# UiPath Test Manager Connect: UiPath Test Manager & Azure DevOps Test Management

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# UiPath Test Manager Connect:

UiPath Test Manager Connect was created to allow UiPath customers to stay in their favorite UiPath tools, while also synchronizing and implementing additional tools into their toolchain. We offer over 60 different connectors and connect to your tools via the REST API's. Also, to ensure integrations are always working, UiPath Test Manager connect conducts 500,000 API tests per day.

## 1. Styles of Integration:

UiPath Test Manager Connect offers three different styles of integration: Synchronization, Gateway, and Enterprise Data Stream.

- **Synchronization:** is the most used integration style. This integration style allows work items to flow bi-directionally between two separate tools (repositories).
    - Example: UiPath Test Manager Connect can synchronize an UiPath Test Manager Connect Requirement over to Azure DevOps as an Epic.
- **Gateway:** A gateway integration is a one-way push of information from a tool that UiPath Test Manager Connect does not have a connector for (example: bitbucket) back to a UiPath Test Manager. There are two types of Gateway integrations
    - **Gateway Create** is used to create new artifacts (work items) in UiPath Test Manager when artifacts are sent to UiPath Test Manager Connect through an inbound webhook.
        - An example of Gateway Create is when a Jenkins Build fails it will automatically create a defect in UiPath Test Manager.
    - **Gateway Modify** is used to modify existing artifacts in UiPath Test Manager when updates to artifacts are sent to UiPath Test Manager Connect through an inbound webhook.
        - An example of a Gateway modify integration is when a developer commits a code in Git, UiPath Test Manager Connect will modify the existing UiPath Test Manager Requirement referencing that code and creating traceability.
- **Enterprise Data Stream** is used to pull all the software lifecycle data that has been created or modified from the repositories that are connected to UiPath Test Manager Connect, normalizes the data through UiPath Test Manager Connect's Model Based Integration (reducing the need for heavy extracts, transforms, or loads) pushes that data into a database. Once in the database, customers can use their BI tools c to create custom reports across their ecosystem.

## 2. What is Model-Based Integration:

In basic terms, a model is a list of fields or attributes that define a certain artifact that you want to integrate. For example, before you set up UiPath Test Manager Connect, your team probably has a list of fields you want to integrate between UiPath Test Manager Requirement and Azure DevOps Epic. Some of these fields may include Summary, Description, Priority, and Status. Along with the fields themselves, you will have your custom field values, such as your Status options may be Draft, Approved, In Progress, or Done. These fields, and the field values, are what make up an UiPath Test Manager Connect model. The value of this model is that instead of having to have all of the fields and field values in UiPath Test Manager and Azure DevOps have the same values, you can use the UiPath Test Manager Connect model in the center to act as a translator to easy direct information where it needs to go.

## 3. Key Concepts of UiPath Test Manager Connect:

Before we begin creating an integration, it is important to understand the key concepts that make up an UiPath Test Manager Connect Integration.

### 3.1 Repositories:

- A **repository** is **any system that houses the artifacts that can be used in an integration**. Repositories can be systems used as part of the software delivery process, like UiPath Test Manager, **Azure DevOps***,* etc., or repositories can be more generic databases, like **MySQL** or **Oracle**.
- A **repository connection** is a **connection to a specific instance of a given repository that permits UiPath Test Manager Connect to communicate with that repository**. To configure a repository connection, users will need to provide base credentials such as a server URL, a username, and a password.
- A **standard repository** is a software lifecycle tool such as Azure DevOps or UiPath Test Manager that contains artifacts such as defects or requirements.

### 3.2 Artifacts:

- An artifact is any object containing metadata that resides within your repository. There are two main types of artifacts: work items and containers. Work items and containers have some similarities, and some key differences, regarding how they behave within UiPath Test Manager Connect.
- Work items are the artifacts that are produced by different teams during software development. They are the core items that will flow as part of your integration. Some examples of common work items are defects, stories, requirements, test cases, and help tickets, to name just a few. Serving as the core currency of communication, work items are the means by which all the work around software production is recorded and tracked. Work items are at the core of any integration and are the entities that UiPath Test Manager Connect can create or modify as a part of an integration.
- Containers are artifacts that are used to group work items. They define where, within the repository, each work item resides. Some examples of common containers are projects, folders, modules, workspaces, and sets. The main purpose of a container is to define a set of work items.

### 3.3 Collections:

- A collection is the set of artifacts that are eligible to flow as part of your integration.
- They have the following characteristics:
  - All artifacts in the collection are the same core artifact type (e.g., defect, user story, feature, etc)
  - The artifacts in the collection are mapped to one model
  - Artifacts can be sourced from multiple projects (containers)
- A concrete example of a collection would be a set of defects from an organization's *Azure DevOps* instance. The artifacts in a collection can come from one or more projects from a given repository connection. Getting back to the example provided, if your Azure DevOps instance had

50 projects, you could include artifacts from any or all of those projects. Once projects are added to a collection, those artifacts are eligible for inclusion in an integration.

- The artifacts in a collection share a set of fields that have repository-specific names and values. Part of creating a collection involves choosing a model on which to base the collection and then mapping these repository specific fields and values to those defined in the model. The concept of models will be discussed in the next section.
- There are four types of collections in UiPath Test Manager Connect:
  - **Work Item Collections**, which typically include work items, such as requirements or defects, from typical repositories, such as *Azure DevOps* or UiPath Test Manager. Work Item Collections can also be utilized to connect to a Database, such as *MySQL*, for use in an Enterprise Data Stream Integration
  - **Container Collections**, which include certain container types from external repositories (such as Jama Components and UiPath Test Manager Folders)
  - **Gateway Collections**, which contains information sent via an inbound webhook, from an external tool. Oftentimes, this information is generated based on an event, such as a failed test or a code review.
  - **Outbound Only Collections**, which contains artifacts like code commits or changesets, where you may want to only flow out of your repository, but which would not receive updates into your repository.

### 3.4 Models:

- In basic terms, **a model is simply a list of fields or attributes that define a certain artifact that you want to integrate.** A **model** is a tool that makes the integration process scalable by defining the fields for each artifact type you would like to integrate.
- When integrating data from multiple collections, there are three factors that are critical to success:
  - The ability to normalize disparate definitions of artifacts between different collections.
  - The ability to scale the integrations to support many collections with hundreds or even thousands of projects and artifacts.
  - Efficient flow of data – meaning, only flow information that is necessary between collections.

### 3.5 Integrations:

At the highest level, the definition of an integration is simply the flow of information between two or more tools. If you dig a little bit deeper, the definition of an integration is the flow of information, between two or more collections. And collections are sets of artifacts.

## 4. How to set up an Integration - Overview:

Now that we have covered the key concepts that make up an UiPath Test Manager Connect integration, let's walk through the four basic steps of setting an integration up.

## 4.1 Add a Repository:

- Starting from the Hub Homepage navigate to and click on the Repository Tab
- Next click on the + New Repository Connection
- The three sections that are necessary to fill in for each Repository Connection are as follows:
  - Name: Create a unique name for the repository instance (Ex: ADO – Production)
  - URL: Insert the URL for the repository instance
  - Authentication: Insert the service account credentials.
    - Please note each repository will need certain credentials that provide UiPath Test Manager Connect the read/write access for the integration. Sometimes tools require full admin access, others just require certain roles. Review the Tasktop documentation to see what your repository requires.

## 4.2 Edit a Model:

- How to create/edit a Model:
  - UiPath Test Manager Connect provides 10 out-of-the-box commonly used models such as a Defect model, Story model, Epic model, etc. All models can be reused, so creating a new model for each new integration is not necessary.
  - All models can be edited to add or remove fields.
  - To add a field to a model, first, select the model.
    - Next, scroll to the bottom of the list of fields and select the + at the bottom right of the page.
    - Finally fill in the selections for the new field including name and type of field (ex: single select, string, persons)
    - To remove a field from a model simply find the field you want to remove and select the trash bin icon on the left side of the listed field.
      - *Note: When mapping fields from a tool to a model, not all fields have to be used. However, a field must be listed in the model to use in the collection mapping.*
  - Creating a new model:
    - Navigate to the Models tab
    - Select the + New button at the top left of the page
    - Name the model
    - Add fields as necessary

## 4.3 Create a Collection:

- Collections define which artifacts are eligible to flow as part of your integration. Each collection is made up of a single tool mapped to a single model. Two collections mapped to the same model create a complete integration.

        - Note: All collections can be used for multiple integrations, so it may not always be necessary to create a new collection for each new integration.
    - How to create a Collection:
        - Begin by navigating to the Collections tab
        - Select + New Collection Button at the top left of the page
        - Create a name for the collection (ex. ADO Story)
        - Choose the repository for the first tool you wish to map
        - Select the project(s) to apply to the collection
            - *Note: Projects can always be added or removed here in the collection as necessary, even after the collection is being used in an integration.*
        - From the Work Item Dropdown select the work item to begin mapping.
        - Be sure to save the Collection at the top left corner of the page.
        - Finally, begin mapping fields and configure relationships.
            - After selecting Map Fields, configure fields as needed, choose additional fields to map from the drop-down, and remove unnecessary fields using the trash bin icons.

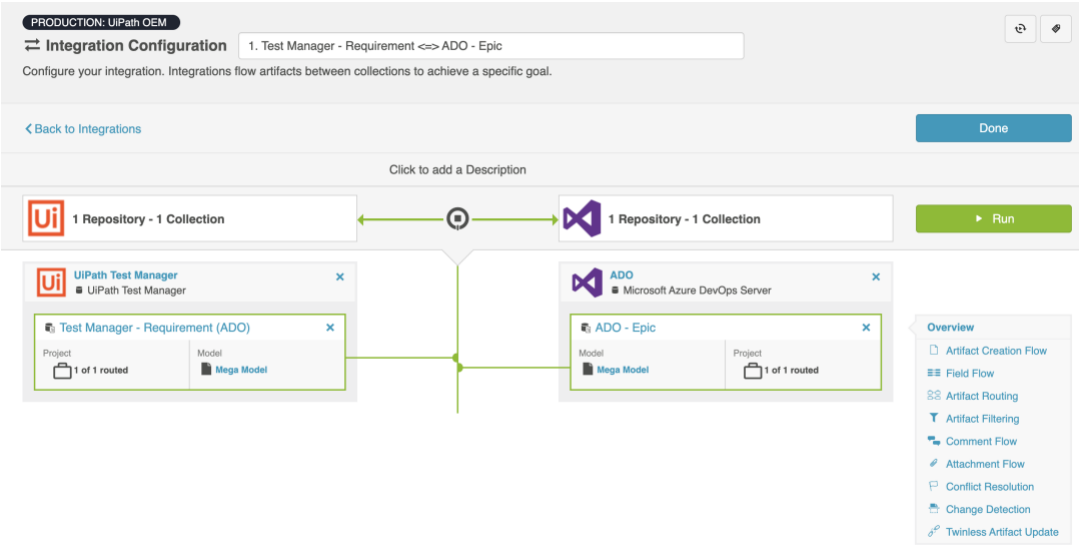
## 4.4 Build an Integration:

- An integration is the flow of information between two or more collections.
- How to create an Integration:
    - Navigate to the Integrations tab
    - Select + New Integration
    - Create a name for your integration (ex. ADO Epic ⇔ UiPath Test Manager Requirement)
    - Select the repository for each tool
    - Below each selected repository, a dropdown list of the existing collections will be displayed.
    - Select the collections you wish to integrate.

- Note: Before running the integration, use the menu bar to configure the integration. Key configurations include Artifact Routing, Artifact Filtering, and Artifact Creation Flow.

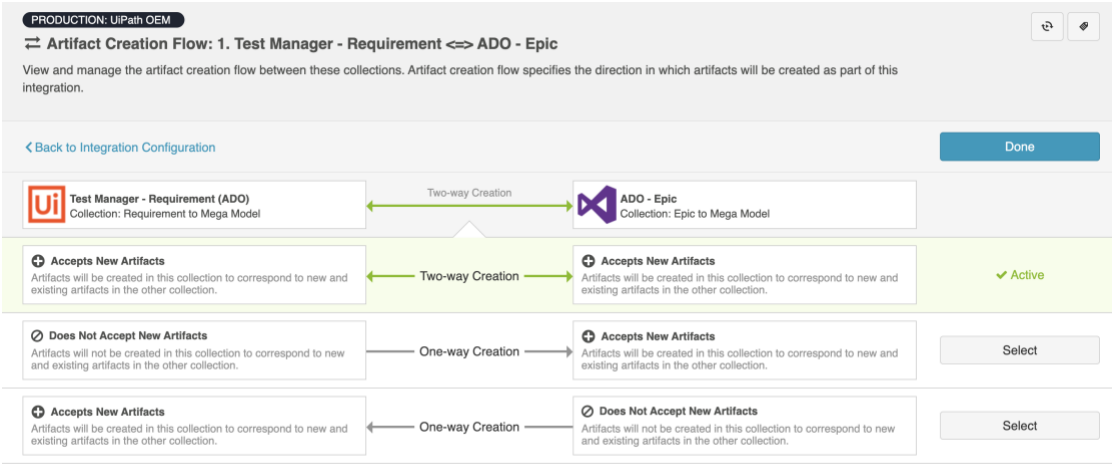
## 4.5 Configuring an integration:

UiPath Test Manager Connect offers many customizations that allow you to configure integrations to according to your unique use case. Below is a list of the different types of integration configurations that are available:



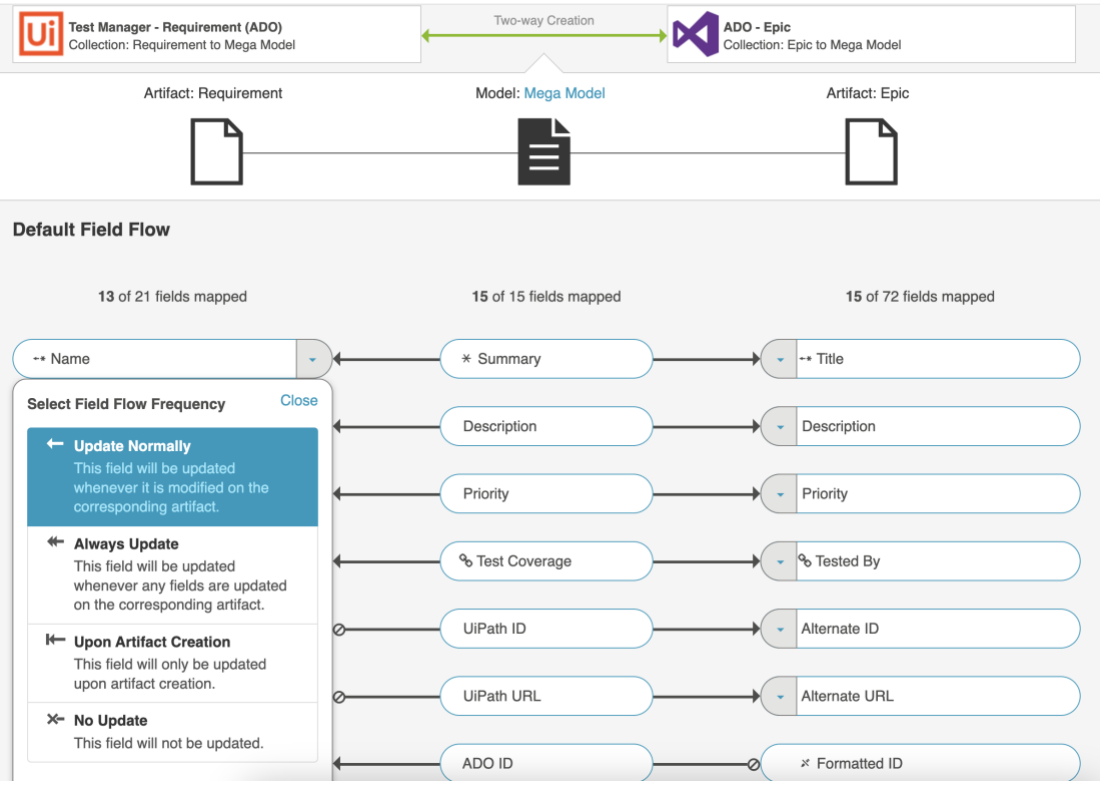

## 4.5-1 Artifact Creation Flow:

Artifact creation flow allows users to decide whether the integration will have a one-way or bidirectional creation flow.



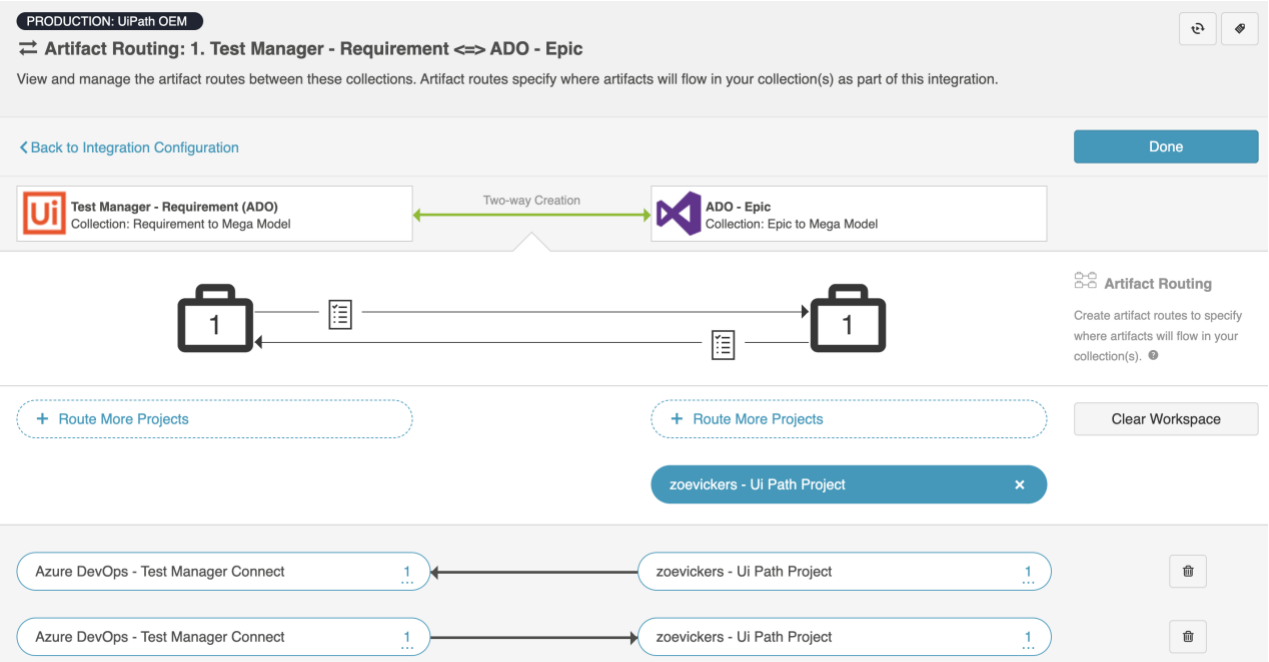

## 4.5-2 Field Flow:

Field Flow allows users to edit how UiPath Test Manager Connect does or does not update artifact fields in the integration. You can choose if fields update only one direction, both directions, or only update based on certain conditions.



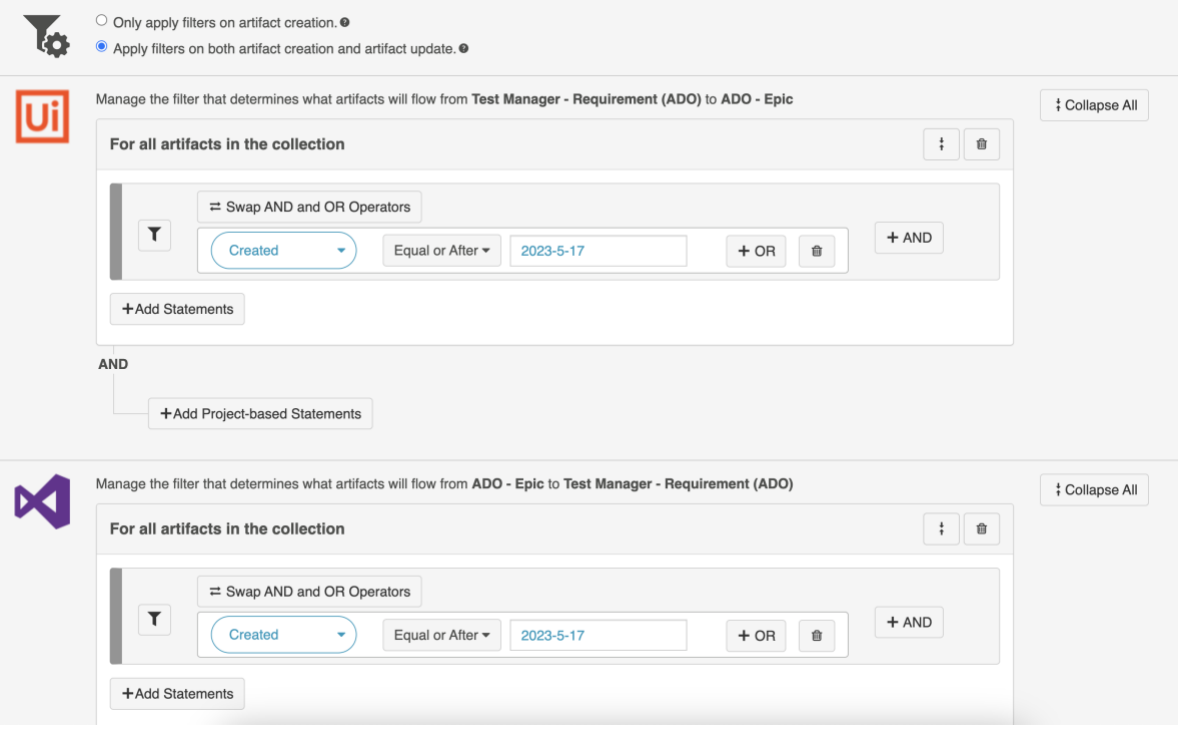

## 4.5-3 Artifact Routing:

- Artifact routing allows users to decide from which projects artifacts will flow in and out.
- Routing can be one-to-one or conditionally sent to multiple projects.



### 4.5-4 Artifact Filtering:

Artifact filtering allows users to only pull artifacts from each tool based on certain field filters. These filters can be any field that you have mapped to a Collection. You can set one or multiple filters, and filters can also be project specific. The screenshot below shows a simple filter of only synchronizing artifacts that are created on or after October 2nd, 2022. Other common filters could be “Priority” equals “high”, “Status” field is set to “Assigned to Development”, or “Summary” contains value “xyz”.



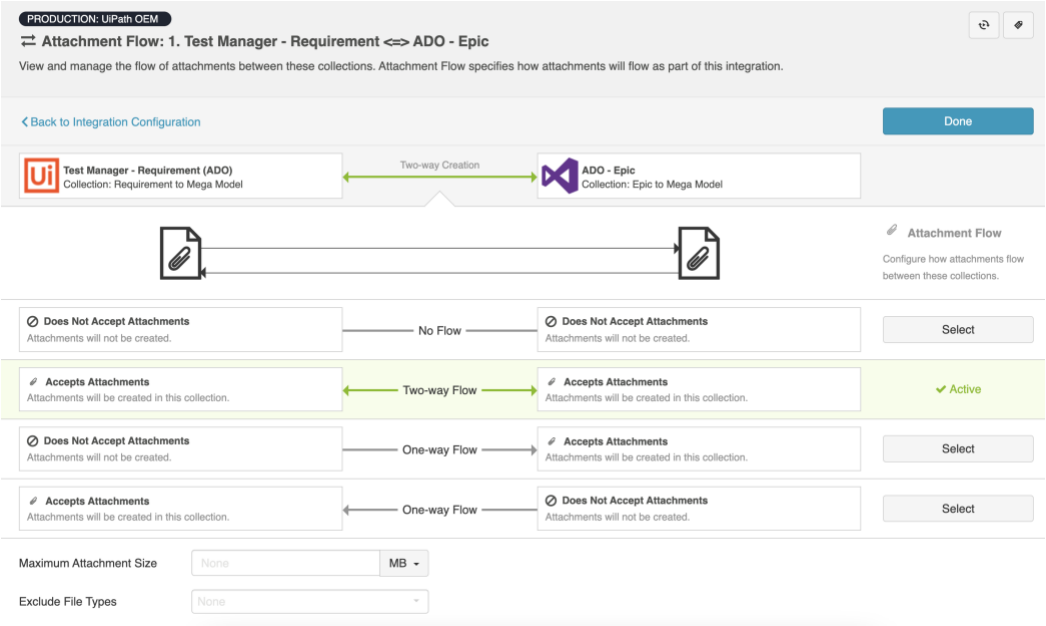

### 4.5-5 Comment Flow:

Comment flow allows users to enable the flow of comments between the integrated tools. These can one directional or bi-directional.

**NOTE: Comment Flow is not currently supported for Test Manager**

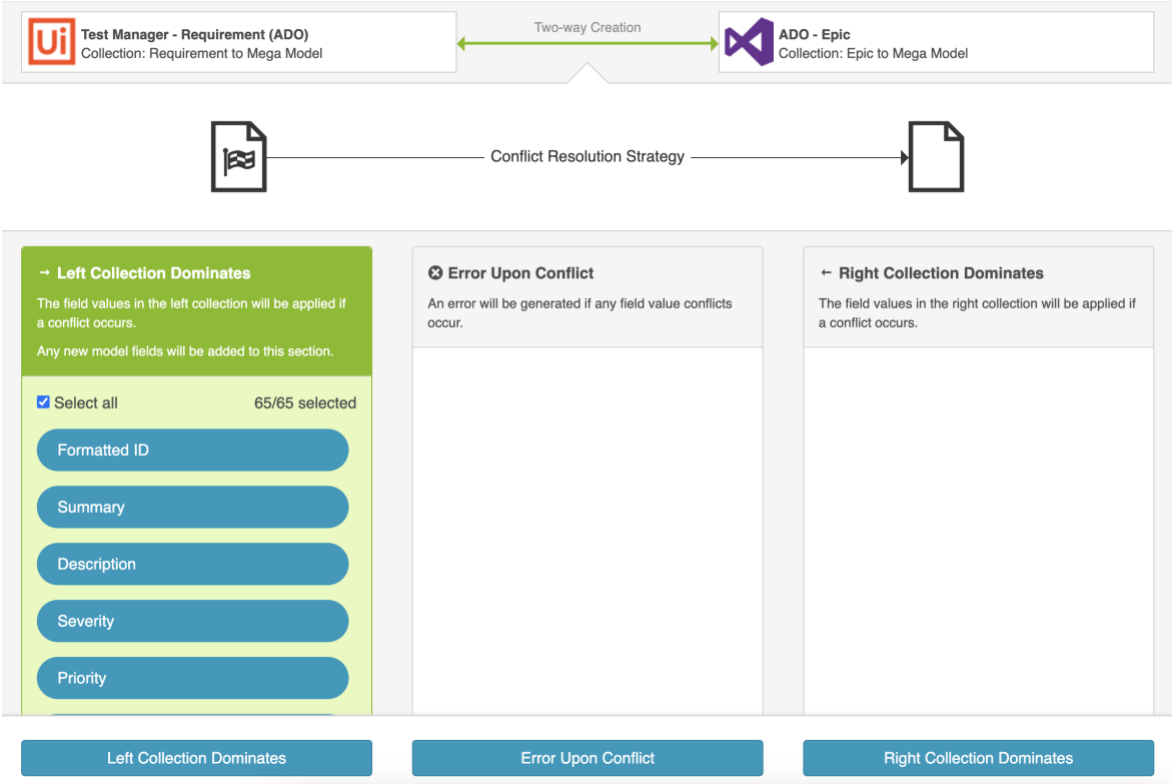
### 4.5-6 Attachment Flow:

Attachment flow allows users to enable the flow of comments between the integrated tools. These can one directional or bi-directional.



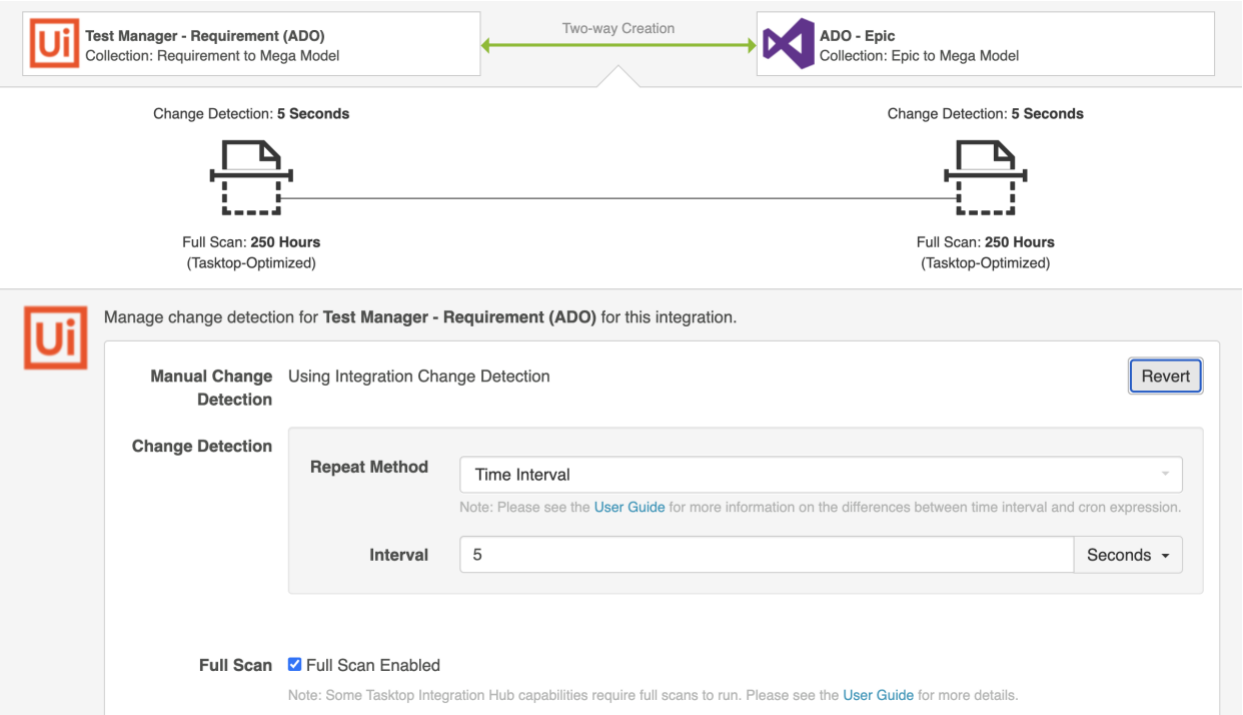

## 4.5-7 Conflict Resolution:

- Conflict resolution allows users to decide which tool is the source of truth when a field updates conflicts.
- A single tool can dominate, or the mapped fields can be set among both tools as needed.



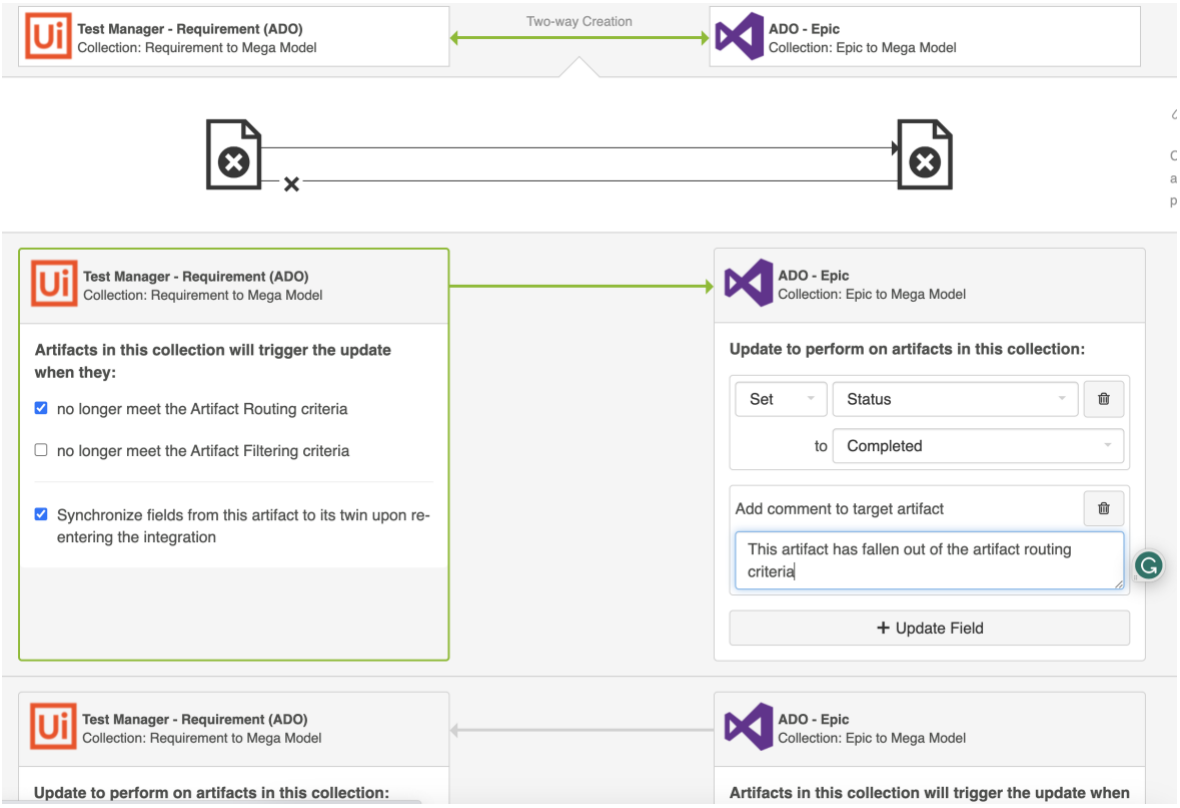
## 4.5-8 Change Detection:

- Change detection is how often UiPath Test Manager Connect checks each tool for artifact and field updates.
- Change Detection allows a user to override the global change detection settings for a single integration.
- Industry standards for production environments are anywhere between 5-30 minutes.




## 4.5-9 Twinless Artifact Update:

- Allows users to configure one final update (for example a comment or a status change) on an artifact when its “twin” in the other repository is no longer eligible to participate in the integration (e.g., when it’s been deleted or no longer meets the artifact filter). The final update informs the newly twinless artifact that the synchronization has been discontinued.
- Artifacts are no longer eligible to participate in an integration if one or both of the conditions below are met for an endpoint:
- Artifacts fall out of Artifact Routing. This can happen when:
    i. Artifacts are deleted
    ii. Artifacts are moved to projects not routed as part of the integration
    iii. Artifacts no longer meet the Artifact Filtering criteria.

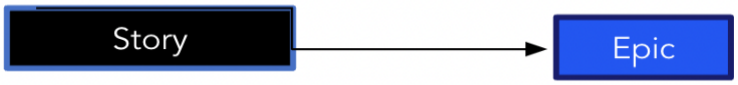



## 5. Additional Concepts:

This guide will try to cover each key concept, but there are many other pieces of functionality that may be pertinent to certain integrations. Below will walk you through some of the most important additional concepts.

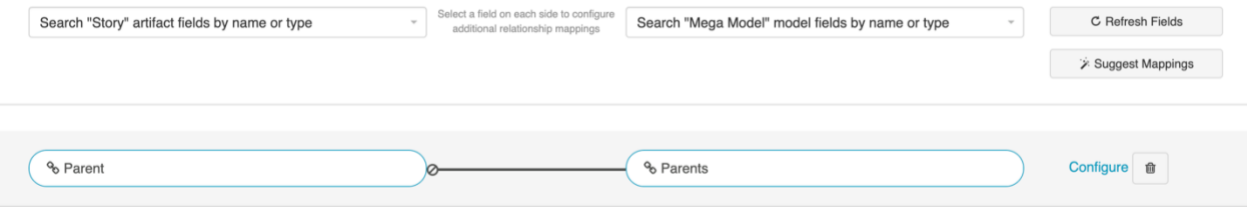
### 5.1 Tips on Relationship mapping:

- The key that relationally links one type of artifact to another typically resides in the lower-level artifact.
  - Ex. The link key points from an UiPath Test Manager Requirement to an UiPath Test Manager Defect.
  - Ex. The link Key points from an ADO Story to an ADO Epic.



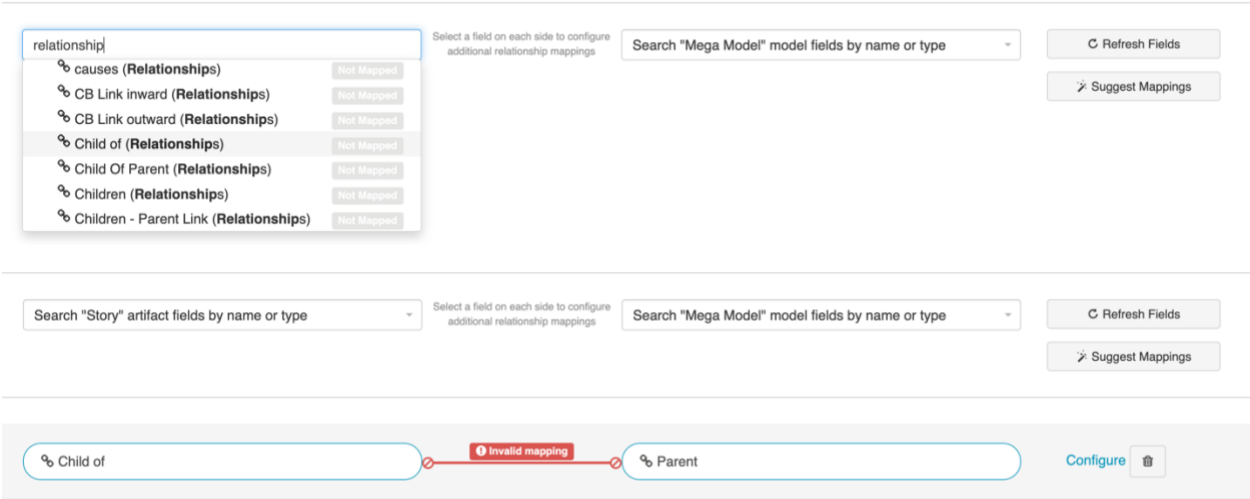

  -
- Start mapping relationships (in most cases) at the bottom level since that is where the keys reside
- Navigate to your collections and map the relationships from each tool to the model
  - Ex. ADO Story: Parent Link -> Parent
- One to one, many to many, one to many

- (Ex. One defect affects multiple epics)




- Note: Check what the field says in the drop-down menu (relationship vs relationships) to avoid invalid mapping

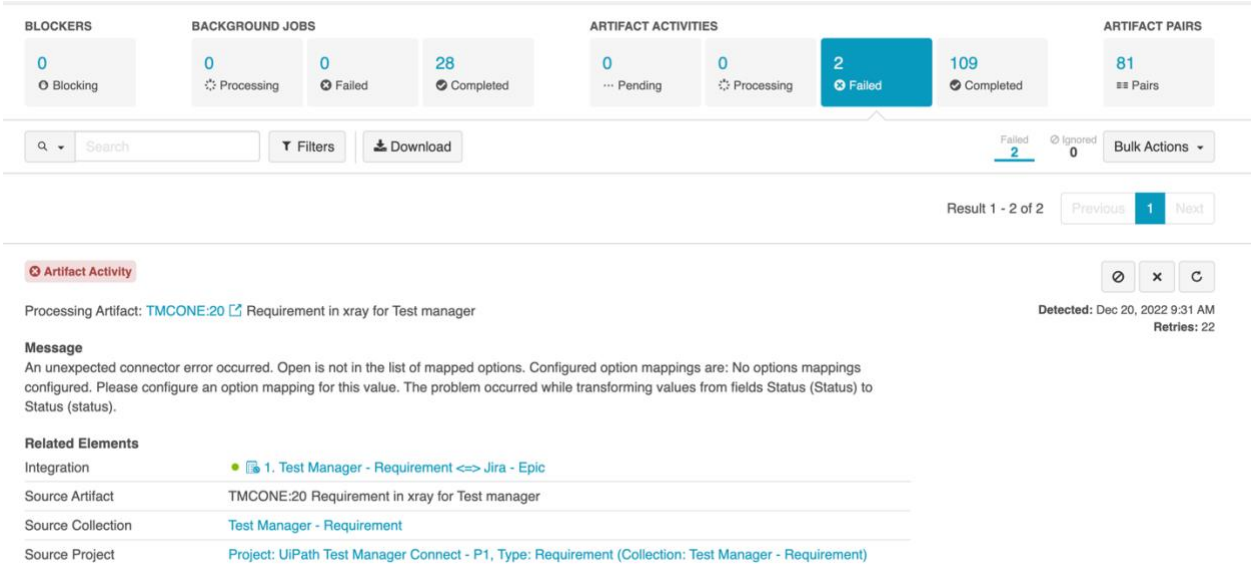
- Ex. relationships to relationship (many to one) is an invalid mapping

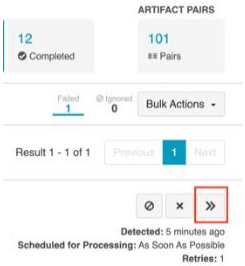



- *Note: To read more about relationship mapping, please navigate to the Planview Tasktop Hub documentation here.*

## 5.2 Troubleshooting Tips:

- Identify the Error message on the activity screen.
- See what information the error provides.
- Look for keywords ex. “Priority must be specified”.
- Does the message provide you with a specific collection origin?




- Process of elimination + check Error Appendix.
  - https://docs.tasktop.com/tasktop/user-guide/troubleshooting/error-message-appendix
- Make Changes + Prioritize Error on the activity screen.
- 

- If all else fails screenshot the error message and email it to UiPath Support to help resolve the error.
  - *Note: Try opening both of your collections in separate tabs and split your screen. This allows you to compare your mappings in each collection side-by-side easily.*
  - *Note: To read more about troubleshooting, please navigate to the Planview Tasktop Hub documentation* here.

## 5.3 Integration Building Best Practices + Tips:

- Always ensure your Repository connection is working properly before building out your collections. (You can test this on the repository page)
- Ensure that the Model you intend to use has all of the fields added that you wish to map.
- When building a Collection always start by mapping a maximum of 10 fields. But we recommend starting with 5 or so of the most basic
  - Examples of these fields are:
    - Name

        - Description
        - Priority
        - Status
        - Start Date
    - Build your integration, then test to ensure that it works before mapping more fields in each collection.
- If a field or value when mapping was recently edited but the changes are not appearing in your collection try refreshing the values or refreshing the project.
- When building out relationships always start at the lowest level of artifact in the hierarchy.
    - *Example: If your hierarchy is Epic à Story à Task. Start by building the Task integration.*
- If using custom fields for any integration, try to add custom fields into the tools and projects before building out the integration. This will prevent the need to jump back and forth between your tools and the UiPath Test Manager Connect solution, creating a smooth integration build experience.
- When building an integration both collections need to be using the same model
- When building the integration always add the necessary Artifact Filters before testing (Pushing RUN) to ensure the right artifacts are synced.
- Change Detection for customer's production instances is typically anywhere from 5-30 minutes. However, for testing purposes, you may put it at a higher frequency to troubleshoot (5 - 10 seconds).
- Field Flow in the menu is a great resource to not only change updates but also to view a complete mapping of your fields.
- After making changes to collections or menu items in an integration, you can navigate to Integrations > Field Flow and reprocess all artifacts in cases where you need UiPath Test Manager Connect to pick up those changes in the tool's artifacts.

### 5.4 Extensions:

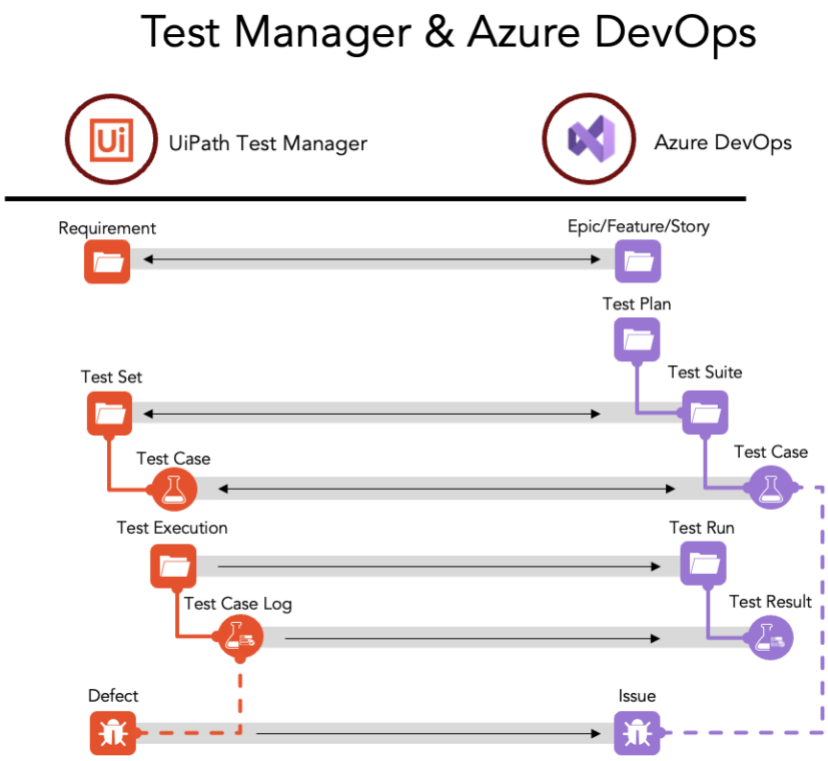
- UiPath Test Manager Connect can provide generic templates to use for simple extensions
- You can read more about where and how to add it to the server here.

## 6. Integration Exercises:

Below are two step-by-step exercises you can follow to create your very first integrations between UiPath Test Manager and Azure DevOps using UiPath Test Manager Connect.

### 6.1 Use Case

The diagram below provides a visual of the recommended use case and flow of artifacts between UiPath Test Manager and Azure DevOps. This is also the flow the next step-by-step exercises will follow. Any further recommendations and limitations are documented below.




1. Synching between UiPath Requirements ⇔ ADO Epics, UiPath Test Sets ⇔ ADO Test Suites, and UiPath Test Cases ⇔ ADO Test Cases are bidirectional.

2. Test Steps are not currently supported; however, they are currently on the roadmap to be supported. If you have any questions around this, please contact Zoe Vickers or Najatt Mohad.

3. UiPath Test Executions ⇔ ADO Test Runs, and UiPath Test Case Logs ⇔ ADO Test Results must be created in UiPath Test Manger and pushed to ADO.

4. UiPath Defects ⇔ ADO Issues are only bidirectional if the test case log is specified. Otherwise, it must be created in UiPath and pushed into ADO.

## 5. 6.1 Use Case 1: UiPath Test Manager Requirement & Azure DevOps Epic

***Tool Set Up:***

1. Ensure that any custom fields have been added to both the UiPath Test Manager Requirement and the ADO Epic for the projects you wish to use. This step may require you to reach out to your tool admin to add these fields to your desired projects. If you have admin rights in your tools, ensure you perform this step first.
2. Below are links to instructions on how to add custom fields in both UiPath Test Manager and ADO
    a. UiPath Test Manager: https://docs.uipath.com/test-suite/docs/managing-custom-fields#:~:text=Creating%20custom%20fields&text=Navigate%20to%20Project%20Settings%20%3E%20Custom,name%20for%20your%20custom%20field.

b. Azure DevOps: https://learn.microsoft.com/en-us/azure/devops/organizations/settings/work/add-custom-field?view=azure-devops

c. In this exercise example, the following custom fields will need to be added:

   i. ADO Epic:

      1. UiPath Test Manager ID (string)

      2. UiPath Test Manager URL (string)

   ii. UiPath Test Manager Requirement:

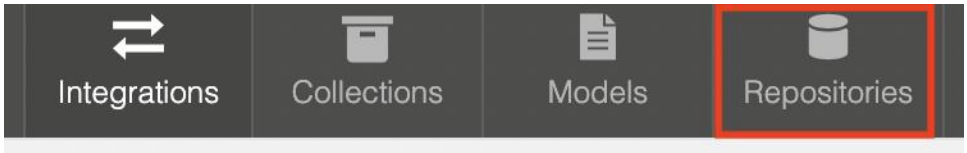
      1. ADO ID (string)

      2. ADO URL (string)

d. Additionally, ensure that at least one Epic has been created in ADO to allow UiPath Test Manager Connect to pull the Epic schema from ADO. If this step is not done, then your UiPath Test Manager Connect Collection may error out.

## 6. 6.1-1 Repository:

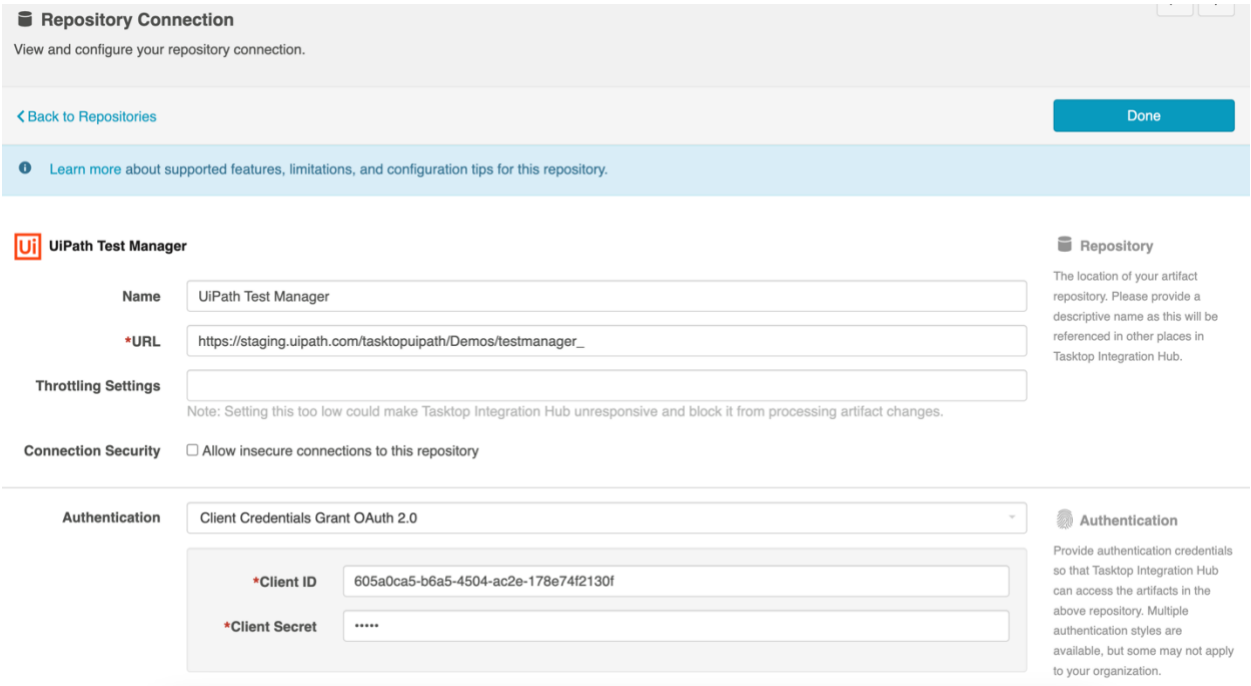
1. Ensure that both UiPath Test Manager and ADO instances are set up and working in the Repositories Tab in UiPath Test Manager Connect.
2. First, navigate to the "Repository" Tab at the top left of the UiPath Test Manager Connect.



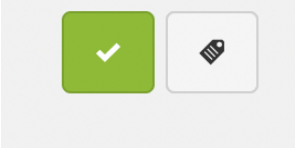

3. Next, select the "+ New Repository" button

4. Then, add a name such as "UiPath Test Manager" in the name section and the URL to your UiPath Test Manager instance in the URL section.
5. The last piece is to choose the type of authentication you wish to use and add the authentication credentials to your UiPath Test Manager instance under the Authentication section of the Repository page.

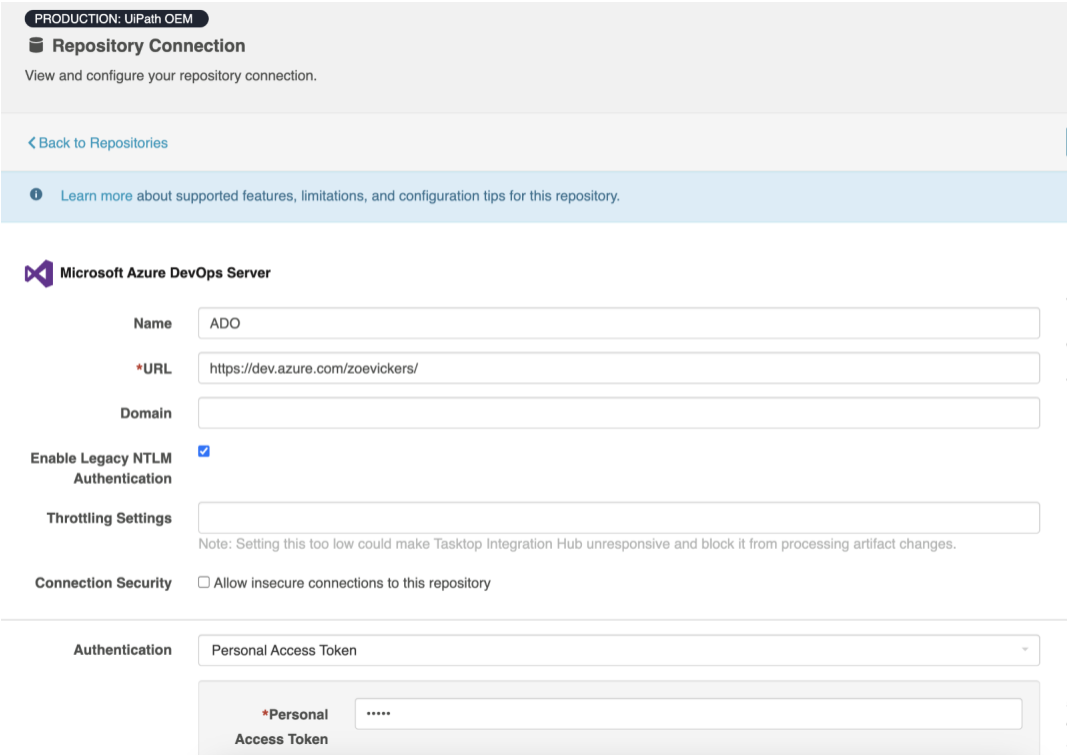
   a. Please note each repository will need certain credentials that provide UiPath Test Manager Connect the read/write access for the integration. Sometimes tools require full admin access, others just require certain roles. Review the Tasktop documentation here to see what your repository requires.




6. Finally, select the "Save" button at the top right of the page. A green check mark should appear at the top right of the page if the connection was successful.



7. Repeat steps 1-6 to create the ADO repository with the link and credentials to your ADO environment.

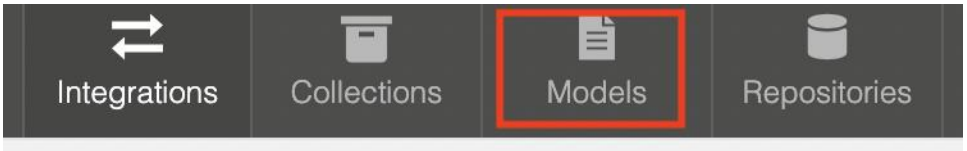



Note: The typical ADO customer uses Personal Access Token Authentication.

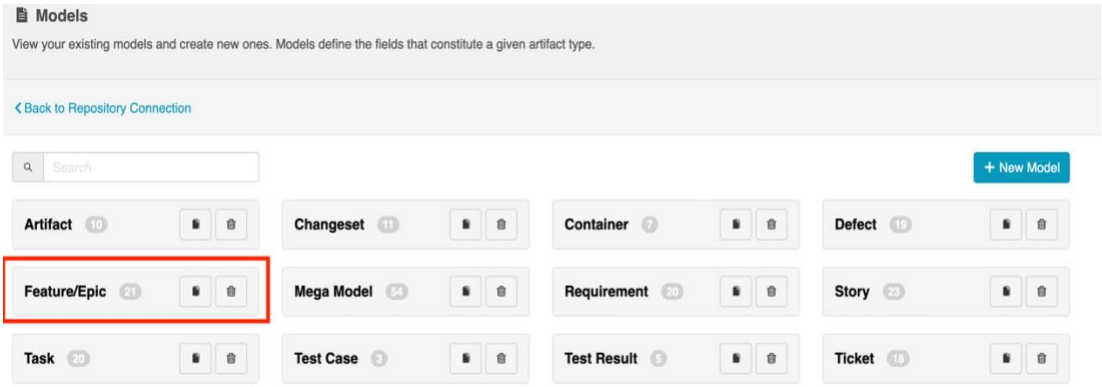
For further information on authentication please see the ADO connector documentation here.

## 7. 6.1-2 Model:

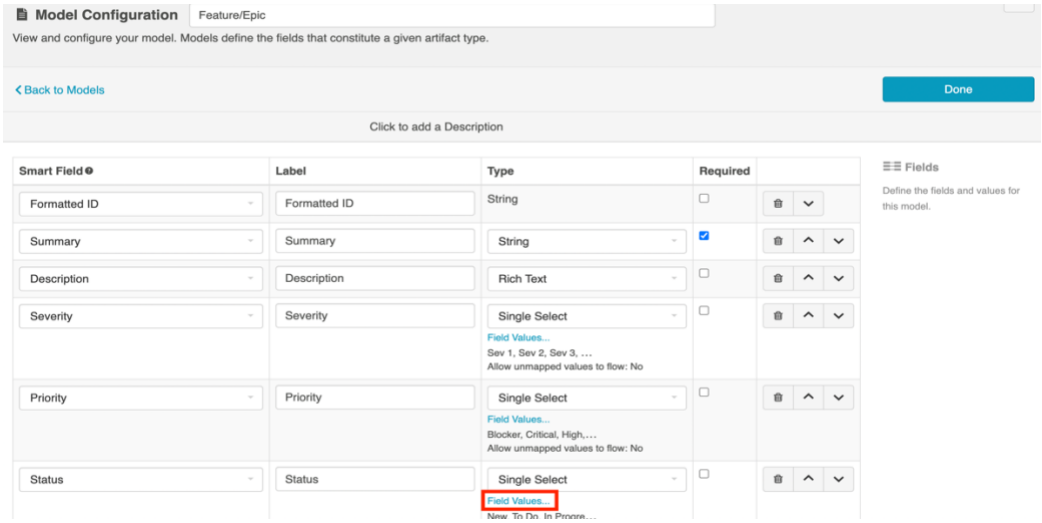
1. Navigate to the "Models" tab at the top left of the UiPath Test Manager Connect.




2. Select the Feature/Epic model. The following fields will need to be edited or added:
   a. Edit:
      i. Status
   b. Add
      i. UiPath Test Manager ID
      ii. UiPath Test Manager URL
      iii. ADO ID
      iv. ADO URL




3. How to add + edit the above fields to the model:
    a. Find the existing Status field and select "Field Values…" in the type section next to the Status Label to edit the field values.

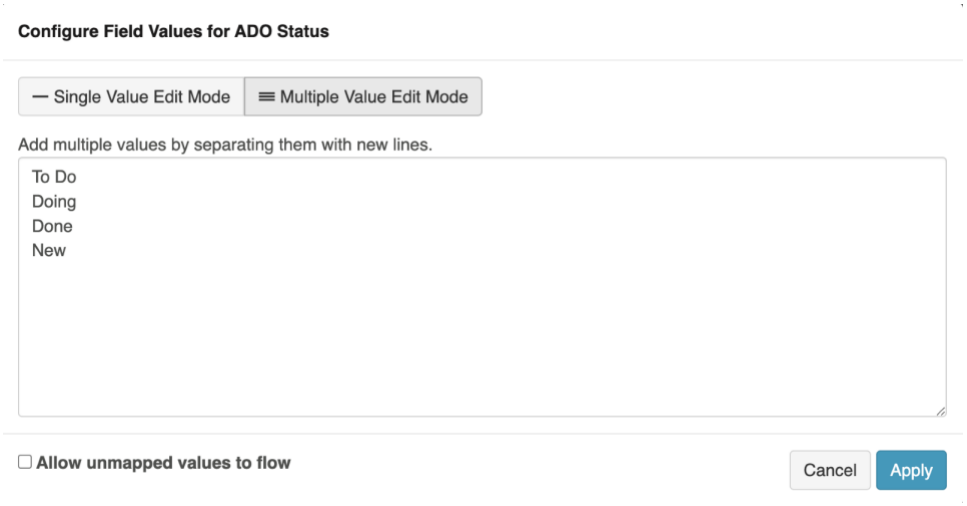



    i. Once the "Configure Field Values for Status" pop-up box appears select "Multiple Value Edit Mode" and delete the existing values.

ii. Once the old values are deleted, type in the following values:

1. New
2. To Do
3. Doing
4. Done

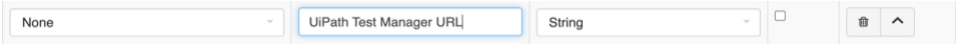
iii. Next select "Apply".



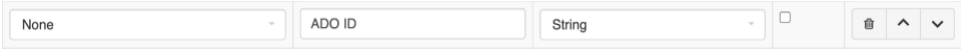

b. For the fields below, scroll to the bottom of the list of fields and select the icon to add each one by one:

i. UiPath Test Manager ID: Smart Field (none), Label (UiPath Test Manager Connect ID), Type (String)

ii. UiPath Test Manager Connect URL: Smart Field (none), Label (UiPath Test Manager URL), Type (String)




iii. ADO ID: Smart Field (none), Label (ADO ID), Type (String)

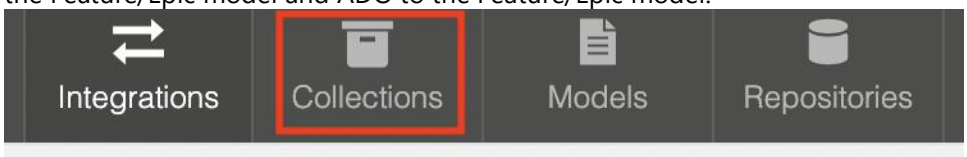



iv. ADO URL: Smart Field (none), Label (ADO URL), Type (String)

c. Push save when done.

## 8. 6.1-3 Collections:

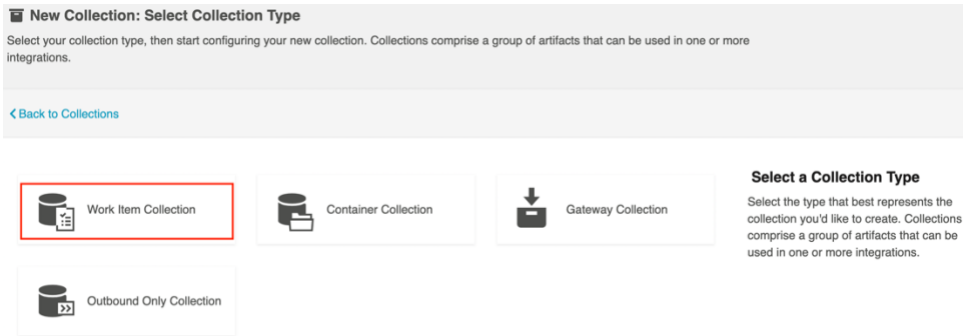
1. After you have ensured that the model being utilized has all the necessary fields, it is time to create two collections. In this scenario, the collection will map UiPath Test Manager to the Feature/Epic model and ADO to the Feature/Epic model.



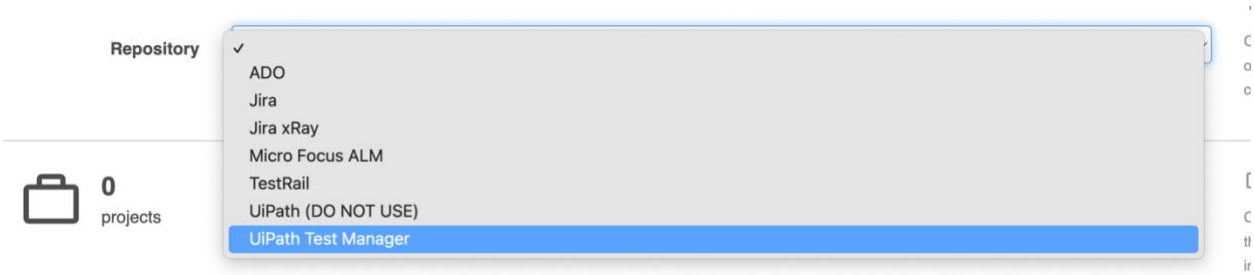

2. Navigate to the Collections Tab and select the "+ New Collections" button.

3.

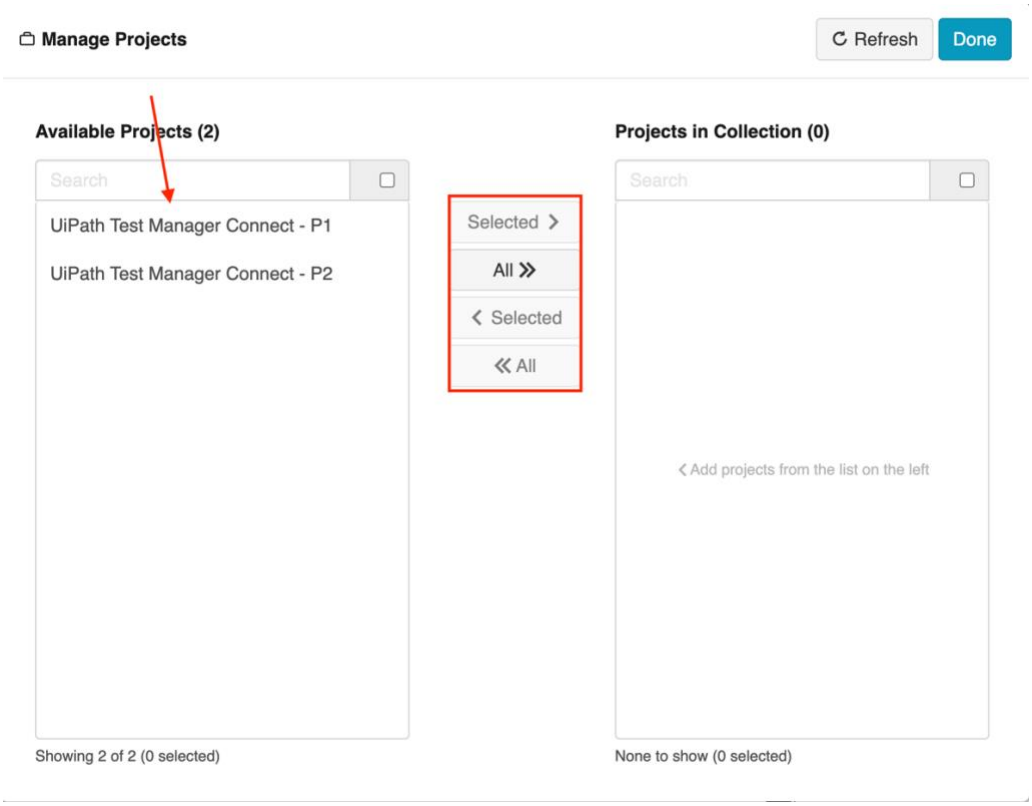

4. Then select "Work Item Collection"



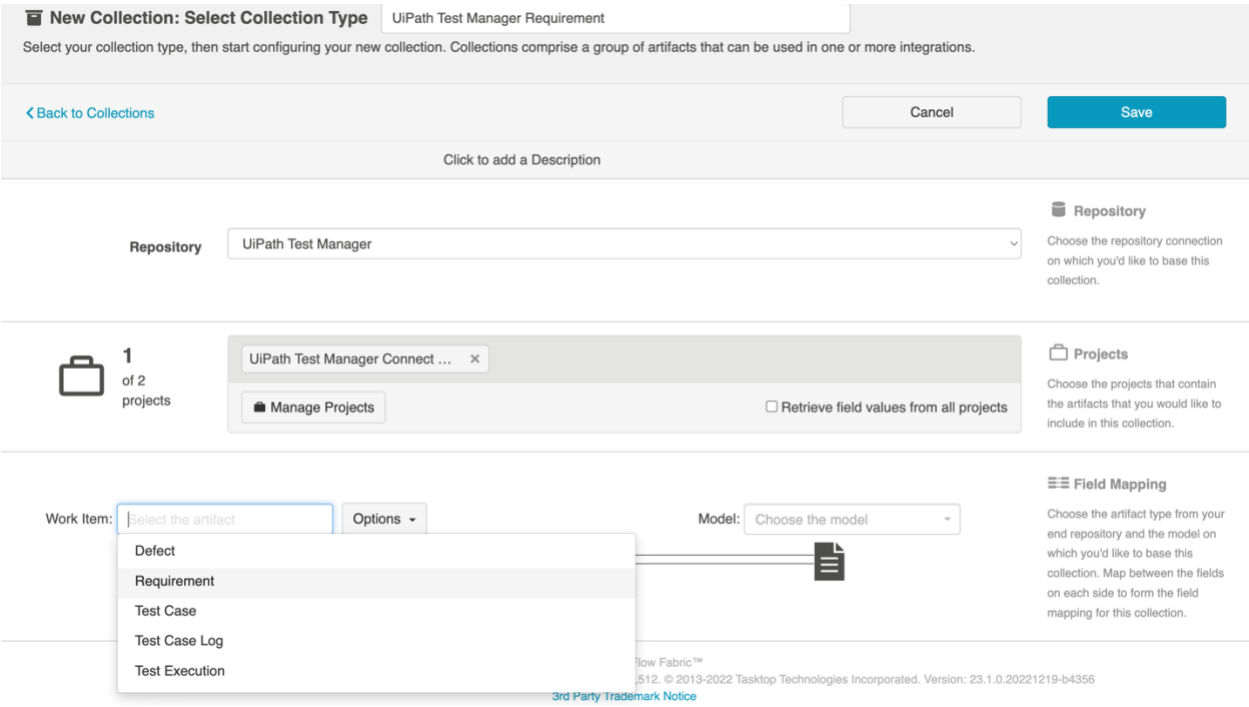

5. Next, give the collection a name such as "UiPath Test Manager Requirement"
6. Select the UiPath Test Manager repository.

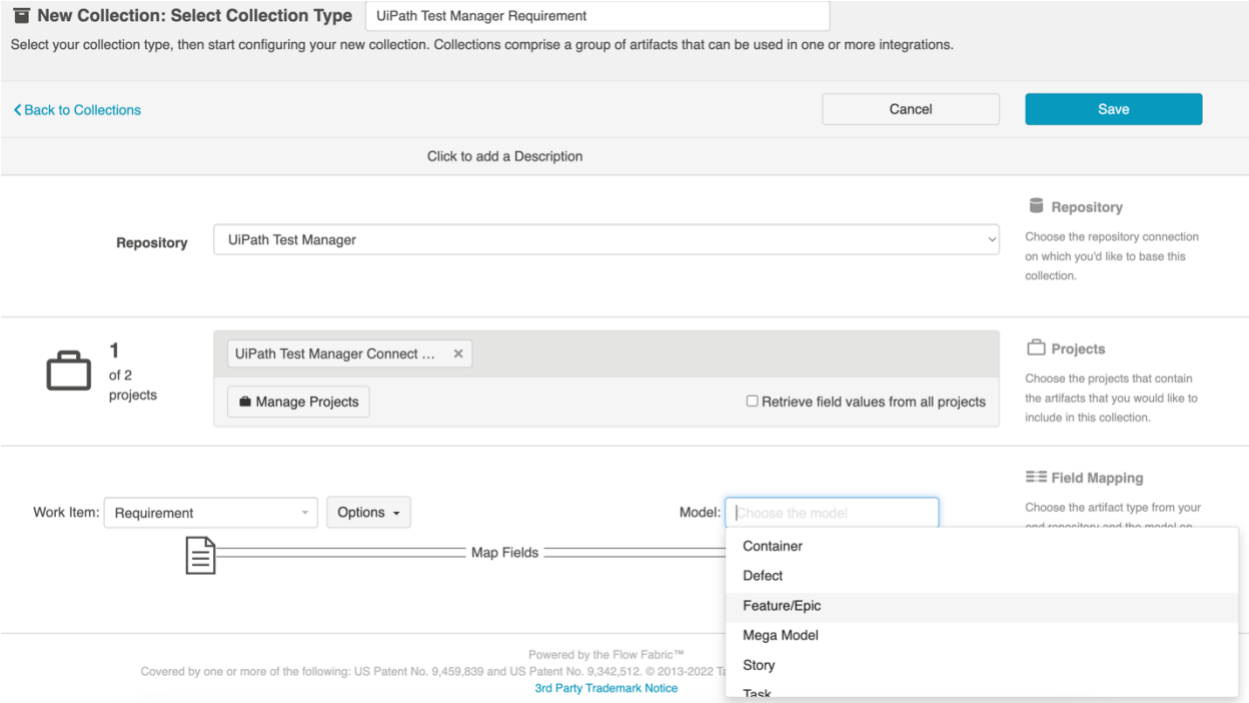



7. Then, choose which UiPath Test Manager projects to use in the collection by selecting "Manage Projects" and using the pop-up to add one or many projects.
    a. *Note: Projects can always be added or removed even after the integration has been built.*

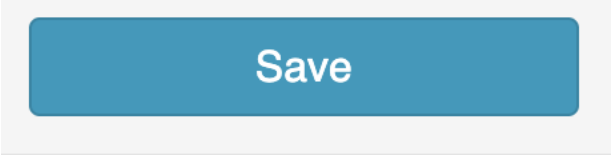



8. Below the projects section, use the "Work Item" and "Model" dropdowns to select the Feature Requirement and the Feature/Epic model.



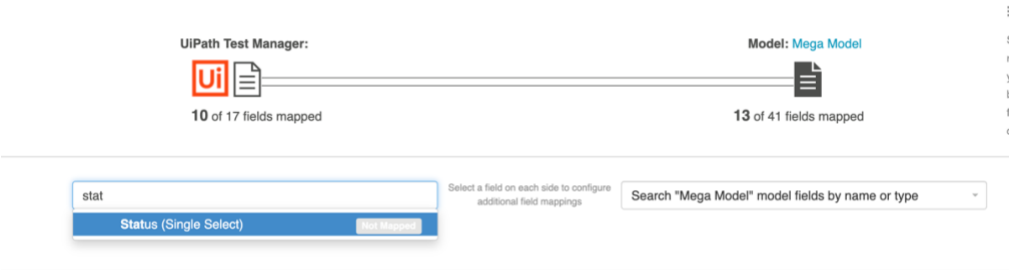



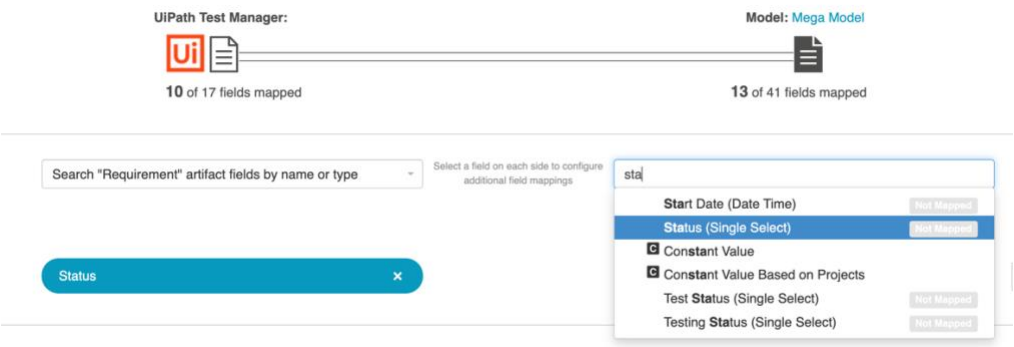

9. Once both are selected navigate to the top right of the page and click the "Save" button.

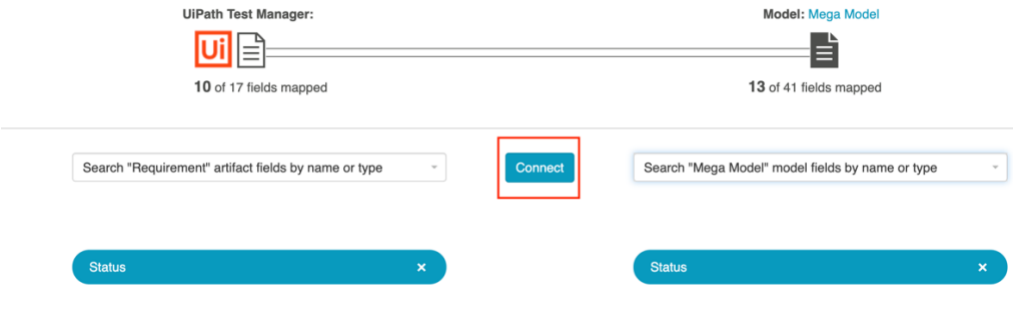


10. Now the process of mapping and configuring the fields can be done. Under the projects section, select “Map Fields”.
11. Once here, UiPath Test Manager Connect will have automatically mapped multiple fields. For this simple integration use the dropdowns and select additional fields to add to the mapping. When adding fields, select a field from the UiPath Test Manager dropdown and the Model dropdown and click the “Connect” button that appears. Ensure that each of the following fields have been mapped:

| **UiPath Test Manager Requirement** | **Feature/Epic Model** |
|---|---|
| Priority | Priority |
| ADO ID | ADO ID |
| ADO URL | ADO URL |
| URL | URL |
| URL | UiPath Test Manager URL |
| Key | Formatted ID |
| Key | UiPath Test Manager ID |
| Name | Summary |
| Description | Description |
| Status | Status |
| Created By | Created By |
| Updated | Modified |
| Updated By | Modified By |





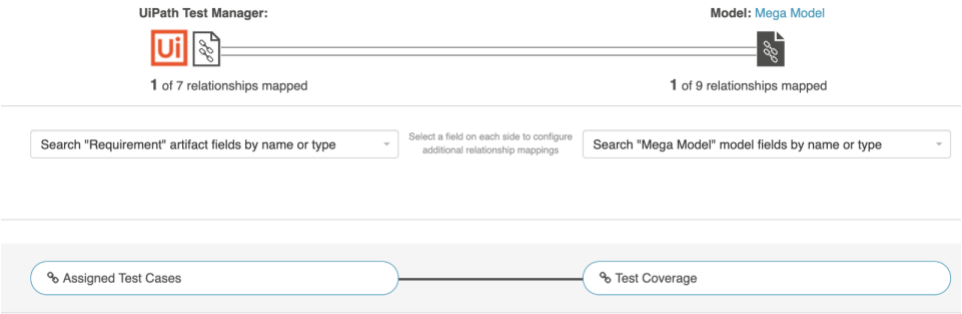

12. Any additional fields can be deleted for now using the trash can Icon next to the field. If you wish to add any additional fields, you can do so at this time or after the integration is complete.

13. After ensuring each of these fields is mapped, orange warning signs are likely to appear next to fields such as "Priority" or "Status". This simply means that the values for those fields must be configured.

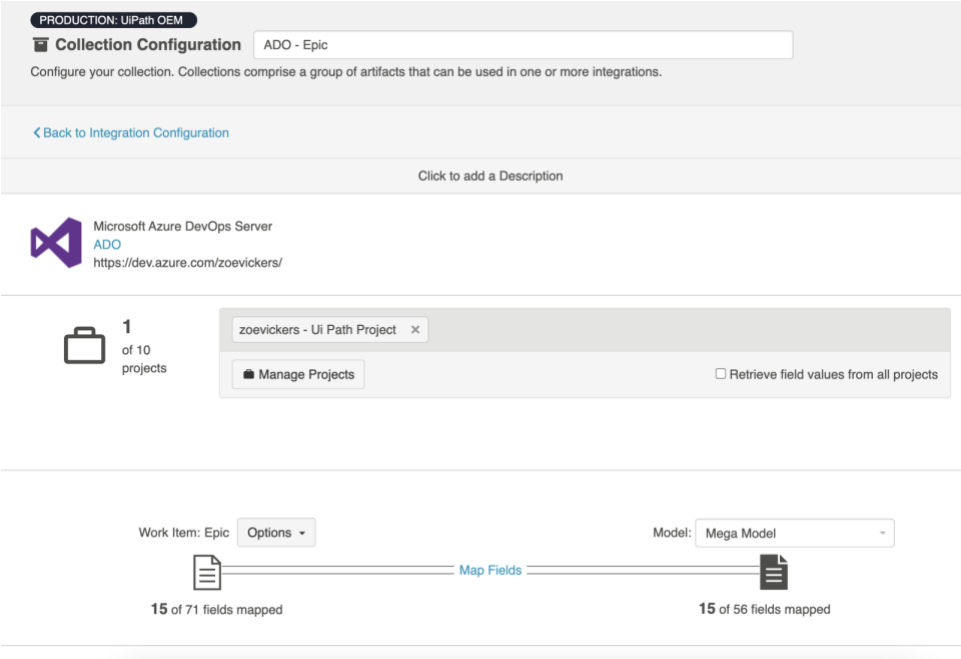
14. Select "Configure" next to each of the fields with the warning symbol to configure the field values. When configuring values select a value on each side and click the "Connect" button to map the values. Values can be mapped one to one or one to multiple.

15. Lastly, navigate back to the newly created UiPath Test Manager "Requirement" collection and select "Configure Relationships" under the "Map Fields" section. Map the following fields:

    a. Assigned Test Cases – Test Coverage



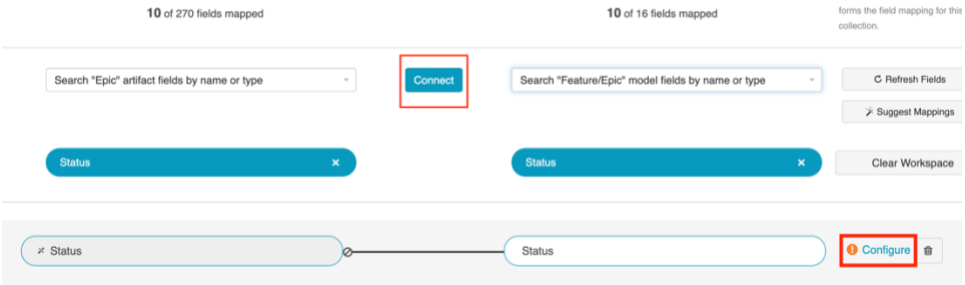

16. The first collection has now been completed! Navigate back to the "Collection" Tab and select "+ New Collection" to begin creating the ADO Collection.




17. Follow steps 2-12 to create the ADO collection with the following modifications:
    a. The collection name should be something similar to "ADO Epic"
    b. Select "Epic" for your Work Item and select the same Feature/Epic model
    c. Map and configure the following fields:

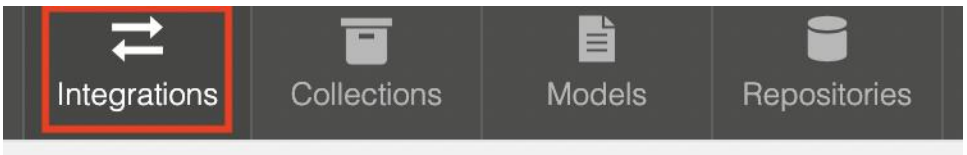
| Azure DevOps Epic | Feature/Epic Model |
|---|---|
| Priority | Priority |
| UiPath Test Manager ID | UiPath Test Manager ID |
| UiPath Test Manager URL | UiPath Test Manager URL |

| | |
|---|---|
| Key | ADO ID |
| URL | ADO URL |
| Formatted ID | Formatted ID |
| Title | Summary |
| Description | Description |
| Status | State |
| Created By | Created By |
| Created Date | Created |
| Change Date | Modified |
| URL | URL |
| Changed By | Modified By |
| Iteration Path | (Constant Value) |
| Area Path | (Constant Value) |



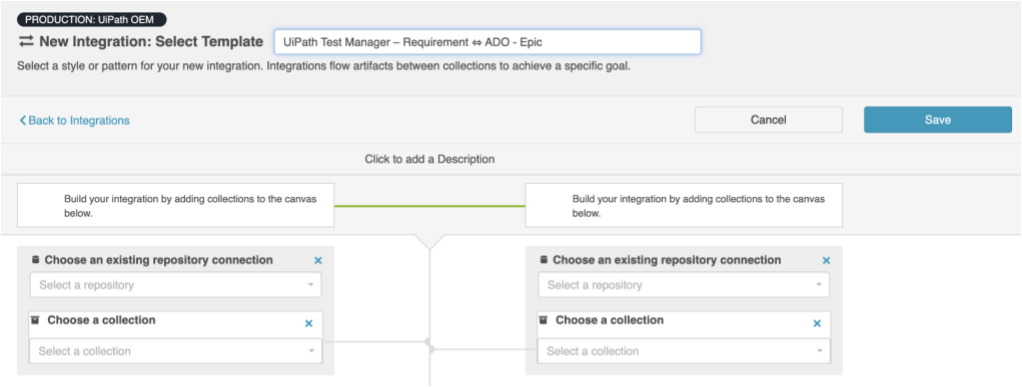

## 9. 6.1-4 Integration:

1. Now it is time to put the two collections together to create one full integration! First, navigate to the "Integrations" tab

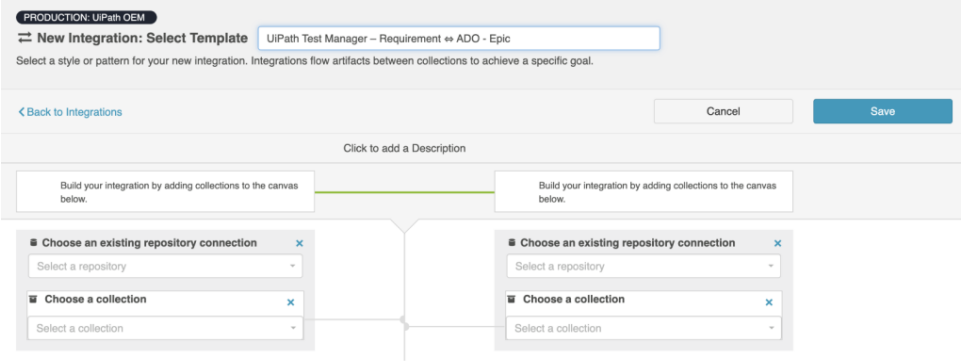


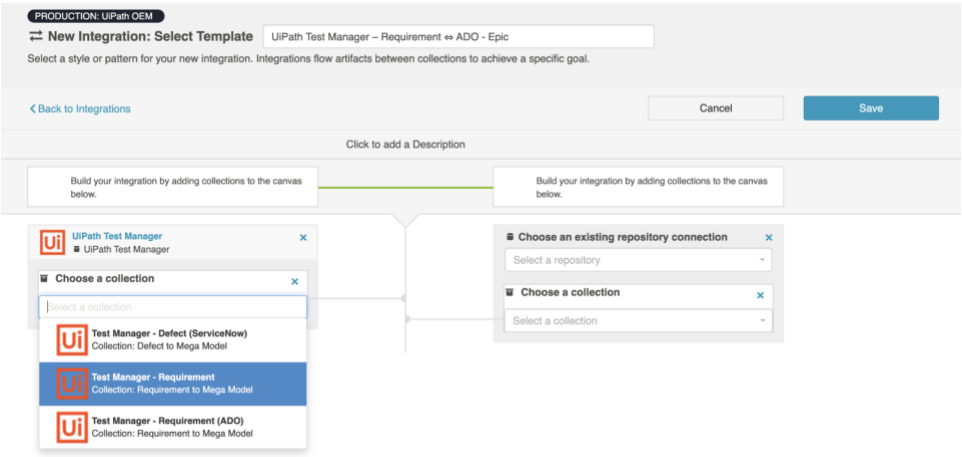

2. Select the "+ New Integration" at the top right of the page.

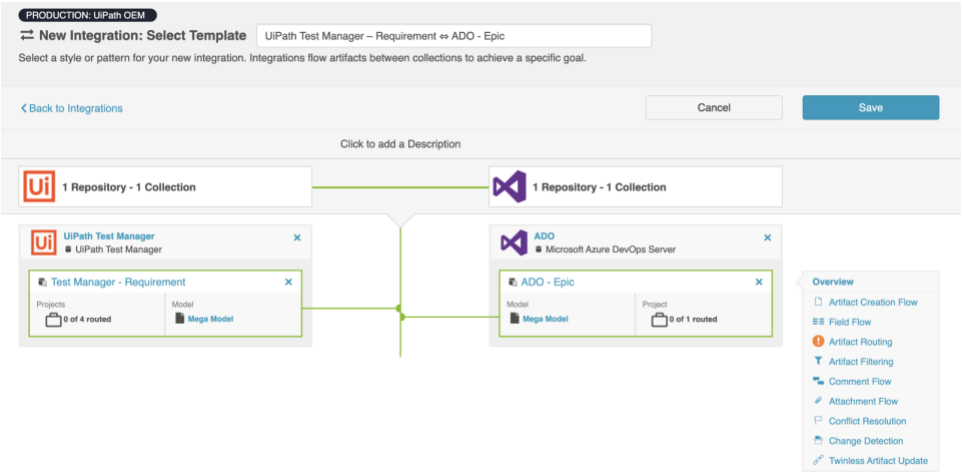
3. Next select "Work Item Synchronization" and give the integration a name such as "UiPath Test Manager – Requirement ⇔ ADO - Epic"



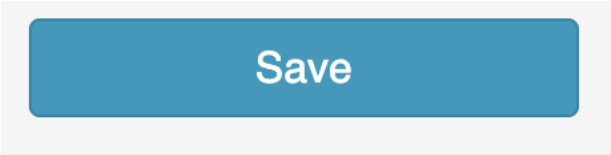

4. Select the UiPath Test Manager repository along with the newly UiPath Test Manager – Requirement collection from the drop downs provided on one side. And similarly, choose the ADO and newly created ADO Epic collection on the other side.



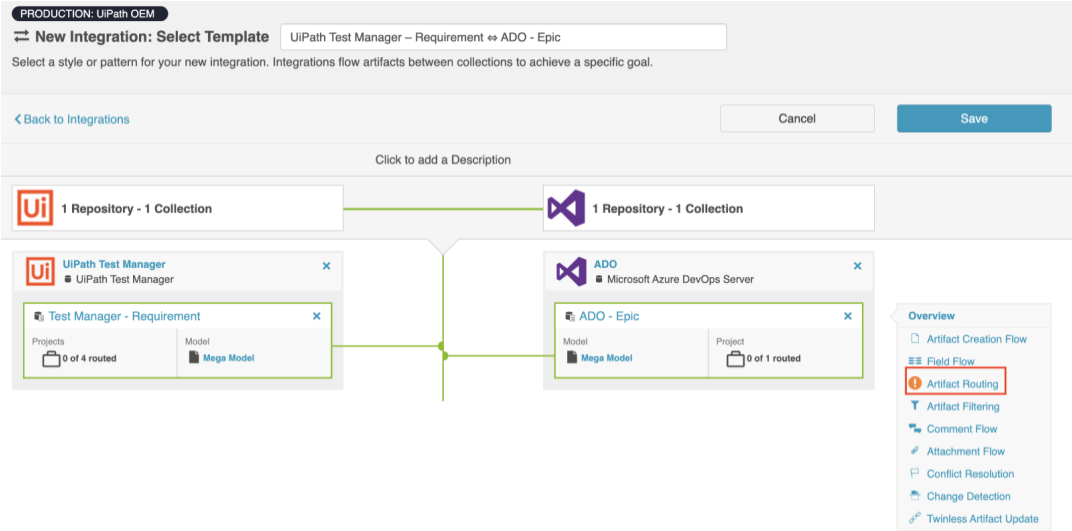





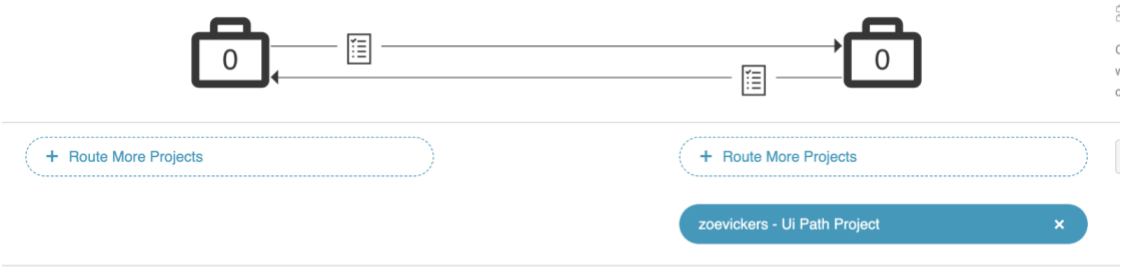

5. Select “Save” at the top right.

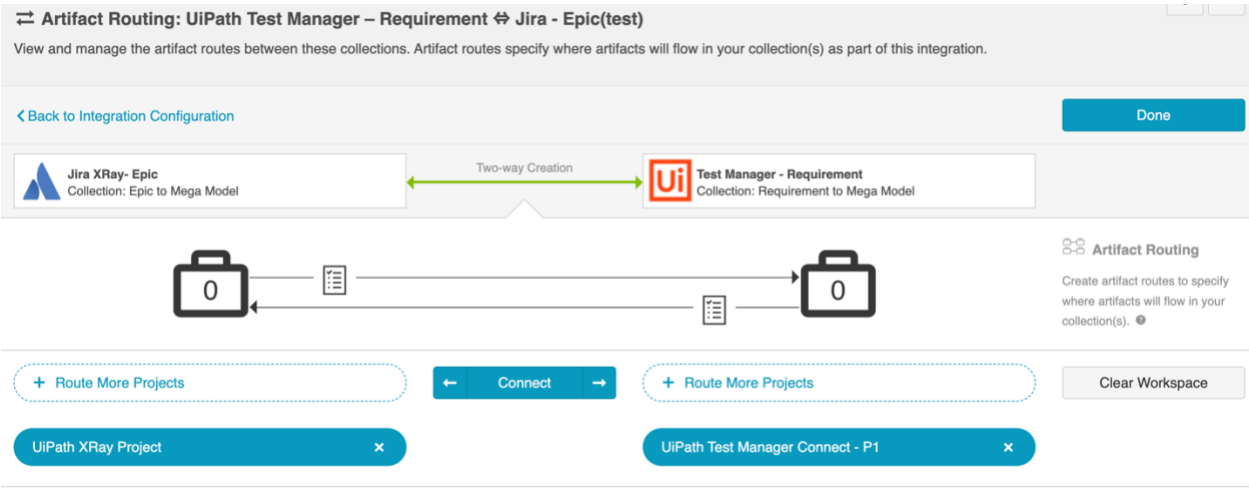


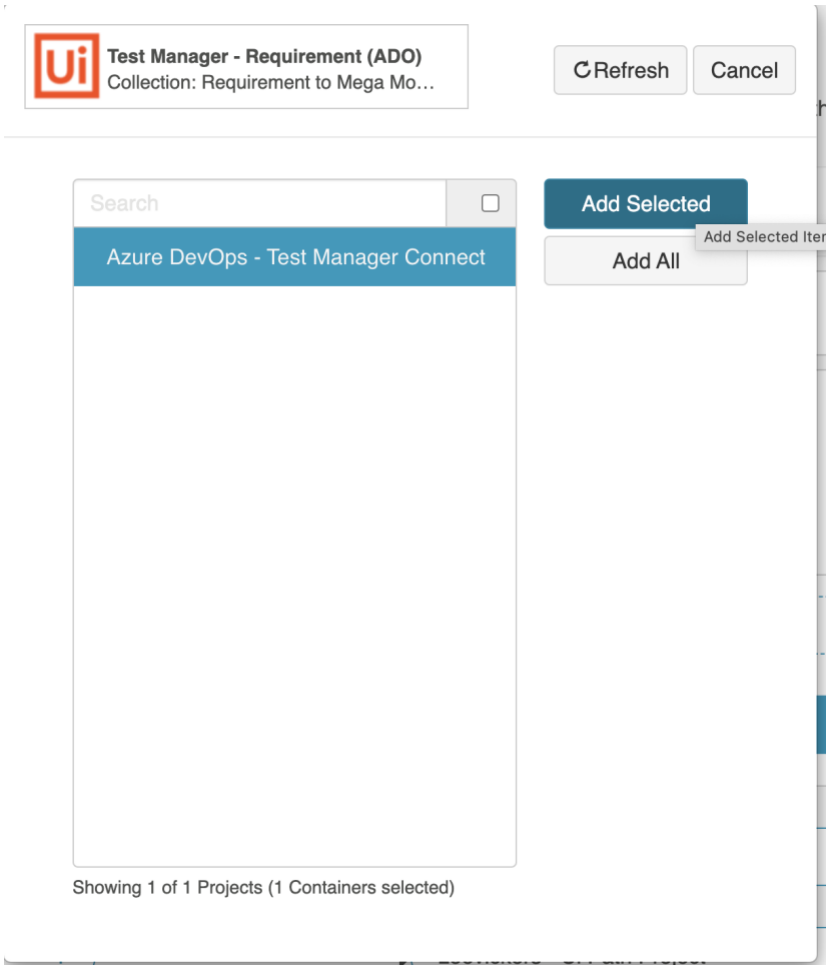

6. A warning symbol will appear on the integration menu on the right side of the screen next to “Artifact Routing”. Artifact routing will need to be set before the integration can run.

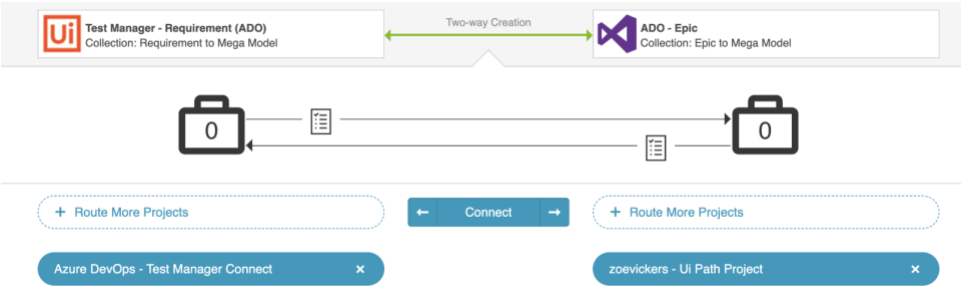



7. Select “Artifact Routing” and choose the projects in both tools you wish to route the artifacts to and from using the popups that appear when selecting “Route More Projects”. Projects can be routed one-to-one or conditionally. To keep it simple for this exercise, choose one project on either side and select the middle connect button that appears in the middle of the page.

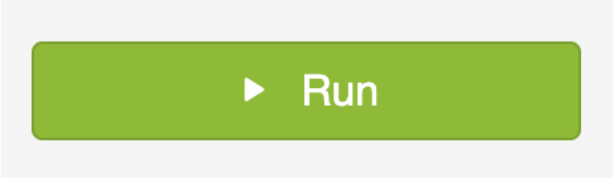

0
0
+ Route More Projects
+ Route More Projects
zoevickers - Ui Path Project


Artifact Routing: UiPath Test Manager – Requirement ⇔ Jira - Epic(test)
View and manage the artifact routes between these collections. Artifact routes specify where artifacts will flow in your collection(s) as part of this integration.
Back to Integration Configuration
Done
Jira XRay- Epic
Collection: Epic to Mega Model
Two-way Creation
Test Manager - Requirement
Collection: Requirement to Mega Model
0
0
Artifact Routing
Create artifact routes to specify where artifacts will flow in your collection(s).
Route More Projects
Connect
Route More Projects
Clear Workspace
UiPath XRay Project
UiPath Test Manager Connect - P1


Test Manager - Requirement (ADO)
Collection: Requirement to Mega Mo…
Refresh
Cancel
Search
Add Selected
Add Selected Iter
Azure DevOps - Test Manager Connect
Add All
Showing 1 of 1 Projects (1 Containers selected)




8. The first Integration is now ready to be run and used! You may now select the "Back to Integration Configuration" Button at the top left of the screen to get back to your newly created integration.
9. You can now select the "Run" Button at the right of the integration and test it out by creating a new Requirement in UiPath Test Manager or in Epic in ADO to test out the integration and ensure it is running properly.

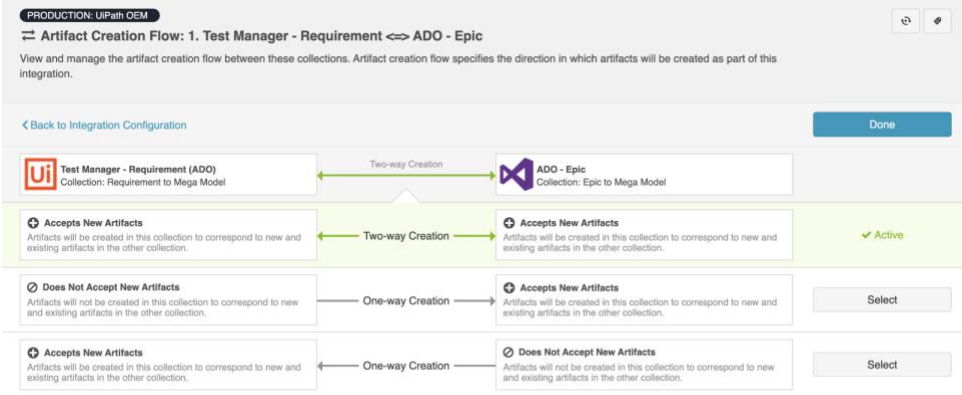



10. 6.1-5 Integration Configurations:

Additionally, other configurations (above and below "Artifact Routing") can be made to the integration using the integration menu. See below:

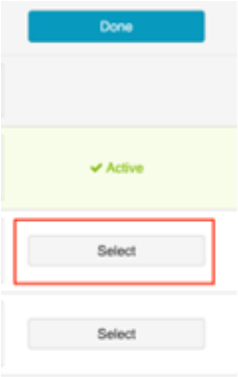
11. Artifact Creation Flow:

- Artifact creation flow allows users to decide whether the integration will have a one-way or bidirectional creation flow.




- How To:
  - Navigate to "Artifact Creation Flow" in the integration menu.

- 
    - Use the select button on the right of each option to select the type of Artifact Creation Flow needed for the integration.

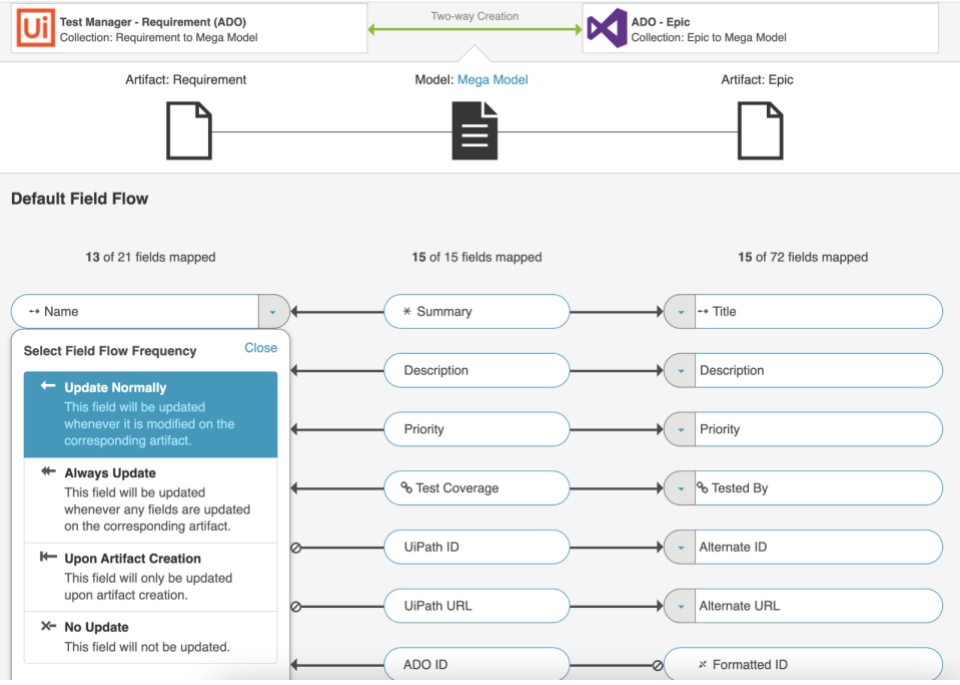



- Note: By default, all integrations will be bidirectional.

- Bidirectional Artifact Creation allows for artifacts to be created in both systems and pushed into the opposite systems.
- One-way creation flow limits artifact creation to only one system and pushed into the other. For example, all artifacts created in UiPath Test Manager will be pushed into ADO, however, any artifacts created in ADO will not move over to UiPath Test Manager.
    - Note: One-way creation only limits the creation of artifacts. Any updates or modifications to artifacts will still be bidirectional.

12. Field Flow:

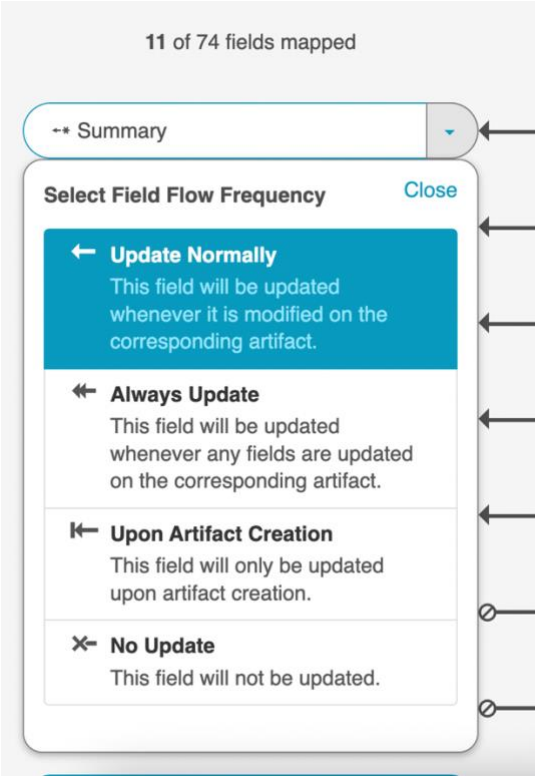
- Field Flow allows users to edit how Hub does or does not update artifact fields in the integration.




- How To:
  - Navigate to "Field Flow" In the integration menu.

- 
  - Select the dropdown from a field in either system to determine how or if that field is updated.

- Note: By default, all fields will "Update Normally" unless previously mapped differently in the collection.

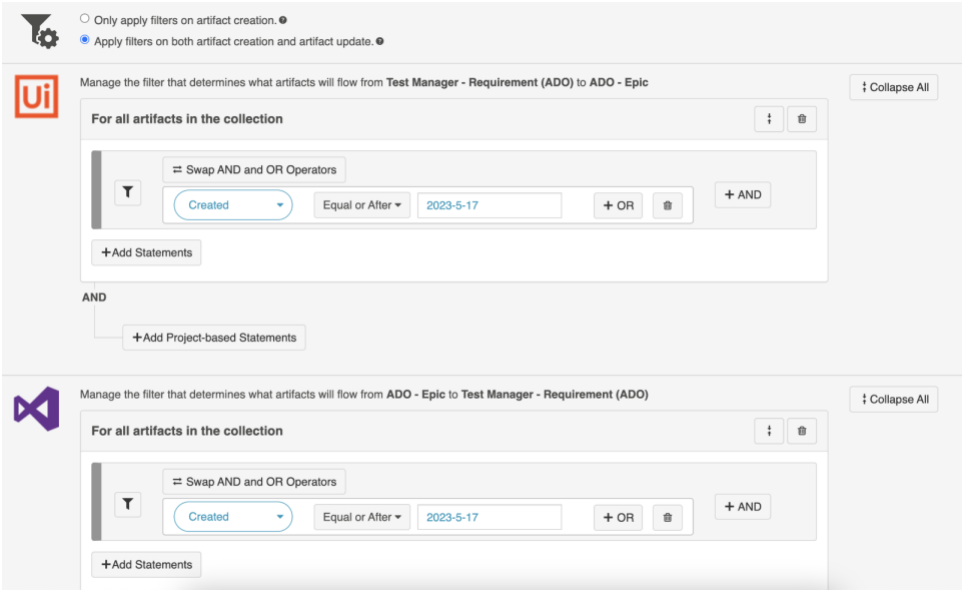



- Finally select Save at the top right corner of the screen to save any changes you have made.

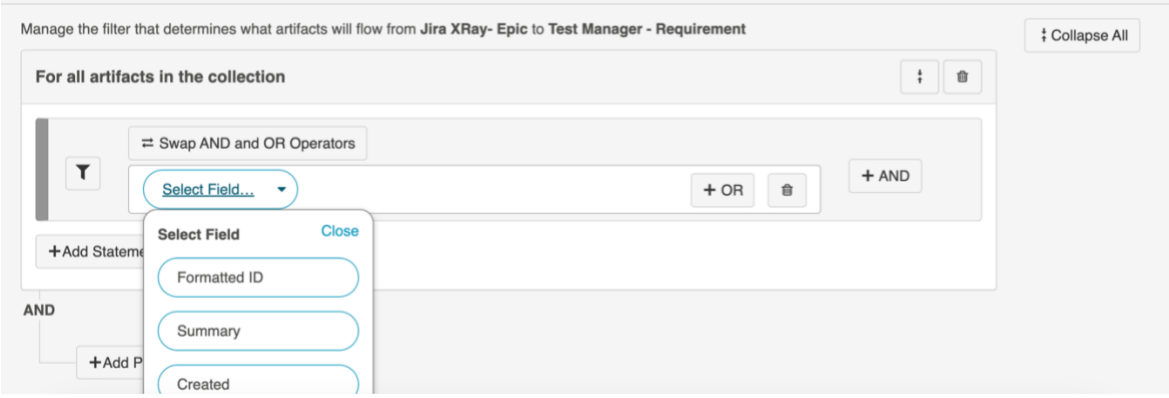
- Update Normally- The field selected will be updated whenever it is modified on the corresponding artifact.
- Always Update- The field selected will be updated when any fields on the corresponding artifact are modified.
- Upon Artifact Creation- The field selected will only update when the artifact is created.
- No Update- The field selected will never update in the system.

13. Artifact Filtering:

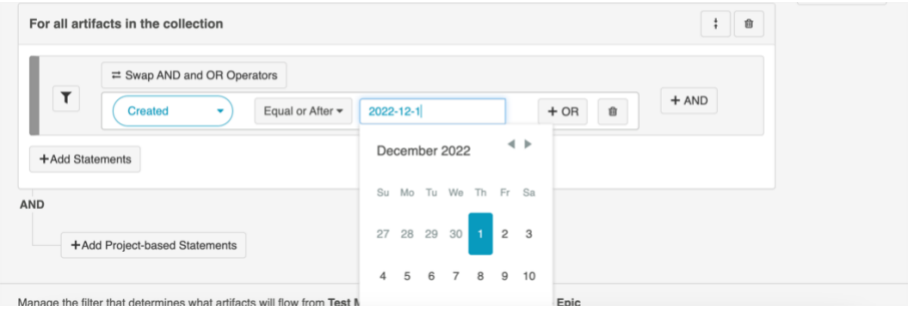
- Artifact filtering allows users to only pull artifacts from each tool based on certain field filters.



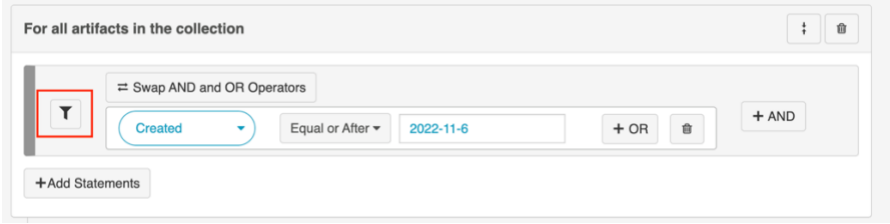

- How To:
  - Navigate to "Artifact Filtering" in the Navigation Menu.
  - Select either the "Only apply filters on artifact creation" or "Apply filters on both artifact creation and artifact update"
- Note: The most common option is to choose to have the filters applied to both artifact creation and artifact updates.
  - Next select "Add statement" and use the field dropdown to choose which field to use as a filter for any artifacts created and updated in UiPath Test Manager.



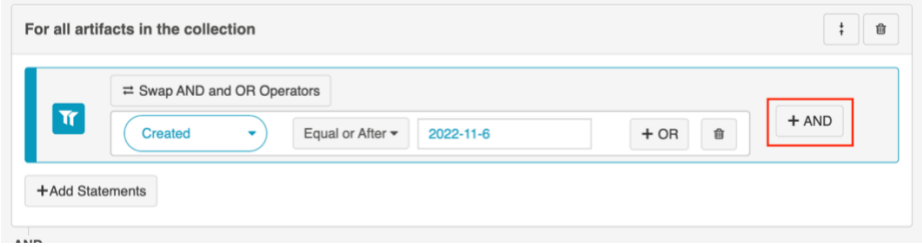

  - For this example, we will use the "Created" field. Then select the operator such as "Equal or After".
  - Lastly, select a value. In this example, we have selected a date. This filter means that only Artifacts created or updated equal to or after the date we have chosen will flow through the integration.



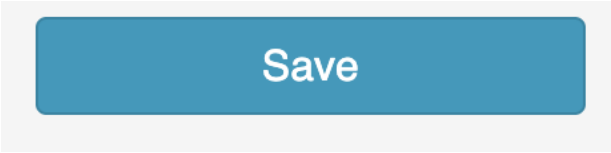

- Select the filter icon on the left of the new filter to apply the same filter to your ADO system.




- Multiple filters can be applied to each system in the integration. When using multiple filters be sure to select either the "AND or OR" operator to the right of each filter to ensure that only the correct artifacts flow through the integration.

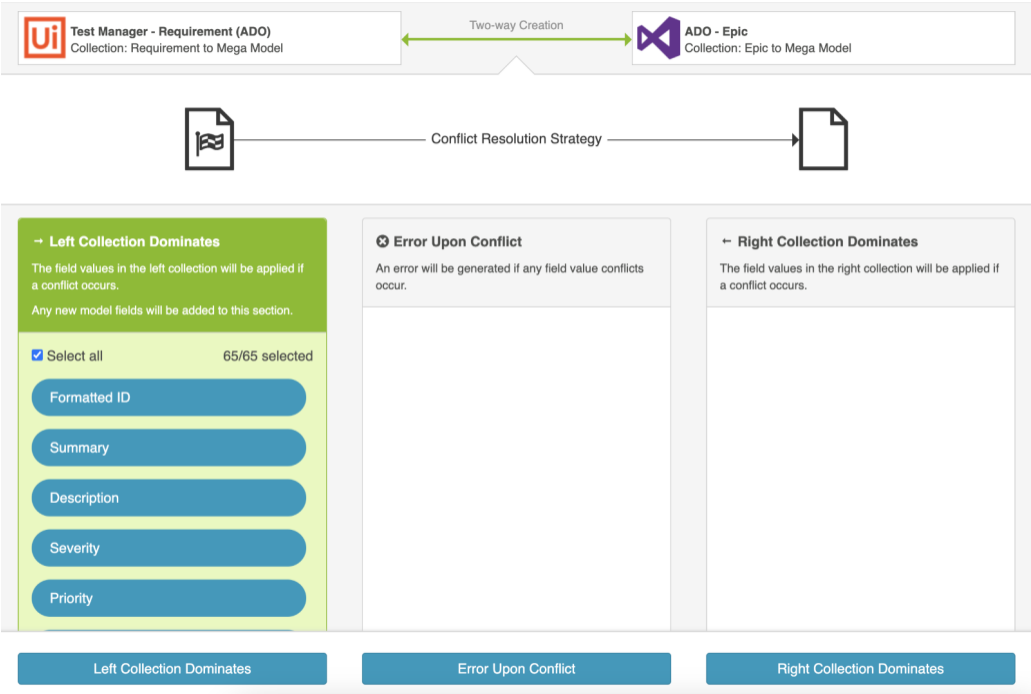



- Finally, select save at the top right corner to save the filters created for the integration.




## 14. Conflict Resolution:

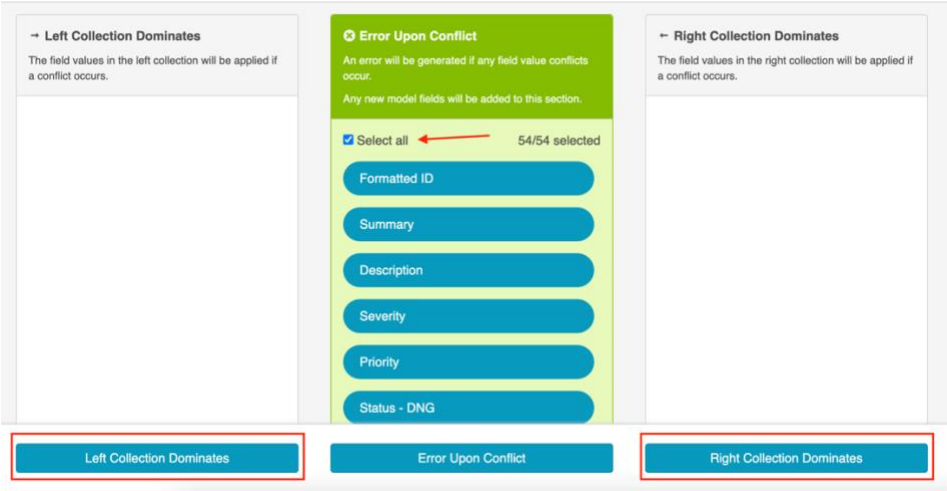
- Conflict resolution allows users to decide which tool is the source of truth when a field updates conflicts.
- A single tool can dominate, or the mapped fields can be set among both tools as needed.



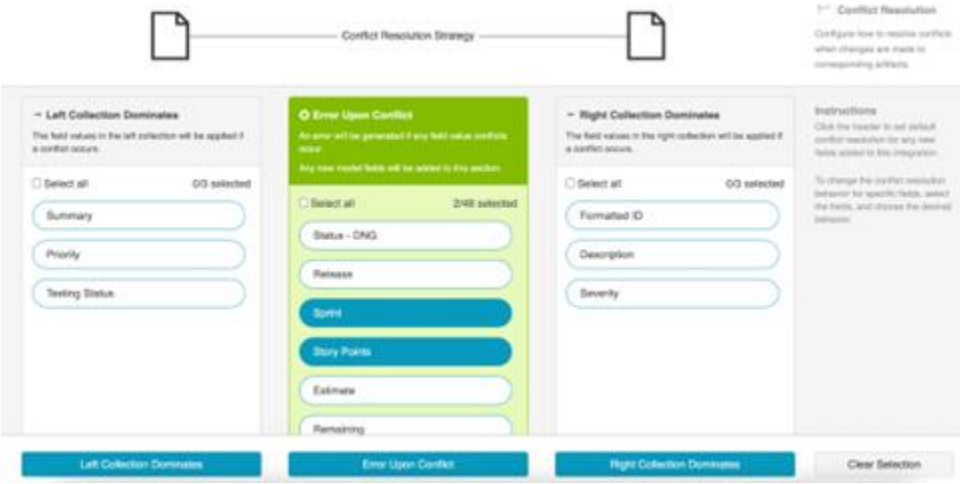

- How To:
  - Navigate to "Conflict Resolution" in the integration menu.

- 
  - Next, you have the option to:
    - Select all
    - Select individual fields
    - Select none

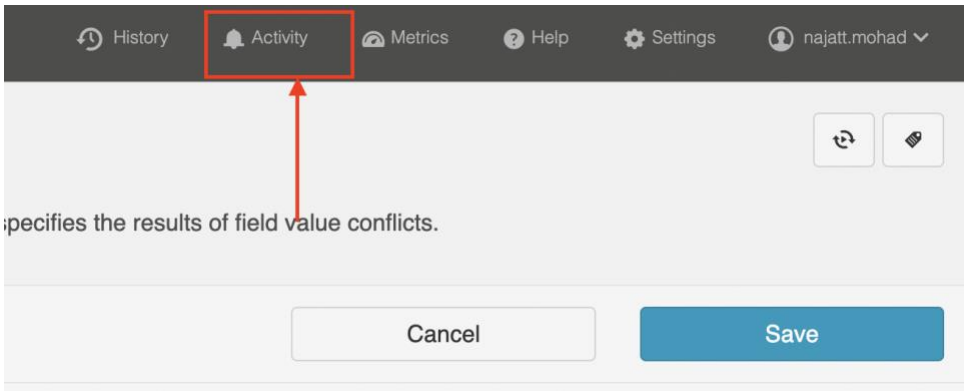
- After selecting all fields select either the UiPath or ADO system to dominate the field values in a conflict.



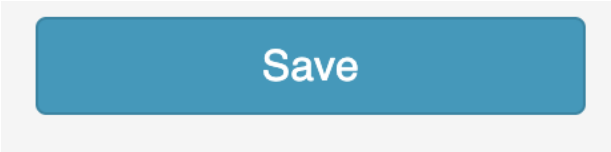

- After selecting individual fields, select either the UiPath Test Manager or ADO system to dominate those specific field values in a conflict. You also have the option to leave fields in the "Error Upon Conflict" section.




- Selecting none and leaving all values in the "Error Upon Conflict" section will create errors in the activity page when field value conflicts occur.

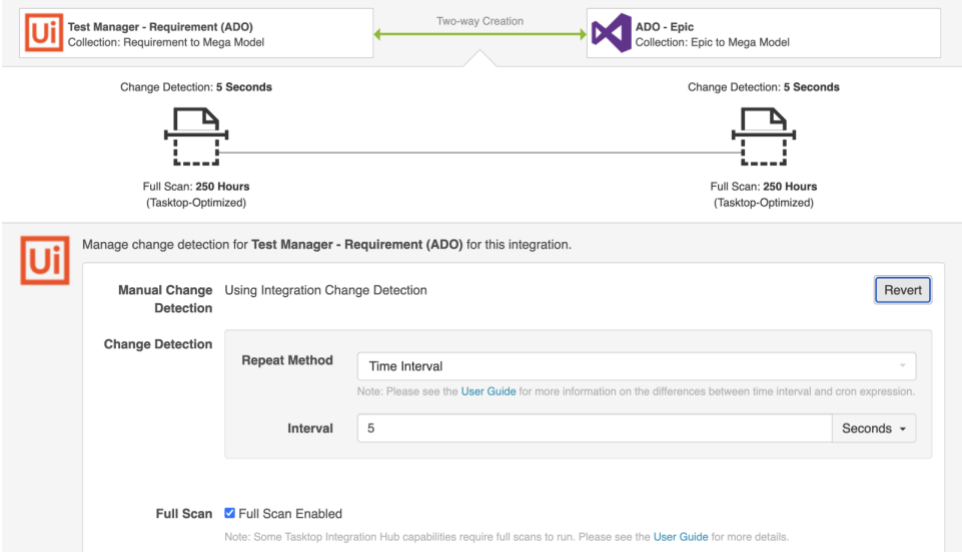
- 


  - Finally, select the save button at the top right to save the conflict resolution configuration for the integration.

- 


15. Change Detection:

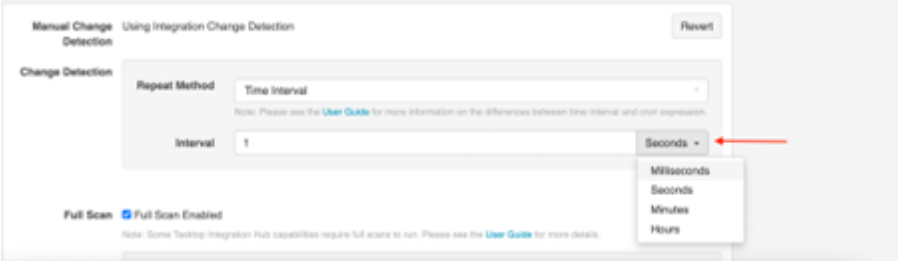
- Change detection is how often Hub checks each tool for artifact and field updates.
- Change Detection allows a user to override the global change detection settings for a single integration.
- Industry standards for production environments are anywhere between 5-30 minutes.



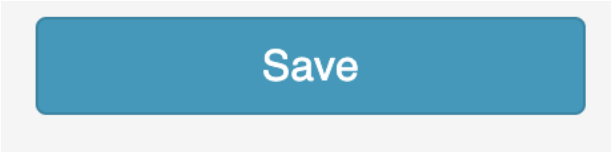

- How To:
  - Navigate to "Change Detection" from the integration menu.

- Select the override button to override the change detection setting for the specific integration.

- Use the dropdown to select the type of time interval, then type in a number for the time interval. Such as 5 minutes.

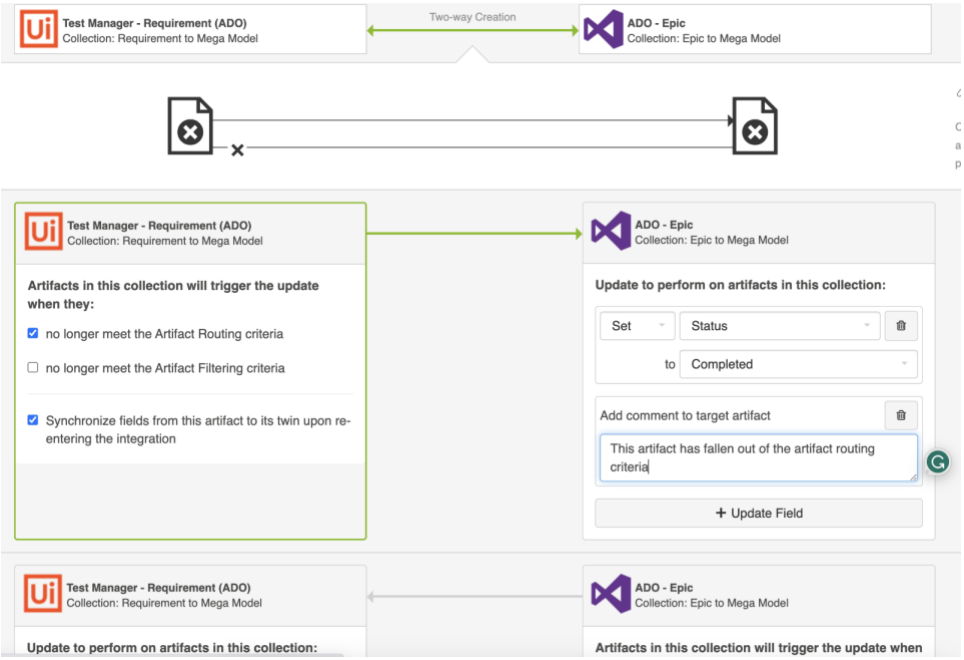



- Finally, use the "Save" button at the top right of the page to save the change detection settings for this integration.

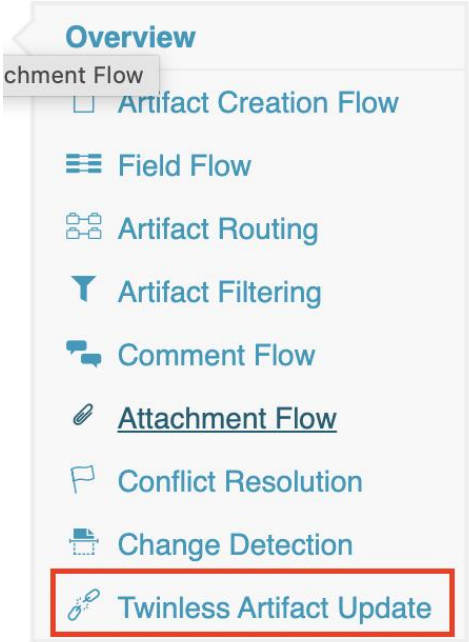


## 16. Twinless Artifact Update:

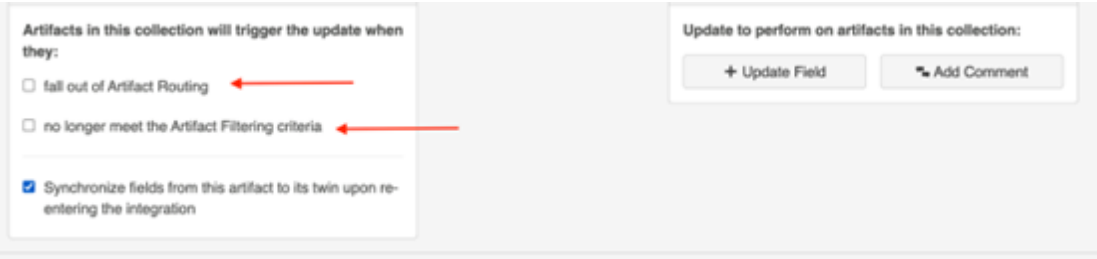
- Allows users to configure one final update (for example a comment or a status change) on an artifact when its "twin" in the other repository is no longer eligible to participate in the integration (e.g., when it's been deleted or no longer meets the artifact filter). The final update informs the newly twinless artifact that the synchronization has been discontinued.
- Artifacts are no longer eligible to participate in an integration if one or both conditions below are met for an endpoint:
- Artifacts fall out of Artifact Routing. This can happen when:
  - Artifacts are deleted
  - Artifacts are moved to projects not routed as part of the integration
  - Artifacts no longer meet the Artifact Filtering criteria.




- How To:
  - Select "Twinless Artifact Update" from the integration menu.

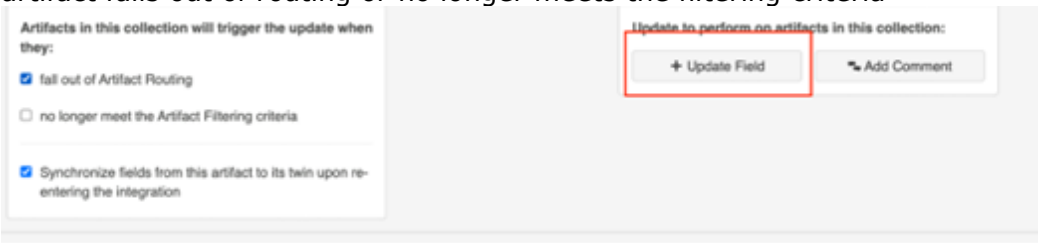


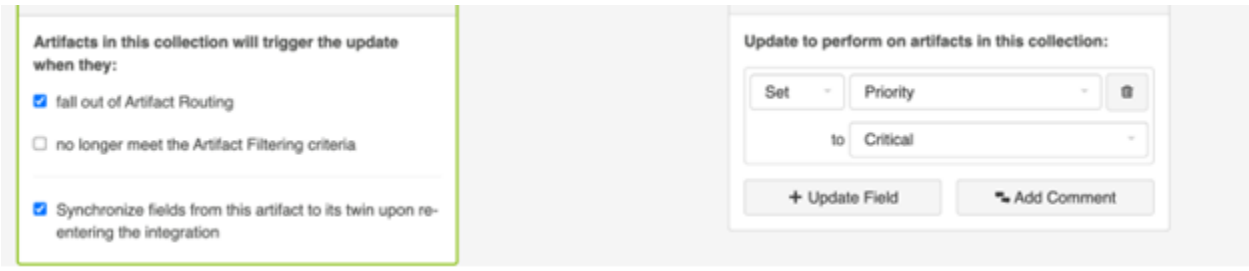

- 
    - Select between the two conditions under the UiPath Test Manager artifact side:
        - a. fall out of artifact routing- meaning when the associated artifact in UiPath Test Manager is moved to a project outside of projects that have been routed in the integration.
        - no longer meet the artifact filtering criteria- meaning the
        - associated artifact in UiPath Test Manager no longer meets the filter criteria
        - configured under "Artifact Filtering" in the integration menu.



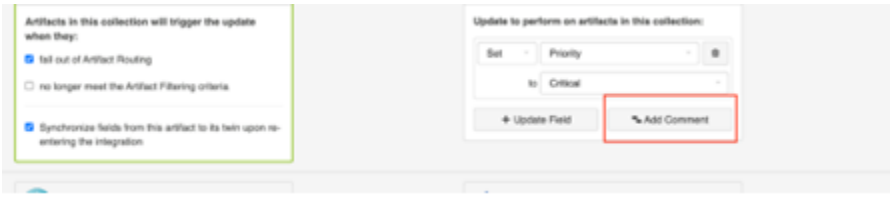

- Next, choose what happens to the twin artifact created in ADO when either one of the above happens.

- Select a field and its value to update in ADO when the UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria




  - b. You also have the option to choose to add a comment to the existing ADO twin artifact when UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria.



- Follow steps 1-3 to set up Twinless Artifact Update for the ADO system if necessary.
- Select the Save button at the top right corner of the page to save the "Twinless Artifact Update" configuration for the integration.

## 17. 6.2 Use Case 2: UiPath Test Manager Test Set & ADO Test Suite

***Tool Set Up:***

1. Ensure that any custom fields have been added to both the UiPath Test Manager Test Set and the ADO Test Suite for the projects you wish to use. This step may require you to reach out to your tool admin to add these fields to your desired projects. If you have admin rights in your tools, ensure you perform this step first.
2. Below are links to instructions on how to add custom fields in both UiPath Test Manager and Azure DevOps
   a. UiPath Test Manager: https://docs.uipath.com/test-suite/docs/managing-custom-fields#:~:text=Creating%20custom%20fields&text=Navigate%20to%20Project%20Settings%20%3E%20Custom,name%20for%20your%20custom%20field.
   b. Azure DevOps: https://learn.microsoft.com/en-us/azure/devops/organizations/settings/work/add-custom-field?view=azure-devops
   c. In this exercise example, the following custom fields will need to be added:

i. ADO Test Suite:

1. UiPath Test Manager ID (string)
2. UiPath Test Manager URL (string)

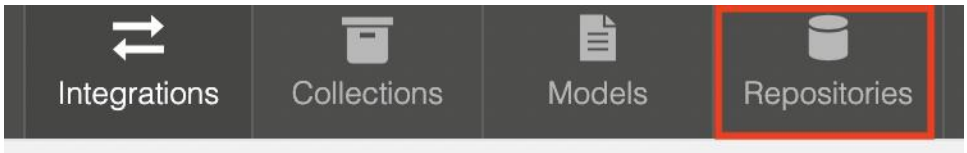
ii. UiPath Test Manager Test Set:

1. ADO ID (string)
2. ADO URL (string)

d. Additionally, ensure that at least one Test Set has been created in ADO to allow UiPath Test Manager Connect to pull the Test schema from ADO. If this step is not done, then your UiPath Test Manager Connect Collection may error out.

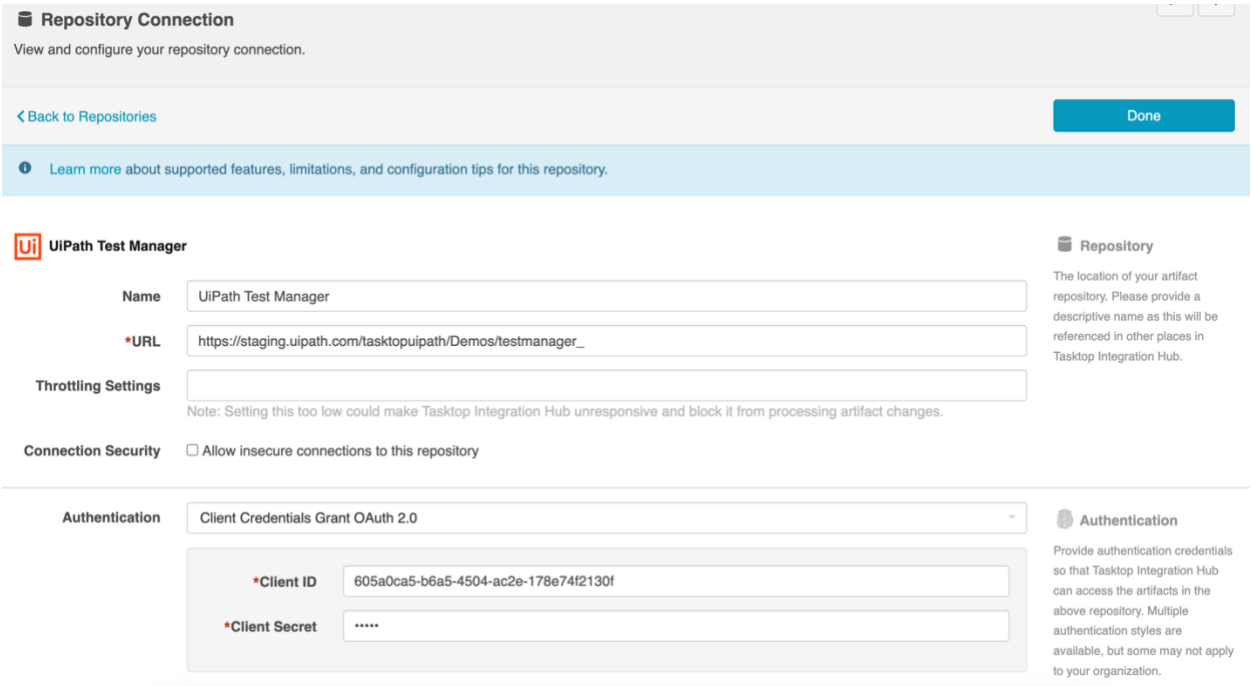
## 18. 6.2-1 Repository:

1. Ensure that both UiPath Test Manager and ADO instances are set up and working in the Repositories Tab in UiPath Test Manager Connect.
2. First, navigate to the "Repository" Tab at the top left of the UiPath Test Manager Connect.

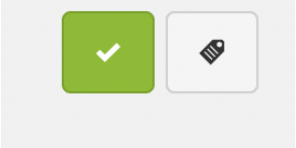



3. Next, select the "+ New Repository" button

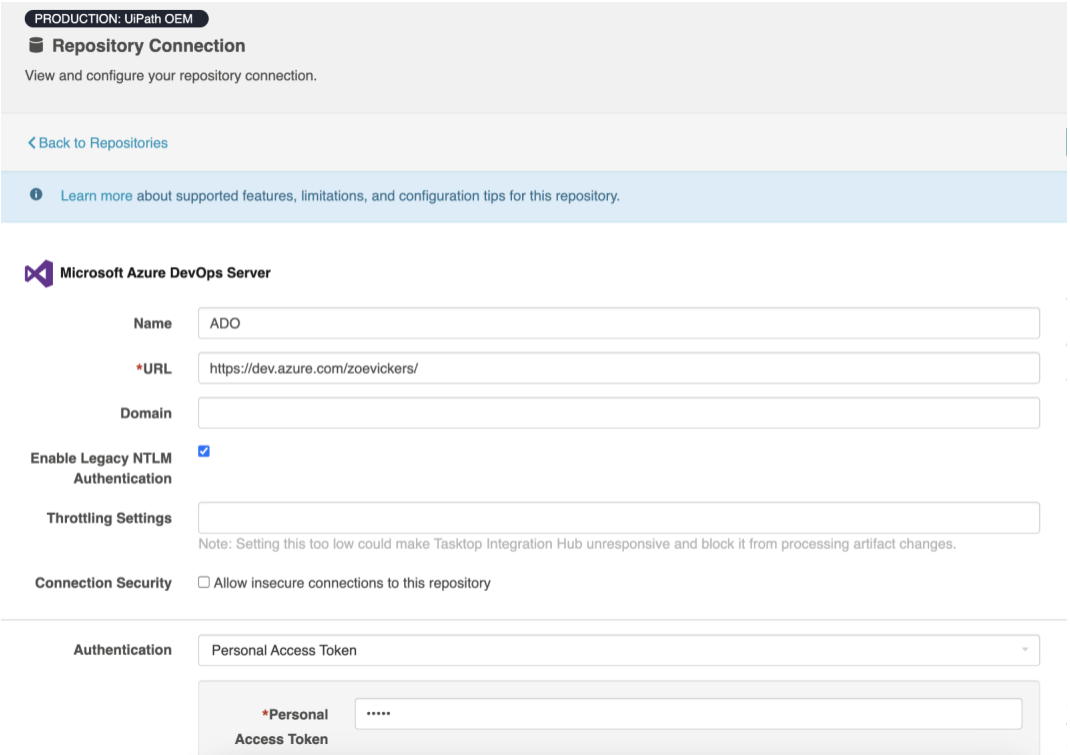
4. Then, add a name such as "UiPath Test Manager" in the name section and the URL to your UiPath Test Manager instance in the URL section.
5. The last piece is to choose the type of authentication you wish to use and add the authentication credentials to your UiPath Test Manager instance under the Authentication section of the Repository page.
   a. Please note each repository will need certain credentials that provide UiPath Test Manager Connect the read/write access for the integration. Sometimes tools require full admin access, others just require certain roles. Review the Tasktop documentation here to see what your repository requires.




6. Finally, select the "Save" button at the top right of the page. A green check mark should appear at the top right of the page if the connection was successful.



7. Repeat steps 1-6 to create the ADO repository with the link and credentials to your ADO environment.

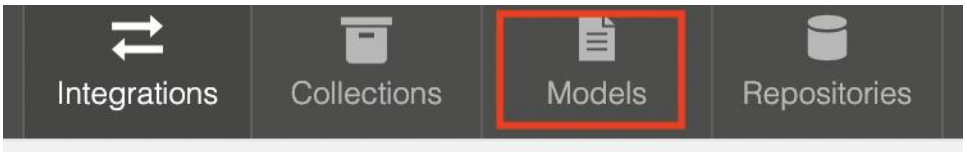



Note: The typical ADO customer uses Personal Access Token Authentication.

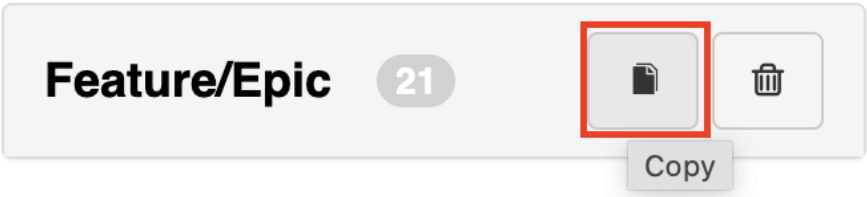
For further information on authentication please see the ADO connector documentation here.

## 19. 6.2-2 Model:

1. Navigate to the "Models" tab at the top left of the UiPath Test Manager Connect.




2. Copy the Feature/Epic model and rename the new Model from "Feature/Epic (copy) to "Test Set".




3. The following fields will need to be edited or added if they are not yet there:

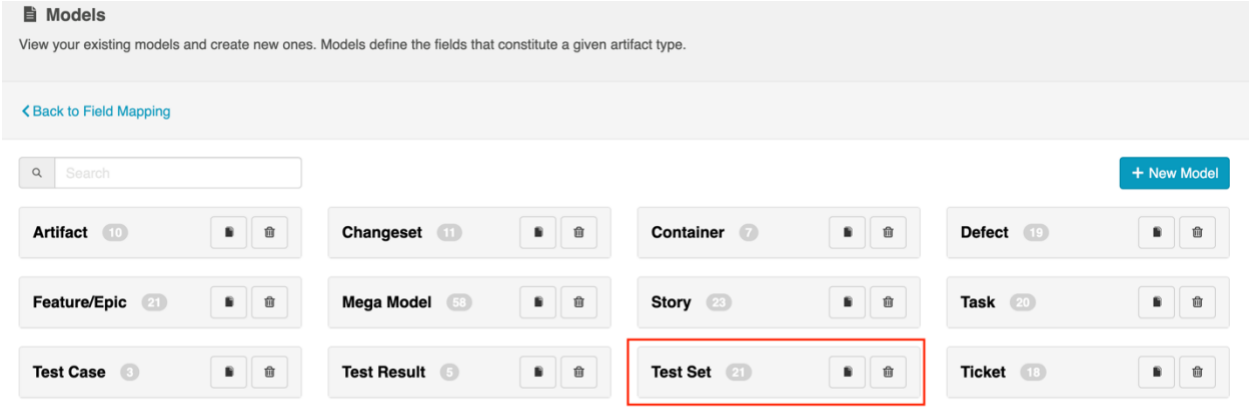
   Add

   i. UiPath Test Manager ID

ii. UiPath Test Manager URL

iii. ADO ID

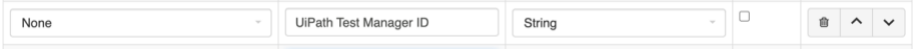
iv. ADO URL



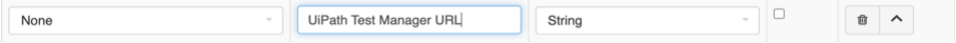

4. How to add +the above fields to the model:

   a. For the fields below, scroll to the bottom of the list of fields and select the icon to add each one by one:

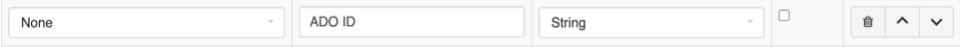
      i. UiPath Test Manager ID: Smart Field (none), Label (UiPath Test Manager Connect ID), Type (String)




      ii. UiPath Test Manager Connect URL: Smart Field (none), Label (UiPath Test Manager URL), Type (String)




      iii. ADO ID: Smart Field (none), Label (ADO ID), Type (String)



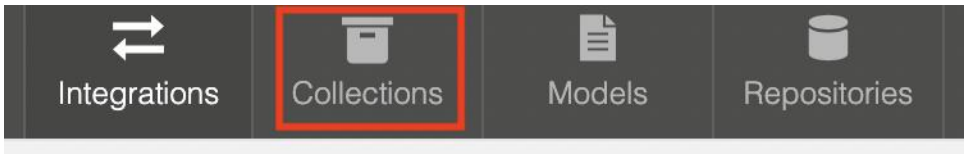

      iv. ADO URL: Smart Field (none), Label (ADO URL), Type (String)

   b. Push save when done.

## 20. 6.2-3 Collections:

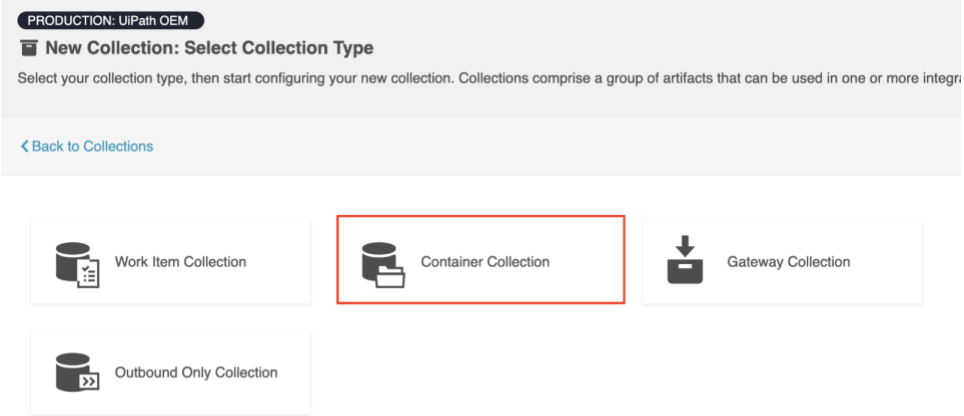
1. After you have ensured that the model being utilized has all the necessary fields, it is time to create two collections. In this scenario, the collection will map UiPath Test Manager to

the Test Set model and ADO to the Test Set model.

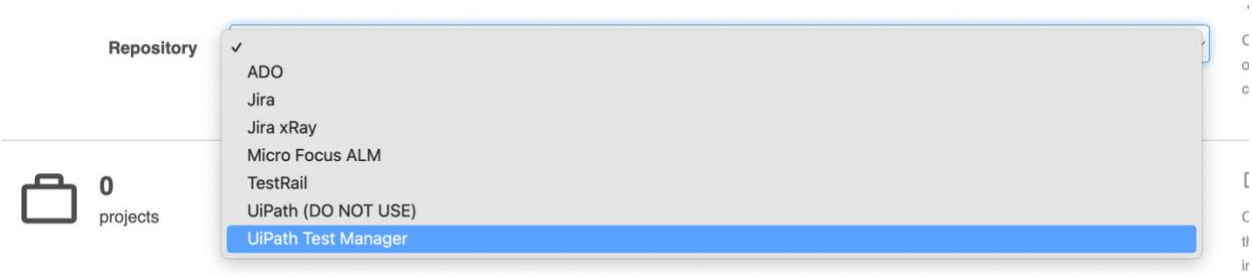



2. Navigate to the Collections Tab and select the "+ New Collections" button.

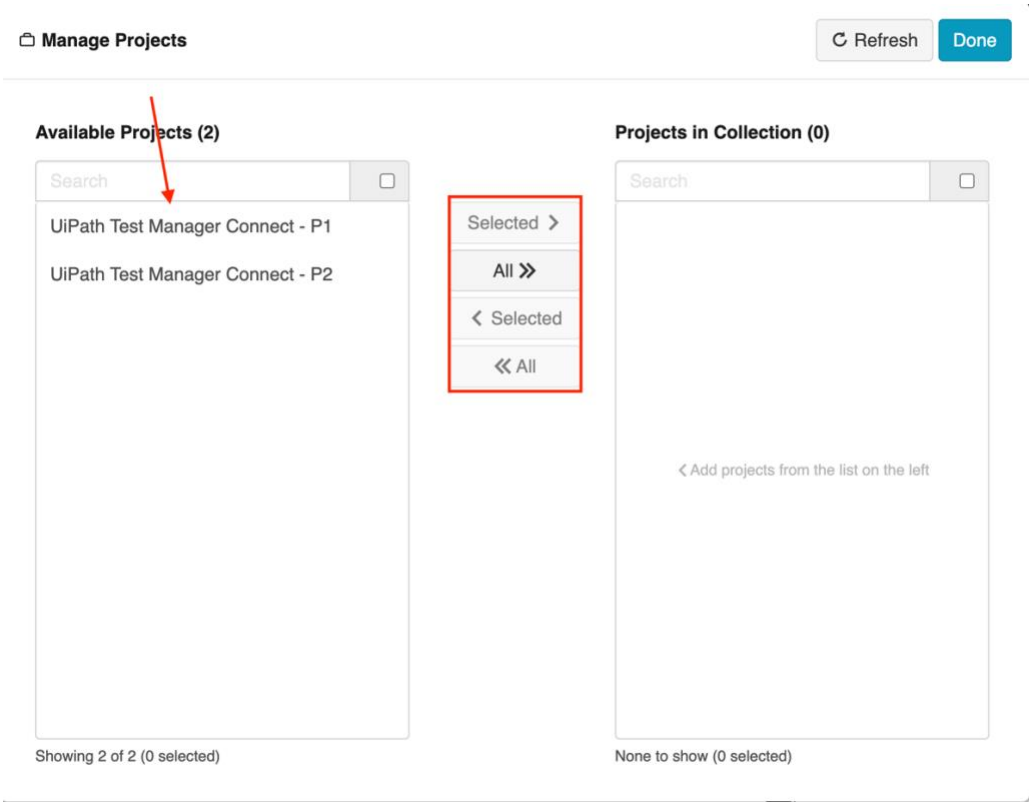
3. Then select "Container Collection".



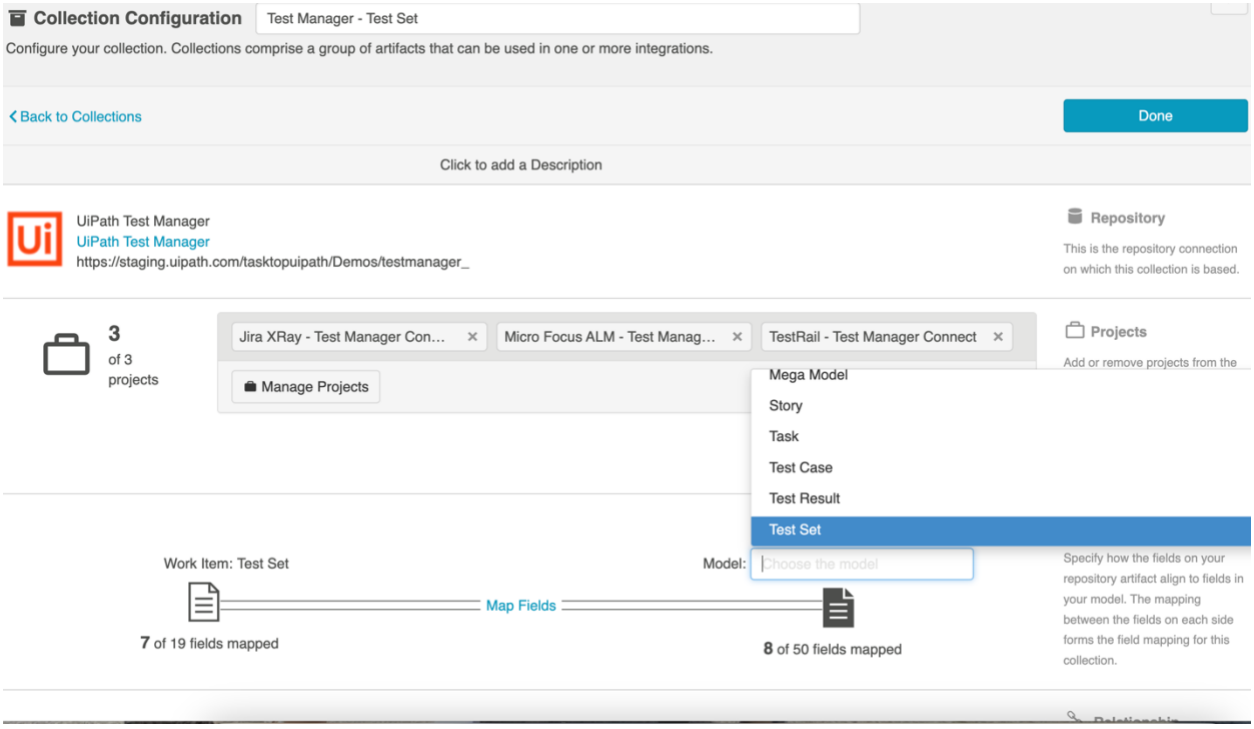

4. Next, give the collection a name such as "UiPath Test Manager Test Set".
5. Select the UiPath Test Manager repository.



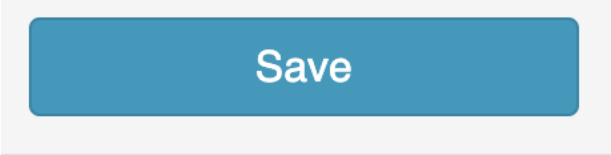

6. Then, choose which UiPath Test Manager projects to use in the collection by selecting "Manage Projects" and using the pop-up to add one or many projects.
    a. *Note: Projects can always be added or removed even after the integration has been built.*




7. Below the projects section, use the "Work Item" and "Model" dropdowns to select the Test Set and the Test Set model.

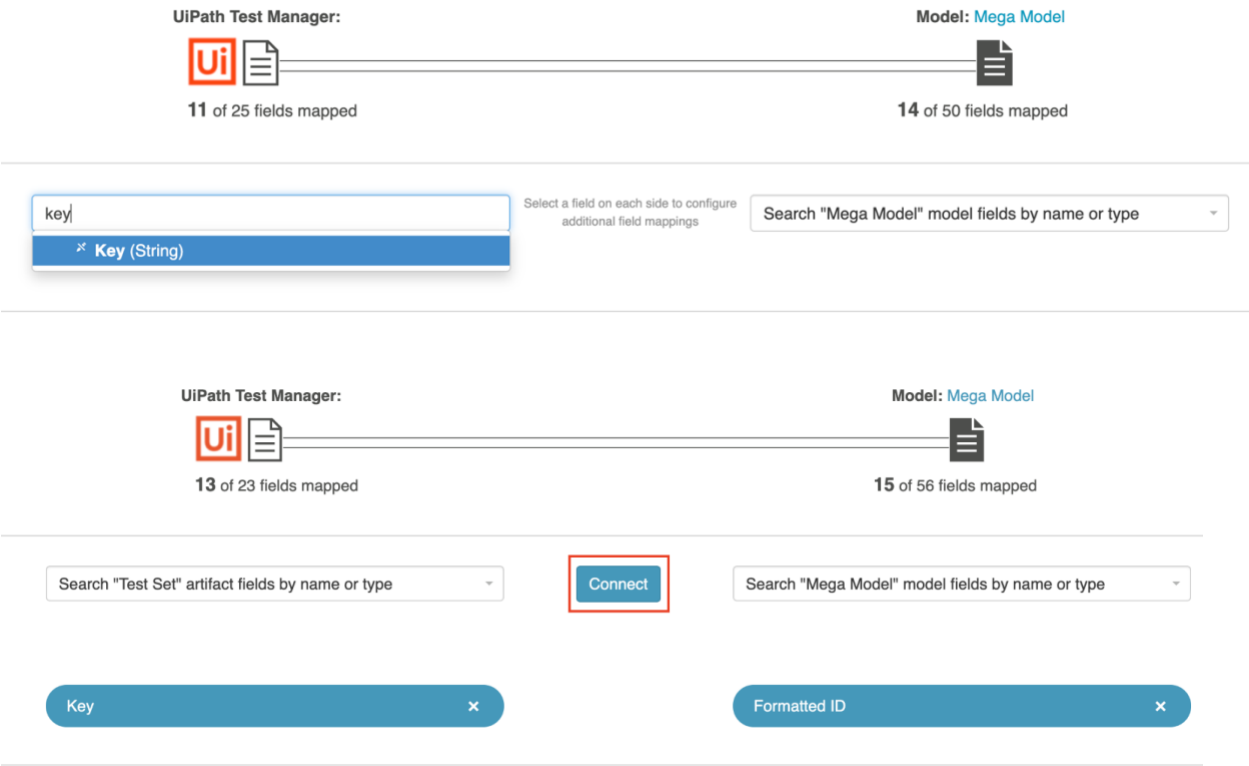


8. Once both are selected navigate to the top right of the page and click the “Save” button.




9. Now the process of mapping and configuring the fields can be done. Under the projects section, select “Map Fields”.
10. Once here, UiPath Test Manager Connect will have automatically mapped multiple fields. For this simple integration use the dropdowns and select additional fields to add to the mapping. When adding fields, select a field from the UiPath Test Manager dropdown and the Model dropdown and click the “Connect” button that appears. Ensure that each of the following fields have been mapped:

| UiPath Test Manager Test Set | Test Set Model |
|---|---|
| ADO ID | ADO ID |
| ADO URL | ADO URL |
| URL | UiPath Test Manager URL |
| URL | URL |
| Key | Formatted ID |
| Key | UiPath Test Manager ID |
| Name | Summary |
| Description | Description |
| Created | Created |
| Updated | Modified |

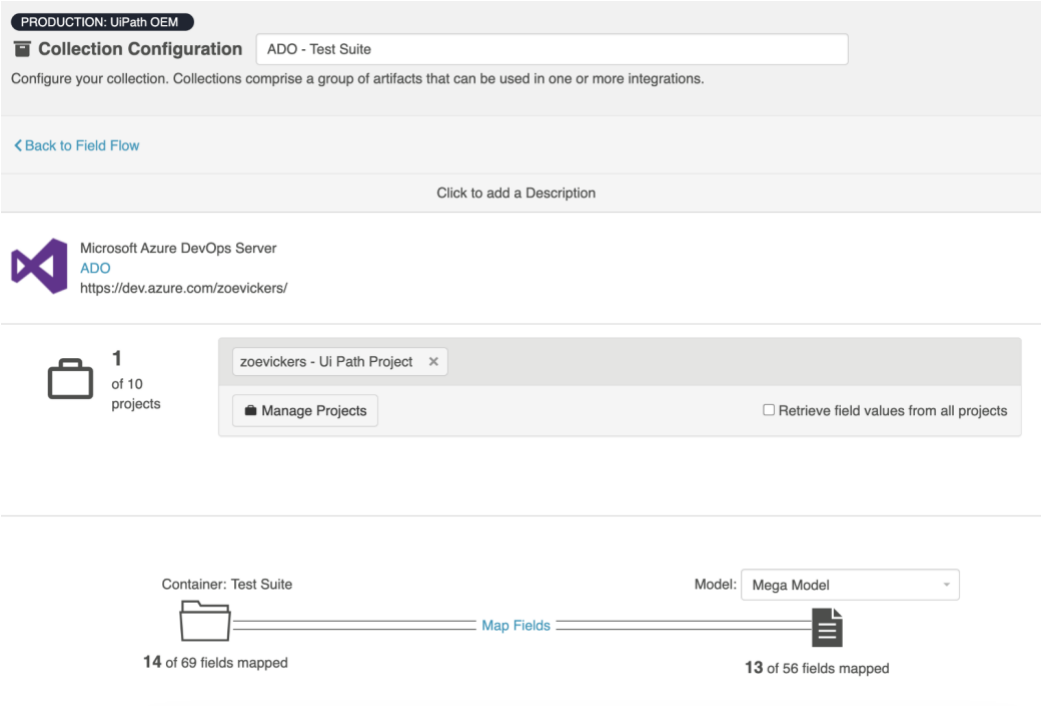



11. Any additional fields can be deleted for now using the trash can Icon next to the field. If you wish to add any additional fields, you can do so at this time or after the integration is complete.

12. After ensuring each of these fields is mapped, orange warning signs are likely to appear next to fields such as "Priority" or "Status". This simply means that the values for those fields must be configured.

13. Select "Configure" next to each of the fields with the warning symbol to configure the field values. When configuring values select a value on each side and click the "Connect" button to map the values. Values can be mapped one to one or one to multiple.

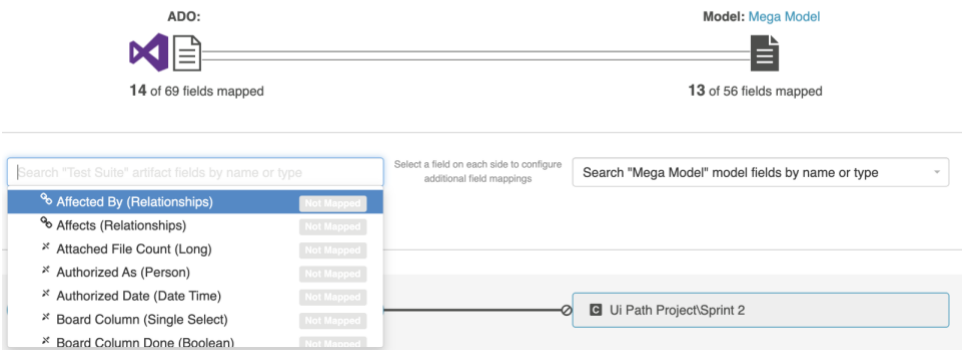
14. The first collection has now been completed! Navigate back to the "Collection" Tab and select "+ New Collection" to begin creating the ADO Collection.




15. Follow steps 2-12 to create the ADO collection with the following modifications:
    a. The collection name should be something similar to "ADO Test Suite"
    b. Select "Test Set" for your Work Item and select the same Test Set model
    c. Map and configure the following fields:

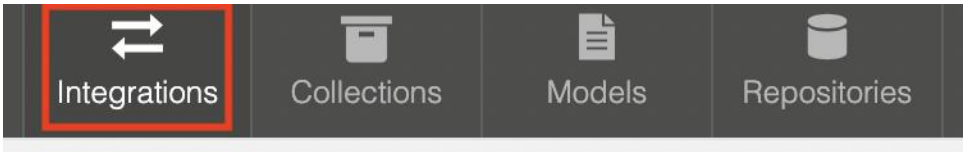
| ADO Test Suite | Test Set Model |
|---|---|
| Area Path | (Constant Value) |
| Iteration Path | (Constant Value) |
| State | (Constant Value) |
| UiPath Test Manager ID | UiPath Test Manager ID |
| UiPath Test Manager URL | UiPath Test Manager URL |
| Key | ADO ID |
| URL | ADO URL |
| Formatted ID | Formatted ID |
| Title | Summary |
| Description | Description |

| | |
|---|---|
| Created | Created Date |
| Change Date | Modified |
| URL | URL |



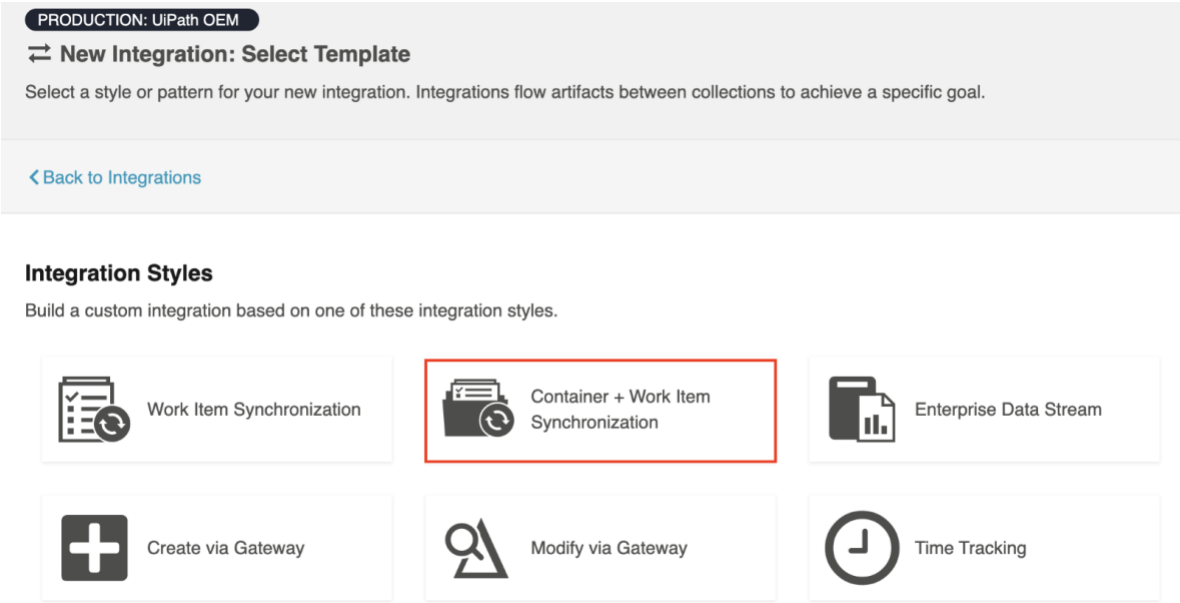

## 21. 6.2-4 Integration:

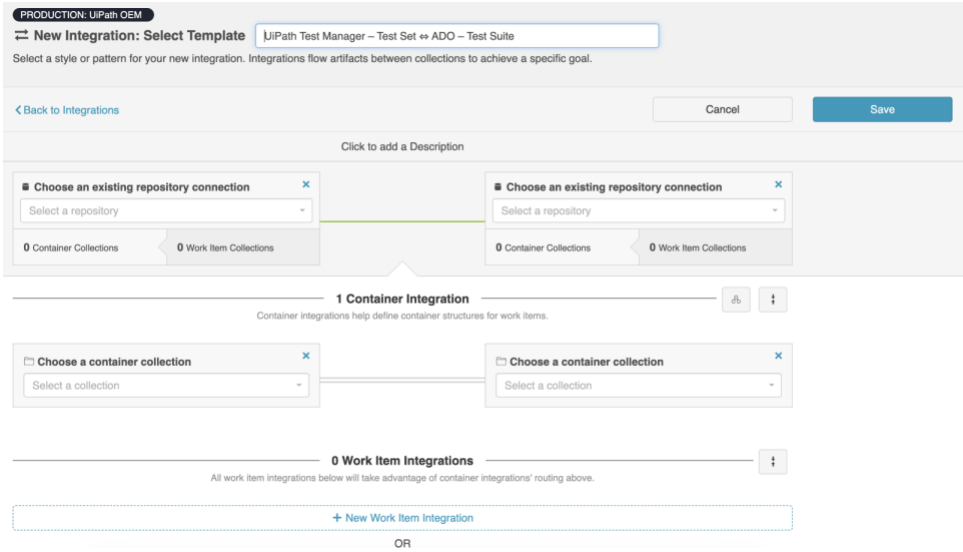
1. Now it is time to put the two collections together to create one full integration! First, navigate to the "Integrations" tab.



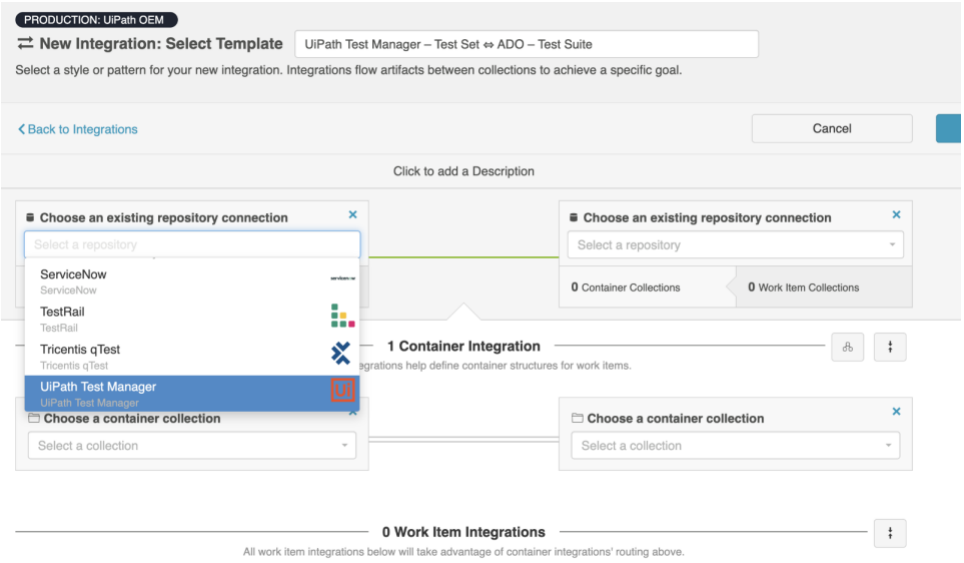

2. Select the "+ New Integration" at the top right of the page.

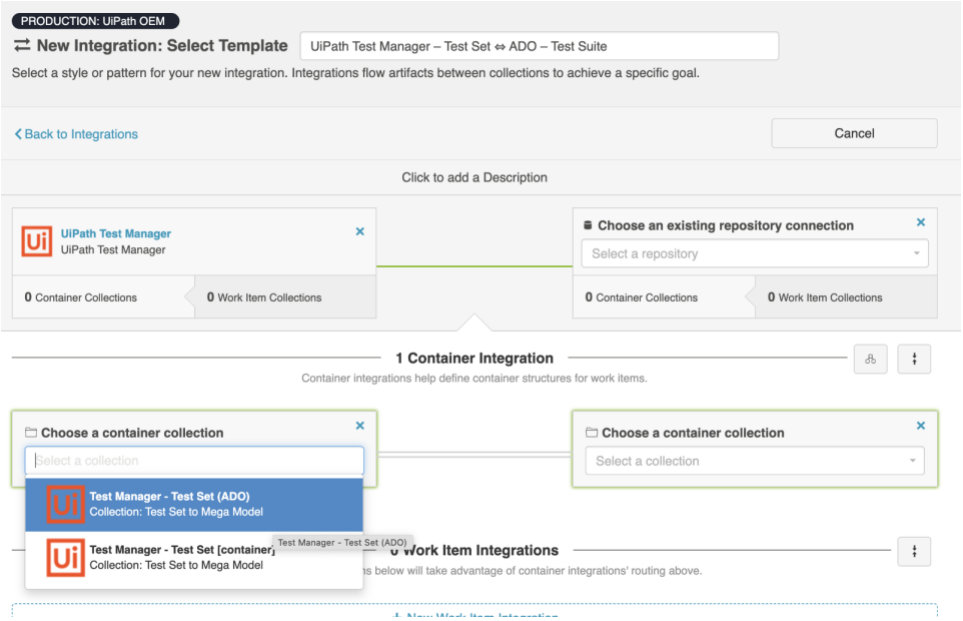
3. Next, select "Container + Work Item Synchronization" and give the integration a name such as "UiPath Test Manager – Test Set ⇔ ADO – Test Suite"

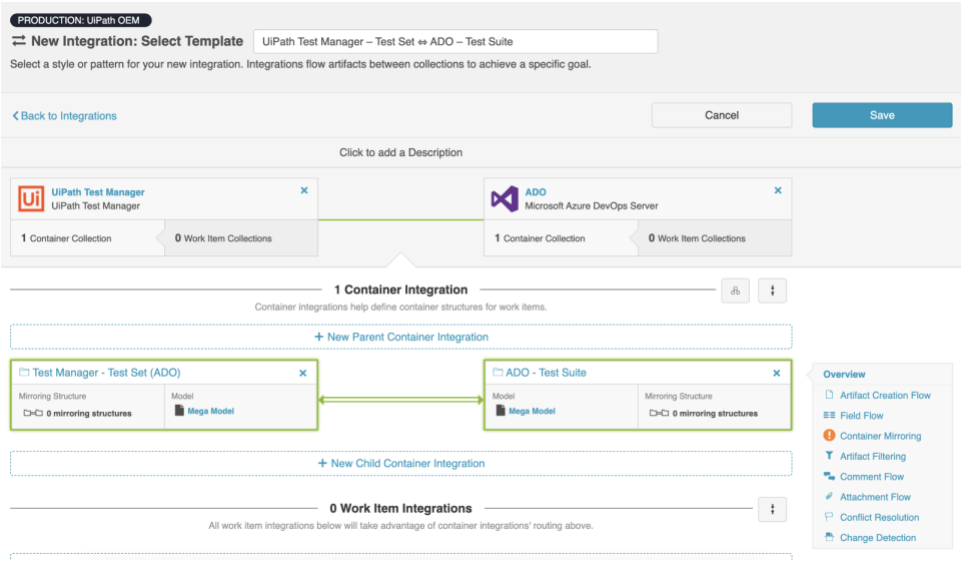


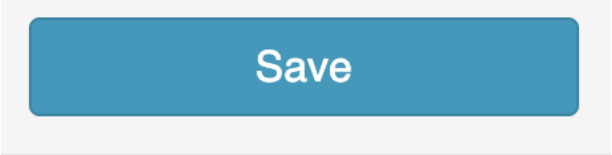

4. Select the UiPath Test Manager repository along with the newly created UiPath Test Manager – Test Set collection from the drop downs provided on one side. And similarly, choose the ADO and newly created ADO Test Set collection on the other side.


PRODUCTION: UiPath OEM
New Integration: Select Template
UiPath Test Manager – Test Set ⇔ ADO – Test Suite
Select a style or pattern for your new integration. Integrations flow artifacts between collections to achieve a specific goal.
Back to Integrations
Cancel
Click to add a Description
Choose an existing repository connection
Select a repository
ServiceNow
TestRail
Tricentis qTest
UiPath Test Manager
Choose an existing repository connection
Select a repository
0 Container Collections
0 Work Item Collections
1 Container Integration
Choose a container collection
Select a collection
Choose a container collection
Select a collection
0 Work Item Integrations
All work item integrations below will take advantage of container integrations' routing above.

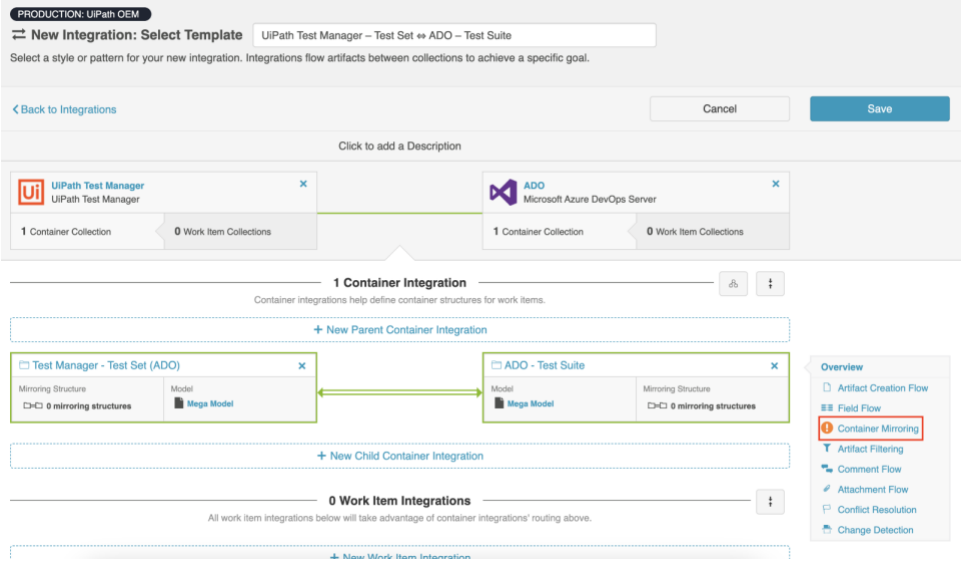

PRODUCTION: UiPath OEM
New Integration: Select Template
UiPath Test Manager – Test Set ⇔ ADO – Test Suite
Select a style or pattern for your new integration. Integrations flow artifacts between collections to achieve a specific goal.
Back to Integrations
Cancel
Click to add a Description
UiPath Test Manager
UiPath Test Manager
0 Container Collections
0 Work Item Collections
Choose an existing repository connection
Select a repository
0 Container Collections
0 Work Item Collections
1 Container Integration
Container integrations help define container structures for work items.
Choose a container collection
Select a collection
Test Manager - Test Set (ADO)
Collection: Test Set to Mega Model
Test Manager - Test Set [container]
Collection: Test Set to Mega Model
Test Manager - Test Set (ADO)
Choose a container collection
Select a collection



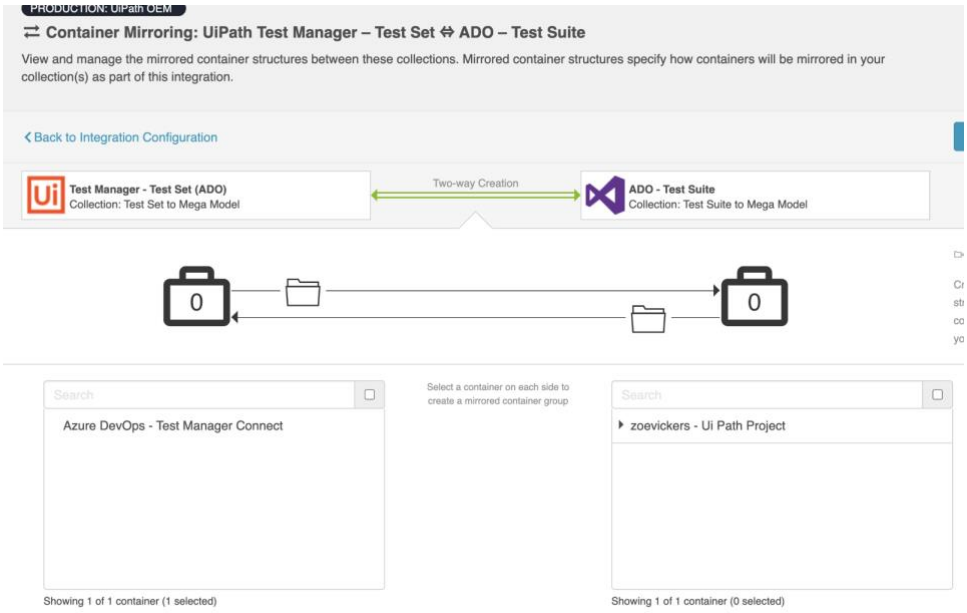

5. Select “Save” at the top right.

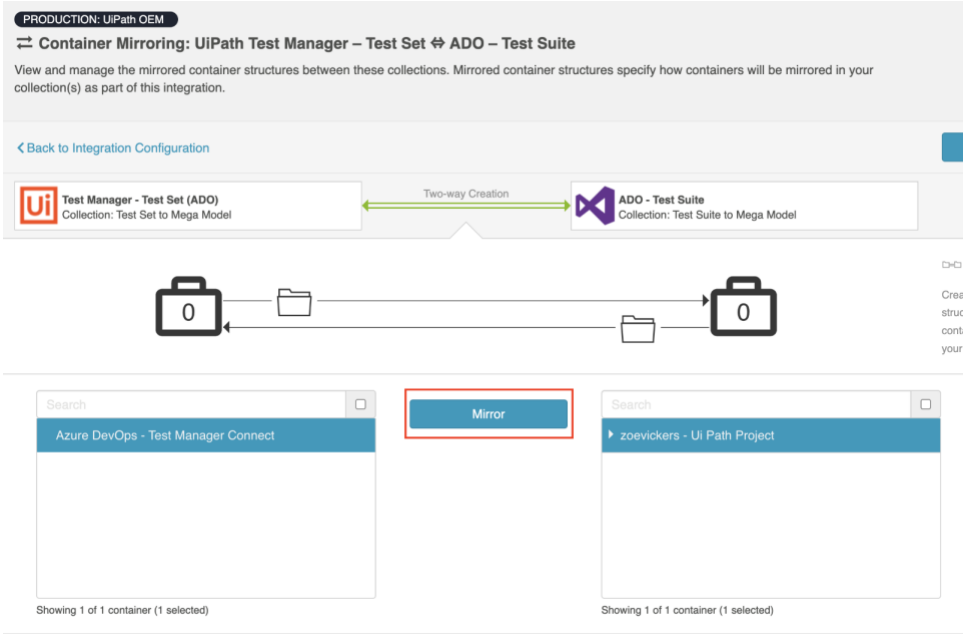



6. A warning symbol will appear on the integration menu on the right side of the screen next to “Container Mirroring”. Container Mirroring will need to be set before the integration can run.



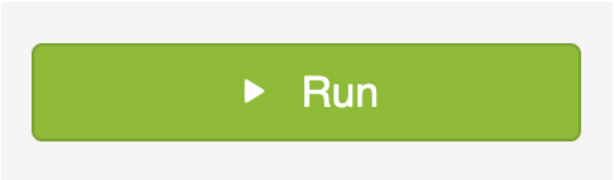
7. Select “Container Mirroring” and choose the projects in both tools you wish to route the artifacts to and from using the container boxes on screen. Projects can be routed one-to-one or conditionally. To keep it simple for this exercise, choose one project on either side and select the middle “Mirror” button that appears in the middle of the page.




8. The second integration is now ready to be run and used! You may now select the “Back to Integration Configuration” Button at the top left of the screen to get back to your newly created integration.

9. You can now select the “Run” Button at the right of the integration and test it out by creating a new Test Set in UiPath Test Manager or Test Suite in ADO to test out the integration and ensure it is running properly.

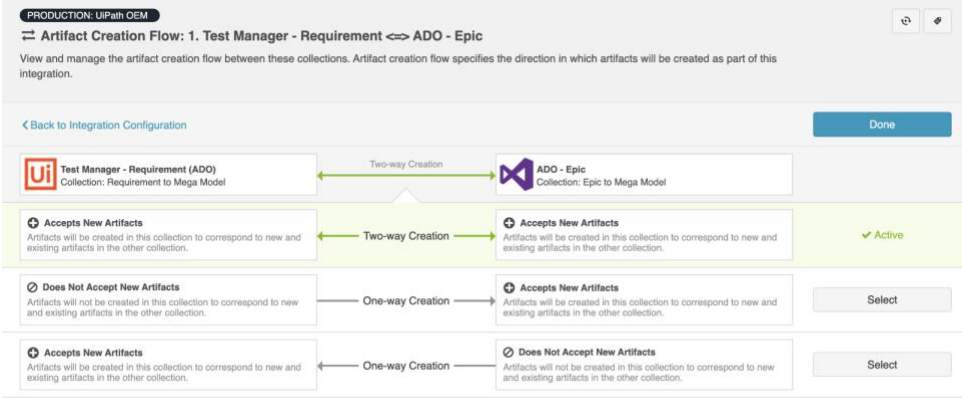



## 22. 6.2-5 Integration Configurations:

Additionally, other configurations (above and below "Artifact Routing") can be made to the integration using the integration menu. See below:

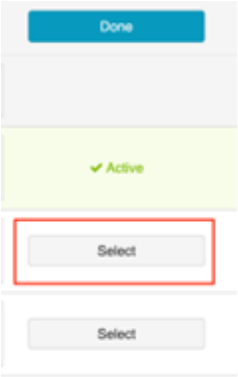
### 23. Artifact Creation Flow:

- Artifact creation flow allows users to decide whether the integration will have a one-way or bidirectional creation flow.




- How To:
  - Navigate to "Artifact Creation Flow" in the integration menu.

- Use the select button on the right of each option to select the type of Artifact Creation Flow needed for the integration.

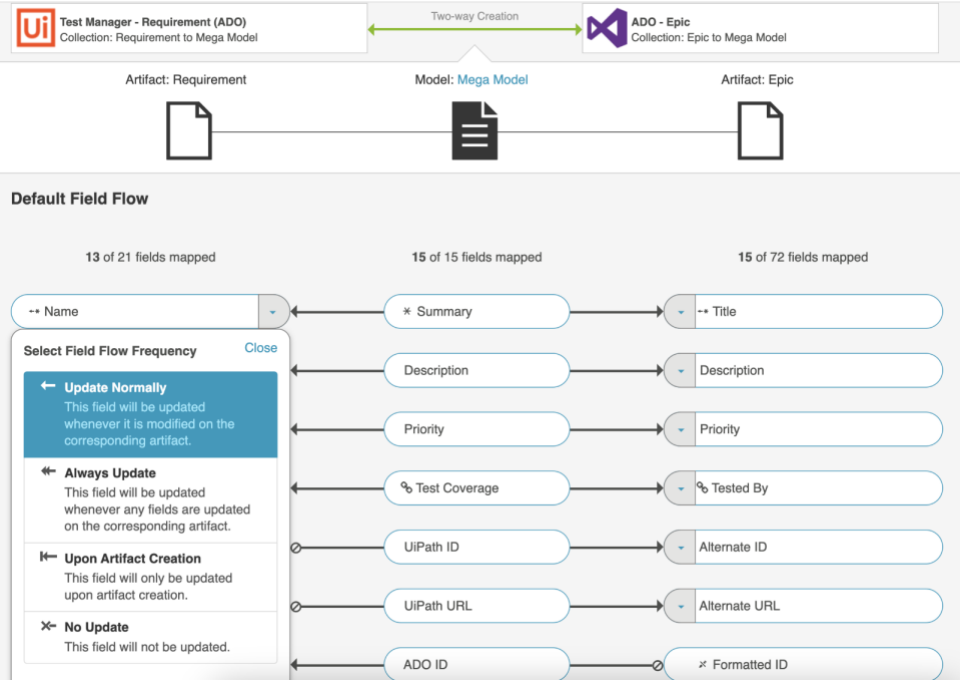



- Note: By default, all integrations will be bidirectional.

- Bidirectional Artifact Creation allows for artifacts to be created in both systems and pushed into the opposite systems.
- One-way creation flow limits artifact creation to only one system and pushed into the other. For example, all artifacts created in UiPath Test Manager will be pushed into ADO, however, any artifacts created in ADO will not move over to UiPath Test Manager.
    - Note: One-way creation only limits the creation of artifacts. Any updates or modifications to artifacts will still be bidirectional.

24. Field Flow:

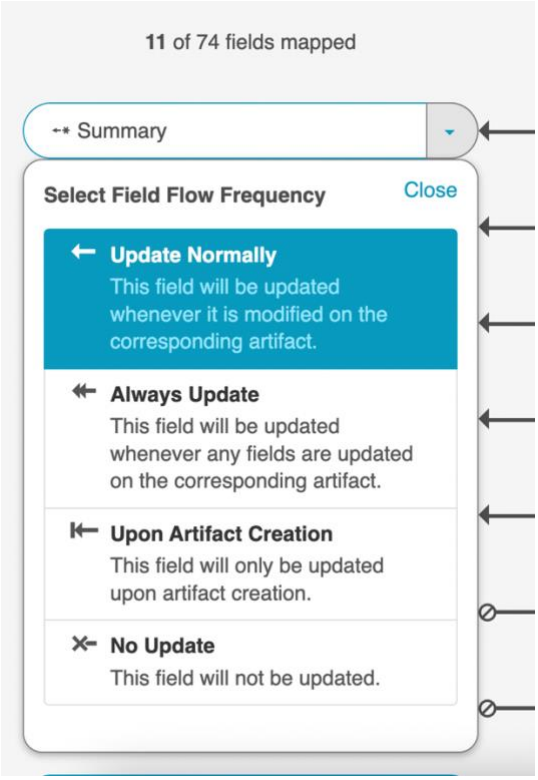
- Field Flow allows users to edit how Hub does or does not update artifact fields in the integration.




- How To:
  - Navigate to "Field Flow" In the integration menu.

- 
  - Select the dropdown from a field in either system to determine how or if that field is updated.

- Note: By default, all fields will "Update Normally" unless previously mapped differently in the collection.

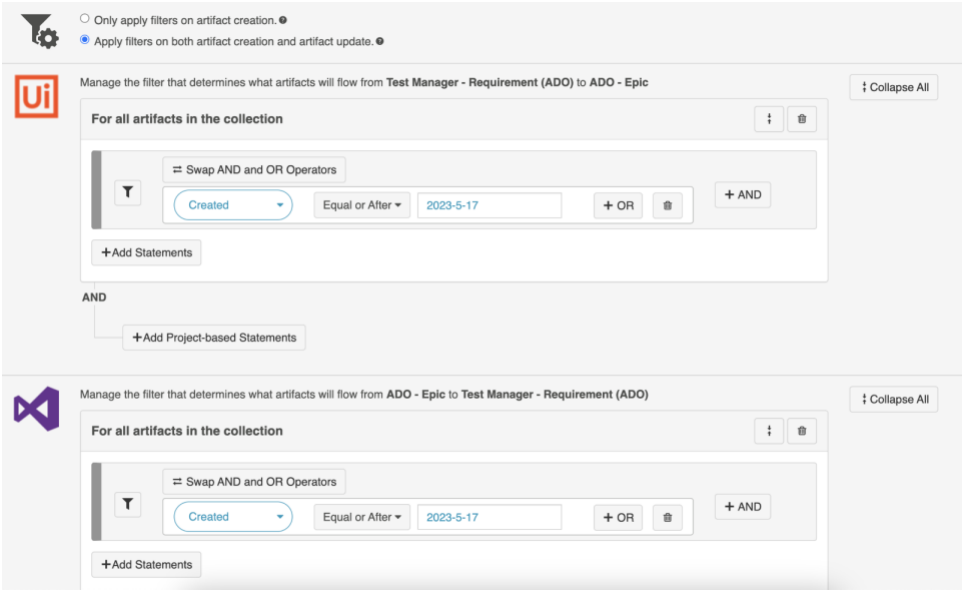



- Finally select Save at the top right corner of the screen to save any changes you have made.

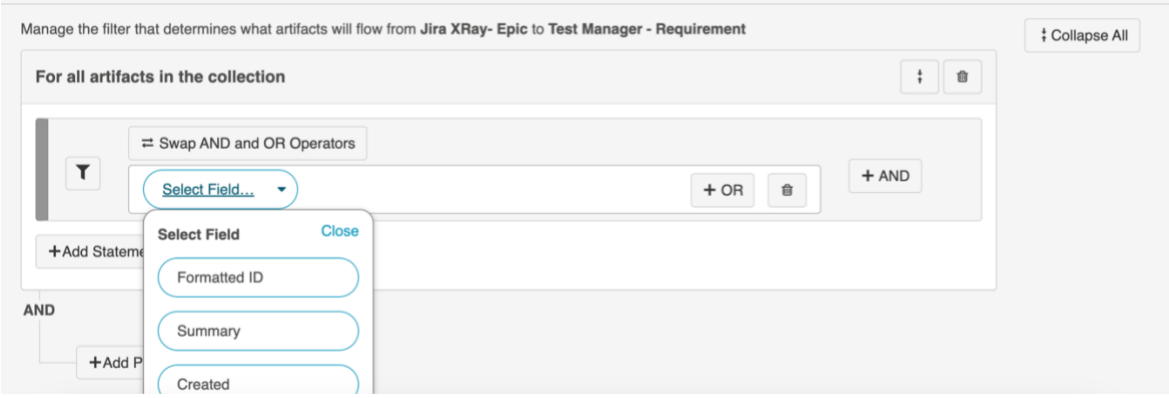
- Update Normally- The field selected will be updated whenever it is modified on the corresponding artifact.
- Always Update- The field selected will be updated when any fields on the corresponding artifact are modified.
- Upon Artifact Creation- The field selected will only update when the artifact is created.
- No Update- The field selected will never update in the system.

## 25. Artifact Filtering:

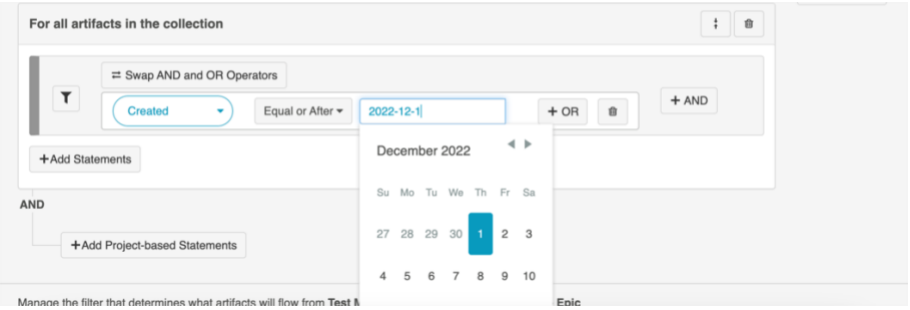
- Artifact filtering allows users to only pull artifacts from each tool based on certain field filters.



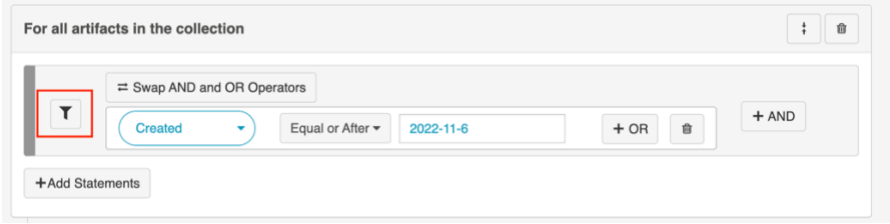

- How To:
  - Navigate to "Artifact Filtering" in the Navigation Menu.
  - Select either the "Only apply filters on artifact creation" or "Apply filters on both artifact creation and artifact update"
- Note: The most common option is to choose to have the filters applied to both artifact creation and artifact updates.
  - Next select "Add statement" and use the field dropdown to choose which field to use as a filter for any artifacts created and updated in UiPath Test Manager.



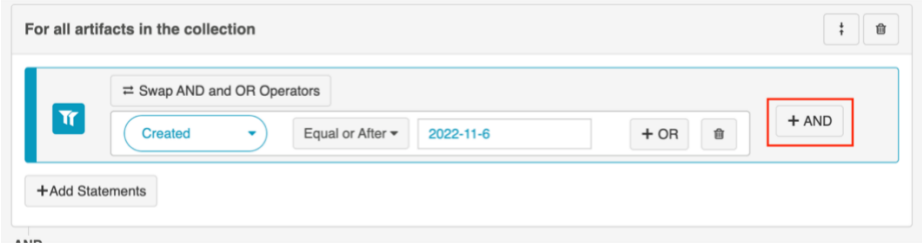

  - For this example, we will use the "Created" field. Then select the operator such as "Equal or After".
  - Lastly, select a value. In this example, we have selected a date. This filter means that only Artifacts created or updated equal to or after the date we have chosen will flow through the integration.



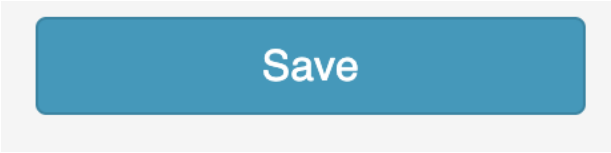

- Select the filter icon on the left of the new filter to apply the same filter to your ADO system.




- Multiple filters can be applied to each system in the integration. When using multiple filters be sure to select either the "AND or OR" operator to the right of each filter to ensure that only the correct artifacts flow through the integration.

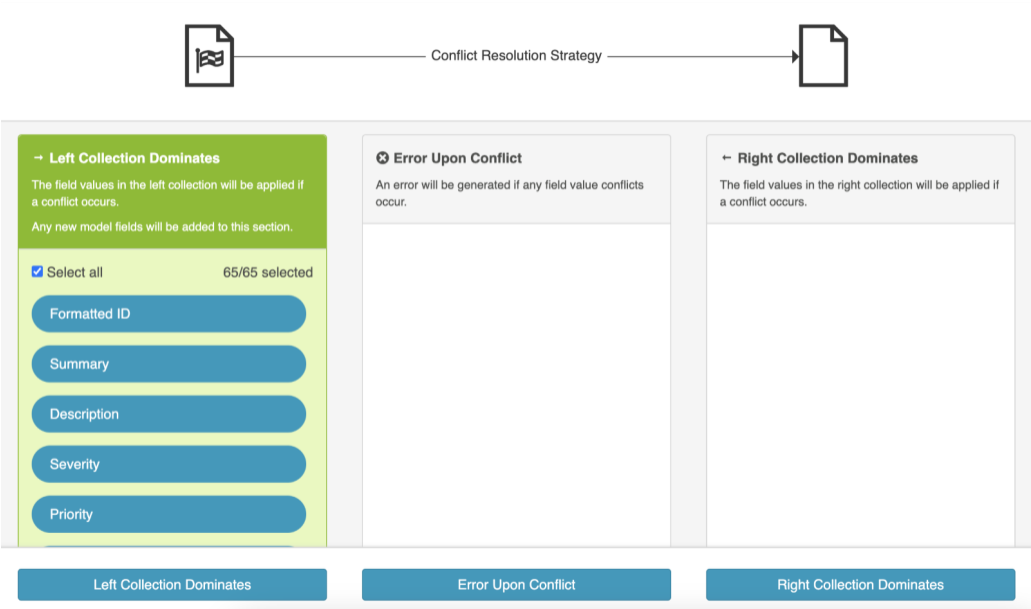



- Finally, select save at the top right corner to save the filters created for the integration.



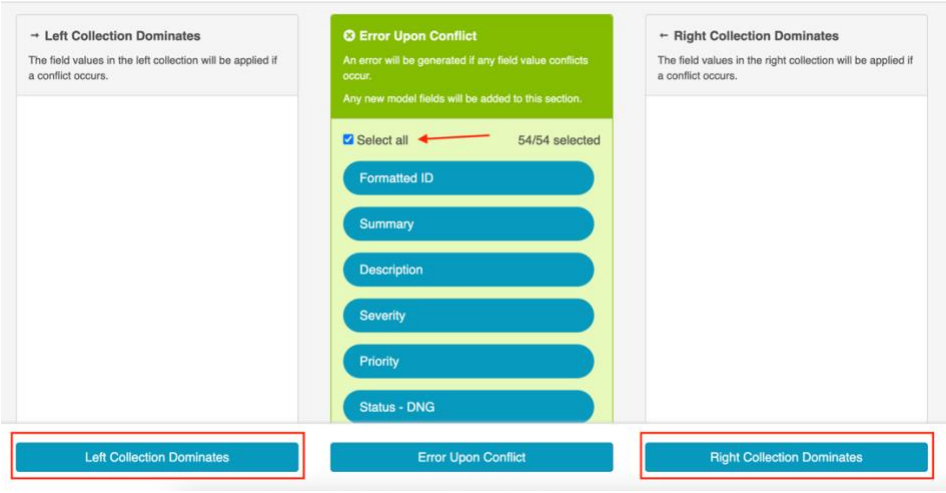

## 26. Conflict Resolution:

- Conflict resolution allows users to decide which tool is the source of truth when a field updates conflicts.
- A single tool can dominate, or the mapped fields can be set among both tools as needed.

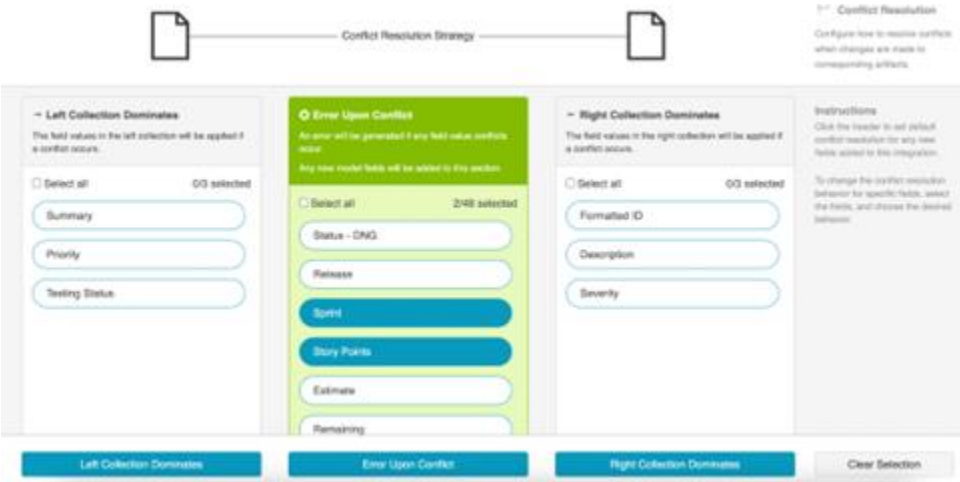



- How To:
  - Navigate to "Conflict Resolution" in the integration menu.

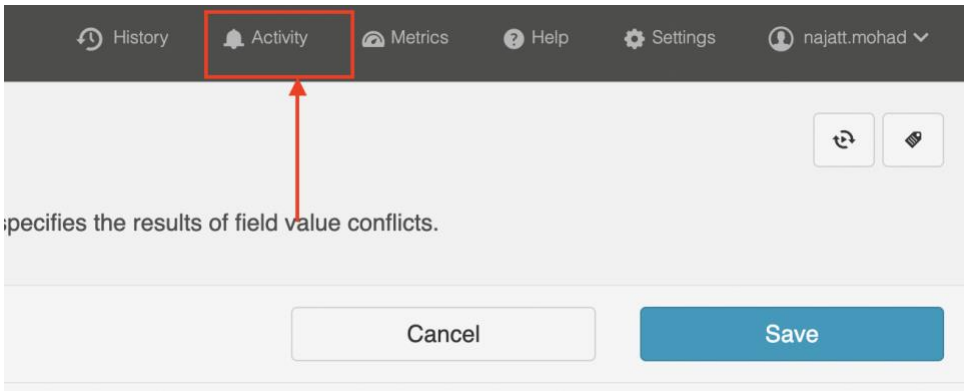
- 
  - Next, you have the option to:
    - Select all
    - Select individual fields
    - Select none
  - After selecting all fields select either the UiPath or ADO system to dominate the field values in a conflict.

- 

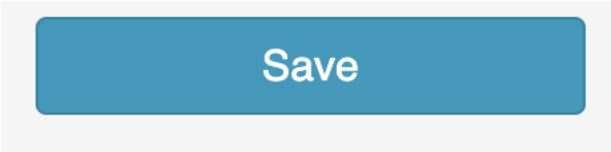

  - After selecting individual fields, select either the UiPath Test Manager or ADO system to dominate those specific field values in a conflict. You also have the option to leave fields in the "Error Upon Conflict" section.

- 


  - Selecting none and leaving all values in the "Error Upon Conflict" section will create errors in the activity page when field value conflicts occur.

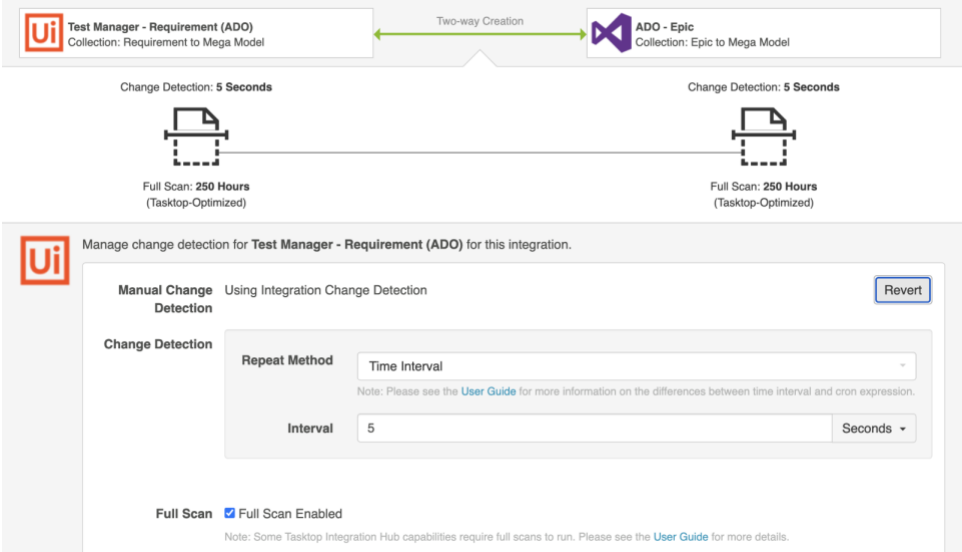
- 


  - Finally, select the save button at the top right to save the conflict resolution configuration for the integration.

- 


27. Change Detection:

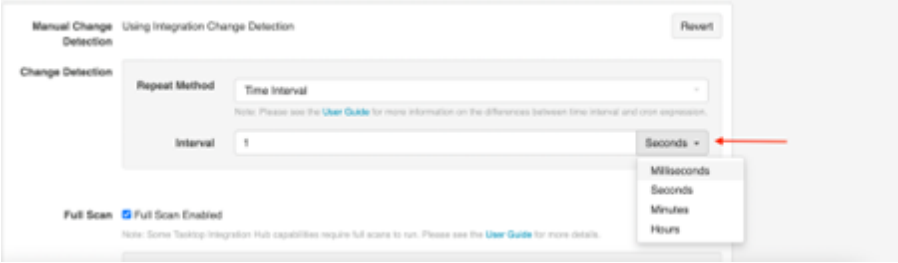
- Change detection is how often Hub checks each tool for artifact and field updates.
- Change Detection allows a user to override the global change detection settings for a single integration.
- Industry standards for production environments are anywhere between 5-30 minutes.



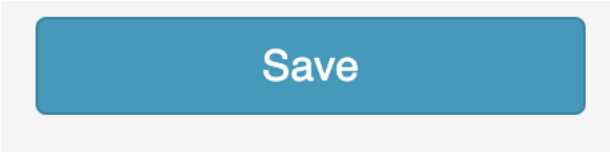

- How To:
  - Navigate to "Change Detection" from the integration menu.

- Select the override button to override the change detection setting for the specific integration.

- Use the dropdown to select the type of time interval, then type in a number for the time interval. Such as 5 minutes.

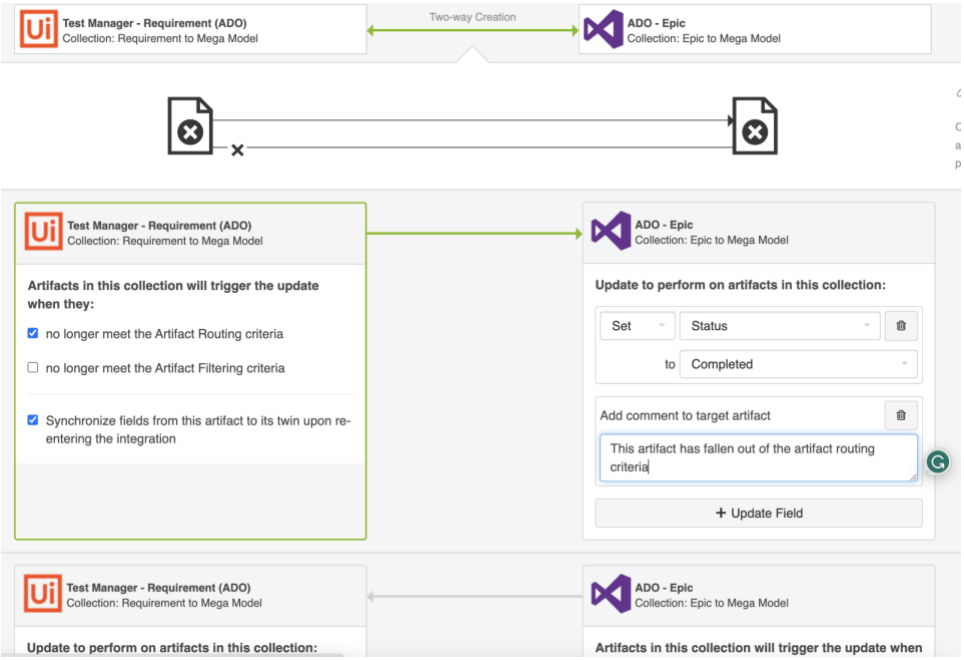



- Finally, use the "Save" button at the top right of the page to save the change detection settings for this integration.

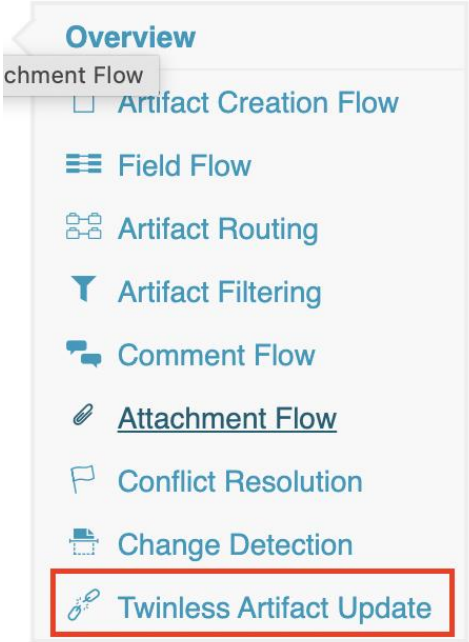


## 28. Twinless Artifact Update:

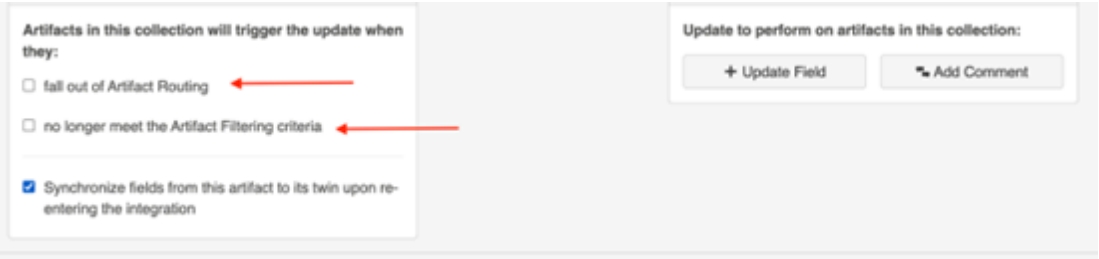
- Allows users to configure one final update (for example a comment or a status change) on an artifact when its "twin" in the other repository is no longer eligible to participate in the integration (e.g., when it's been deleted or no longer meets the artifact filter). The final update informs the newly twinless artifact that the synchronization has been discontinued.
- Artifacts are no longer eligible to participate in an integration if one or both conditions below are met for an endpoint:
- Artifacts fall out of Artifact Routing. This can happen when:
  - Artifacts are deleted
  - Artifacts are moved to projects not routed as part of the integration
  - Artifacts no longer meet the Artifact Filtering criteria.




- How To:
  - Select "Twinless Artifact Update" from the integration menu.

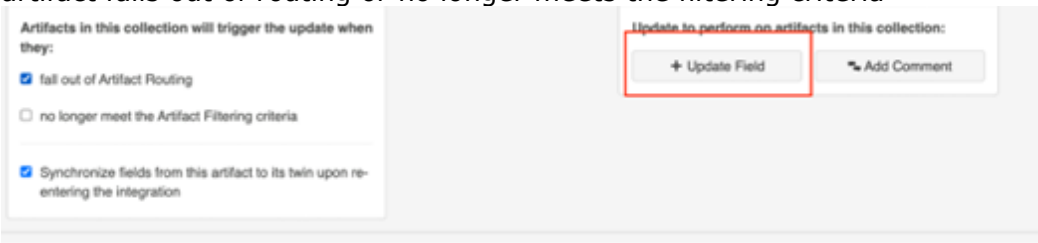


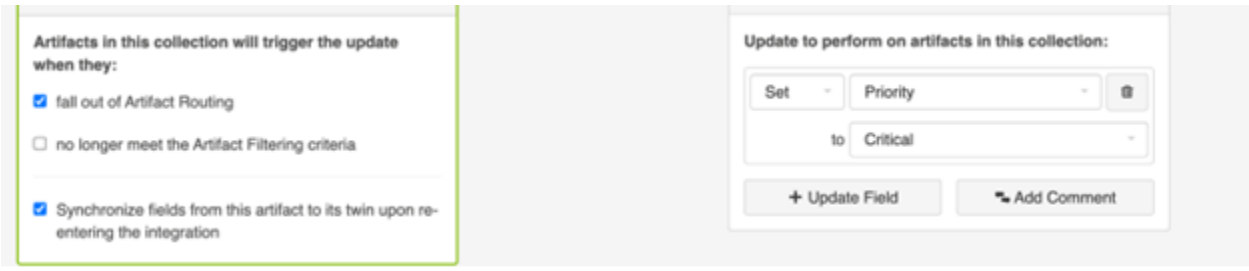

- 
    - Select between the two conditions under the UiPath Test Manager artifact side:
        - a. fall out of artifact routing- meaning when the associated artifact in UiPath Test Manager is moved to a project outside of projects that have been routed in the integration.
        - no longer meet the artifact filtering criteria- meaning the
        - associated artifact in UiPath Test Manager no longer meets the filter criteria
        - configured under "Artifact Filtering" in the integration menu.



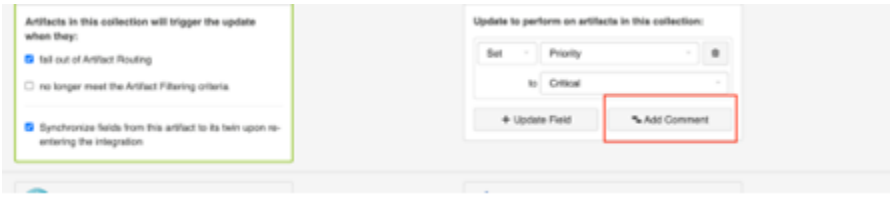

- Next, choose what happens to the twin artifact created in ADO when either one of the above happens.

- Select a field and its value to update in ADO when the UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria




  - b. You also have the option to choose to add a comment to the existing ADO twin artifact when UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria.



- Follow steps 1-3 to set up Twinless Artifact Update for the ADO system if necessary.
- Select the Save button at the top right corner of the page to save the "Twinless Artifact Update" configuration for the integration.

## 6.3 Use Case 3: UiPath Test Manager Test Case & ADO Test Case

***Tool Set Up:***

1. Ensure that any custom fields have been added to both the UiPath Test Manager Test Case and the ADO Test Case for the projects you wish to use. This step may require you to reach out to your tool admin to add these fields to your desired projects. If you have admin rights in your tools, ensure you perform this step first.
2. Below are links to instructions on how to add custom fields in both UiPath Test Manager and Azure DevOps
   a. UiPath Test Manager: https://docs.uipath.com/test-suite/docs/managing-custom-fields#:~:text=Creating%20custom%20fields&text=Navigate%20to%20Project%20Settings%20%3E%20Custom,name%20for%20your%20custom%20field.
   b. Azure DevOps: https://learn.microsoft.com/en-us/azure/devops/organizations/settings/work/add-custom-field?view=azure-devops

c. In this exercise example, the following custom fields will need to be added:

   i. ADO Test Case:

      1. UiPath Test Manager ID (string)

      2. UiPath Test Manager URL (string)

   ii. UiPath Test Manager Test Case:

      1. ADO ID (string)

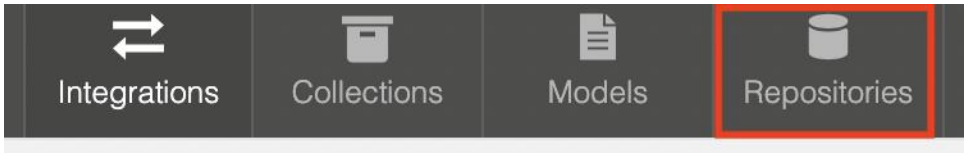
      2. ADO URL (string)

d. Additionally, ensure that at least one Test has been created in ADO to allow UiPath Test Manager Connect to pull the Test schema from ADO. If this step is not done, then your UiPath Test Manager Connect Collection may error out.

6.3-1 Repository:

1. Ensure that both UiPath Test Manager and ADO instances are set up and working in the Repositories Tab in UiPath Test Manager Connect.

2. First, navigate to the "Repository" Tab at the top left of the UiPath Test Manager Connect.

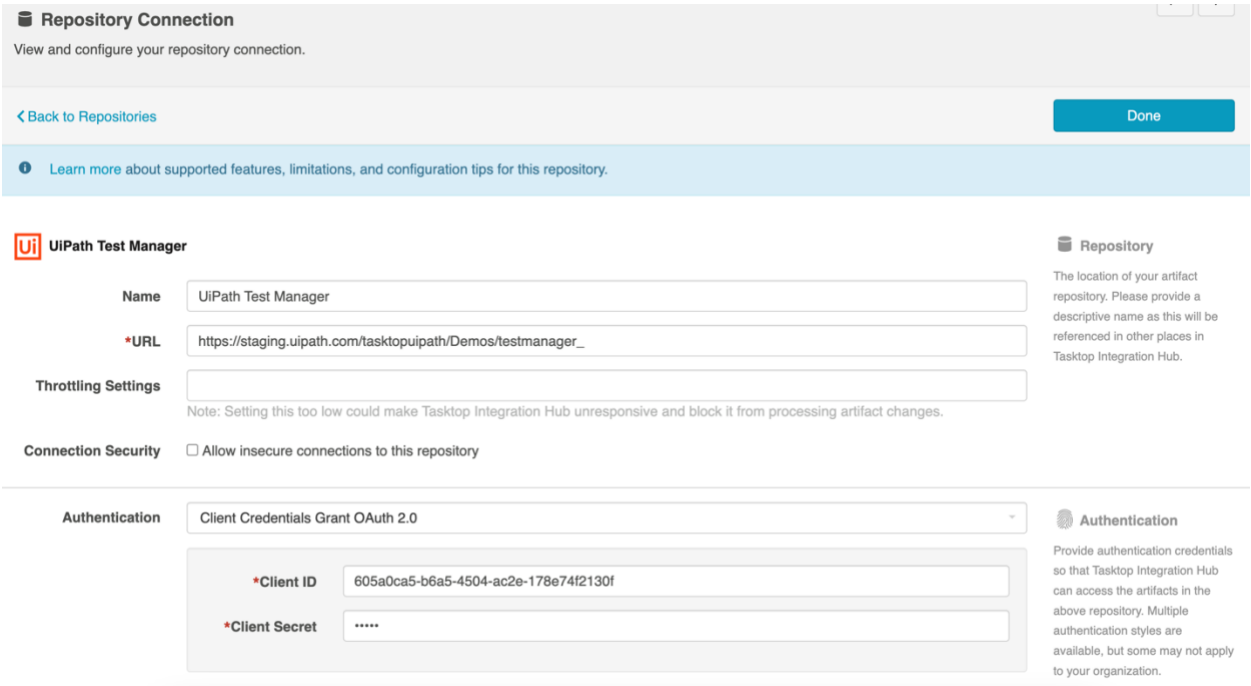



3. Next, select the "+ New Repository" button

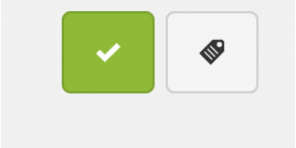
4. Then, add a name such as "UiPath Test Manager" in the name section and the URL to your UiPath Test Manager instance in the URL section.

5. The last piece is to choose the type of authentication you wish to use and add the authentication credentials to your UiPath Test Manager instance under the Authentication section of the Repository page.

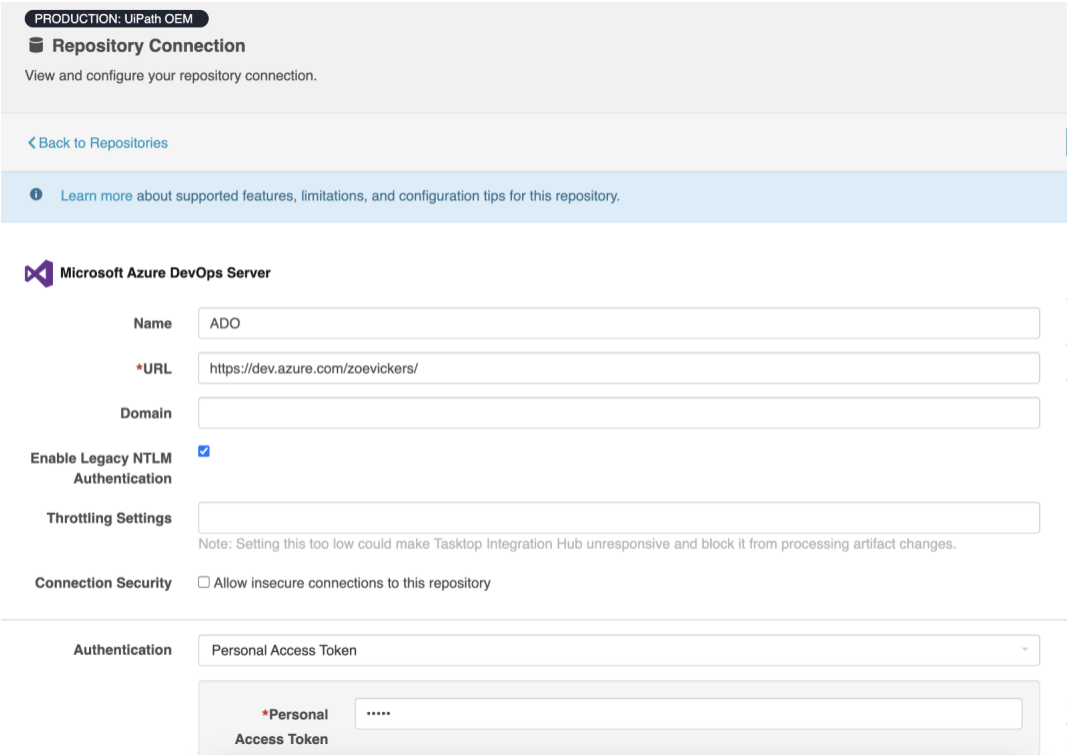
   a. Please note each repository will need certain credentials that provide UiPath Test Manager Connect the read/write access for the integration. Sometimes tools require full admin access, others just require certain roles. Review the Tasktop documentation here to see what your repository requires.




6. Finally, select the "Save" button at the top right of the page. A green check mark should appear at the top right of the page if the connection was successful.



7. Repeat steps 1-6 to create the ADO repository with the link and credentials to your ADO environment.

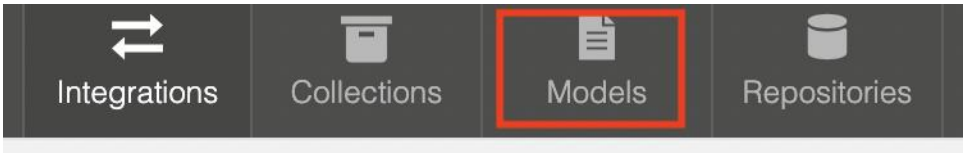



Note: The typical ADO customer uses Personal Access Token Authentication.

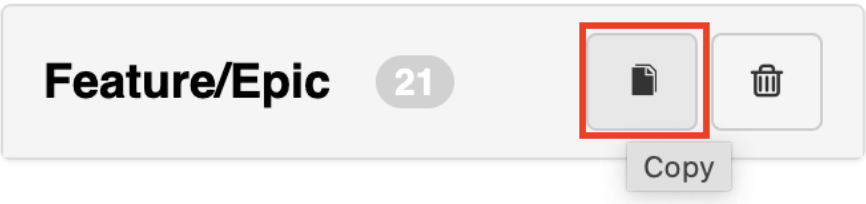
For further information on authentication please see the ADO connector documentation here.

## 6.3-2 Model:

1. Navigate to the "Models" tab at the top left of the UiPath Test Manager Connect.




2. Copy the Feature/Epic model and rename the new Model from "Feature/Epic (copy) to "Test Case" (or something similar).




3. The following fields will need to be edited or added if they are not yet there:

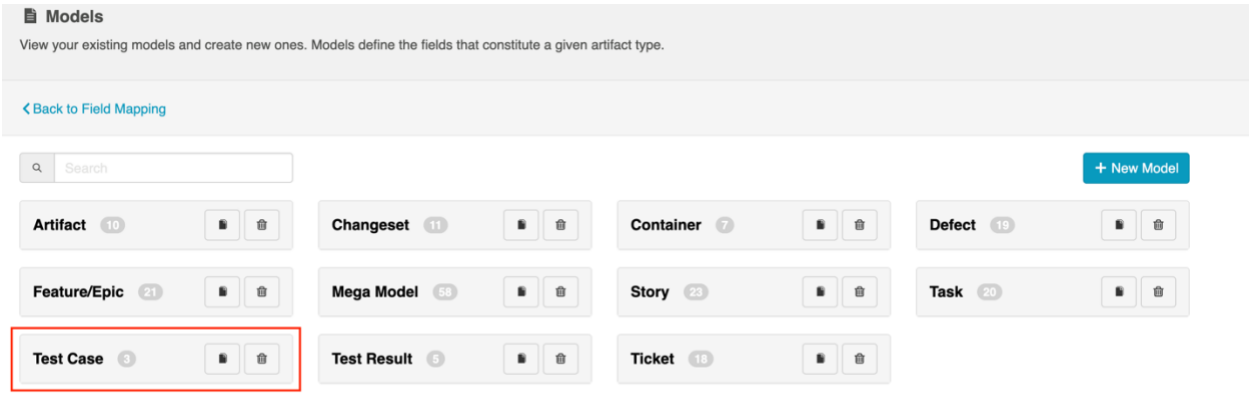
   Add

   i. UiPath Test Manager ID

   ii. UiPath Test Manager URL

iii. ADO ID

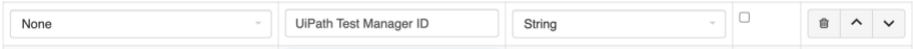
iv. ADO URL



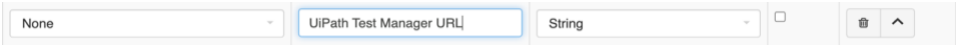

4. How to add +the above fields to the model:

   a. For the fields below, scroll to the bottom of the list of fields and select the icon to add each one by one:

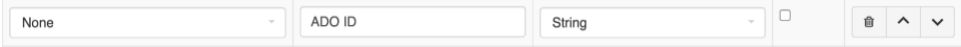
      i. UiPath Test Manager ID: Smart Field (none), Label (UiPath Test Manager Connect ID), Type (String)




      ii. UiPath Test Manager Connect URL: Smart Field (none), Label (UiPath Test Manager URL), Type (String)




      iii. ADO ID: Smart Field (none), Label (ADO ID), Type (String)

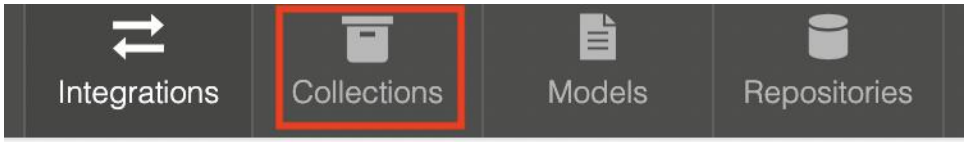



      iv. ADO URL: Smart Field (none), Label (ADO URL), Type (String)

   b. Push save when done.

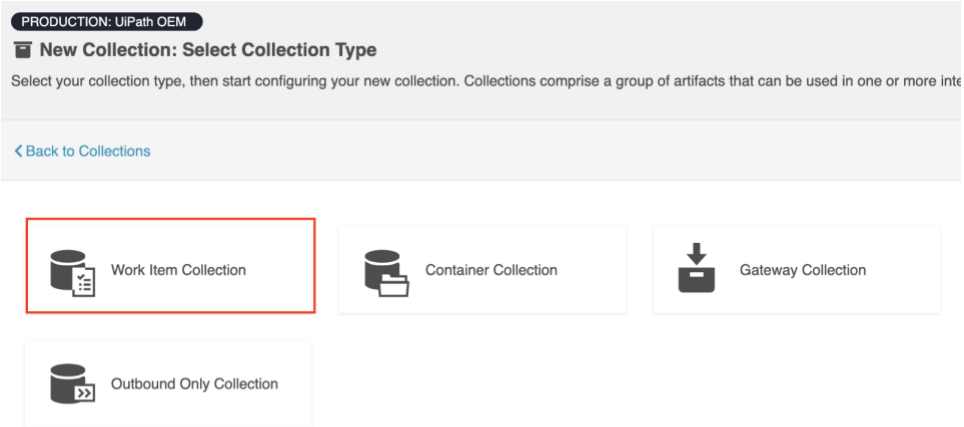
## 6.3-3 Collections:

1. After you have ensured that the model being utilized has all the necessary fields, it is time to create two collections. In this scenario, the collection will map UiPath Test Manager to the Test Case model and ADO to the Test Case model.

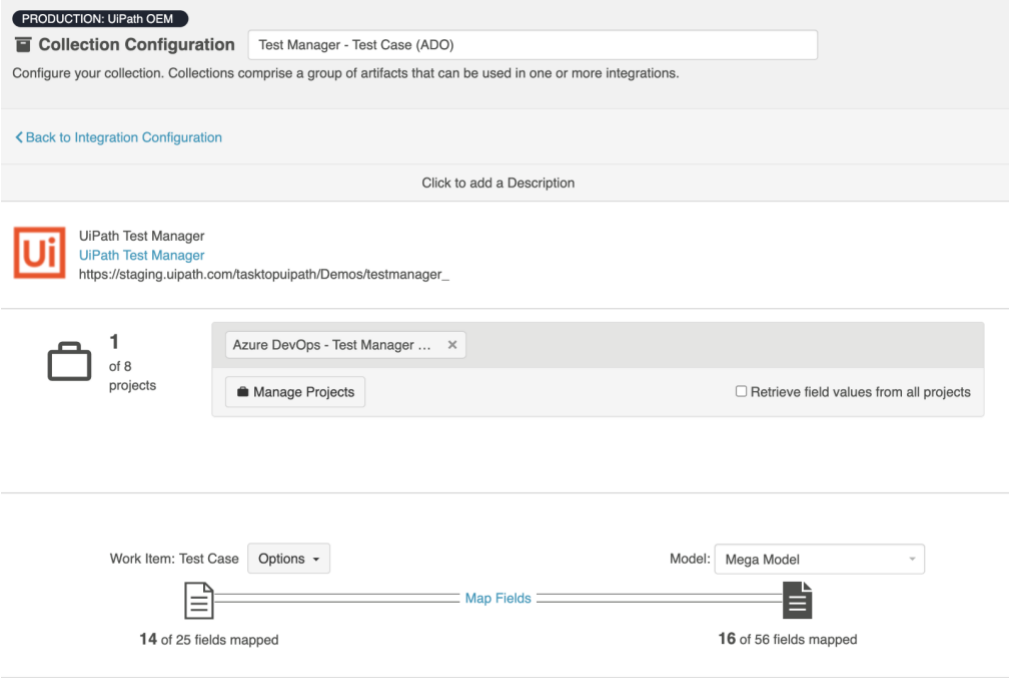


2. Navigate to the Collections Tab and select the "+ New Collections" button.

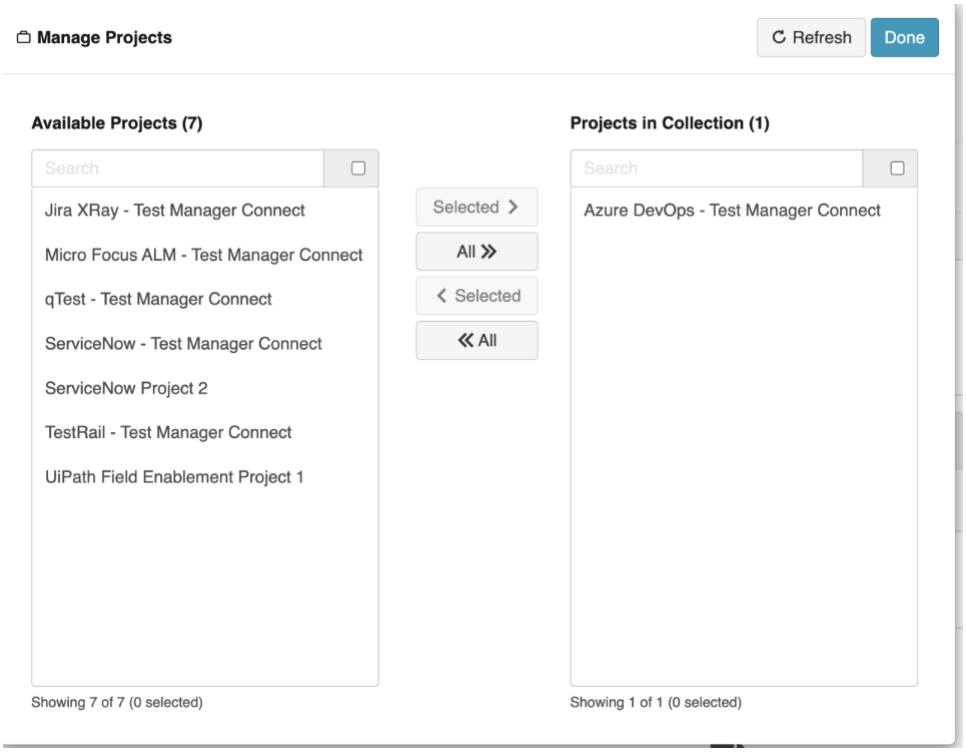
3. Then select "Work Item Collection"



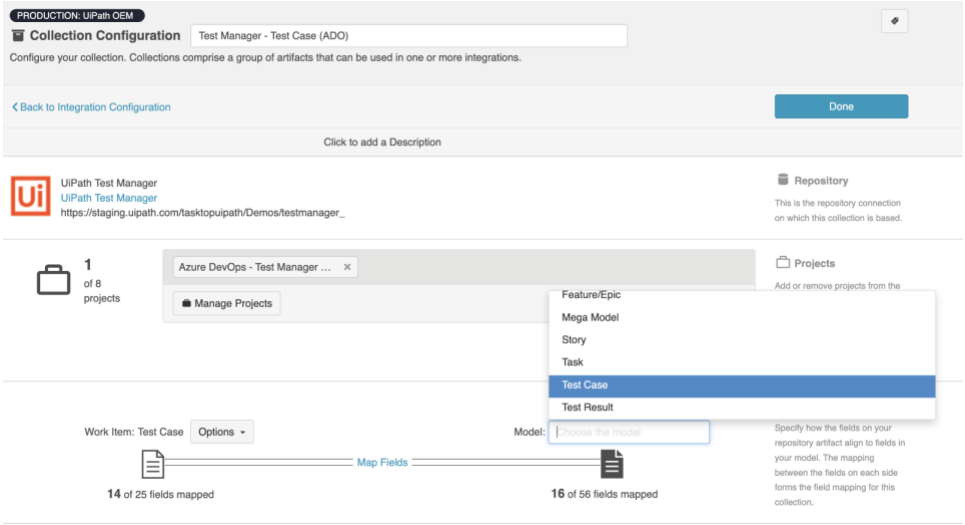

4. Next, give the collection a name such as "UiPath Test Manager Test Case"
5. Select the UiPath Test Manager repository.



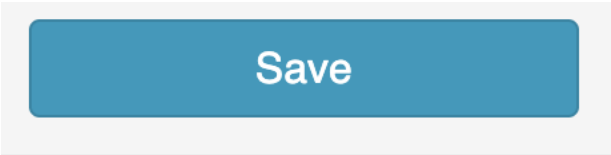
6. Then, choose which UiPath Test Manager projects to use in the collection by selecting "Manage Projects" and using the pop-up to add one or many projects.
    a. *Note: Projects can always be added or removed even after the integration has been built.*




7. Below the projects section, use the "Work Item" and "Model" dropdowns to select the Test Case and the Test Case model.

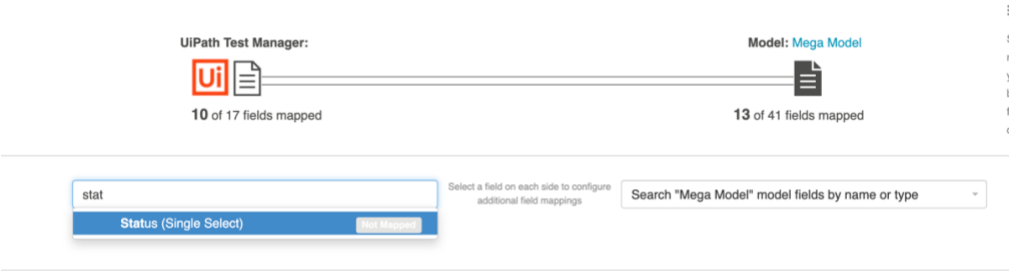


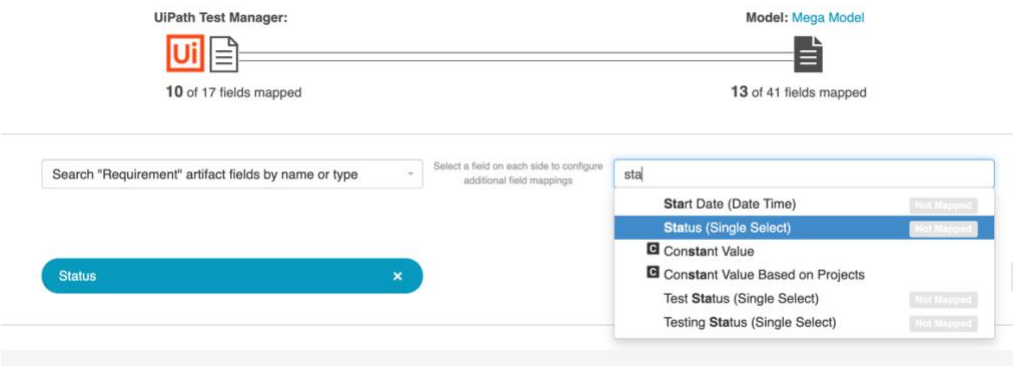

8. Once both are selected navigate to the top right of the page and click the "Save" button.

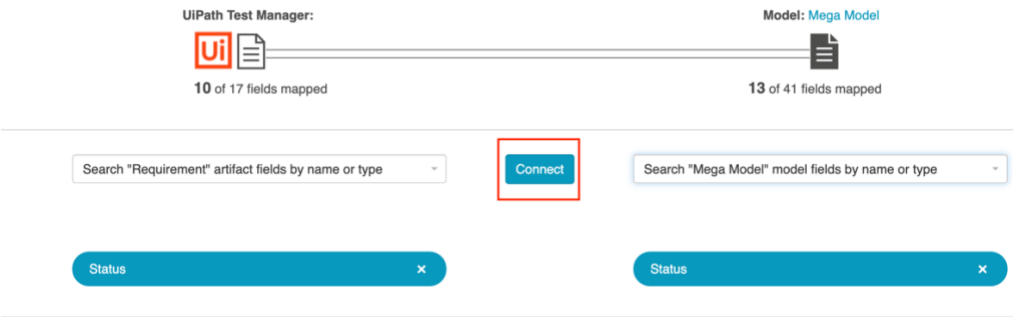



9. Now the process of mapping and configuring the fields can be done. Under the projects section, select "Map Fields".
10. Once here, UiPath Test Manager Connect will have automatically mapped multiple fields. For this simple integration use the dropdowns and select additional fields to add to the mapping. When adding fields, select a field from the UiPath Test Manager dropdown and the Model dropdown and click the "Connect" button that appears. Ensure that each of the following fields have been mapped:

| UiPath Test Manager Test Case | Test Case Model |
|---|---|
| Priority | Priority |
| ADO ID | ADO ID |
| ADO URL | ADO URL |
| URL | URL |
| URL | UiPath Test Manager URL |
| Key | Formatted ID |
| Key | UiPath Test Manager ID |
| Name | Summary |
| Description | Description |
| Created | Created |
| Updated | Modified |
| Status | Status |





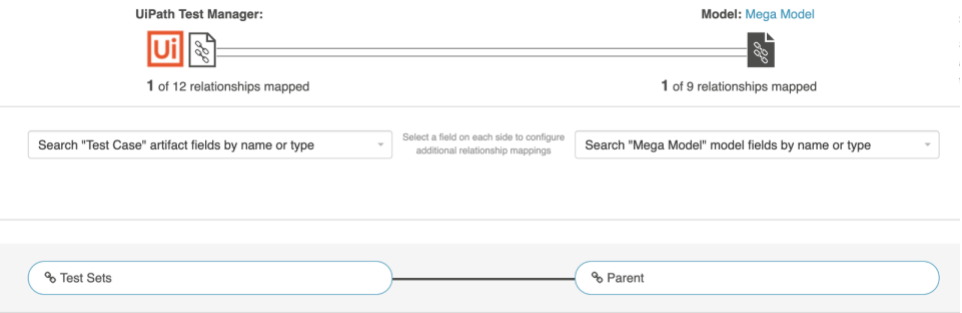

11. Any additional fields can be deleted for now using the trash can Icon next to the field. If you wish to add any additional fields, you can do so at this time or after the integration is complete.

12. After ensuring each of these fields is mapped, orange warning signs are likely to appear next to fields such as "Priority" or "Status". This simply means that the values for those fields must be configured.

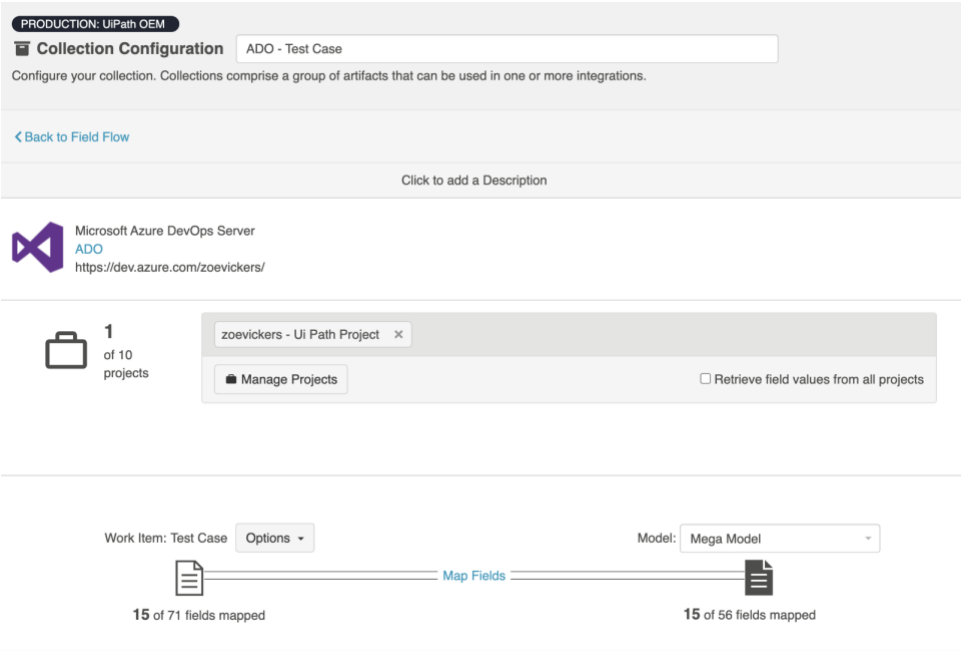
13. Select "Configure" next to each of the fields with the warning symbol to configure the field values. When configuring values select a value on each side and click the "Connect" button to map the values. Values can be mapped one to one or one to multiple.

14. Navigate back to the newly created UiPath Test Manager "Test Case" collection and select "Configure Relationships" under the "Map Fields" section. Map the following fields:

    a. Test Sets – Parent




14. The first collection has now been completed! Navigate back to the "Collection" Tab and select "+ New Collection" to begin creating the ADO Collection.



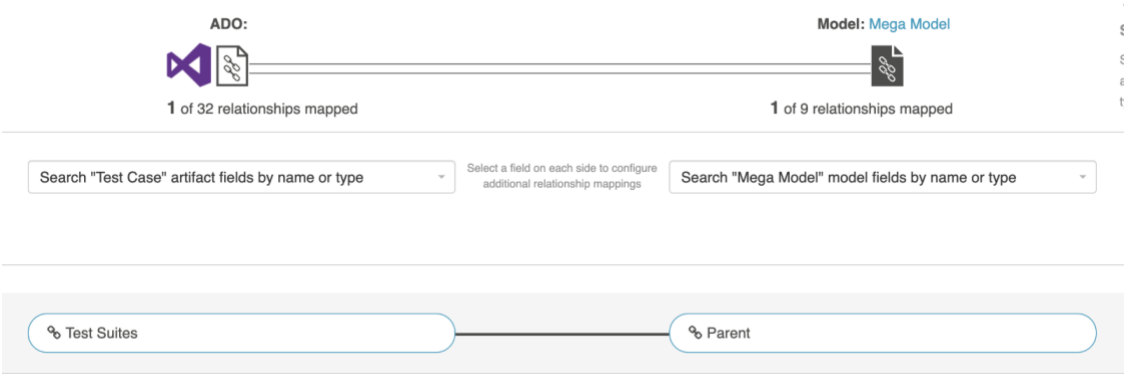

15. Follow steps 2-12 to create the ADO collection with the following modifications:
    b. The collection name should be something similar to "ADO Test Case"
    c. Select "Test" for your Work Item and select the same Test Case model
    d. Map and configure the following fields:

| ADO Test Case | Test Case Model |
|---|---|
| Priority | Priority |
| UiPath Test Manager ID | UiPath Test Manager ID |

| | |
|---|---|
| UiPath Test Manager URL | UiPath Test Manager URL |
| Key | ADO ID |
| URL | ADO URL |
| Formatted ID | Formatted ID |
| Title | Summary |
| Description | Description |
| Created Date | Created |
| Change Date | Modified |
| URL | URL |
| State | Status |
| Iteration Path | (Constant Value) |
| Area Path | (Constant Value) |

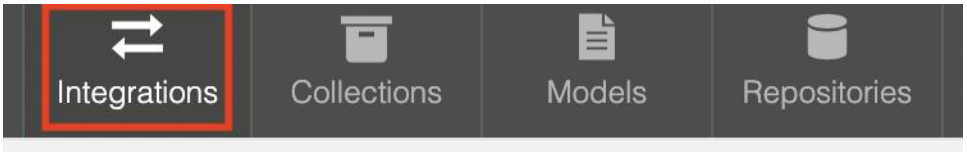
Lastly, navigate back to the newly created ADO "Test Case" collection and select "Configure Relationships" under the "Map Fields" section. Map the following fields:

a. Test Suites – Parent



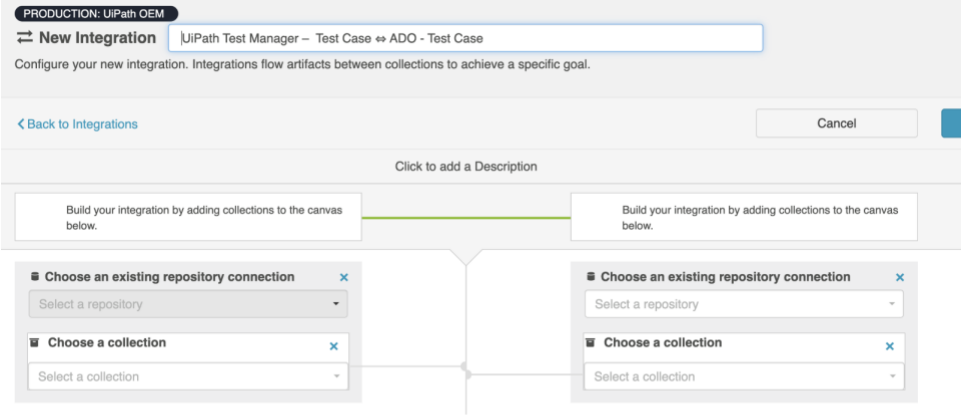
## 6.3-4 Integration:

1. Now it is time to put the two collections together to create one full integration! First, navigate to the "Integrations" tab

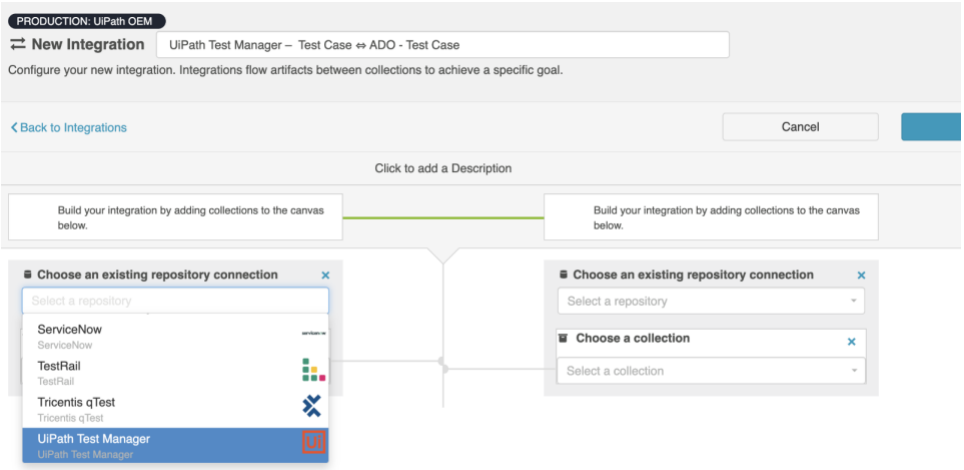


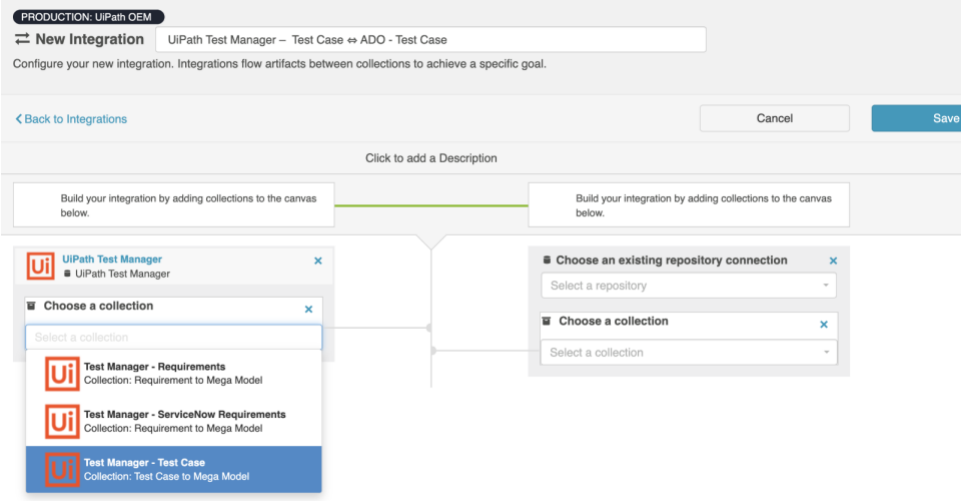

2. Select the "+ New Integration" at the top right of the page.

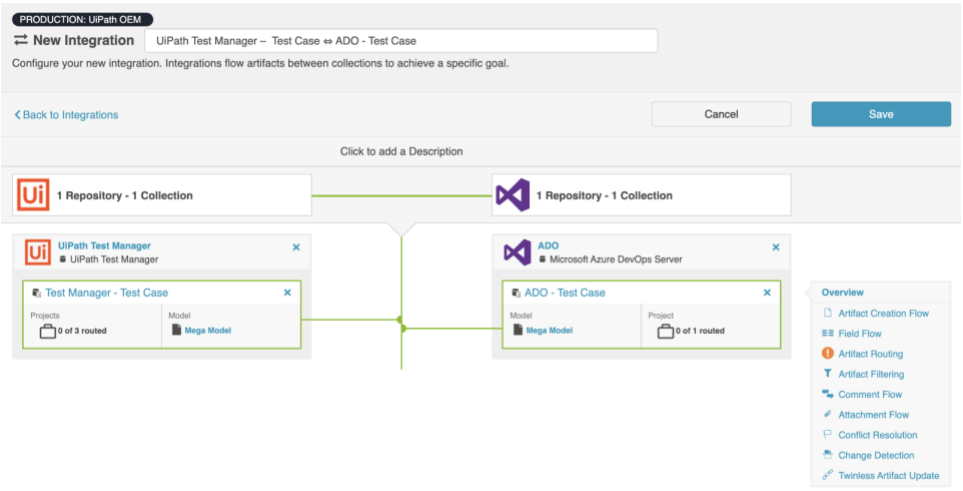
3. Next select "Work Item Synchronization" and give the integration a name such as "UiPath Test Manager – Test Case ⇔ ADO - Test Case"



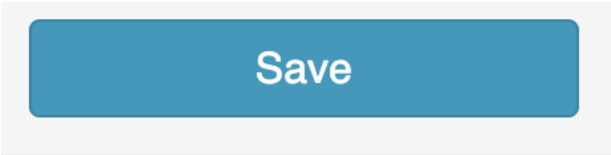

4. Select the UiPath Test Manager repository along with the newly created UiPath Test Manager – Test Case collection from the drop downs provided on one side. And similarly, choose the ADO and newly created ADO Test Case collection on the other side.



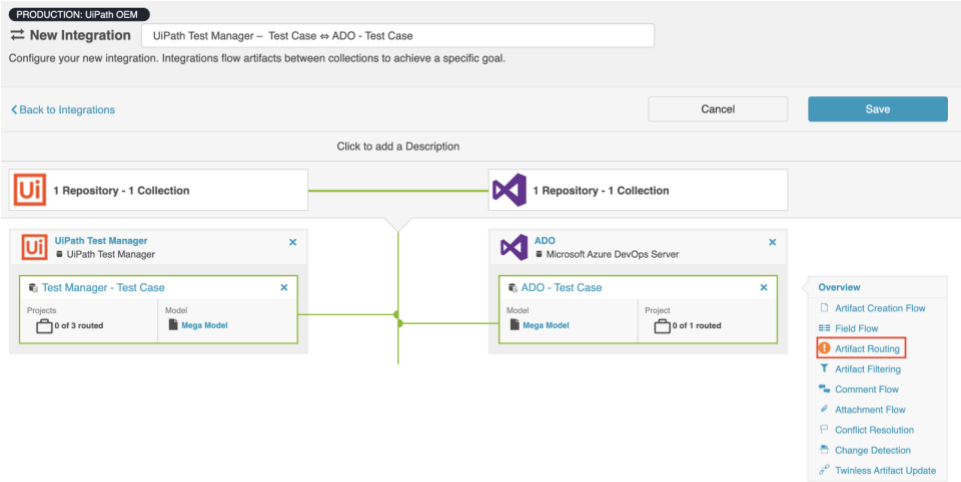



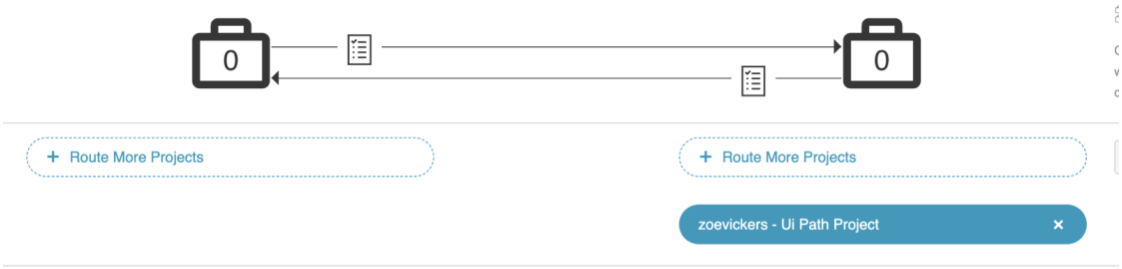

5. Select “Save” at the top right.

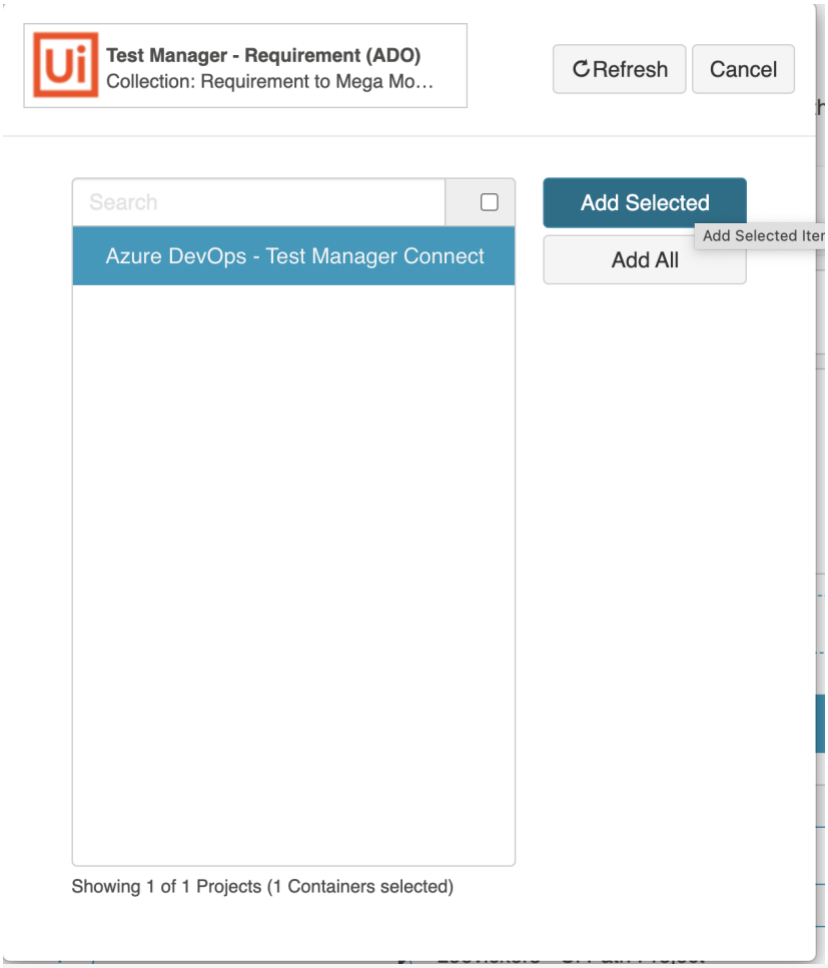


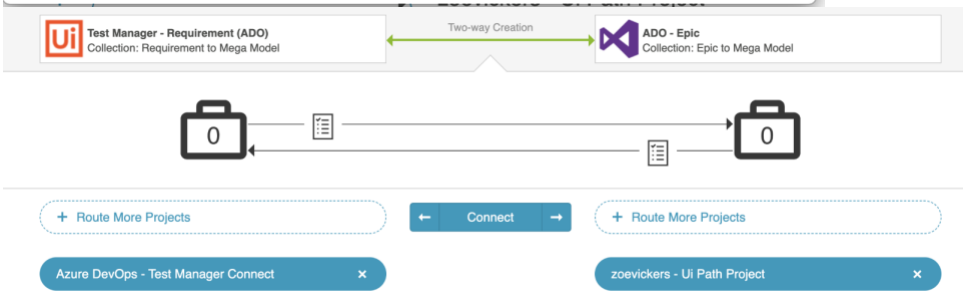

6. A warning symbol will appear on the integration menu on the right side of the screen next to "Artifact Routing". Artifact routing will need to be set before the integration can run.



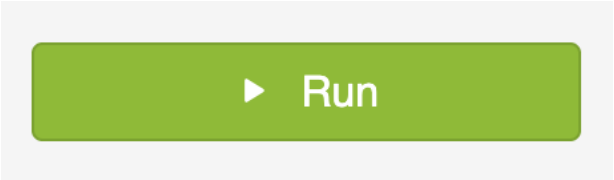

7. Select "Artifact Routing" and choose the projects in both tools you wish to route the artifacts to and from using the popups that appear when selecting "Route More Projects". Projects can be routed one-to-one or conditionally. To keep it simple for this exercise, choose one project on either side and select the middle connect button that appears in the middle of the page.


0
0
+ Route More Projects
+ Route More Projects
zoevickers - Ui Path Project


Test Manager - Requirement (ADO)
Collection: Requirement to Mega Mo...
Refresh
Cancel
Search
Azure DevOps - Test Manager Connect
Add Selected
Add Selected Iter
Add All
Showing 1 of 1 Projects (1 Containers selected)


Test Manager - Requirement (ADO)
Collection: Requirement to Mega Model
Two-way Creation
ADO - Epic
Collection: Epic to Mega Model
0
0
+ Route More Projects
Connect
+ Route More Projects
Azure DevOps - Test Manager Connect
zoevickers - Ui Path Project

8. The third integration is now ready to be run and used! You may now select the "Back to Integration Configuration" Button at the top left of the screen to get back to your newly created integration.
9. You can now select the "Run" Button at the right of the integration and test it out by creating a new Test Case in UiPath Test Manager or ADO to test out the integration and ensure it is running properly.

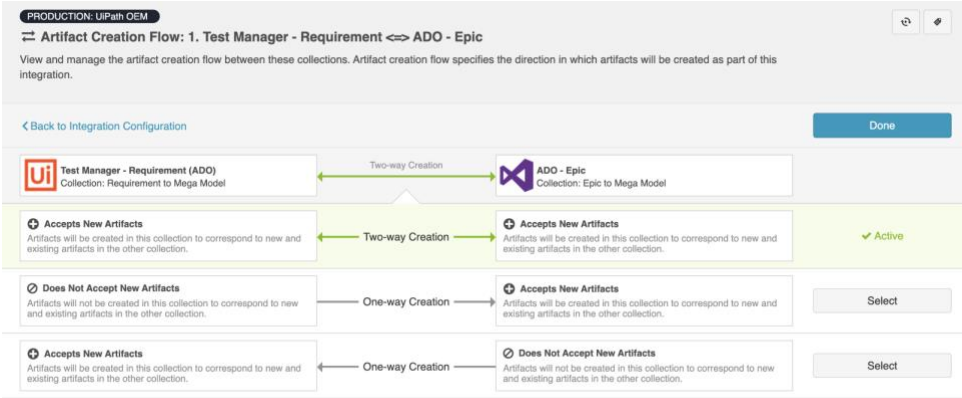



## 29. 6.3-5 Integration Configurations:

Additionally, other configurations (above and below "Artifact Routing") can be made to the integration using the integration menu. See below:

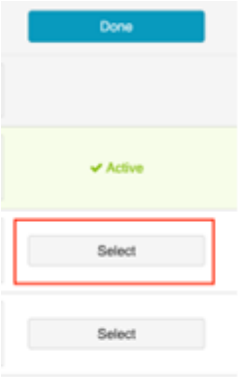
### 30. Artifact Creation Flow:

- Artifact creation flow allows users to decide whether the integration will have a one-way or bidirectional creation flow.




- How To:
  - Navigate to "Artifact Creation Flow" in the integration menu.

- Use the select button on the right of each option to select the type of Artifact Creation Flow needed for the integration.

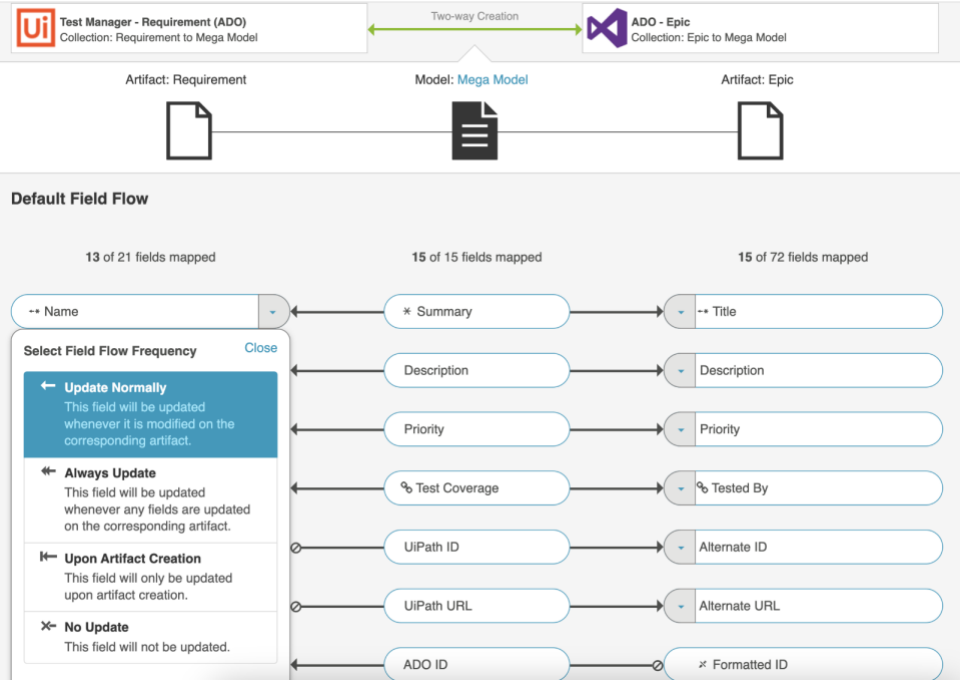



- Note: By default, all integrations will be bidirectional.

- Bidirectional Artifact Creation allows for artifacts to be created in both systems and pushed into the opposite systems.
- One-way creation flow limits artifact creation to only one system and pushed into the other. For example, all artifacts created in UiPath Test Manager will be pushed into ADO, however, any artifacts created in ADO will not move over to UiPath Test Manager.
    - Note: One-way creation only limits the creation of artifacts. Any updates or modifications to artifacts will still be bidirectional.

31. Field Flow:

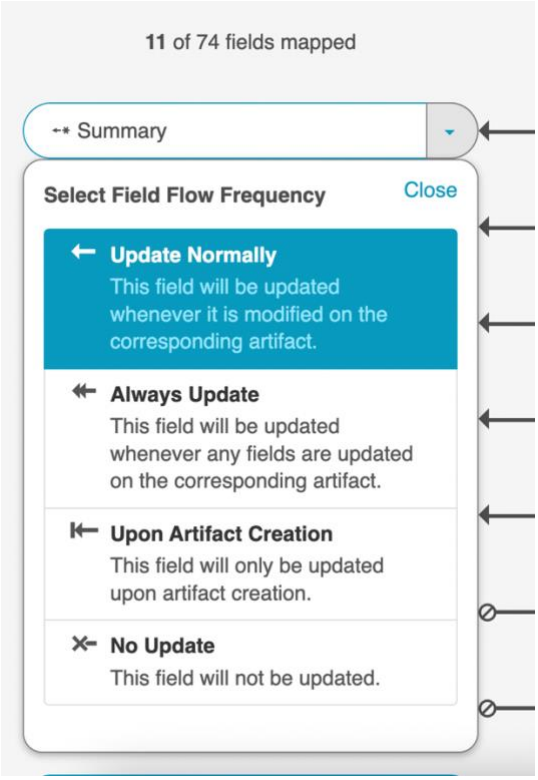
- Field Flow allows users to edit how Hub does or does not update artifact fields in the integration.




- How To:
  - Navigate to "Field Flow" In the integration menu.

- 
  - Select the dropdown from a field in either system to determine how or if that field is updated.

- Note: By default, all fields will "Update Normally" unless previously mapped differently in the collection.

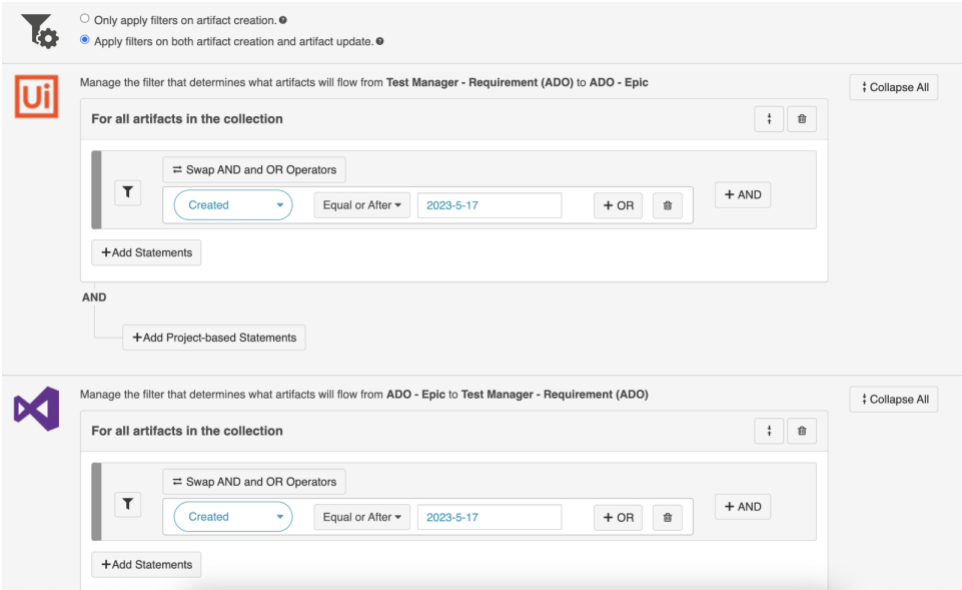



- Finally select Save at the top right corner of the screen to save any changes you have made.

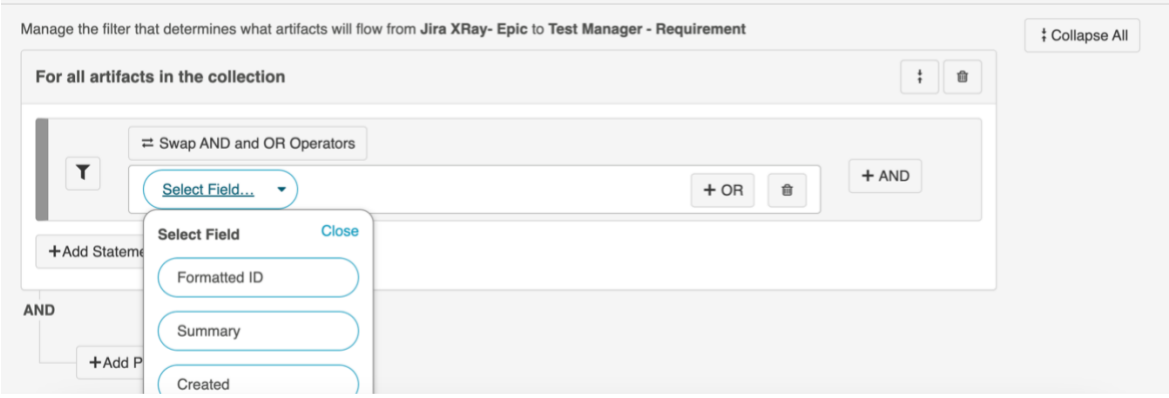
- Update Normally- The field selected will be updated whenever it is modified on the corresponding artifact.
- Always Update- The field selected will be updated when any fields on the corresponding artifact are modified.
- Upon Artifact Creation- The field selected will only update when the artifact is created.
- No Update- The field selected will never update in the system.

## 32. Artifact Filtering:

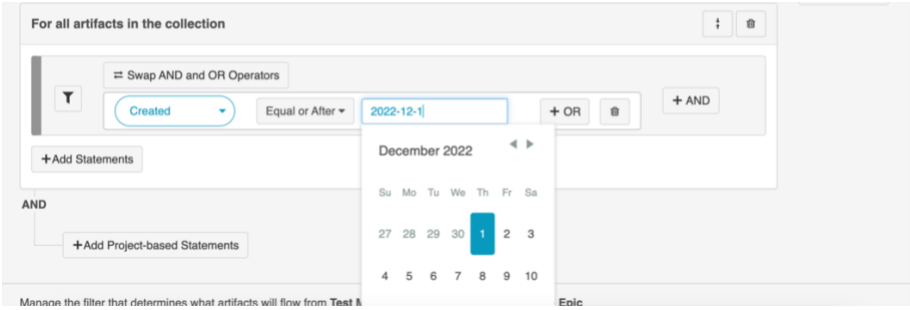
- Artifact filtering allows users to only pull artifacts from each tool based on certain field filters.



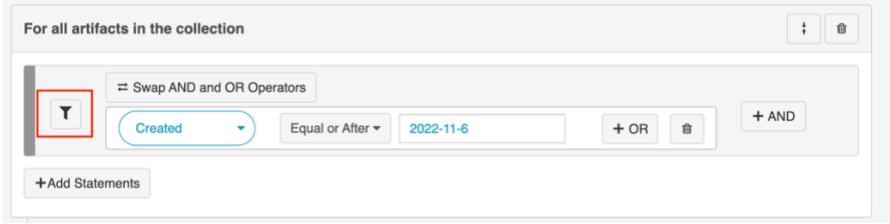

- How To:
  - Navigate to "Artifact Filtering" in the Navigation Menu.
  - Select either the "Only apply filters on artifact creation" or "Apply filters on both artifact creation and artifact update"
- Note: The most common option is to choose to have the filters applied to both artifact creation and artifact updates.
  - Next select "Add statement" and use the field dropdown to choose which field to use as a filter for any artifacts created and updated in UiPath Test Manager.



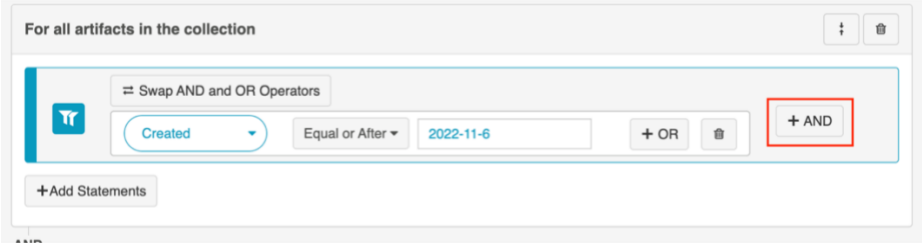

  - For this example, we will use the "Created" field. Then select the operator such as "Equal or After".
  - Lastly, select a value. In this example, we have selected a date. This filter means that only Artifacts created or updated equal to or after the date we have chosen will flow through the integration.



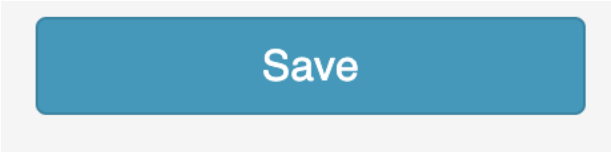

- Select the filter icon on the left of the new filter to apply the same filter to your ADO system.




- Multiple filters can be applied to each system in the integration. When using multiple filters be sure to select either the "AND or OR" operator to the right of each filter to ensure that only the correct artifacts flow through the integration.

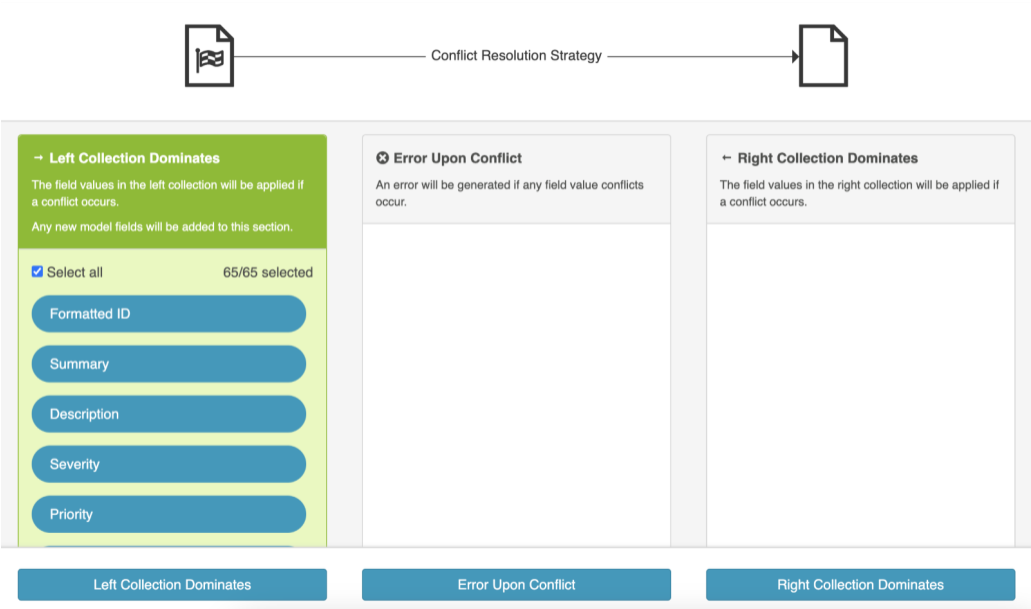



- Finally, select save at the top right corner to save the filters created for the integration.



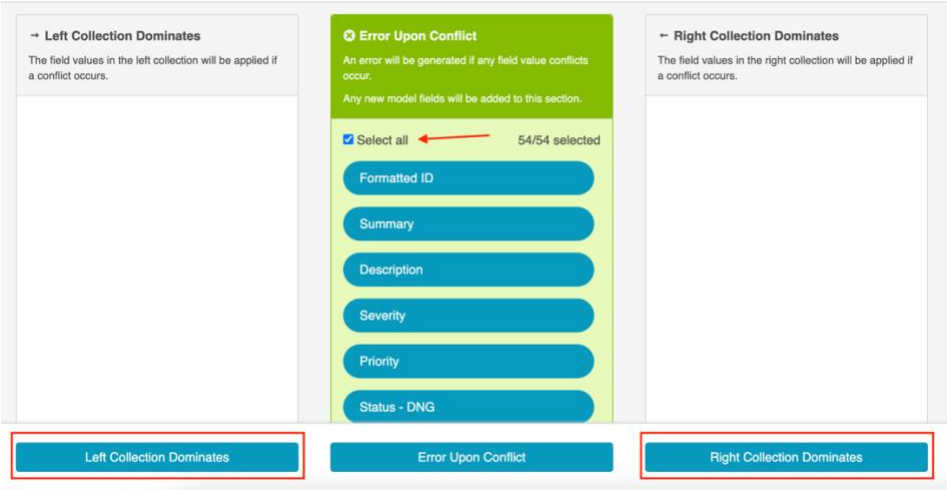

## 33. Conflict Resolution:

- Conflict resolution allows users to decide which tool is the source of truth when a field updates conflicts.
- A single tool can dominate, or the mapped fields can be set among both tools as needed.

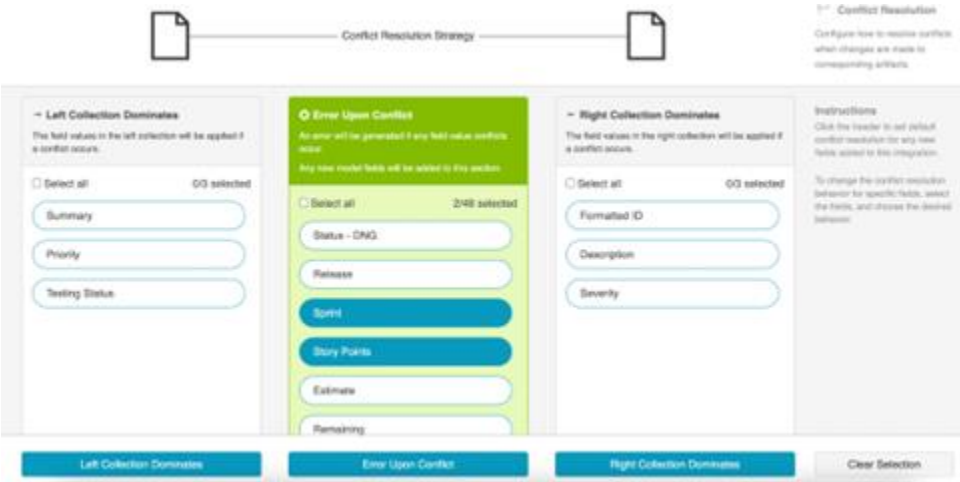



- How To:
  - Navigate to "Conflict Resolution" in the integration menu.

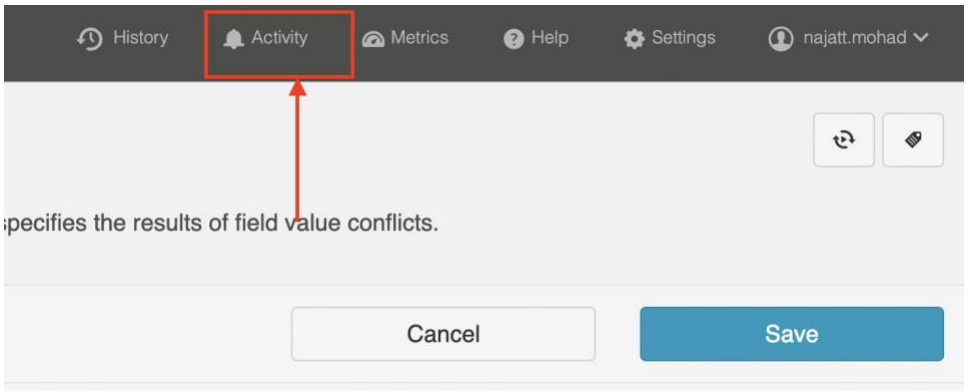
- 
  - Next, you have the option to:
    - Select all
    - Select individual fields
    - Select none
  - After selecting all fields select either the UiPath or ADO system to dominate the field values in a conflict.



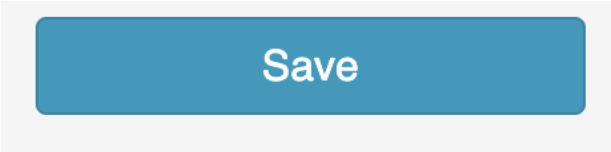

- After selecting individual fields, select either the UiPath Test Manager or ADO system to dominate those specific field values in a conflict. You also have the option to leave fields in the "Error Upon Conflict" section.




- Selecting none and leaving all values in the "Error Upon Conflict" section will create errors in the activity page when field value conflicts occur.

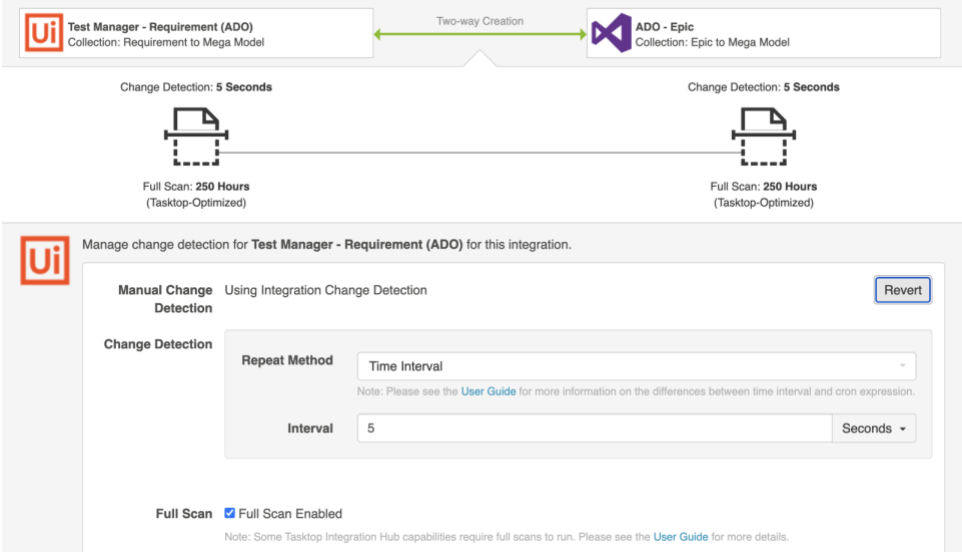
- 


  - Finally, select the save button at the top right to save the conflict resolution configuration for the integration.

- 


34. Change Detection:

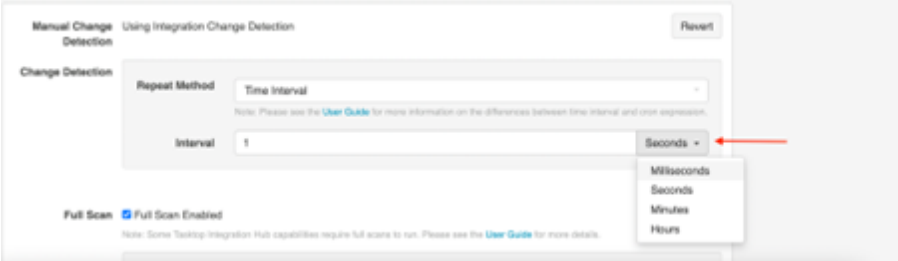
- Change detection is how often Hub checks each tool for artifact and field updates.
- Change Detection allows a user to override the global change detection settings for a single integration.
- Industry standards for production environments are anywhere between 5-30 minutes.



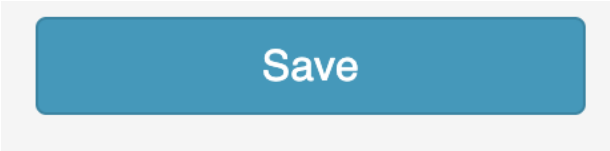

- How To:
  - Navigate to "Change Detection" from the integration menu.

- Select the override button to override the change detection setting for the specific integration.

- Use the dropdown to select the type of time interval, then type in a number for the time interval. Such as 5 minutes.

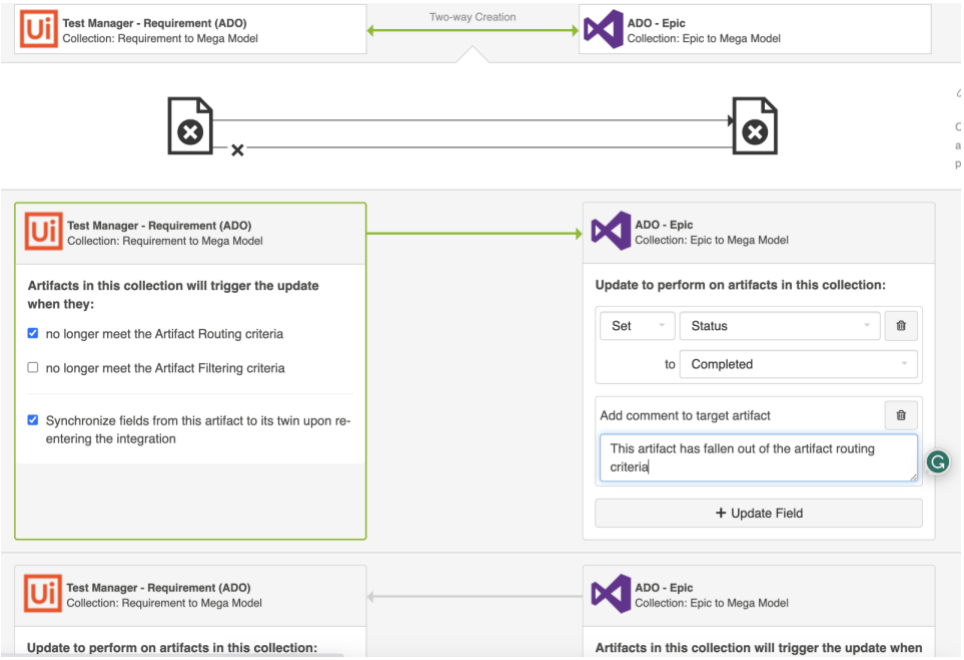



- Finally, use the "Save" button at the top right of the page to save the change detection settings for this integration.

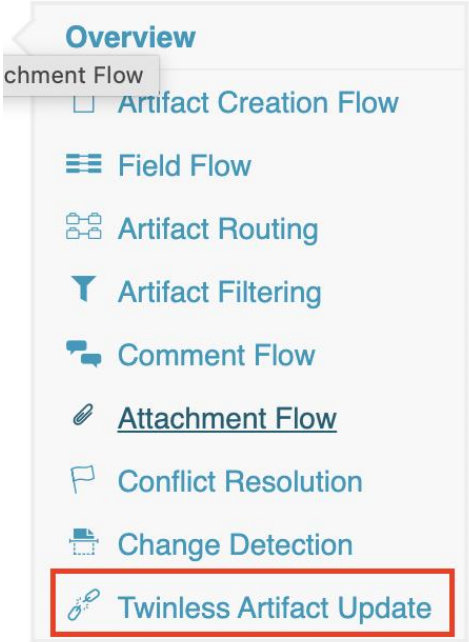


## 35. Twinless Artifact Update:

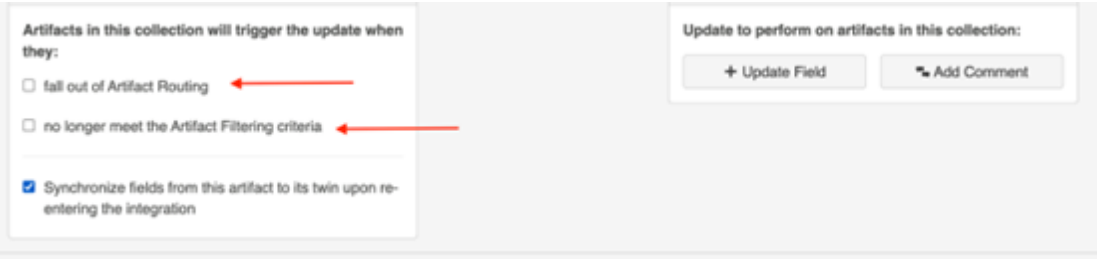
- Allows users to configure one final update (for example a comment or a status change) on an artifact when its "twin" in the other repository is no longer eligible to participate in the integration (e.g., when it's been deleted or no longer meets the artifact filter). The final update informs the newly twinless artifact that the synchronization has been discontinued.
- Artifacts are no longer eligible to participate in an integration if one or both conditions below are met for an endpoint:
- Artifacts fall out of Artifact Routing. This can happen when:
  - Artifacts are deleted
  - Artifacts are moved to projects not routed as part of the integration
  - Artifacts no longer meet the Artifact Filtering criteria.




- How To:
  - Select "Twinless Artifact Update" from the integration menu.

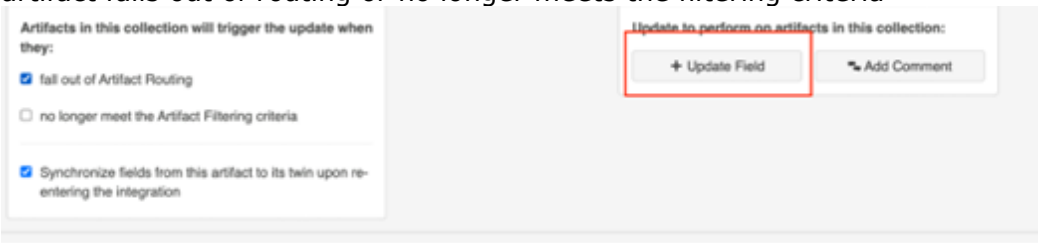


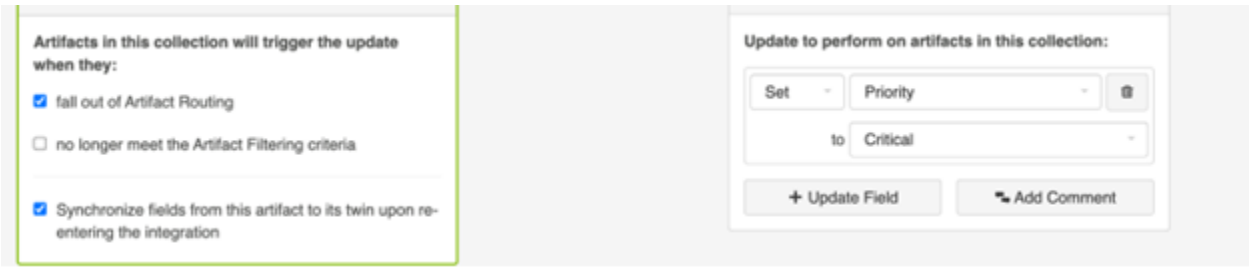

- 
    - Select between the two conditions under the UiPath Test Manager artifact side:
        - a. fall out of artifact routing- meaning when the associated artifact in UiPath Test Manager is moved to a project outside of projects that have been routed in the integration.
        - no longer meet the artifact filtering criteria- meaning the
        - associated artifact in UiPath Test Manager no longer meets the filter criteria
        - configured under "Artifact Filtering" in the integration menu.



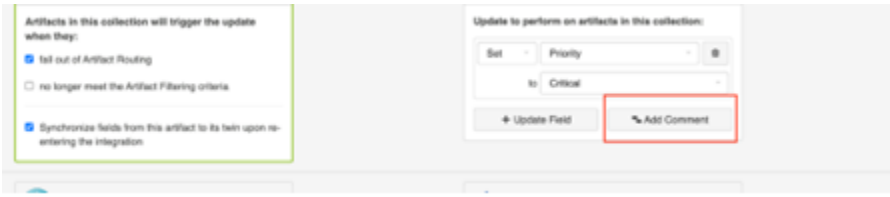

- Next, choose what happens to the twin artifact created in ADO when either one of the above happens.

- Select a field and its value to update in ADO when the UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria




  - b. You also have the option to choose to add a comment to the existing ADO twin artifact when UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria.



- Follow steps 1-3 to set up Twinless Artifact Update for the ADO system if necessary.
- Select the Save button at the top right corner of the page to save the "Twinless Artifact Update" configuration for the integration.

## 36. 6.4 Use Case 4: UiPath Test Manager Test Execution & ADO Test Run

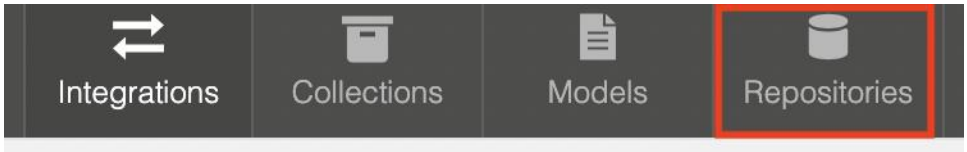
***Tool Set Up:***

1. Ensure that any custom fields have been added to both the UiPath Test Manager Test Execution and the ADO Test Run for the projects you wish to use. This step may require you to reach out to your tool admin to add these fields to your desired projects. If you have admin rights in your tools, ensure you perform this step first.
2. Below are links to instructions on how to add custom fields in both UiPath Test Manager and Azure DevOps
   a. UiPath Test Manager: https://docs.uipath.com/test-suite/docs/managing-custom-fields#:~:text=Creating%20custom%20fields&text=Navigate%20to%20Project%20Settings%20%3E%20Custom,name%20for%20your%20custom%20field.
   b. Azure DevOps: https://learn.microsoft.com/en-us/azure/devops/organizations/settings/work/add-custom-field?view=azure-devops

c. Additionally, ensure that at least one Test Run has been created in ADO to allow UiPath Test Manager Connect to pull the Test Execution schema from ADO. If this step is not done, then your UiPath Test Manager Connect Collection may error out.

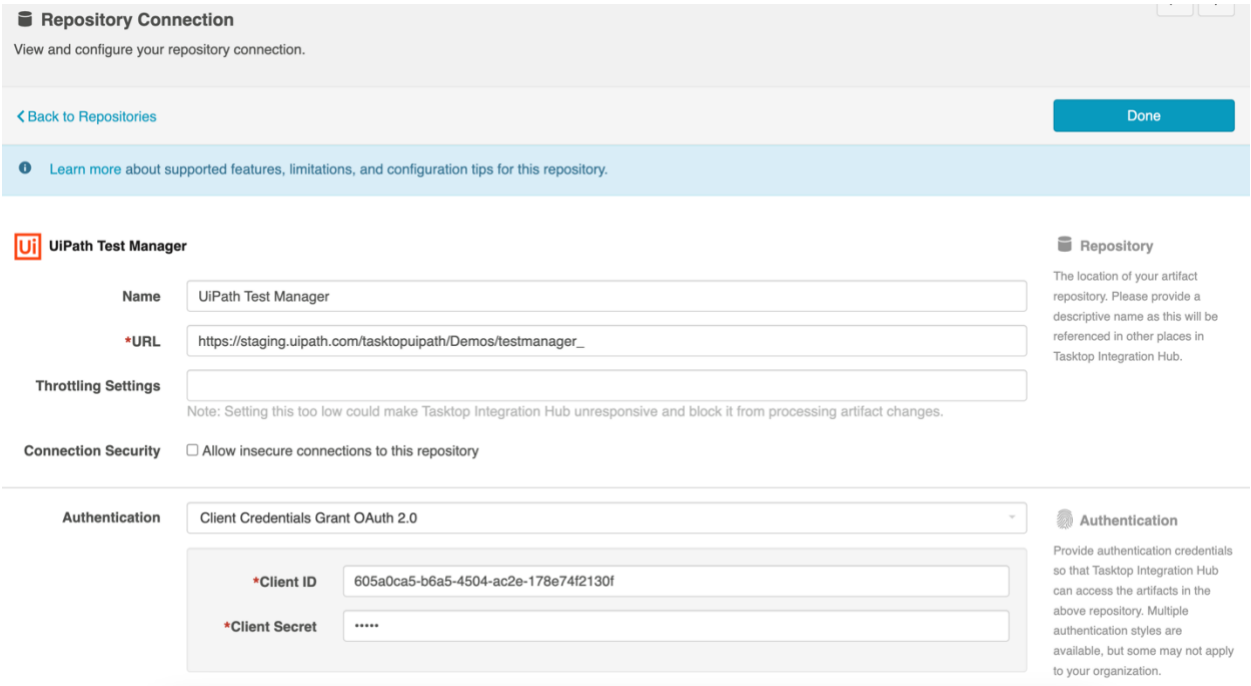
## 37. 6.4-1 Repository:

1. Ensure that both UiPath Test Manager and ADO instances are set up and working in the Repositories Tab in UiPath Test Manager Connect.
2. First, navigate to the "Repository" Tab at the top left of the UiPath Test Manager Connect.

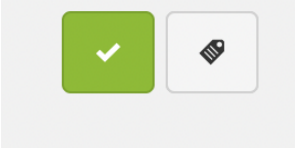



3. Next, select the "+ New Repository" button

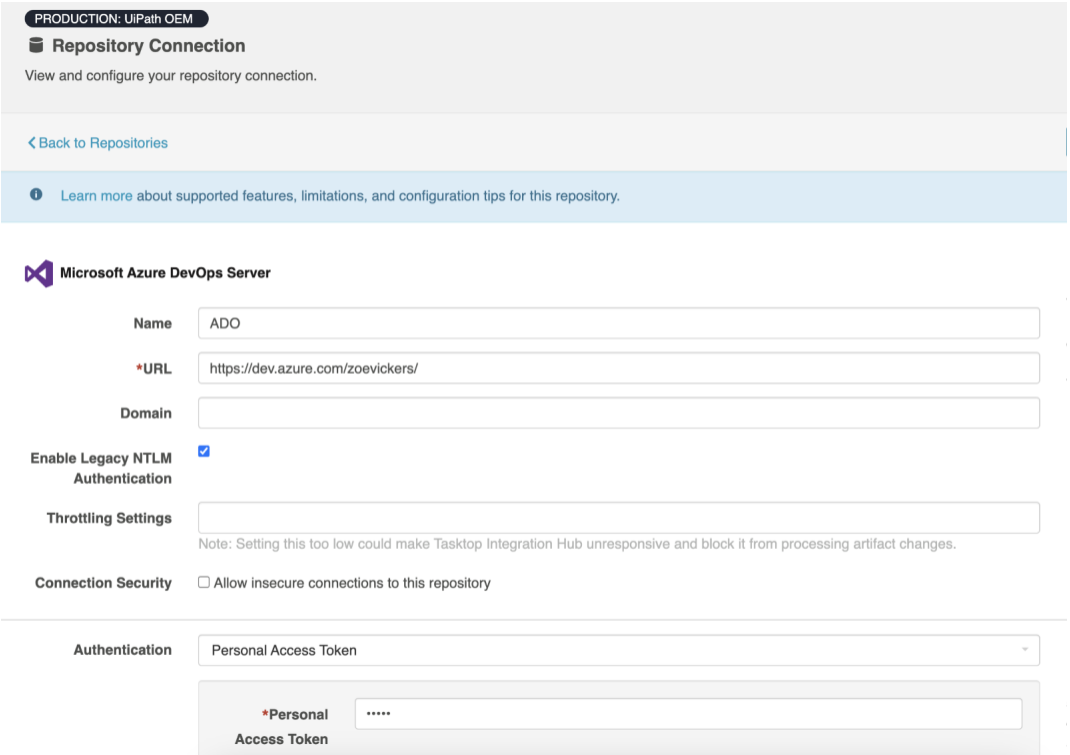
4. Then, add a name such as "UiPath Test Manager" in the name section and the URL to your UiPath Test Manager instance in the URL section.
5. The last piece is to choose the type of authentication you wish to use and add the authentication credentials to your UiPath Test Manager instance under the Authentication section of the Repository page.
    a. Please note each repository will need certain credentials that provide UiPath Test Manager Connect the read/write access for the integration. Sometimes tools require full admin access, others just require certain roles. Review the Tasktop documentation here to see what your repository requires.




6. Finally, select the "Save" button at the top right of the page. A green check mark should appear at the top right of the page if the connection was successful.



7. Repeat steps 1-6 to create the ADO repository with the link and credentials to your ADO environment.

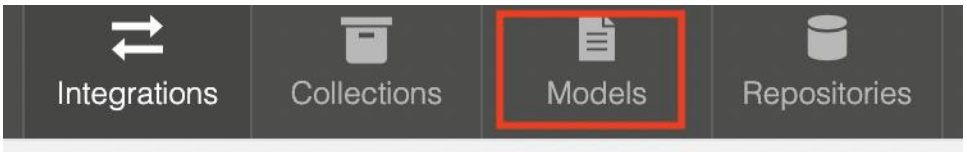



Note: The typical ADO customer uses Personal Access Token Authentication.

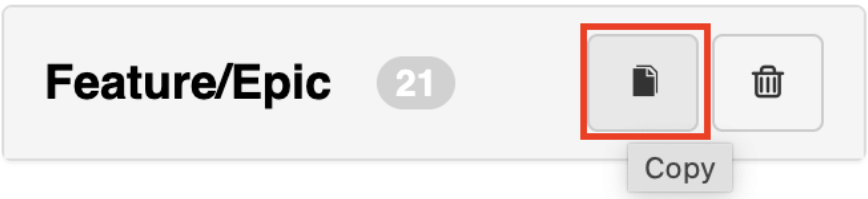
For further information on authentication please see the ADO connector documentation here.

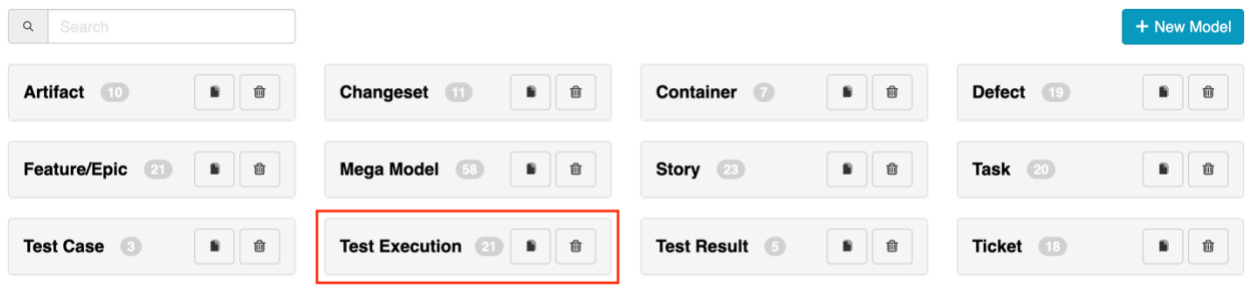
## 38. 6.4-2 Model:

1. Navigate to the "Models" tab at the top left of the UiPath Test Manager Connect.




2. Copy the Feature/Epic model and rename the new Model from "Feature/Epic (copy) to "Test Execution".

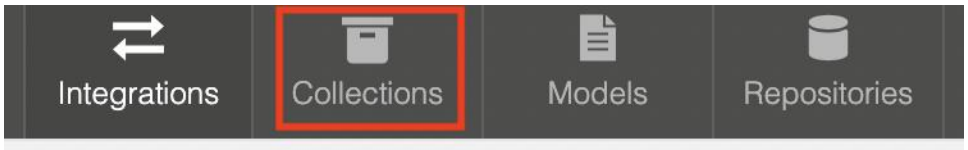





a. Push save when done.

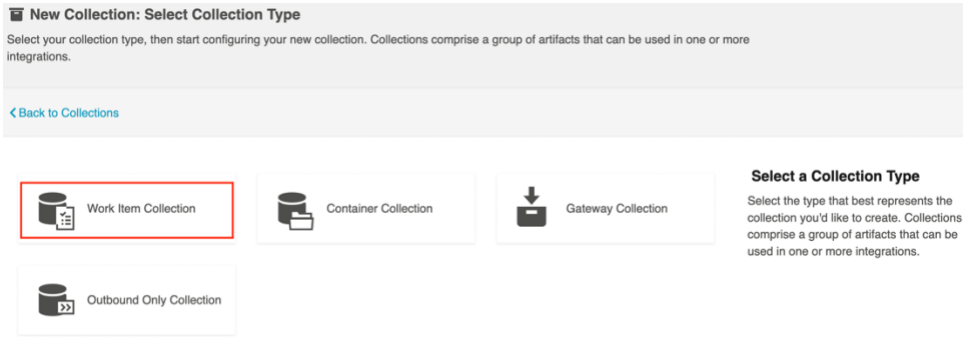
## 39. 6.4-3 Collections:

1. After you have ensured that the model being utilized has all the necessary fields, it is time to create two collections. In this scenario, the collection will map UiPath Test Manager to the Test Execution model and ADO to the Test Execution model.

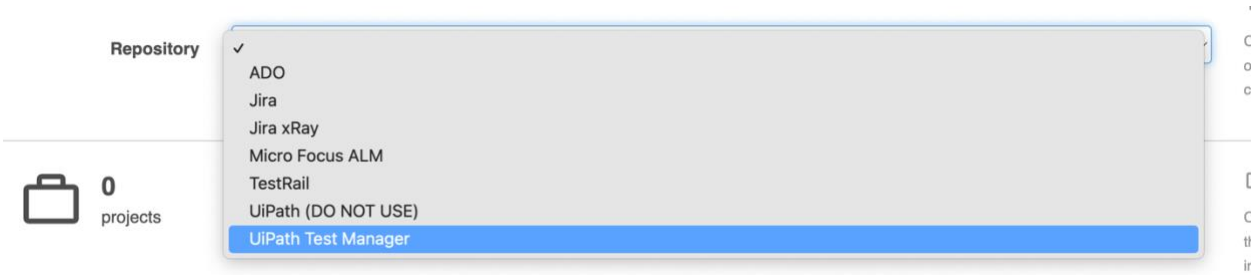



2. Navigate to the Collections Tab and select the "+ New Collections" button.

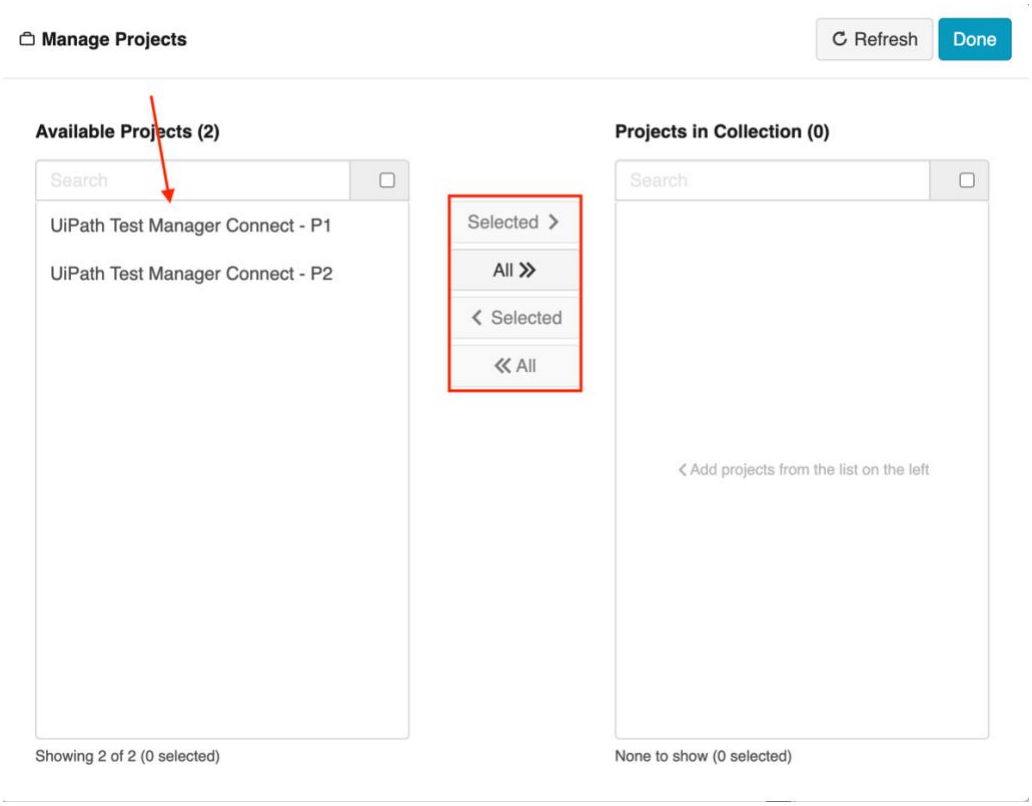
3. Then select "Work Item Collection".



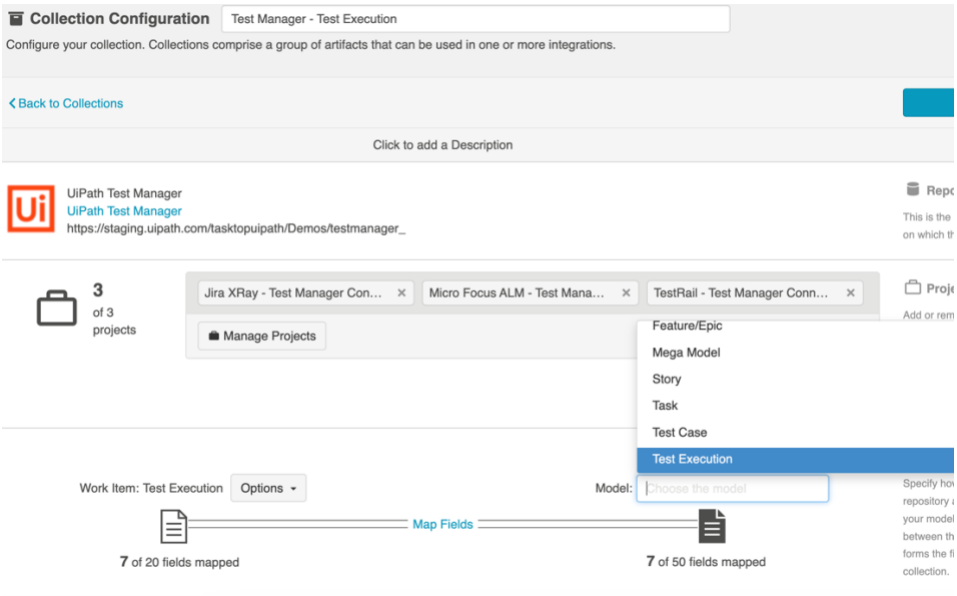

4. Next, give the collection a name such as "UiPath Test Manager Test Execution".
5. Select the UiPath Test Manager repository.



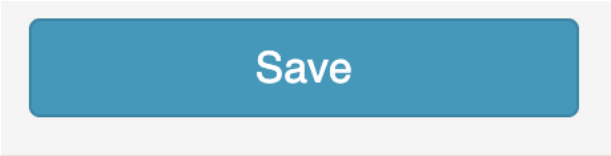

6. Then, choose which UiPath Test Manager projects to use in the collection by selecting "Manage Projects" and using the pop-up to add one or many projects.
    a. *Note: Projects can always be added or removed even after the integration has been built.*




7. Below the projects section, use the "Work Item" and "Model" dropdowns to select the Test Execution and the Test Execution model.

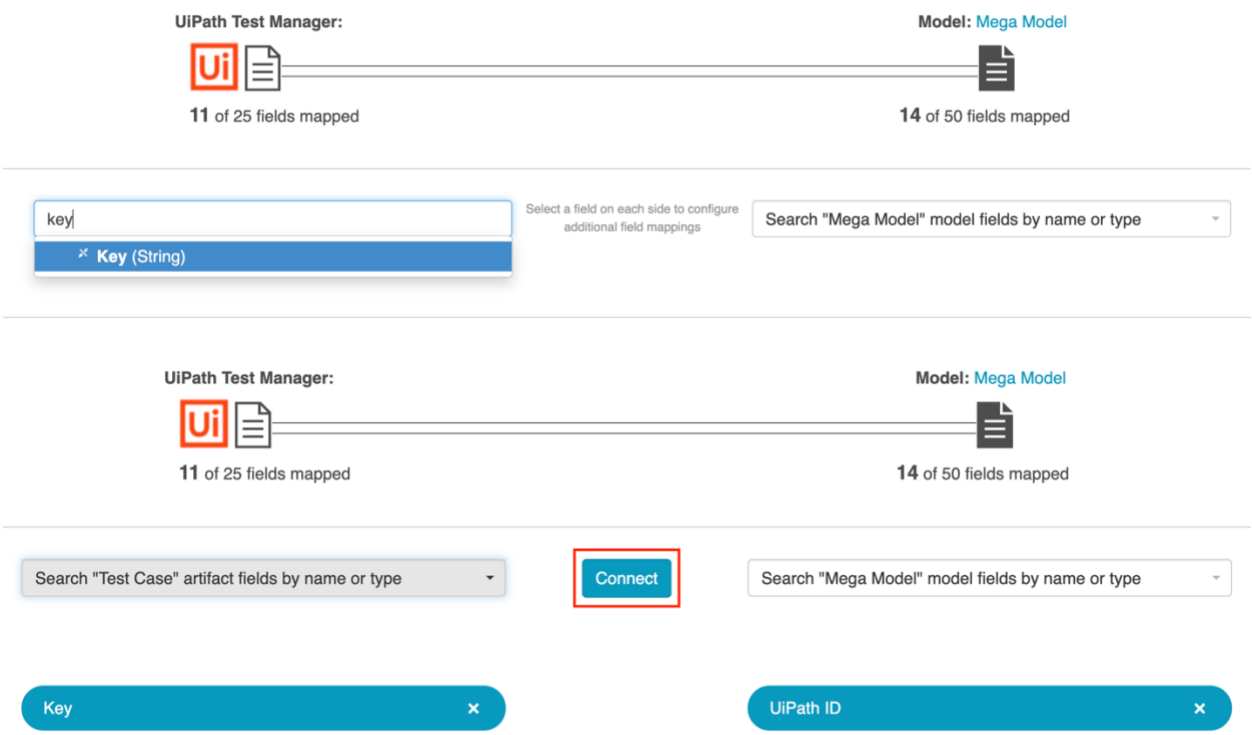



8. Once both are selected navigate to the top right of the page and click the "Save" button.




9. Now the process of mapping and configuring the fields can be done. Under the projects section, select "Map Fields".
10. Once here, UiPath Test Manager Connect will have automatically mapped multiple fields. For this simple integration use the dropdowns and select additional fields to add to the mapping. When adding fields, select a field from the UiPath Test Manager dropdown and the Model dropdown and click the "Connect" button that appears. Ensure that each of the following fields have been mapped:

| UiPath Test Manager Test Execution | Test Execution Model |
|---|---|
| URL | URL |
| Key | Formatted ID |
| Name | Summary |
| Description | Description |
| Created | Created |
| Updated | Modified |

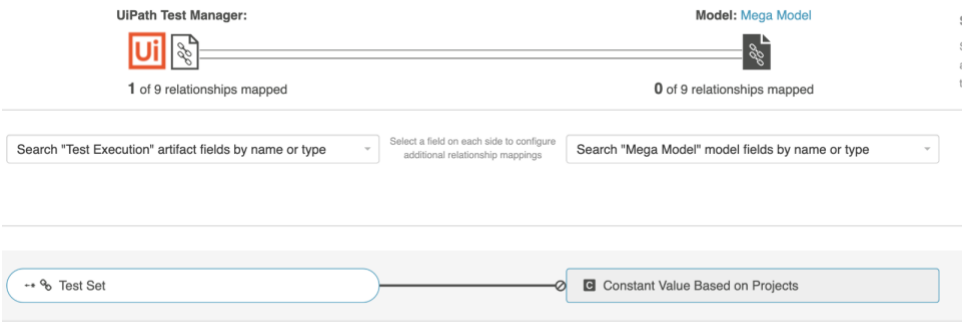



11. Any additional fields can be deleted for now using the trash can Icon next to the field. If you wish to add any additional fields, you can do so at this time or after the integration is complete.

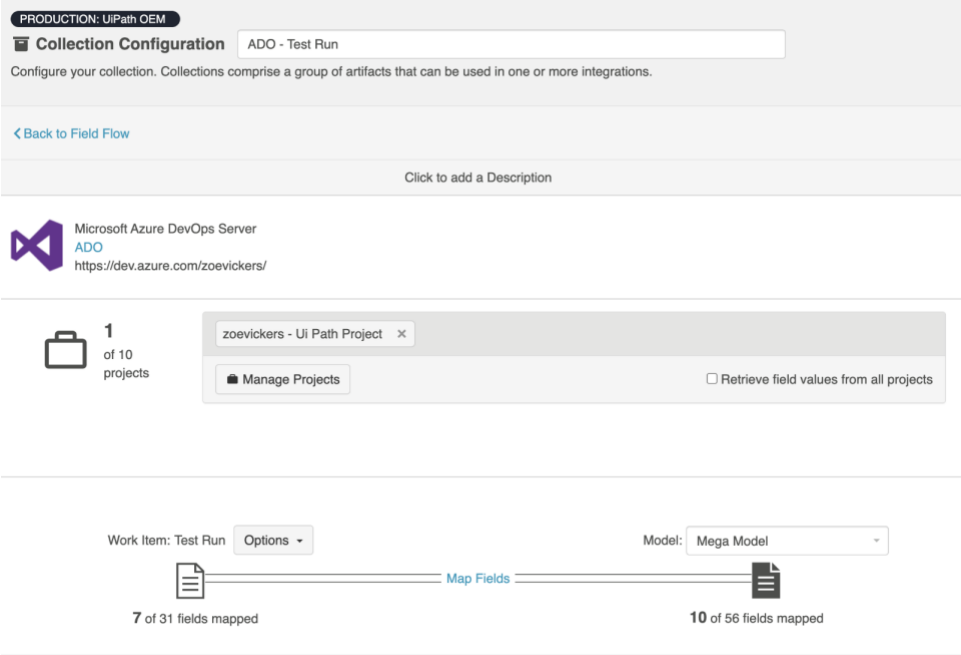
12. After ensuring each of these fields is mapped, orange warning signs are likely to appear next to fields such as "Priority" or "Status". This simply means that the values for those fields must be configured.

13. Select "Configure" next to each of the fields with the warning symbol to configure the field values. When configuring values select a value on each side and click the "Connect" button to map the values. Values can be mapped one to one or one to multiple.

14. Lastly, navigate back to the newly created "UiPath Test Manager Test Case" collection and select "Configure Relationships" under the "Map Fields" section. Map the following fields:
    a. Test Set - (Constant Value based on Projects)



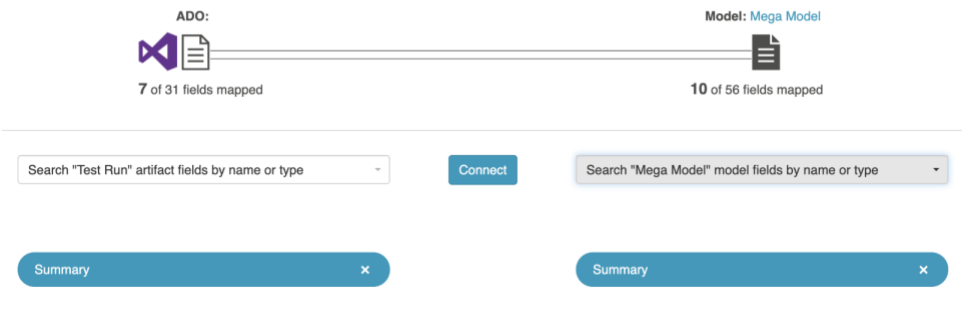

15. The first collection has now been completed! Navigate back to the "Collection" Tab and select "+ New Collection" to begin creating the ADO Collection.



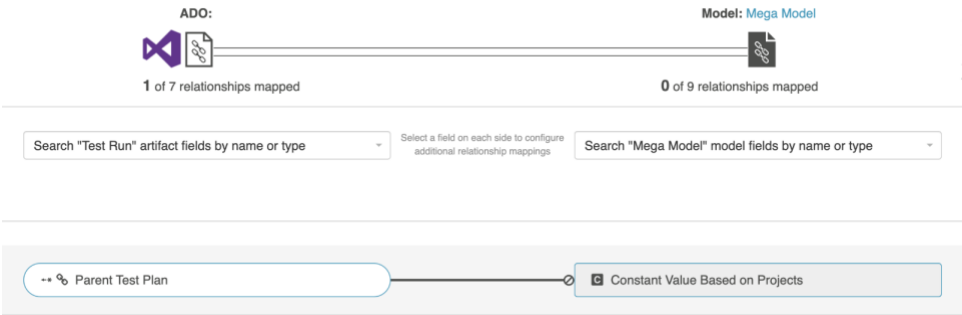

16. Follow steps 2-12 to create the ADO collection with the following modifications:
    a. The collection name should be something similar to "ADO Test Run".
    b. Select "Test Run" for your Work Item and select the same Test Execution model.
    c. Map and configure the following fields:

| ADO Test Run | Test Set Model |
|---|---|

| | |
|---|---|
| Formatted ID | Formatted ID |
| Summary | Summary |
| Created Date | Created |
| Last Updated Date | Modified |
| URL | URL |

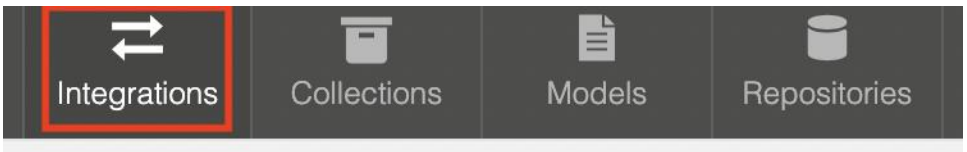



18. Lastly, navigate back to the newly created ADO "Test Run" collection and select "Configure Relationships" under the "Map Fields" section. Map the following fields:
    a. Parent Test Plan – Constant Value Based on Projects



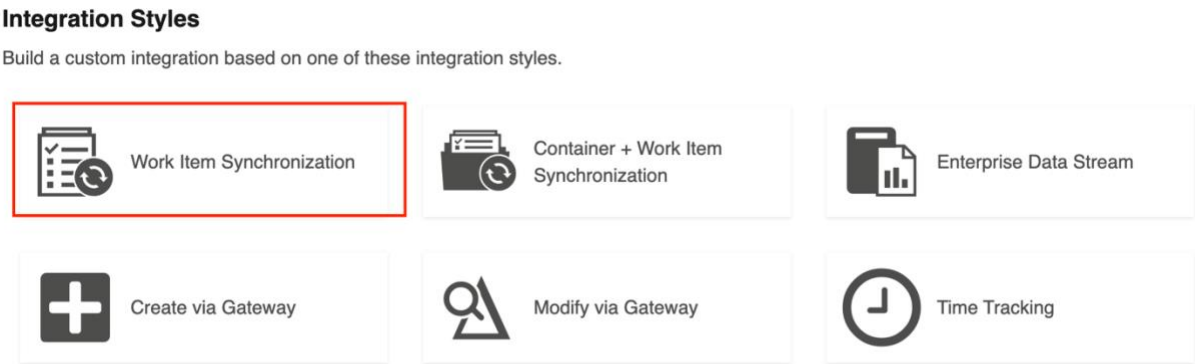

## 40. 6.4-4 Integration:

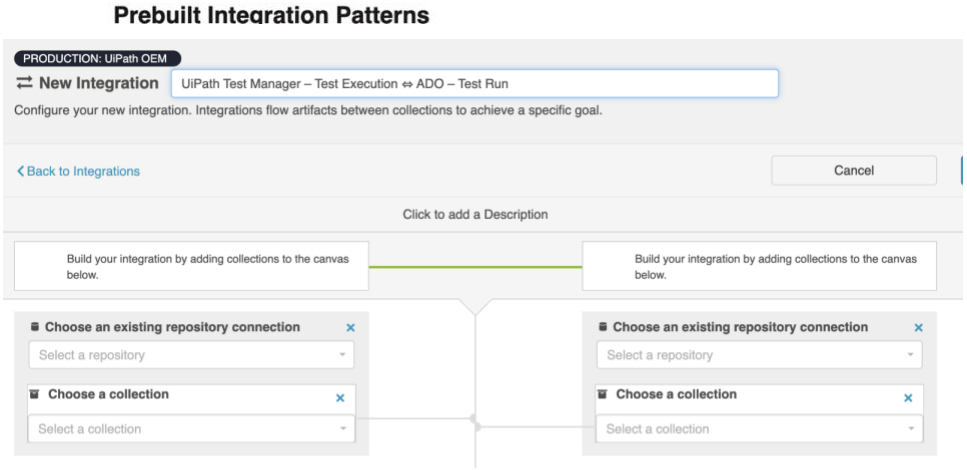
1. Now it is time to put the two collections together to create one full integration! First, navigate to the "Integrations" tab.



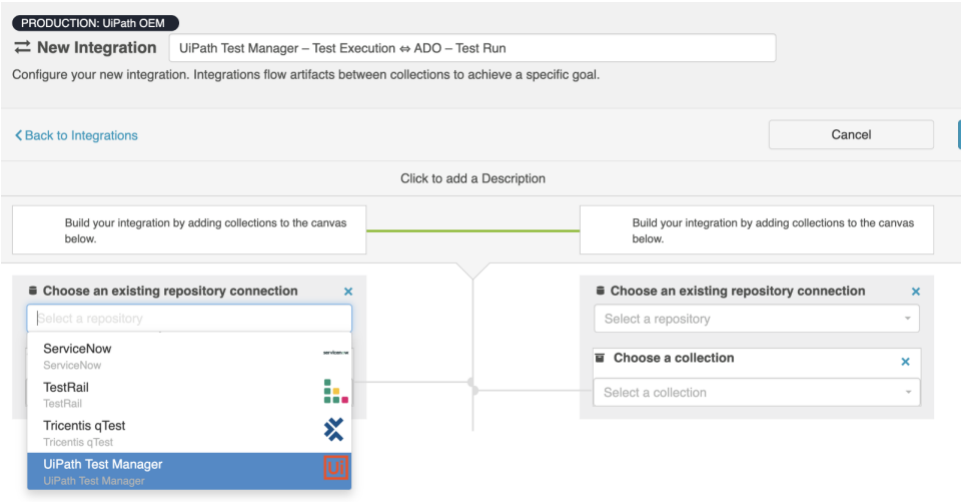
2. Select the "+ New Integration" at the top right of the page.

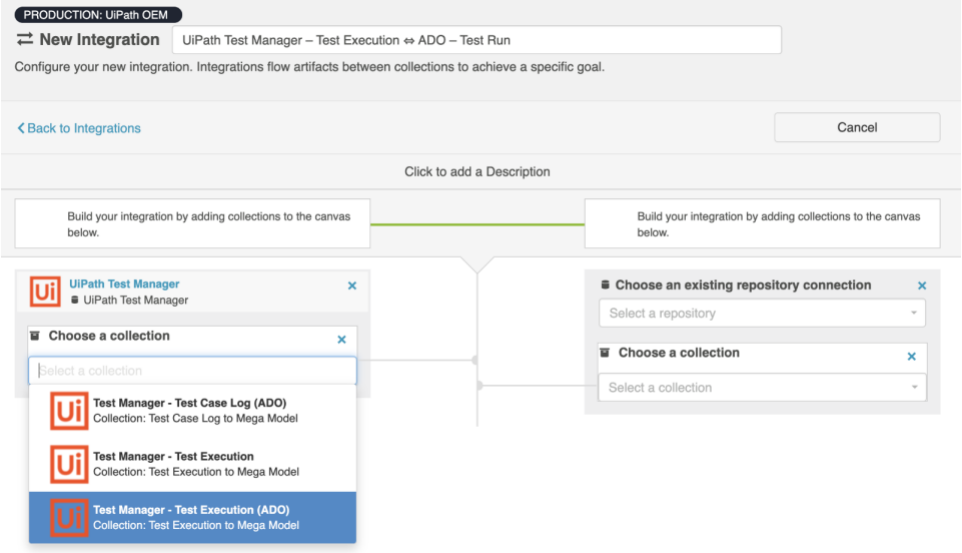
3. Next select "Work Item Synchronization" and give the integration a name such as "UiPath Test Manager – Test Execution ⇔ ADO – Test Run"

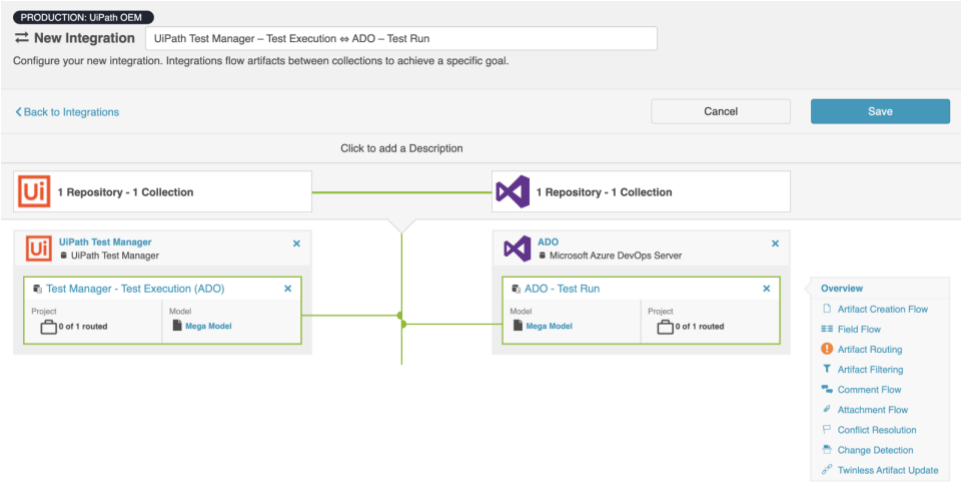


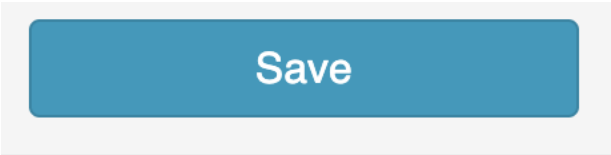

4. Select the UiPath Test Manager repository along with the newly created UiPath Test Manager – Test Execution collection from the drop downs provided on one side. And similarly, choose the ADO and newly created ADO Test Run collection on the other side.



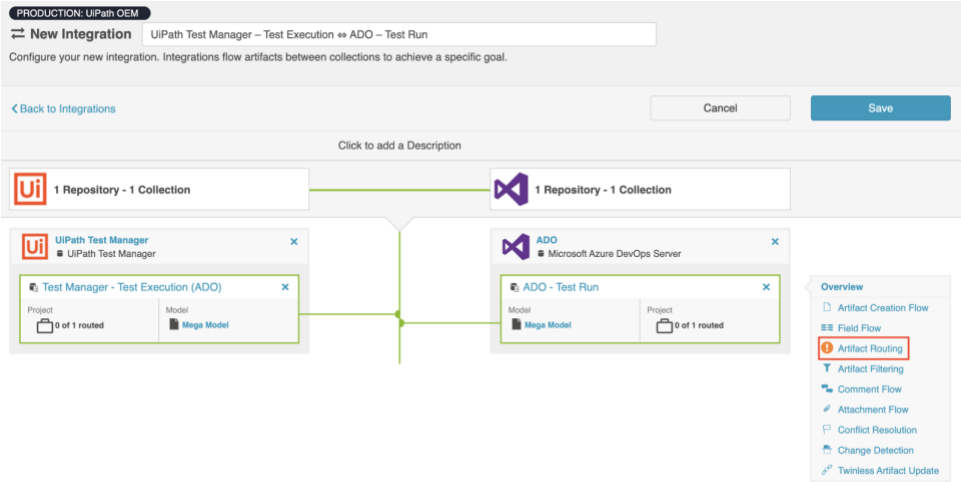



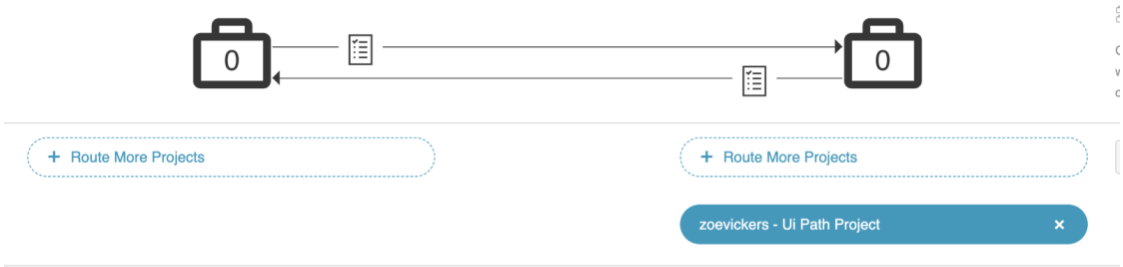

5. Select “Save” at the top right.

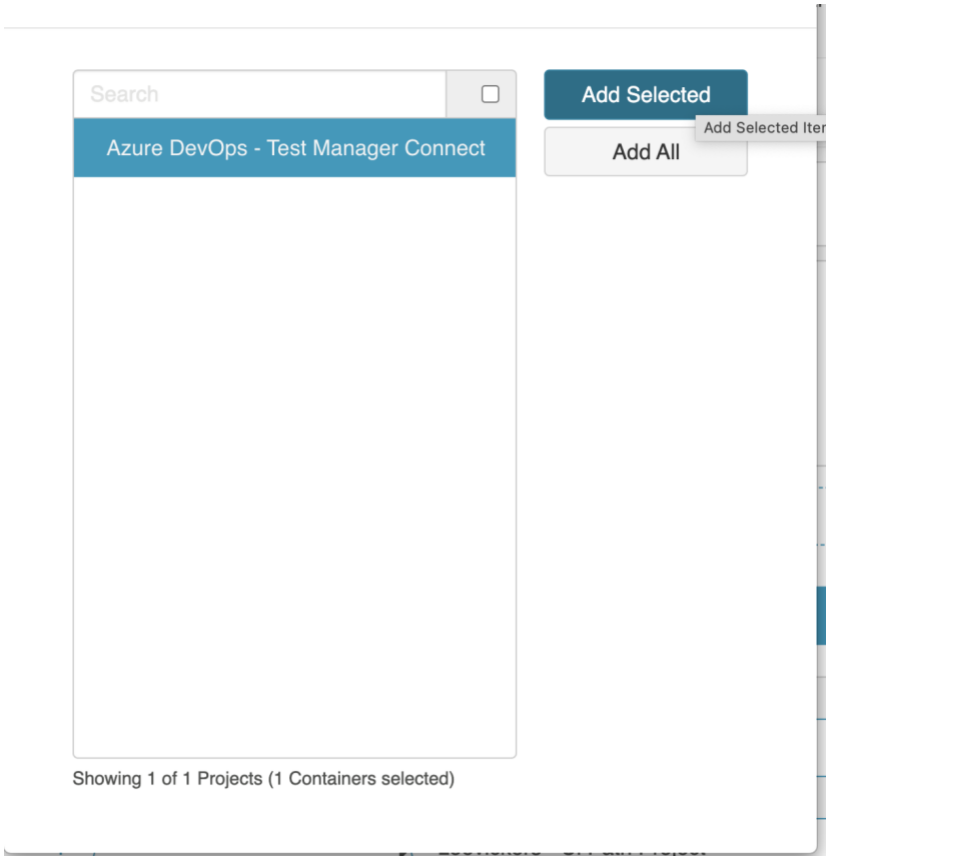



6. A warning symbol will appear on the integration menu on the right side of the screen next to "Artifact Routing". Artifact routing will need to be set before the integration can run.

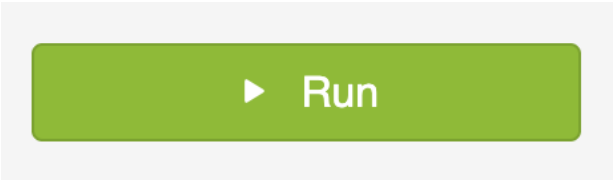



7. Select "Artifact Routing" and choose the projects in both tools you wish to route the artifacts to and from using the popups that appear when selecting "Route More Projects". Projects can be routed one-to-one or conditionally. To keep it simple for this exercise, choose one project on either side and select the middle connect button that appears in the middle of the page.




8. The fourth integration is now ready to be run and used! You may now select the "Back to Integration Configuration" Button at the top left of the screen to get back to your newly created integration.
9. You can now select the "Run" Button at the right of the integration and test it out by creating a new Test Execution in UiPath Test Manager to test out the integration and ensure it is running properly.

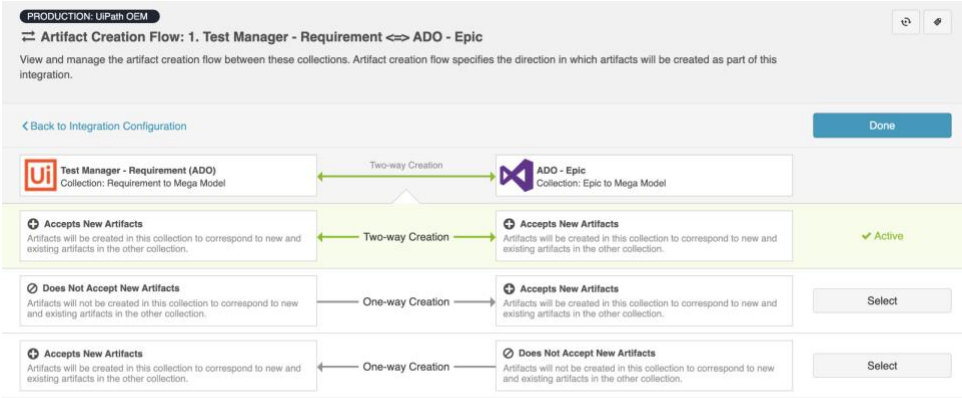



## 6.4-5 Integration Configurations:

Additionally, other configurations (above and below "Artifact Routing") can be made to the integration using the integration menu. See below:

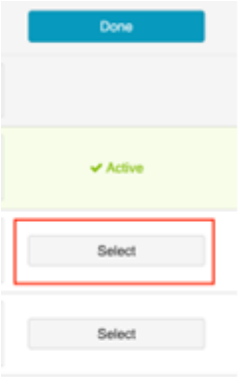
### 41. Artifact Creation Flow:

- Artifact creation flow allows users to decide whether the integration will have a one-way or bidirectional creation flow.




- How To:
  - Navigate to "Artifact Creation Flow" in the integration menu.

- 
    - Use the select button on the right of each option to select the type of Artifact Creation Flow needed for the integration.

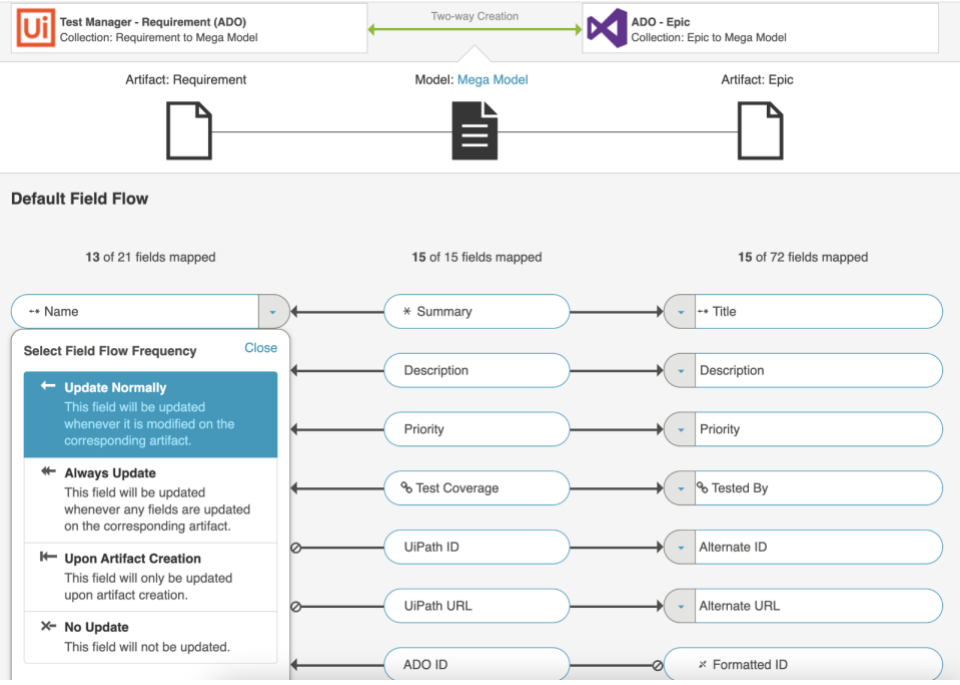



- Note: By default, all integrations will be bidirectional.

- Bidirectional Artifact Creation allows for artifacts to be created in both systems and pushed into the opposite systems.
- One-way creation flow limits artifact creation to only one system and pushed into the other. For example, all artifacts created in UiPath Test Manager will be pushed into ADO, however, any artifacts created in ADO will not move over to UiPath Test Manager.
    - Note: One-way creation only limits the creation of artifacts. Any updates or modifications to artifacts will still be bidirectional.

42. Field Flow:

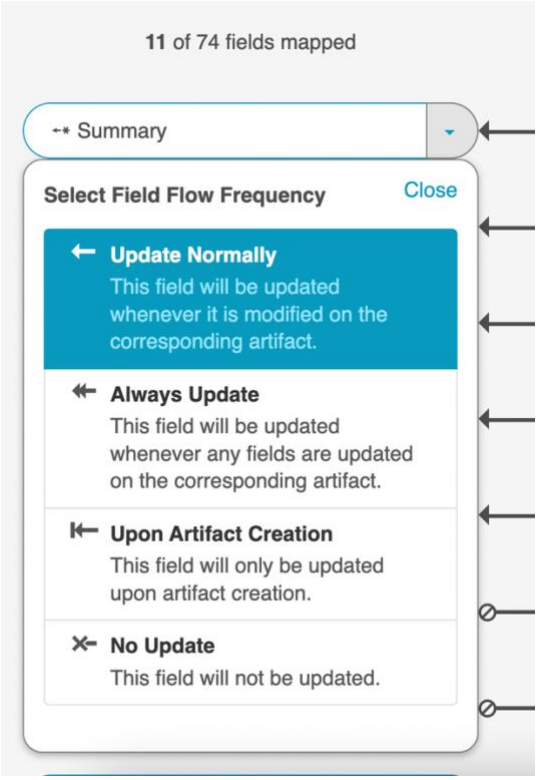
- Field Flow allows users to edit how Hub does or does not update artifact fields in the integration.




- How To:
  - Navigate to "Field Flow" In the integration menu.

- 
  - Select the dropdown from a field in either system to determine how or if that field is updated.

- Note: By default, all fields will "Update Normally" unless previously mapped differently in the collection.

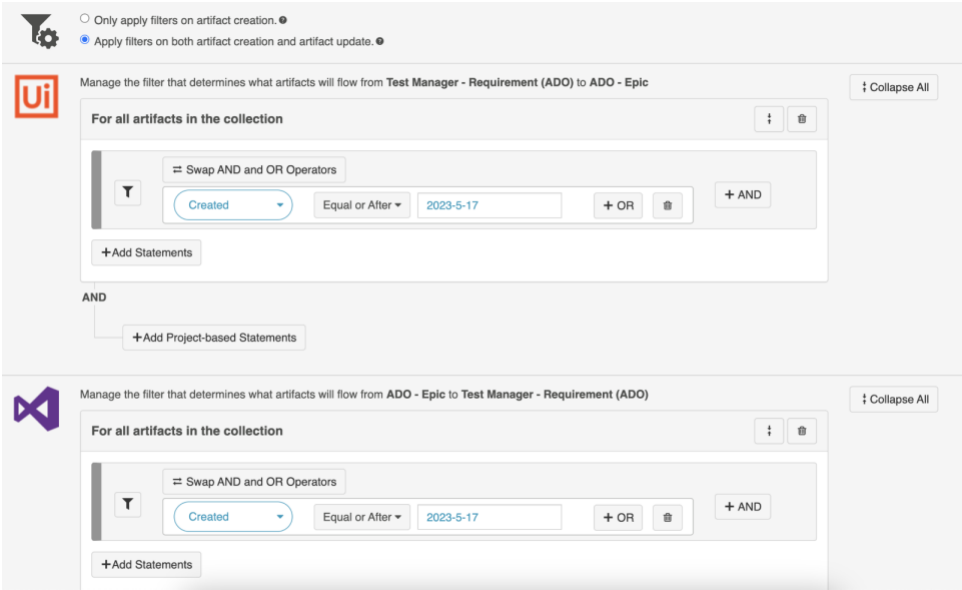



- Finally select Save at the top right corner of the screen to save any changes you have made.

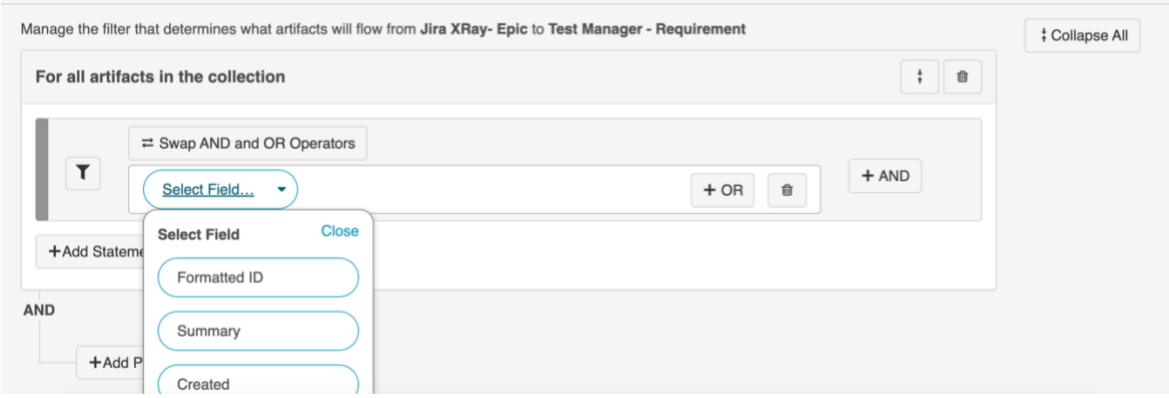
- Update Normally- The field selected will be updated whenever it is modified on the corresponding artifact.
- Always Update- The field selected will be updated when any fields on the corresponding artifact are modified.
- Upon Artifact Creation- The field selected will only update when the artifact is created.
- No Update- The field selected will never update in the system.

## 43. Artifact Filtering:

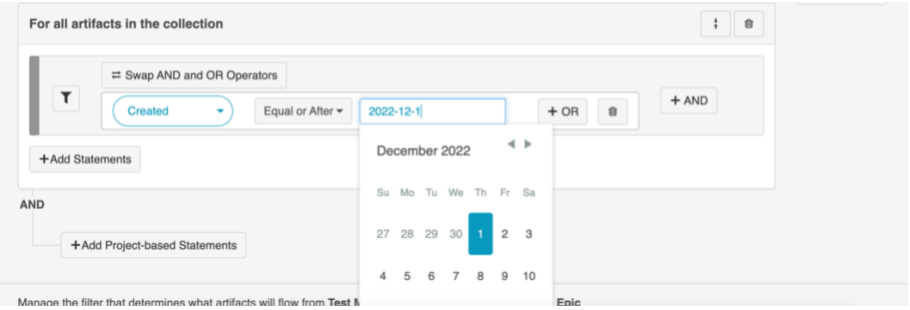
- Artifact filtering allows users to only pull artifacts from each tool based on certain field filters.



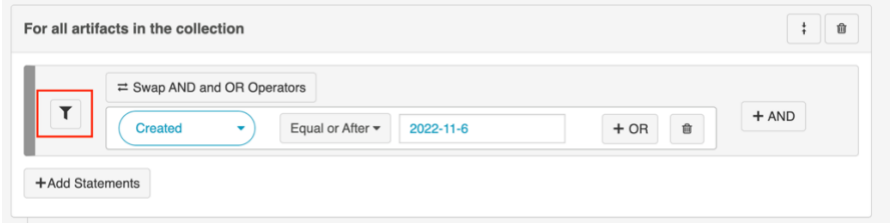

- How To:
  - Navigate to "Artifact Filtering" in the Navigation Menu.
  - Select either the "Only apply filters on artifact creation" or "Apply filters on both artifact creation and artifact update"
- Note: The most common option is to choose to have the filters applied to both artifact creation and artifact updates.
  - Next select "Add statement" and use the field dropdown to choose which field to use as a filter for any artifacts created and updated in UiPath Test Manager.



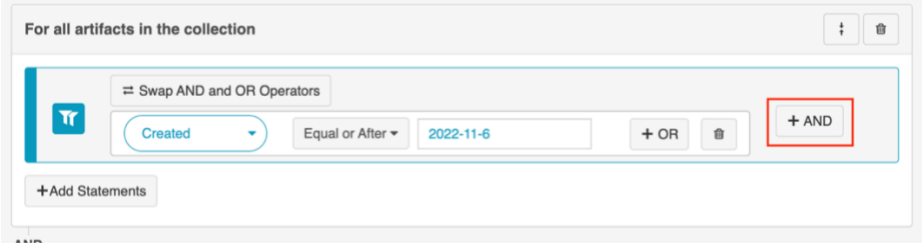

  - For this example, we will use the "Created" field. Then select the operator such as "Equal or After".
  - Lastly, select a value. In this example, we have selected a date. This filter means that only Artifacts created or updated equal to or after the date we have chosen will flow through the integration.



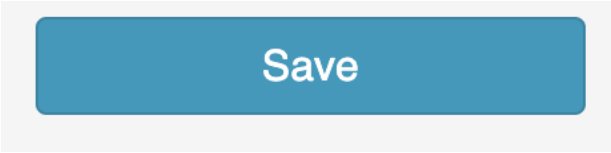

- Select the filter icon on the left of the new filter to apply the same filter to your ADO system.




- Multiple filters can be applied to each system in the integration. When using multiple filters be sure to select either the "AND or OR" operator to the right of each filter to ensure that only the correct artifacts flow through the integration.

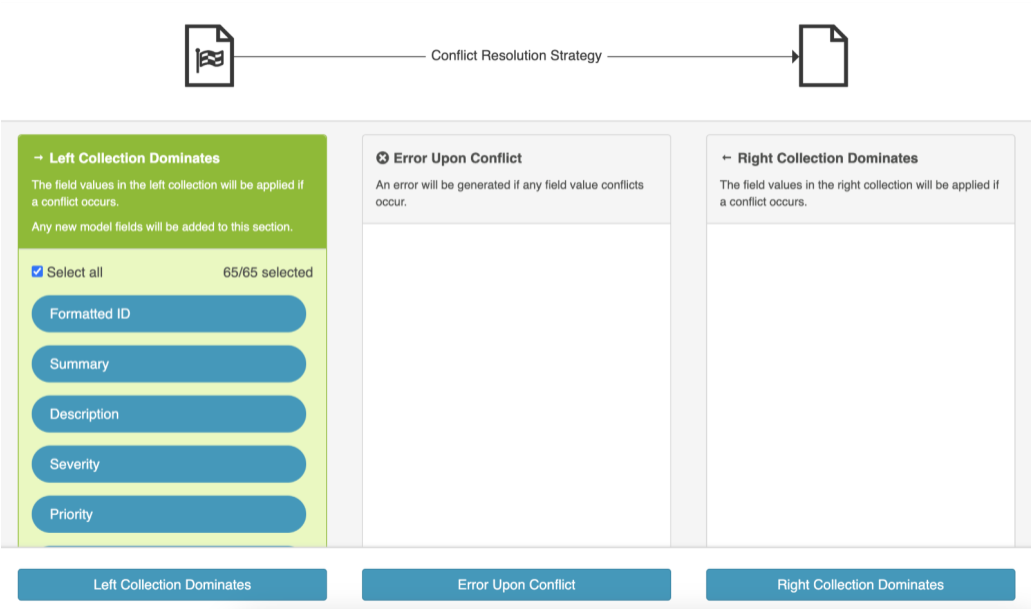



- Finally, select save at the top right corner to save the filters created for the integration.



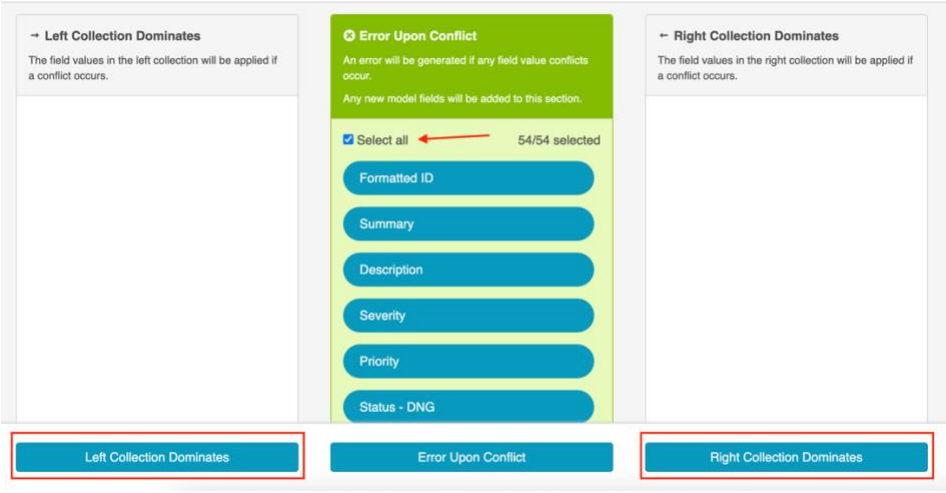

## 44. Conflict Resolution:

- Conflict resolution allows users to decide which tool is the source of truth when a field updates conflicts.
- A single tool can dominate, or the mapped fields can be set among both tools as needed.




- How To:
  - Navigate to "Conflict Resolution" in the integration menu.

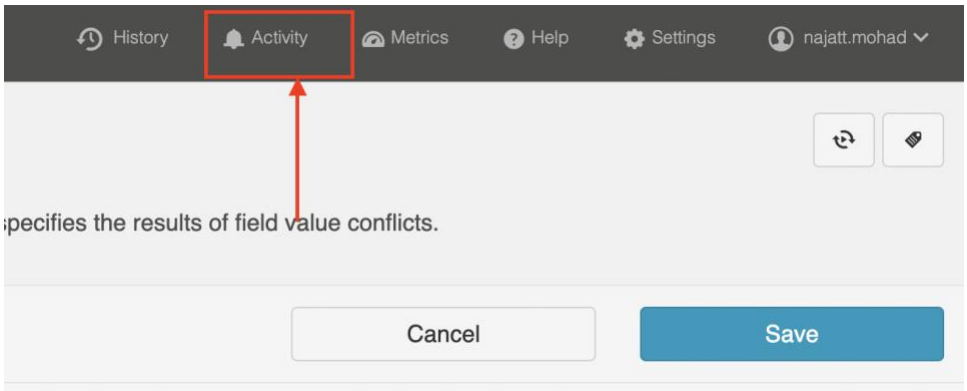
- 
  - Next, you have the option to:
    - Select all
    - Select individual fields
    - Select none
  - After selecting all fields select either the UiPath or ADO system to dominate the field values in a conflict.

- 

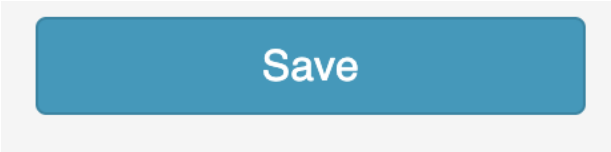

  - After selecting individual fields, select either the UiPath Test Manager or ADO system to dominate those specific field values in a conflict. You also have the option to leave fields in the "Error Upon Conflict" section.

-


  - Selecting none and leaving all values in the "Error Upon Conflict" section will create errors in the activity page when field value conflicts occur.

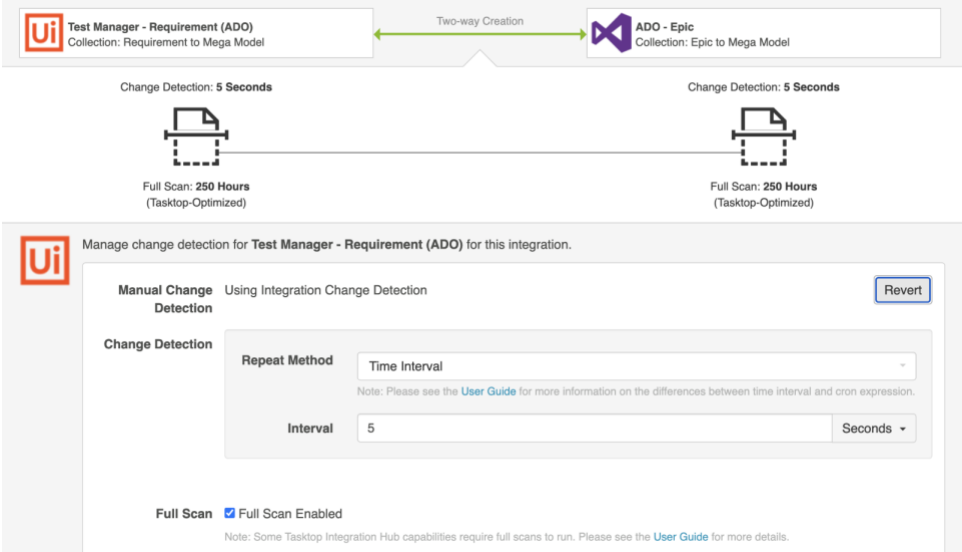
- 


  - Finally, select the save button at the top right to save the conflict resolution configuration for the integration.

- 


45. Change Detection:

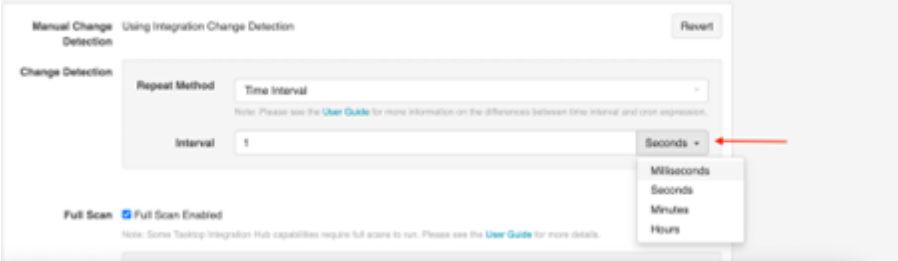
- Change detection is how often Hub checks each tool for artifact and field updates.
- Change Detection allows a user to override the global change detection settings for a single integration.
- Industry standards for production environments are anywhere between 5-30 minutes.



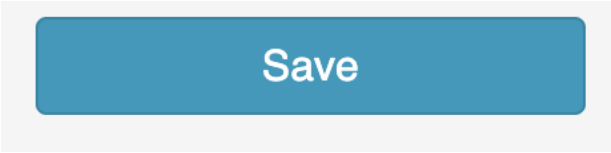

- How To:
  - Navigate to "Change Detection" from the integration menu.

- Select the override button to override the change detection setting for the specific integration.

- Use the dropdown to select the type of time interval, then type in a number for the time interval. Such as 5 minutes.

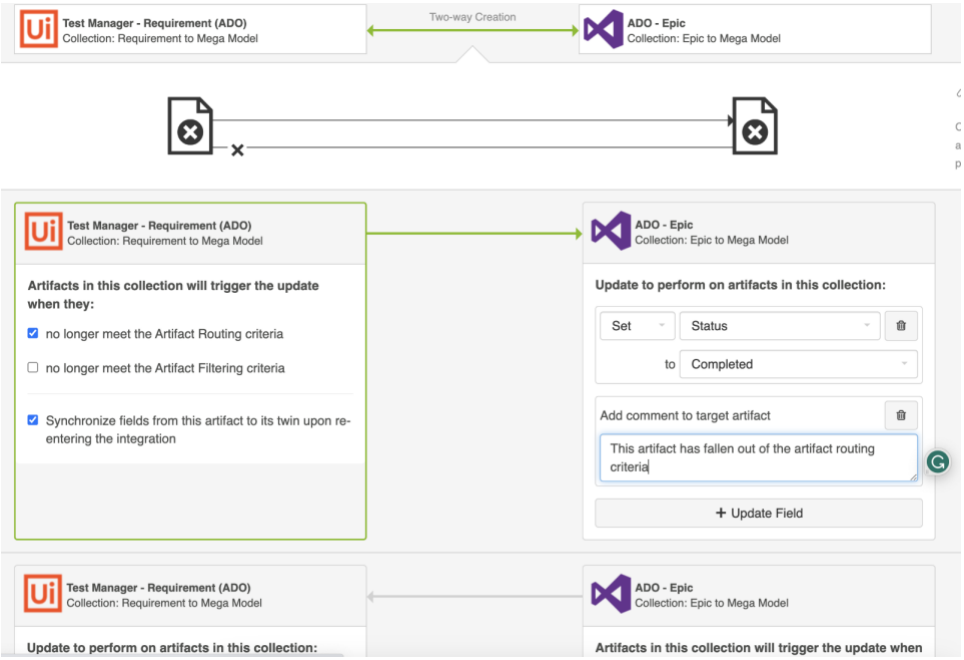



- Finally, use the "Save" button at the top right of the page to save the change detection settings for this integration.

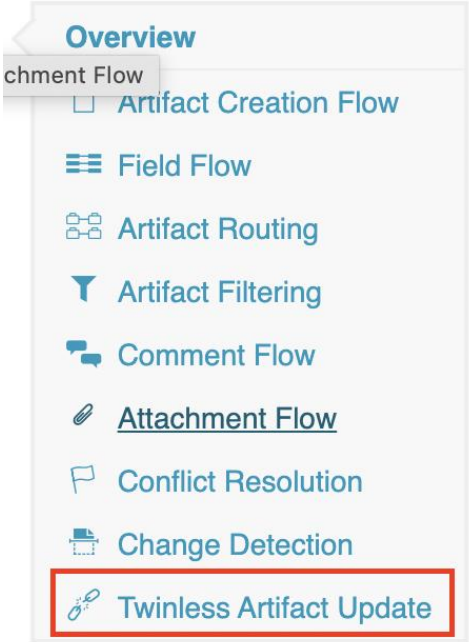


## 46. Twinless Artifact Update:

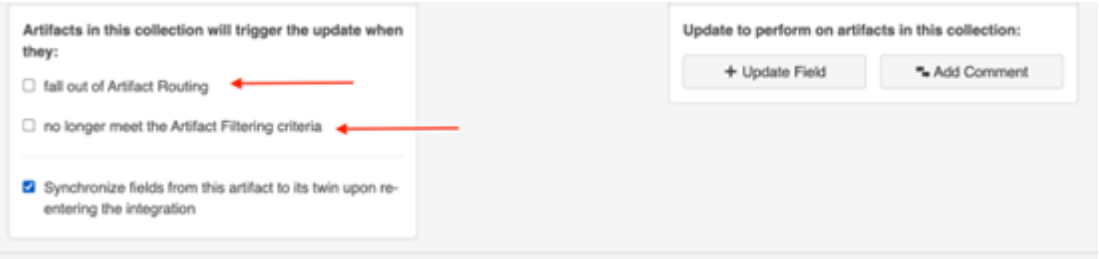
- Allows users to configure one final update (for example a comment or a status change) on an artifact when its "twin" in the other repository is no longer eligible to participate in the integration (e.g., when it's been deleted or no longer meets the artifact filter). The final update informs the newly twinless artifact that the synchronization has been discontinued.
- Artifacts are no longer eligible to participate in an integration if one or both conditions below are met for an endpoint:
- Artifacts fall out of Artifact Routing. This can happen when:
  - Artifacts are deleted
  - Artifacts are moved to projects not routed as part of the integration
  - Artifacts no longer meet the Artifact Filtering criteria.




- How To:
  - Select "Twinless Artifact Update" from the integration menu.

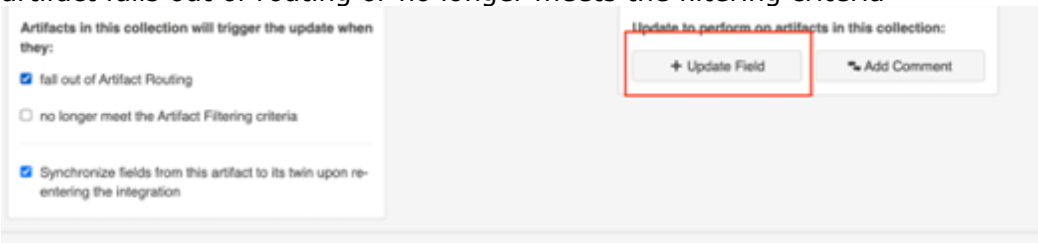


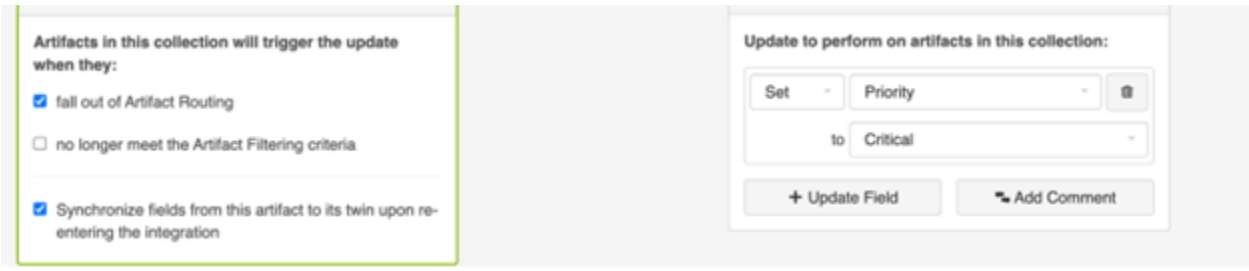

- 
    - Select between the two conditions under the UiPath Test Manager artifact side:
        - a. fall out of artifact routing- meaning when the associated artifact in UiPath Test Manager is moved to a project outside of projects that have been routed in the integration.
        - no longer meet the artifact filtering criteria- meaning the
        - associated artifact in UiPath Test Manager no longer meets the filter criteria
        - configured under "Artifact Filtering" in the integration menu.



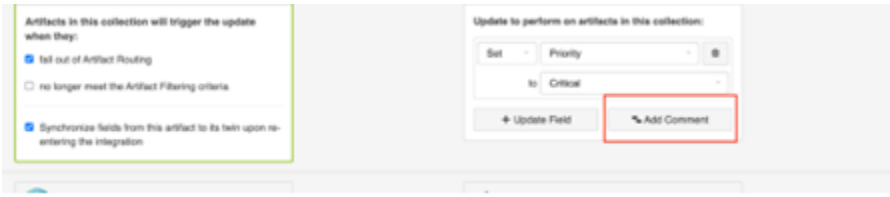

- Next, choose what happens to the twin artifact created in ADO when either one of the above happens.

- Select a field and its value to update in ADO when the UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria




  - b. You also have the option to choose to add a comment to the existing ADO twin artifact when UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria.



- Follow steps 1-3 to set up Twinless Artifact Update for the ADO system if necessary.
- Select the Save button at the top right corner of the page to save the "Twinless Artifact Update" configuration for the integration.

## 6.5 Use Case 5: UiPath Test Manager Test Case Log & ADO Test Result

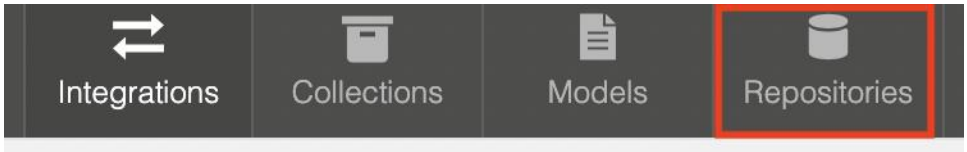
***Tool Set Up:***

1. Ensure that any custom fields have been added to both the UiPath Test Manager Test Execution and the ADO Test Run for the projects you wish to use. This step may require you to reach out to your tool admin to add these fields to your desired projects. If you have admin rights in your tools, ensure you perform this step first.
2. Below are links to instructions on how to add custom fields in both UiPath Test Manager and Azure DevOps
   a. UiPath Test Manager: https://docs.uipath.com/test-suite/docs/managing-custom-fields#:~:text=Creating%20custom%20fields&text=Navigate%20to%20Project%20Settings%20%3E%20Custom,name%20for%20your%20custom%20field.
   b. Azure DevOps: https://learn.microsoft.com/en-us/azure/devops/organizations/settings/work/add-custom-field?view=azure-devops

c. Additionally, ensure that at least one Test Run has been created in ADO to allow UiPath Test Manager Connect to pull the Test Execution schema from ADO. If this step is not done, then your UiPath Test Manager Connect Collection may error out.

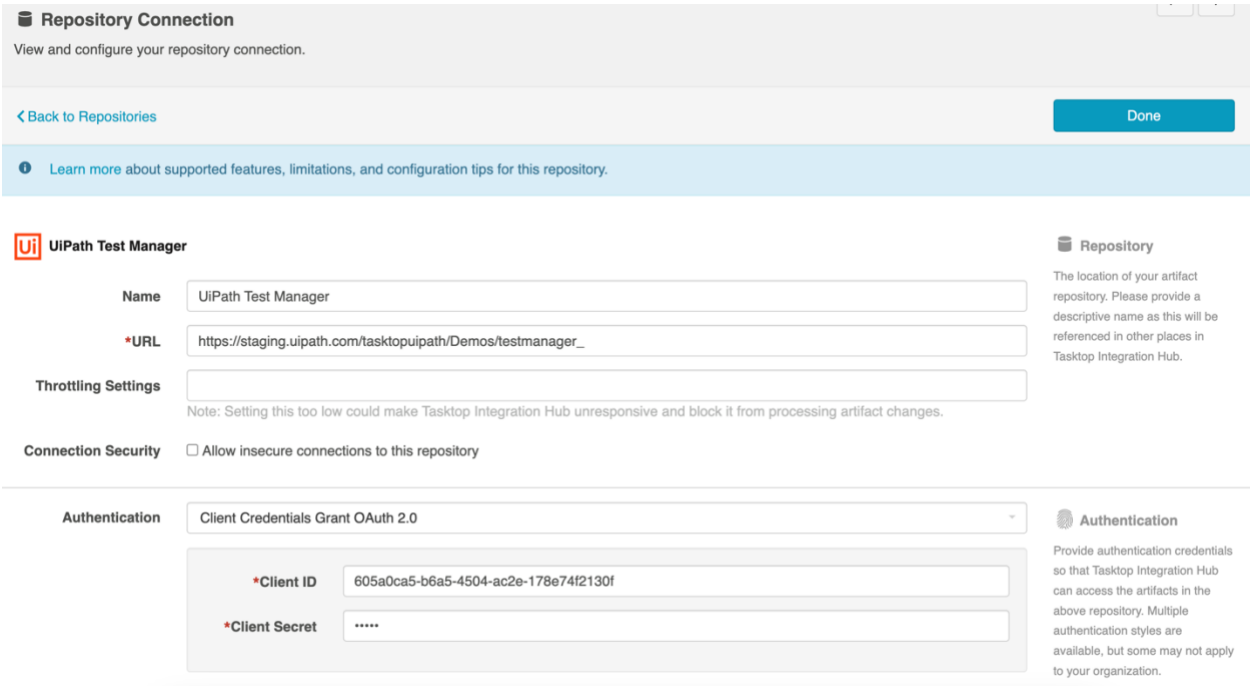
## 6.5-1 Repository:

1. Ensure that both UiPath Test Manager and ADO instances are set up and working in the Repositories Tab in UiPath Test Manager Connect.
2. First, navigate to the "Repository" Tab at the top left of the UiPath Test Manager Connect.

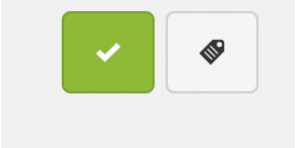



3. Next, select the "+ New Repository" button

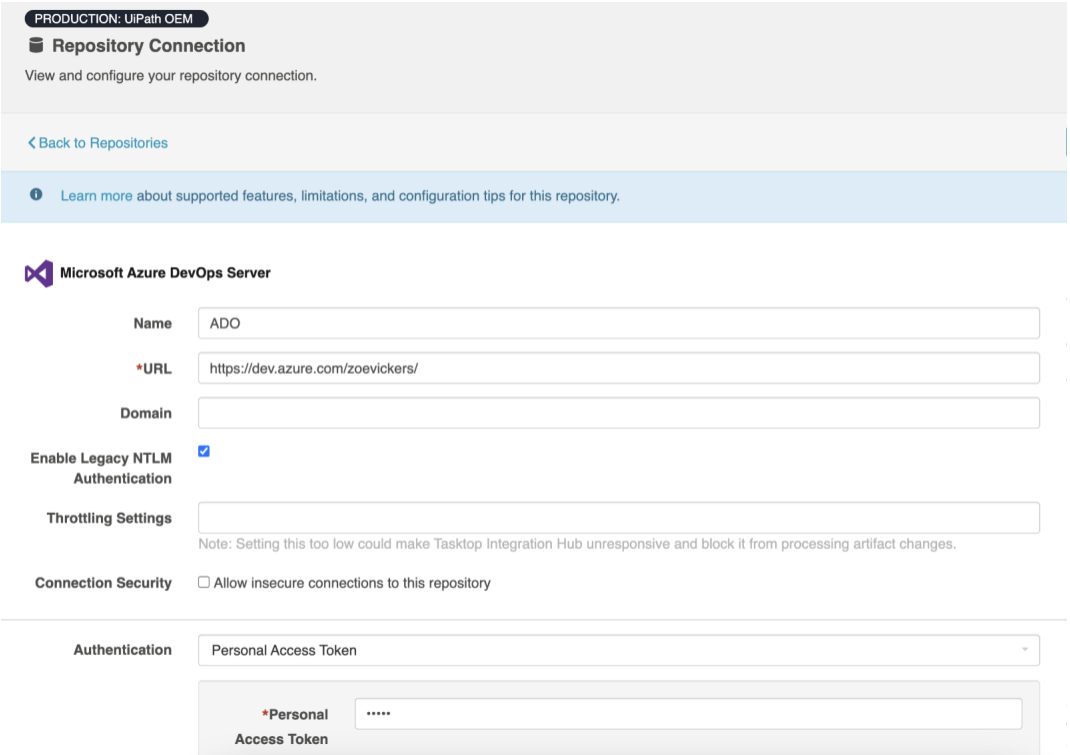
4. Then, add a name such as "UiPath Test Manager" in the name section and the URL to your UiPath Test Manager instance in the URL section.
5. The last piece is to choose the type of authentication you wish to use and add the authentication credentials to your UiPath Test Manager instance under the Authentication section of the Repository page.
    a. Please note each repository will need certain credentials that provide UiPath Test Manager Connect the read/write access for the integration. Sometimes tools require full admin access, others just require certain roles. Review the Tasktop documentation here to see what your repository requires.




6. Finally, select the "Save" button at the top right of the page. A green check mark should appear at the top right of the page if the connection was successful.



7. Repeat steps 1-6 to create the ADO repository with the link and credentials to your ADO environment.

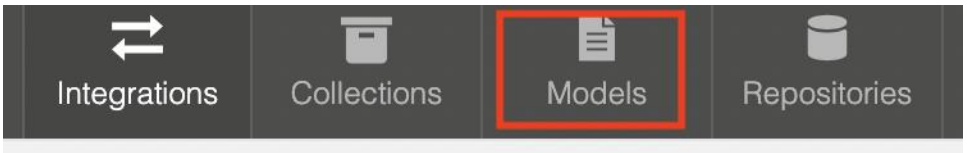



Note: The typical ADO customer uses Personal Access Token Authentication.

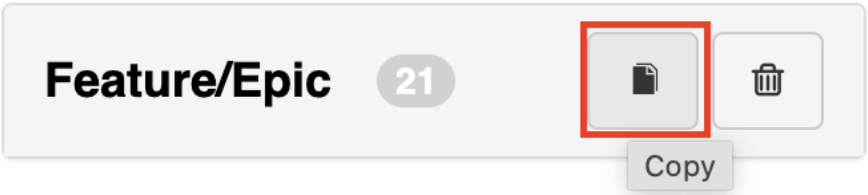
For further information on authentication please see the ADO connector documentation here.

6.5-2 Model:

1. Navigate to the "Models" tab at the top left of the UiPath Test Manager Connect.



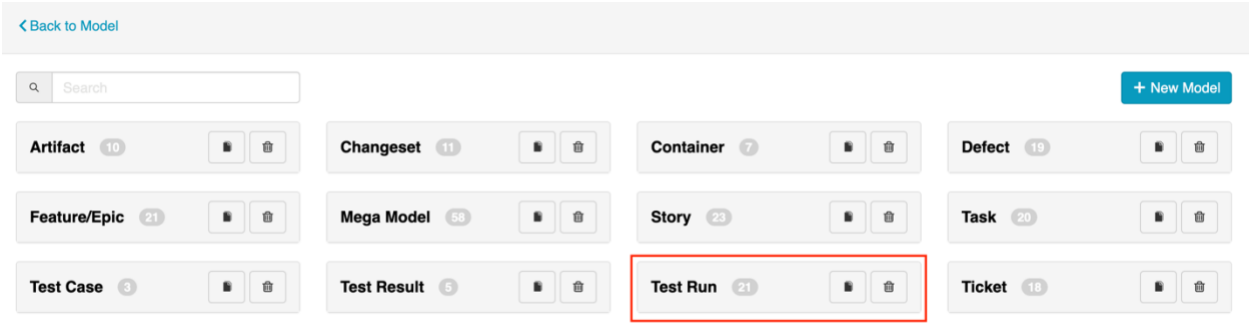

2. Copy the Feature/Epic model and rename the new Model from "Feature/Epic (copy) to "Test Run".



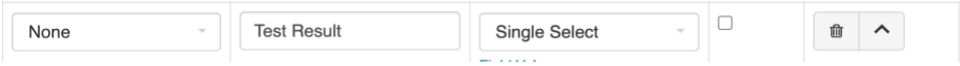

3. The following fields will need to be edited or added if they are not yet there:

   Add

   i. Test Result




4. How to add + edit the above fields to the model:
    a. To add the Test Status field, scroll to the bottom of the list of fields and select the icon to add each one by one:
        i. Smart Field (none), Label (Test Result), Type (Single Select)



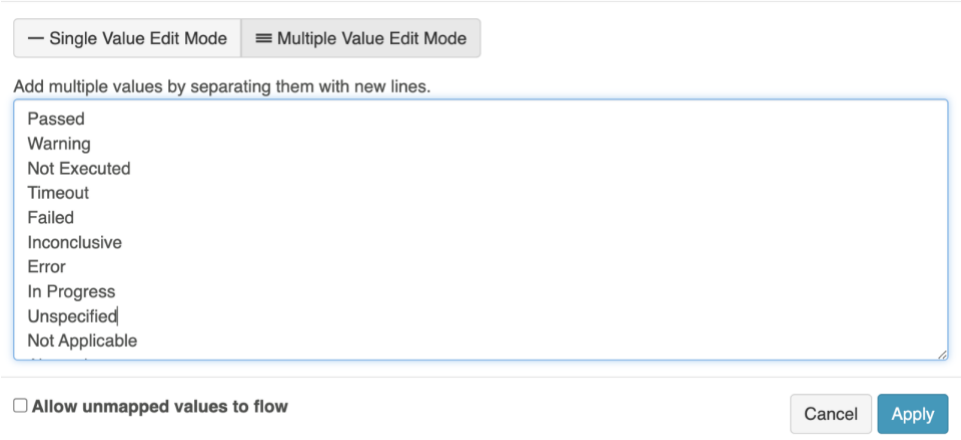

    b. To edit the field values select "Field Values…" in the type section next to the Test Status Label to edit the field values.

        i. Once the "Configure Field Values for Test Result" pop-up box appears select "Multiple Value Edit Mode" and delete the existing values.

        ii. Once the old values are deleted, type in the following values:
            1. Passed
            2. Warning

3. Not Executed
4. Timeout
5. Failed
6. Inconclusive
7. Error
8. In Progress
9. Unspecified
10. Not Applicable
11. Aborted
12. None
13. Blocked
14. Paused

iii. Next select "Apply".

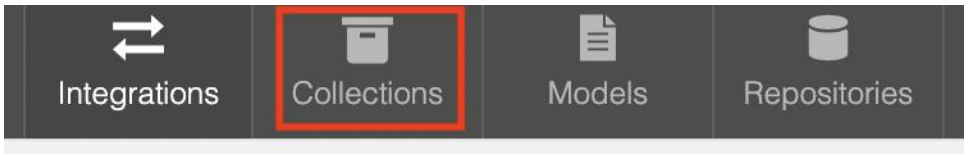



c. Push save when done.

## 6.5-3 Collections:

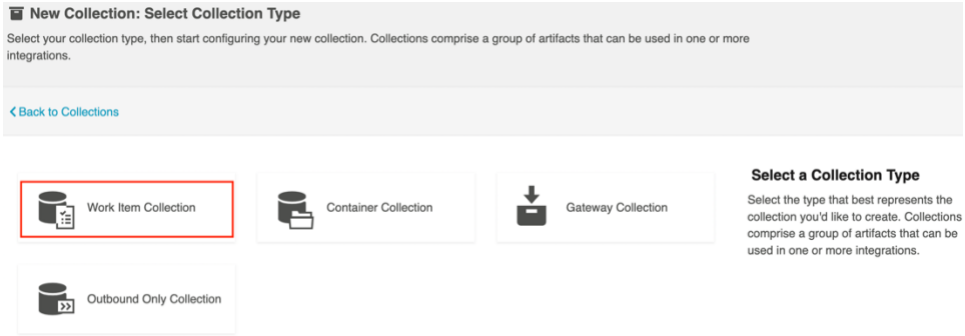
1. After you have ensured that the model being utilized has all the necessary fields, it is time to create two collections. In this scenario, the collection will map UiPath Test Manager to

the Test Run model and ADO to the Test Run model.

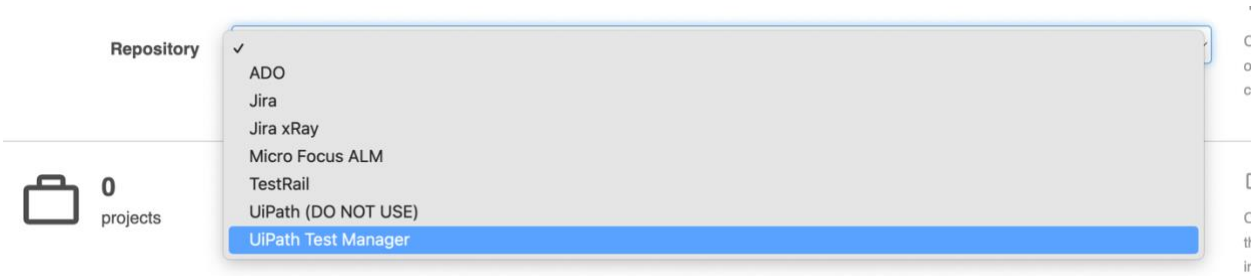



2. Navigate to the Collections Tab and select the "+ New Collections" button.

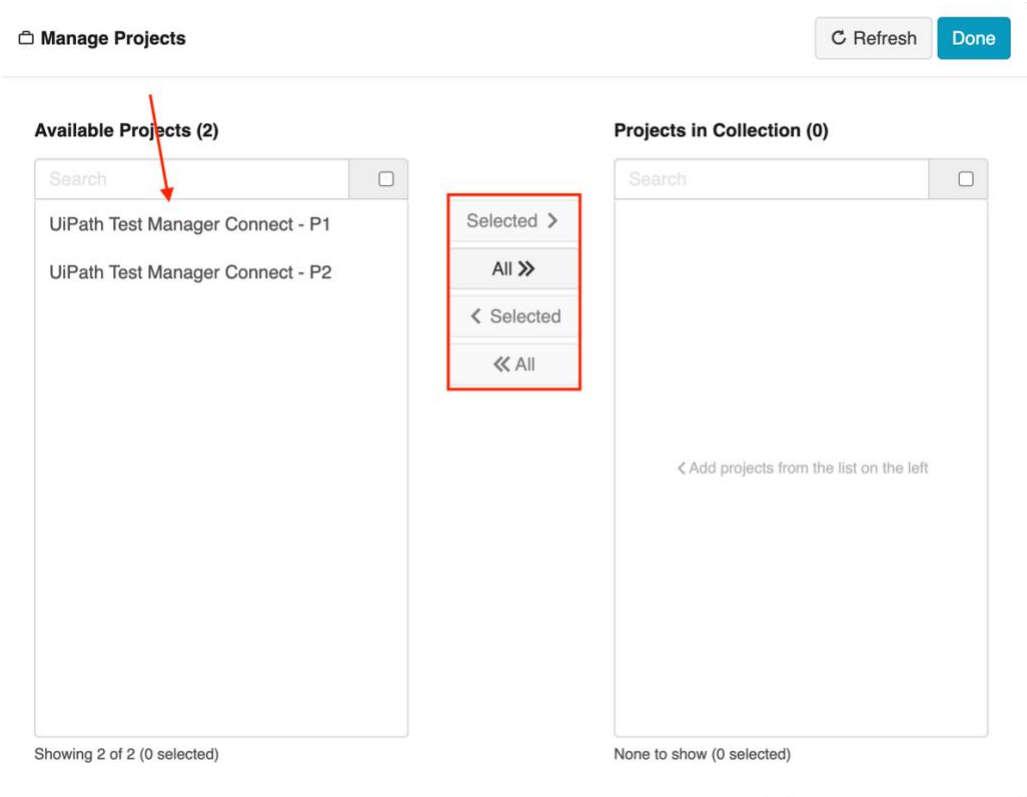
3. Then select "Work Item Collection".



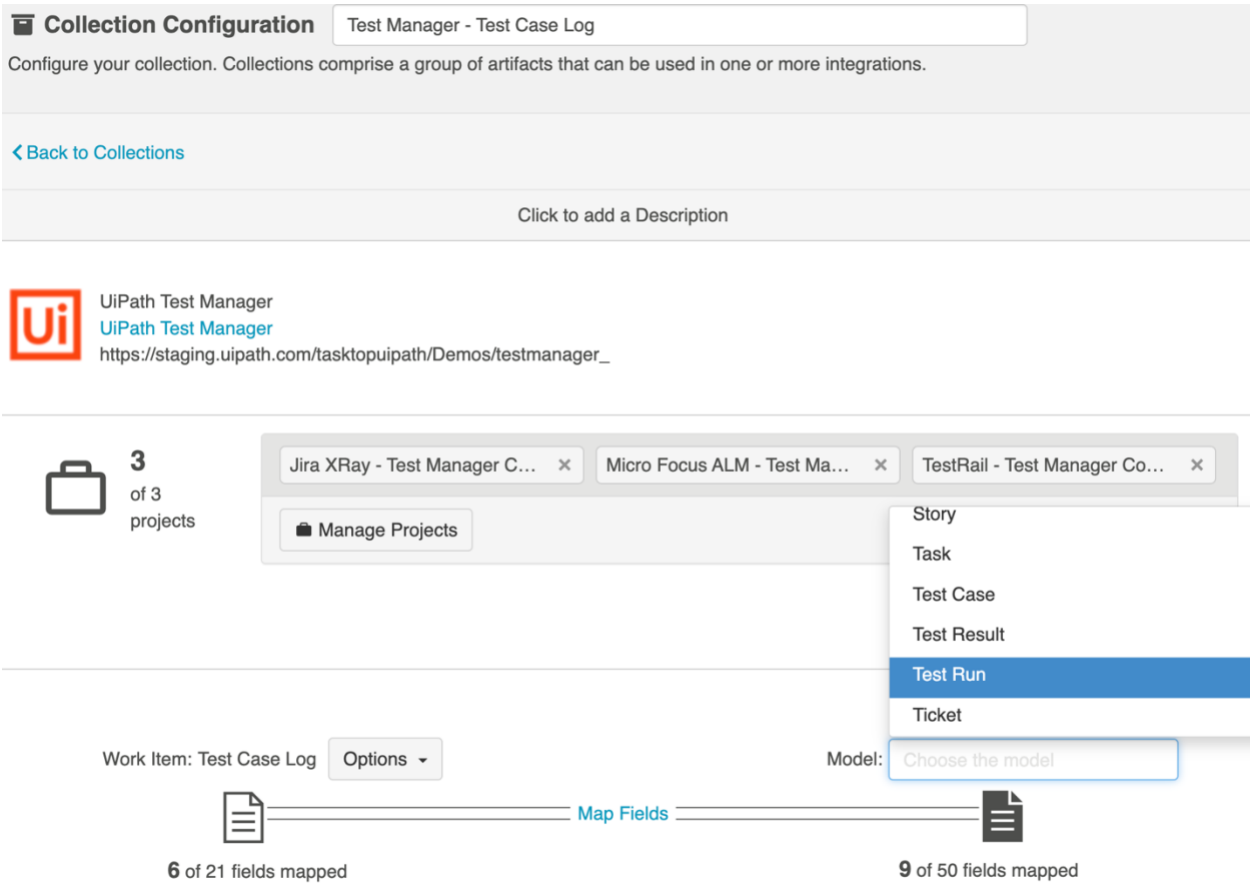

4. Next, give the collection a name such as "UiPath Test Manager Test Execution".
5. Select the UiPath Test Manager repository.



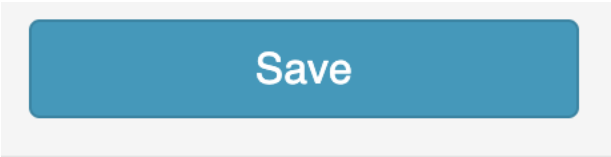

6. Then, choose which UiPath Test Manager projects to use in the collection by selecting "Manage Projects" and using the pop-up to add one or many projects.
    a. *Note: Projects can always be added or removed even after the integration has been built.*




7. Below the projects section, use the “Work Item” and “Model” dropdowns to select the Test Case Log and the Test Run model.



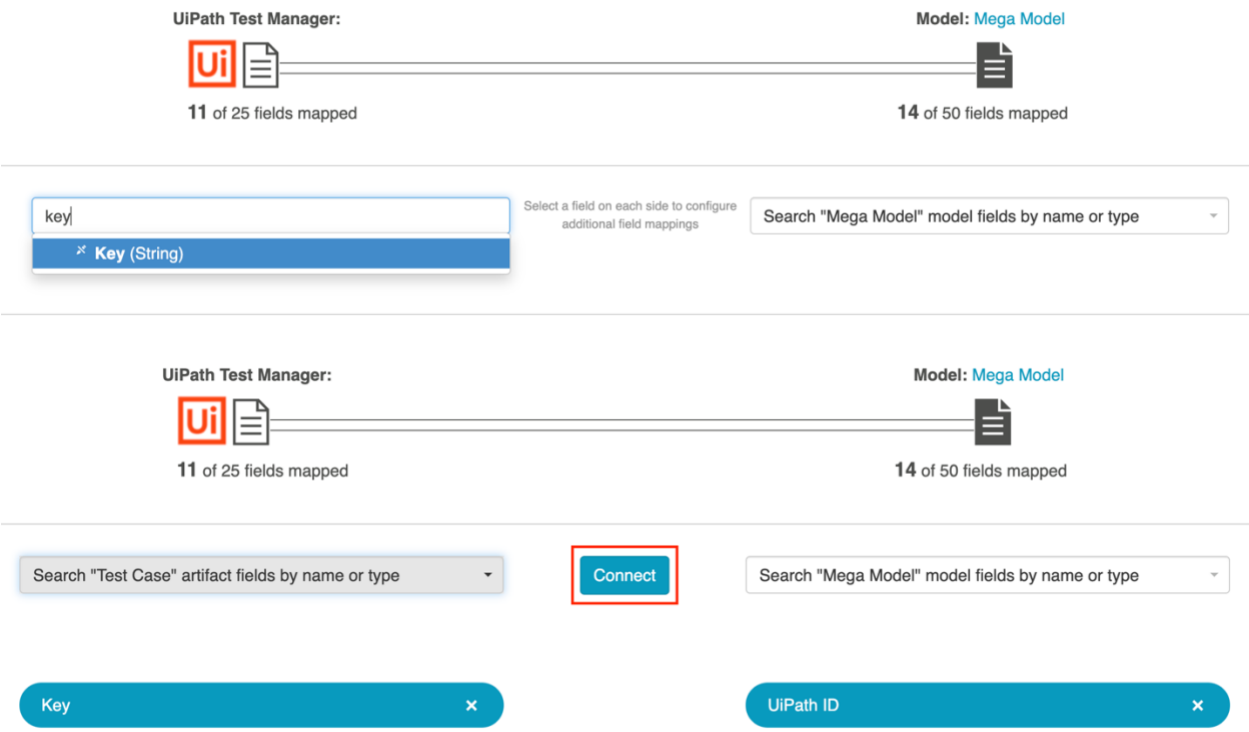

8. Once both are selected navigate to the top right of the page and click the "Save" button.




9. Now the process of mapping and configuring the fields can be done. Under the projects section, select "Map Fields".
10. Once here, UiPath Test Manager Connect will have automatically mapped multiple fields. For this simple integration use the dropdowns and select additional fields to add to the mapping. When adding fields, select a field from the UiPath Test Manager dropdown and the Model dropdown and click the "Connect" button that appears. Ensure that each of the following fields have been mapped:

| UiPath Test Manager Test Case Log | Test Run Model |
|---|---|
| URL | URL |

| | |
|---|---|
| Key | Formatted ID |
| ID | Test Run Name |
| Result | Test Result |

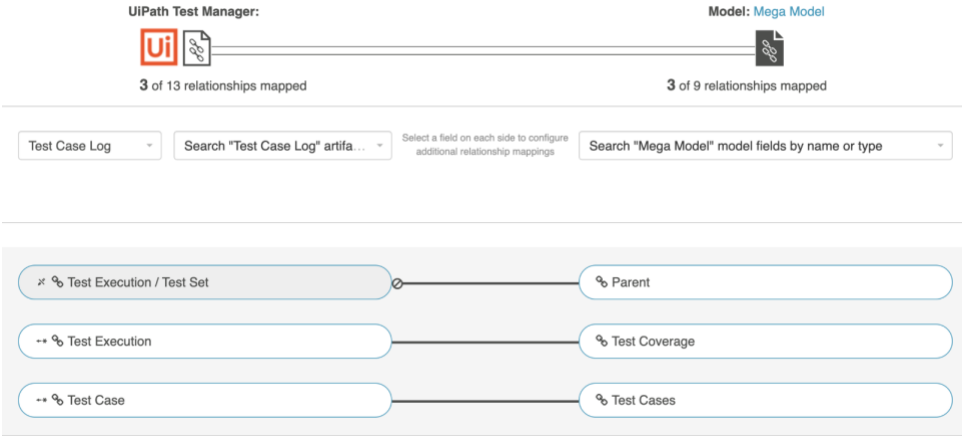



11. Any additional fields can be deleted for now using the trash can Icon next to the field. If you wish to add any additional fields, you can do so at this time or after the integration is complete.

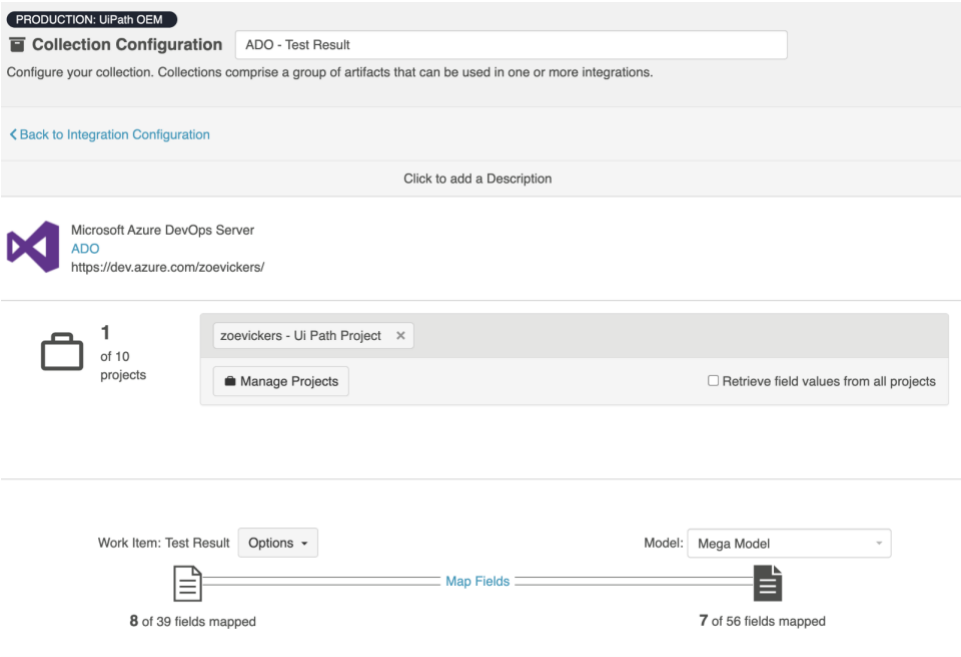
12. After ensuring each of these fields is mapped, orange warning signs are likely to appear next to fields such as “Priority” or “Status”. This simply means that the values for those fields must be configured.

13. Select “Configure” next to each of the fields with the warning symbol to configure the field values. When configuring values select a value on each side and click the “Connect” button to map the values. Values can be mapped one to one or one to multiple.

14. Lastly, navigate back to the newly created “UiPath Test Manager Test Case” collection and select “Configure Relationships” under the “Map Fields” section. Map the following fields:
    a. Test Execution/Test Set – Parent
    b. Test Execution – Test Coverage
    c. Test Case – Test Cases



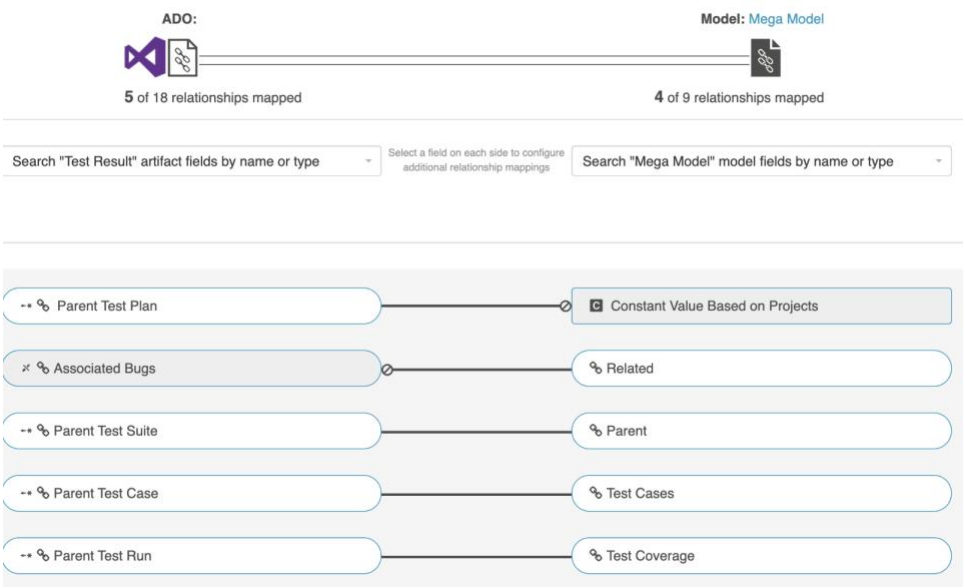

15. The first collection has now been completed! Navigate back to the “Collection” Tab and select “+ New Collection” to begin creating the ADO Collection.



16. Follow steps 2-12 to create the ADO collection with the following modifications:
    a. The collection name should be something similar to “ADO Test Result”.
    b. Select “Test Result” for your Work Item and select the same Test Run model.
    c. Map and configure the following fields:

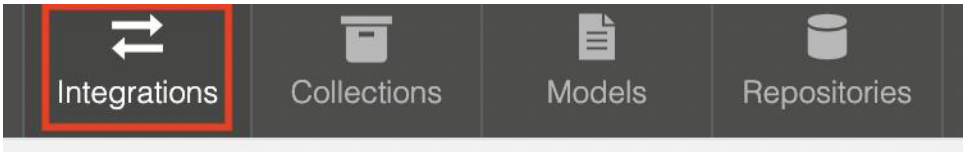
| ADO Test Result | Test Run Model |
|---|---|
| Formatted ID | Formatted ID |
| Test Case Title | Summary |
| URL | URL |
| Outcome | Test Result |
| Configuration | (Constant Value) |

18. Lastly, navigate back to the newly created ADO “Test Run” collection and select “Configure Relationships” under the “Map Fields” section. Map the following fields:
    a. Parent Test Plan – Constant Value Based on Projects
    b. Associated Bugs – Related
    c. Parent Test Suite – Parent
    d. Parent Test Case- Test Cases
    e. Parent Test Run – Test Coverage



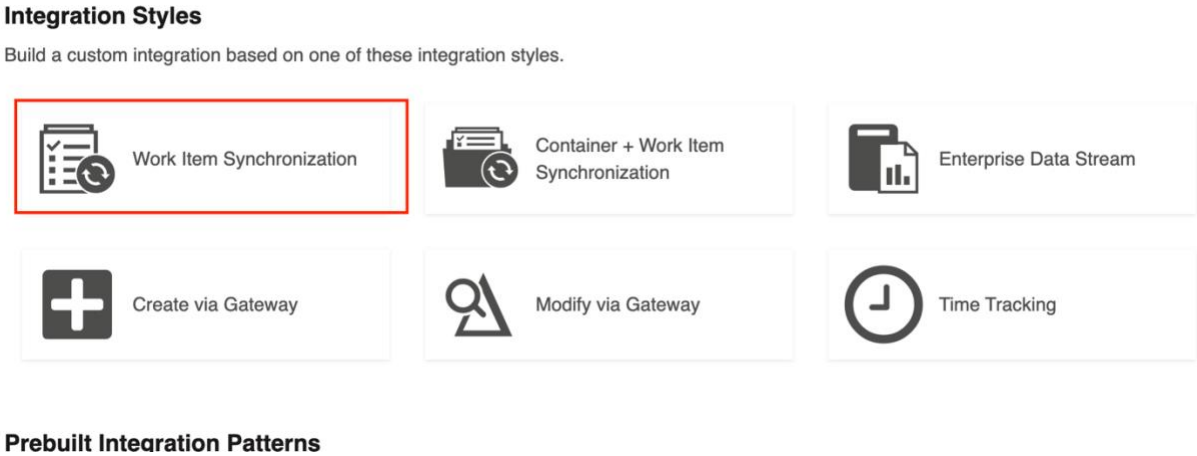

## 6.5-4 Integration:

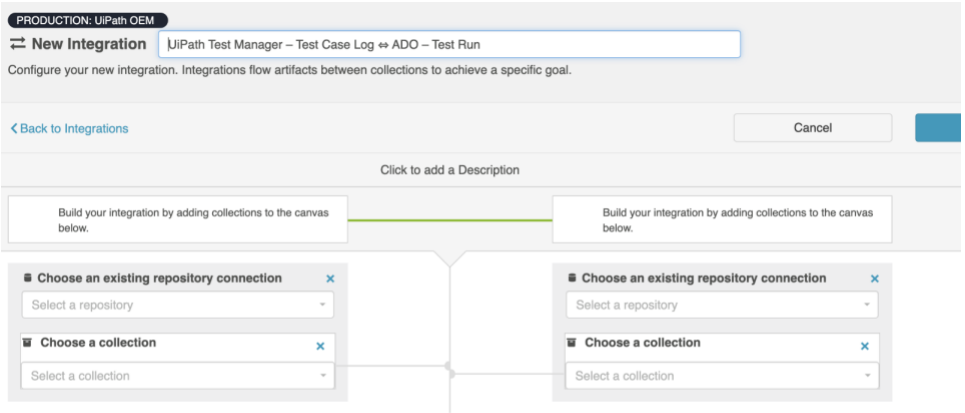
1. Now it is time to put the two collections together to create one full integration! First, navigate to the "Integrations" tab.



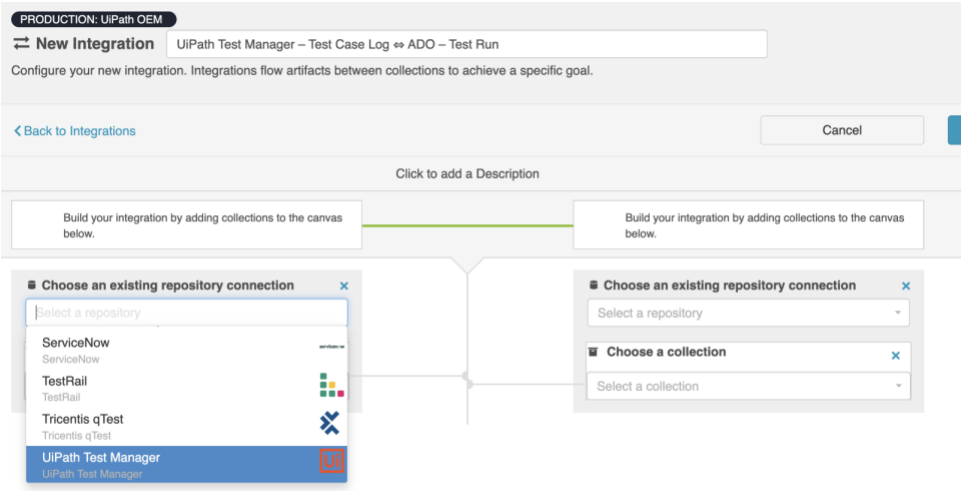

2. Select the "+ New Integration" at the top right of the page.

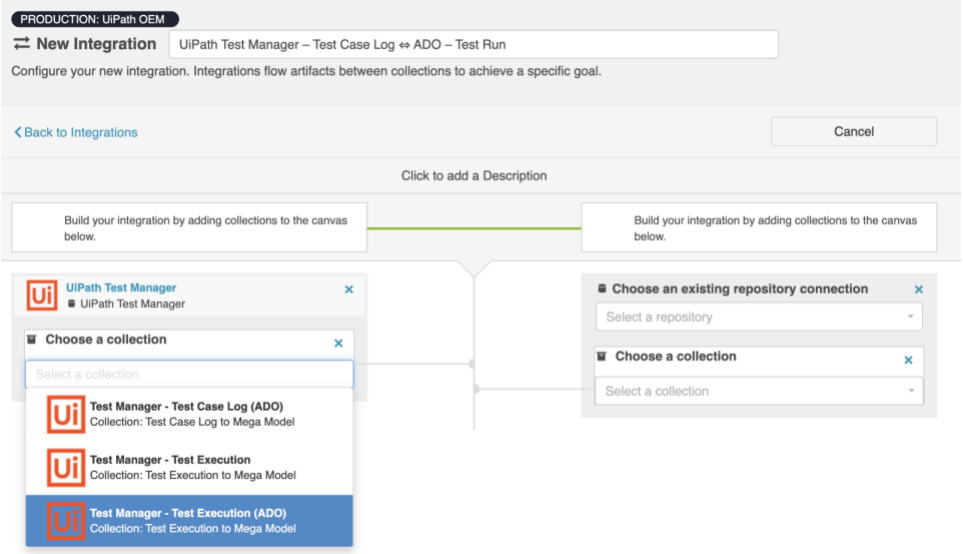
3. Next select "Work Item Synchronization" and give the integration a name such as "UiPath Test Manager – Test Case Log ⇔ ADO – Test Run"

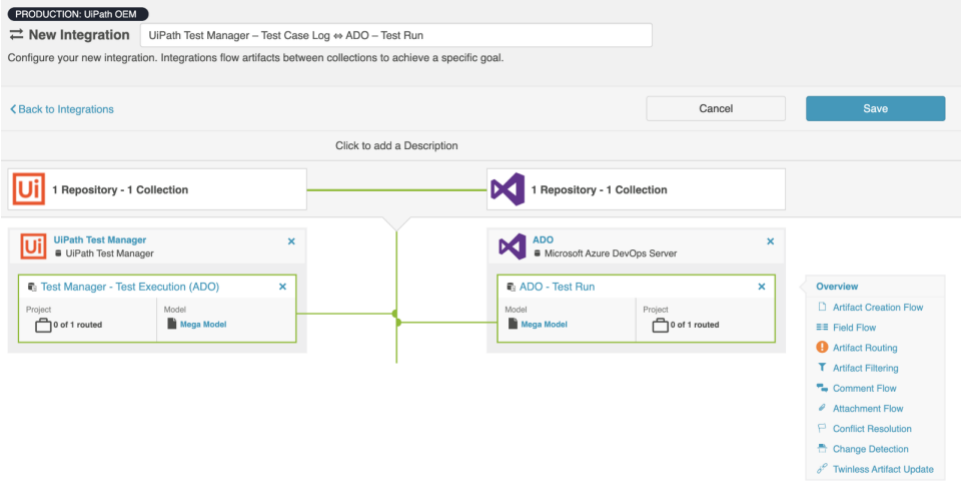




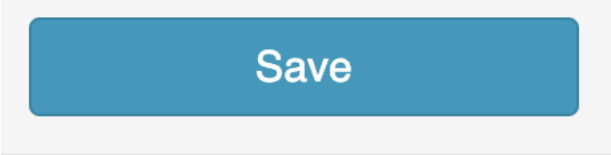

4. Select the UiPath Test Manager repository along with the newly created UiPath Test Manager – Test Case Log collection from the drop downs provided on one side. And similarly, choose the ADO and newly created ADO Test Run collection on the other side.


PRODUCTION: UiPath OEM
New Integration
UiPath Test Manager – Test Case Log ⇔ ADO – Test Run
Configure your new integration. Integrations flow artifacts between collections to achieve a specific goal.
Back to Integrations
Cancel
Click to add a Description
Build your integration by adding collections to the canvas below.
Build your integration by adding collections to the canvas below.
Choose an existing repository connection
Select a repository
ServiceNow
TestRail
Tricentis qTest
UiPath Test Manager
Choose an existing repository connection
Select a repository
Choose a collection
Select a collection

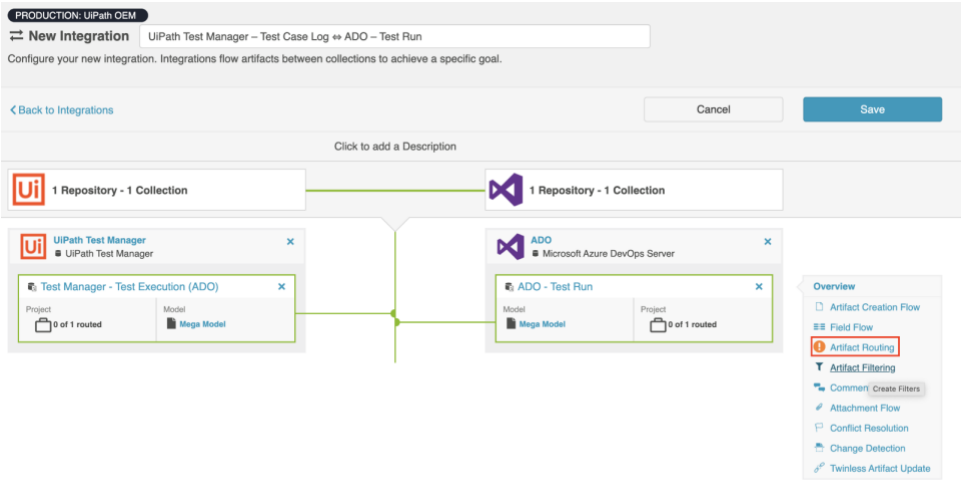

PRODUCTION: UiPath OEM
New Integration
UiPath Test Manager – Test Case Log ⇔ ADO – Test Run
Configure your new integration. Integrations flow artifacts between collections to achieve a specific goal.
Back to Integrations
Cancel
Click to add a Description
Build your integration by adding collections to the canvas below.
Build your integration by adding collections to the canvas below.
UiPath Test Manager
UiPath Test Manager
Choose a collection
Select a collection
Test Manager - Test Case Log (ADO)
Collection: Test Case Log to Mega Model
Test Manager - Test Execution
Collection: Test Execution to Mega Model
Test Manager - Test Execution (ADO)
Collection: Test Execution to Mega Model
Choose an existing repository connection
Select a repository
Choose a collection
Select a collection


PRODUCTION: UiPath OEM
New Integration
UiPath Test Manager – Test Case Log ⇔ ADO – Test Run
Configure your new integration. Integrations flow artifacts between collections to achieve a specific goal.
Back to Integrations
Cancel
Save
Click to add a Description
1 Repository - 1 Collection
1 Repository - 1 Collection
UiPath Test Manager
UiPath Test Manager
Test Manager - Test Execution (ADO)
Project
0 of 1 routed
Model
Mega Model
ADO
Microsoft Azure DevOps Server
ADO - Test Run
Model
Mega Model
Project
0 of 1 routed
Overview
Artifact Creation Flow
Field Flow
Artifact Routing
Artifact Filtering
Comment Flow
Attachment Flow
Conflict Resolution
Change Detection
Twinless Artifact Update

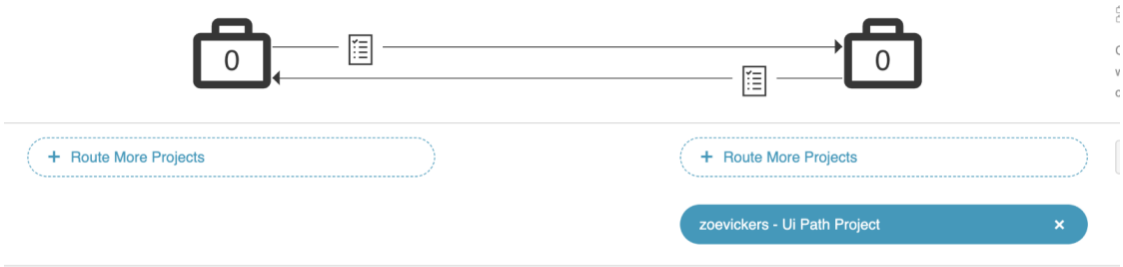
5. Select “Save” at the top right.

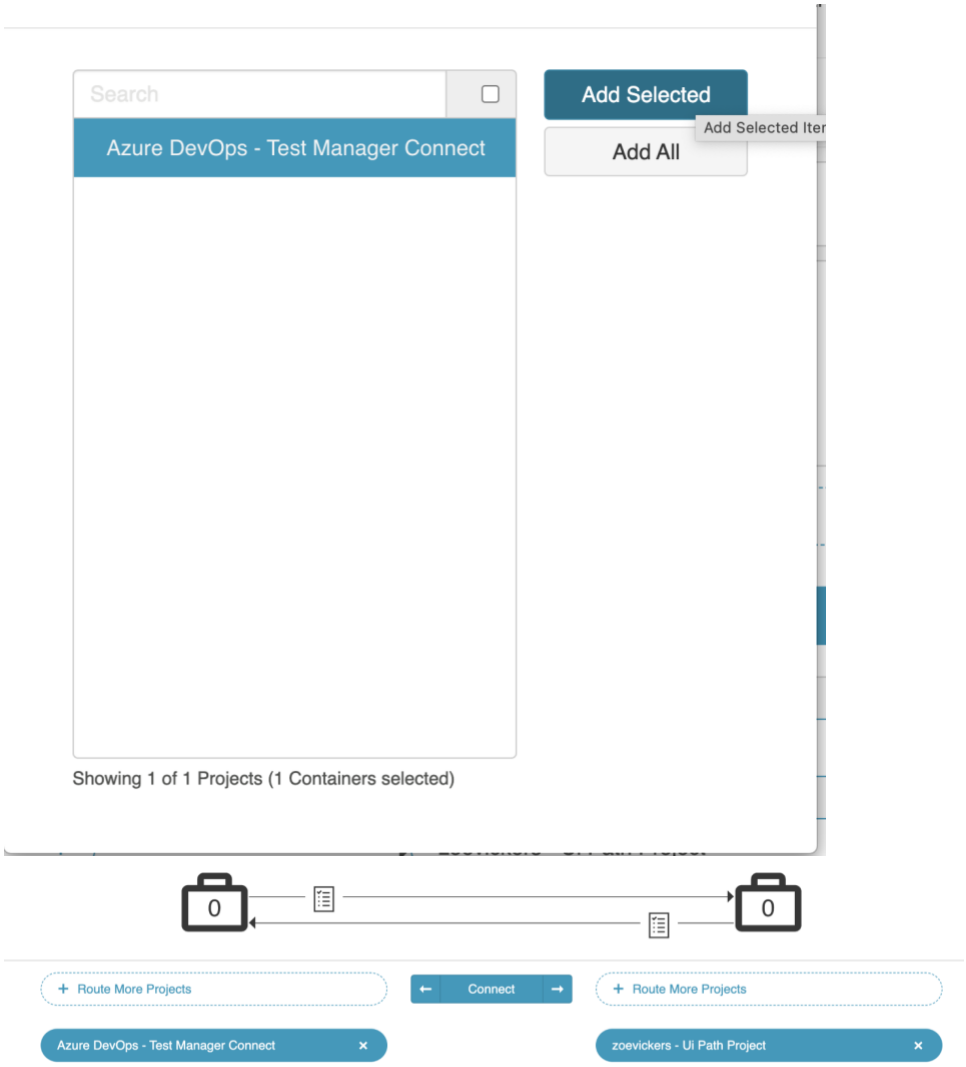



6. A warning symbol will appear on the integration menu on the right side of the screen next to “Artifact Routing”. Artifact routing will need to be set before the integration can run.

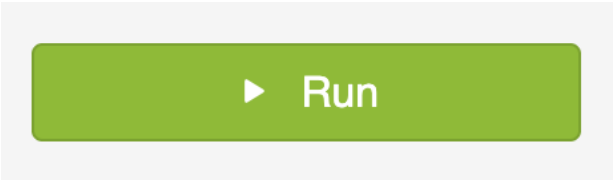



7. Select “Artifact Routing” and choose the projects in both tools you wish to route the artifacts to and from using the popups that appear when selecting “Route More Projects”. Projects can be routed one-to-one or conditionally. To keep it simple for this exercise, choose one project on either side and select the middle connect button that appears in the middle of the page.




8. The fourth integration is now ready to be run and used! You may now select the "Back to Integration Configuration" Button at the top left of the screen to get back to your newly created integration.
9. You can now select the "Run" Button at the right of the integration and test it out by creating a new Test Case Log in UiPath Test Manager to test out the integration and ensure it is running properly.

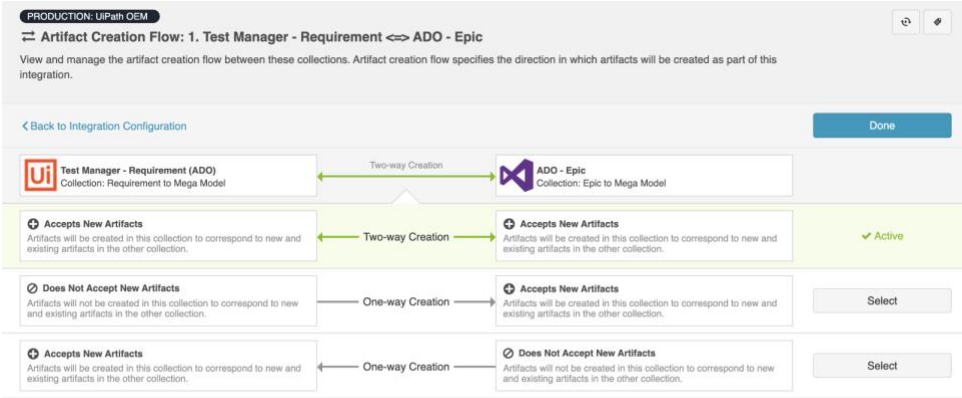



## 6.5-5 Integration Configurations:

Additionally, other configurations (above and below "Artifact Routing") can be made to the integration using the integration menu. See below:

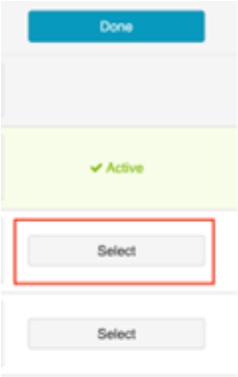
### 47. Artifact Creation Flow:

- Artifact creation flow allows users to decide whether the integration will have a one-way or bidirectional creation flow.




- How To:
  - Navigate to "Artifact Creation Flow" in the integration menu.

- 
  - Use the select button on the right of each option to select the type of Artifact Creation Flow needed for the integration.

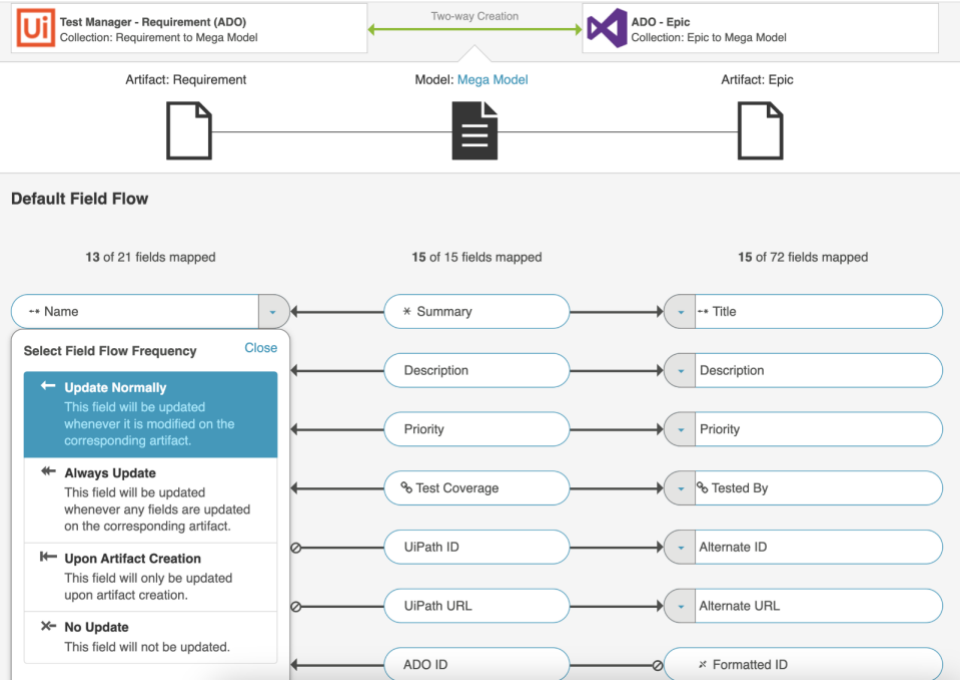



  - Note: By default, all integrations will be bidirectional.

- Bidirectional Artifact Creation allows for artifacts to be created in both systems and pushed into the opposite systems.
- One-way creation flow limits artifact creation to only one system and pushed into the other. For example, all artifacts created in UiPath Test Manager will be pushed into ADO, however, any artifacts created in ADO will not move over to UiPath Test Manager.
  - Note: One-way creation only limits the creation of artifacts. Any updates or modifications to artifacts will still be bidirectional.

48. Field Flow:

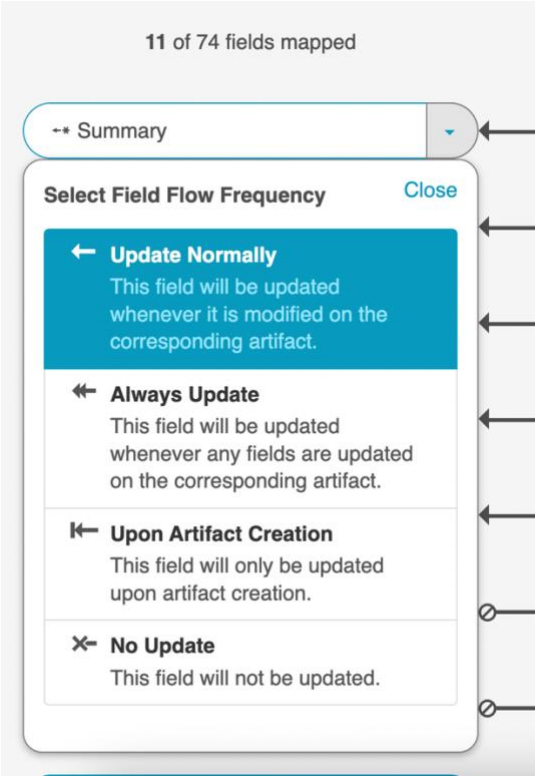
- Field Flow allows users to edit how Hub does or does not update artifact fields in the integration.




- How To:
  - Navigate to "Field Flow" In the integration menu.

- 
  - Select the dropdown from a field in either system to determine how or if that field is updated.

- Note: By default, all fields will "Update Normally" unless previously mapped differently in the collection.

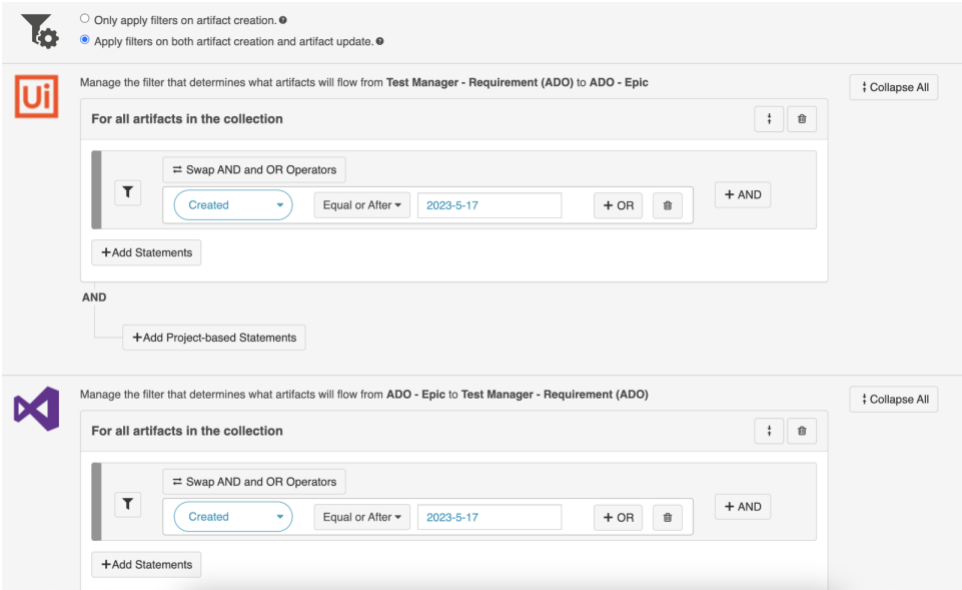



- Finally select Save at the top right corner of the screen to save any changes you have made.

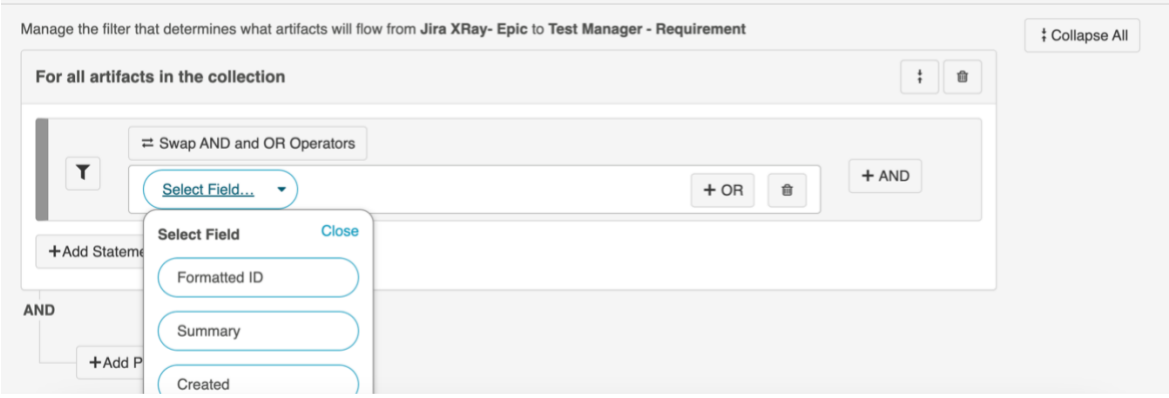
- Update Normally- The field selected will be updated whenever it is modified on the corresponding artifact.
- Always Update- The field selected will be updated when any fields on the corresponding artifact are modified.
- Upon Artifact Creation- The field selected will only update when the artifact is created.
- No Update- The field selected will never update in the system.

## 49. Artifact Filtering:

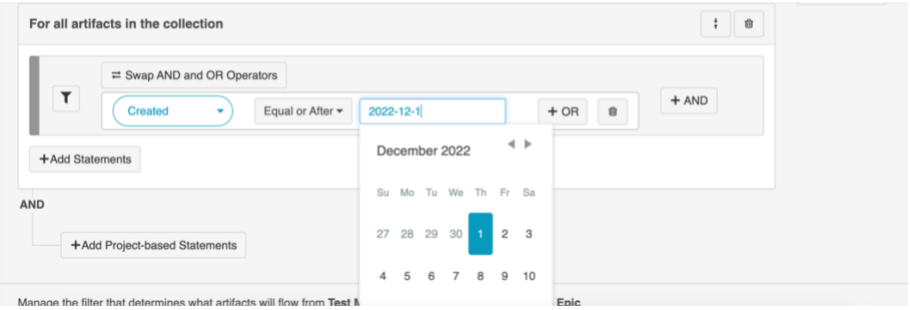
- Artifact filtering allows users to only pull artifacts from each tool based on certain field filters.



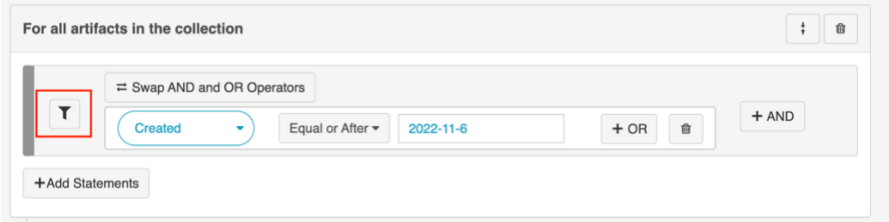

- How To:
  - Navigate to "Artifact Filtering" in the Navigation Menu.
  - Select either the "Only apply filters on artifact creation" or "Apply filters on both artifact creation and artifact update"
- Note: The most common option is to choose to have the filters applied to both artifact creation and artifact updates.
  - Next select "Add statement" and use the field dropdown to choose which field to use as a filter for any artifacts created and updated in UiPath Test Manager.



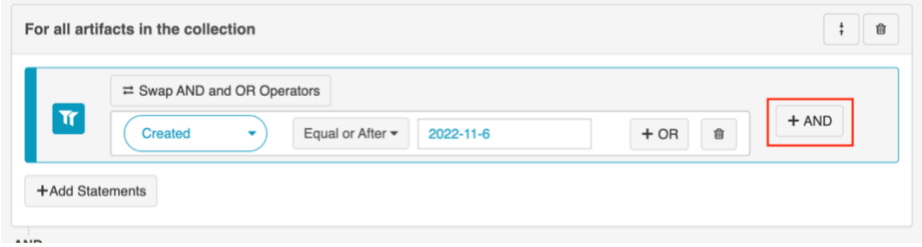

  - For this example, we will use the "Created" field. Then select the operator such as "Equal or After".
  - Lastly, select a value. In this example, we have selected a date. This filter means that only Artifacts created or updated equal to or after the date we have chosen will flow through the integration.



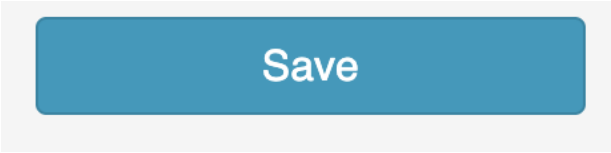

- Select the filter icon on the left of the new filter to apply the same filter to your ADO system.




- Multiple filters can be applied to each system in the integration. When using multiple filters be sure to select either the "AND or OR" operator to the right of each filter to ensure that only the correct artifacts flow through the integration.

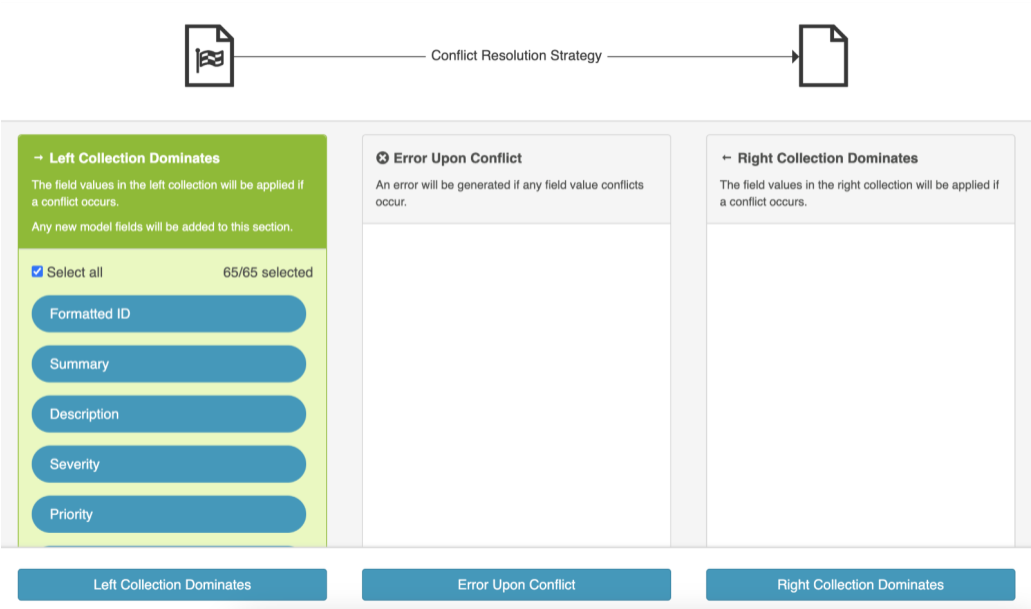



- Finally, select save at the top right corner to save the filters created for the integration.



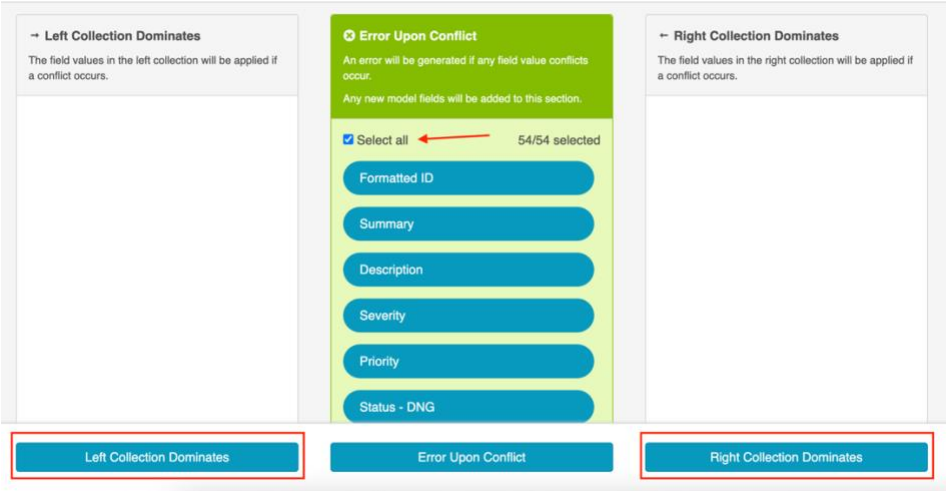

## 50. Conflict Resolution:

- Conflict resolution allows users to decide which tool is the source of truth when a field updates conflicts.
- A single tool can dominate, or the mapped fields can be set among both tools as needed.

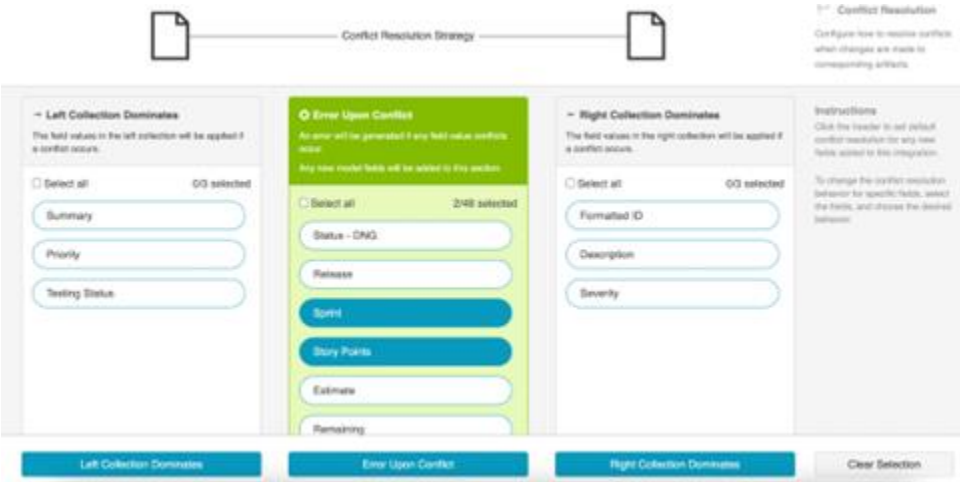



- How To:
  - Navigate to "Conflict Resolution" in the integration menu.

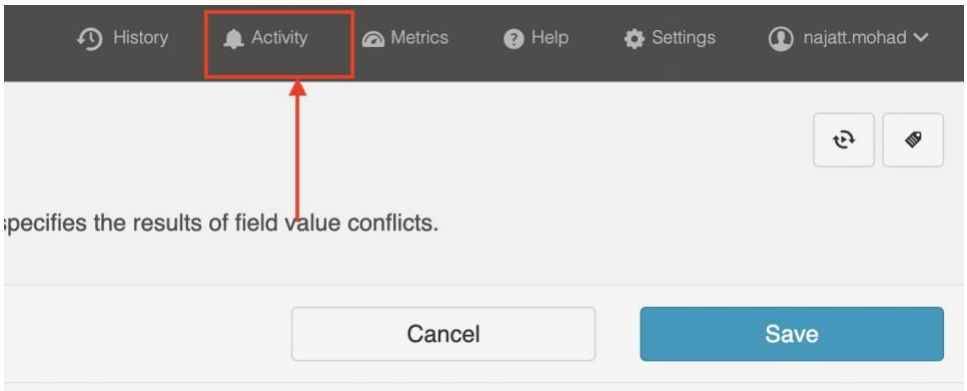
- 
  - Next, you have the option to:
    - Select all
    - Select individual fields
    - Select none
  - After selecting all fields select either the UiPath or ADO system to dominate the field values in a conflict.

- 

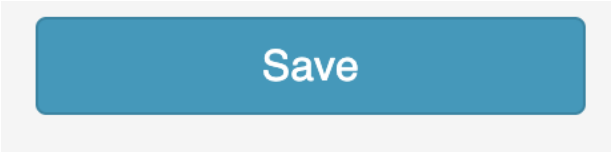

  - After selecting individual fields, select either the UiPath Test Manager or ADO system to dominate those specific field values in a conflict. You also have the option to leave fields in the "Error Upon Conflict" section.

- 


  - Selecting none and leaving all values in the "Error Upon Conflict" section will create errors in the activity page when field value conflicts occur.

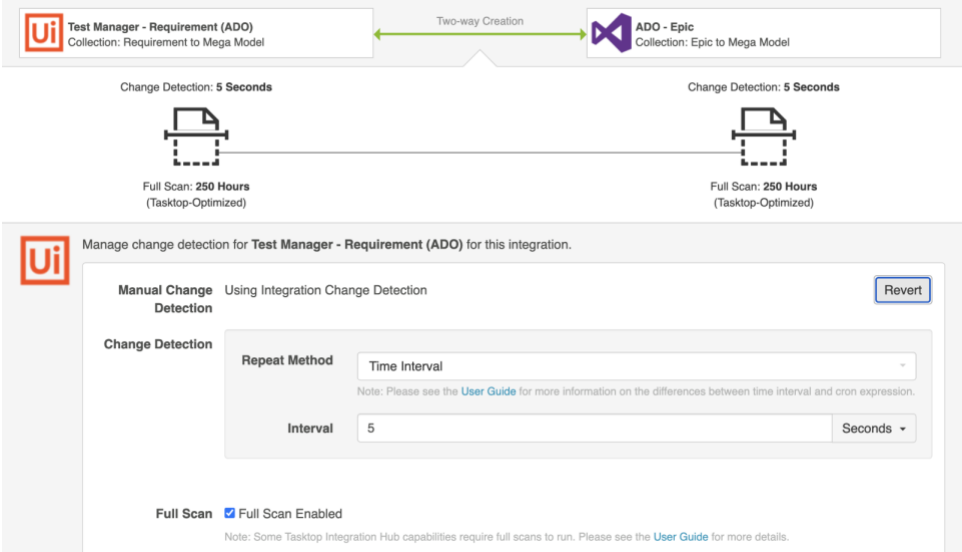
- 


  - Finally, select the save button at the top right to save the conflict resolution configuration for the integration.

- 


51. Change Detection:

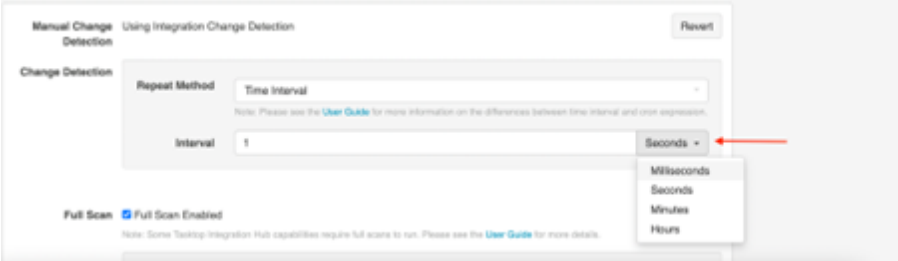
- Change detection is how often Hub checks each tool for artifact and field updates.
- Change Detection allows a user to override the global change detection settings for a single integration.
- Industry standards for production environments are anywhere between 5-30 minutes.



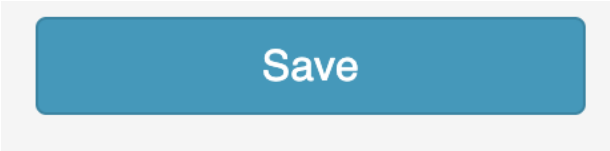

- How To:
  - Navigate to "Change Detection" from the integration menu.

- Select the override button to override the change detection setting for the specific integration.

- Use the dropdown to select the type of time interval, then type in a number for the time interval. Such as 5 minutes.

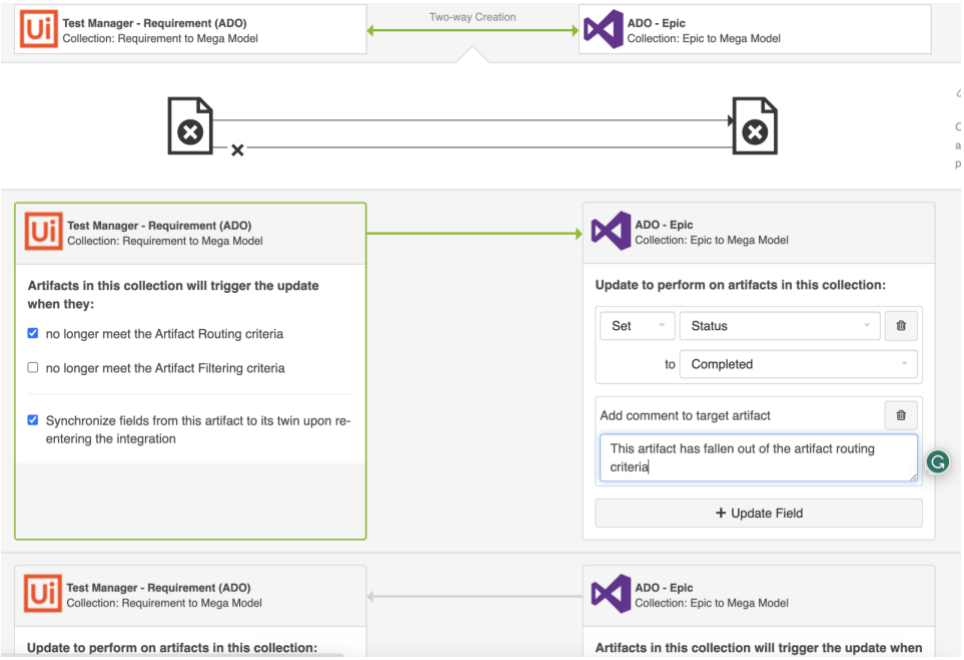



- Finally, use the "Save" button at the top right of the page to save the change detection settings for this integration.

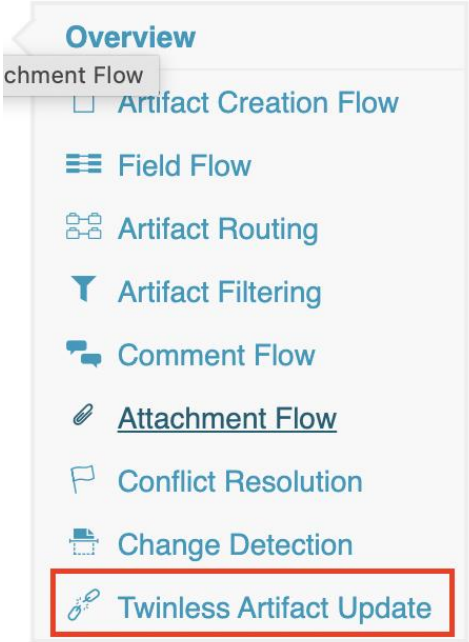


## 52. Twinless Artifact Update:

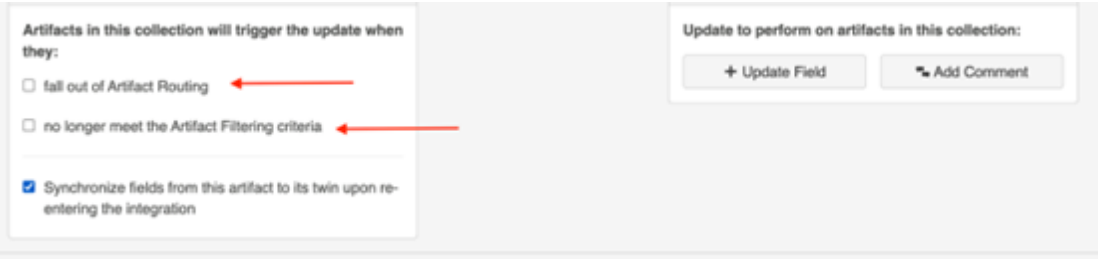
- Allows users to configure one final update (for example a comment or a status change) on an artifact when its "twin" in the other repository is no longer eligible to participate in the integration (e.g., when it's been deleted or no longer meets the artifact filter). The final update informs the newly twinless artifact that the synchronization has been discontinued.
- Artifacts are no longer eligible to participate in an integration if one or both conditions below are met for an endpoint:
- Artifacts fall out of Artifact Routing. This can happen when:
  - Artifacts are deleted
  - Artifacts are moved to projects not routed as part of the integration
  - Artifacts no longer meet the Artifact Filtering criteria.




- How To:
  - Select "Twinless Artifact Update" from the integration menu.

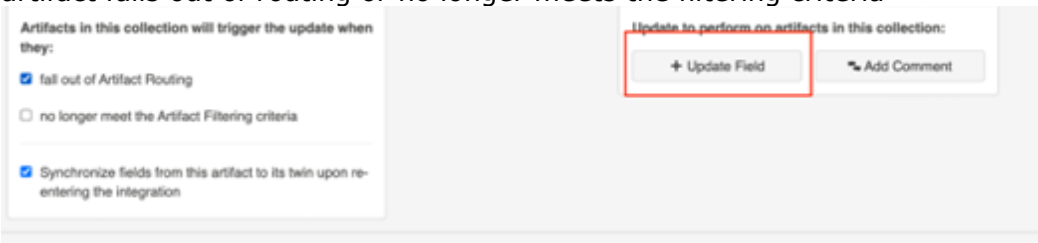


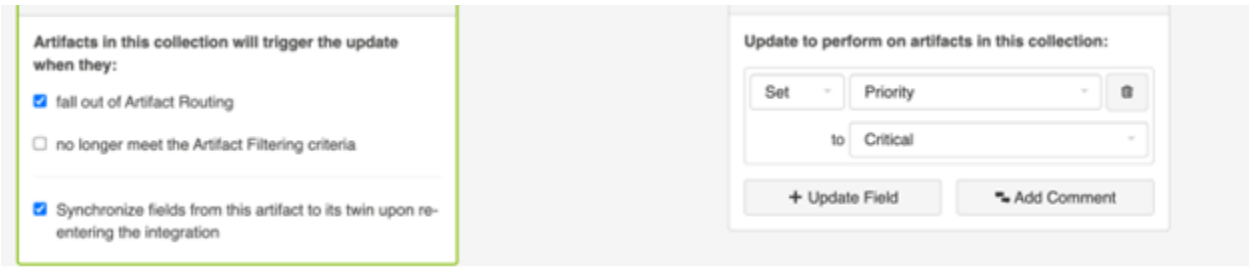

- 
    - Select between the two conditions under the UiPath Test Manager artifact side:
        - a. fall out of artifact routing- meaning when the associated artifact in UiPath Test Manager is moved to a project outside of projects that have been routed in the integration.
        - no longer meet the artifact filtering criteria- meaning the
        - associated artifact in UiPath Test Manager no longer meets the filter criteria
        - configured under "Artifact Filtering" in the integration menu.



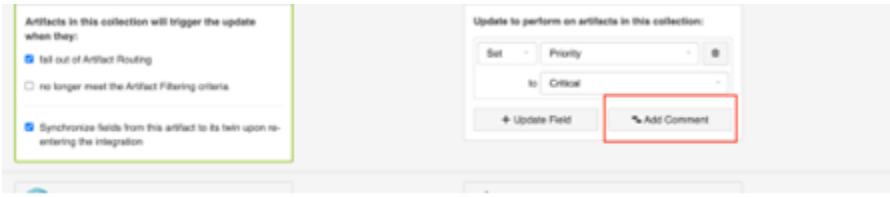

- Next, choose what happens to the twin artifact created in ADO when either one of the above happens.

- Select a field and its value to update in ADO when the UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria




  - b. You also have the option to choose to add a comment to the existing ADO twin artifact when UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria.



- Follow steps 1-3 to set up Twinless Artifact Update for the ADO system if necessary.
- Select the Save button at the top right corner of the page to save the "Twinless Artifact Update" configuration for the integration.

## 6.6 Use Case 6: UiPath Test Manager Defect & ADO Issue:

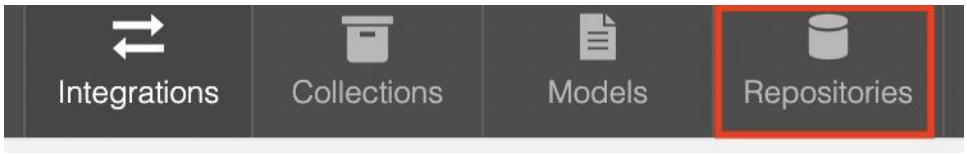
**Tool Set Up:**

1. Ensure that any custom fields have been added to both the UiPath Test Manager Test Execution and the ADO Test Run for the projects you wish to use. This step may require you to reach out to your tool admin to add these fields to your desired projects. If you have admin rights in your tools, ensure you perform this step first.
2. Below are links to instructions on how to add custom fields in both UiPath Test Manager and Azure DevOps
   d. UiPath Test Manager: https://docs.uipath.com/test-suite/docs/managing-custom-fields#:~:text=Creating%20custom%20fields&text=Navigate%20to%20Project%20Settings%20%3E%20Custom,name%20for%20your%20custom%20field.
   e. Azure DevOps: https://learn.microsoft.com/en-us/azure/devops/organizations/settings/work/add-custom-field?view=azure-devops

f. Additionally, ensure that at least one Test Run has been created in ADO to allow UiPath Test Manager Connect to pull the Test Execution schema from ADO. If this step is not done, then your UiPath Test Manager Connect Collection may error out.

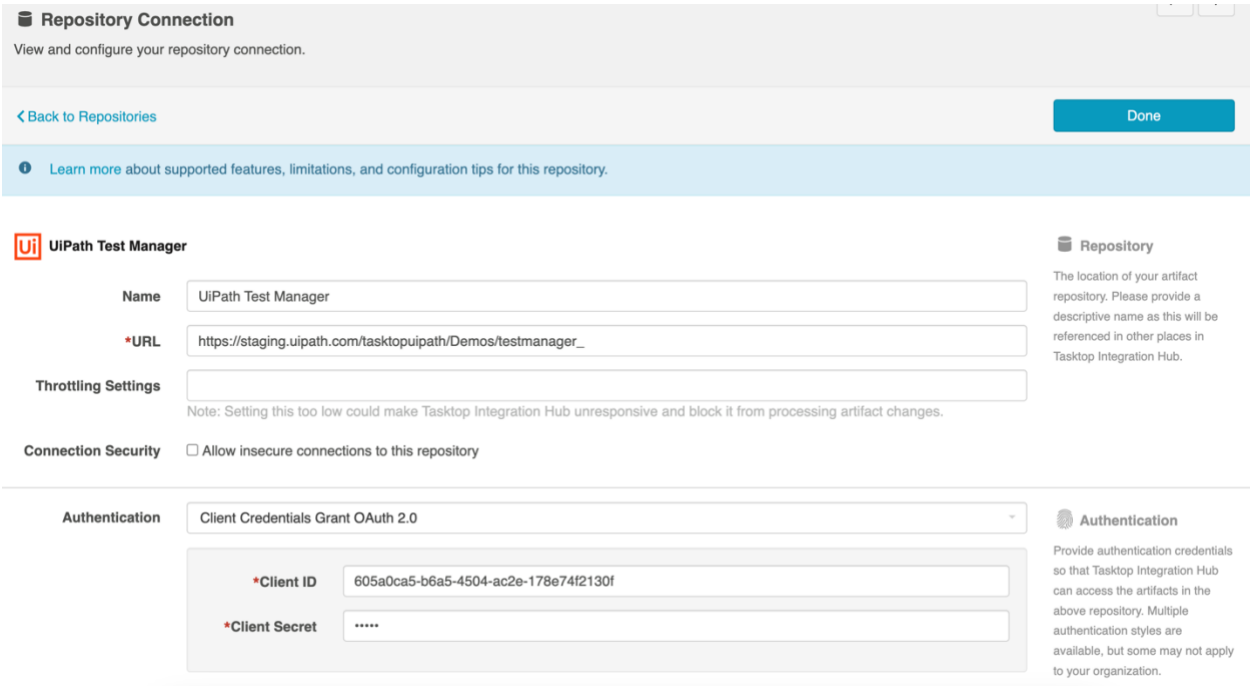
6.6-1 Repository:

1. Ensure that both UiPath Test Manager and ADO instances are set up and working in the Repositories Tab in UiPath Test Manager Connect.
2. First, navigate to the "Repository" Tab at the top left of the UiPath Test Manager Connect.

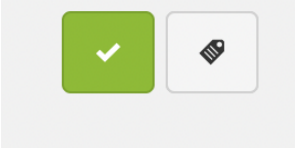



3. Next, select the "+ New Repository" button

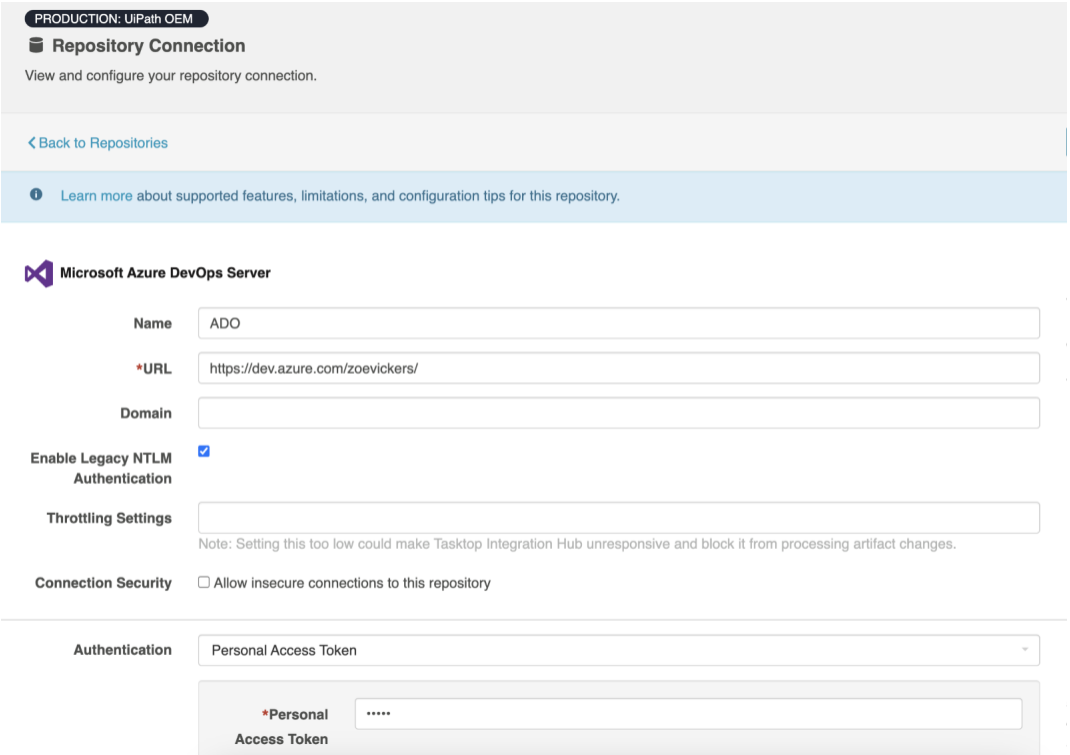
4. Then, add a name such as "UiPath Test Manager" in the name section and the URL to your UiPath Test Manager instance in the URL section.
5. The last piece is to choose the type of authentication you wish to use and add the authentication credentials to your UiPath Test Manager instance under the Authentication section of the Repository page.
    a. Please note each repository will need certain credentials that provide UiPath Test Manager Connect the read/write access for the integration. Sometimes tools require full admin access, others just require certain roles. Review the Tasktop documentation here to see what your repository requires.




6. Finally, select the "Save" button at the top right of the page. A green check mark should appear at the top right of the page if the connection was successful.



7. Repeat steps 1-6 to create the ADO repository with the link and credentials to your ADO environment.

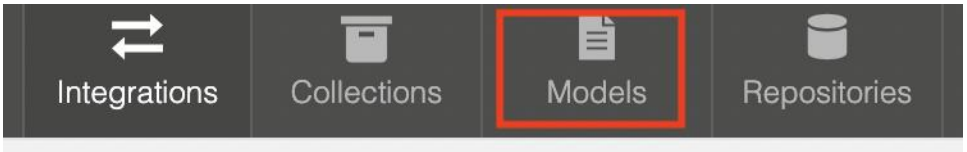



Note: The typical ADO customer uses Personal Access Token Authentication.

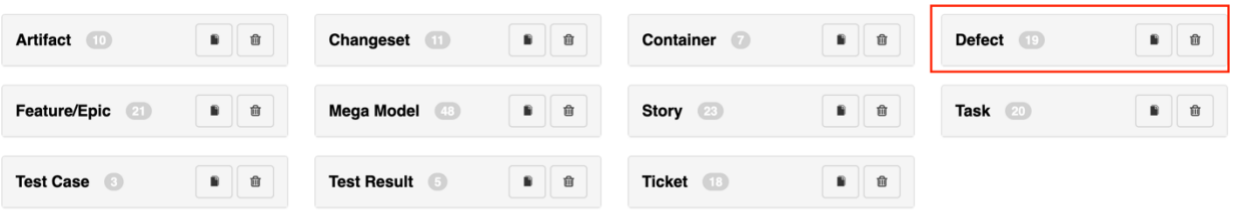
For further information on authentication please see the ADO connector documentation here.

6.6-2 Model:

1. Navigate to the "Models" tab at the top left of the UiPath Test Manager Connect.



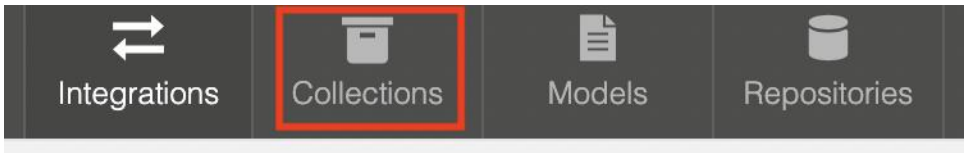

2. Select the "Defect" model and ensure that it has all the necessary fields added.




6.6-3 Collections:

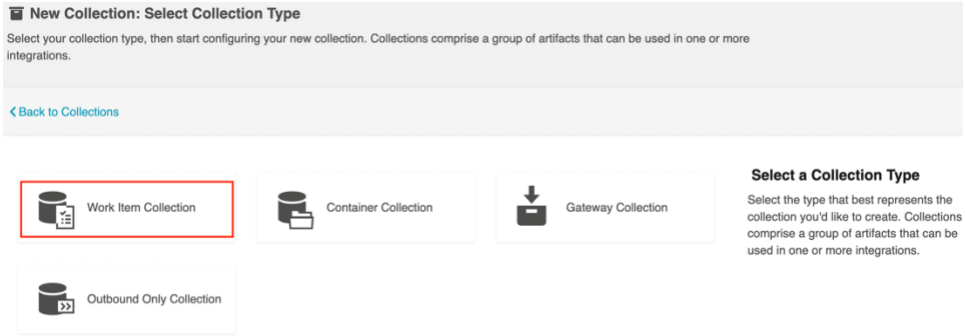
1. After you have ensured that the model being utilized has all the necessary fields, it is time to create two collections. In this scenario, the collection will map UiPath Test Manager to

the Defect model and ADO to the Defect model.

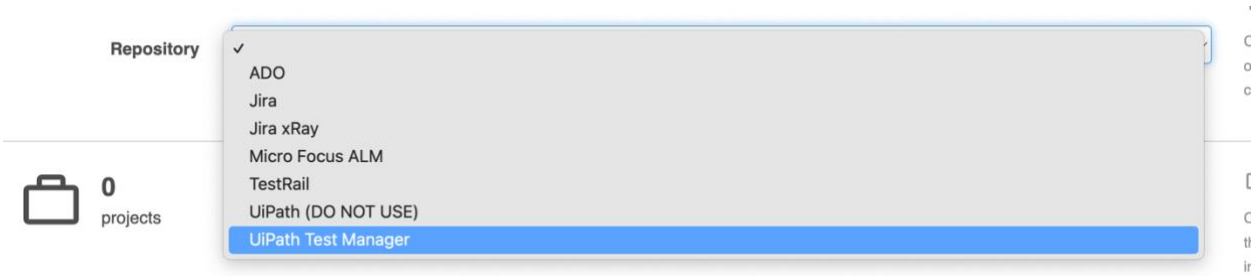



2. Navigate to the Collections Tab and select the "+ New Collections" button.

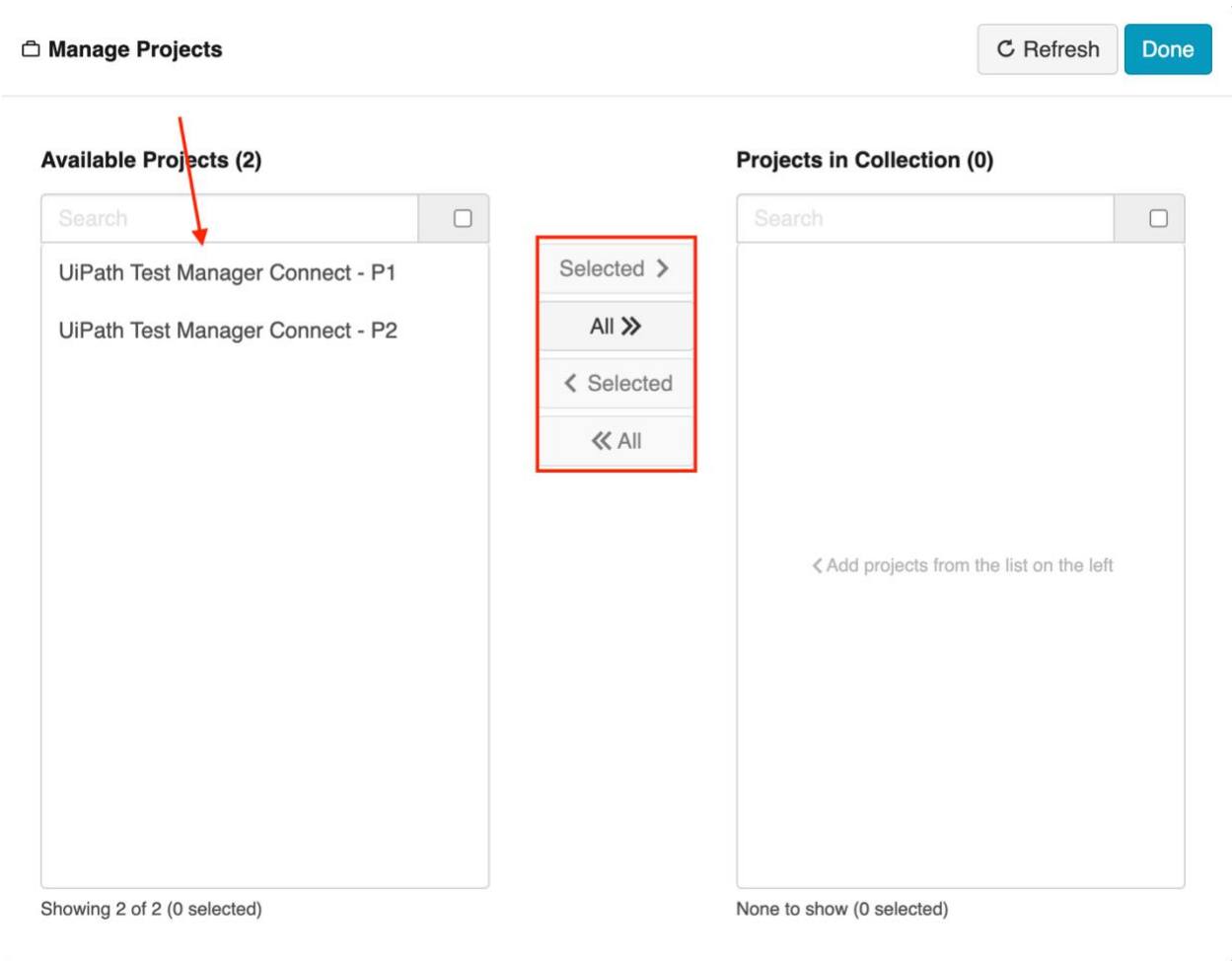
3. Then select "Work Item Collection"



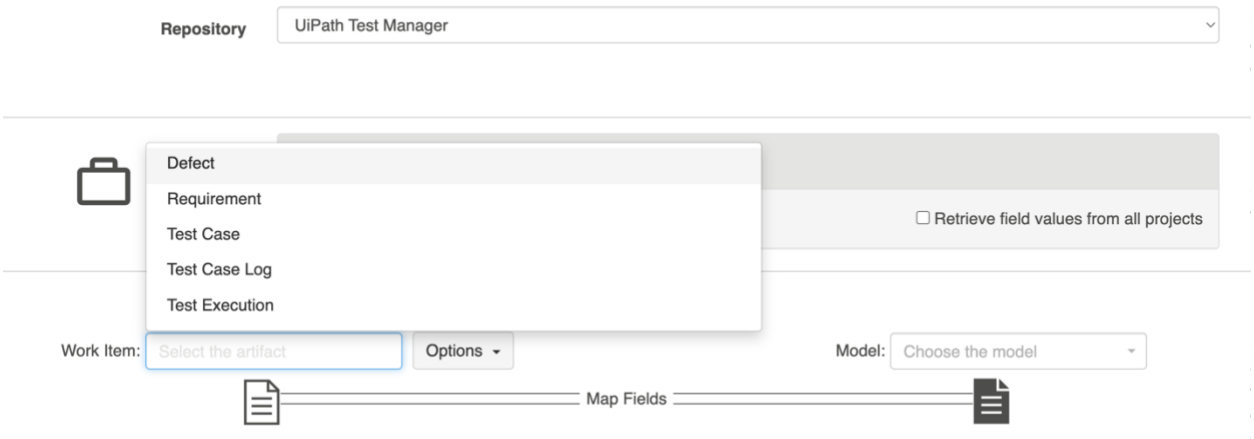

4. Next, give the collection a name such as "UiPath Test Manager Defect"
5. Select the UiPath Test Manager repository.

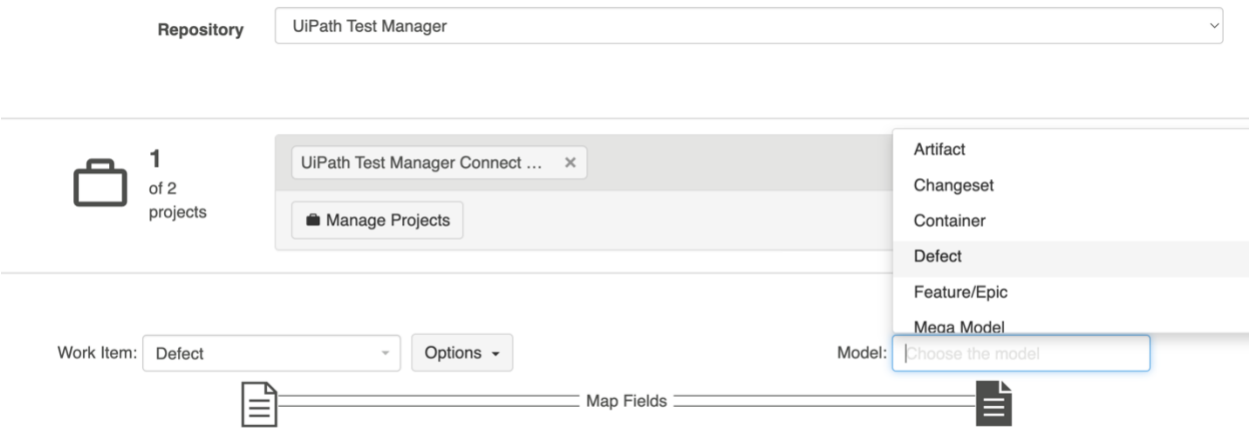



6. Then, choose which UiPath Test Manager projects to use in the collection by selecting "Manage Projects" and using the pop-up to add one or many projects.
    a. Note: Projects can always be added or removed even after the integration has been built.

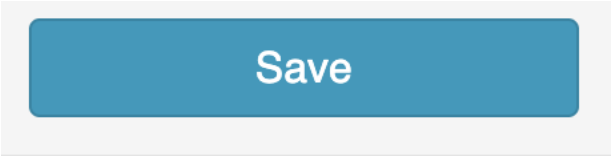



7. Below the projects section use the “Work Item” and “Model” dropdowns to select the Defect and the Defect model.



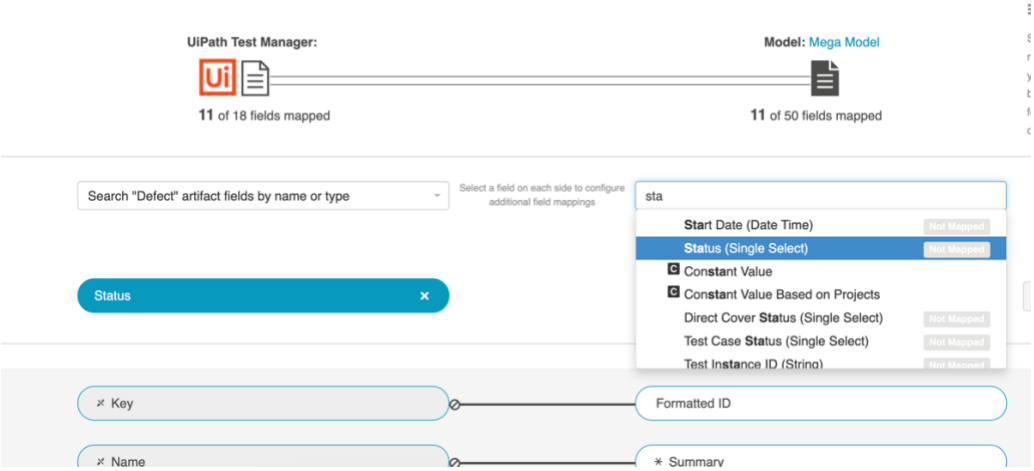


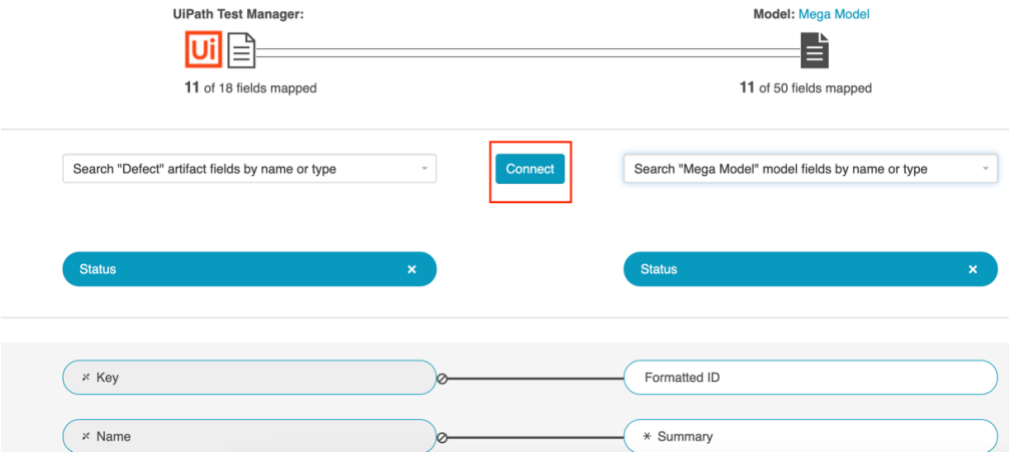

8. Once both are selected navigate to the top right of the page and click the "Save" button.




9. Now the process of mapping and configuring the fields can be done. Under the projects section, select "Map Fields".
10. Once here, UiPath Test Manager Connect will have automatically mapped multiple fields. For this simple integration use the dropdowns and select additional fields to add to the mapping. When adding fields, select a field from the UiPath Test Manager dropdown and the Model dropdown and click the "Connect" button that appears. Ensure that each of the following fields have been mapped:

| UiPath Test Manager Defect | Defect Model |
|---|---|
| Link Label | ADO ID |
| Link | ADO URL |
| Key | Formatted ID |
| Created | Created |
| Updated | Modified |
| Name | Summary |
| Description | Description |



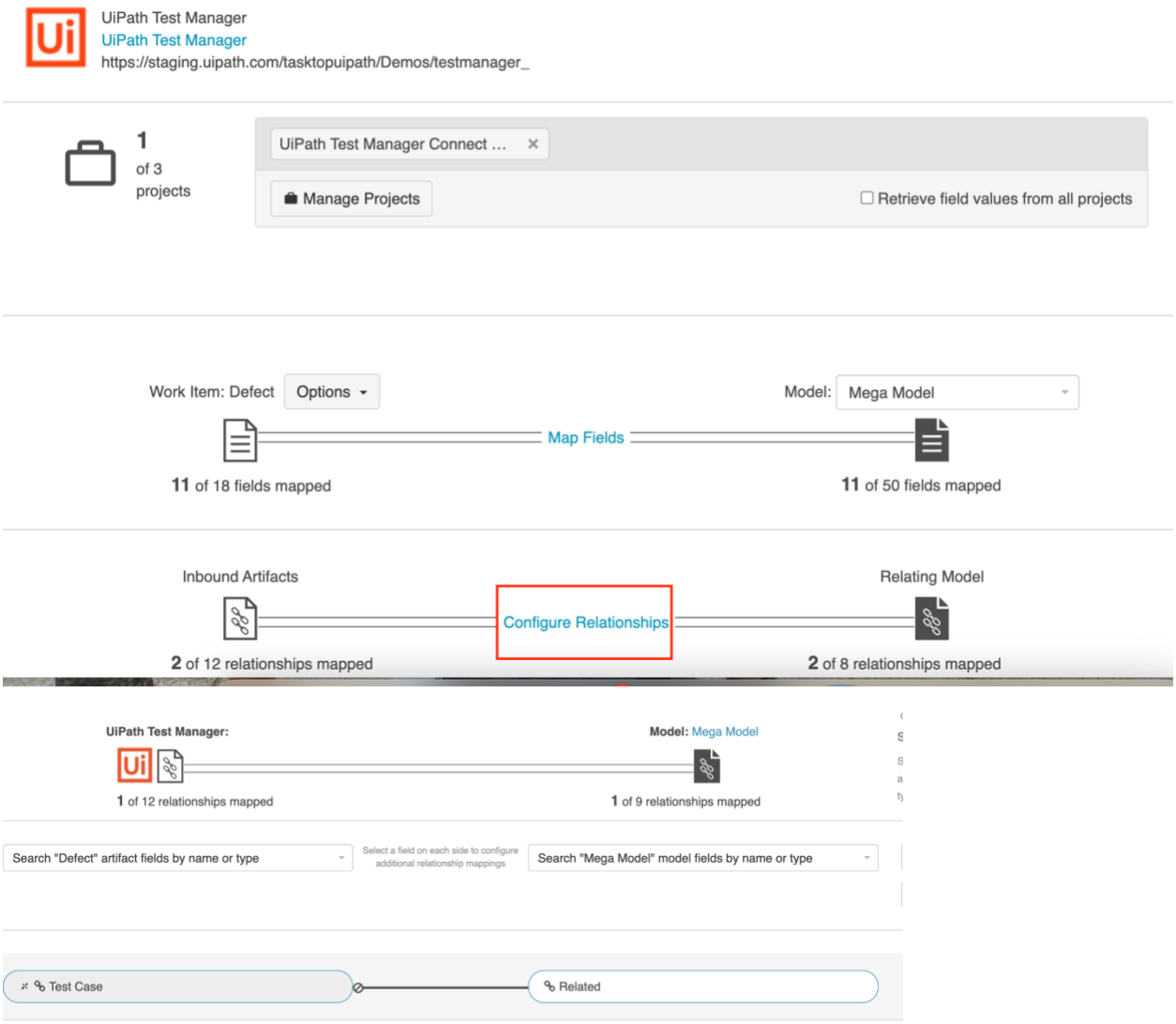




11. Any additional fields can be deleted for now using the trash can Icon next to the field. If you wish to add any additional fields, you can do so at this time or after the integration is complete.

12. After ensuring each of these fields is mapped, orange warning signs are likely to appear next to fields such as "Priority" or "Status". This simply means that the values for those fields must be configured.

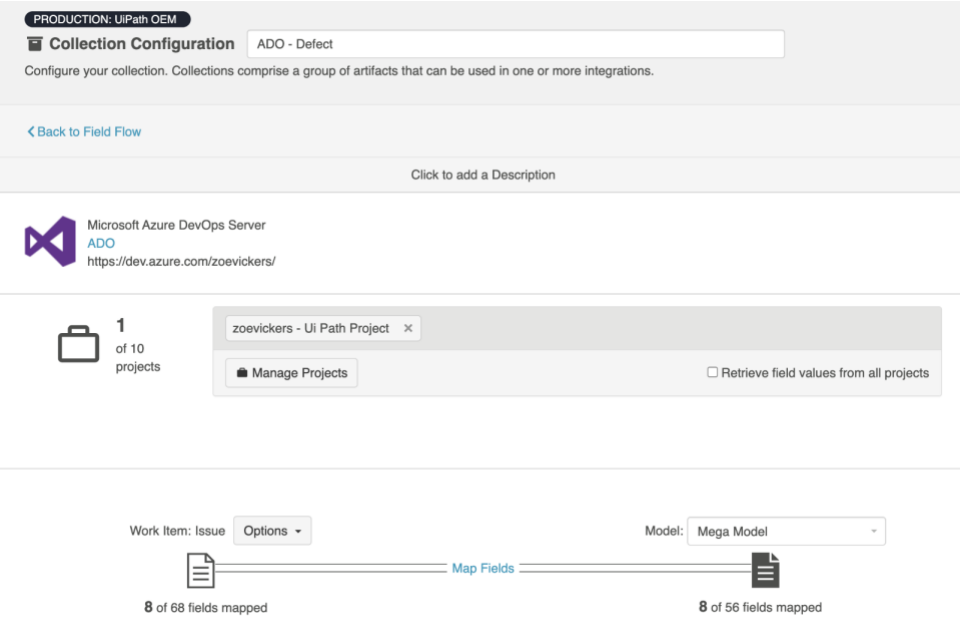
13. Select "Configure" next to each of the fields with the warning symbol to configure the field values. When configuring values select a value on each side and click the "Connect" button to map the values. Values can be mapped one to one or one to multiple.

14. Lastly, navigate back to the newly created "UiPath Test Manager Connect" collection and select "Configure Relationships" under the "Map Fields" section. Map the following fields:
    a. Test Case – Related

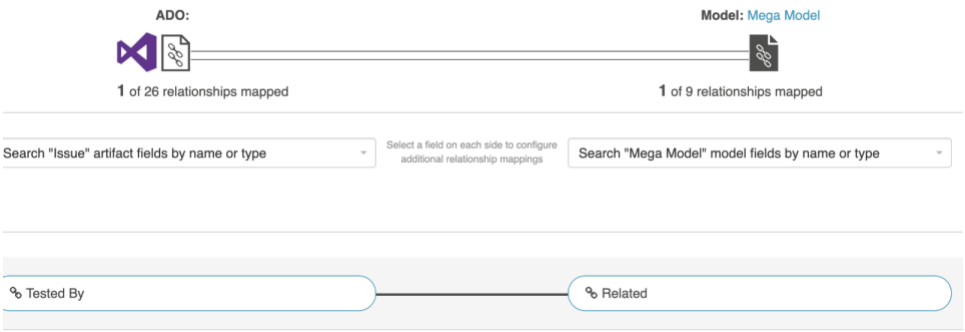



15. The first collection has now been completed! Navigate back to the "Collection" Tab and select "+ New Collection" to begin creating the ADO Collection.
16. Follow steps 2-12 to create the ADO collection with the following modifications:
    a. The collection name should be something similar to "ADO Issue"
    b. Select "Issue" for your Work Item, and select the same Defect model
    c. Map and configure the following fields:

| ADO Issue | Defect Model |
|---|---|
| Iteration Path | (Constant Value) |
| Area Path | (Constant Value) |
| Formatted ID | ADO ID |
| URL | ADO URL |
| Formatted ID | Formatted ID |
| Title | Summary |
| Description | Description |
| Created Date | Created |
| Changed Date | Modified |

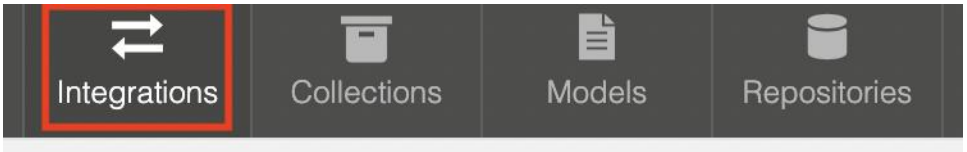



17. Lastly, navigate back to the newly created "ADO Issue" collection and select "Configure Relationships" under the "Map Fields" section and map the following fields:
    a. Tested By – Related



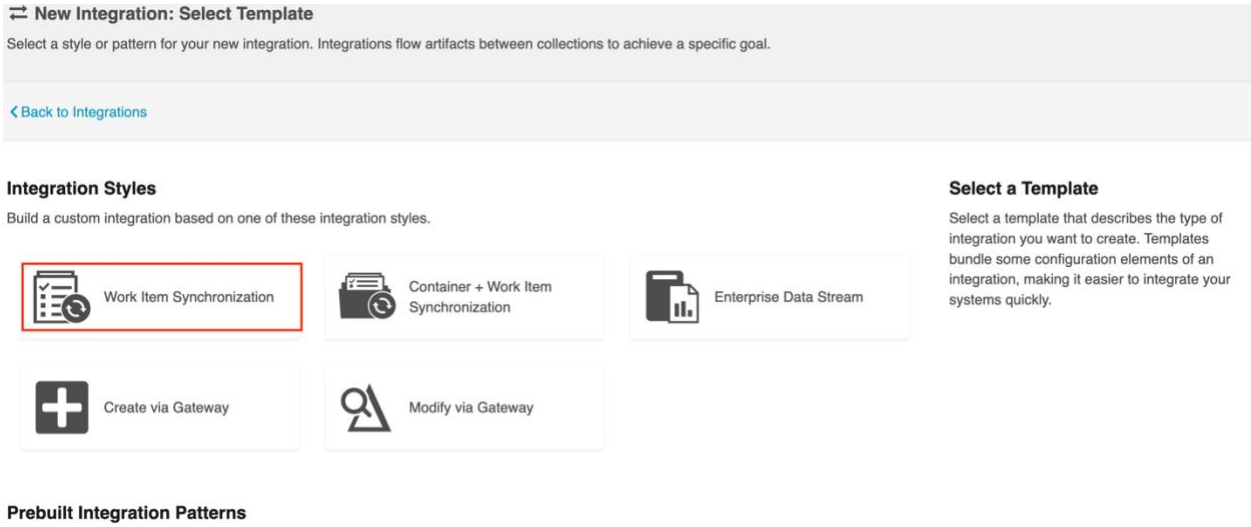

## 6.6-4 Integration:

1. Now it is time to put the two collections together to create one full integration! First, navigate to the "Integrations" tab.

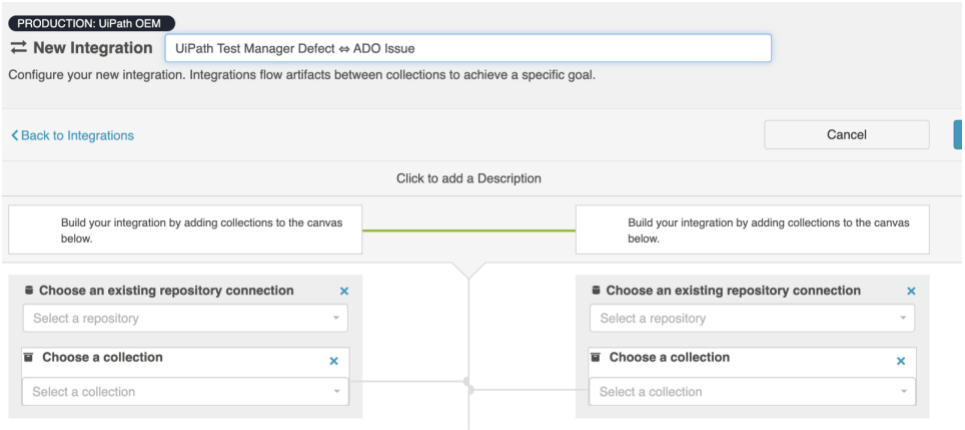



2. Select "+ New Integration" at the top right of the page.

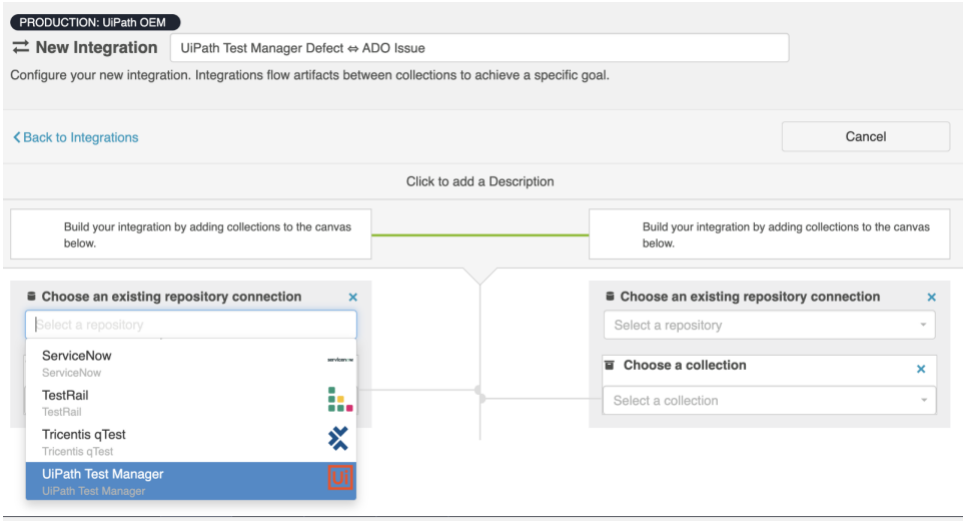
3. Select "Work Item integration"

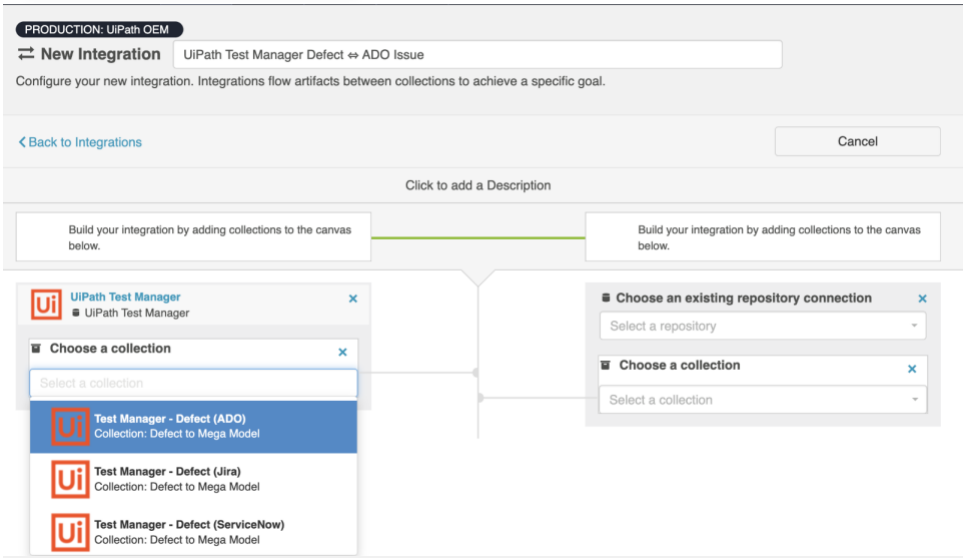


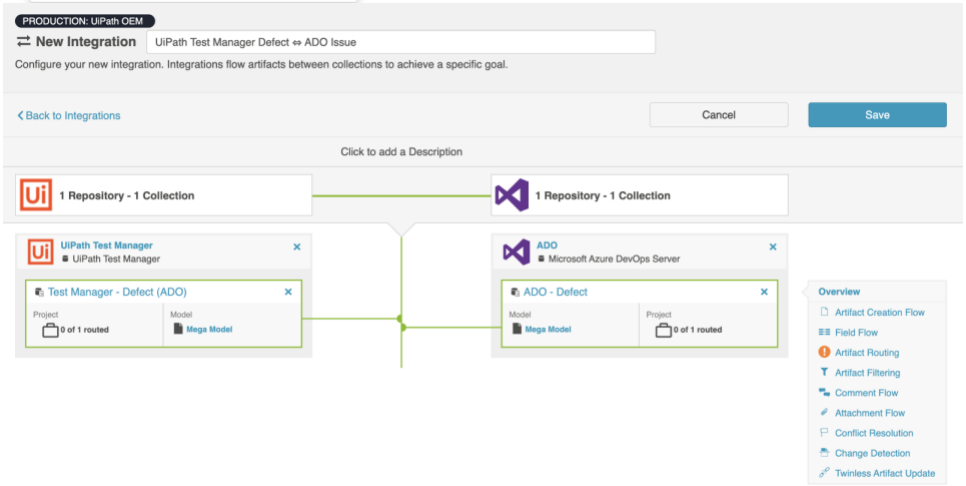

4. Give the integration a name such as "*UiPath Test Manager Defect* ⇔ ADO Issue"



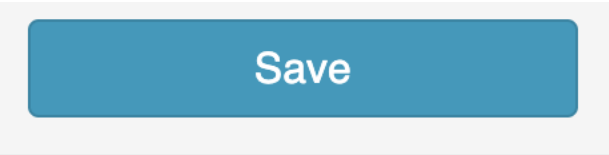

5. Select the UiPath repository along with the newly created UiPath Defect collection from the dropdowns provided on one side. And similarly, choose the ADO and newly created ADO Issue collection on the other side.



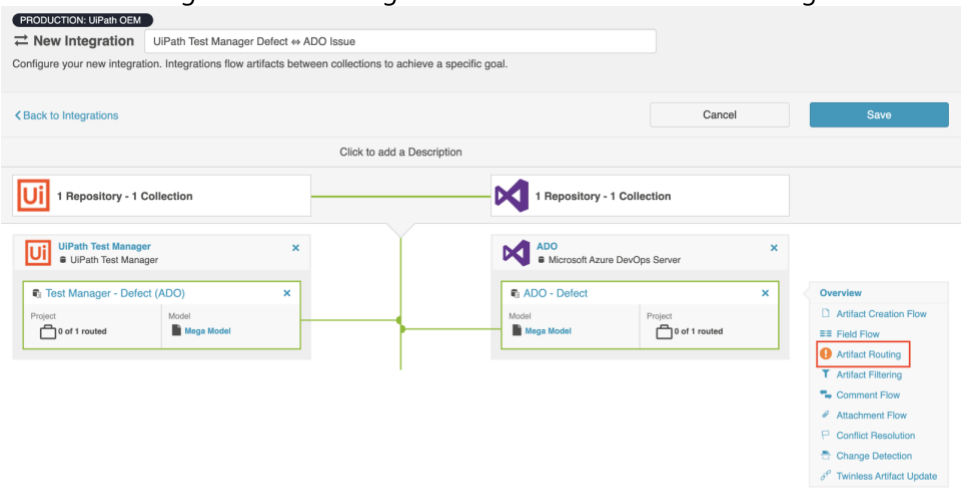



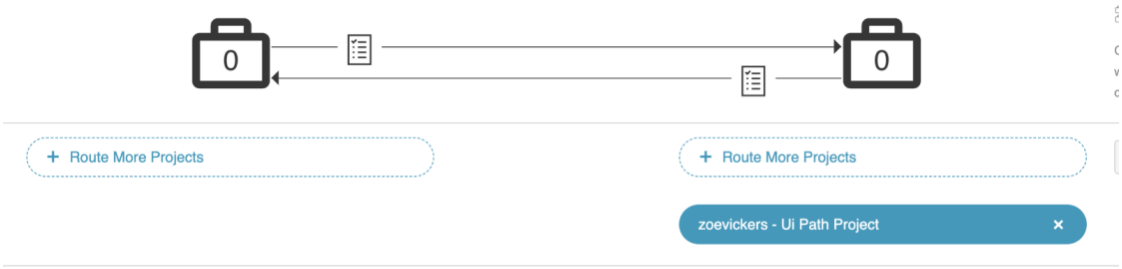

6. Select “Save” at the top right.

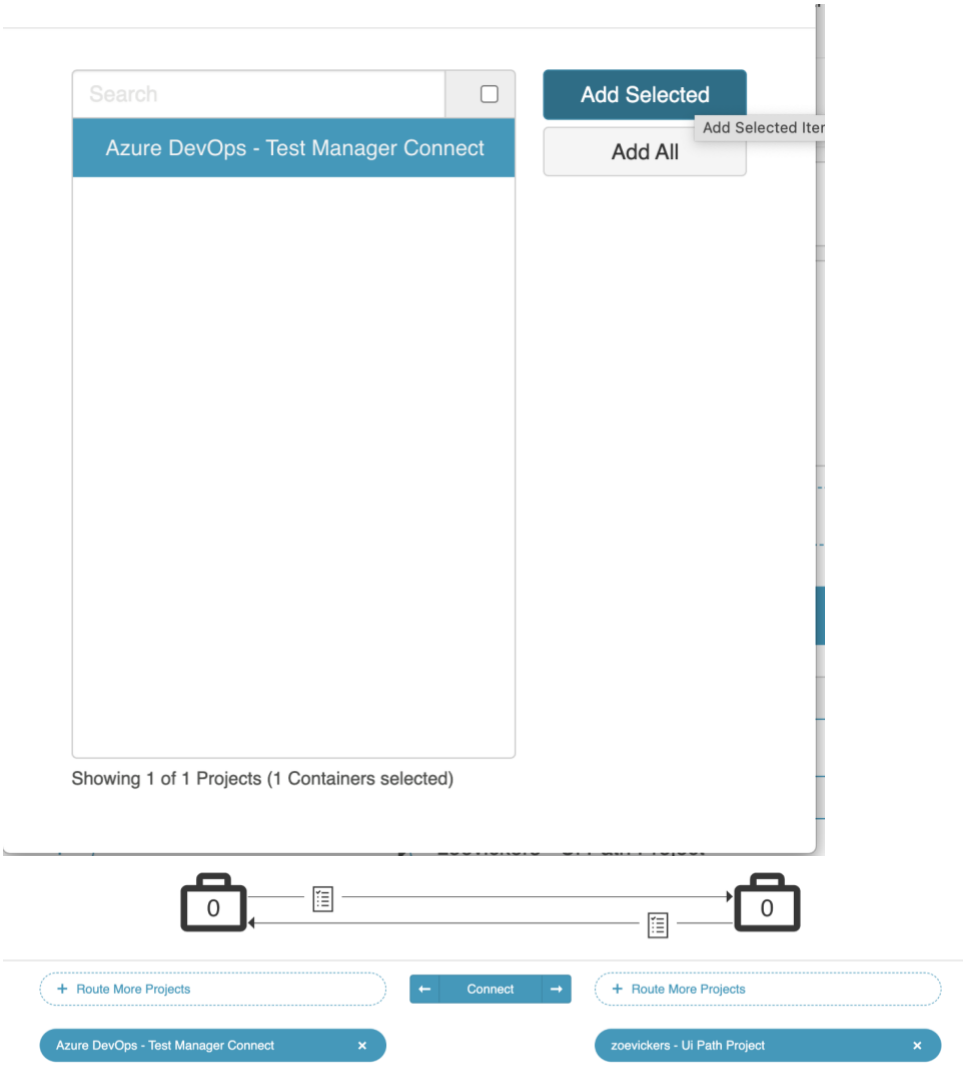



7. A warning sign will appear on the integration menu on the right side of the screen next to "Artifact Routing". Artifact routing will need to be set before the integration can run.



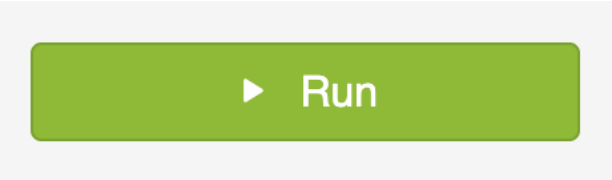

8. Select "Artifact Routing" and choose the projects in both tools you wish to route the artifacts to and from using the popups that appear when selecting "Route More Projects". Projects can be routed one-to-one or conditionally. To keep it simple for this exercise, choose one project on either side and select the middle connect button that appears in the middle of the page.




9. Finally, select “Save” at the top right.
10. The sixth Integration is now ready to be run and used! You may now select the “Back to Integration Configuration” Button at the top left of the screen to get back to your newly created integration.

11. You can now select the “Run” Button at the right of the integration and test it out by creating a new Defect in UiPath Test Manager to test out the integration and ensure it is running properly.

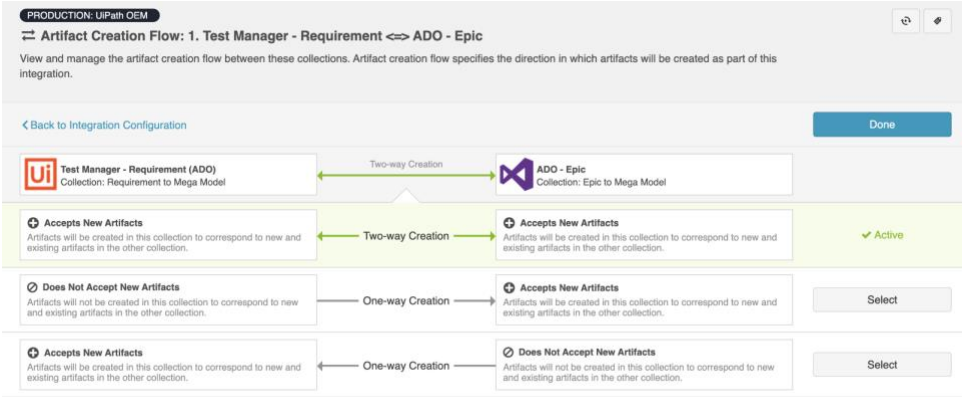



## 6.6-5 Integration Configurations:

Additionally, other configurations (above and below “Artifact Routing”) can be made to the integration using the integration menu. See below:

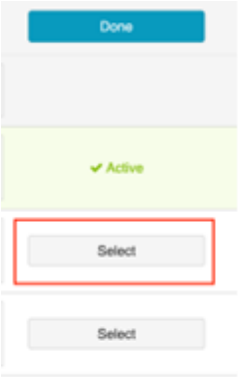
### 53. Artifact Creation Flow:

- Artifact creation flow allows users to decide whether the integration will have a one-way or bidirectional creation flow.




- How To:
  - Navigate to “Artifact Creation Flow” in the integration menu.

- 
    - Use the select button on the right of each option to select the type of Artifact Creation Flow needed for the integration.

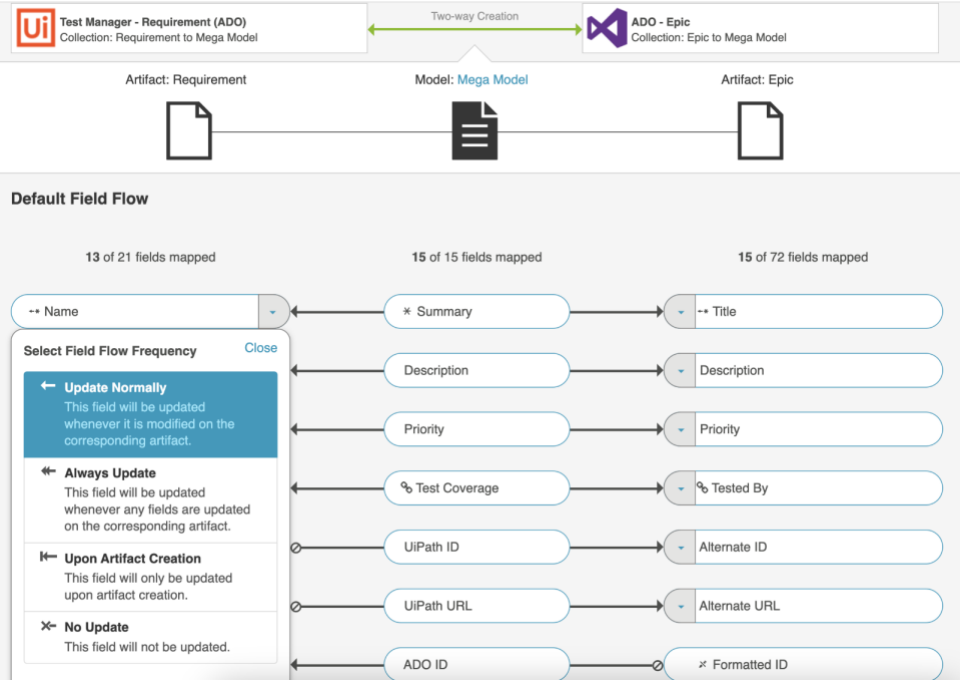



- Note: By default, all integrations will be bidirectional.

- Bidirectional Artifact Creation allows for artifacts to be created in both systems and pushed into the opposite systems.
- One-way creation flow limits artifact creation to only one system and pushed into the other. For example, all artifacts created in UiPath Test Manager will be pushed into ADO, however, any artifacts created in ADO will not move over to UiPath Test Manager.
    - Note: One-way creation only limits the creation of artifacts. Any updates or modifications to artifacts will still be bidirectional.

54. Field Flow:

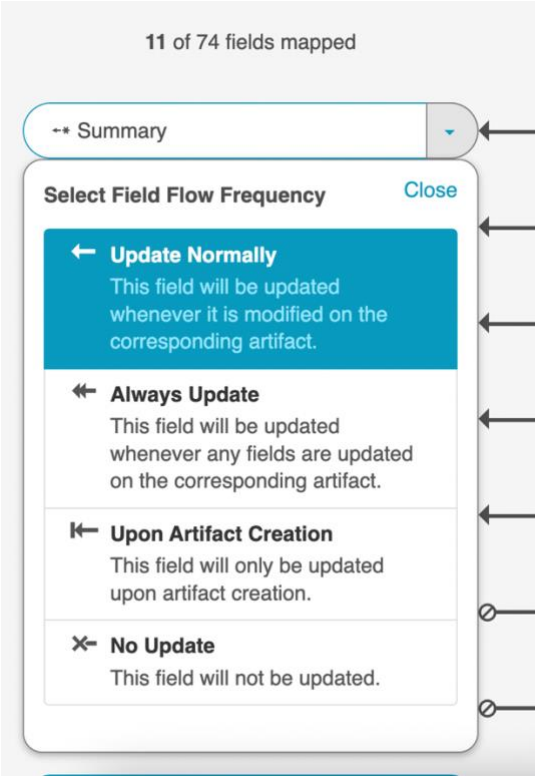
- Field Flow allows users to edit how Hub does or does not update artifact fields in the integration.




- How To:
  - Navigate to "Field Flow" In the integration menu.

- 
  - Select the dropdown from a field in either system to determine how or if that field is updated.

- Note: By default, all fields will "Update Normally" unless previously mapped differently in the collection.

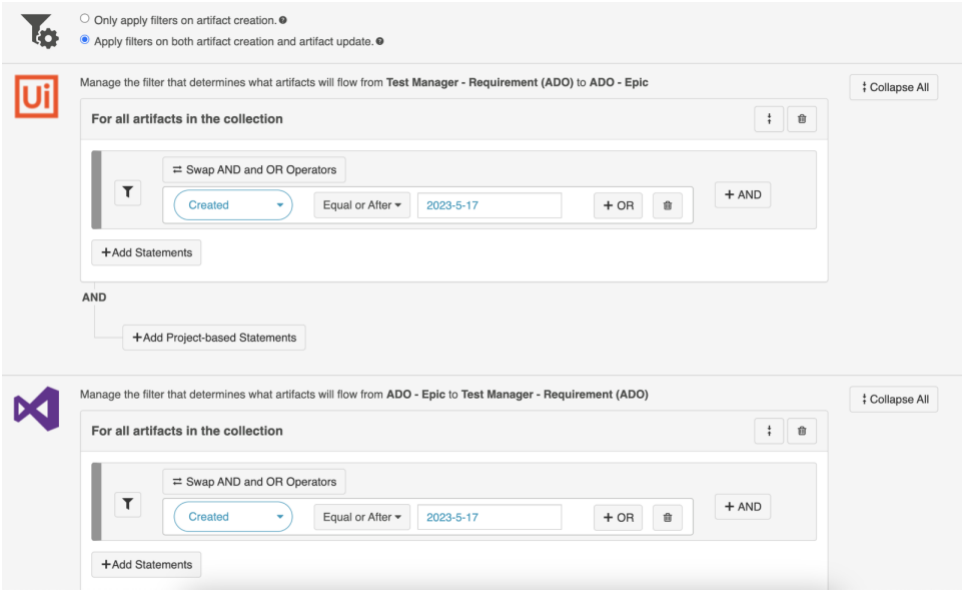



- Finally select Save at the top right corner of the screen to save any changes you have made.

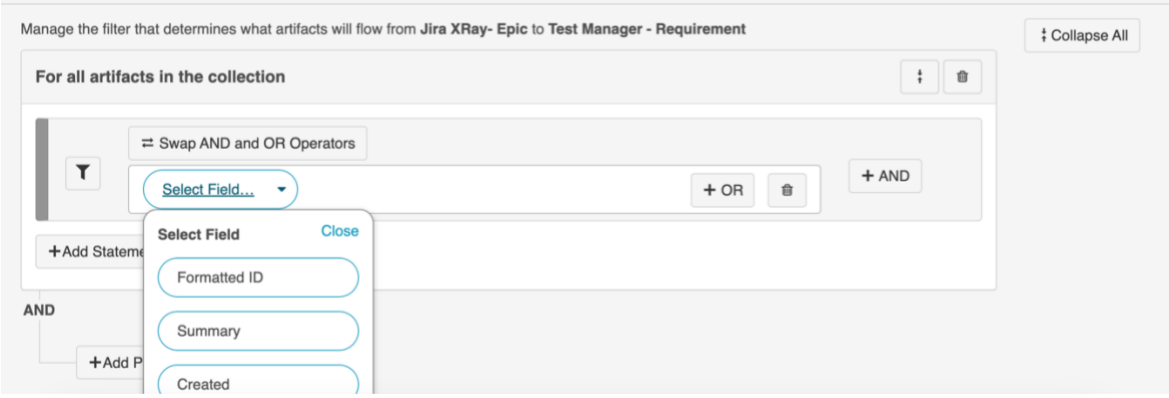
- Update Normally- The field selected will be updated whenever it is modified on the corresponding artifact.
- Always Update- The field selected will be updated when any fields on the corresponding artifact are modified.
- Upon Artifact Creation- The field selected will only update when the artifact is created.
- No Update- The field selected will never update in the system.

## 55. Artifact Filtering:

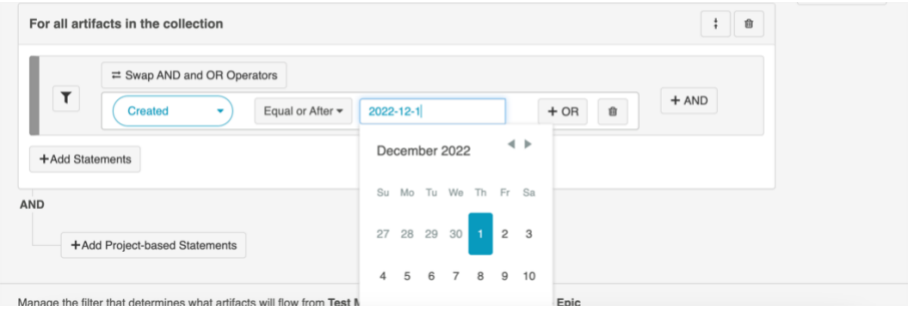
- Artifact filtering allows users to only pull artifacts from each tool based on certain field filters.



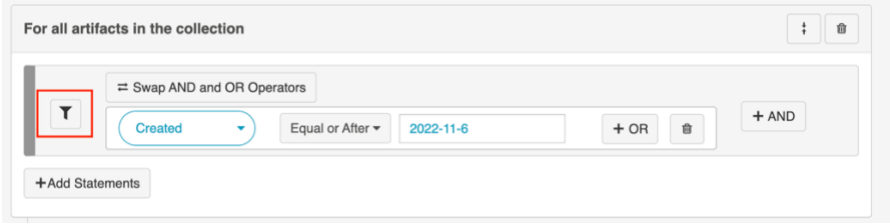

- How To:
  - Navigate to "Artifact Filtering" in the Navigation Menu.
  - Select either the "Only apply filters on artifact creation" or "Apply filters on both artifact creation and artifact update"
- Note: The most common option is to choose to have the filters applied to both artifact creation and artifact updates.
  - Next select "Add statement" and use the field dropdown to choose which field to use as a filter for any artifacts created and updated in UiPath Test Manager.



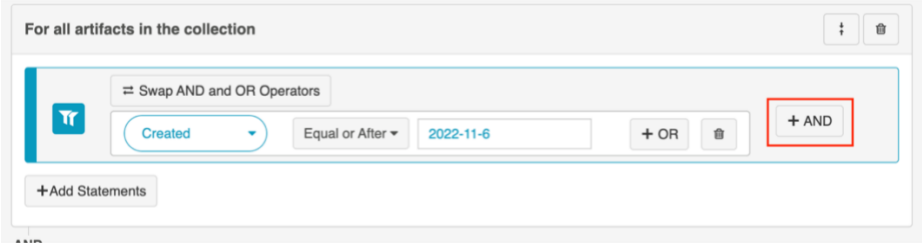

  - For this example, we will use the "Created" field. Then select the operator such as "Equal or After".
  - Lastly, select a value. In this example, we have selected a date. This filter means that only Artifacts created or updated equal to or after the date we have chosen will flow through the integration.



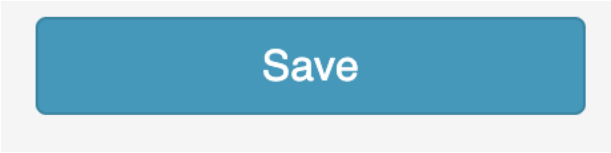

- Select the filter icon on the left of the new filter to apply the same filter to your ADO system.




- Multiple filters can be applied to each system in the integration. When using multiple filters be sure to select either the "AND or OR" operator to the right of each filter to ensure that only the correct artifacts flow through the integration.

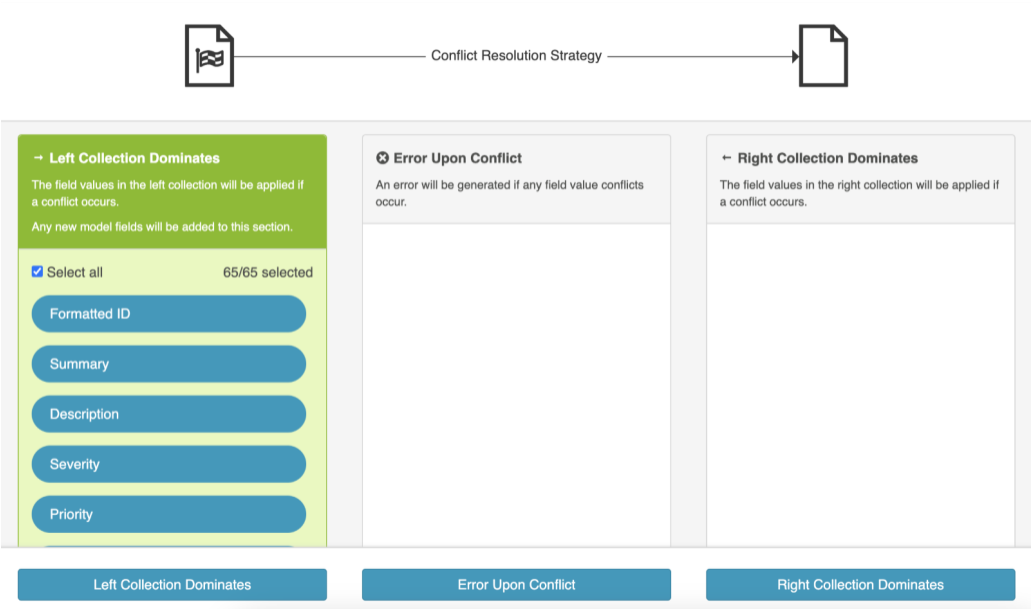



- Finally, select save at the top right corner to save the filters created for the integration.



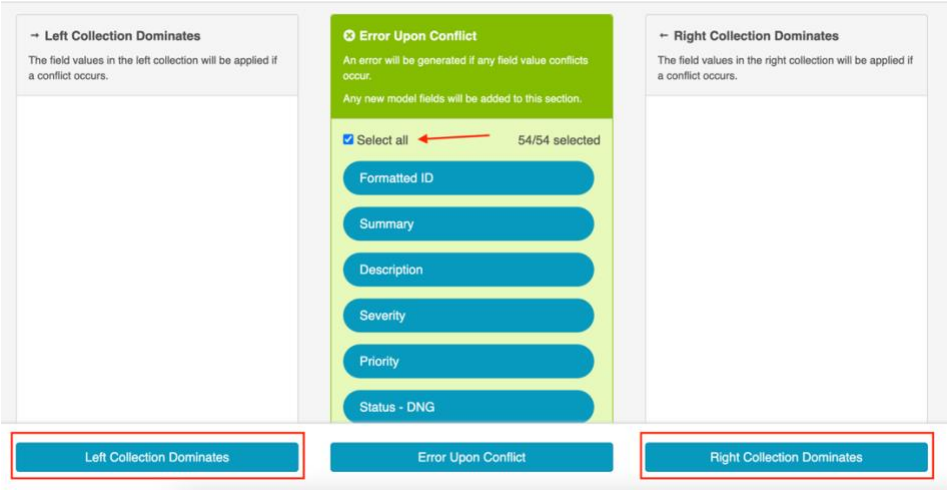

## 56. Conflict Resolution:

- Conflict resolution allows users to decide which tool is the source of truth when a field updates conflicts.
- A single tool can dominate, or the mapped fields can be set among both tools as needed.

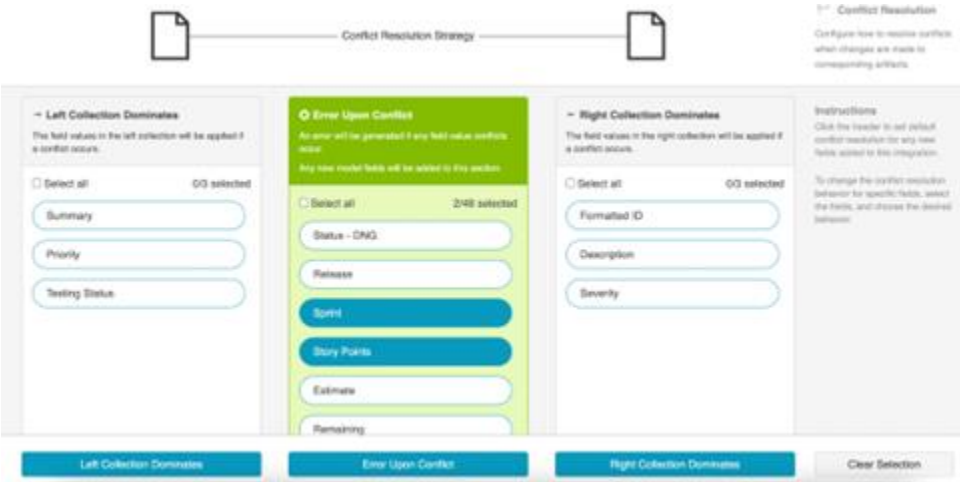



- How To:
  - Navigate to "Conflict Resolution" in the integration menu.

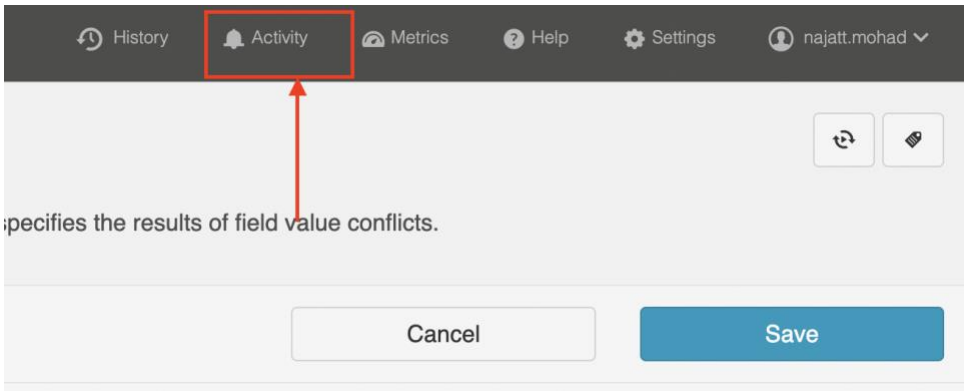
- 
  - Next, you have the option to:
    - Select all
    - Select individual fields
    - Select none
  - After selecting all fields select either the UiPath or ADO system to dominate the field values in a conflict.



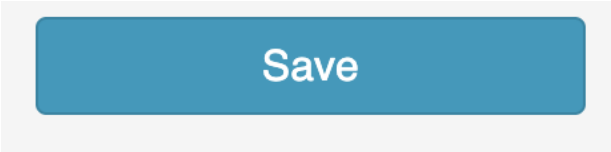

- After selecting individual fields, select either the UiPath Test Manager or ADO system to dominate those specific field values in a conflict. You also have the option to leave fields in the "Error Upon Conflict" section.




- Selecting none and leaving all values in the "Error Upon Conflict" section will create errors in the activity page when field value conflicts occur.

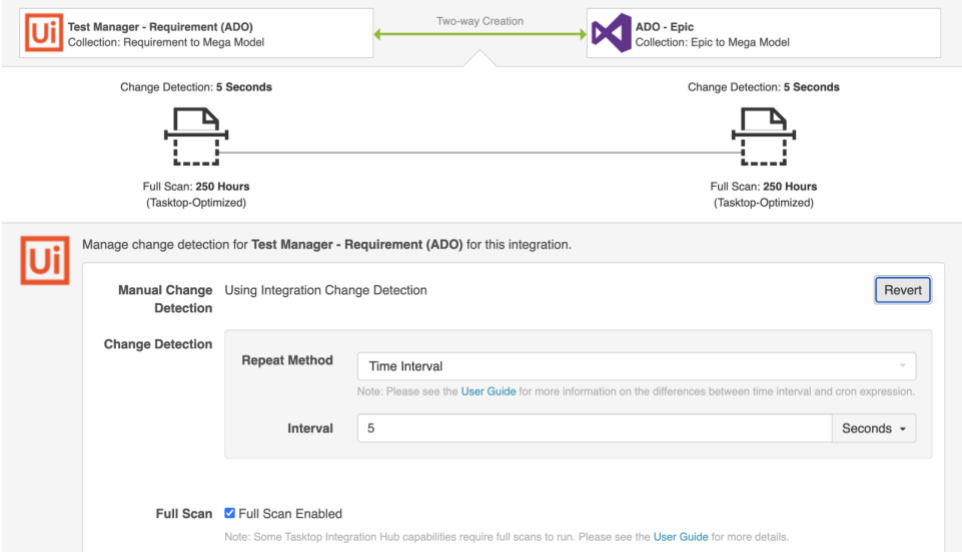
- 


  - Finally, select the save button at the top right to save the conflict resolution configuration for the integration.

- 


57. Change Detection:

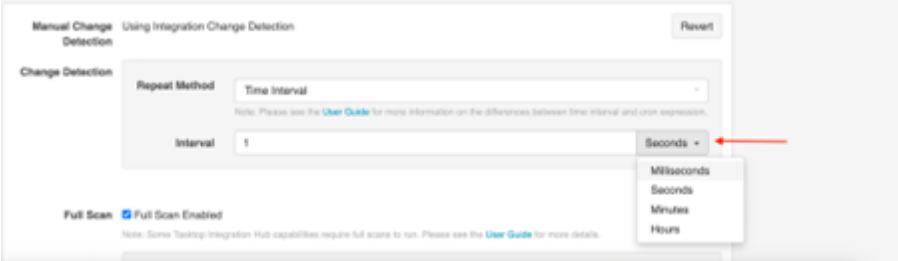
- Change detection is how often Hub checks each tool for artifact and field updates.
- Change Detection allows a user to override the global change detection settings for a single integration.
- Industry standards for production environments are anywhere between 5-30 minutes.



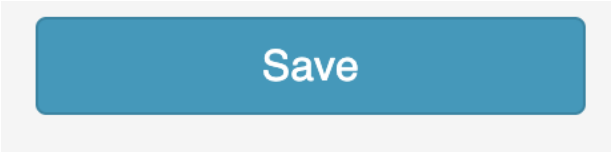

- How To:
  - Navigate to "Change Detection" from the integration menu.

- Select the override button to override the change detection setting for the specific integration.

- Use the dropdown to select the type of time interval, then type in a number for the time interval. Such as 5 minutes.

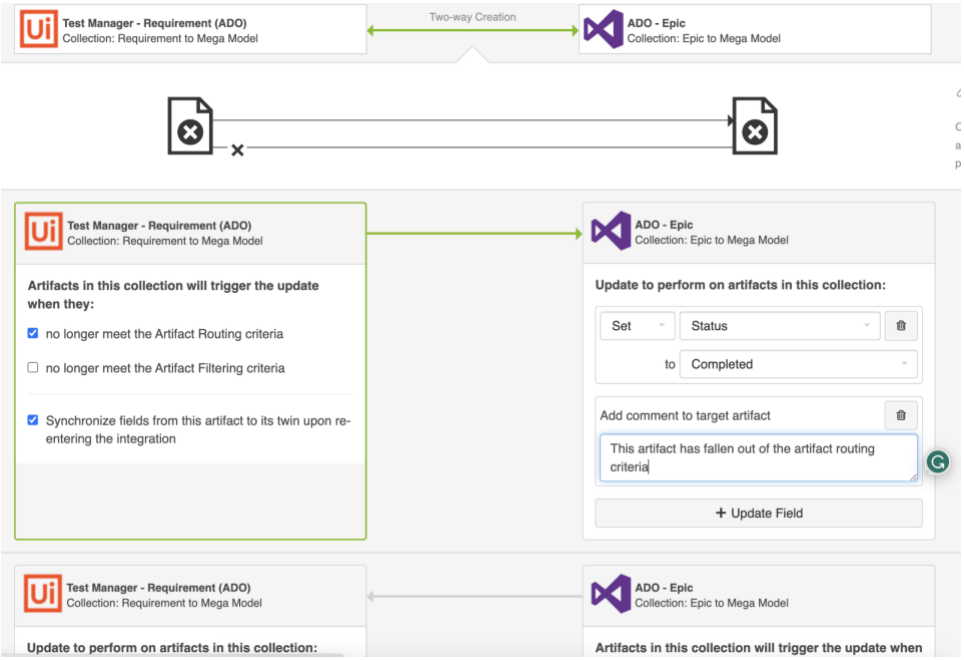



- Finally, use the "Save" button at the top right of the page to save the change detection settings for this integration.

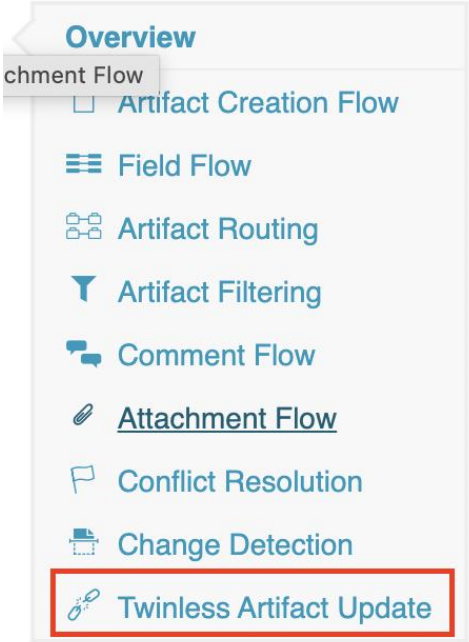


## 58. Twinless Artifact Update:

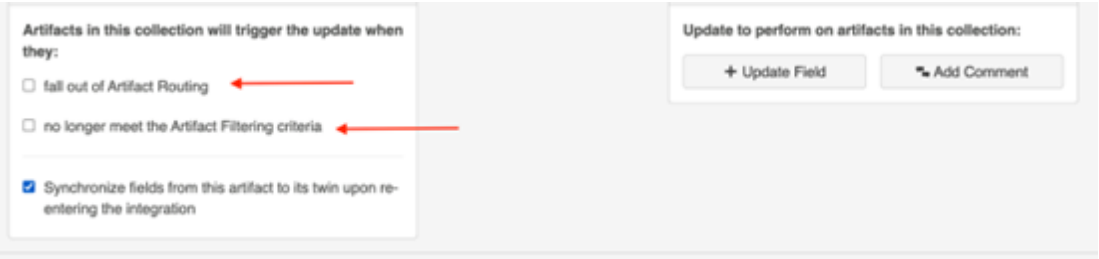
- Allows users to configure one final update (for example a comment or a status change) on an artifact when its "twin" in the other repository is no longer eligible to participate in the integration (e.g., when it's been deleted or no longer meets the artifact filter). The final update informs the newly twinless artifact that the synchronization has been discontinued.
- Artifacts are no longer eligible to participate in an integration if one or both conditions below are met for an endpoint:
- Artifacts fall out of Artifact Routing. This can happen when:
  - Artifacts are deleted
  - Artifacts are moved to projects not routed as part of the integration
  - Artifacts no longer meet the Artifact Filtering criteria.




- How To:
  - Select "Twinless Artifact Update" from the integration menu.

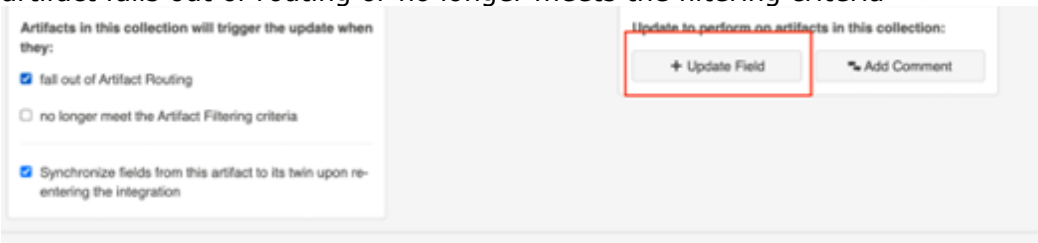


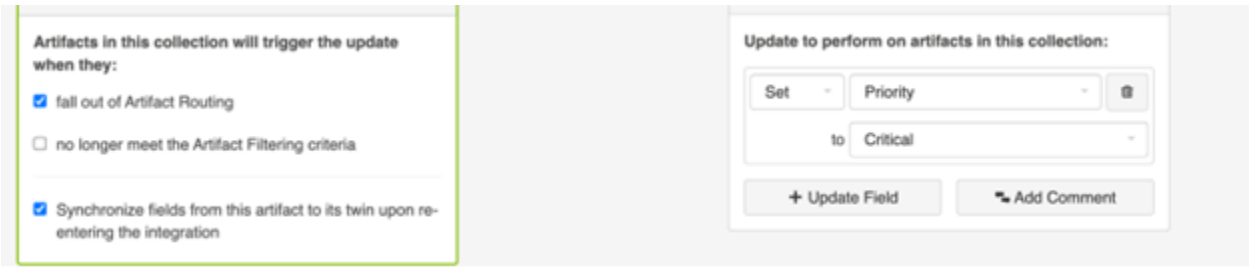

- 
    - Select between the two conditions under the UiPath Test Manager artifact side:
        - a. fall out of artifact routing- meaning when the associated artifact in UiPath Test Manager is moved to a project outside of projects that have been routed in the integration.
        - no longer meet the artifact filtering criteria- meaning the
        - associated artifact in UiPath Test Manager no longer meets the filter criteria
        - configured under "Artifact Filtering" in the integration menu.



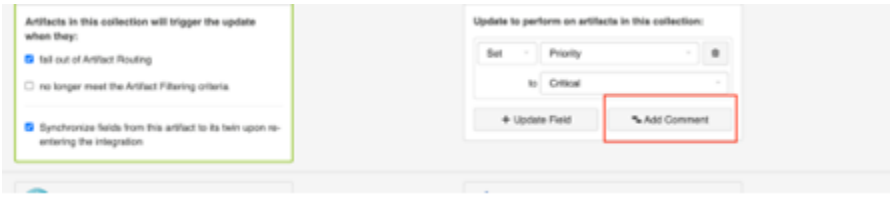

- Next, choose what happens to the twin artifact created in ADO when either one of the above happens.

- Select a field and its value to update in ADO when the UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria




- b. You also have the option to choose to add a comment to the existing ADO twin artifact when UiPath Test Manager artifact falls out of routing or no longer meets the filtering criteria.



- Follow steps 1-3 to set up Twinless Artifact Update for the ADO system if necessary.
- Select the Save button at the top right corner of the page to save the "Twinless Artifact Update" configuration for the integration.

Congratulations! You have successfully created six fully functioning integrations!

If you wish to learn more please visit https://docs.tasktop.com/.

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5. Enter into Premium Content => Connector Documentation