

Oracle® WebCenter Forms Recognition

OAN AP WFR Project Reporting Version 1.0.0

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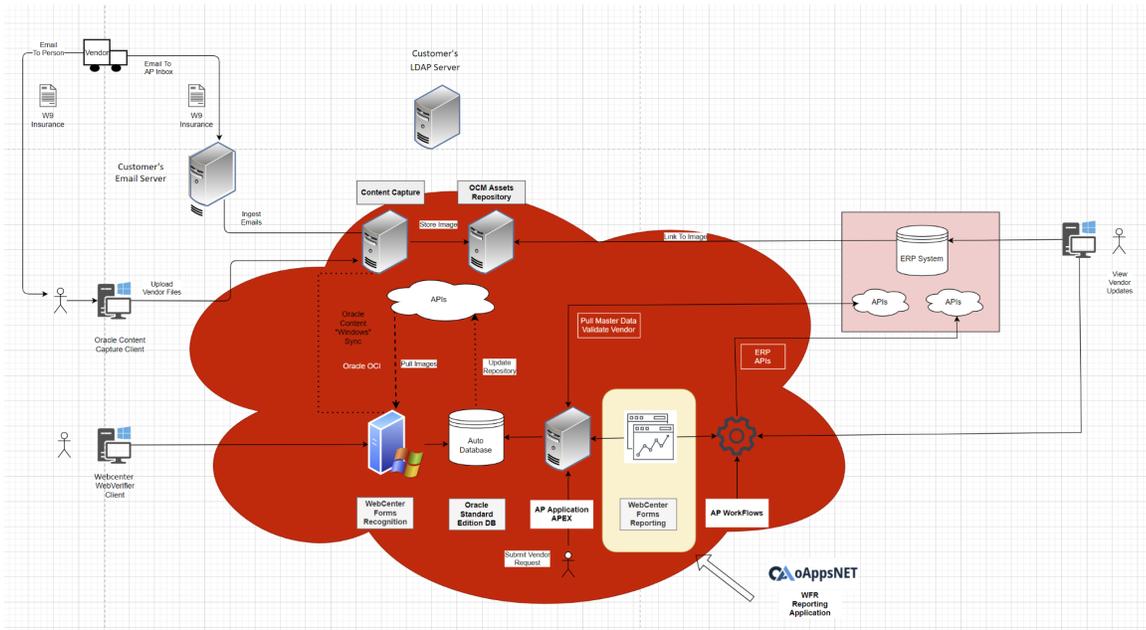
Introduction

While Oracle WebCenter Forms Recognition (WFR) does not, in itself, provide any reporting capability, the AP Packaged Project can be configured to generate comprehensive reporting data that can be used to create reports.

This AP Project Reporting application is an example of any Oracle Application Express (APEX) solution that uses the latest Oracle APEX application to provide a number of sample reports, based on the data generated by the AP Packaged Project.

APEX is a no-cost, low code development tool for building web applications on an Oracle database.

The AP Project Reporting application is freely distributed for demonstration and educational purposes. As such, it is neither maintained nor supported by Oracle as a licensed product. The oAppsNET Group will be supporting this version of the WFR reporting application.



Allow Reporting From WFR Application

WFR Version (11.1.1.8 , 12.2.1.4, 12.2.1.4.2803) or Later

Version 1006D or later of the AP Packaged Project must be installed on WebCenter Forms Recognition version 10.1.3.5.0 or later.

1. The AP Packaged Project reporting tables must be created in an Oracle database.

WFR 11.1.1 (11.1.1.8.0 or later) Only:

If batches are stored in the database, the reporting tables should be created in the same database schema to enable the "In-Flight" reports.

2. The AP Packaged Project must be correctly configured to generate data in the reporting tables through the following INI settings:

```
REP_OP_ConnectToReportingDB=YES
REP_VL_SQLConnectionGroup=01
REP_OP_StartNewRecordForImportedDocument=YES
REP_VL_ReportingDBDocumentTable=OFRdocument
```

```
REP_VL_ReportingDBFieldTable=OFRfields  
REP_VL_ReportingDBHistoryTable=OFRdocstatus  
REP_VL_ReportingDBImageTable=OFRDOCIMAGE  
REP_OP_StoreImageInReportingTables=NO  
REP_VL_ReportingKey=URN
```

Note: Ensure that the SQLConnectionGroup is correctly mapped to a properly configured connection to the AP Project reporting tables.

Installation of Oracle APEX

3. Oracle Application Express version 20.2 or later must be installed on the Oracle database where the AP Packaged Project reporting data is stored. (WFR Schema)
4. Latest Oracle Installation or Upgrade for APEX can be downloaded here:
 - [APEX Download and Installation](#)
 - APEX schema requires access to the WFR schema (i.e. tables and views)

Installation Of WFR Application In APEX

The provided AP Reporting Application package contains all of the required files for installing the application on an existing Oracle Application Express implementation. The following steps describe how to install the application.

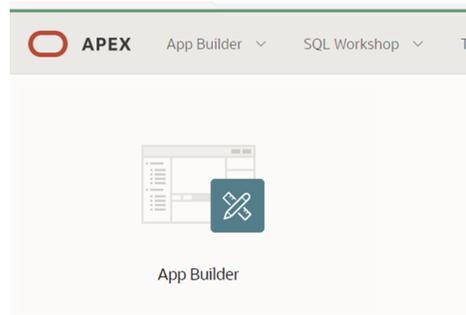
1. Ensure your APEX implementation is running version 20.2 or later. Refer to the appropriate Application Express documentation for full details about installing and/or upgrading APEX.
2. In a browser, navigate to the APEX login page:

```
http://(database server):(apex port)/apex/
```

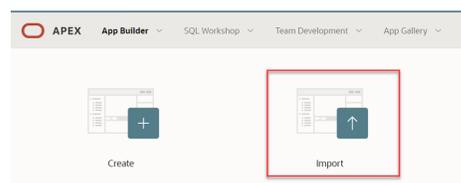
For example, the default port for APEX is “8080”, and if the name of the database is “formsrec.us.oracle.com” the URL used would be:

```
http://formsrec.us.oracle.com:8080/apex/
```

3. Optionally create a new workspace into which to install the AP Project Reporting application, otherwise go to step 5.
 4. Login to the APEX workspace where you want to install the application.
1. Import the Development APEX Application into the QA or Production environment
 - Login to QA/Prod APEX Oracle Application Express application using Admin username/password
 - Click on the App Builder icon

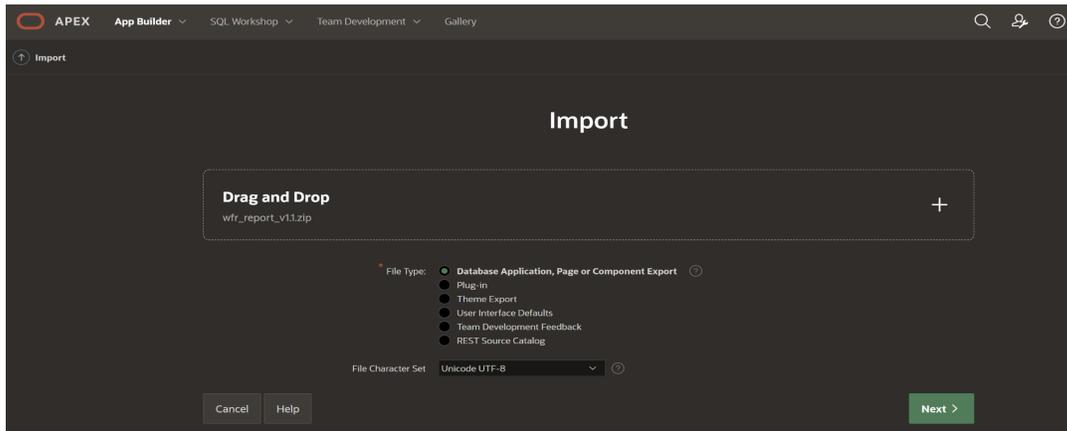


- Click on the Import icon



- Drag and Drop or click on Select a file icon to add file (wfr_report_v1.1.zip) to be imported

- File to be imported will be provided separately



- Leave all other default values and click on the Next button
- Click on the Next button on the Import page
- On the Install Database Application page, under the Install as Application option, select the “Auto Assign New Application Id”
- Click on Install Application
- On the Confirm Replace Application page, select Replace Application button

Additional DB Objects Installed

- Install will create Tables, Functions, Views and Packages required by application
- WFR_Report_Create_Tables
- WFR_Report_Function
- WFR_Report_View
- WFR_Report_Packages

The application installation is now complete. You can run the application from the Application Builder home page to test that the installation was successful, and that the pages and images are correctly displayed.

Accessing the Reports

After the AP Project Reporting application has been installed in APEX, it can be accessed directly by entering the following URL into the browser’s address bar:

```
http://(database server):(apex port)/apex/f?p=(application id)
```

For example, the default port for APEX is “8080”, and if the name of the database server is “formsrec.us.oracle.com” and the AP Project Reporting application’s ID within APEX is “100”, the URL used would be:

```
http://formsrec.us.oracle.com:8080/apex/f?p=100
```

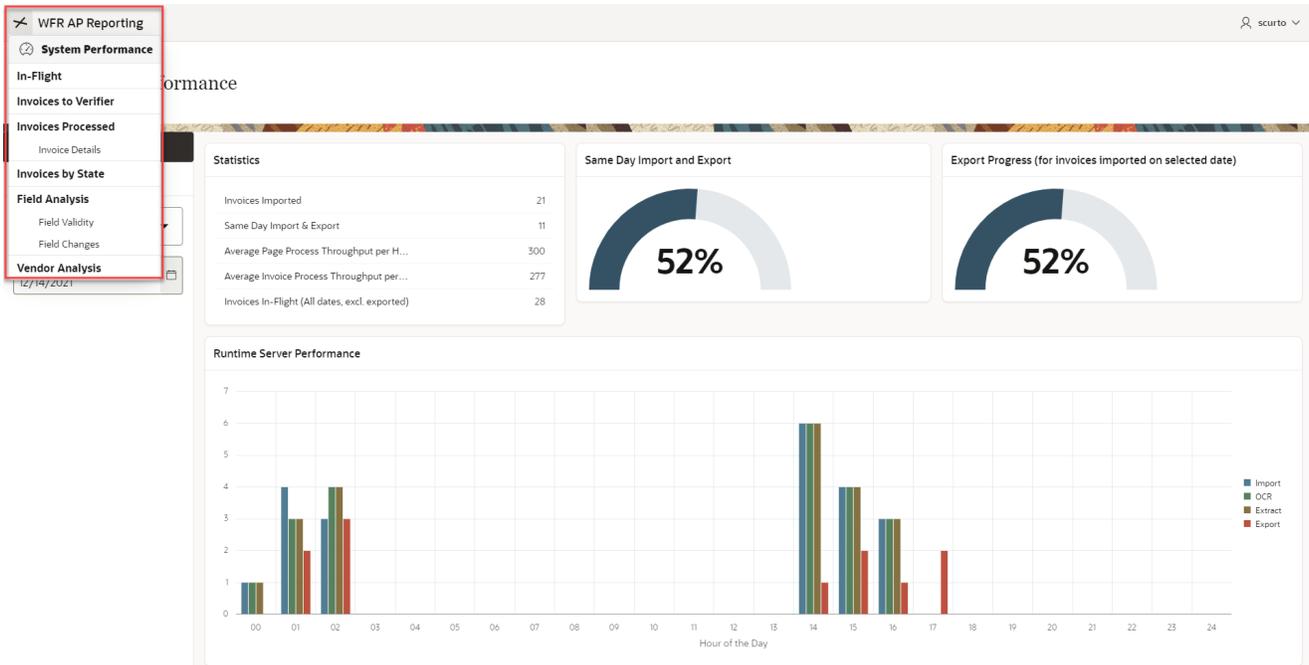
The application’s login page will be displayed. Users should login with a database user account that has at least ‘read’ permissions on the schema where the reporting tables are located.

User Guide

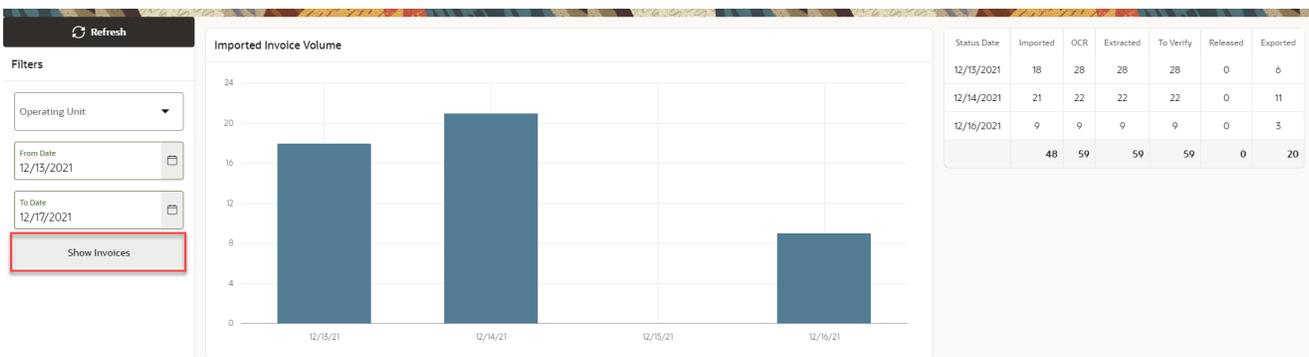
Using the AP Project Reporting Application

The following sections describe, in detail, the report pages in the AP Project Reporting application, and the individual components **for each** report.

A report is selected by simply clicking the required report within the main menu at the top left hand corner of the page. at the top of the application page, and in some cases, further pages can be viewed by clicking the “Show...” button in the selected report’s left hand Filter region,(where applicable), as shown below.



Invoices Processed



In this example, the Invoice Processed report is selected, which contains two pages. The first page, showing Imported Invoice Volume and Invoice Status by Date, will be displayed when the tab is clicked, and the second page can be selected by clicking the “Show Invoices” button in the Filter region.

The Filter region is also where the user can specify the parameters for the selected report:

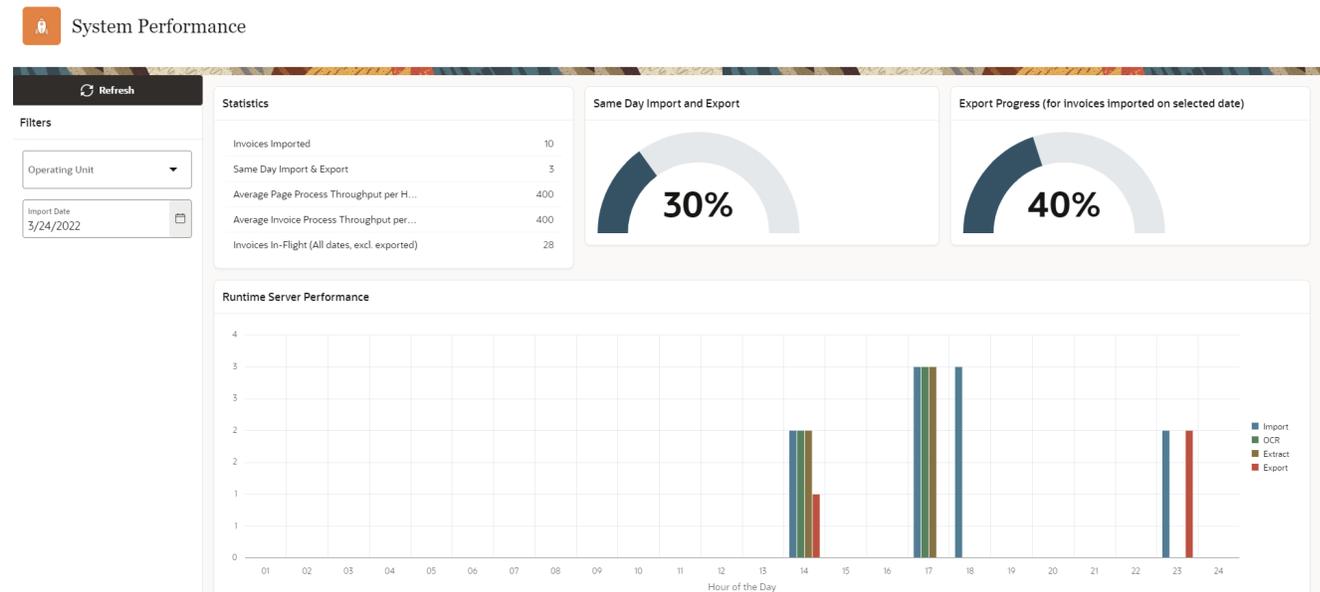
- The desired Processing Group (ex. Shared Service Center) for the report
- The desired Operating Unit for the report
- The desired date range for the report

Many of the reports will be automatically updated every 60 seconds, but users can manually update the currently selected report by clicking the “Run Report” button in the report’s toolbar. In some cases, the user may need to click the button the first time a report is run in their browser session.

When a user has finished using the reports, the user should click the “Sign Out” button located under the drop down menu at the top right of every page. This will display the AP Project Reporting application’s login page.

System Performance Report

The System Performance report provides a ‘snapshot’ of how WebCenter Forms Recognition has been performing overall for the specified process date. By default, the current date is used as the Process Date value.



Statistics

This region provides the following system overview statistics:

- Total Invoices Imported:** Shows the total number of invoices that were imported into WFR on the specified date.
- Total Invoices Imported & Exported:** Shows the total number of invoices that were imported, processed and exported on the specified date.
- Average Pages Processed per Hour:** Shows the average number of individual pages per hour that were processed through the import, OCR and extraction steps by the Runtime Server for the specified date.
- Average Invoices Processed per Hour:** Shows the average number of documents that were processed per hour by the Runtime Server for the specified date. This number will typically be lower than the average pages processed per hour, as this will reflect multi-page documents that were processed.
- Invoices In-Flight (All dates):** Shows the total number of invoices, irrespective of their import date, that are currently in the WFR system, excluding those invoices that have been exported and are pending clean-up (i.e. have a state of “800”).

Overall Progress (%)

This dial shows the percentage of documents that were imported into WFR on the specified date and were fully processed and exported on the same date.

Runtime Server Performance

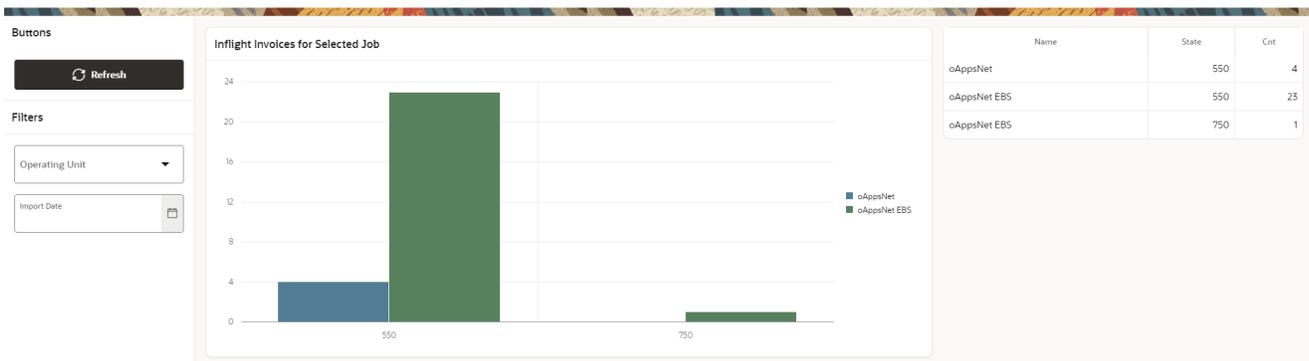
This graph illustrates the number of documents that were processed by the Import, OCR, Extract and Export RTS instances for the specified date, grouped into hours.

In-Flight Invoices Report

The In-Flight Invoices report shows the number of documents that are currently in the WebCenter Forms Recognition system. This will include all documents that are at any state up to and including state '800' (exported). Documents will only be removed from the In-Flight Invoices report when they are removed from the WFR system, either by the Clean-Up RTS instance (if configured) or by being manually deleted through the Administration Console.

This report is only available for WFR 11.1.1 (11.1.1.8.0 or later) systems, where the WFR database has been initialized. Unlike all other reports in the AP Project Reporting application, the In-Flight reports draw their data from the core WFR database tables, as opposed to the specific reporting tables.

In Flight



In-Flight Invoices by Job

This graph shows the total number of documents that are currently active in the WFR system for the database grouped by each database job. Each column of the graph represents the count of documents for the state indicated in the x-axis label.

Note that a batch that contains a particular document may not necessarily have the same state as that document. This is because a batch inherits its state from the lowest document state of all of the documents contained in that batch. For example, if a batch contains 10 documents, of which 9 are ready to be exported (700) and 1 requires verification (550), the batch state will be 550. However, the In-Flight Invoices report will display all 10 documents, with 9 in the “700” column and 1 in the “550” column.

All Database Jobs

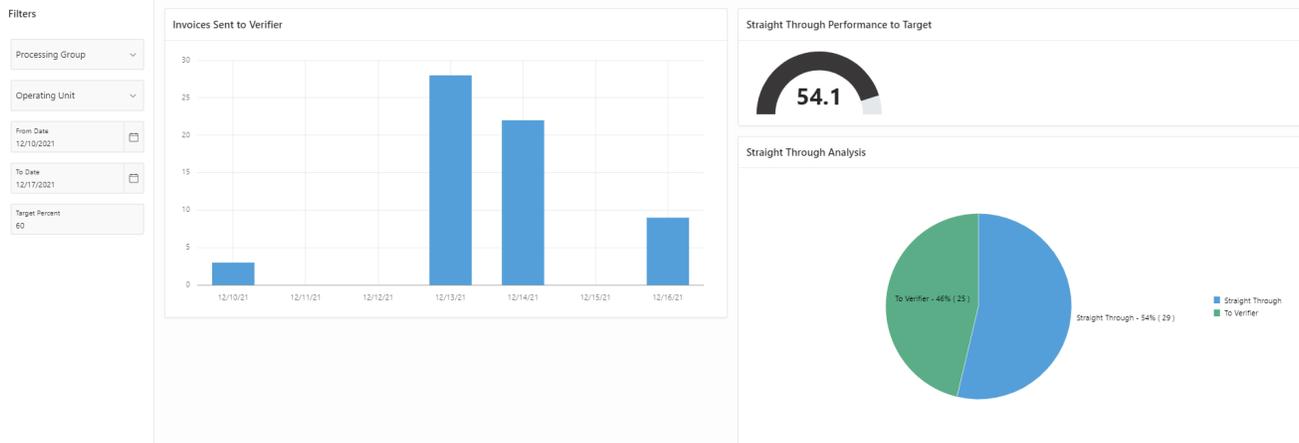
This report shows the counts of all documents, grouped by document state, that are currently active in the WFR system, for all database jobs.

Invoices to Verifier Report

The Invoices to Verifier report gives details about the number of documents that failed extraction validation for the date range specified in the report's toolbar.



Invoices to Verifier



Invoices Sent to Verifier

This graph shows the number of documents that required manual verification for each day in the specified date range.

It is worth considering that a document will be sent to Verifier if a single field is deemed invalid after extraction, and it should not be implied that a document 'failed' because it required manual verification. It is likely that documents that were sent to Verifier still had a reasonable proportion of data correctly extracted.

Straight Through Performance to Target

This dial provides a general indication of how the percentage of documents that have been processed through the AP project without requiring manual verification compares to the specified target percentage for the specified date range. Thus, the dial value represents the percentage of straight through documents and the maximum dial value represents the target percentage. The target percentage is specified in the report page's toolbar.

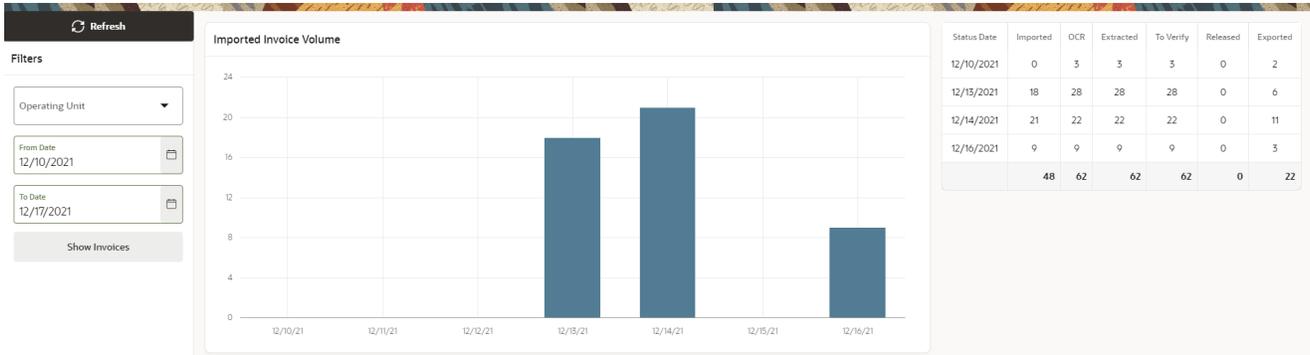
Straight Through Analysis

This chart shows the proportion of documents sent to Verifier (shown in red) compared with the proportion that were processed straight through to export without requiring manual verification (shown in green) during the specified date range.

Invoices Processed

The Invoices Processed report provides information about the number of documents that were processed during the specified date range.

Invoices Processed



Imported Invoice Volume

This graph shows the total number of documents that were imported into WebCenter Forms Recognition each day during the specified date range.

Invoices Processed by Status

This table gives details of the total number of documents that were processed at each process step for each day in the specified date range. The “Verify” column shows the number of documents that were sent to Verifier, while the “Release” column shows the number of documents that did not require verification, and were available for export immediately after the extraction step.

Invoices Processed: Invoice Details

The Invoice Details report lists the primary header level fields of all invoices that have been successfully exported during the date range specified in the report page’s toolbar.

Invoice Details

The figure shows an interactive report titled 'Invoice Details' with a search bar and filters. The filters include Operating Unit (Vision Operations (204)), From Date (12/10/2021), and To Date (12/17/2021). The table below lists the invoice details:

| Processing Group | Operating Unit | Vendor Id | Vendor Name | Process Date | Documentnumber | Invoice number | Ponumber | Invoicedate | Batchname | Amounttotal | Site Id | Vendor Vat Reg No | Bill-to Name | Invalid Reason | Invoice Type | Urn | Delivery Note |
|------------------|----------------|-----------|---------------------------|--------------|--------------------------------------|-----------------|----------|-------------|-------------|-------------|---------|-------------------|--------------|----------------|--------------|--------------------------------------|---------------|
| USCA | | 1008 | Office Supplies, Inc. | 12/14/2021 | 02562af2-05cb-4e45-bd0f-28519791d79c | 99998 | | 02/20/2021 | OAPPSE-E-30 | 3 | 5972 | | | NONE | NO-PO | 02562af2-05cb-4e45-bd0f-28519791d79c | |
| USCA | | 21 | SHOOT SUIT, INC | 12/16/2021 | 050dc506-4c5b-432e-beff-98acdcfefe | SC-0027560-IN | | 08/24/2009 | OAPPSE-E-36 | 49.04 | 15021 | | | NONE | NO-PO | 050dc506-4c5b-432e-beff-98acdcfefe | |
| | | 15 | PC Systems | 12/10/2021 | 0a18b89e-bbc1-4026-b039-b8f45b014947 | JR_TEST_FOR_SAL | | 08/27/2021 | OAPPSE-M-80 | 1865.25 | 6999 | | | NONE | NO-PO | 0a18b89e-bbc1-4026-b039-b8f45b014947 | |
| USCA | | 21 | SHOOT SUIT, INC | 12/15/2021 | 0e02fcb6-7139-4310-93d1-e213c7b7899e | 0027860-INTEST | | 08/24/2021 | OAPPSE-M-90 | 49.04 | 10021 | | | NONE | NO-PO | 0e02fcb6-7139-4310-93d1-e213c7b7899e | |
| | | 21 | SHOOT SUIT, INC | 12/13/2021 | 0f9160a2-9f5c-4e76-b1d7-37a8fcd0b23d | DAWJ/24/200* | | 08/24/2021 | OAPPSE-M-84 | 49.04 | 10021 | | | NONE | NO-PO | 0f9160a2-9f5c-4e76-b1d7-37a8fcd0b23d | |
| USCA | | 17 | WebCenter Office Supplies | 12/16/2021 | 1bc8d0bd-f88c-4573-89c7-cd1e5d8f9f84 | FR001521 | 6575 | 06/08/2021 | OAPPSE-E-36 | 77 | 9021 | | | NONE | PO | 1bc8d0bd-f88c-4573-89c7-cd1e5d8f9f84 | |

Notice that this is an interactive report where the user can perform aggregate and other functions to change the format of the report.

Invoices by State

The Invoices by State report lists the primary header fields for all invoices that were extracted during the date range specified in the report page's toolbar, and are currently at the state specified. The default state is "550", and this report may prove particularly useful for identifying invoices that require manual verification.

It is important to recognise that the field values displayed in the Invoices by State report may be the values that were extracted from the documents by the Runtime Service, and may not have been validated or manually verified. This is particularly true if the selected state is less than 700.

This is an interactive report with a layout similar to that of the Invoices Processed: Invoice Details report shown above.

Invoices by State

| Status | Vendor Id | Vendor Name | Extraction Date | Process Date | Documentnumber | Invoicenumber | Ponumber | Invoicedate | Batchname | Amounttotal | Site Id | Vendor Reg No | Bill to Name | Invalid Reason | Invoice Type | Urn | Delivery Note | Orgid | Operating Unit | Pr |
|--------|-----------|-------------|-----------------|--------------|--------------------------------------|---------------|----------|-------------|-------------|-------------|---------|---------------|--------------|----------------|--------------|--------------------------------------|---------------|-------|-------------------|----|
| Q | 550 | | 12/14/2021 | | 04810f5a-f428-4f4e-a2e4-f837cbbed5a8 | 114177-5G | | 03/13/2020 | OAPPSE-E-21 | 50 | 5823 | | | NONE | NO-PO | 04810f5a-f428-4f4e-a2e4-f837cbbed5a8 | | 204 | Vision Operations | US |
| Q | 550 | | 12/16/2021 | | 0c3778bb-08c9-4070-826f-3e5b02e6bd06 | FR061521 | 6575 | 06/08/2021 | OAPPSE-E-35 | 77 | 9021 | | | NONE | PO | 0c3778bb-08c9-4070-826f-3e5b02e6bd06 | | 204 | Vision Operations | US |
| Q | 550 | | 12/16/2021 | | 28499f56-6a05-4415-89e4-1dd334f63574 | SC123 | | 03/07/2021 | OAPPSE-E-35 | 3 | 5972 | | | NONE | NO-PO | 28499f56-6a05-4415-89e4-1dd334f63574 | | 204 | Vision Operations | US |
| Q | 550 | | 12/13/2021 | | 289ddfb2-17be-4047-acba-edb41a831c97 | 335219 | | 06/03/2016 | OAPPSE-E-15 | 1303.59 | 4081 | | | NONE | NO-PO | 289ddfb2-17be-4047-acba-edb41a831c97 | | 204 | Vision Operations | US |
| Q | 550 | | 12/13/2021 | | 38ef50e5-656c-42ab-a789-c674501f6f65 | 10363 | | 08/23/2021 | OAPPSE-M-88 | | | | | NONE | NO-PO | 38ef50e5-656c-42ab-a789-c674501f6f65 | | | | US |

Field Analysis: Changed Fields

The Changed Field report provides information about the number of documents for which the value extracted by the Runtime Server for a particular field was not the value exported for a specified date range.

Field Changes



Changed Fields

This graph shows a bar for every field where the value was changed between extraction and export. Fields

where there were no changes are not displayed on this graph. Each bar shows the proportion of documents where the extracted field value was not subsequently changed (i.e. extracted correctly and shown in green) alongside the proportion of documents for which the extracted value was changed (shown in red).

Consider that while it is possible that a script may have changed a value, it is more likely that a changed field was manually modified in Verifier.

Changed Fields Detail

This report lists all fields for which the value was changed between extraction and export within the specified date range. The “Invoices Correct” column shows the number of documents for which the field value was considered correct and was not changed after extraction, while the “Invoices Changed” column shows the number of documents where the value was changed after extraction. Additionally, the “% Invoices Changed” column shows the Invoices Changed number as a percentage of the total documents processed in the same date range.

Field Analysis: Field Validity

During the extraction process, each field in the AP Packaged Project is marked as being either “Valid” or “Invalid”, depending on whether the field’s confidence reached the defined threshold, and whether any validations defined for a given field were successfully passed.

The Field Validity report provides metrics concerning the AP Packaged Project fields that were marked as valid or invalid during the specified date range.

Field Validity



Field Validity

This graph shows every field in the AP Packaged Project, including those that are not typically displayed to the user in Verifier, and the number of documents for which each field has been marked as valid (shown in green) or invalid (shown in red) after extraction for the specified date range. This allows you to easily see which fields are not successfully validated during the extraction process, and the proportion of the total documents for which each field failed validation.

As a reminder, a field that is identified as ‘invalid’ during extraction may not, in fact, be incorrect. For example, if invoice number validation is enabled the field may be marked as invalid for a document if there are not enough previous examples to perform the validation, or if the invoice does not match the format of previous examples, even though the actual invoice number value may have been correctly extracted from the invoice image. A further, common, scenario is where the total of the invoice lines do not match the subtotal on the invoice, in which case all amount fields will be marked as Invalid (AmountDiscount, AmountFreight PrepaidAndAdded, AmountMisc, AmountSubtotal, AmountTax and AmountWithholdingTax). Consequently, the “Change Fields” report provides a more accurate insight into the actual data exceptions that were subsequently modified by a user in Verifier.

Field Validity Detail

This chart shows the same information as the Field Validity graph, but in a textual form.

If the “Avg Confidence” column shows a value of “0” for a given field, it is likely that an extraction engine may not have determined the field. For example, the Company Code is not extracted, and typically passed into the AP Packaged Project via the invoice file name.

Vendor Analysis

The Vendor Analysis report is useful to determine which vendors are causing the most invalid fields. You can use this report to help identify vendors that could benefit from invoice training using Supervised Learning Workflow.

Vendor Analysis

The screenshot shows a web interface for a Vendor Analysis report. It includes a search bar at the top, a 'Refresh' button, and a 'Filters' sidebar on the left. The main area contains a table with the following columns: Operating Unit, Vendor ID, Vendor Name, Total Invalid Fields, Total Docs, Avg Invalid Fields, and Trained. The data is filtered to show 'Vision Operations' for the date range 12/10/2021 to 12/17/2021.

| Operating Unit | Vendor ID | Vendor Name | Total Invalid Fields | Total Docs | Avg Invalid Fields | Trained |
|-------------------|-----------|---------------------------|----------------------|------------|--------------------|---------|
| Vision Operations | 2005 | Industrial Dressler | 7 | 1 | 7 | None |
| Vision Operations | 21 | SHOOT SUIT, INC | 29 | 5 | 5.8 | None |
| Vision Operations | 1008 | Office Supplies, Inc. | 29 | 9 | 3.2 | None |
| Vision Operations | | UNKNOWN | 1 | 1 | 1 | All |
| Vision Operations | 5009 | Mutual Insurance Company | 1 | 1 | 1 | None |
| Vision Operations | 13 | PC Systems | 1 | 1 | 1 | None |
| Vision Operations | 17 | WebCenter Office Supplies | 0 | 4 | 0 | None |

The “Trained” column indicates whether or not the invoices were processed against a vendor that has already been trained. A “Trained” value of “Some” indicates that some invoices were processed without the vendor being trained while other invoices for the vendor were processed when the vendor was trained. In other words, for the specified date range, the vendor was not initially trained, but at some point in time, the vendor was trained.