

# Snapshot Best Practices: Artificial Intelligence



Metazoa has made a deep investment in Artificial Intelligence (AI) capabilities for managing complex Salesforce environments with our Snapshot product. While Salesforce has done a great job making AI accessible for end users in sales and marketing, Metazoa has focused on using AI to help Salesforce administrators, developers, and architects. These new AI capabilities complement our core mission of removing technical debt, documenting complexity, and optimizing security perfectly. This whitepaper presents the best practices for using all the new AI powered capabilities in our Snapshot product.

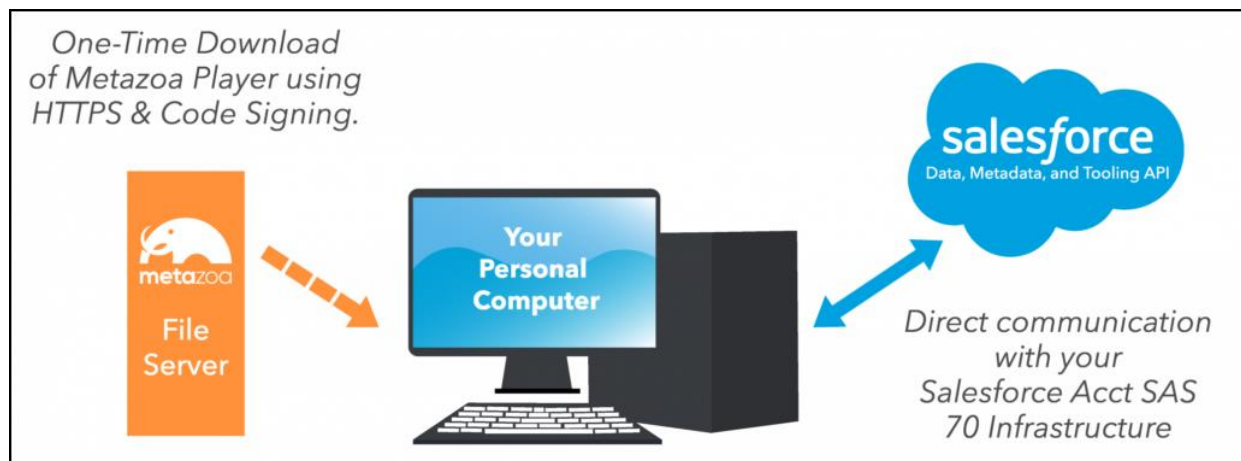
## AI Security

Before going any farther, we need to be clear that AI is an **optional** part of Snapshot. You can change a setting in the Snapshot Preferences panel and prevent all usage of AI. Most of the applications in Snapshot still function as before, but without AI powered enhancements. We have done this because some companies may still be formulating their AI adoption policy. They may still have questions about AI usage and private data security. We share these concerns and welcome any questions that customers might have.

All that having been said, we believe that the benefits of using AI far outweigh the risks. Snapshot communicates directly with the OpenAI API. No other server or cloud is involved. OpenAI has extensive security and data protection policies in place. They have server information security certifications like Salesforce. The OpenAI API does not train on any prompts or grounding data.

Meanwhile, there are substantial security **benefits** to adopting AI. Customers can use AI to detect security problems, document compliance issues, discover technical debt, and enrich the asset quality. The Metazoa Security Policy document discusses our Zero Trust architecture and OpenAI API utilization in more detail:

<https://www.metazoa.com/privacy-and-security/>



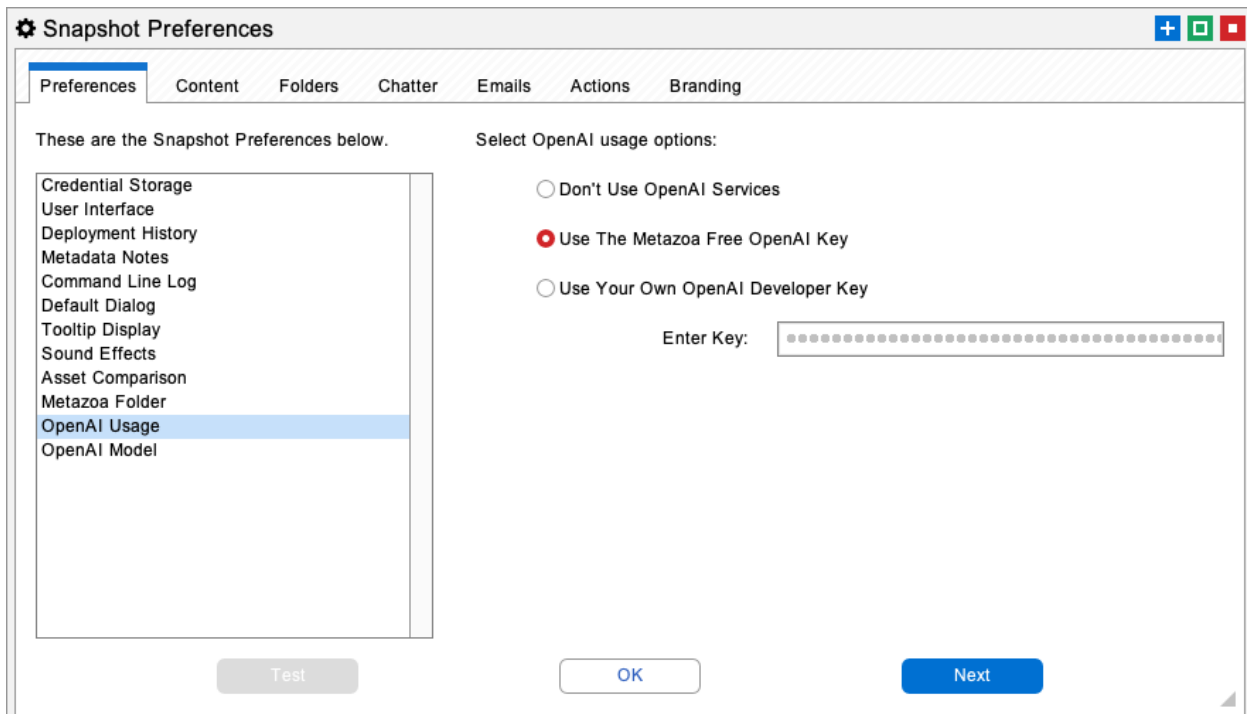
## AI Preferences

The Snapshot Preferences panel has AI specific settings. Navigate in product to the Snapshot menu and select Snapshot Preferences. Click on the third tab to edit the settings for OpenAI usage. At left, you can select three different options for OpenAI access:

- Don't Use OpenAI Services
- Use Metazoa Free OpenAI Key
- Use Your Corporate OpenAI Key

The best option is to enter your corporate OpenAI API Key. This lets you monitor usage and cost and ensure there are no service interruptions. We expect that the average cost for most Snapshot customers will be less than \$100 per month. If you are using AI for massive org transformation, then some projects might be more expensive. Here is a link to get an OpenAI Key for your company:

<https://platform.openai.com/api-keys>



The screenshot shows a window titled "Snapshot Preferences" with a gear icon and window control buttons. The "Preferences" tab is selected, showing a list of settings on the left and configuration options on the right. The "OpenAI Usage" setting is highlighted in the list. The configuration options include three radio buttons: "Don't Use OpenAI Services", "Use The Metazoa Free OpenAI Key" (which is selected), and "Use Your Own OpenAI Developer Key". Below these is a text input field labeled "Enter Key:" with a dotted pattern. At the bottom, there are "Test", "OK", and "Next" buttons.

Snapshot Preferences

Preferences Content Folders Chatter Emails Actions Branding

These are the Snapshot Preferences below.

Select OpenAI usage options:

- Don't Use OpenAI Services
- Use The Metazoa Free OpenAI Key
- Use Your Own OpenAI Developer Key

Enter Key:

Test OK Next

The Metazoa Free OpenAI Key is available to all customers. We limit use of this key for some activities that might result in massive usage. Here are the restrictions for the Metazoa Free OpenAI Key:

- Calculating SOQL Filters: Unlimited Use
- Explaining Migration Errors: Unlimited Use
- Explaining Deployment Errors: Unlimited Use
- Explaining Metadata Assets: Unlimited Use
  
- Metadata Studio Prompt Engineering: 100 Uses / Individual
- Metadata Studio Prompt Automation: 100 Uses / Individual
- Intelligent Search Assistant: 200 Uses / Individual
- Description Enrichment: 100 Uses / Individual
- Improve Code Coverage: 100 Uses / Individual
- Improve Code Quality: 100 Uses / Individual

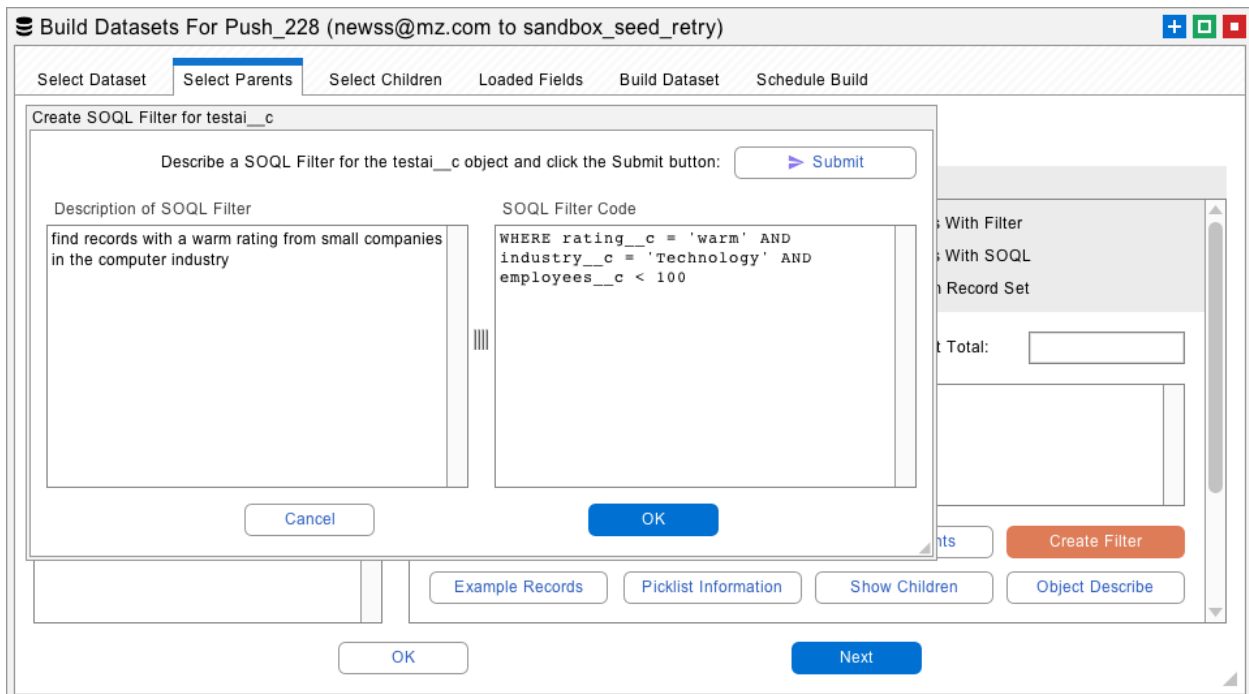
The checkbox to Mask Personal Information will scramble email addresses, phone numbers, and other fields with sensitive information. The information is unscrambled when the answer is returned.

Lastly, you can select the default OpenAI Model that you want to use. Our default is the economical gpt-4o-mini model. Use gpt-4o for better quality but with a smaller response window. The table below shows the different models that are available and the number of characters they support for questions and responses.

Model	Question	Answer	Default
gpt-4	5 K	3 K	
gpt-4o	128 K	4 K	
gpt-4o-mini	128 K	16 K	X
gpt-4-turbo	128 K	4 K	
gpt-3.5-turbo	3 K	1 K	
gpt-3.5-turbo-16k	10 K	6 K	

## SOQL Filters

There are half a dozen places in Snapshot where the user can select data records. For example, when building a new dataset for data migration you might select parent objects. Records can be selected in many ways, but the most powerful option is to create a SOQL filter that finds the records. However, SOQL must conform to syntactical rules that are hard to remember. Now there is an option to type in a textual description of the record filter and have AI create the SOQL string. Simply click the Create Filter button and this brings up the interface below. You can interactively test the SOQL filter and make sure you are retrieving the desired record set.



The screenshot shows a web application window titled "Build Datasets For Push\_228 (newss@mz.com to sandbox\_seed\_retry)". The main interface has tabs for "Select Dataset", "Select Parents", "Select Children", "Loaded Fields", "Build Dataset", and "Schedule Build". The "Select Parents" tab is active.

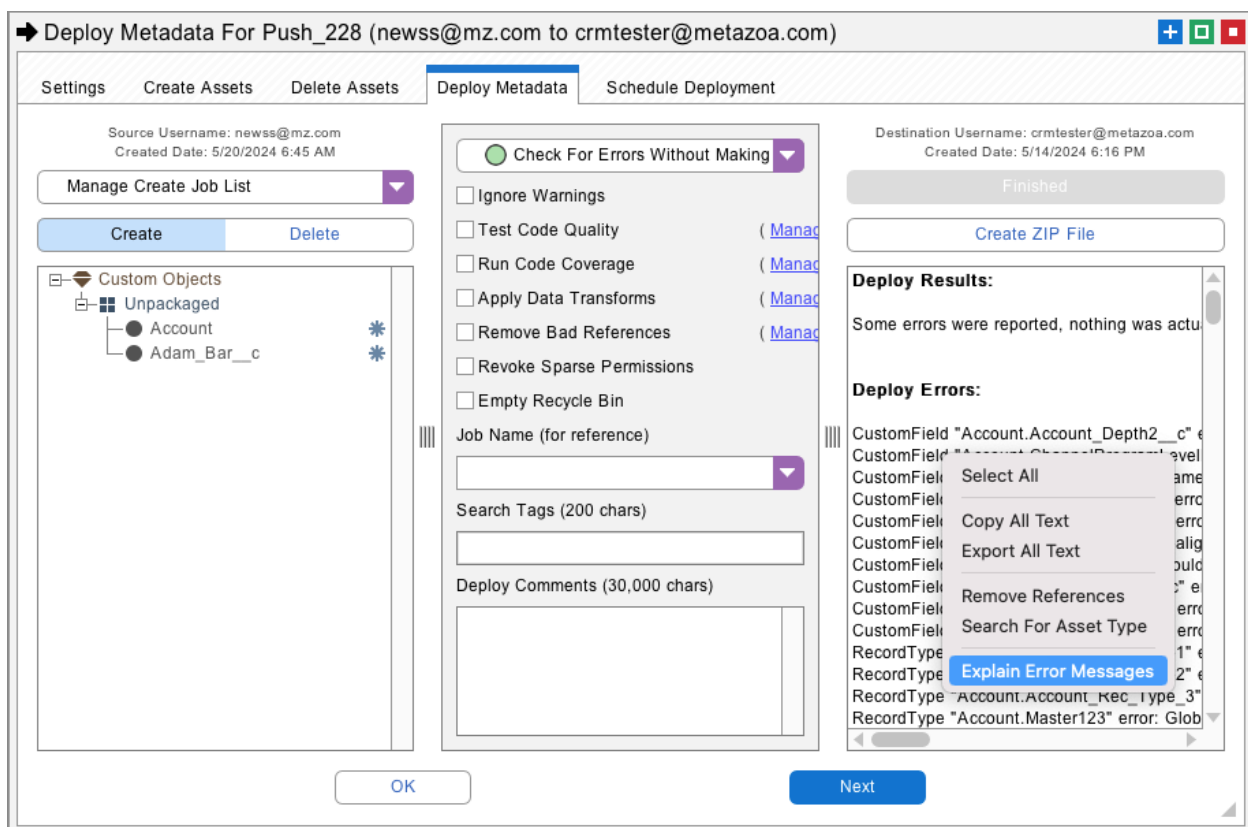
A modal dialog box titled "Create SOQL Filter for testai\_\_c" is open. It contains the following elements:

- A "Submit" button with a right-pointing arrow.
- A "Description of SOQL Filter" text area containing the text: "find records with a warm rating from small companies in the computer industry".
- A "SOQL Filter Code" text area containing the code: `WHERE rating__c = 'warm' AND industry__c = 'Technology' AND employees__c < 100`.
- "Cancel" and "OK" buttons at the bottom of the dialog.

Below the dialog, the main interface shows a "Create Filter" button (orange) and several other buttons: "Example Records", "Picklist Information", "Show Children", and "Object Describe". At the bottom of the main window, there are "OK" and "Next" buttons.

## Explaining Errors

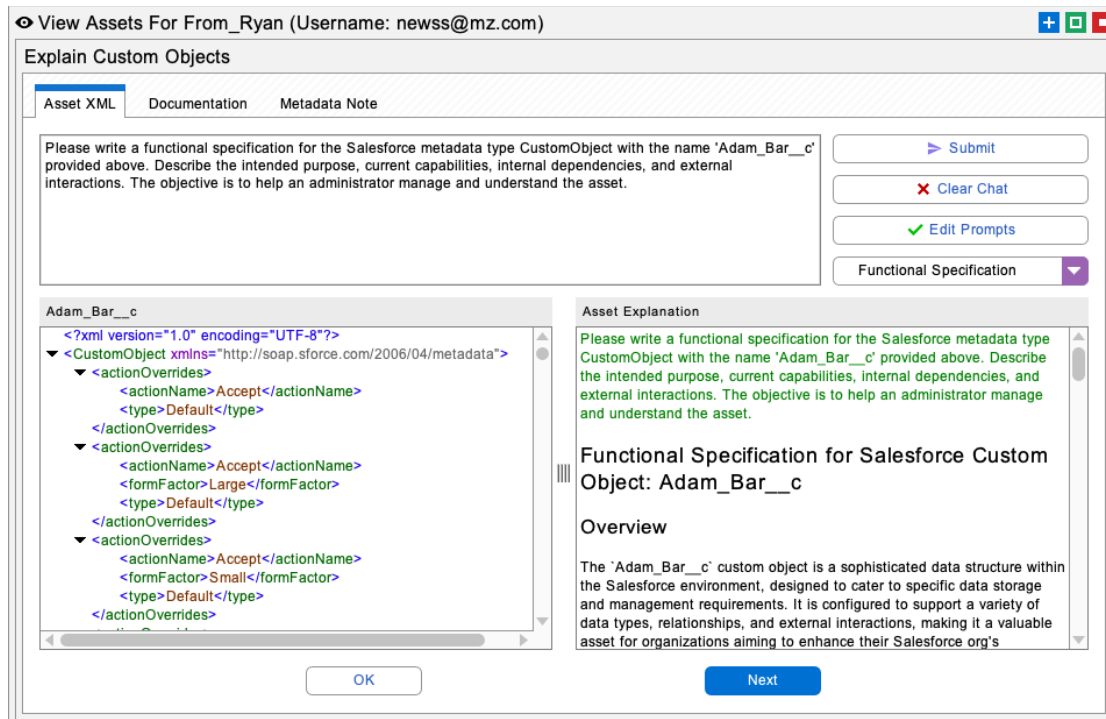
The deployment errors returned by the Metadata API are often difficult to understand. Now, Snapshot can use AI to explain metadata deployment errors. In many situations, the Intelligent Assistant can both explain the error message and suggest the correct solution. In the screenshot below, metadata deployment errors were encountered, they are visible at lower right. Right-click and select Explain Error Messages to bring up the Error Explanation interface.



The data migration tools will also explain errors and suggest solutions. Just right-click the error message returned in the Migrate Datasets application to bring up the Error Explanation interface.

## Explaining Assets

There are many places in Snapshot where the user can view metadata assets. There are XML assets like Custom Objects and text-based assets like Apex Classes. Now, when working with an asset, you can right click and select Explain Asset. This brings up the Explain Asset interface when you can select a prompt to run on the asset.

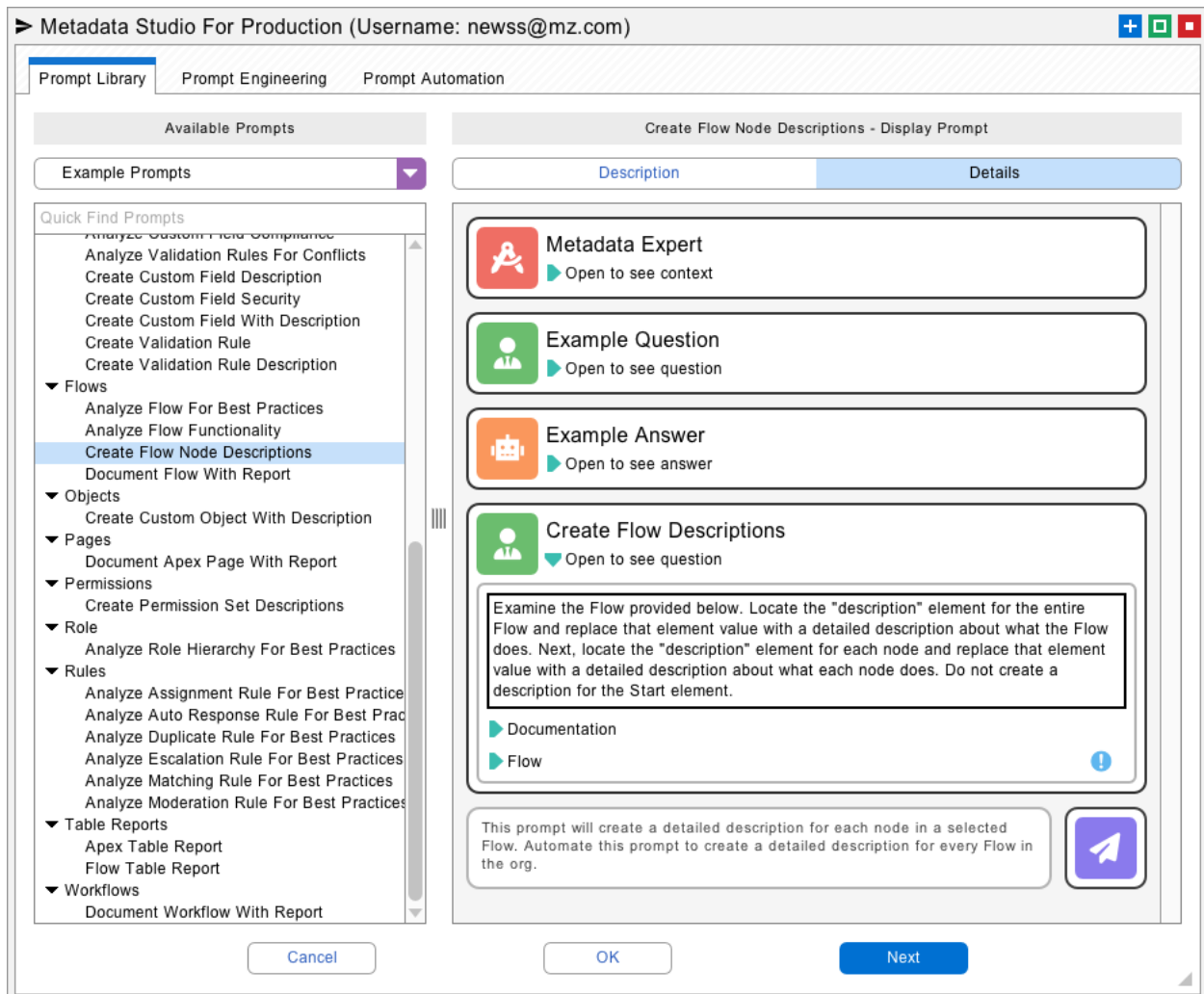


Each prompt can reveal different information about the asset. Click the Edit Prompts button to edit the default prompts or to create new ones based on your corporate policies. Here are the default prompts that are currently available:

- Automated Documentation
- Best Practices
- Compliance Review
- Functional Specification
- Technical Debt

# Metadata Studio

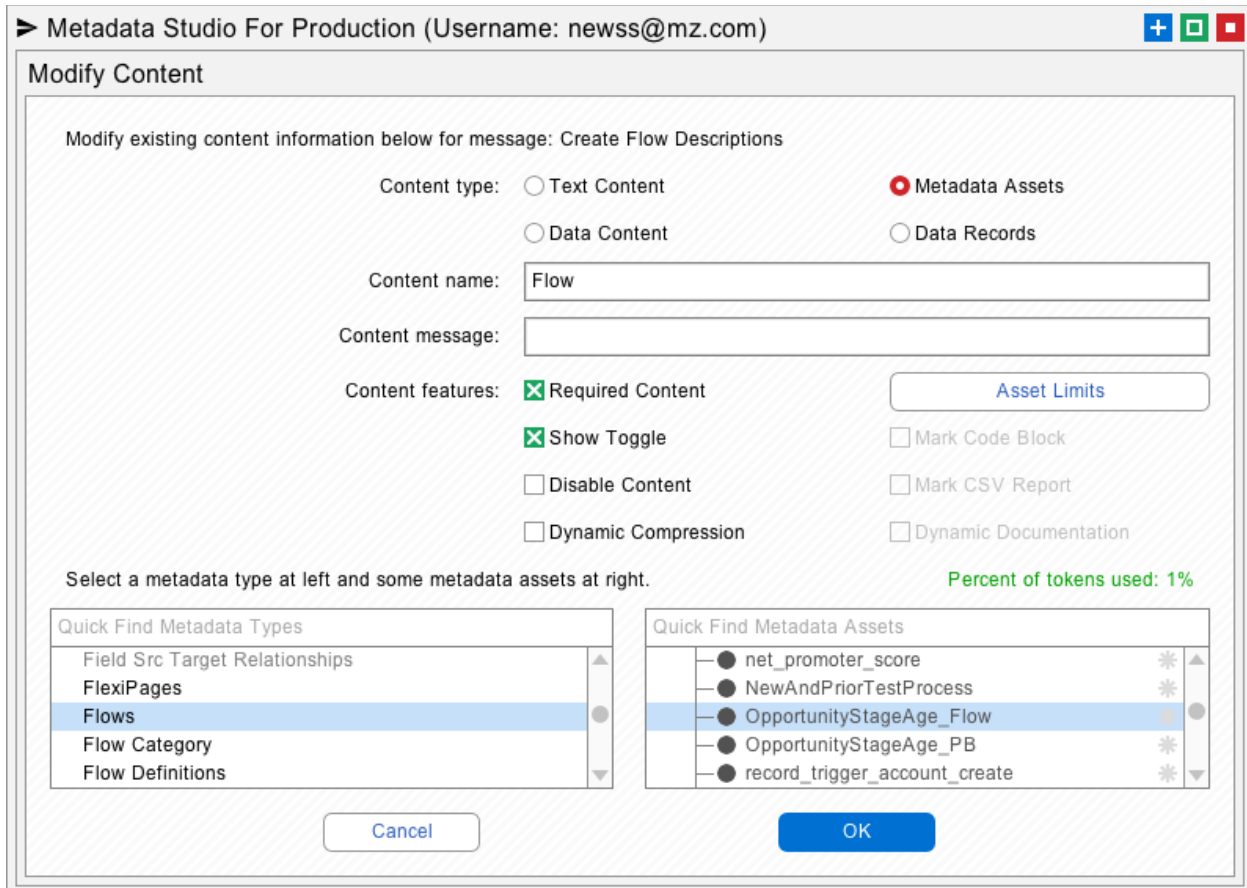
Metadata Studio is a powerhouse prompt engineering platform designed for org management and prompt automation. We supply 60 default prompts that Salesforce administrators and developers can run and customize. You can also create entirely new prompts and share them with your team. The first tab in metadata studio is easy to use. Just select any prompt at left and click the submit button at lower right.



The screenshot displays the Metadata Studio interface for a user named 'newss@mz.com'. The interface is divided into three main sections: 'Prompt Library', 'Prompt Engineering', and 'Prompt Automation'. The 'Prompt Library' section is active, showing a list of 'Available Prompts' on the left and a 'Create Flow Node Descriptions - Display Prompt' section on the right. The 'Available Prompts' list includes categories like 'Example Prompts', 'Quick Find Prompts', 'Flows', 'Objects', 'Pages', 'Permissions', 'Role', 'Rules', 'Table Reports', and 'Workflows'. The 'Create Flow Node Descriptions' prompt is selected, and its details are shown in the right-hand section. The details include a 'Description' tab and a 'Details' tab. The 'Description' tab contains a list of prompts: 'Metadata Expert', 'Example Question', 'Example Answer', and 'Create Flow Descriptions'. The 'Create Flow Descriptions' prompt is selected, and its details are shown in the 'Details' tab. The details include a description of the prompt, a 'Documentation' link, and a 'Flow' link. The 'Details' tab also includes a summary of the prompt's functionality and a 'Next' button.



The second tab is Prompt Engineering where you can create and modify these prompts. Prompts are composed of Messages, and Messages are composed of Content. A message can be created for the System, a User, or the Assistant. Prompts must start with the system message which is followed by any number of user and assistant messages in that order. Here is the content editing interface, below:



Metadata Studio For Production (Username: newss@mz.com)

### Modify Content

Modify existing content information below for message: Create Flow Descriptions

Content type:  Text Content  Metadata Assets  
 Data Content  Data Records

Content name:

Content message:

Content features:  Required Content  Show Toggle  
 Disable Content  Dynamic Compression

[Asset Limits](#)

Mark Code Block  Mark CSV Report  
 Dynamic Documentation

Select a metadata type at left and some metadata assets at right. Percent of tokens used: 1%

Quick Find Metadata Types	Quick Find Metadata Assets
Field Src Target Relationships	net_promoter_score
FlexiPages	NewAndPriorTestProcess
<b>Flows</b>	<b>OpportunityStageAge_Flow</b>
Flow Category	OpportunityStageAge_PB
Flow Definitions	record_trigger_account_create

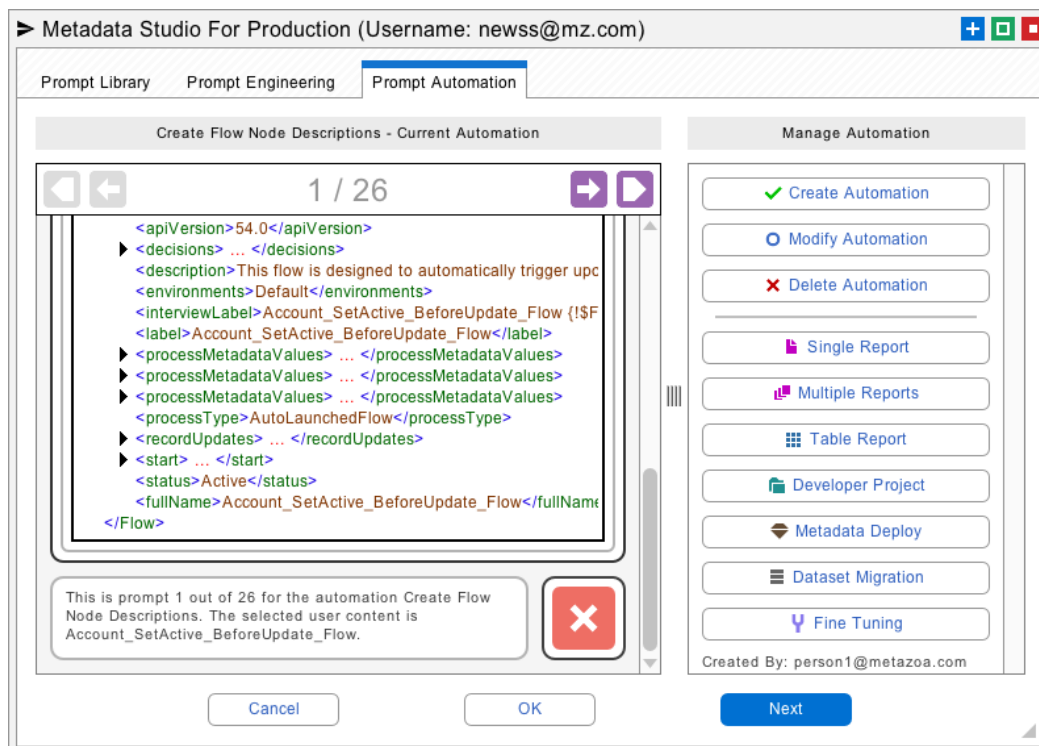
[Cancel](#) [OK](#)

Content can be composed of metadata assets, data records, XML data, or text characters. Check the Required Content option to have the end user manually select the content information before continuing. Use the Assets Limits button to control what metadata assets and data records can be selected. For example, you might want the user to only select apex test classes, or certain types of data records.

The Dynamic Compression option will compress metadata assets and data records to fit within the token limits. This is accomplished by removing the least important parts of the asset. The Dynamic Documentation option will document all the elements in the metadata assets and data records for superior AI responses.

## Prompt Automation

The last tab is Prompt Automation which allows a prompt to be applied to the entire org. For example, let's say you have a prompt that creates node descriptions for a Flow. You can open that prompt on the Prompt Automation tab and run it on any number of selected Flows. Then all those changes can be opened in the deployment tooling. Here is another example. Let's say you have a prompt that documents an Apex Class. In prompt automation you can document all of your Apex Classes and assemble this information into a single report table.



Here are the options on the right-hand side of the dialog for using automated prompts. All the output from the prompt can be combined into a Single Report, or you can save Multiple Reports, one for each prompt. The CSV output of each prompt can also be assembled into a Table Report. When the prompts contain metadata assets, this information can be saved as a local Developer Project. You can also deploy this information immediately with the Metadata Deployment option. Lastly, when the prompts contain data records, this information can be saved for Dataset Migration. In this manner, the powerful Snapshot tools for Metadata Deployment and Data Migration are directly integrated into the Prompt Engineering platform.

# Intelligent Search

Our Intelligent Search application expands your team with an intelligent assistant that knows everything about your org. There are four main areas with selected grounding data that Intelligent Search can focus on:

## **Data Records**

You can select any set of data records and connected children and ask Intelligent Search questions about them. For example, you could select an Account with connected Opportunities and Contacts and then ask about the next best steps to close one of the opportunities.

## **Object Schema**

This option uses schema information for a selected object. For example, if you select an object, you could create Validation Rules, Custom Fields, Record Types, Picklists, SOQL Filters, or Formula Fields for that object.

## **Metadata Types**

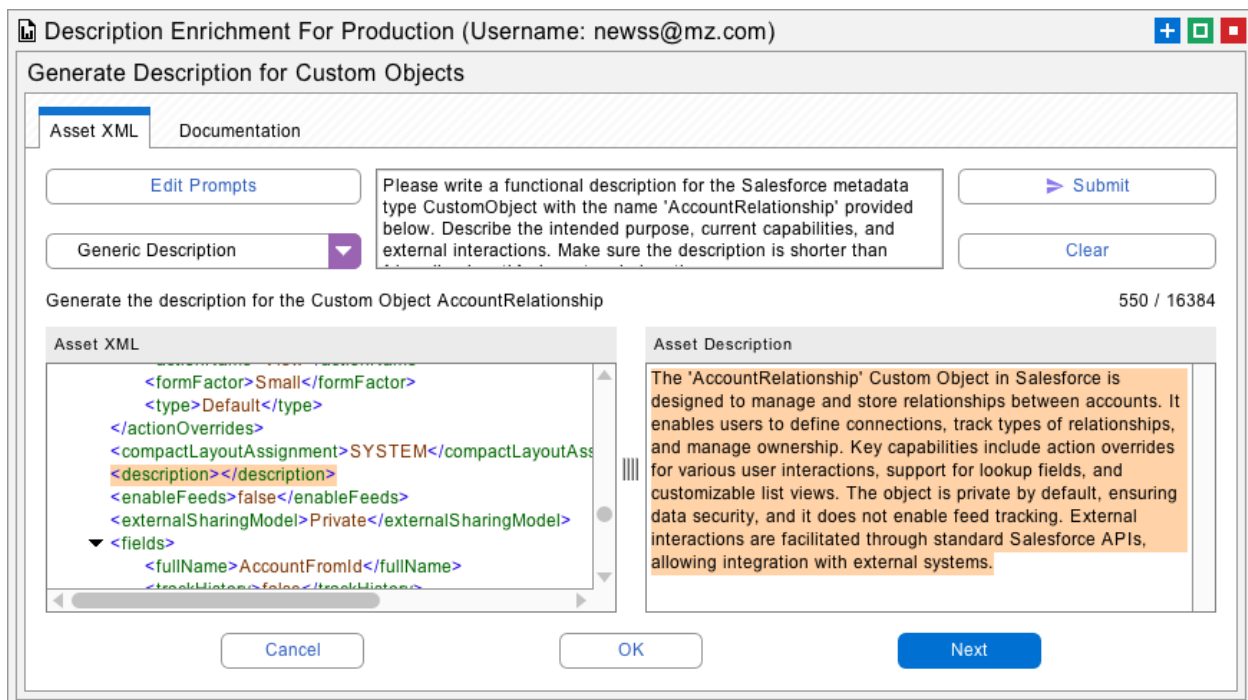
You can select any number of metadata assets and ask Intelligent Search questions about them. For example, you could select multiple Validation Rules and ask if there are conflicts between them. Or you could select a Flow and ask what it does or see if there are any security problems.

## **Org Management**

This option lets you ask any kind of question about org management. Our extensive library of whitepapers and documentation is used for grounding data. The intelligent assistant can answer your questions and suggest strategies to solve org management problems.

## Description Enrichment

Our latest application of AI technology can be found in the Description Enrichment report. This application gathers information from the 160 metadata types that have a description field. You can identify assets that need descriptions, and better yet, you can edit the descriptions right from the report, review the changes, and deploy the new descriptions immediately.



Description Enrichment For Production (Username: newss@mz.com)

### Generate Description for Custom Objects

Asset XML | Documentation

[Edit Prompts](#)

Please write a functional description for the Salesforce metadata type CustomObject with the name 'AccountRelationship' provided below. Describe the intended purpose, current capabilities, and external interactions. Make sure the description is shorter than

[Submit](#)

Generic Description ▼ [Clear](#)

Generate the description for the Custom Object AccountRelationship 550 / 16384

Asset XML

```

<formFactor>Small</formFactor>
<type>Default</type>
</actionOverrides>
<compactLayoutAssignment>SYSTEM</compactLayoutAss
<description></description>
<enableFeeds>>false</enableFeeds>
<externalSharingModel>Private</externalSharingModel>
<fields>
  <fullName>AccountFromId</fullName>
  <trackHistory>>false</trackHistory>

```

Asset Description

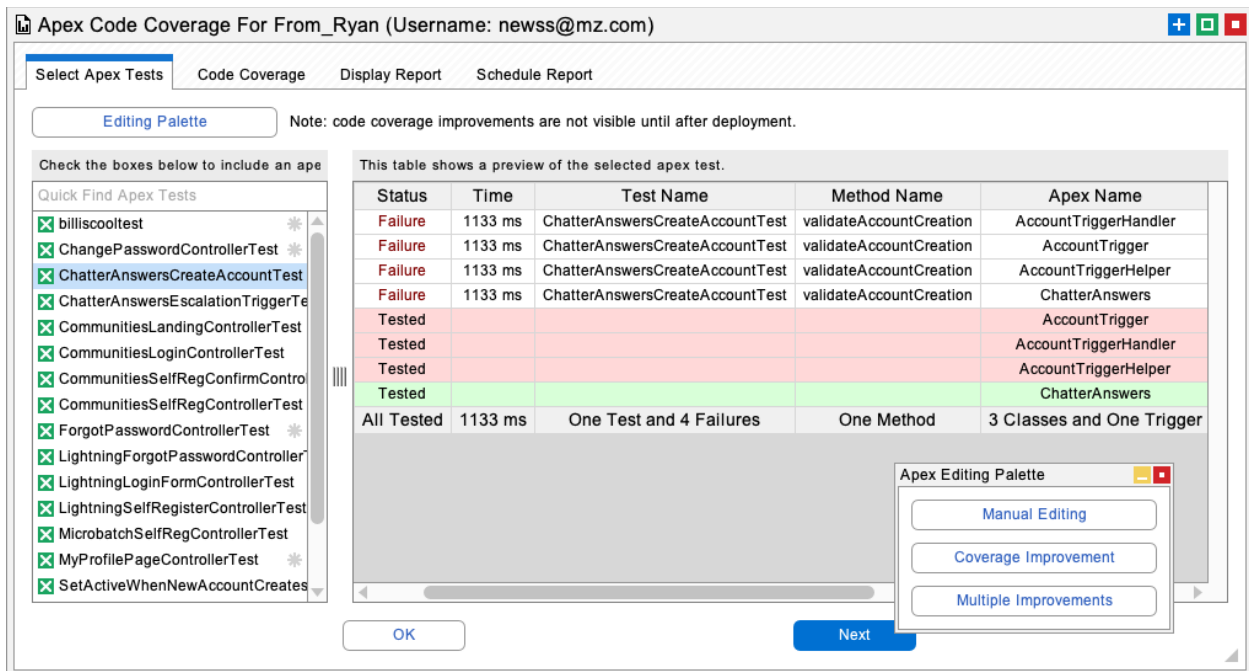
The 'AccountRelationship' Custom Object in Salesforce is designed to manage and store relationships between accounts. It enables users to define connections, track types of relationships, and manage ownership. Key capabilities include action overrides for various user interactions, support for lookup fields, and customizable list views. The object is private by default, ensuring data security, and it does not enable feed tracking. External interactions are facilitated through standard Salesforce APIs, allowing integration with external systems.

[Cancel](#) [OK](#) [Next](#)

Description Enrichment also includes a sophisticated capability to generate new descriptions using AI. The end user can select from a variety of prompts or create their own. This allows different prompts to be used for each metadata type. Lastly, Description Enrichment allows the selection of multiple metadata assets and the automatic creation of descriptions for all of them. Again, these changes can be carefully reviewed and deployed with our deployment tooling inside the report.

# Apex Code Coverage

The Apex Code Coverage Report shows the Code Coverage for each Test Class in the Org. Now with the use of Artificial Intelligence, you can automatically repair and improve Code Coverage for any Test Class. The improvement can start with a single Test Class. You can edit the prompts and make sure that the results conform to your business practices and policies. Then the improvements in Code Coverage can be automated for any number of Test Classes in the Org with the Multiple Improvements button. The changes can be reviewed and deployed right from the same interface.



Apex Code Coverage For From\_Ryan (Username: newss@mz.com)

Select Apex Tests | Code Coverage | Display Report | Schedule Report

Editing Palette Note: code coverage improvements are not visible until after deployment.

Check the boxes below to include an apex test

Quick Find Apex Tests

- billiscooltest
- ChangePasswordControllerTest
- ChatterAnswersCreateAccountTest
- ChatterAnswersEscalationTriggerTest
- CommunitiesLandingControllerTest
- CommunitiesLoginControllerTest
- CommunitiesSelfRegConfirmControllerTest
- CommunitiesSelfRegControllerTest
- ForgotPasswordControllerTest
- LightningForgotPasswordControllerTest
- LightningLoginFormControllerTest
- LightningSelfRegisterControllerTest
- MicrobatchSelfRegControllerTest
- MyProfilePageControllerTest
- SetActiveWhenNewAccountCreates

This table shows a preview of the selected apex test.

Status	Time	Test Name	Method Name	Apex Name
Failure	1133 ms	ChatterAnswersCreateAccountTest	validateAccountCreation	AccountTriggerHandler
Failure	1133 ms	ChatterAnswersCreateAccountTest	validateAccountCreation	AccountTrigger
Failure	1133 ms	ChatterAnswersCreateAccountTest	validateAccountCreation	AccountTriggerHelper
Failure	1133 ms	ChatterAnswersCreateAccountTest	validateAccountCreation	ChatterAnswers
Tested				AccountTrigger
Tested				AccountTriggerHandler
Tested				AccountTriggerHelper
Tested				ChatterAnswers
All Tested	1133 ms	One Test and 4 Failures	One Method	3 Classes and One Trigger

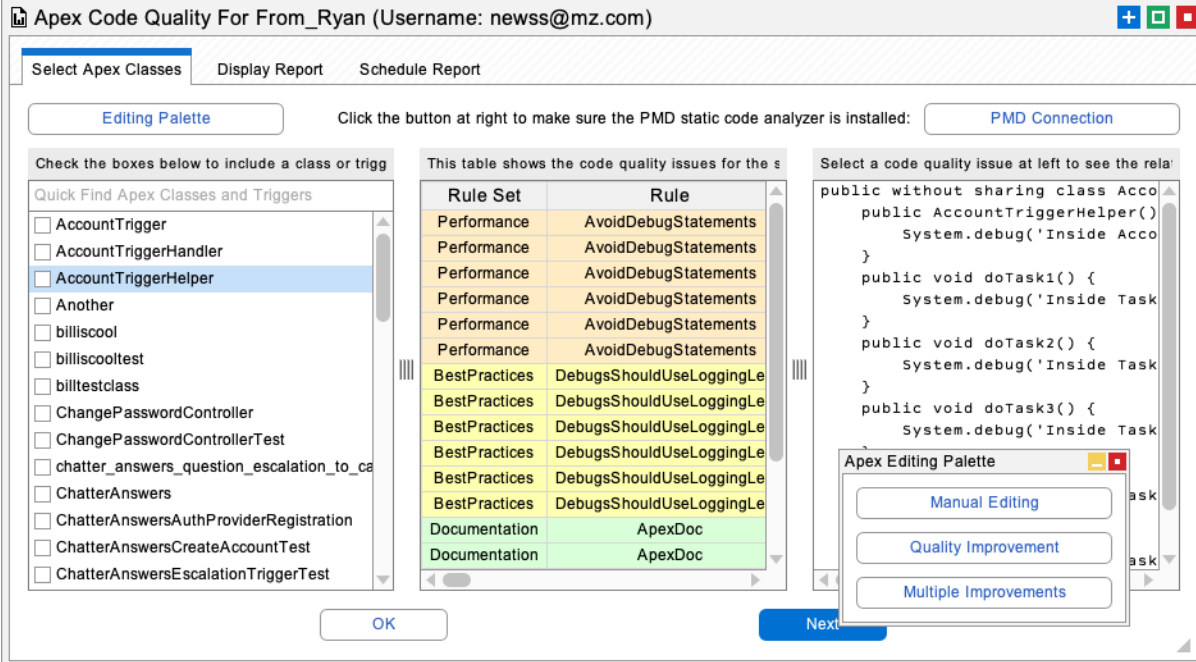
Apex Editing Palette

- Manual Editing
- Coverage Improvement
- Multiple Improvements

OK Next

# Apex Code Quality

The Apex Code Quality Report uses PMD static code analysis to list out Code Quality Issues for any selected Apex Class or Trigger. You can also run this report on the entire Org. Now with the use of Artificial Intelligence, you can automatically repair and improve the Code Quality Issues that were discovered. The improvement can start with a single Class or Trigger. You can edit the prompts and make sure that the results conform to your business practices and policies. Then the improvements in Code Quality can be automated for any number of Classes or Triggers in the Org with the Multiple Improvements button. The changes can be reviewed and deployed right from the same interface.



The screenshot shows the 'Apex Code Quality For From\_Ryan (Username: newss@mz.com)' interface. It features three main tabs: 'Select Apex Classes', 'Display Report', and 'Schedule Report'. The 'Select Apex Classes' tab is active, showing an 'Editing Palette' and a 'PMD Connection' button. Below these are three main sections:

- Check the boxes below to include a class or trigger:** A list of Apex classes with checkboxes. 'AccountTriggerHelper' is selected.
- This table shows the code quality issues for the s:** A table with columns 'Rule Set' and 'Rule'.
 

Rule Set	Rule
Performance	AvoidDebugStatements
Performance	AvoidDebugStatements
Performance	AvoidDebugStatements
Performance	AvoidDebugStatements
Performance	AvoidDebugStatements
Performance	AvoidDebugStatements
BestPractices	DebugsShouldUseLoggingLe
BestPractices	DebugsShouldUseLoggingLe
BestPractices	DebugsShouldUseLoggingLe
BestPractices	DebugsShouldUseLoggingLe
BestPractices	DebugsShouldUseLoggingLe
BestPractices	DebugsShouldUseLoggingLe
Documentation	ApexDoc
Documentation	ApexDoc
- Select a code quality issue at left to see the rela:** A code editor showing the source code for 'AccountTriggerHelper' with a 'Debug' statement.

An 'Apex Editing Palette' is overlaid on the code editor, containing three buttons: 'Manual Editing', 'Quality Improvement', and 'Multiple Improvements'. The 'Next' button is visible at the bottom right.

## Conclusion

There you have it. Metazoa wants to revolutionize org management with AI and prompt engineering. This white paper has discussed how we use AI with our administrative thinking partner Intelligent Search and our prompt engineering platform Metadata Studio to document the org, remove technical debt, and optimize security for administrators and developers. This technology is delivered in a Zero Trust security environment that companies can deploy with confidence.

Bill Appleton  
CTO Metazoa  
[bill@metazoa.com](mailto:bill@metazoa.com)