

SAP CLOUD PLATFORM | EXTERNAL

Live Process Configuration Guide

Manage Invoices without Purchase Order

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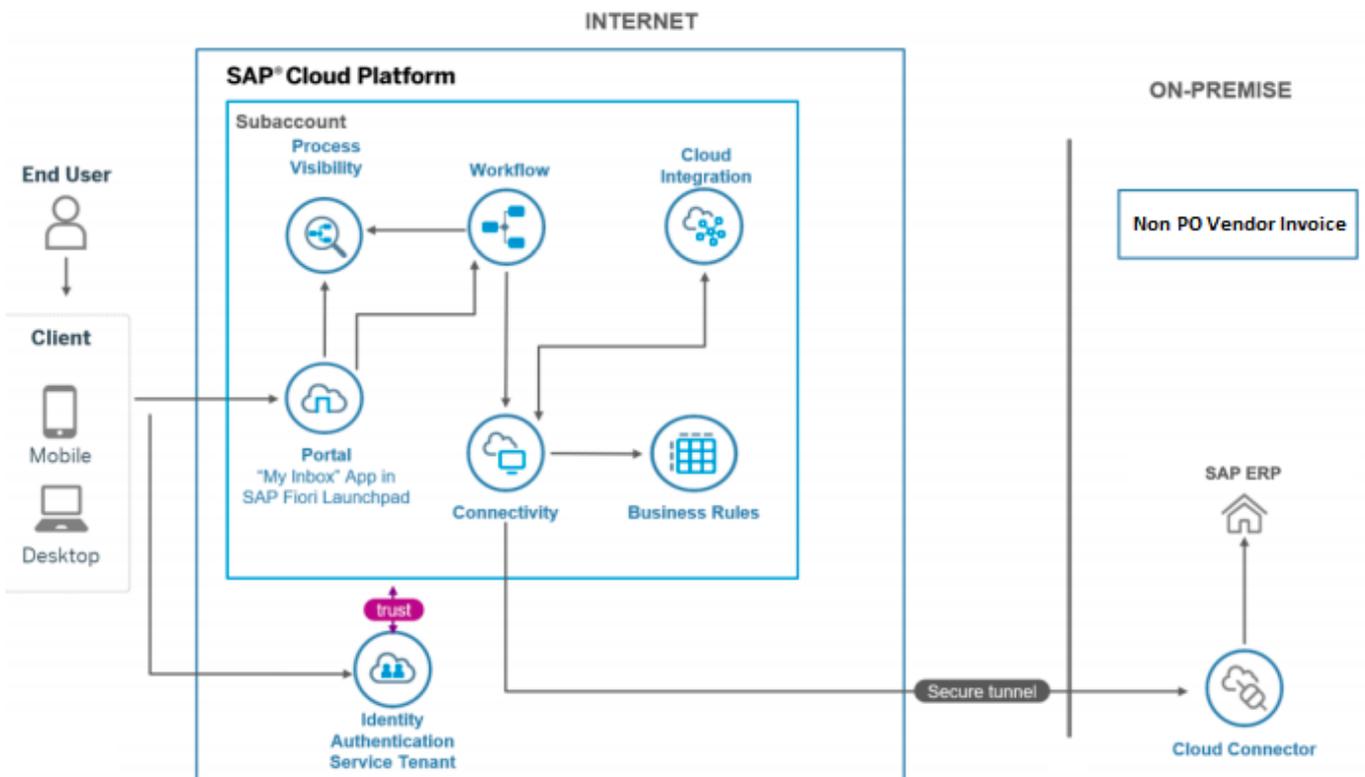
Overview

This document provides information about configuration steps to consume the live process package **Manage Invoices without Purchase Order**. The main audience of this document are Finance experts, Developers and Product owners.

The **Manage Invoices without Purchase Order** content package enables SAP ERP customers to automate the creation, approval and posting of Non-PO Vendor Invoices using SAP Cloud Platform Workflow Management without additional development in SAP ERP. Salient features of this content package are:

- Plug and Play with SAP ERP without additional development
- Pre-configured process steps to create net new variants
- New Process variants can be configured in a low-code, no-code approach
- Add additional approvers before the vendor invoice is posted in SAP ERP
- Agent/approver determination using Business Rules or SAP ERP or external systems
- Flexibility in determining process variants based on business conditions
- Master data validations and additional business validation of vendor invoice using business rules
- Pre-built integration content to call SAP ERP RFC from SAP Cloud Platform Workflow Management
- Out-of-the-box visibility into key process performance indicators

SAP ERP - Manage Non PO Vendor Invoice



Live Process Artifacts

A process content package consists of multitarget application, process steps, process templates, process variants, decisions and process visibility models. Please refer [help documentation](#) about these artifacts.

Process

The Manage Invoices without Purchase Order package contains the following process template:

InvoiceWithoutPOApprovalTemplate – Create vendor invoice in SAP ERP with a multilevel approval process. It includes two process steps for easy no-code/low-code configuration.

A business process can be broken down logically into smaller parts or steps. Each process step is a collection of activities to perform a specific task. For example, an approval process step can contain an activity to determine the approvers, an approval task itself, notifications activities, and handle the approval result. Table 1 represents the list of process steps available to be used in Manage Invoices without Purchase Order.

Table 1. Process Steps.

Process Steps	Cardinality	Detailed Description
Approval	1.. N	This step has activities to initiate and complete one level of approval for a Non-PO Vendor Invoice. This step can occur multiple times in process variant. Based on the number of approval levels required, this step can be re-used multiple times. It is possible to rename the step to appropriate approval roles, for example, 'Approval by Finance Head'. The approver is determined based on various conditions using a business rule. The requestor and the approver are automatically notified via mail about the decision and approval task, respectively.
Finalization	1..1	This step has activities to create or update a Non-PO Vendor Invoice based on the result of the approval step(s). This step shall occur only once, and it should be the last step of the process. The requestor is automatically notified via email.

A process step can have customizable properties and they could determine the outcome of the process step. For example, the Approval step can be reused multiple times and based on customized properties the approver is determined. Please see Table 2 for more details

Note: Approver can see invoice approval history based on invoice cost objects. In rework task, if invoice cost objects are modified by approver then approval history will be shown as per the updated cost object.

Table 2. Process Step Properties.

Process Step	Properties	Detailed Description
Approval	Level Name	Based on the name of the approval level, the approver is determined using a business rule. Default value is Finance Manager and it can be configured to any approval level provided the same level name is configured in the

		business rule.
--	--	----------------

A subset of the context attributes of the process are exposed and are available in Process Visibility. With these attributes, the process expert can get meaningful insights into the process and define relevant process performance indicators. Please see Table 3 for more details.

Table 3. Process Attributes.

Process Attributes	Detailed Description
companyCode	Company Code
oneTimeVendor	One-Time Vendor Indicator (True/ False)
vendorCode	Vendor Code
vendorName	Vendor Name
invoiceDate	Invoice Date
invoiceDueDate	Invoice Due Date
invoiceAmount	Invoice Amount
currencyKey	Currency Key
approvalStatus	Approval Status
requesterName	Requester Name
costCenter	Cost Center
discountDate	Discount Date
discountAmount	Discount Amount
secondDiscountDate	Second Discount Date
secondDiscountAmount	Second Discount Amount

Sample Context of the Process

The following (sample) context is required to start the header Workflow. This can be used to test the workflow using the Monitor Workflows application. Additionally, this is the context that is passed from the Manage Non-PO Invoices application

```
{
  "invoiceDetails": {
    "items": [
      {
        "itemNumber": 1,
        "amount": 1000,
        "costCenter": "1006",
        "itemGroupNo": 0,
        "internalOrderDesc": "",
        "profitCenter": "",
        "taxCode": "V2",
        "itemText": "Item 1",
        "internalOrder": "",
        "businessAreaDesc": "",
        "businessArea": "",
        "glAccountDesc": "Cafeteria equipment",
        "taxCodeDesc": "7% domestic input tax",
        "plant": ""
      }
    ]
  }
}
```

```

    "currencyKey": "USD",
    "plantDesc": "",
    "profitCenterDesc": "",
    "glAccount": "470100",
    "costCenterDesc": "Cafeteria Cost Center"
  },
  {
    "itemNumber": 2,
    "amount": 200,
    "costCenter": "1006",
    "itemGroupNo": 0,
    "internalOrderDesc": "",
    "profitCenter": "",
    "taxCode": "V2",
    "itemText": "Item 2",
    "internalOrder": "",
    "businessAreaDesc": "",
    "businessArea": "",
    "glAccountDesc": "Cafeteria equipment",
    "taxCodeDesc": "7% domestic input tax",
    "plant": "",
    "currencyKey": "USD",
    "plantDesc": "",
    "profitCenterDesc": "",
    "glAccount": "470100",
    "costCenterDesc": "Cafeteria Cost Center"
  }
],
"paymentTerms": [
  {
    "days": 15,
    "percentageAmount": 3
  },
  {
    "days": 30,
    "percentageAmount": 0
  },
  {
    "days": 0,
    "percentageAmount": 0
  }
],
"headerDetail": {
  "initiatorMailId": "initiator@CompanyDomain.com",
  "paymentTermDesc": "15 days 3%, 30 days net",
  "initiator": "Sumit",
  "initiatorComments": "submit",
  "invoiceAmount": 1200,
  "reference": "Test",
  "exchangeRate": 1.8876,

```

```

"requesterName": "Frau Julia Schmidt",
"countryCode": "DE",
"companyCodeDesc": "SAP A.G.",
"requestDate": "2020-10-12T17:30:31.643Z",
"currency": "USD",
"text": "Test",
"oneTimeVendorName": "",
"companyCodeCurrency": "EUR",
"requester": "USERID",
"companyCode": "0001",
"taxableAmount": 1284,
"oneTimeVendorCountry": "",
"invoiceTotalAmount": 1284,
"invoiceDate": "20201012",
"paymentMethodDesc": "Scheck (mit Scheckmanagement)",
"oneTimeVendorCountryDesc": "",
"vendorNumberDesc": "ABC PVT LTD",
"oneTimeVendorCity": "",
"oneTimeVendor": false,
"paymentMethod": "C",
"vendorNumber": "100806",
"paymentTerm": "PT02"
}
}
}

```

Process Variants

A process variant consists of multiple process steps configured by a Line of business expert. It is possible to create multiple variants of the same process. For example, for plant 10001 the approval steps can be skipped, etc. Please refer [help documentation](#) about how to import content packages and configure a process variant.

Invoice without PO Approval Variant

An example of an **Invoices without Purchase Orders** process variant is given below. It is possible to configure multiple variants of this process.

SAP Manage Process Variants

Finance Head Approvals

Undo Redo Save Activate

Available Steps (3)

- Approval
- Finalization
- Generic... Use this generic extension step to add...

```

graph TD
    Start(( )) --> FM[Finance Manager Approval]
    FM --> ASU[Approvals Status Update]
    ASU --> End(( ))
  
```

Process Variant Properties

Name* Finance Head Approvals

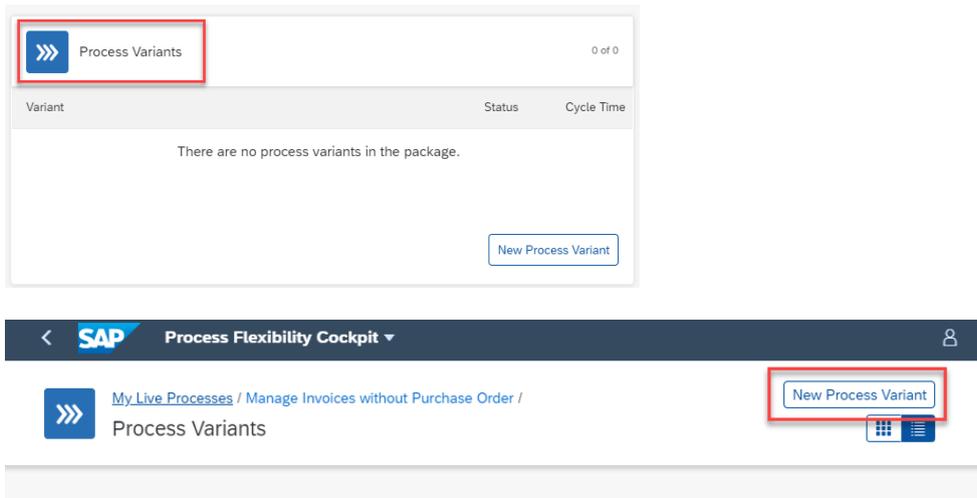
Process InvoiceWithoutPOApproval...

Description DefaultProcessVariant

Import Manage Invoices without Purchase Order and Configure Process Variants

1. Import the content package **Manage Invoices without Purchase Order**. Please refer the standard help document about [how to import a content package](#)
2. Create a new variant of **Manage Invoices without Purchase Order** by clicking on the 'New Process Variant' button.

Note, this will be visible only if there are no existing process variants already created. In such a case, click on the 'Process Variants' header to get the option to create new variants.



3. Provide an appropriate name. **Hint:** Give it a business specific name to signify the business relevance, for example – ‘**Finance Head Approval**’
4. Select ‘**InvoiceWithoutPOApprovalTemplate**’ process from the drop down. **Note:** This Live Process Content has only one process template associated with it.
5. Click the newly created Process Variant tile to modify it.
6. The Process Variant editor is opened with default variant. Drag and drop additional approval steps from the ‘**Available Steps**’.
7. Under step properties, navigate to details to access the ‘**Approval Level**’ property.

The property - ‘**Approval Level**’ is used to determine the Approver. This is accomplished using the business rule ‘**Determine Approver**’.

Note: Ensure that the value used as the approval level is maintained in the ‘**Determine Approver**’ rule.

It is possible to add additional Approval steps to a process variant. Drag and drop the Approval step in the desired sequence. It is mandatory that these approval steps should be before the **Finalization** step.

Decisions & Policies

Decisions allow to encapsulate the business logic from core applications and supports the reuse of business rules across different business processes. Decisions enable customers to adopt changes in processes without changing the underlying workflows or application logic. SAP Cloud Platform Workflow Management has decision management capabilities that enables customers to centrally manage all decisions. Please go through the [Decision Management capabilities](#) in SAP Workflow Management.

Manage Invoices without Purchase Order live process package contains Business Rules that will enable the customers to flexibly configure decisions to do the following

1. Perform (additional) business validation on Invoices without Purchase Order

2. Determine item group
3. Determine process variant
4. Determine approvers
5. Determine approver determination strategy

Validate Non-PO Vendor Invoice Business Data

With this decision, it is possible to add any business-specific validation on a Vendor Invoice. For example, enable/disable the cloud application for a specific company code, invoice date, currency, cost center, plant etc.

Rule Service: Validate Invoice

Input Data Object 1: Invoice Header Details (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
Company Code	String	Company code is an organizational unit within financial accounting.
Invoice Date	Date	Specifies the issue date of the original document.
Reference	String	Reference refers to the external document number printed on the physical copy of vendor invoice.
Currency Key	String	Currency key refers to the key to the document currency.
Payment Terms	String	Key for defining payment terms composed of cash discount percentages and payment periods.
Payment Method	String	A method that specifies how payment is to be made: check, bill of exchange, or bank transfer.

Input Data Object 2: Invoice Item Details (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
GL Account	String	General Ledger represents the code to record the expenses.
Plant	String	Plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning.
Business Area	String	Business Area is an organizational unit of financial accounting that represents a separate area of operations or responsibilities within an organization and to which value changes recorded in Financial Accounting can be allocated.
Cost Center	String	An organizational unit within a controlling area that represents a defined location of cost incurrence.
Internal Order	String	Internal order is a simple task or measure within a controlling area.
Profit Center	String	An organizational unit in Accounting that reflects a management-oriented structure of the organization for the purpose of internal control.

Threshold Invoice Amount	Number	Total amount of item group in document currency
--------------------------	--------	---

Output Data Object: Validation Result (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
Validation Message	String	Validation Message
Is Valid	String	'True' if validation is successful and 'False' if validation failed.

[Manage Projects](#) / [Non PO Vendor Invoice Approval](#) /

 InvoiceValidation

Details **Text Rule**

▼ If

 Then

 Message:

 Is Valid:

Determine Item Group

Determine item group field combination for approval process. Depending on the item group, approval process will be processed. The combination of item group fields are based on cost center, profit center, business area and plant.

Rule Service: Determine Item Group

Input Data Object 1: Invoice Header Details (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
Company Code	String	Company code is an organizational unit within financial accounting.
Invoice Date	Date	Specifies the issue date of the original document.
Reference	String	Reference refers to the external document number printed on the physical copy of vendor invoice.
Currency Key	String	Currency key refers to the key to the document currency.

Payment Terms	String	Key for defining payment terms composed of cash discount percentages and payment periods.
Payment Method	String	A method that specifies how payment is to be made: check, bill of exchange, or bank transfer.

Output Data Object: Item Group List (Table Type)

ATTRIBUTE	TYPE	DESCRIPTION
Cost Object	String	Cost objects are used to build item grouping as per the business objects. Cost objects can be maximum 4 fields, which are cost center, profit center, business area and plant.

If	Then
Invoice Header Details.Company Code	Cost Object
MATCHES '*'	'costCenter'
MATCHES '*'	'profitCenter'
MATCHES '*'	'businessArea'

Determine Approval Process Variant:

Policy to determine the process variant based on various business criteria like company, invoice date, currency key, payment terms, due date, exchange rate and payment method.

Rule Service: Determine Process Variant

Input: Invoice (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
Company Code	String	Company code is an organizational unit within financial accounting.
Invoice Date	String	Specifies the issue date of the original document.
Currency Key	String	Currency key refers to the key to the document currency.
Payment Terms	String	Payment Terms are conditions agreed with vendor for the payment of invoices. The conditions define the due date and the cash discount offered for payment of the invoice within a certain period.
Invoice Due Date	Number	This is the date on which the vendor open item will be due for payment. The due date for net payment is calculated from the invoice date based on payment term.
Exchange Rate	Number	Exchange rate is translation ratios, this rate is used to translate the document currency to local currency.
Payment Method	String	Mode of payment with which the vendor open items needs to be paid.

Along with the above attributes the other Header and Line Items attributes can also be added as input parameters in this business rule.

Output: Process Variant Details (String)

ATTRIBUTE	TYPE	DESCRIPTION
Process Variant ID	String	A preconfigured Workflow Definition Id. The value of workflow definition id will be available in Monitor Workflows-Workflow definitions application after activation of a Process Variant of type Non-PO Vendor Invoice Maintenance Approval.

Decision Table

If									Then
Invoice.Company...	Invoice.Invoice Date	Invoice.Currency ...	Invoice.Payment T...	Invoice.Payment ...	Invoice.Exchange ...	Invoice.Cost Cent...	Invoice.Profit Cen...	Invoice.Business ...	Process Variant Id
'0001'					IN [0 .. 100]	'1006'			'nonpovendorin...
'0001'					IN [0 .. 100]	'1007'			'nonpovendorin...
									'nonpovendorin...

Approver Determination Strategy

The application will have two way to identify approver. To identify the approver determination strategy below rule service will be used. It can be 'Business Rules' based or 'External Service' based.

Rule Service Name: Approver Determination Strategy

Input: Invoice (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
Company Code	String	Company code is an organizational unit within financial accounting.
Currency Key	String	Currency key refers to the key to the document currency.
GL Account	String	This field contains the number of the G/L account to which the transaction figures are updated
Plant	String	Plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning.
Cost Center	String	An organizational unit within a controlling area that represents a defined location of cost incurrence.
Business Area	String	An organizational unit of financial accounting that represents a separate area of operations or responsibilities within an organization and to which value changes recorded in Financial Accounting can be allocated.
Profit Center	String	An organizational unit in Accounting that reflects a management-oriented structure of the organization for the purpose of internal control.

Threshold Invoice Amount	Number	Total amount of item group in document currency
--------------------------	--------	---

Along with the above attributes the other Header and Line Items attributes can also be added as input parameters in this business rule.

Output: Approver Determination Strategy (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
Determination Strategy	String	Approver Determination strategy can either “Business Rule” or “External Service” depending on Invoice details.

Text Rule

▼ If

Invoice.Company Code = '9001'

Then

Determination Strategy: 'External Service'

▼ Else

Determination Strategy: 'Business Rules'

Determine Approvers

Rule service used in the item level approval process step to identify the potential approvers based on different company policy. Approver will be determined depending on Invoice details. In this business rules Due date will be this business rules determined by a text rule based on Invoice details. Every approver will have their respective due date in their approval task.

Rule Service Name: Determine Approver

Input: Invoice (Structure data type)

ATTRIBUTE	TYPE	DESCRIPTION
Company Code	String	Company code is an organizational unit within financial accounting.
Currency Key	String	Currency key refers to the key to the document currency.
GL Account	String	This field contains the number of the G/L account to which the transaction figures are updated
Plant	String	Plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning.

Cost Center	String	An organizational unit within a controlling area that represents a defined location of cost incurrence.
Business Area	String	An organizational unit of financial accounting that represents a separate area of operations or responsibilities within an organization and to which value changes recorded in Financial Accounting can be allocated.
Profit Center	String	An organizational unit in Accounting that reflects a management-oriented structure of the organization for the purpose of internal control.

Threshold Invoice Amount	Number	Total amount of item group in document currency
Approval Level	String	Approval Level Name for which specific approver will approve the request

Along with the above attributes the other Header and Line Items attributes can also be added as input parameters in this business rule.

Output Approver Details (Structure)

ATTRIBUTE	TYPE	DESCRIPTION
Is Approval Required	String	Check if approval is required or can be skipped. True if required and false if not required.
User Group	String	A user group in SAP Cloud Platform who can approve a step in the process. You can provide either user group or user id or both.
Email	String	Email address of the approver to whom the task notification will be sent. You can add multiple email addresses using a comma separated value.
User Id	String	User ID of the individual approver. You can add multiple user ID using a comma separated value. You can provide either user group or user id or both.
Task Due Duration	Number	The duration target by which the user task needs to be completed. Used along with the unit of time.
Unit of Time	String	Unit of time of due duration like minutes, hours, days, etc.

Decision Table										
If							Then			
Invoice.Compa...	Invoice.Currenc...	Invoice.Cost Ce...	Invoice.Profit C...	Invoice.Busines...	Invoice.Threshol...	Invoice.Approva...	User Group	Email	User Id	Is Approval Req...
'0001'		'1006'				'Finance Head'	'FinanceMan...	'ramakrushna...	'Ramakrushna'	true
'0001'		'1007'				'Finance Man...	'FinanceMan...	'ramakrushna...	'Ramakrushna'	true
'0001'		'1006'				'Finance'	'FinanceMan...	'sumit.prodh...	'Sumit'	true
'0001'		'1006'				'Local Manag...	'LocalManager'	'k.bhowmick...	'Krishnendu'	true
							'LocalManager'	'k.bhowmick...	'Krishnendu'	true

Document Information Extraction

Document Information Extraction helps to process large amounts of business documents that have content in headers and items. The extracted information can be used, for example, to automatically process payables, invoices, or payment notes while making sure that invoices and payables match. After you upload a document file to the service, it returns the extraction results from header fields and line items in JSON format. Please refer the [help documentation](#) for more details.

In this live process package, the Document information extraction feature is used to retrieve the header details fields from the invoices based on the Document Information Extraction Job ID. The Receiver of the Invoice needs to upload the PDF copy of the Vendor Invoice in the Document Information Extraction Software as a Service Portal. After successful upload of the invoice, system will generate a unique ID called the Document Information Extraction Job ID. This Job ID needs to be shared with the Initiator of Non-PO Vendor Invoice.

Application Behaviour on Entering the JOB ID:

Job ID is a prerequisite for Document Information Extraction.

Steps to use the Document Information Extraction:

1. Enter Document Information Extraction Job ID
2. On successful validation of the Job ID the Display icon will be enabled (enabling navigation to Document extraction Software as a service portal)
3. Data such as Company code, vendor number, invoice date, amount, currency, reference, Requester Name, will be fetched based on the data available in the invoice document
4. Details such as Vendor Number and Requestor Employee ID to be enriched using the Data enrichment feature of the Document Information Extraction

- a. Data Enrichment: Match a business document to an enrichment data record based on the document's extracted information. The Data API takes document files as input and returns the ID of the matching enrichment data records

Process Visibility

Process visibility enables Business Process Experts and/or Process Owners to gain real time visibility on processes and key process performance indicators. Process visibility capability in SAP Cloud Platform Workflow Management enables customers gain out of the box insights into their running processes. Please refer [help documentation](#) for more details.

This live process content package provides out of the box visibility on all the deployed process variants of **Manage Invoices without Purchase Order**. A process owner or line of business expert will be able to enhance the visibility scenario.

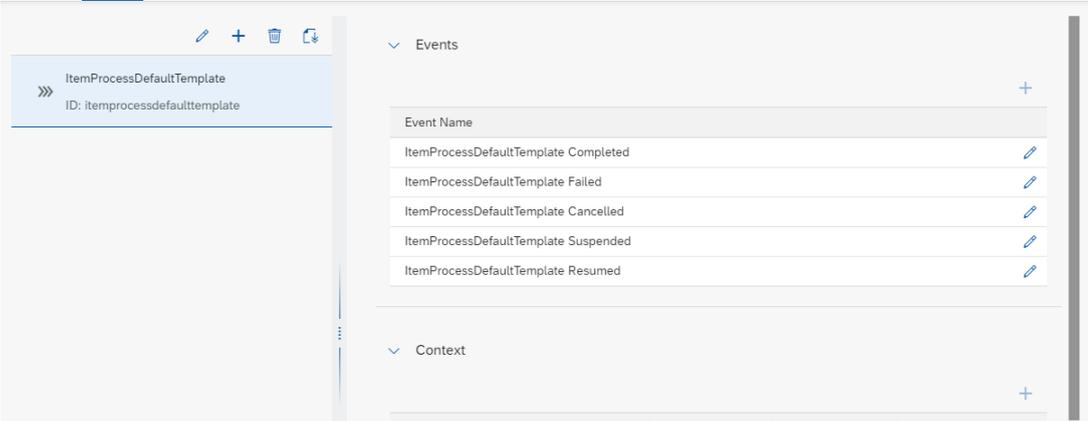
Configure Visibility Scenarios

1. Go to Process Flexibility Cockpit
2. Select **Manage Invoices without Purchase Order** tile
3. Click Visibility Scenarios tile
4. Select **Invoices without Purchase Orders** scenario

Please go through [help documentation](#) how to model a visibility scenario.

Invoices without Purchase Orders (Invoices_without_Purchase_Orders) Save Activate

General **Processes** Correlation Phases State Status ▾ Attributes Actions Performance Indicators



The screenshot displays the configuration page for a process template named 'ItemProcessDefaultTemplate' (ID: itemprocessdefaulttemplate). The interface is divided into two main sections: 'Events' and 'Context'. The 'Events' section contains a table with five rows, each representing a different event state: 'Completed', 'Failed', 'Cancelled', 'Suspended', and 'Resumed'. Each row has an edit icon (pencil) to its right. The 'Context' section is currently empty, with a plus sign indicating that new context items can be added. At the top right of the configuration area, there are 'Save' and 'Activate' buttons. The top navigation bar includes tabs for 'General', 'Processes', 'Correlation', 'Phases', 'State', 'Status', 'Attributes', 'Actions', and 'Performance Indicators'.

Event Name	
ItemProcessDefaultTemplate Completed	
ItemProcessDefaultTemplate Failed	
ItemProcessDefaultTemplate Cancelled	
ItemProcessDefaultTemplate Suspended	
ItemProcessDefaultTemplate Resumed	

Access Process Workspace

1. Go to Process Flexibility Cockpit
2. Select **Manage Invoices without Purchase Order**
3. Click on Live Process Insights

