Automating Deltek Costpoint to Improve GovCon Compliance & Efficiency

10th Anniversary | THE REDSTONE EDGE

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- Technical consultant with Redstone GCI, specializing in business intelligence, data analysis, and extract-transform-load (ETL) efforts
- 28 years experience with the Deltek product suite as a user, administrator, and consultant
- Extensive experience with Costpoint software installation and configuration
- Background in IT, ranging from helpdesk operations to department management
- Experienced programmer and database administrator

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Learning Objectives

- ✓ Saving Application Parameters
- ✓ Setting Up Process Scheduling
- ✓ Scheduling Processes As Jobs
- ✓ Monitoring Scheduled Jobs
- ✓ Interacting With Approval Workflows
- ✓ Understanding Workflow Architecture
- ✓ Administering Workflow Case
- ✓ Understanding Extensibility w/Workflows

Improving Compliance

Improving Efficiency

- Ensuring that critical processes (such as report table updates and revenue computation) are executed consistently and in a timely fashion.
- Ensuring that the proper people are included in approval decisions, and that approval is documented, recorded, and reportable.
- Ensuring that business rules and standards are reproducibly applied to ERP and ERP-adjacent data.

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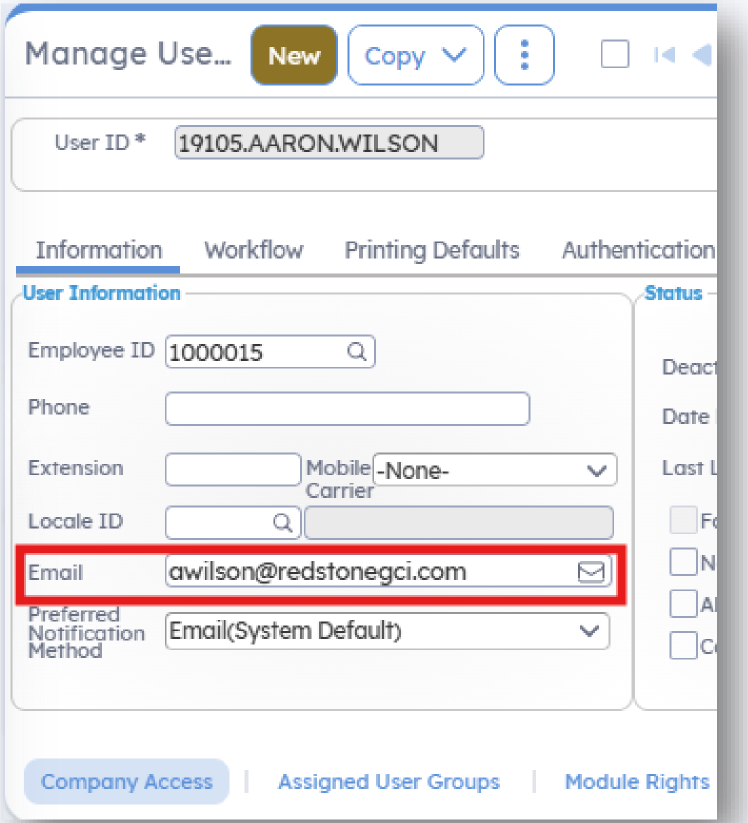
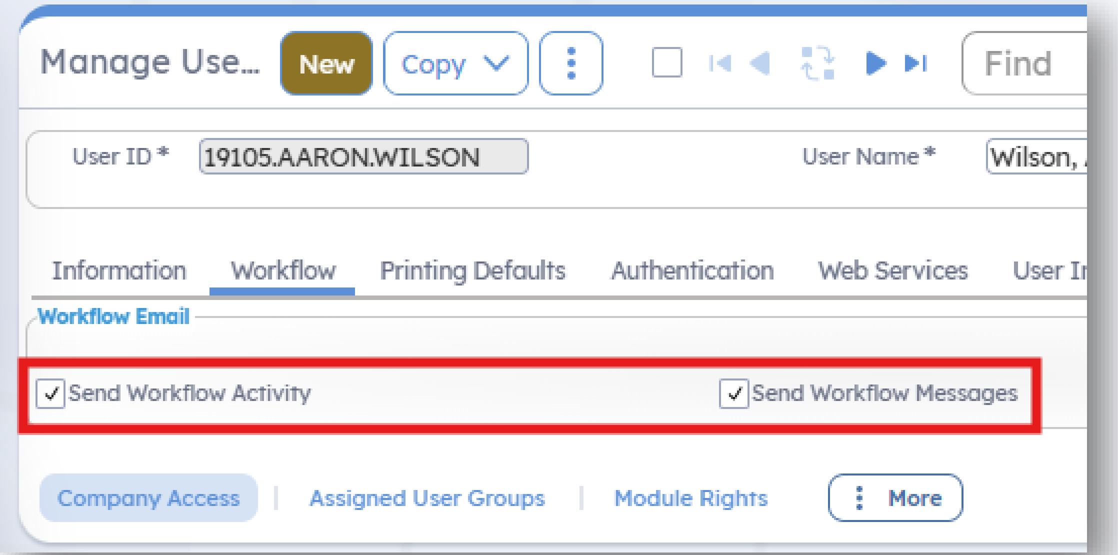
Is It An Application Or A Screen?

- Costpoint documentation refers to applications.
- Common parlance is to call an application a screen.
- This presentation will use the terms interchangeably.

Before We Start – User Notification Setup



- Make sure your users will be able to receive notifications for both scheduled jobs and workflows.



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Part I:
Parameters & Scheduling

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Saved Application Parameters

- ✓ Costpoint applications that perform a computation or generate a report typical require many prompts to be filled in before running.
- ✓ Filling in these prompts once, and then saving the prompts for later use, will greatly enhance the usability of the applications
- ✓ Saved application parameters are also critical for scheduling applications to run on their own.

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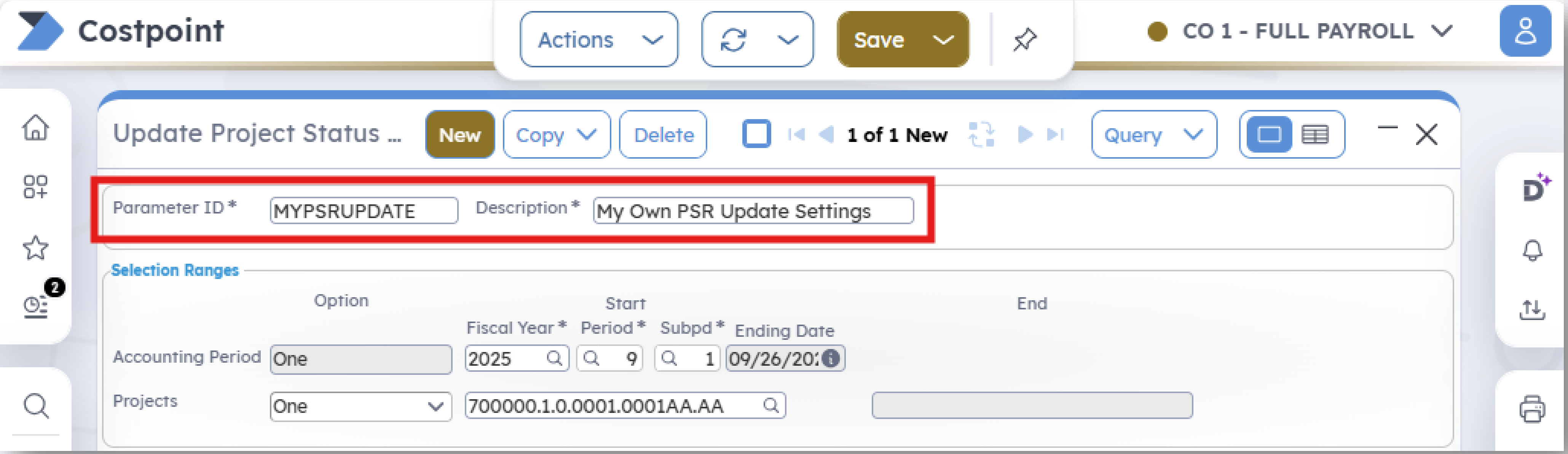
Saved Application Parameters

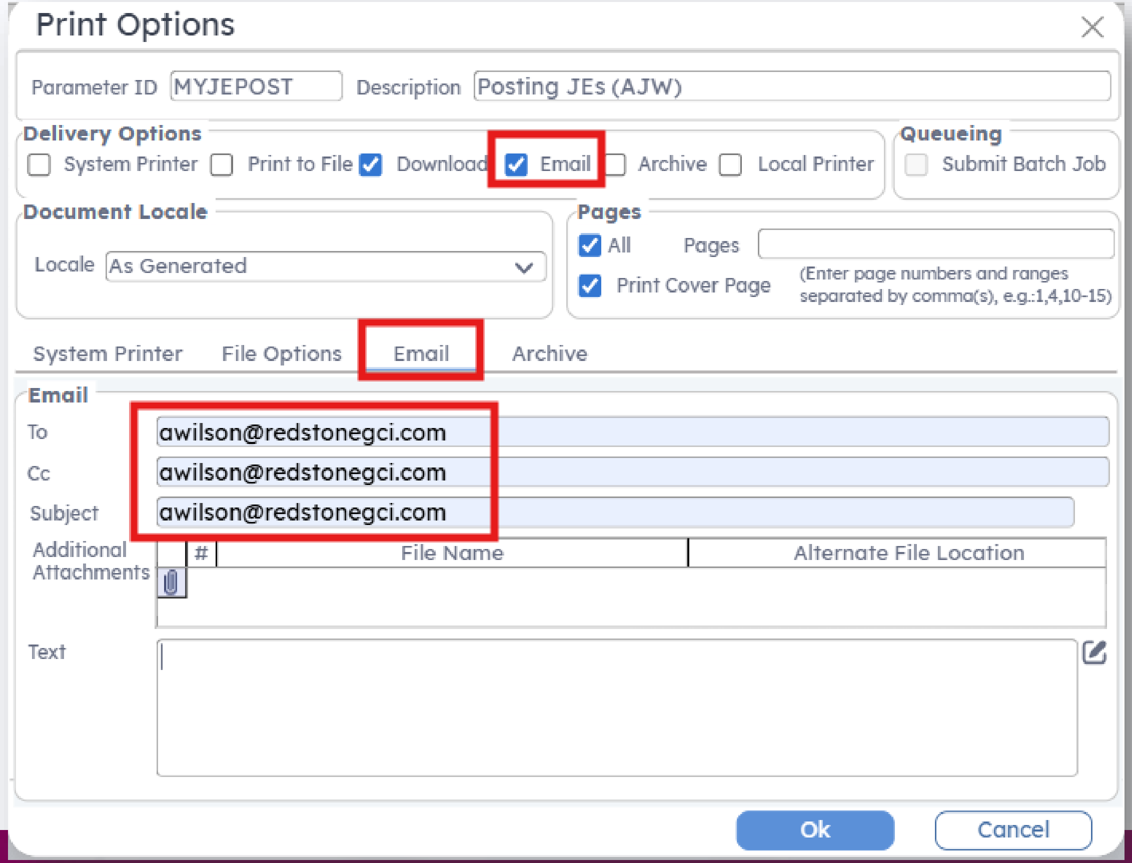
Any application that shows Parameter ID/Description is eligible.



Saved Application Parameters

If the application performs a posting process, you can set it up to email the posting report to you as part of the saved parameter.

- Open the application, query for the saved parameter, and then open the Print Options dialog.
- Turn on the email delivery option and fill out the Email tab, then click Okay.
- Finally, save the parameter again to preserve the email settings.



Saved Application Parameters

- ✓ If any parameter value needs to change, a user will need to actively change it and then save the modified parameter.
- ✓ One value that needs to updated frequently is the accounting period and/or subperiod.
- ✓ The Change Period Report Parameters utility can make this process easier for a limited set of applications.
  - This utility is located under Cost and Revenue Processing Utilities.

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What Is A Job?

- A job is generally any process that runs in Costpoint unattended.
- Jobs define a sequence of steps called operations that consist of:
  - An application (screen) that performs a process or generates a report
  - A saved parameter that provides the required values for the process
- Jobs are submitted to job queues that determine when the job executes.

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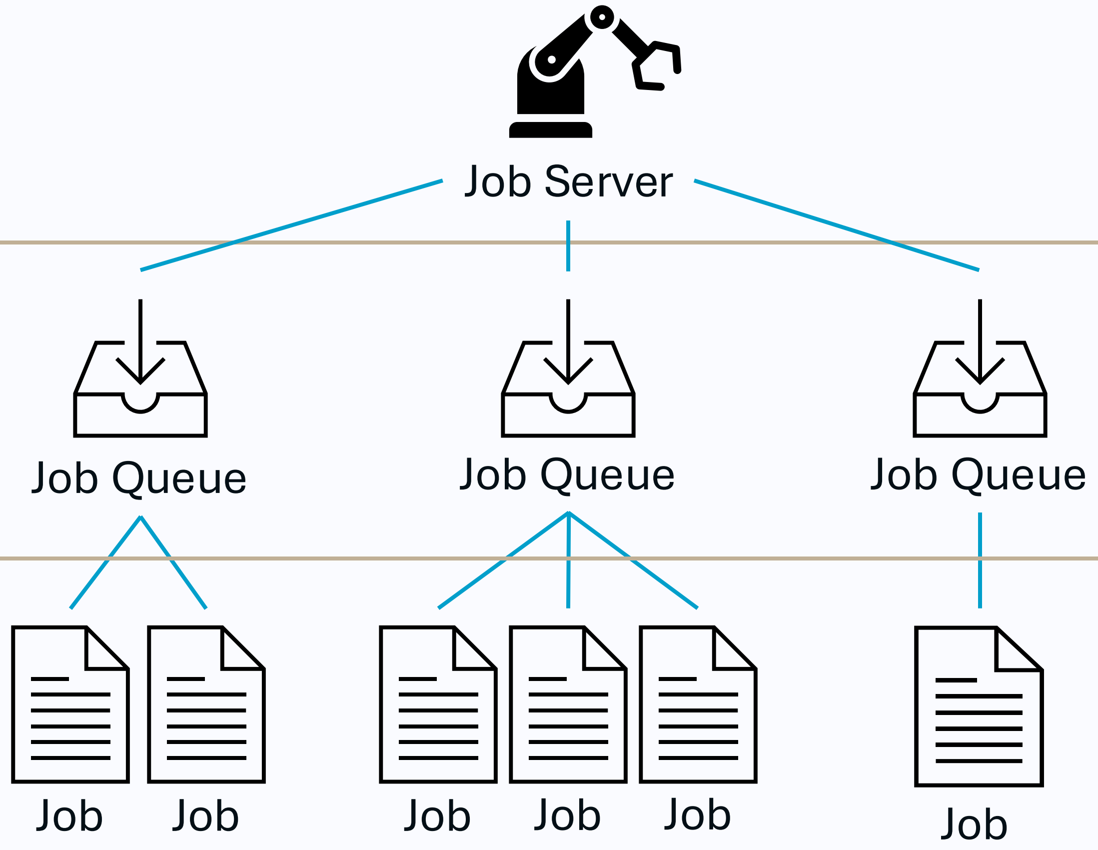
Job Server Architecture



Runs jobs in its assigned queues

Schedules and prioritizes jobs

Contains the steps to do the process

Initial Setup For Scheduling

- If you’ve never used scheduled jobs before, there are some things you need to do first before getting started.
- Most of this is a one-time setup, but there may be reasons to create additional queues or other objects in the future.
- The order of setup is not very intuitive…
  - … but we’ll walk you through it.

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Initial Setup For Scheduling

- Create one or more job queues.
  - Queues can be set to process jobs sequentially or non-sequentially.

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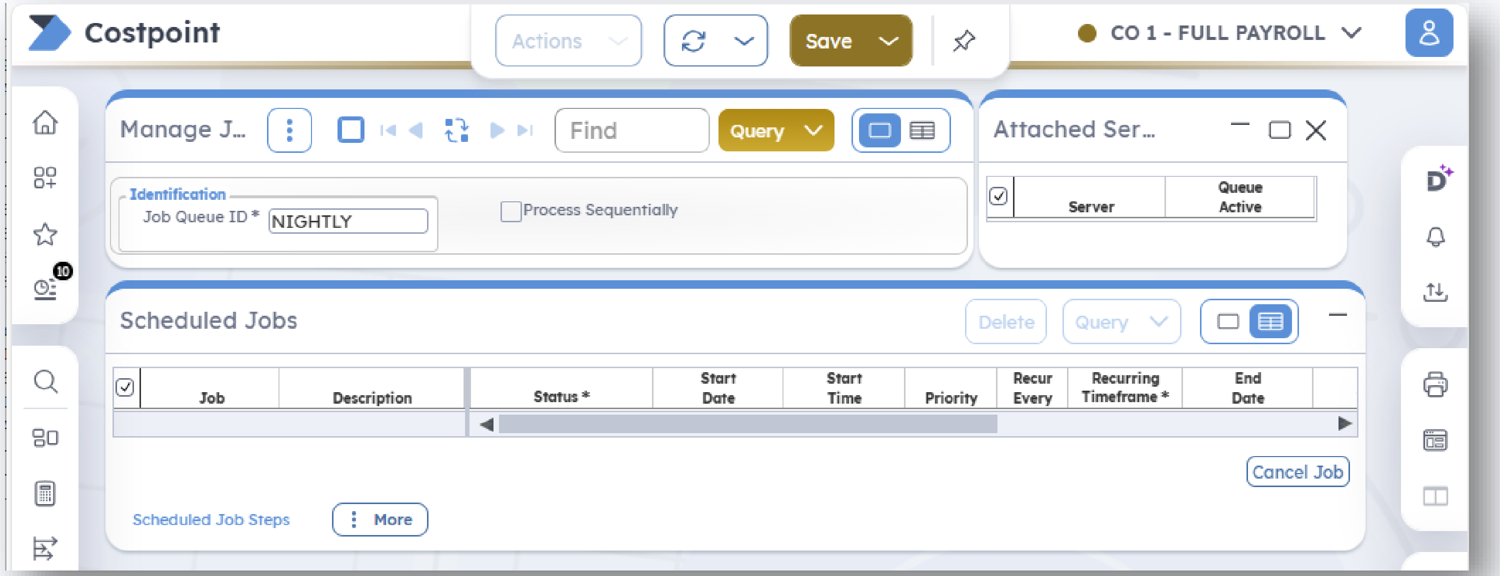
Job Management

Job Management Codes

Manage Job Queues



Initial Setup For Scheduling

- Create one or more job servers.
  - One server is almost always enough to handle any number of jobs.

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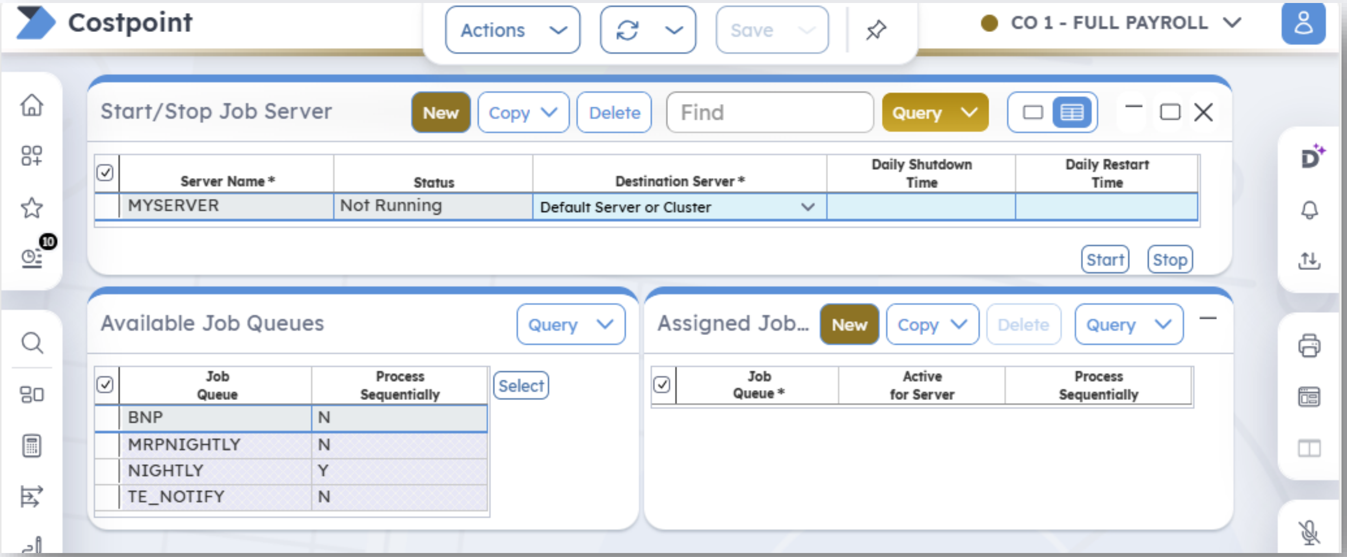
Job Management

Job Management Processing

Start/Stop Job Server



- If a job server already exists, **do NOT create a new one.**

Initial Setup For Scheduling

- Assign one or more queues to the job server and save.
  - Be sure to check the Active For Server box for each assigned queue.
- Click the “Start” button.

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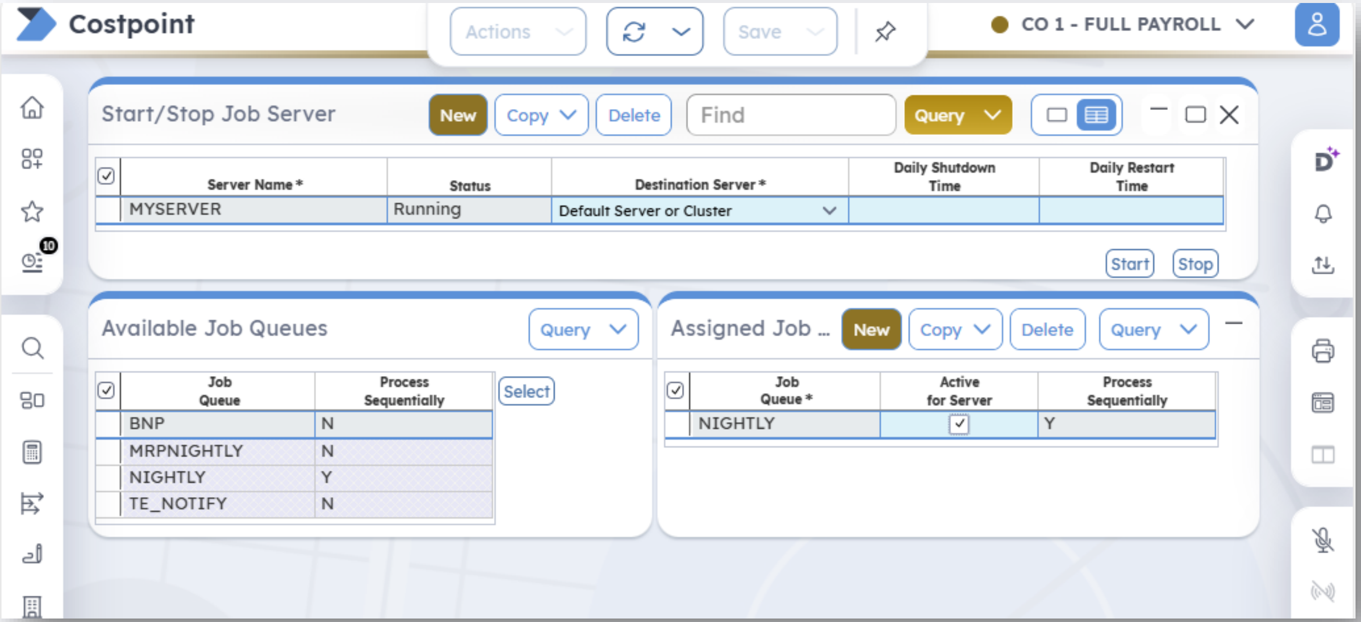
Job Management Processing

Start/Stop Job Server



Creating a Scheduled Job

- ✓ Start by opening the application you wish to schedule.
- ✓ Ensure there is a saved parameter that contains the values needed when run as part of the schedule.
  - We suggest incorporating “SCHD”, “JOB”, or something similar as part of the parameter ID for clarity.

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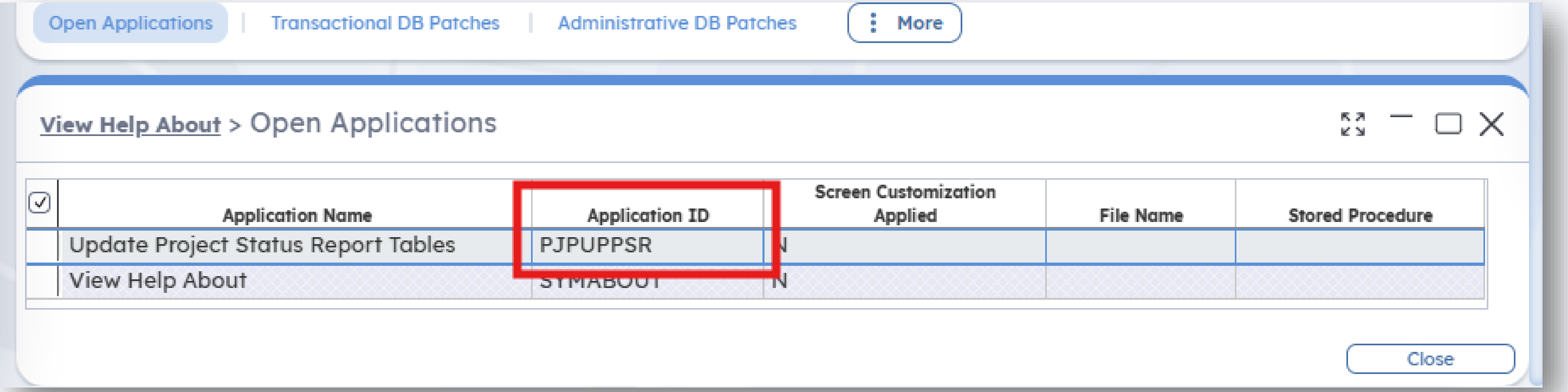
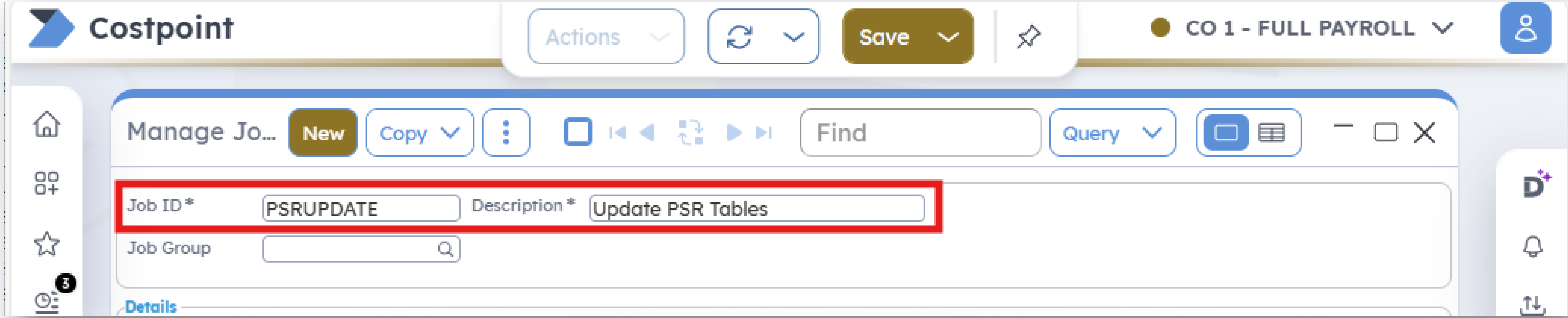
Creating a Scheduled Job

- While the application is still open, go to the Help menu and select About.
- In the Open Applications subtask at the bottom of the View Help About screen, note application ID for your application.



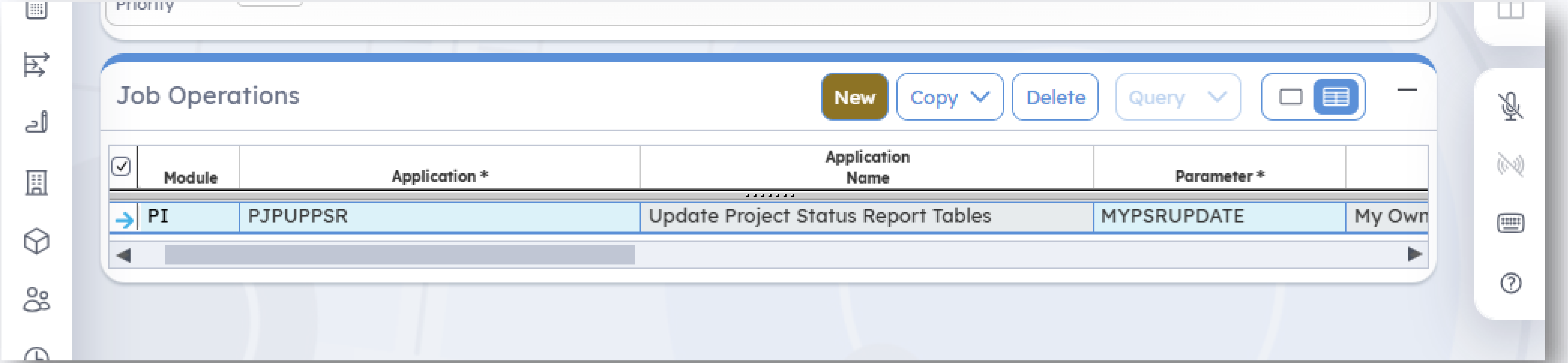
Creating a Scheduled Job

- On the Manage Jobs screen, enter a Job ID and Description.



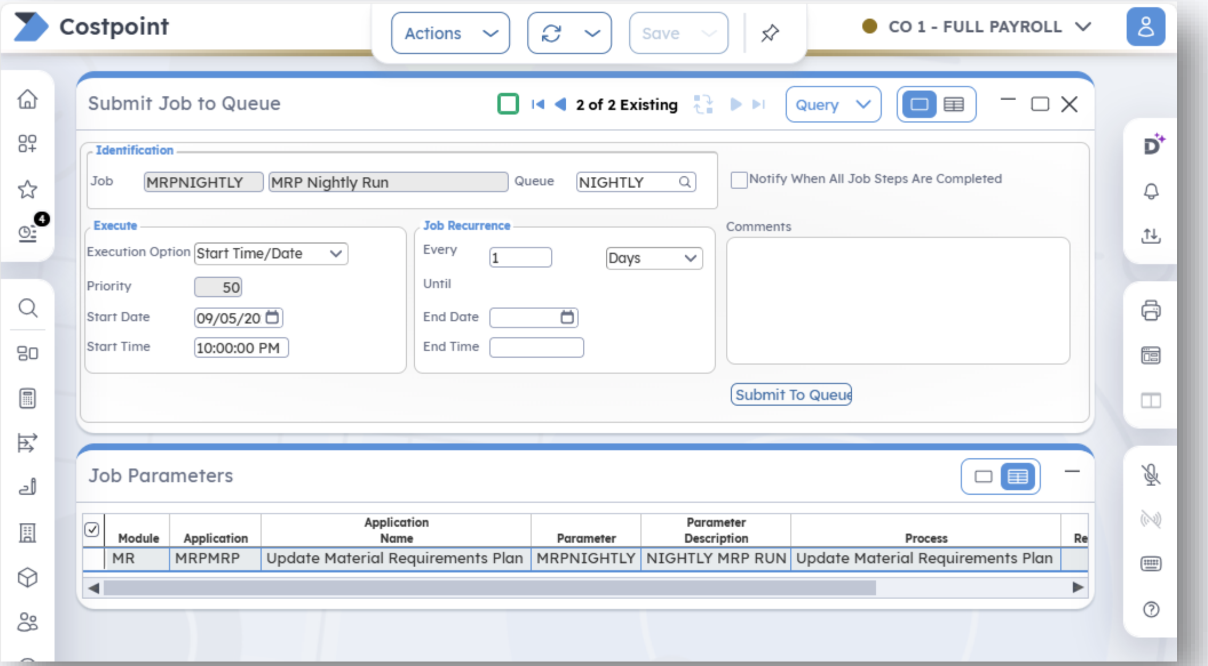
Creating a Scheduled Job

- On the Manage Jobs screen, add one or more operations.
- Enter or select the application ID from earlier under “Application” and select the appropriate saved parameter, then save.



Submitting a Scheduled Job to a Queue

- Query for the new job, populate the Queue box and the appropriate scheduling prompts.
- Click the Submit To Queue button.



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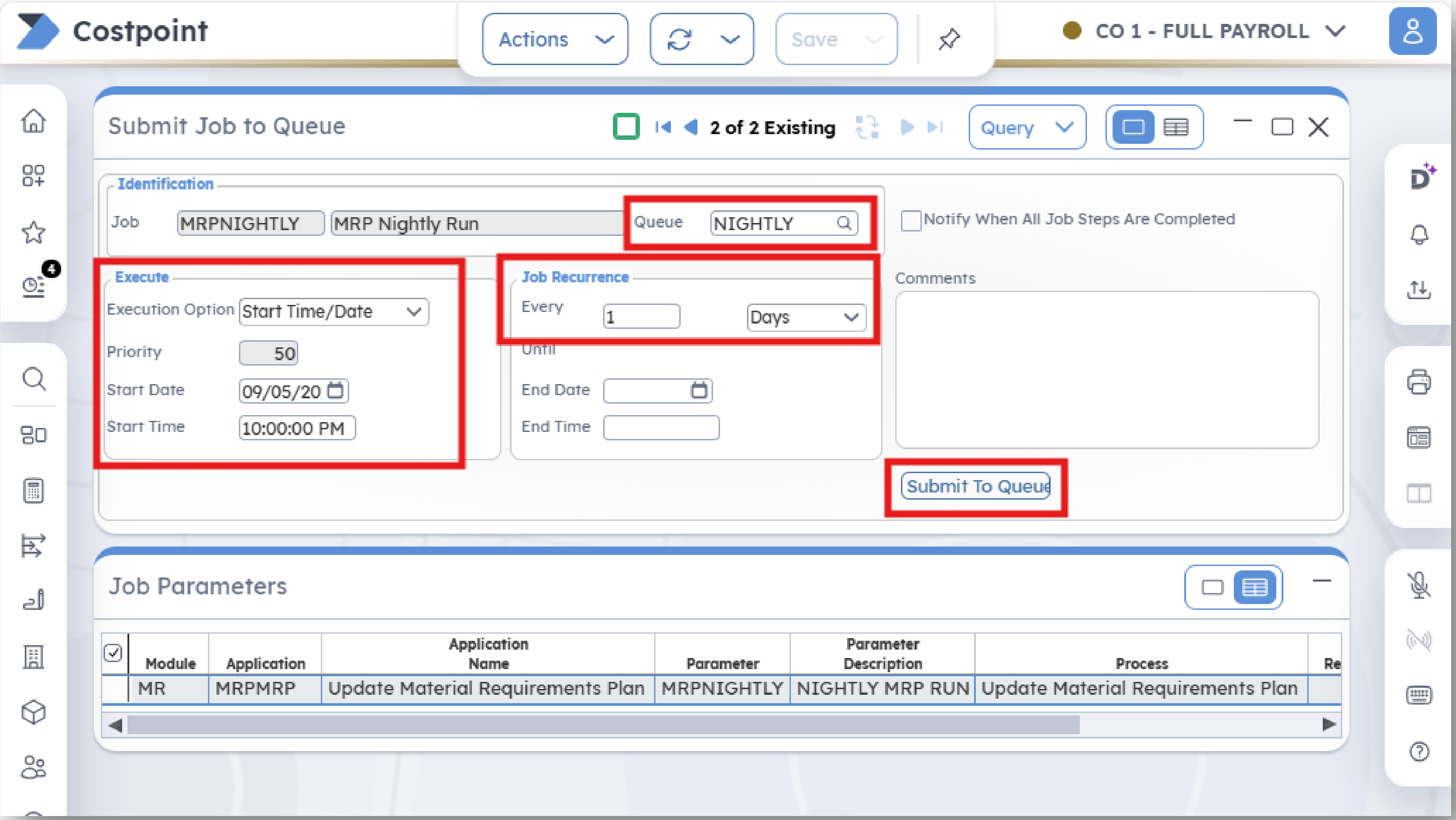
Job Management

Job Management Processing

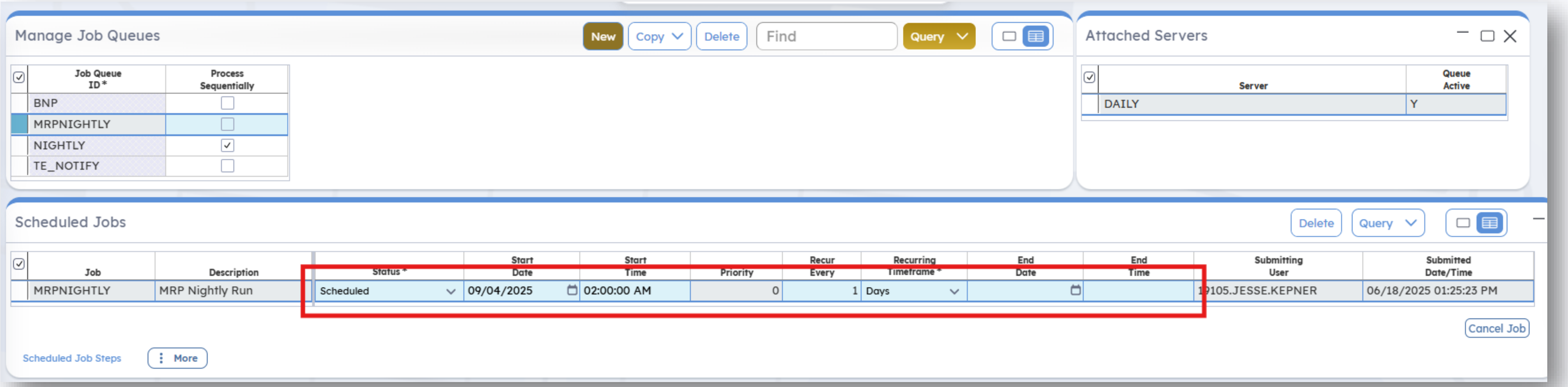
Submit Job to Queue

Submitting a Scheduled Job to a Queue



Managing Job Queues

- The Manage Job Queues application allows you to review and modify current job schedules.
- The Status dropdown allows you to hold or release the schedule.



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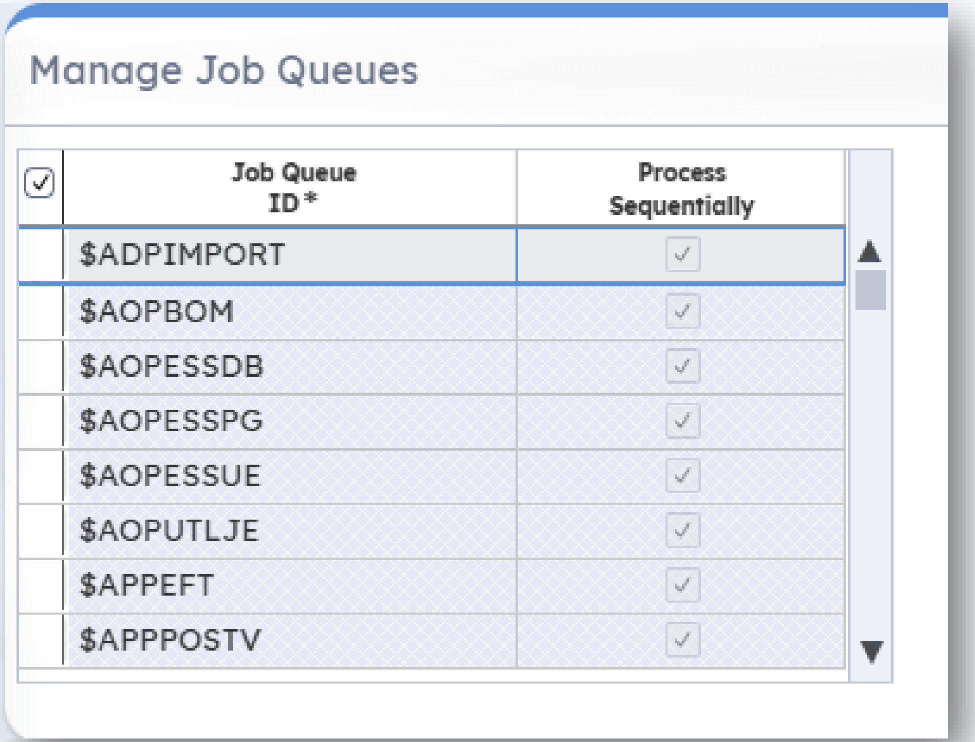
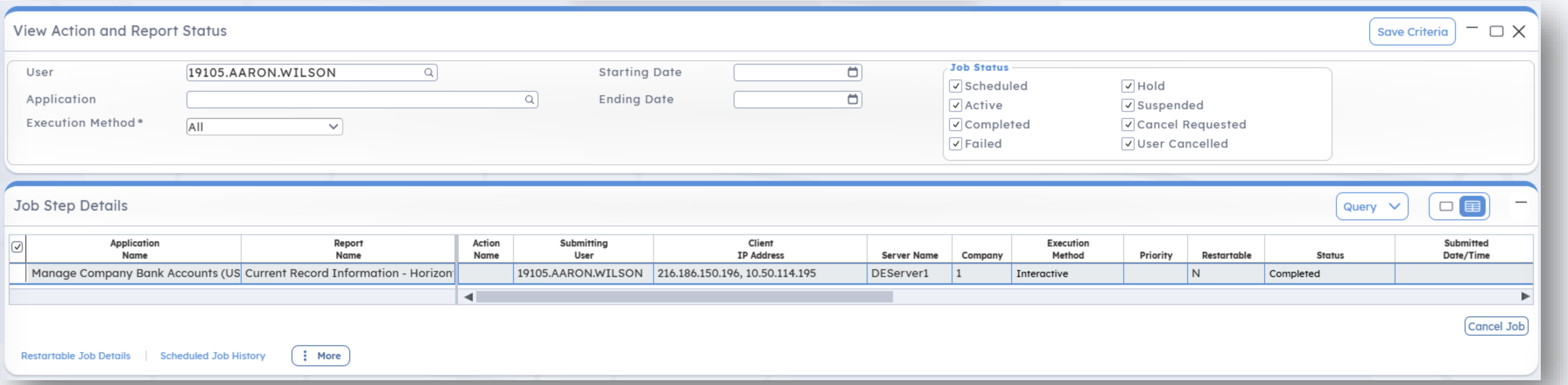
System Job Queues

- When using the Manager Job Queues application, you may see many oddly-named queues in the list, all beginning with “$”.
- These are background processing queues, used by Costpoint when certain functions are run by multiple users at once.
- These queues cannot be modified or deleted, but their jobs can be managed if necessary.



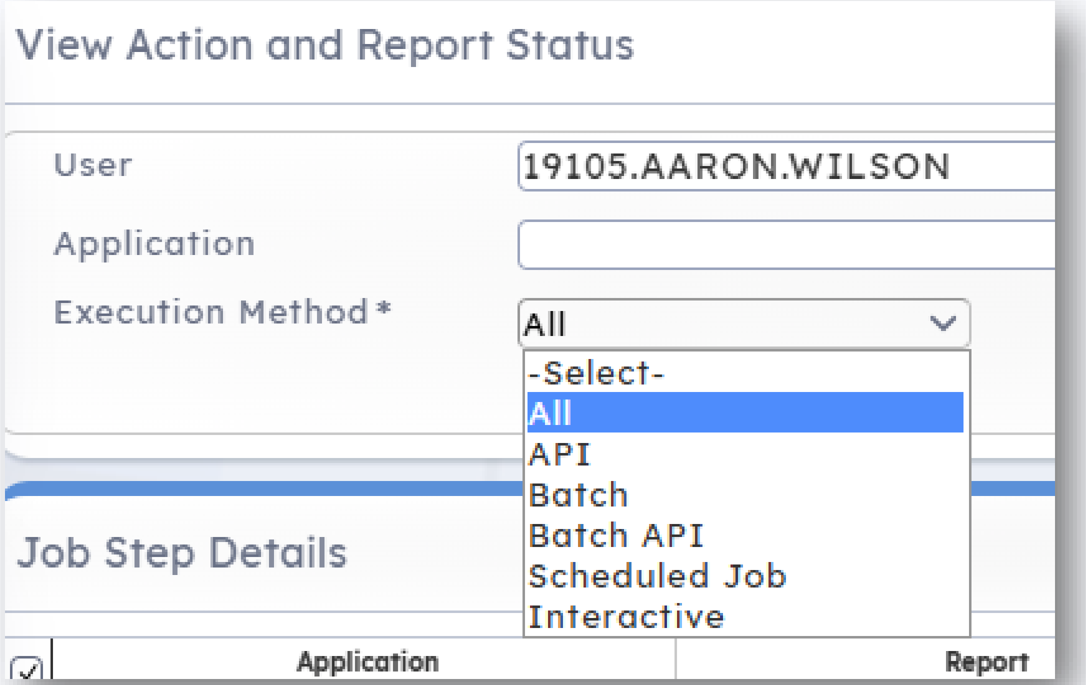
Monitoring Job Progress

- The View Action and Report Status application is the most useful tool for troubleshooting failed scheduled jobs.
- You can search for jobs by initiating user, specific application, time frame, job status, and execution method.



Monitoring Job Progress

- The View Action and Report Status screen can also give you details about processes other than scheduled jobs.
- For example, searching by the interactive execution method will show any process a user manually initiated in Costpoint by clicking on an action or button.



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Tips For Schedule Jobs

- ✓ Turn on the "Notify When All Job Steps Are Completed" checkbox when submitting a job to a queue.
- ✓ Job servers and queues are shared between companies, but jobs and saved application parameters are not.
  - Thus, for true multi-company environments, you only need to setup one job server and one job queue at a minimum.
- ✓ Job queues should almost always be set to process jobs sequentially to reduce potential collisions in the database.

Part II: Workflows

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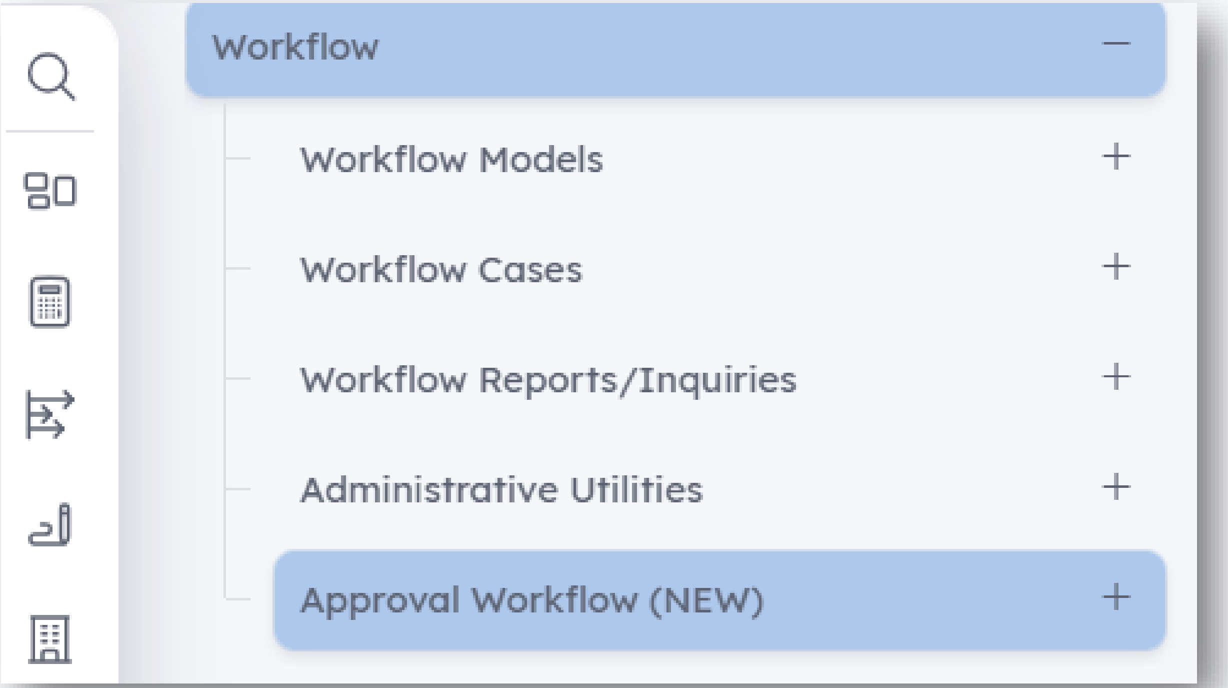
Traditional vs “NEW” Workflow Functionality

- Traditional workflows are a legacy from older versions of Costpoint
  - Mostly used now in certain applications where Deltek has defined special logic to alert users to activities and events.
  - Used for requisition approval, engineering change notices, and some logical processes
- Approval workflows are a more recent enhancement, enabling complicated routing and approval logic across multiple applications.
  - We will focus on these in this presentation.

A Quick Aside

This NEW in the menu drives me nuts….



Interacting With Approval Workflows

For my example, I have a simple workflow that requires approval of modifications on new projects.

The steps go like this:

- A user creates the project in Manage Project User Flow and initiates the workflow.
- The project manager is notified via email that there is a modification setup to be reviewed.
- The project manager goes to the Manage Modifications application and approves or rejects the workflow.
- The original user is notified of the approval or rejection.

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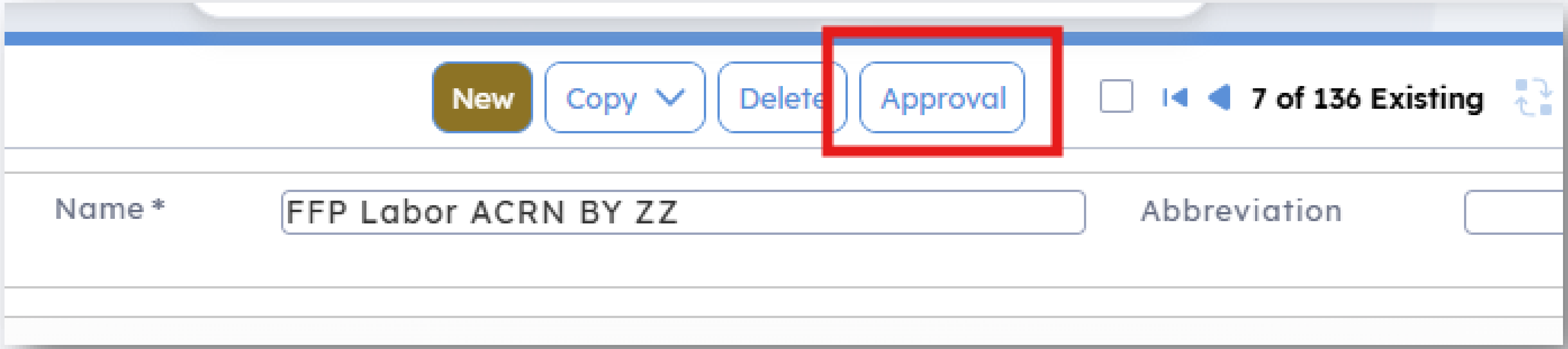
Interacting With Approval Workflows

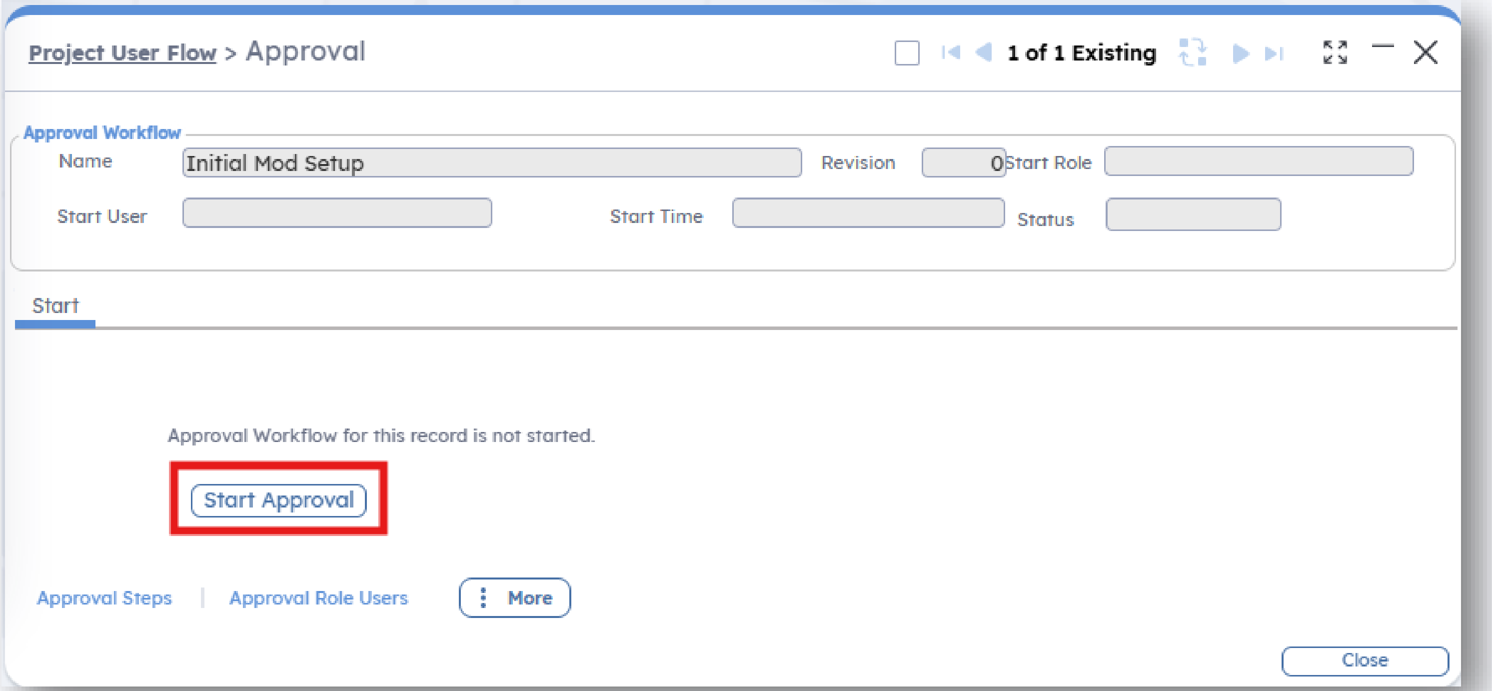
- When the new project is saved, an Approval button becomes available on the toolbar.



- Clicking the button brings up the Approval subtask.

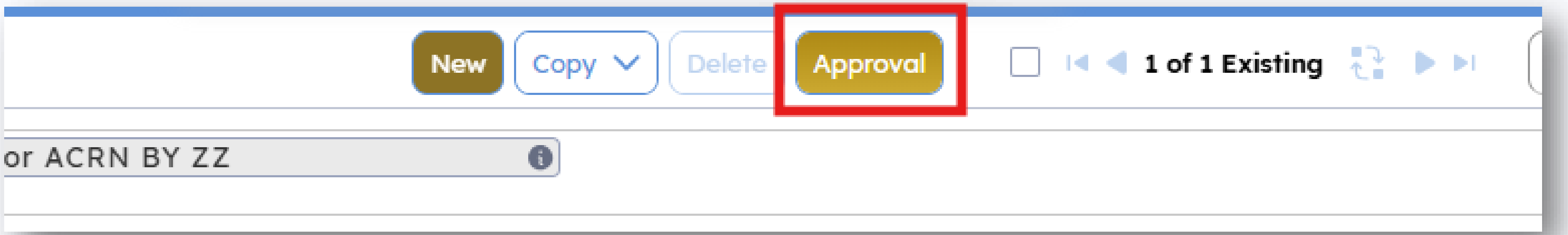
Interacting With Approval Workflows

- The user starts the approval process by clicking Start Approval.



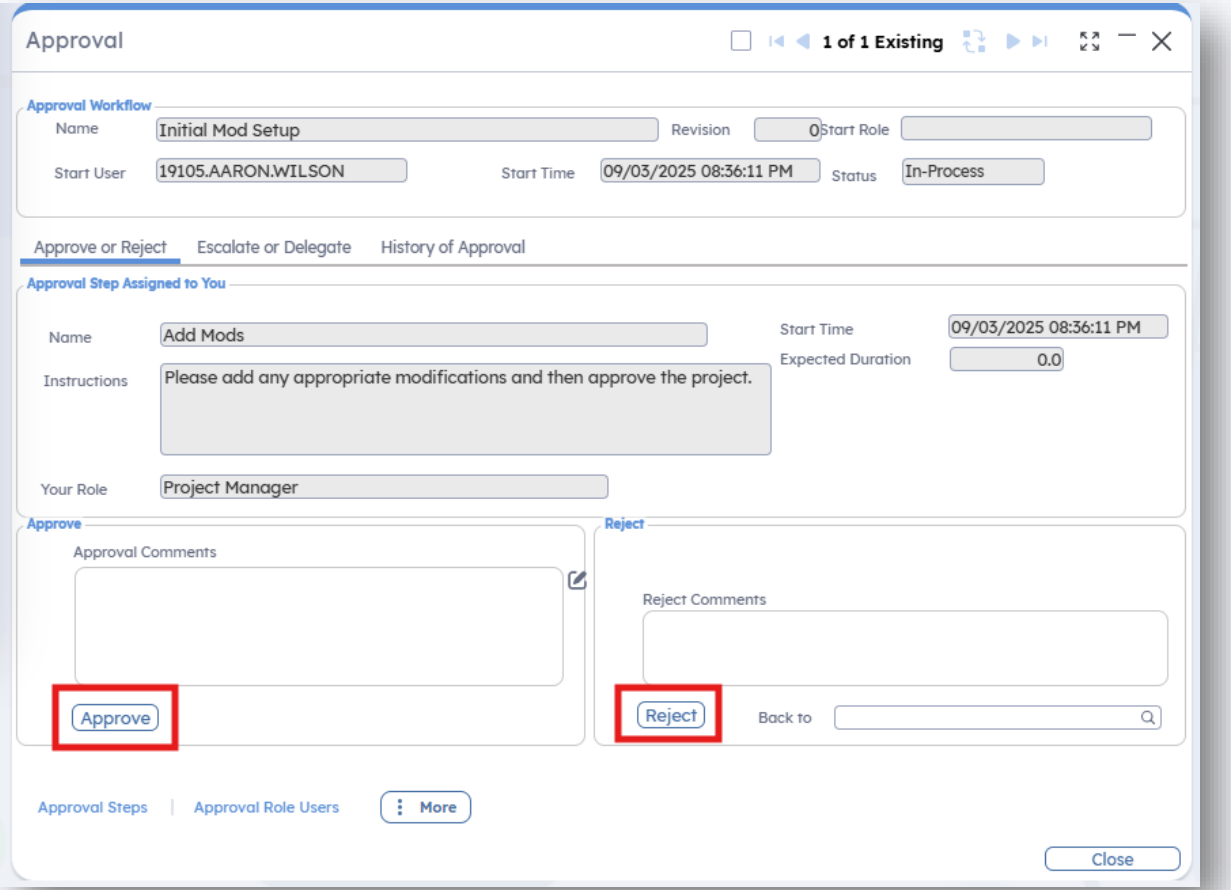
Interacting With Approval Workflows

- The project manager receives an email that includes a link to the Manage Modifications application in Costpoint.
- The Approval button appears in gold at the top.



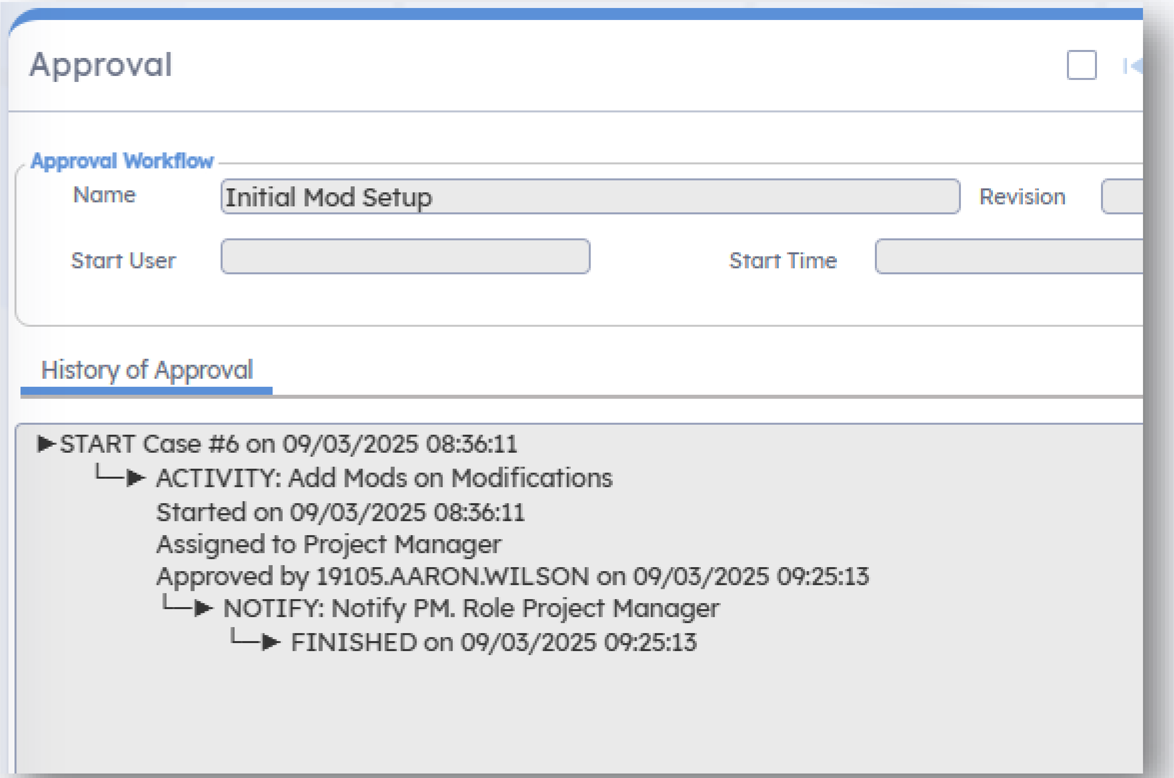
Interacting With Approval Workflows

- Clicking the Approval button opens the Approval subtask as before.
- The project manager may approve or reject, and they can include comments in either scenario.



Interacting With Approval Workflows

- After approval or rejection, the initial user receives an email saying the workflow is complete.
- At any time, the History of Approval tab on the Approval subtask will show who approved and when, even after the workflow is complete.



Interacting With Approval Workflows

- The color of the Approval button indicates the overall status of the workflow.
  - Clear – No workflow has been initiated
  - Gold – Workflow is in progress
  - Green – Workflow has been approved and is complete
  - Red – Workflow has been rejected and is complete

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Interacting With Approval Workflows

- Workflow configuration options include:
  - The email may allow approval and rejection without clicking the application link or logging into Costpoint.
  - Relevant information from the workflow process may be included in the email, such as project ID or modification amounts.
  - Approval steps may be set to will escalate automatically to another person after a set amount of time has elapsed.
- This is not an exhaustive list.

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Managing Workflow Cases

- Once a workflow has been started, it is assigned a case number.
- The Manage Approval Workflow Case Status application can be used to review the current state of any pending, completed, or rejected cases.
- It can also be used to reset the workflow to the beginning or to redirect a case to another user.

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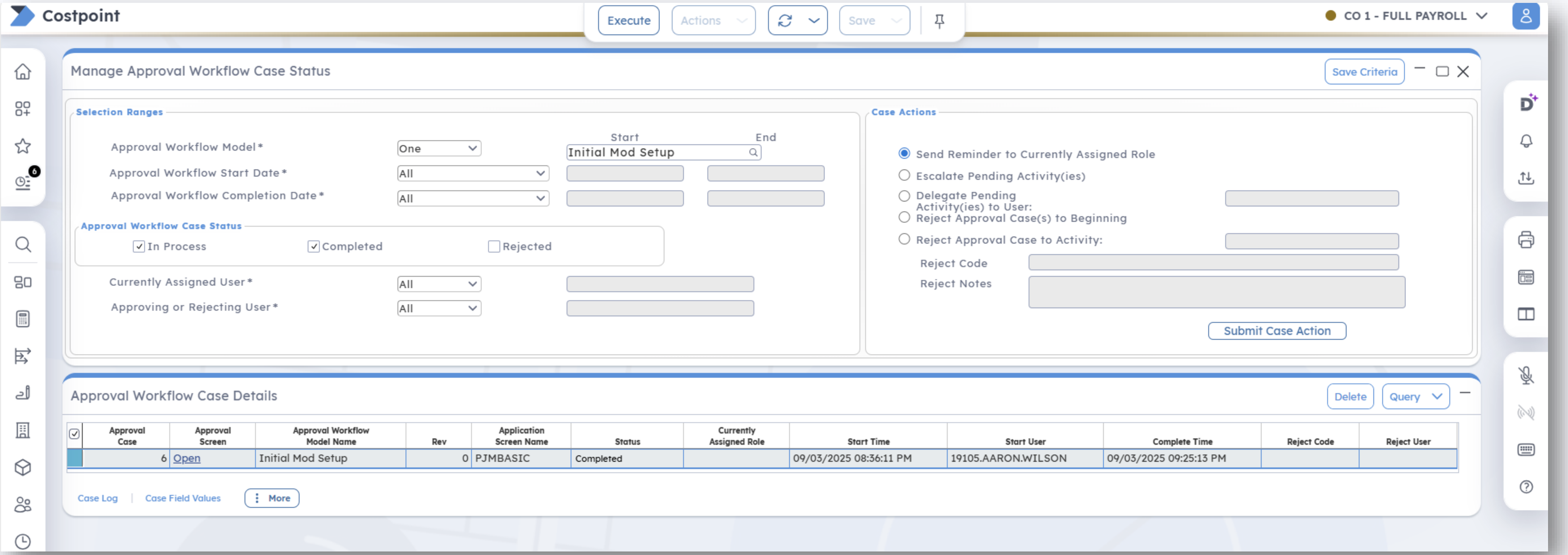
Managing Workflow Cases



Anatomy of an Approval Workflow

- A workflow consists of an overarching model and a series of nodes that perform some function in the workflow.

- Node types:

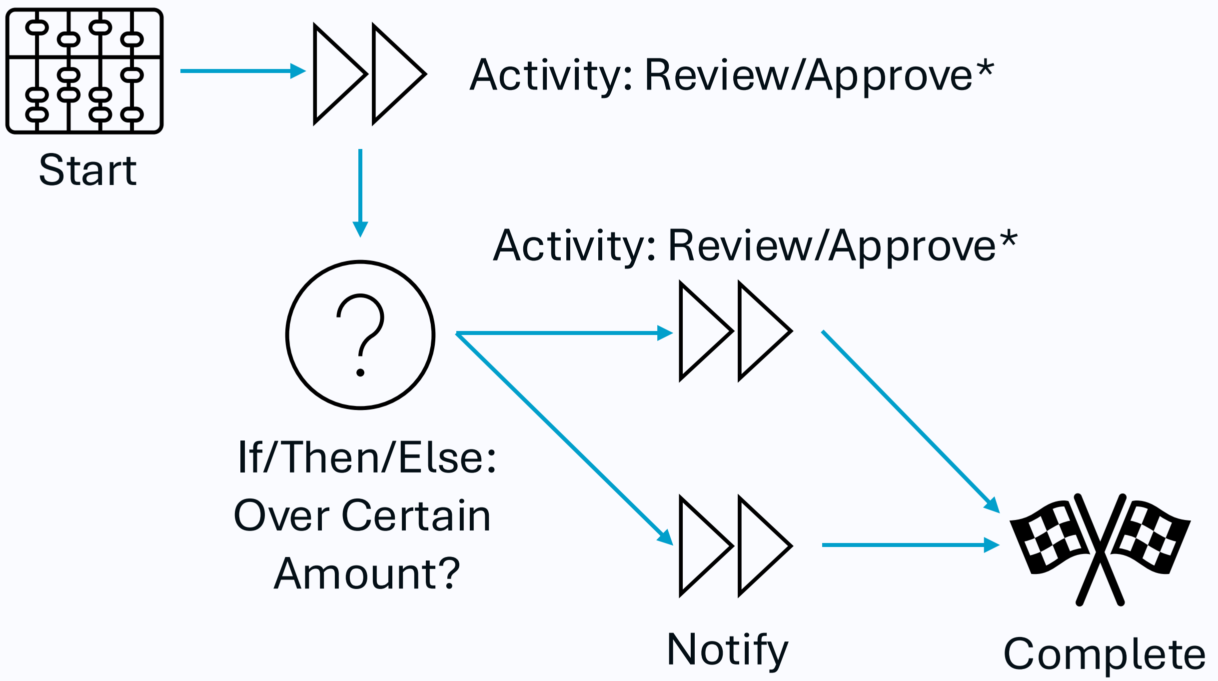
  - **Activity** – Require approval, optionally perform data updates

  - **If/Then/Else** – Evaluate criteria to determine the proper next step

  - **Notify** – Send an informational email to a user

  - **Group** – Define parallel approval scenarios

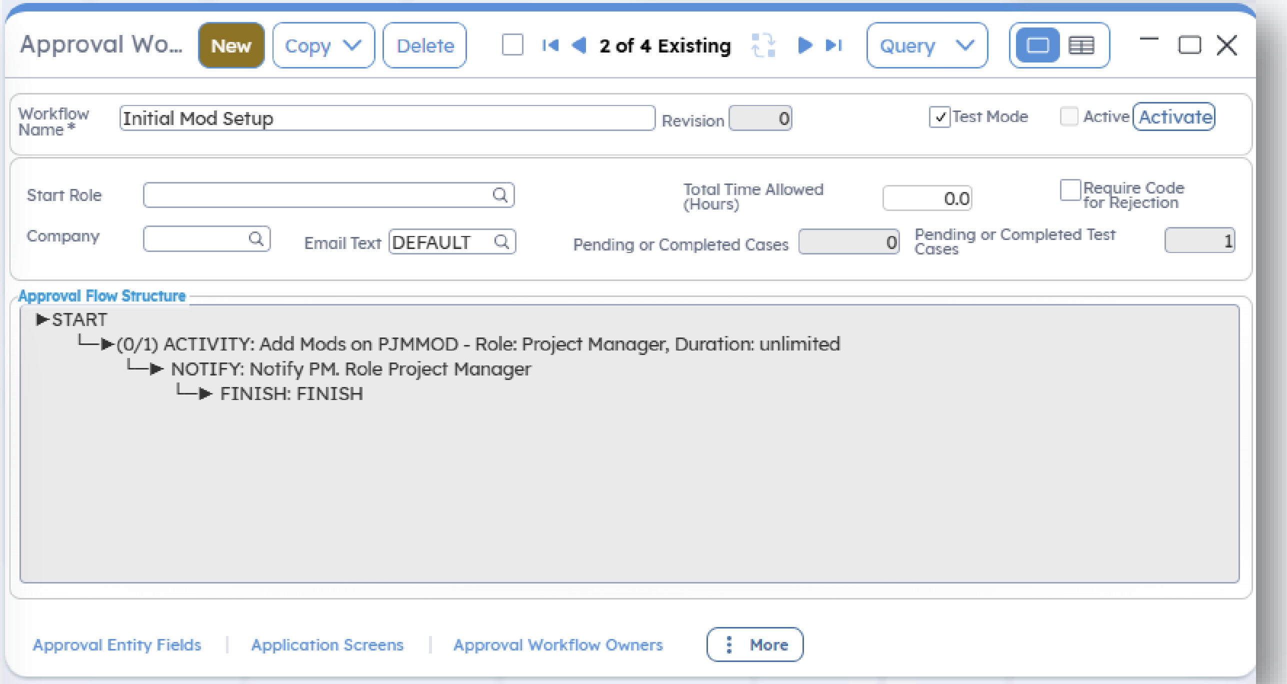
Anatomy of an Approval Workflow



* Tied To Specific Application

Anatomy of an Approval Workflow

- The Approval Workflow Models application allows the creation, modification, and testing of new workflows.
- The type and sequence of the nodes is presented graphically in the Approval Flow Structure box.



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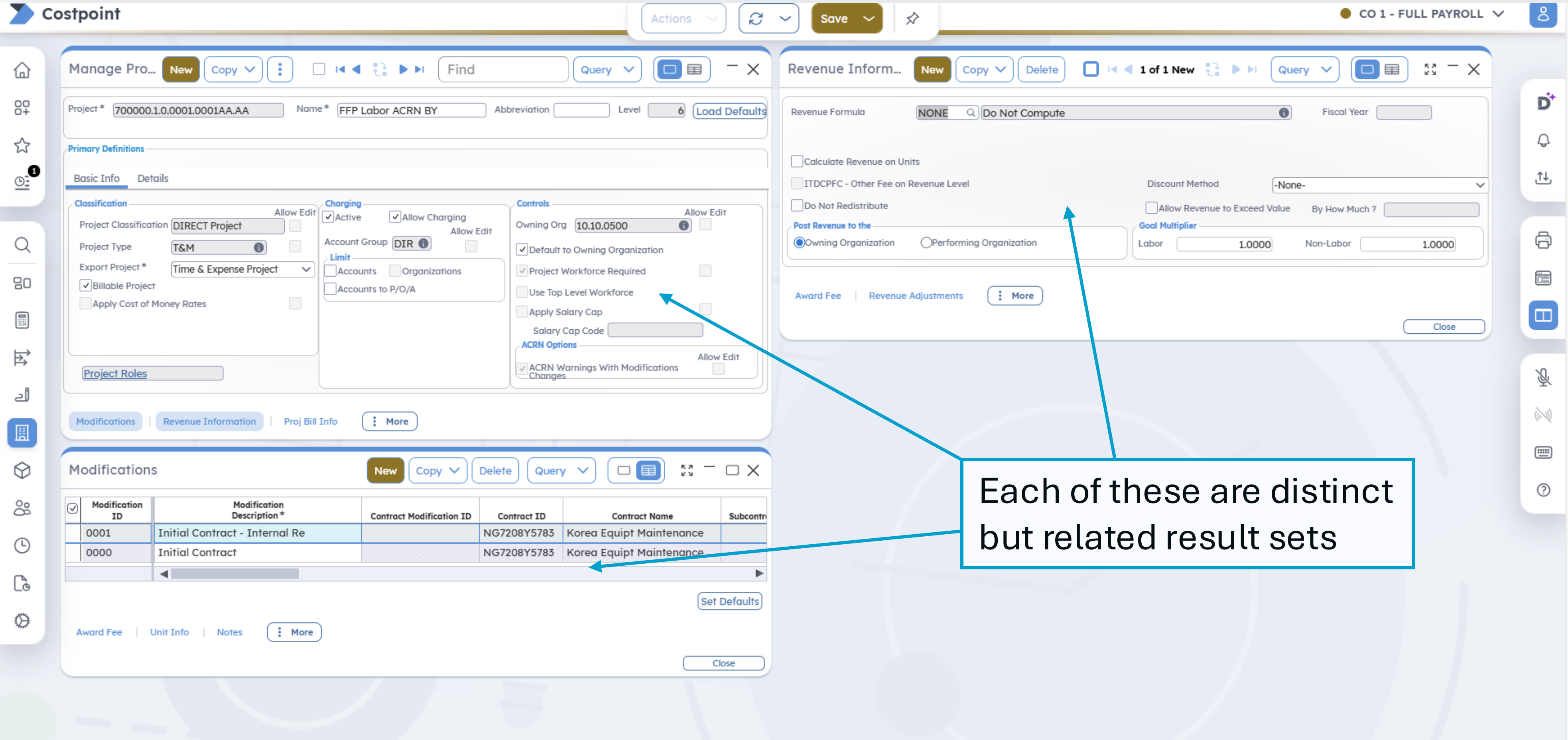
Applications & Result Sets

- Applications often consist of several areas on the screen:
  - Main or header area
  - Detail area, usually below the header area
  - One or more subtasks which may be open or closed
- Each area is “powered” by separate result set.
- Every field, checkbox, button, etc. within an area or subtask is a member of the corresponding result set.

Applications & Result Sets



Each of these are distinct but related result sets

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Applications & Result Sets

- When a workflow is connected to an application, it is tied to one result set within that application.

- This allows an approval workflow to apply to any of these areas (header, details, or subtask) independent of the other areas.

  - An approval workflow model could be designed that would require individual PO lines to be approved/rejected.

Routing, Roles, & Role Filters

- Routing of approval workflow cases is based on roles, such as project manager, buyer, AP clerk, etc.
- Employees are assigned to each role that is used by a workflow.
    - For example, if three people are assigned to the AP clerk role, all three people would be notified when a workflow needs their approval.
- Role filters can ensure that only the appropriate person assigned to a role receives the notification.

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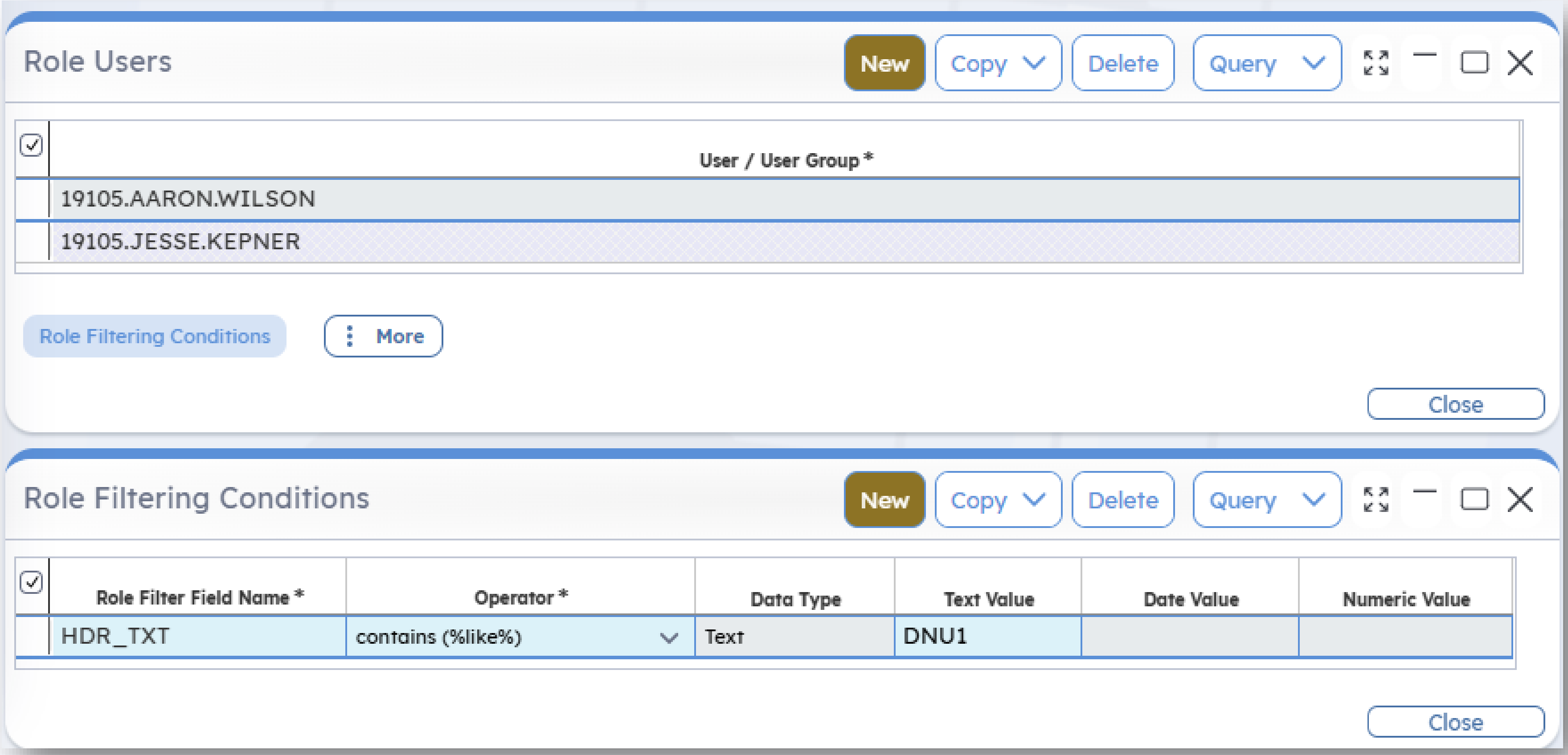
Routing, Roles, & Role Filters



Leveraging Extensibility With Workflows

- Each step in the workflow model is assigned to one application.
- All routing decisions (if/then/else, role filters, etc.) are limited to using data that is shown within that application.
- But what if, for example, you need to route a purchase order based on the project account group of the default project in Manage Purchase Orders?

The answer is extensibility.

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Leveraging Extensibility With Workflows

Extensibility is a way to expand the functionality of Costpoint to meet your business needs by:

- Adding new data fields to an application or changing how they look
- Creating new subtasks or even new applications
- Expanding the processing functions available in an application

In the end, 90% of extensibility development is modifying existing result sets to include new data or data from elsewhere in the system.

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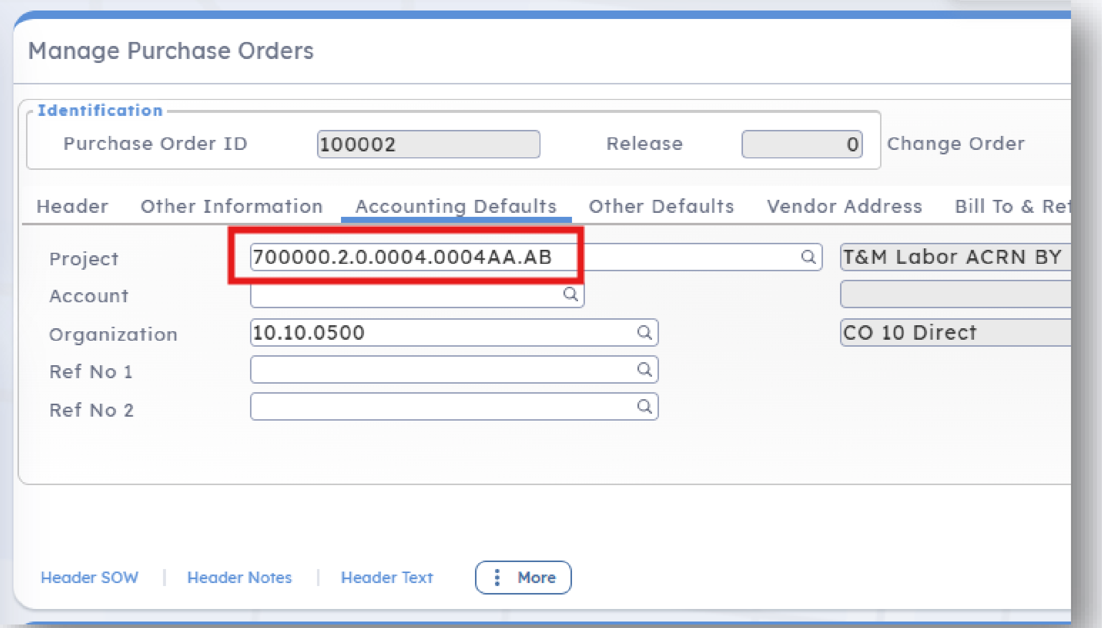
Leveraging Extensibility With Workflows

- In the previous example, I need to be able to route a PO based on the PAG of this project in Manage Purchase Orders



Leveraging Extensibility With Workflows

- To accomplish this, we use extensibility to create a new link between the PO header result set and the project data in the database.

- Once complete, the workflow model developer will see the PAG field as an available field to use in filters and if/then/else conditions.

- Assuming you have access to extensibility development in your environment, this enhancement might take 1 hour.

Questions and Discussion

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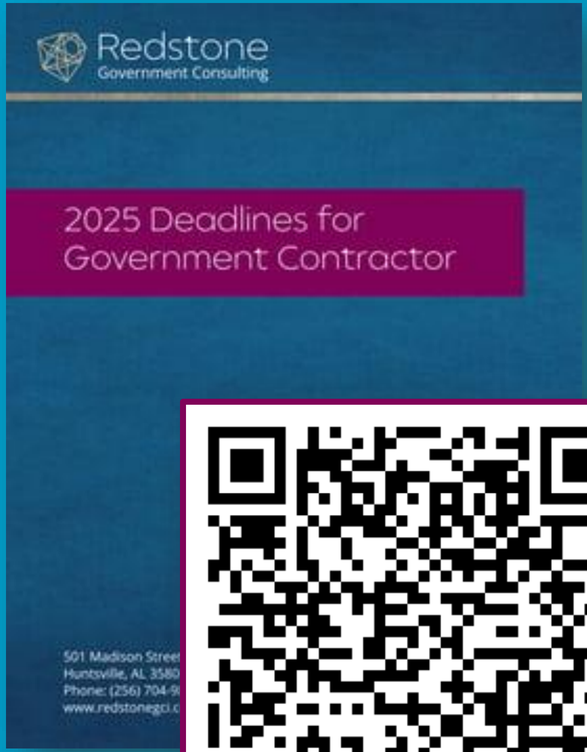

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