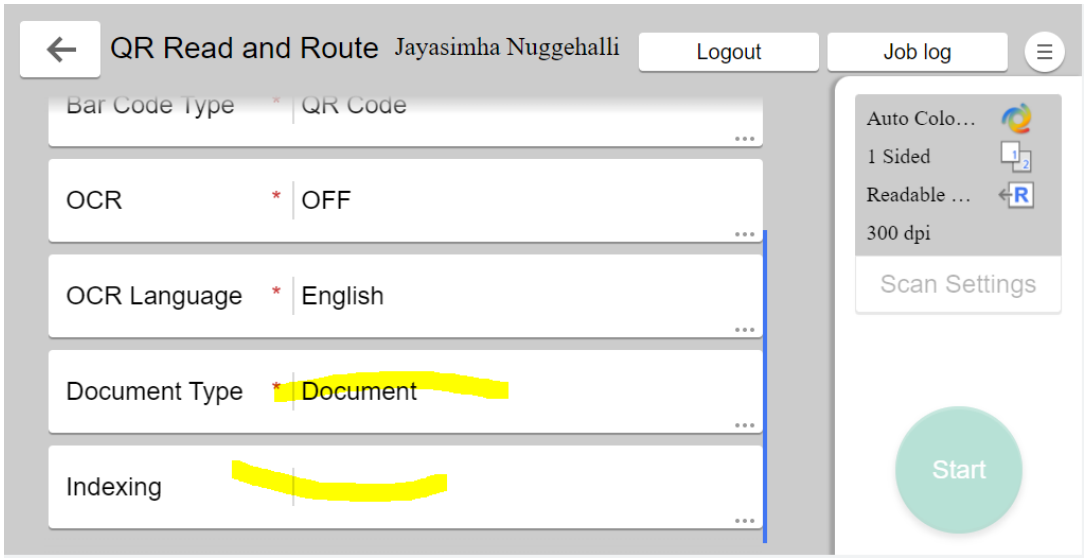
Once Configured, Selected folder is displayed.



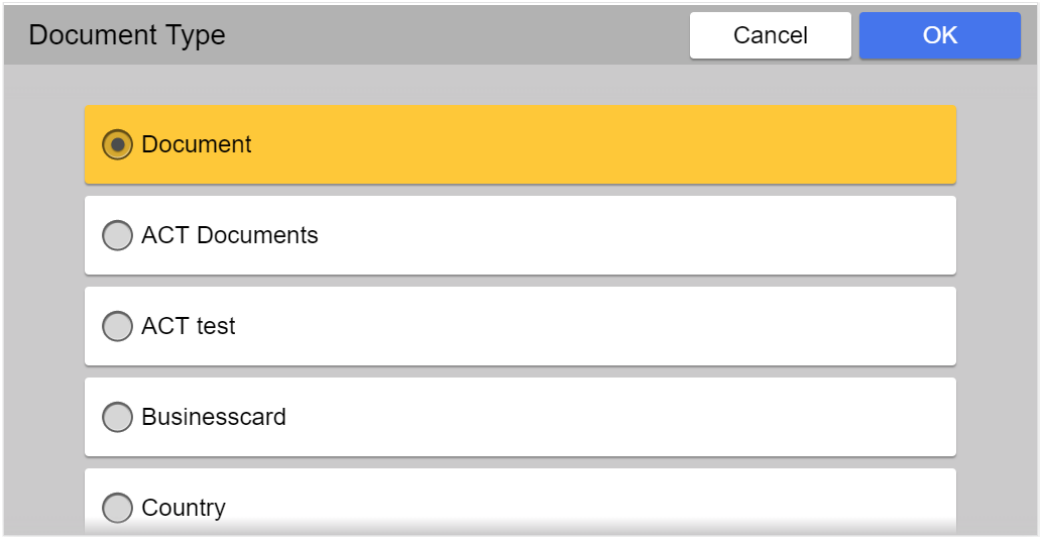
RICOH Content Manager Indexing

Document Type and Indexing settings are available in RICOH Content Manager. Administrator of RCM will configure Document Types and associated indexing values.

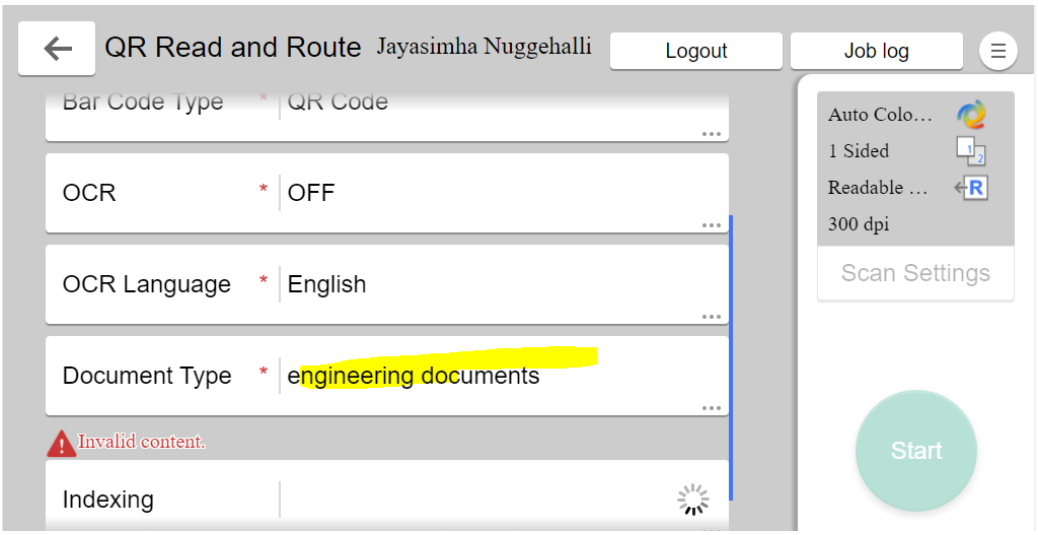
QR Cover Read and Route displays available Document Type and associated indexing values. Users can select Document Type and indexing values before scanning.



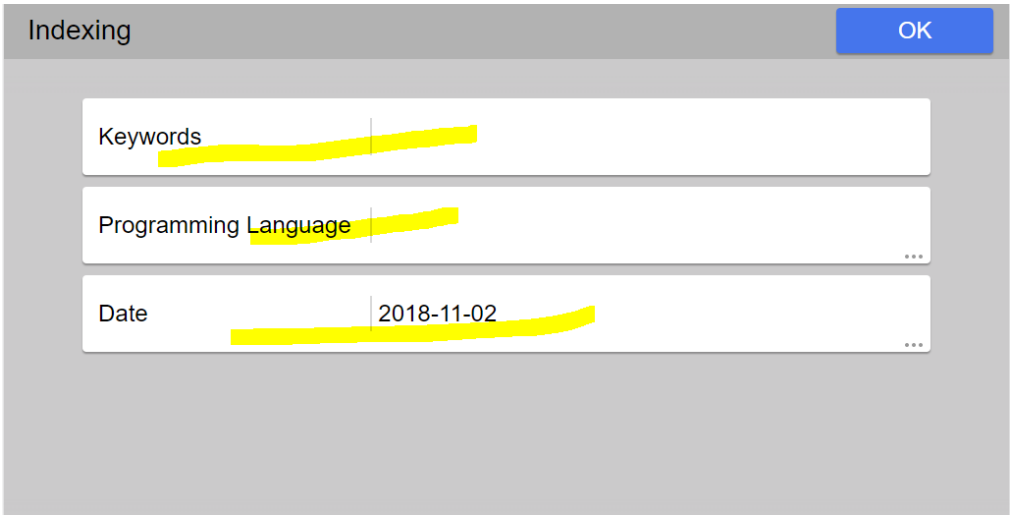
Touch on 'Document Type' this will display available Document Types



Select desired 'Document Type'

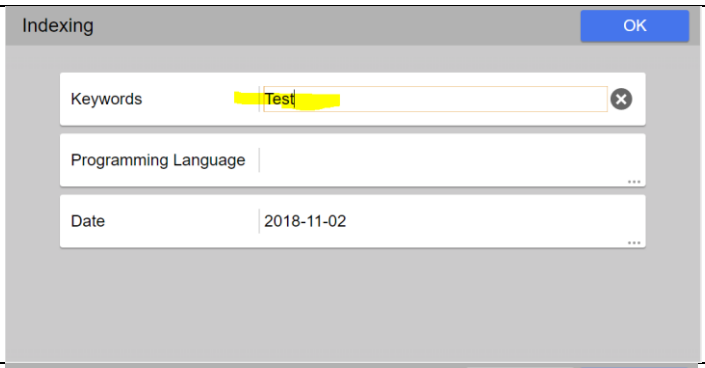
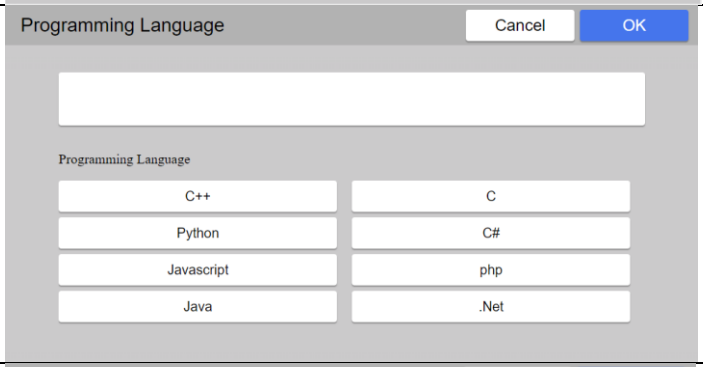
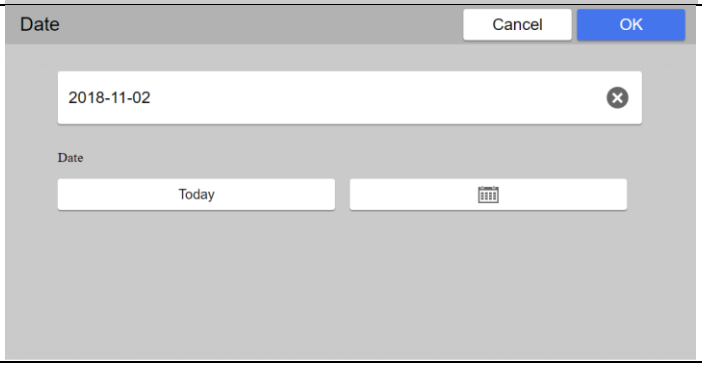


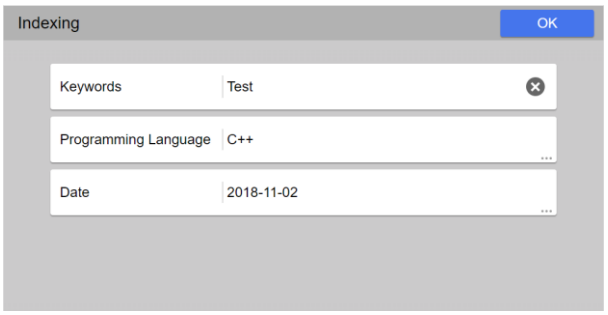
Touch on 'indexing' this will display indexing values related to selected 'Document Type'

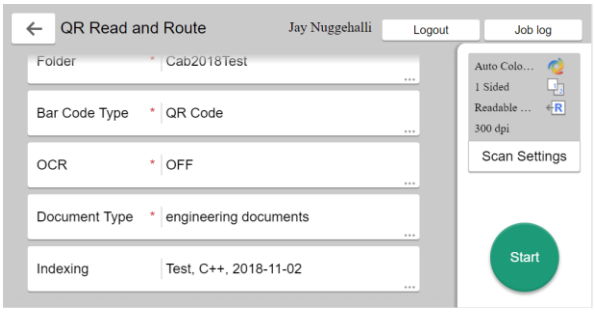


Depending on the type of values, different user input interface will be displayed.

Details of indexing values are shown below.

Keywords Type: Textbox		
Programming Language Type: List		
Date Type: Date		





8 Limitations

QR Read and Route Limitations

- Following characters are not supported for folder and filename creation. Using these characters in employee number and work order number in QR code data is invalid. Since these values are used to create folder and filename.

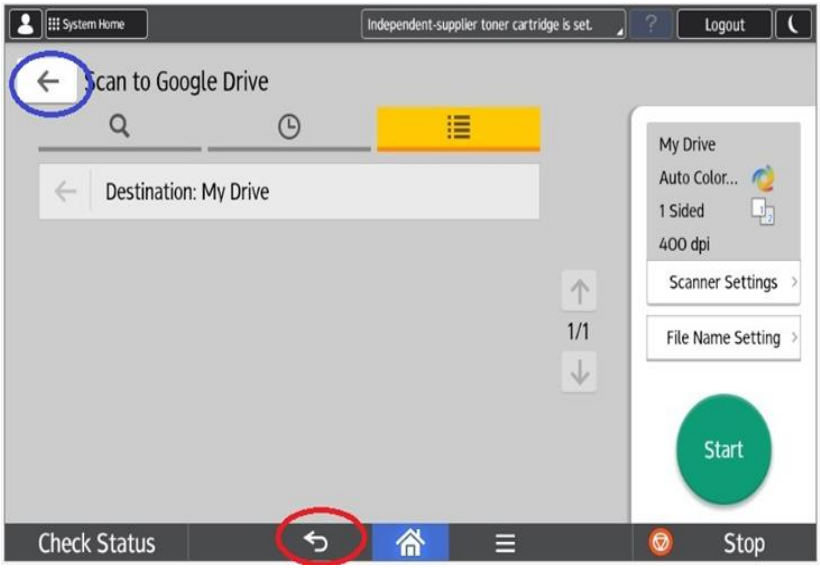
  ~"#%&*:<>?/\{|}
- If Scanned document is missing QR Code or QR code has invalid data, scanned document is uploaded to 'temp' folder.
- QR Read and Route supports up to 200 MB of Scan file size or 500 Pages whichever is lower. This is due to file size limitation in Bar Code recognition module

User Site Limitations

- Supported Browsers for User Site are:
  - Internet Explorer: 11 or later
  - Edge: Latest Version
  - Chrome: Latest Version
  - Firefox: Latest Version
- Limitations for Home Screen/Applications
  - Home: Maximum 20 for each profile, Max 32 characters for the name.
  - Applications: Maximum 18 for each home screen, Max 32 characters for the name
- User Management
  - Email address is unique in the system; same Email address cannot be used even if user belongs to different Tenants
  - Users belong to same tenant cannot set different time zones
  - User cannot change their login Email address, need admins assistance to change email address

General Limitations

- Once Administrator has logged in to a Tenant on MFP, administrator from another tenant cannot login to same MFP. Refer to guide on 'How to remove registered device'
- Back button inside application display screen must be used, instead for 'Back' button on the operation panel.



- Folder and File Search results varies from Cloud Service to Cloud Service, this depends on the Search API for each service.

OCR Limitations

Category	Phenomenon	Description
Upside-down image rotation	Sometimes misrecognized	We identify the top and bottom from the image as pre-processing of OCR. We use information such as the direction of arrangement of letters, letter / picture / chart layout, ruled line position, etc. to infer which is upper. In the case of the following manuscripts, the OCR may also fail because the top / bottom discrimination fails. · Manuscript with only few letters · Manuscript with characters written diagonally · Documents with a dark background / background such as photos
OCR	Unusual fonts cannot be recognized	In OCR, it is based on standardly used fonts such as Arial / Verdana / Times New Roman for foreign languages, MS Ming Dynasty / MS Gothic / MS UI Gothic for Japanese. Therefore, recognition may fail in the following cases. · Using a special font · Using extremely large / small font size
	Input image is not clear	Although 200 dpi to 600 dpi is recommended for engine specifications, if the recognition rate is bad at 200 dpi, please raise the resolution and scan again. Also, if the input images are blurred or are not enough contrast, the recognition rate will not improve. Please use clear images.
PDF output	Output size is different	Due to the limitation of the current engine, the size of the output PDF page may increase by about 0.3 to 1.7 mm.

	Sometimes impossible to print with EXP machine	When you print PDF with Japanese OCR by EXP machine, if alternative font is not installed in MFP, it may not be printed correctly.
Word output	Layout collapse	The OCR engine writes the character string of the recognition result as Word text and uses the font size / font type / line spacing / text width etc. to try to make it as close to the original as possible, but it is difficult to match with the original perfectly. Therefore, the following phenomena may occur. ・Although the manuscript was 2 pages, it became 3 pages / 1 page ・Margins increase or decrease
	The number of blank pages increases	If you input multiple pages and try to output them in Word, blank pages sometimes increase.
	Sometimes the footer's page number is incorrect	When outputting a document with a page number in the footer section as an input, Word automatically counts the page count and may be out of alignment with the page number of the document. Example: Manuscript: 2 pages of 3/8, 4/8 Word output result: 2 pages of 1/2, 2/2 (Since there are only 2 pages, Word automatically judges 2 pages, 8 replaces 2 and redoes the page)
	Doc format, that is created by OCR, cannot be displayed in iOS UIWebView	It is said that iOS does not officially support doc / xls etc., it may not be displayed normally on iOS machines. This is because the OCR function creates data in RTF format and then outputs it to doc format. Please use docx / xlsx.

	Sometimes blank page is removed	In decision of the current OCR engine, blank page is sometimes removed. So, for example, 4 pages sometimes become 3 pages.
	Cell color/ Frame border are lost	For Word output, the color of the cell or the frame border of the table are lost during the transfer.
Excel output	Color / figure / photo are lost	For Excel output, the color of characters is not reflected. Also, figures and photographs are not reflected. With regard to the part recognized as table, OCR engine uses the cell ruled line / cell combination to create table.

9 Appendix

File Name Formula

Formula functions are similar to Microsoft Excel Formulas. Not all Excel functions are relevant and supported.

Following variables from the workflow application are available to use in the formula

1. TenantId [Smart Integration Tenant ID]
2. UserId [Smart Integration User ID]
3. employee_number [From QR Code]
4. workorder_number [From QR Code]

Data format in QR Code:

employee_number:workorder_number

Sample Formulas

Formula	Result
YEAR(NOW()) & "-" & MONTH(NOW()) & "-" & DAY(NOW()) & "-" & HOUR(NOW()) & MINUTE(NOW()) & SECOND(NOW())	2018-12-21-102657
YEAR(NOW()) & "-INVOICE"	2018-INVOICE
_[UserId] & "-" & YEAR(NOW()) & "-" & MONTH(NOW()) & "-" & DAY(NOW())	TOM-2018-12-21
_[workorder_number] & "_" & "completed"	220100_completed
_[workorder_number] & "_" & _[employee_number]	220100_33001
_[workorder_number] & "_" & TEXT(TODAY(), "mm-dd-yyyy")	220100_01-08-2019

Formula Functions

Formula Evaluation is based on Open Source, Apache POI

Note: Please see link below. All formulas listed may not be relevant to workflow application. Here is list of formulas.

http://poi.apache.org/components/spreadsheet/eval-devguide.html