Deltek

Deltek Costpoint® 8.0

Approval Workflows: WFA

September 1, 2020

This edition published September 2020.

Contents

Introduction 1
Purpose of this Guide 2
Terminology 3
Overview of the WFA Functionality 4
Approval Roles 5
  Roles 6
  Role Users 6
  Role Filtering Conditions 6
Reject Codes 7
  Reject Codes 7
Role Filter Fields 8
Approval Email Message 9
Approval Workflow Models 11
  Header Section Parameters 12
  Approval Entity Fields 14
  Approval Application Screens 14
    Approval Screen Fields 15
    Conditions 17
  Workflow Reject Codes 18
  Approval Workflow Owners 18
  Approval Steps: Designing the Workflow Model 18
    Node Types 19
    Edit Activity 21
    Edit node 22
    Updates 23
  View Approval Cases 23
  Import/Export 24
Delegate Approval 27
Running Approval Workflows 28
  Start Tab 28
  Approve or Reject Tab 29
  Escalate or Delegate Tab 30
  History Tab 31

Reject Tab 31
Approval Steps 32
Approval Role Users.. 32
Approval by Email 33
My Approval Tasks.. 34

Introduction

The Approval Workflow is a generic Costpoint functionality that enables automation of approvals of business entities across all application screens. The project abbreviation is WFA. The basic WFA features are:

- Ability to configure multi-level workflow approval process with sequential and concurrent approvals
- Assign approval workflows to Costpoint application screens, have more than one workflow per screen, and have a single workflow to span multiple screens
- Ability to set conditions before workflow can begin, or set thresholds on approval process
- Approval roles:
  - Define membership model for approval roles and Costpoint users as members
  - Utilize built-in roles (Project Manager, Employee Manager)
  - Build groups or associate users/user groups to roles
  - Enable role user selection based on data conditions, role filtering
- Ability of approvers to delegate approval on demand or for a period of time
- Escalation capabilities:
  - Ability of approver to escalate to another person or role within the approval process
  - Ability to set time limits for approval of individual steps, and escalate after assigned time has expired
- Rejection capabilities
  - Ability to define whether rejection reasons are required
  - Ability to set up user-defined rejection codes/reason for use in workflow
  - Reject workflow back to previously completed step or to beginning
- Email notification
  - Customized message with link to approval screen or direct approval
  - Approve step just by clicking the approve link located in the email message body
  - Attach documents linked to record to email notification messages
- Comprehensive view into Approval history audit

> **Note:** The Approval Workflow feature (WFA) is a new functionality that has some similarities with the old Costpoint Workflow, but it is designed and developed completely from the ground up as a standalone feature without any common code shared with the old Workflow system.

Purpose of this Guide

This guide describes how to configure, design, and run Approval Workflows. Approvals are always tied to a single business entity that can exist within multiple Costpoint application screens. Accordingly, approval workflows can include tasks spanning multiple Costpoint screens.

Configuration and design is done using configuration applications inside **Workflow » Approval Workflow** menu group.

Running Approval Workflows is a built-in extension to any application that is previously configured for it.

This document will guide you through the process of configuring and designing the flow of detailed approval steps (activities) and will explain the process of running workflows by multiple users and roles.

Terminology

This document uses the following terms and abbreviations.

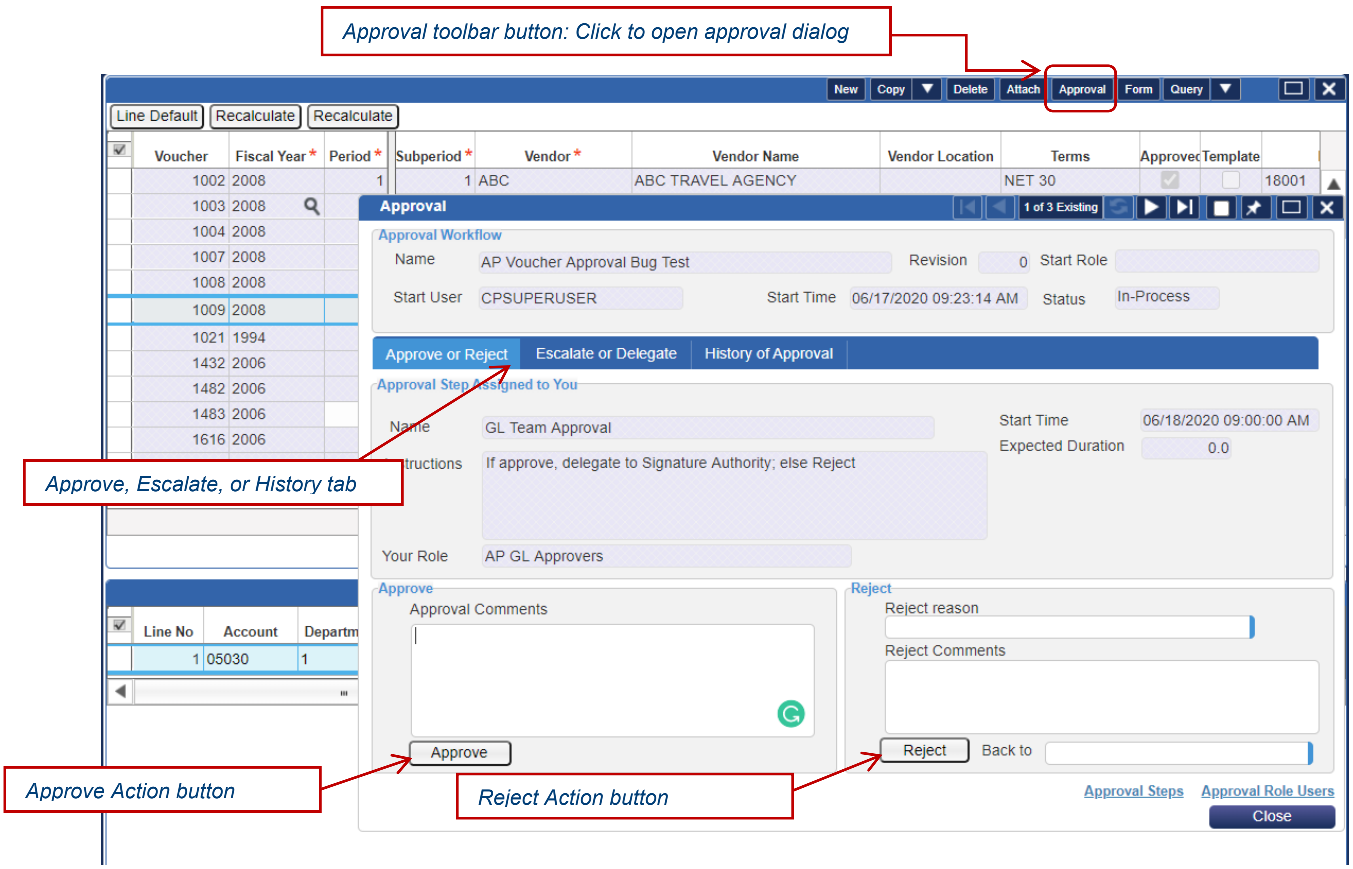
Term	Definition
Approval Workflow	Software system (engine) that is used to automate multistage approval process of any Costpoint business entity
Approval Workflow Model	Definition, a model, of the process flow, sequential or parallel steps that define the outline of an approval process
Approval Entity	Business entity, document, or category that is subject of approval
Approval Application Screen	Costpoint application screen that is referenced and associated with the approval process. Multiple screens can be associated with the approval workflow through sharing of the common approval entity.
Workflow Activity	A step in the approval process that requires user action
Workflow Node	An element in the approval process that does not require user intervention. A node is processed programmatically to make specific decision about workflow processing. Examples are: Start, Finish, If, Group, and Notification nodes.
Approval Role	A group of users having the same approval rights
Built-In Approval Role	A Role that gets its members identified using application logic, using the data contained within the approval entity instance.
Email Notification	Email message sent to all members of the Approval Role to approve specific activity
Email Approval	Direct approval using the approval URL contained in the email notification message
Approval Workflow Case	An instance of Approval Workflow for a specific Approval Entity in the Costpoint data
Approval Workflow Routing	Execution of the workflow case. Processing workflow nodes from start to finish, following the workflow model definition.

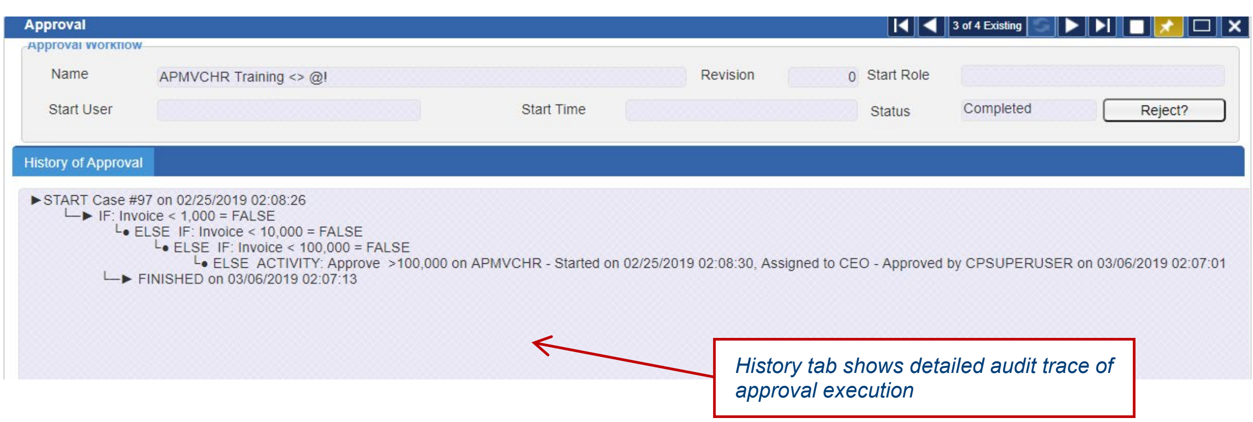
Overview of the WFA Functionality

When WFA is configured for a particular Costpoint application screen, the **Approval** button on the toolbar becomes enabled. Click this button to display the Approve system subtask. This form displays current action that is assigned to you. If no actions are assigned, or if approval is completed, only History tab is visible.

If approval is not yet started, you can start it, but you must be in the Start Role for given approval.

Click on the Approval steps to see list of previously completed steps, or click on History tab to view detailed graph of Approval Case flow.



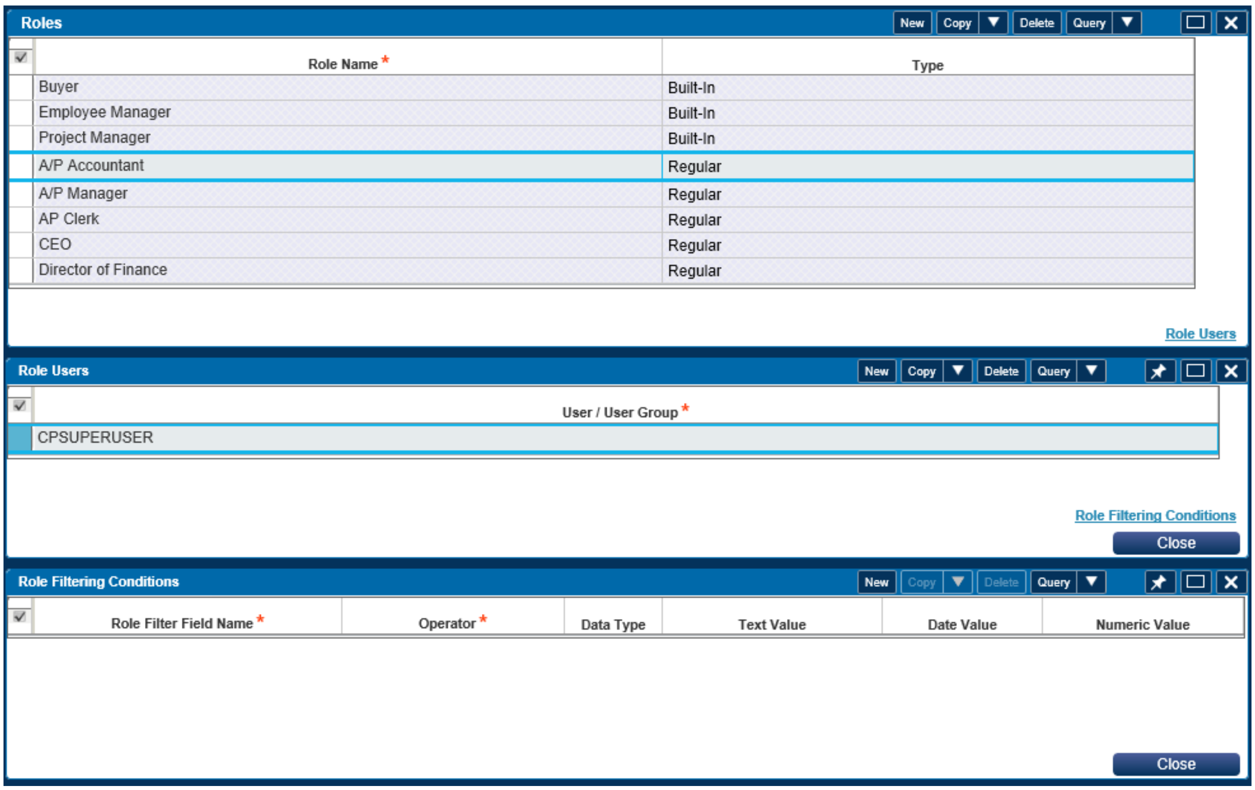


Approval Roles

Use the Approval Roles (WFMAROLE) application screen to enter roles and associated users for your approval workflows.

Role represents the qualification of the participants who perform specific approval steps or activities. Only roles that exist on this screen can be assigned to execute approval steps.

> **Note:** It is important that users associated with the roles are correctly set up in Manage Users with a valid email address and employee ID. These users must be configured to receive messages through email so that they get notified once activities are routed to them.



There are two types of approval roles:

- **Regular**: This is a group of users or users groups. You can enter or modify a regular role on this screen and assign users and/or user groups to it.
- **Built-In**: This is a pre-defined role and cannot be modified or deleted. The built-in roles are **Project Manager**, **Employee Manager**, and **Buyer**. You cannot add users to a built-in role. Role membership for the built-in role is evaluated for Approval Case from particular entity instance data.

Because the role designation is necessary to determine where to route activities and messages, you must set up roles on this screen as one of the first steps in designing approval workflows and before adding data to the Approval Workflow Models screen. Although you can add to, delete, or change the information on this screen at any time, use caution in timing your edits because they could affect the execution of pending and future approval workflow cases.

Roles

Use this table window to add new regular approval roles. This table window displays both built-in and regular roles.

- **Name**: For regular roles, use this field to enter a role name for a group of individuals that meet the required qualifications to perform approval activities. For built-in roles, this field displays **Buyer**, **Employee Manager**, or **Project Manager**.
- **Type**: This field displays **Built-In** or **Regular**.

Role Users

Use this subtask to enter users or user groups who should receive approval steps and messages in their email when the role is associated with a particular step. You can use this subtask to enter users or user groups for regular roles. You may also update this subtask at any time.

- **User / User Group**: Enter the user ID or user group you want to associate with the role selected in the Roles table window. The user IDs or user groups you enter in this field will have approval steps assigned to them and messages routed to their email address when steps are routed to their role.

Role Filtering Conditions

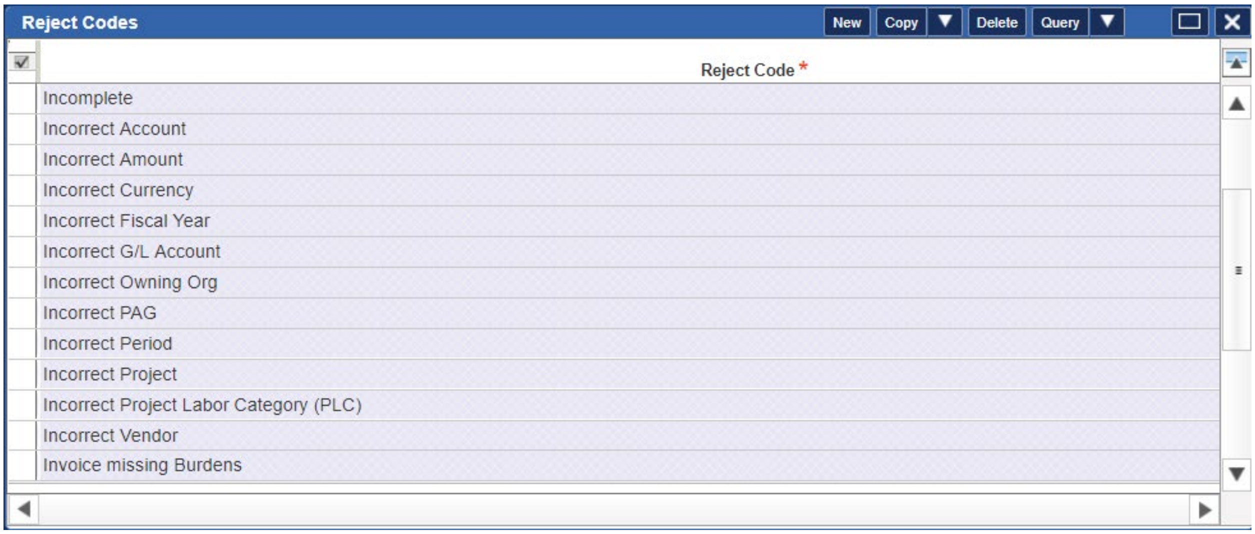
You can configure role filtering conditions for each user. These conditions are evaluated at workflow runtime and are used to exclude or include a particular user from the role, based on data values of approval entity.

These conditions are constructed using fields defined in the Role Filter Fields (WFMARF) application. If multiple condition lines are defined, the AND operation between them is assumed.

Reject Codes

Use the Reject Codes (WFMARRJCD) application screen to enter codes for rejecting approval workflows.

Existing codes display when you open this screen. You can delete existing lines, modify existing lines, or create new codes for all possible reject reasons. Codes on this screen can be selected on the Approval Workflow Models screen for a specific approval workflow. Maintain this screen whenever necessary.



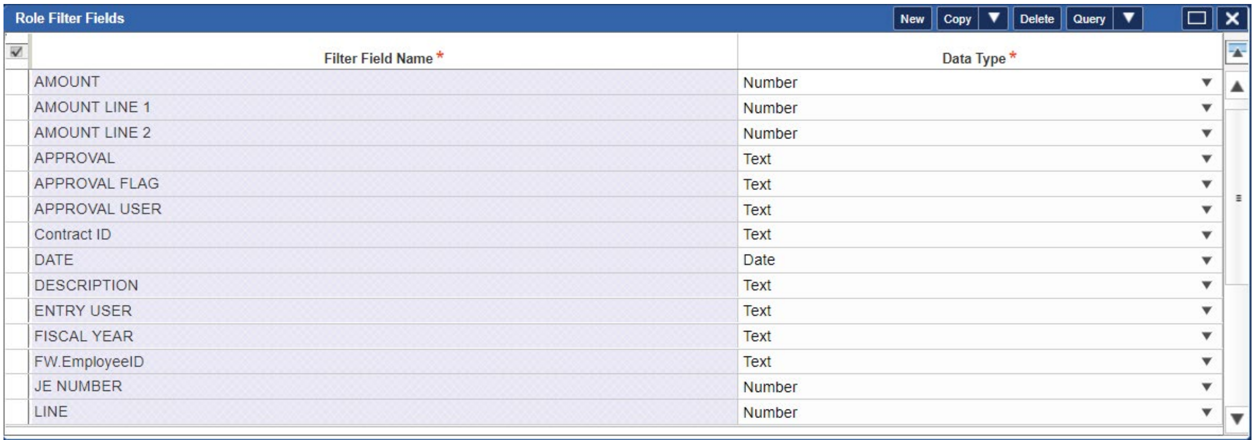
Reject Codes

Use this table window to add reject codes.

- **Reject Code**: Enter alphanumeric characters in this field for the reject code.

Role Filter Fields

Use the Role Filter Fields (WFMARF) application screen to define fields for role filtering.

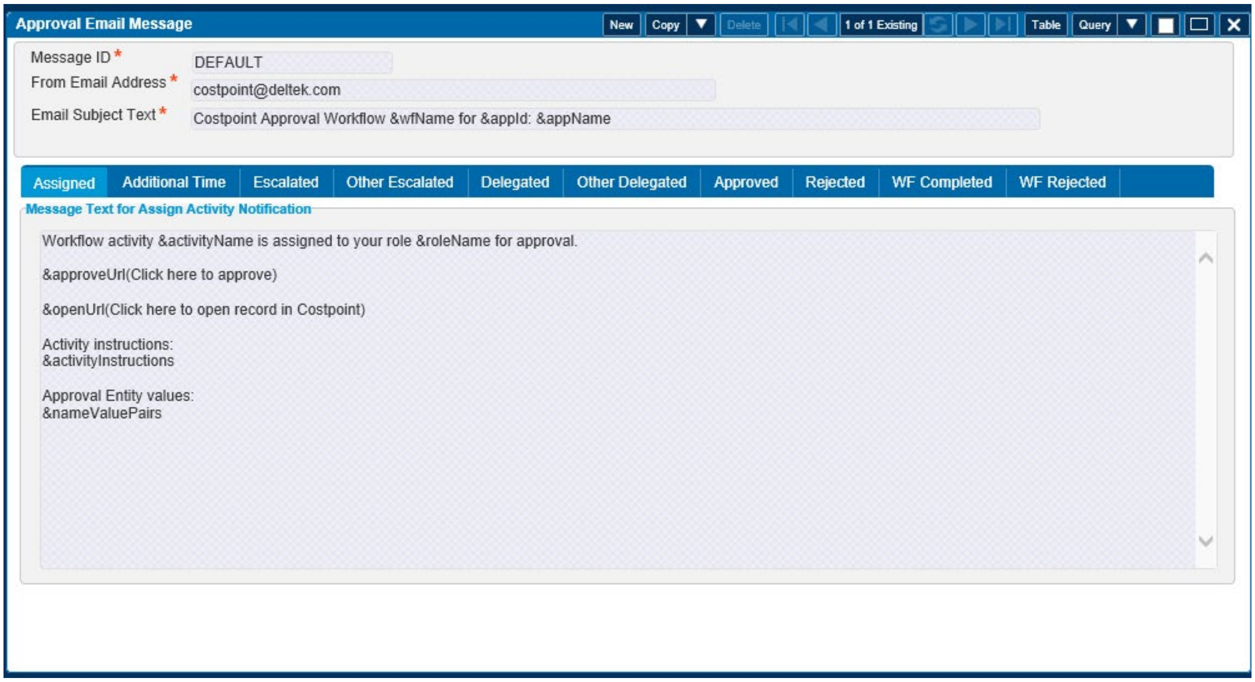


Existing fields display when you open this screen. You can delete existing lines, modify existing lines, or create new fields. It is important to enter correct data type because only matching data types will be possible to map with entity fields in the Approval Workflow Models (WFMAPPRL) application.

Fields from this screen can be used to define role user filtering conditions and are associated to actual data through mapping with entity fields selected on the Approval Workflow Models screen for a specific approval workflow. Maintain this screen whenever necessary.

Approval Email Message

Use the Approval Email Message (WFMAEMAIL) application screen to define text templates for email notifications.



A read only DEFAULT set of templates is already created for you, and if you do nothing, it will be used for all workflows. You can define your custom templates and assign them to your workflows. The easiest way to create a customized message template is to clone DEFAULT and enter your changes. A modified template can be later assigned to the workflow model.

There are several tabs for message body, each one for different notification type. They contain text templates for the messages that will be sent for following actions:

- **Assigned**: Sent to role user when activity is assigned
- **Additional Time**: Sent to role user when regular time for approval expires and additional time is assigned
- **Escalated**: Sent to role user when activity is assigned to through escalation
- **Other Escalated**: Sent to all currently assigned role users, notifying them that the activity has been escalated
- **Delegated**: Sent to role user when activity is assigned through delegation
- **Other Delegated**: Sent to all currently assigned role users, notifying them that the activity has been delegated
- **Approved**: Sent to all currently assigned role users, notifying them that the activity has been approved
- **Rejected**: Sent to all currently assigned role users, notifying them that the activity has been rejected
- **WF Completed**: Sent to start user, notifying that the workflow has been completed
- **WF Rejected**: Sent to start user, notifying that the workflow has been rejected

For new templates, you can change following fields:

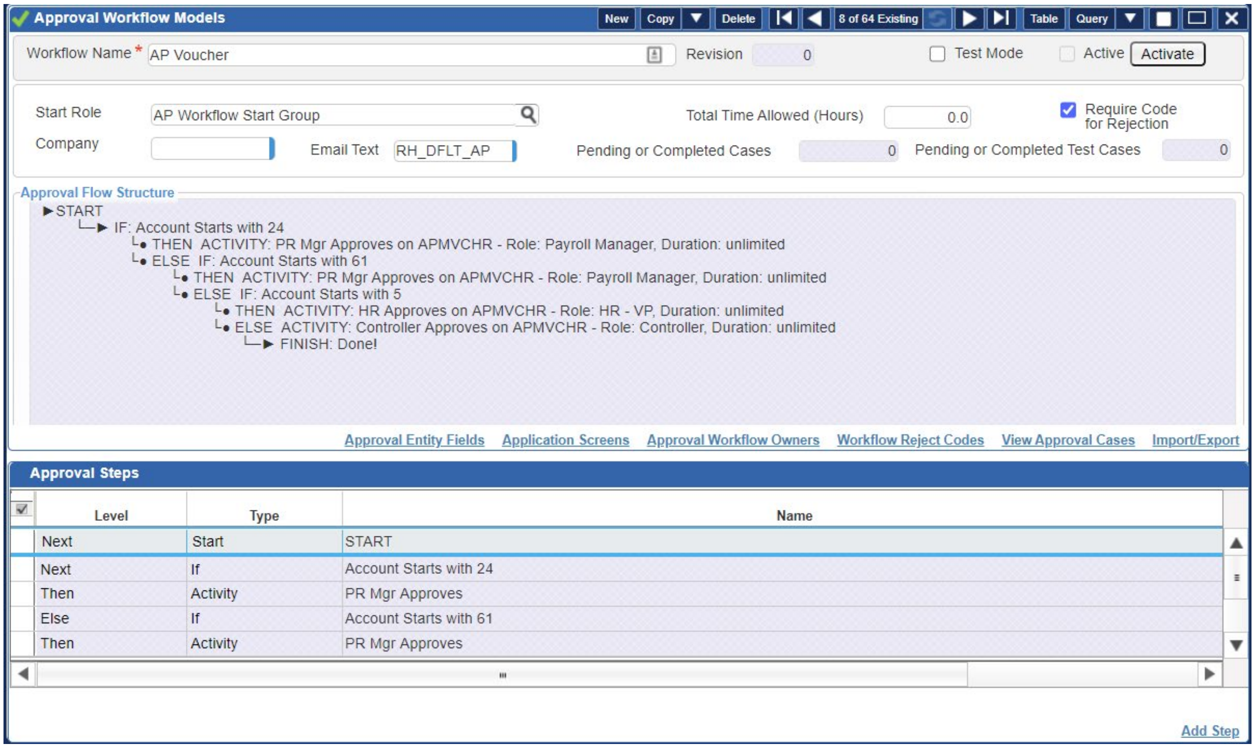
- **Message ID**: Identifier for the email message template
- **From email address**: Address that will be used as email message **From** element for all email notifications
- **Email Subject Text**: Text that will be used as an email **Subject**
- **Email Message Bodies for different notification types**: Body of the email message. The email template subject and body can contain any text, and it can also contain variables inserted directly by the framework to compose a specific email message instance.

These variables are replaced with following values.

Variable	Value
&wfName	Workflow name
&wfCase	Workflow case number
&appId	Application id
&appName	Application name
&approveUser	Name of the user who approved activity
&rejectUser	Name of the user who rejected activity
&rsId	Result set (screen) id
&rsName	Result set (screen) name
&activityName	Actual activity (task) name
&activityInstructions	Actual activity (task) instructions
&roleName	Role name (for escalated message it will be an escalate role)
&addTime	Additional time assigned
&approveUrl(Click here to approve)	Approve link. This will be generated as an <a> html tag with text inside parenthesis shown in email, and approve url as a link.
&openUrl(Click here to open record in Costpoint)	Open link. This will be generated as an <a> html tag with text inside parenthesis shown in email, and open url as a link.
&nameValuePairs	List of entity properties set to be shown in email, together with their values
&actionText	Since email messages are sent for different approval actions, this field defines configurable texts for each of these actions: Assigned, Additional time assigned, Escalated, and Delegated. Actual text for these actions can be defined in fields grouped in Action Text (&actionText) group

Approval Workflow Models

Use this application to design approval workflow models. The topmost screen section defines the master information about the workflow. The middle section displays the graphical presentation of the approval flow structure, while the bottom table is used to edit the approval steps. Also there are several subtasks that will be individually described.



The logical order for creating a new approval workflow model is:

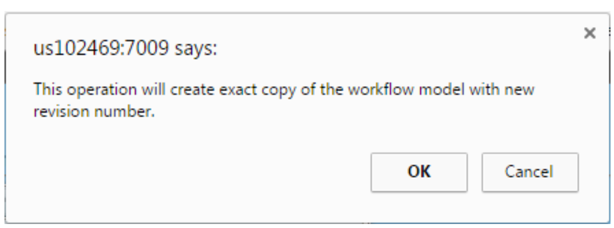
1. Parameters in the header section
2. Approval Entity Fields subtask
3. Workflow Reject Codes subtask (if required by check box)
4. Approval Application Screens subtask (with Fields subtask)
5. Assign Entity Fields to Application Screen Fields
6. Save
7. Add Approval Steps (Nodes and Activities)
8. Edit Approval Nodes and Activities
9. Set Test flag to make model active for testing
10. Test approval workflow for specific application
11. Modify model to fine tune it to your needs
12. Optionally delete test cases in View Approval Cases subtask and test again
13. Activate the model for production (activation deletes all previous test cases)
14. Once active and cases are completed, model cannot be changed, only new revision created

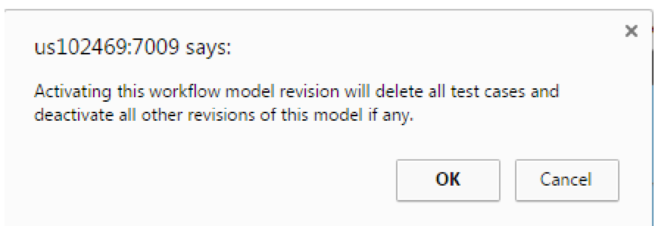
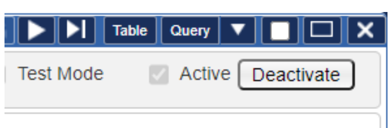
Warning: Do not activate the workflow until it is fully tested and ready for production. Setting the workflow into test mode makes it fully functional. The only difference is that test cases can be conveniently deleted while active cases cannot be deleted.

New revisions are suitable only after prolonged use of the workflow model in production.

The remaining subtasks—View Approval Cases and Import/Export—are used for maintenance and are described later in this guide.

Header Section Parameters

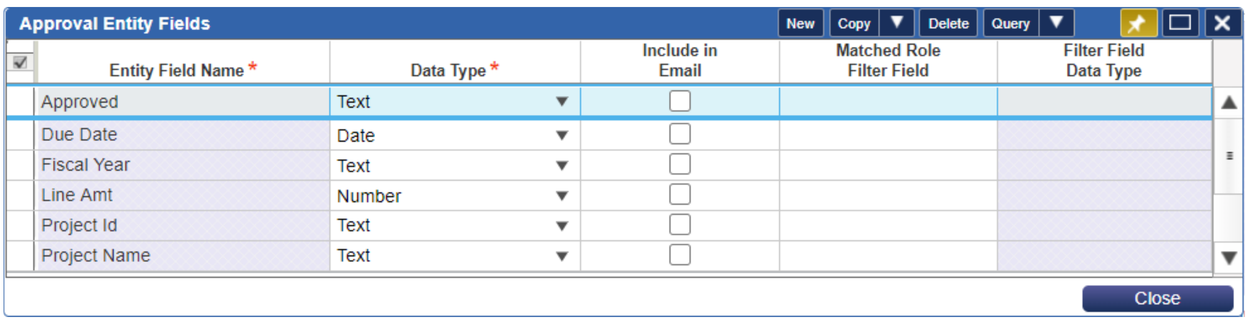
Parameter	Description
Workflow name	This is a unique name assigned to the workflow model.
Revision	There can be multiple revisions of the model. It is important to understand the concept of revisions. After a single approval case is created with a specific active workflow model, the model cannot be modified any more. There is a strong dependency between the instance of the workflow (a case) and a model. If you want to change the model after a period of use and X completed cases, the only permitted way to do it is to create a new revision. Details of the process are described in the following **New Revision** action section.
New Revision	This button becomes active when activated workflow model has pending or completed cases.  Clicking the **New Revision** button opens a dialog box with the message. If you click **OK**, a new revision of the workflow model is created in the database. A new revision is a complete replica of the existing model, but with a new revision number.  The newly created model is inactive and can be deleted if not needed. The old revision is still active. In order to retire an old revision, you must activate a new one. As soon as there is a single started case with the new revision, it cannot be modified or deleted any more.

Parameter	Description
Test Mode	If selected, the workflow model is active in test mode. While designing a model, you can test it by running test cases. If you just want to test and fine tune a new model, select the Test check box to set the model into test mode. In test mode, the model behaves the same as in active model. Only inactive models can be set into test mode. Test mode is the preferred state for testing the workflow before it is set as ready for production. All cases created while in test mode are considered temporary and will be deleted after you activate the workflow model. Individual pending or completed test cases can be viewed in the View Approval Cases subtask and deleted there if necessary.
Active	This check box indicates the workflow model is active and cannot be changed anymore. Activation can be performed only using the **Activate/Deactivate** button.
Activate/Deactivate	Clicking this button initiates workflow model activation. Being active means enabling the approval workflow for application screens listed in Approval Application Screens**.** When you click **Activate**, a message displays:  Clicking **OK** will delete all test cases, select the **Active** check box, and activate the model. Clicking **Deactivate** will deactivate the model and clear the **Active** check box. 
Start Role	Start role is an optional field that defines a group of users authorized to start the workflow case. If **Start Role** is missing, any user who has rights to access the start application screen can start the workflow.
Total Time Allowed	This is the total amount of time available for workflow completion. If workflow case duration exceeds the assigned time, the case will be automatically rejected as expired. This value is optional and if left as **0.00**, it will be assumed that there is no time limit set.
Require Code for Rejection	Selecting this check box indicates that the rejection code is always required for rejecting activities or rejecting a completed workflow. If selected, reject codes that are available for the model must be listed in the Workflow Reject Codes subtask.

Parameter	Description
Company	This optional field limits the use of the workflow model only for a specific company. If left blank, the workflow model is applicable to all companies.
Email Text	This optional field defines which email text template will be used for the workflow. If left blank, the DEFAULT text from Approval Email Message application screen is used.
Pending or Completed Cases	This field lists the number of pending or completed cases using a specific instance and revision of the workflow model.
Pending or Completed Test Cases	This field lists the number of pending or completed test cases using a specific instance and revision of the workflow model.

Approval Entity Fields

This subtask defines the entity which is the actual object of approval.



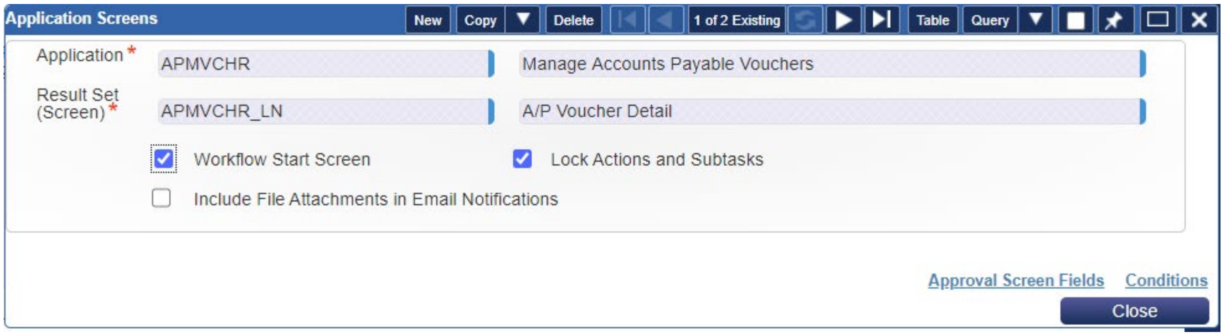
An Approval Entity is defined by its fields. This table outlines an abstract definition of the entity with field names, data types, and check box values that defines the inclusion of the property/value pair in the approval email message. Deltek recommends writing descriptive names because it will be easier to approvers to understand its meaning when they see it in the notification email. The actual matching of **Approval Entity Fields** with **Screen Fields** is done in the Approval Application Screens » Approval Screen Fields subtask.

Fields in this table are:

- **Entity Field Name**: Descriptive name of the entity field
- **Data Type**: **Text**, **Number**, **Date**, or special system field **Current User**
- **Include in Email**: Notification email inclusion
- **Matched Role Filter Field**: This is where role filter condition fields are mapped with entity fields, and indirectly to actual approval data
- **Filter Field Data Type**: Entity data types and filter field data types must match

Approval Application Screens

This subtask defines the application screens associated with approval, in other words, it defines the screens that contain the entity that is the object of approval. Multiple screens can be associated with the workflow model, but only one can be the start screen, the screen where users can start the execution of the workflow.



Assigning multiple screens to a single approval workflow model enables the workflow to span multiple screens in its activities. There are limitations to screen definition that must be respected and will be enforced. **The application screen can only be the topmost or a second level result set in the application tree.**

You have to assign following fields in the subtask:

- **Application**: Costpoint application ID and name that is assigned to this workflow model
- **Result Set (Screen)**: Actual screen assigned to this model. This is the screen that contains the entity that is the subject of approval. Note: result set must be 1st or 2nd level in the screen result set tree.
- **Workflow Start Screen**: Selecting this check box designates the screen as a start screen for approvals.
- **Lock Actions and Subtask**: The Approval Screen Fields subtask defines the locking requirements for fields. Selecting this check box locks all actions and subtasks on the approval screen during the duration of the approval workflow case.
- **Include File Attachments in Email Notifications**: If selected, CMI documents attached to the record under approval will be included in all notification email messages.

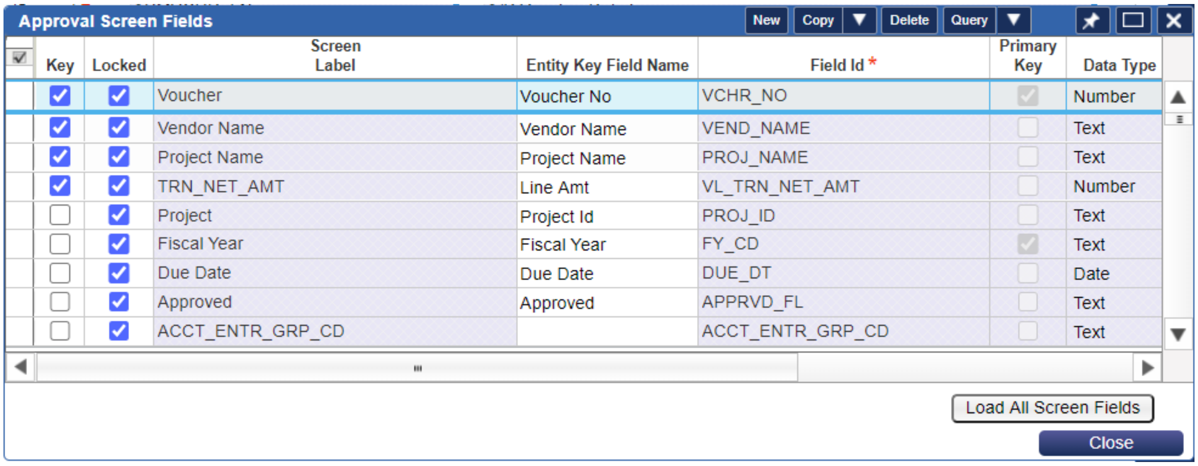
> **Note:** Content Management Integration (CMI) is a Costpoint feature that enables linking documents from CMS like SharePoint to Costpoint transactional data (that is, actual PDF or image scan of the invoice attached to voucher, and so on.

Approval Screen Fields

For each screen associated with an approval, you must define screen fields and match them to previously defined entity fields.

The easiest way to populate the fields is to click the **Load All Screen Fields** button. This action uses the Costpoint screen definition and populates the table with all the fields defined for a particular screen. You can run it only once and only if there are no records in the fields table. The next steps are to define the key fields and to map the map screen fields to entity fields.

It is important to note that fields from the parent result set can also be included if a given screen is not the topmost result set in the approval application.



Key	Locked	Screen Label	Entity Key Field Name	Field Id *	Primary Key	Data Type
☑	☑	Voucher	Voucher No	VCHR_NO	☑	Number
☑	☑	Vendor Name	Vendor Name	VEND_NAME	☐	Text
☑	☑	Project Name	Project Name	PROJ_NAME	☐	Text
☑	☑	TRN_NET_AMT	Line Amt	VL_TRN_NET_AMT	☐	Number
☐	☑	Project	Project Id	PROJ_ID	☐	Text
☐	☑	Fiscal Year	Fiscal Year	FY_CD	☑	Text
☐	☑	Due Date	Due Date	DUE_DT	☐	Date
☐	☑	Approved	Approved	APPRVD_FL	☐	Text
☐	☑	ACCT_ENTR_GRP_CD		ACCT_ENTR_GRP_CD	☐	Text

Column	Description
Key	Keys are responsible to uniquely identify the record that is the subject of approval. It is very important to select proper keys to eliminate the possibility of misidentifying a correct record being approved, or have a situation where multiple records match the same keys. Running the Load Fields action selects the **Key** check box for all fields that are defined as Primary Key fields in the screen design. Keys also play an important role in approval URL generation. Using the keys defined here, the approval framework will generate unique URLs that will be included in the notification email The URLs can be used later by approvers to remotely approve workflow activities just by clicking the links in the email.
Locked	This check box is selected by default and indicates that the field will be locked for edit during the approval process.
Screen Label	This is the label for the field. Some fields have no screen label; in which case, this value is equal to field ID
Entity Key Field Name	This is where you define the mapping between the Entity Fields and the Screen Fields. This mapping helps to retrieve values for the entity fields from the actual screen fields when the approval starts. It is very important that all Key fields are mapped to Entity Fields.
Field	This is the ID of the field.
Primary Key	This check box is selected for fields that are configured as primary keys for the screen in the application definition.
Data Type	This column displays the predefined field data type: **Text**, **Number**, or **Date**.
Screen Name	This is the name of the result set (screen) for the field. It is important to emphasize that some fields from the parent result set can be included in this table. If the screen is not the topmost result set for the application, it is usually necessary to include key fields from the parent result set in order to uniquely identify the record in the child result set.

Column	Description
Result Set (Screen)	This is the ID of the result set.

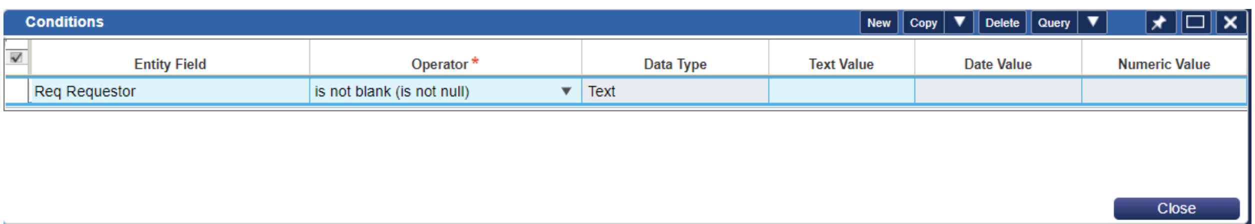
Note: Approval Workflow model is defined for an abstract entity that is configured using the Approval Entity Fields subtask. All conditions, especially those that define workflow branching, are composed with logical expressions containing entity fields.

Mapping actual screen fields to entity fields is important to identify abstract entity as actual business entity defined by specific screen data. When workflow is started, entity fields are matched and screen data is retrieved. This enables every workflow case (instance) to process actual data values.

Conditions

Start conditions can be defined for the start screen. If the conditions are not met, the approval process cannot be started.

The Conditions screen is used in several places in the Approval Workflow Models application, and it is defined as a list of conditional expressions built entity fields. If multiple condition lines exist, the AND operator is assumed between them.

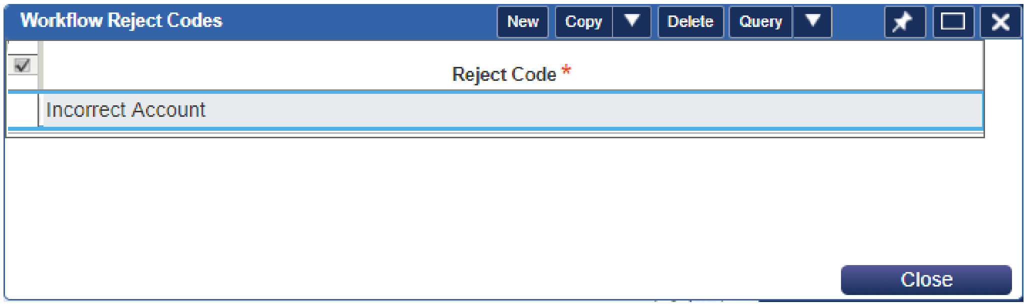


Note: An **Entity Field** used in a condition must be mapped to a screen field in order for the workflow engine to locate the actual value of the field at runtime.

Column	Description
Entity Field	This column list the entity field(s) used for the condition.
Operator	The list of logical operators include: =, >, <, >=, <=, !=, is blank, is not blank, begins with, ends with, contains.
Data Type	The data type for the entity field displays in this column.
Text Value **Date Value** **Numeric Value**	There is a separate column for the text, numeric, or date value.

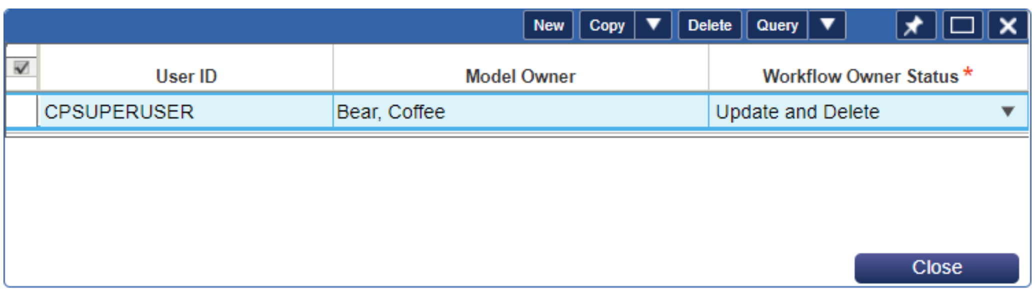
Workflow Reject Codes

This subtask defines a list of reject codes that are applicable to the parent Workflow Model. The codes are entered in separate application Reject Codes (WFMARRJCD). Select the check box for the ones that are applicable to this model.



Approval Workflow Owners

This subtask defines a list of users who have rights to view and make modifications to workflow cases in the Manage Approval Workflow Case Status (WFMACASE) application.



Column	Description
User ID	ID of a user who is granted access
Model Owner	User name
Workflow Owner Status	Possible values are: **Read Only**, **Update**, and **Update and Delete**.

Approval Steps: Designing the Workflow Model

In order to design a workflow model, you have to define nodes, their actions, and a flow. A flow is a sequence of nodes.

There are several different types of nodes that can be configured, and they are processed differently based on their type and properties. Activity is the only node that requires user interaction. All other node types are processed by the system, and their purpose is to define the routing order and system actions. Activities define individual steps in the approval process. On the other hand, **Start**, **If**, **Group**, and **Finish** nodes define the flow or the routing sequence of the workflow.

Node Types

Node	Description
Start	A workflow always starts with the **Start** node, which is automatically created and cannot be entered or deleted.
Activity	**Activity** is the most important node and represents the actual approval step. Activity always assumes user interaction and intervention.
If	**If** is a branching node that uses a condition expression to branch to **Then** or **Else** branches. You can set conditions for the **If** node on the Conditions subtask of the Edit Node subtask. If is followed by nodes with **Then** and **Else** levels. **Then** level defines the branch of the flow when conditions evaluate to **True**. The **Else** defines the branch of the flow when conditions evaluate to **False**. At the very least, a **Then** branch must be present; otherwise, the **If** node is incomplete.
Group	**Group** contains parallel activities or options. When the **Group** node is reached in the workflow routing, all activities defined as options under this node are executed immediately (in parallel). If all options under this node are required, the steps after the **Group** node will not proceed until all activities have been approved. If none of the options are required, the **Group** step/node is considered complete if only one of them has been approved. Under the **Group** node, only steps with Type = Activity and Level = Option are permitted. An activity that is defined as an **Option** has a required parameter on the Edit Activity subtask. **Group** is used for parallel execution and cannot be used for branching. Only an **If** node can branch the flow sequence.
Notify	When the **Notify** node is reached, a notification message is sent to the role. Specific message text and the recipient role are defined using the **Edit Node** operation for **Notify** node.
Finish	This optional node marks the end of the workflow. If the workflow reaches the end, finish is assumed. It is, however, helpful to add a **Finish** node to visually mark the end of the workflow, or especially when it contains updates pertaining to the completion of the workflow.

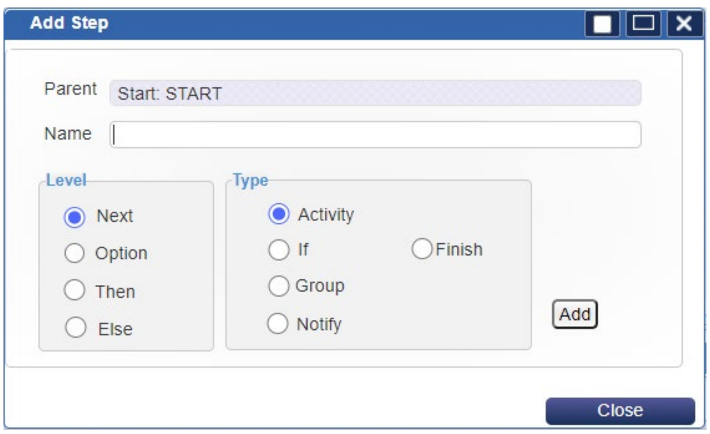
Based on its position in the flow, the node can have a specific level.

Level	Description
Next	This is a default level. It indicates that the node is processed in sequence after the previous node is completed

Level	Description
Option	This level can be only applied to the **Activity** node inside a **Group** node. It indicates that the activity with an option level will be executed in parallel, together with other activities inside a group. **Option** is a closing node and cannot be used for branching: There cannot be another node in the sequence after **Option**.
Then	This level can only be entered after an **If** node, and it can be applied to **Activity**, **If**, **Group**, and **Finish** nodes. The **Then** node defines a flow branch that will be routed if the parent **If** node condition evaluates to **True**.
Else	The level is the same as the Then level. This level defines a flow branch that will be routed if the parent **If** node condition evaluates to **False**.

The Approval Steps table lists all nodes that are visually present in the Approval Flow Structure outline. In this table, you can enter new steps, configure their details, or delete existing ones.

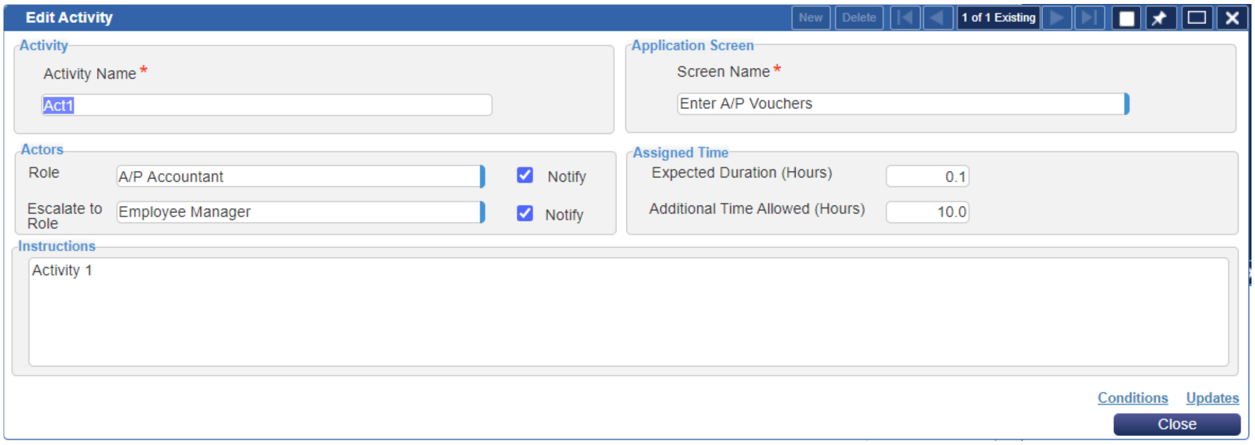
Use the Add Step subtask to add a new step.



Option	Description
Parent	This field defines a parent node that will contain a new step.
Name	This is the name of the step. You can edit the name later in the Edit Node or Edit Activity dialog box.
Level	This is the level for the new step, relative to the parent node. The default level is **Next**.
Type	This option defines the type of the node. The default is **Activity**.

After you create the node, you can edit its details using either the Edit Node or Edit Activity subtask.

Edit Activity



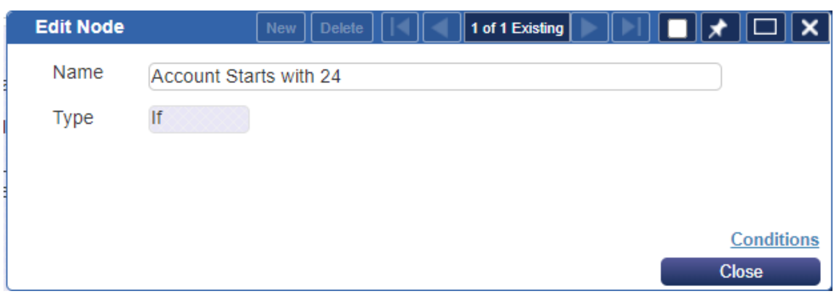
Activity is defined by following options.

Option	Description
Activity Name	The descriptive name you entered when you created the activity on the Add Step dialog box displays here. You can edit the name, if needed.
Required	This check box displays only for activities that have a level equal to **Option**. These are parallel activities inside a Group node. If not checked, the activity is optional, and it will be automatically approved if any other activity in the group is approved by the corresponding role user. If all activities inside a group are not required, the group itself is still required, and at least one of the non-required options must be approved.
Screen Name	An Activity is always associated with a specific Costpoint application screen. A specific role member is expected to approve entity on the specific application screen. By default, this field is populated with the screen name entered in Approval Application Screens subtask and designated as start screen, but if multiple screens are configured for the workflow, here you can select specific screen that this activity is referring to.
Role	This is the activity assignment field. Here you define who is responsible for activity approval. Roles are defined in the Approval Roles application.
Notify (Role)	If selected, all role members will receive an email notification when an activity is assigned to them, or when any other activity assignment change is processed.
Escalate to Role	This is the role that is assigned when an activity is escalated. An activity can be escalated manually or escalated automatically when the expected time expires.
Notify (Escalate to Role)	If selected, all escalate role members will receive an email notification when an activity is assigned to them, or when any other activity assignment change is processed.

Option	Description
Expected Duration (Hours)	This field defines the time that is assigned to Role for completion of the activity. If set to 0.00, infinite time is permitted for activity completion.
Additional Time Allowed (Hours)	If expected time expires, and Additional Time is defined, role members will receive an email notification, and they will have this extra time for completion. If additional time is set to 0.00, or if expired, activity is escalated to escalate role.
Instructions	This field can be used to write detailed instructions about activity approval. This text will be included in the approval dialog and notification email message.
Conditions subtask	Conditions subtask opens up the conditions table, the same one as Conditions. If all conditions listed in this subtask do not evaluate to true, activity cannot be approved.
Updates subtask	Updates subtask opens up the Updates table. This table lists update expressions that will be executed upon approval of the activity.

Edit node

The Edit Node dialog box displays the node **Type** and can be used to edit the **Name** of the node. As already mentioned, node type can be: **Start**, **If**, **Group**, **Notify**, or **Finish**. A **Start** node cannot be edited.

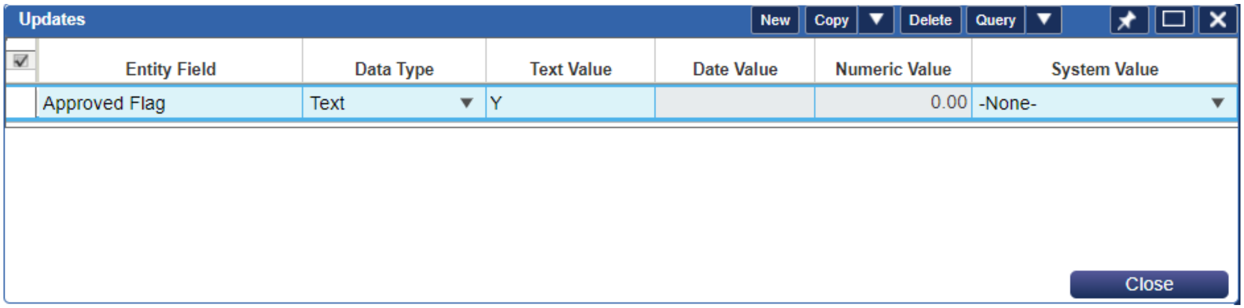


The **If** node has the Conditions subtask, and the **Finish** node has the Updates subtask:

- The Conditions subtask for an If node defines conditions that evaluate to true or false by defining the branching to Then or Else route branches.
- The Updates subtask for a Finish node lists all the update expressions that execute after the workflow is completed.

Updates

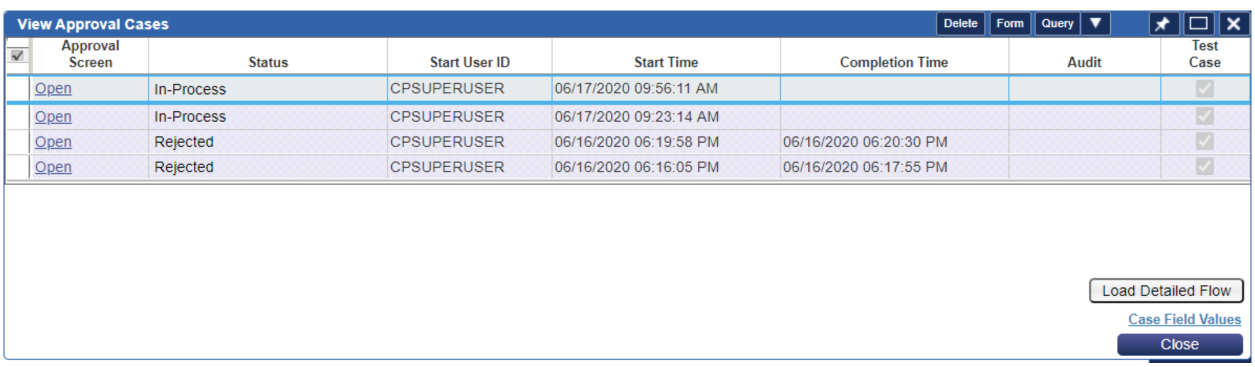
Updates can be defined as a list of expressions that will automatically execute upon activity or workflow (Finish node) completion.



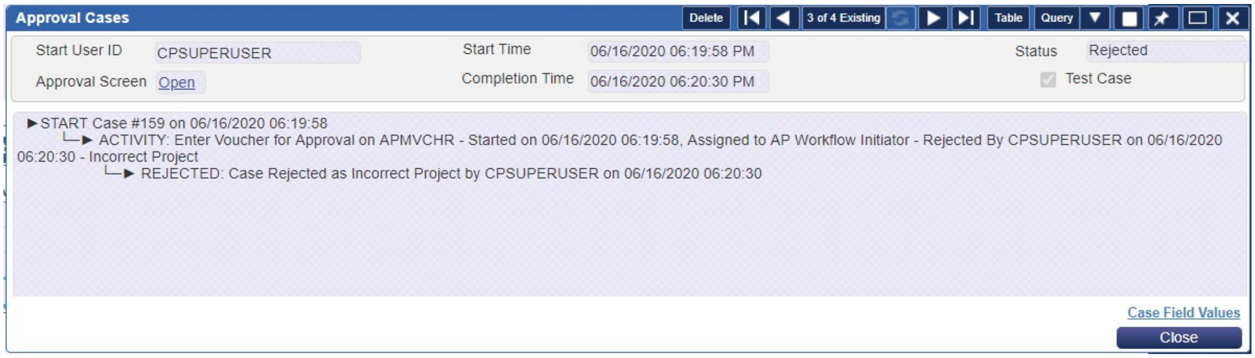
Column	Description
Entity Field	Any entity field
Data Type	Pulled from entity
Value	Separate fields for Text, Numeric, or Date value
System Value	Value assigned by system. Possible options are: ▪ **CP_COMPANY_ID**: Current company ID ▪ **CP_CURRENT_DT**: Current date ▪ **CP_USER_ID**: Current user ID

View Approval Cases

This subtask for the workflow model lists all completed or pending cases (instances) of the workflow.



The table window of the View Approval Cases subtask populates automatically when opened, but details about each individual case are not be loaded. To load the audit details for a particular case, click the **Load Detailed Flow** button.



Clicking the Open link in the **Approval Screen** field loads the specific application screen where the workflow case is running or completed.

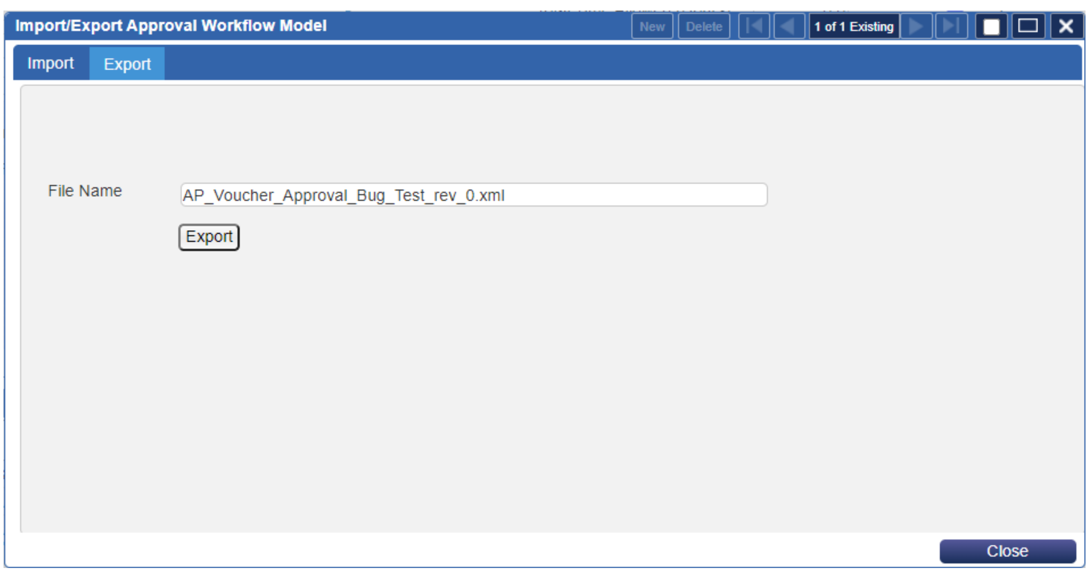
If the workflow case is running or is completed as test case, the **Test Case** check box is selected.

Import/Export

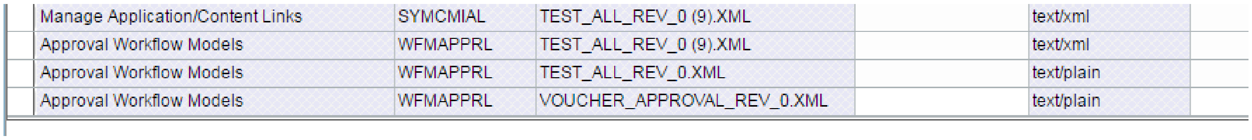
Workflow models can be exported to an XML definition file and imported from it. The subtask contains two tabs: Import and Export. Both tabs store and retrieve the definition file from the Costpoint database file location that is accessible through menu options **Process -> File Download** and **File Upload**. Exported files are visible in the storage and you can download it from there to your workstation. To import a file into a new model, you first have to upload the file to Costpoint.

> **Note:** In order to upload and download XML files to Costpoint database storage, you first need to add the XML file extension in the Configure System Settings -> File Upload Limits table.

To export a file, enter the file name, and click the **Export** button. The **File Name** field automatically populates with the workflow name and revision number.

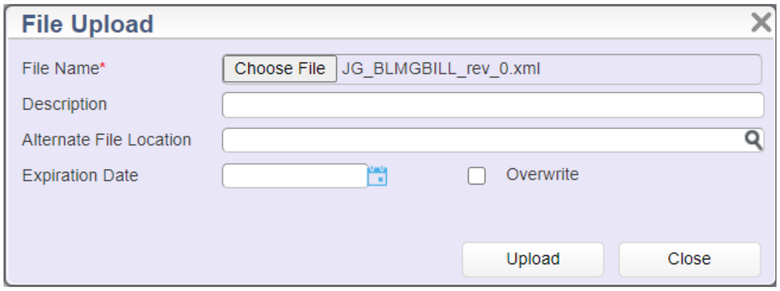


Once exported, the file is visible on the File Download screen, and you can download the file to your workstation from there.



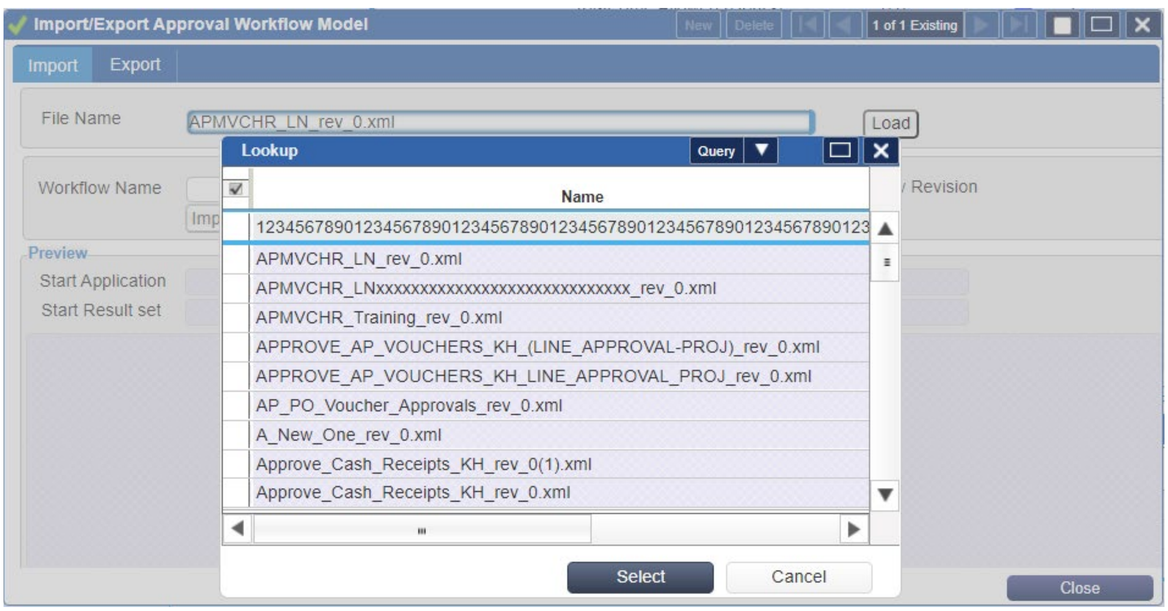
Manage Application/Content Links	SYMCMIAL	TEST_ALL_REV_0 (9).XML		text/xml
Approval Workflow Models	WFMAPPRL	TEST_ALL_REV_0 (9).XML		text/xml
Approval Workflow Models	WFMAPPRL	TEST_ALL_REV_0.XML		text/plain
Approval Workflow Models	WFMAPPRL	VOUCHER_APPROVAL_REV_0.XML		text/plain

To import a file, you first need to upload the XML definition file to Costpoint. Open the Approval Workflow application screen, and select **Process -> File Upload** from the system Menu.

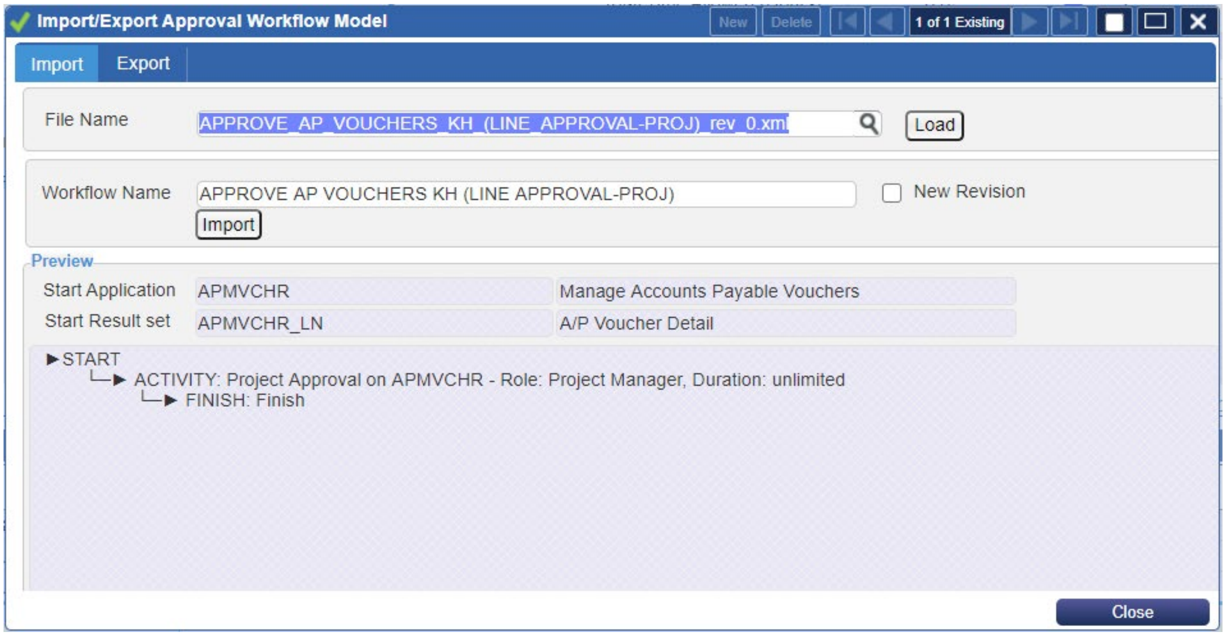


After you choosing file from your workstation, leave all other fields empty, and click on **Upload**.

Open the Import/Export subtask. On Import tab, select the newly uploaded file in the lookup.



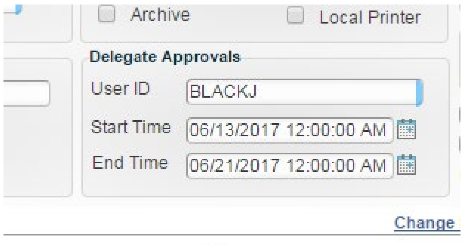
After file selection, click **Load**. This action checks for structural integrity of the workflow model definition file and loads the basic information into the **Preview** fields.



If you are certain that the model is what you expect, you can still change the Workflow name and click Import button. Once imported, you will need to query on the Approval Workflow screen to find it among your other models.

Delegate Approval

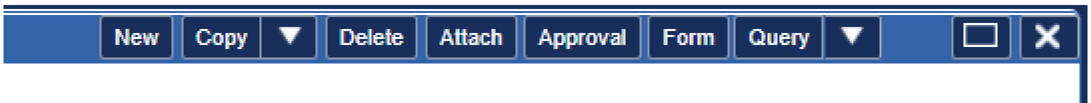
As a Costpoint user, you can decide to delegate all your approval rights and responsibilities to another person. This delegation can be permanent or temporary. Use the **Delegate Approvals** group box on the User Preferences screen to enter another user as your delegate and to define the time interval for this delegation.



All fields are optional. If the **Start Time** and **End Time** are missing, the delegation is permanent or until this record is changed again. If only the start time is entered, the delegation will begin at that time and will be permanent until changed. If only end time is entered, delegation starts immediately and lasts until end time is reached.

Running Approval Workflows

After you have defined and activated, or set a test mode for a workflow model, all the associated application screens become **Approval Workflow Enabled**. For all configured application screens, an **Approval** button displays in the screen header.



Depending on the color of the button, you can conclude the state of the workflow:

- Default color means that the workflow is not yet started.
- Orange means that the workflow is pending.
- Green is for successfully completed workflows.
- Red indicates a rejected workflow model.

> **Note:** Please note that if multiple workflows are assigned to a single screen, button coloring cannot be conclusive to one of them. In this case, a color is the combination of all associated workflows state.

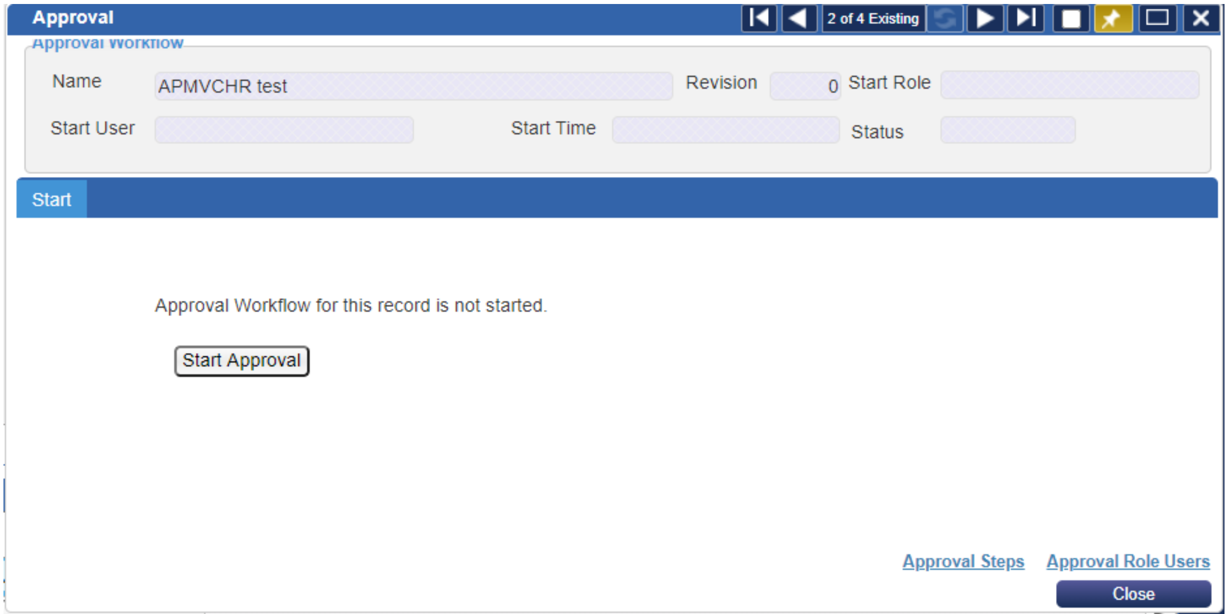
Clicking the button opens the Approval dialog box. This dialog box has several tabs which are hidden or shown based on the current state and context of the workflow.

The header section displays the **Name** of the workflow and a **Start Role**. If the workflow has already started, the **Start User**, **Start Time**, and **Status** fields populate with the appropriate information.

Usually there is only one workflow associated with the screen, but theoretically there can be more. If there are multiple associated screens, the Approval dialog box can have multiple records. You can use **Next** and **Previous** buttons to locate a specific workflow. The same situation can happen with the single workflow, if you as a user are a member of multiple roles and parallel activities are assigned to those roles. In this case, you can use the **Next** and **Previous** buttons to locate the specific activity that you want to approve.

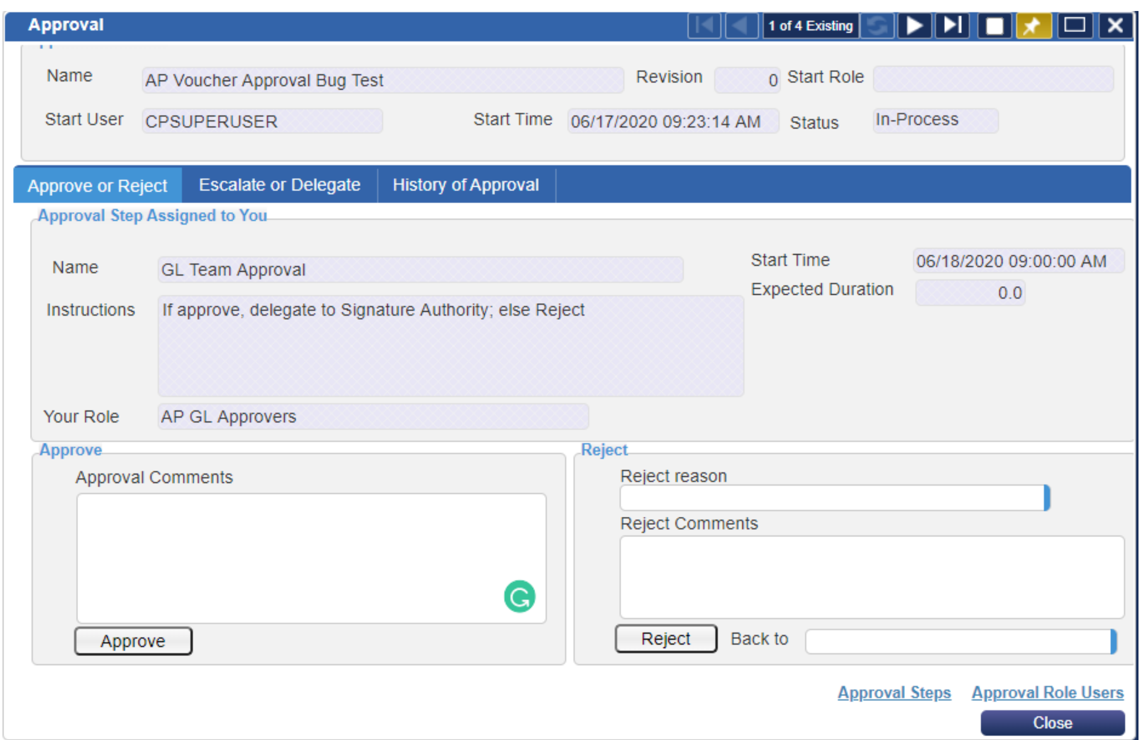
Start Tab

This tab is visible only when the workflow is not yet started, or it was previously rejected and can be started again.



Clicking the **Start Approval** button initiates the approval workflow case, and the internal workflow engine starts routing activities based on the workflow model designed in the [Approval Workflow Models](#) application.

Approve or Reject Tab

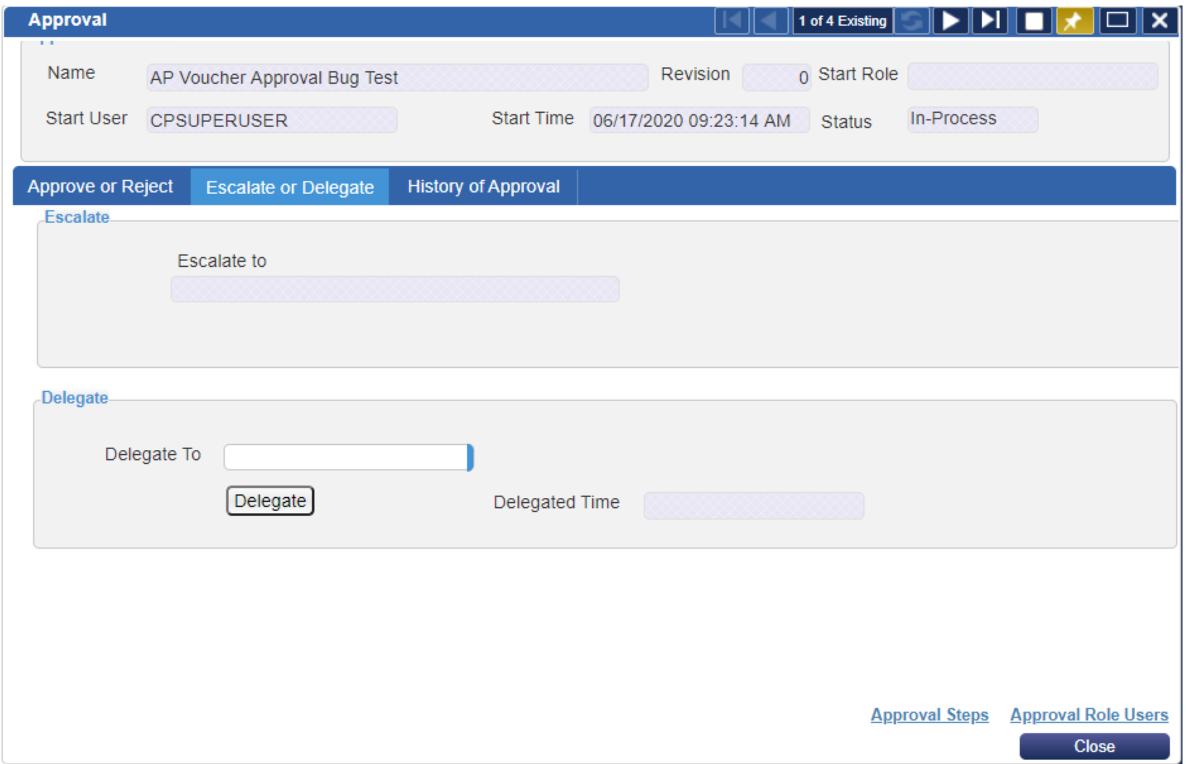


If an activity is assigned to you (your role) for approval, the Approve or Reject tab displays. In the top section of the tab displays the details of the activity (step) assigned to you. The bottom section provides two options: **Approve** or **Reject**.

To approve the activity, enter any optional **Approval Comments** you want, and click **Approve**. Routing of the workflow case continues to the next node in the approval workflow.

To reject the activity, select **Reject Reason**, and enter any optional **Reject Comments** you want. The **Back to** field defines the depth of the reject action. **Reject All** selection rejects the complete workflow while you can select any previously approved activity to go back just one or more steps in the flow. If the workflow model was configured to require a reject reason, you cannot reject the activity without first selecting one of predefined reject reasons.

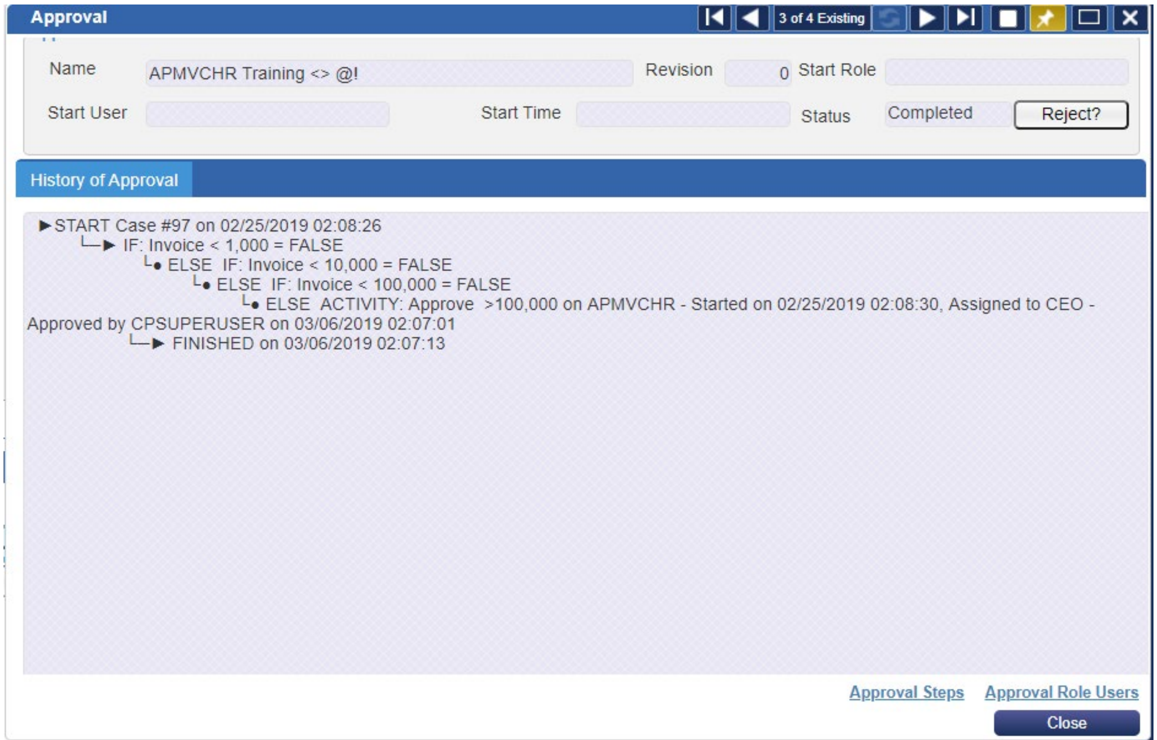
Escalate or Delegate Tab



By clicking the **Escalate** button on this tab, you can manually escalate the activity (step) to a predefined escalation role. As mentioned earlier, escalation will happen automatically if the assigned time and extended time for the approval role has expired. If this happens, this section will indicate that the activity is already escalated.

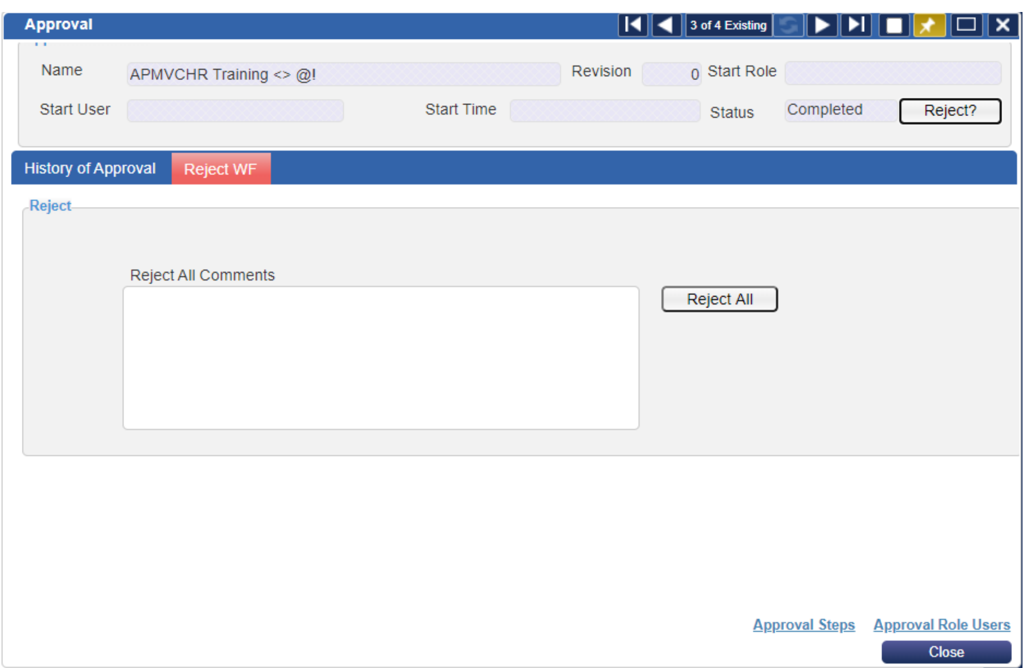
Delegate is another option to redirect approval of the activity to somebody else. You can enter, or use lookup to select, any other user. Clicking the **Delegate** button will redirect execution exclusively to that person.

History Tab



The History tab displays the current or complete audit of the workflow. Here you can inspect all the details about routing and completed approval.

Reject Tab

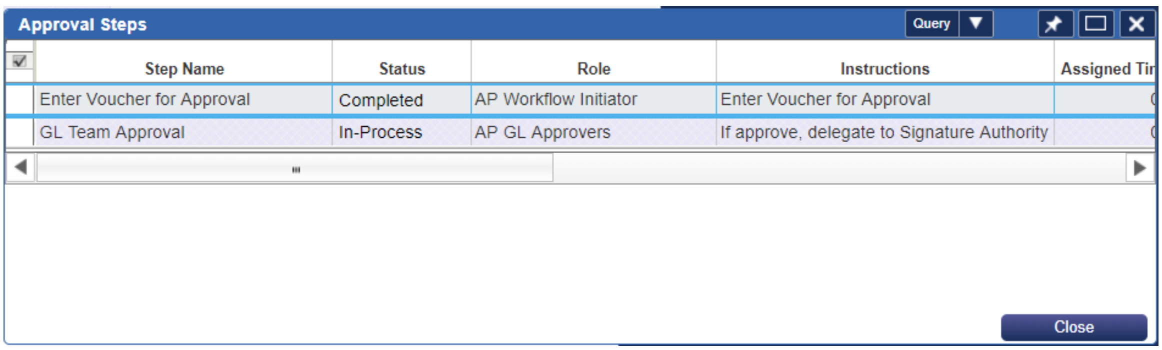


There are situations where an already completed workflow needs to be rejected. The most common scenario is when data has changed and you need to restart the approval process. To reject the completed workflow, click the **Reject?** button. Clicking this button enables the display of the red Reject WF tab.

This option is also available for already running workflows if the user is a member of any role that has already completed its approval steps. If you are a member of the current role, you can reject your activity and that will automatically reject the workflow. The rules for rejecting a workflow are the same as for rejecting an activity. If required by the model, you have to enter a **Reject reason** before clicking **Reject All** button.

Approval Steps

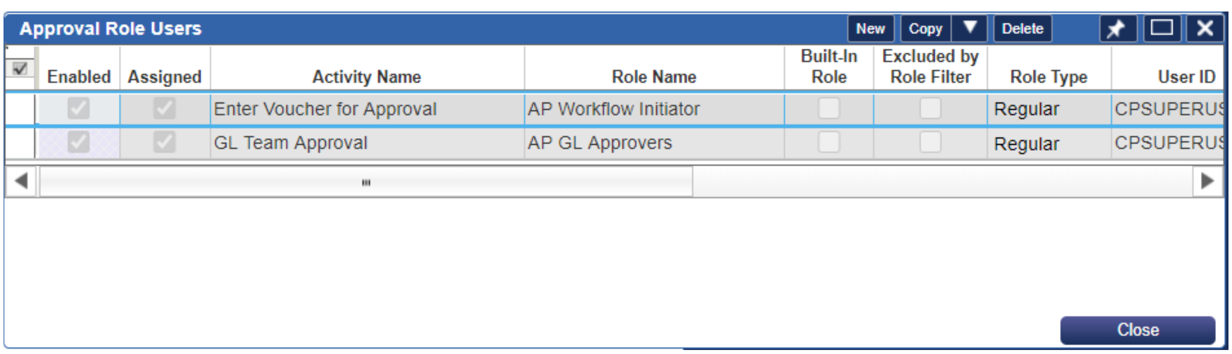
The Approval Steps subtasks lists all completed activities in tabular form.



Step Name	Status	Role	Instructions	Assigned Tir
Enter Voucher for Approval	Completed	AP Workflow Initiator	Enter Voucher for Approval	(
GL Team Approval	In-Process	AP GL Approvers	If approve, delegate to Signature Authority	(

Approval Role Users

This subtasks lists users that are assigned to a current activity and lists role users who will be assigned to a next activity. Determining next users is a complex process where some users might be assigned through delegation and some might be filtered out by a role filter.



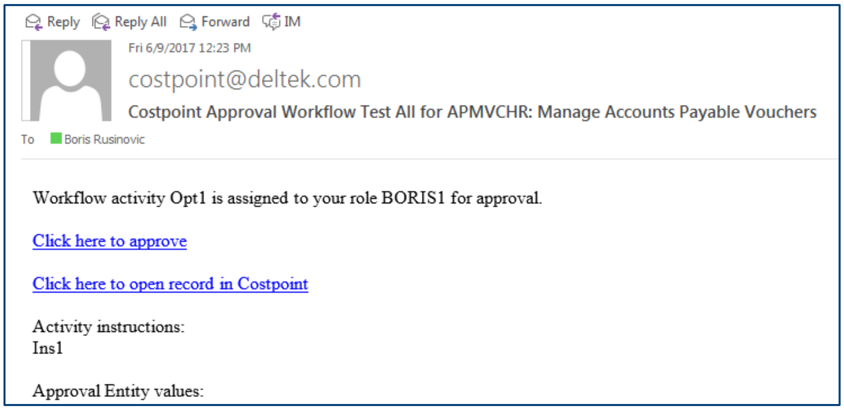
Enabled	Assigned	Activity Name	Role Name	Built-In Role	Excluded by Role Filter	Role Type	User ID
✓	✓	Enter Voucher for Approval	AP Workflow Initiator			Regular	CPSUPERUS
✓	✓	GL Team Approval	AP GL Approvers			Regular	CPSUPERUS

For the next activity, the system presents users who will be assigned to the **Regular** and **Escalate** role. The approver of the current activity here has the option to deselect some users and exclude them from the approval process of the next activity.

The system will validate this selection and won’t permit approval if at least one approver is available for the approval process of the next activity.

Approval by Email

Whenever an activity is assigned to the role, all members of the role receive an email notification. Note that the notification check boxes must be selected on the Edit Activity screen. The notification message contains two links:


Reply Reply All Forward IM
Fri 6/9/2017 12:23 PM
costpoint@deltek.com
Costpoint Approval Workflow Test All for APMVCHR: Manage Accounts Payable Vouchers
To Boris Rusinovic

Workflow activity Opt1 is assigned to your role BORIS1 for approval.

Click here to approve

Click here to open record in Costpoint

Activity instructions:
Ins1

Approval Entity values:

The **Click here to approve** link opens a default browser and initiates a special request that will approve the activity without logging in to Costpoint. The following message displays upon successful approval:

Workflow Activity has been approved.

If the approval request is invalid, the activity is already approved, or something went wrong, the system will respond with a different message:

Approve Workflow Activity failed.

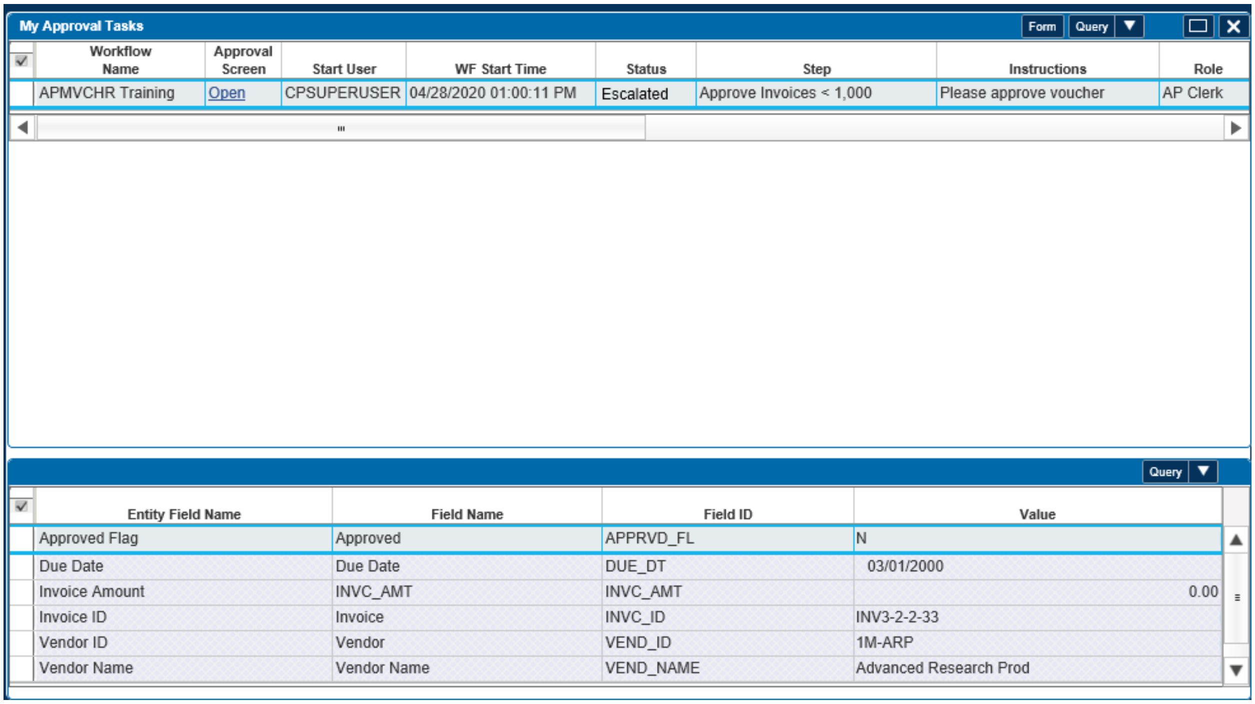
Note that approval by email is possible with any device capable of receiving email and internet browsing, including tablets and smartphones.

Attention: For information on how to customize the content of the notification messages and text for links refer to the Approval Email Message section.<Replace text>

The **Click here to open record in Costpoint** link opens Costpoint to the specific application screen and record that is the subject of the approval activity. This assumes that single sign-on is set up. If not, you will be first prompted to log in.

My Approval Tasks

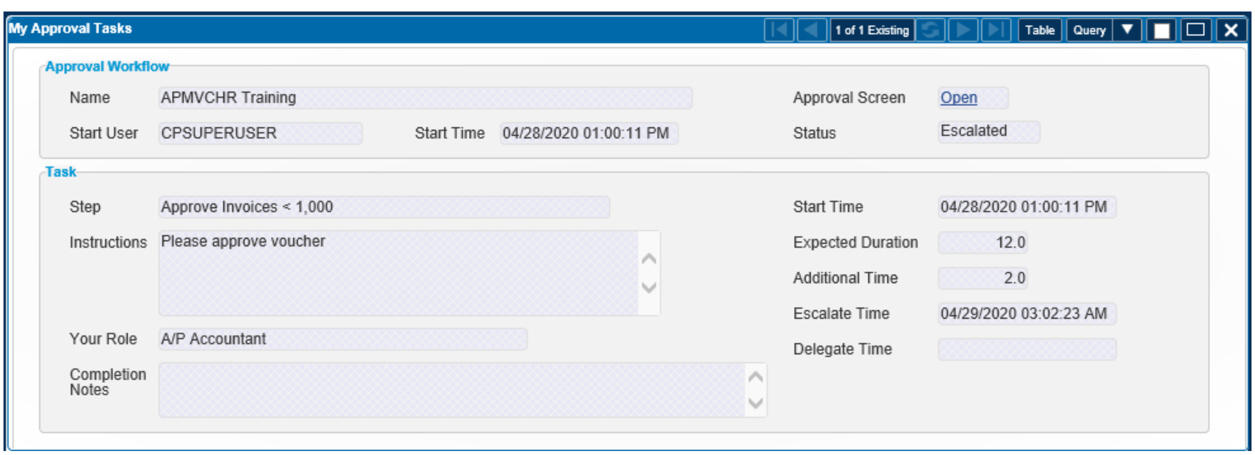
My Approval Tasks is a separate application that lists all activities that you as a Costpoint user and possible member of different roles are due to approve.



The top table window all the task (activities) that are due for approval. The bottom table window displays the specific entity values for particular workflow case.

Clicking the **Open** link for a task opens the record that requires approval.

The form view displays all the fields in a more structured form.



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