onestream

AI System Diagnostics Guide

PV8.5.0 SV100

Table of Contents

Overview

AI System Diagnostics builds on the capabilities of System Diagnostics by introducing the ability to scan custom code within the application for inefficiencies and poor coding practices that may negatively impact the environment's performance. By finding and eliminating these inefficiencies within the existing code, AI System Diagnostics helps ensure an environment's performance is optimized.

AI System Diagnostics includes a set of Predefined Conditions that identify common poor coding practices, complete with descriptions and examples, as well as a compiled list of OneStream-specific issues that can be found in custom code. To run a scan, users select the conditions they wish to evaluate, along with the option to specify which components to scan: Business Rules (here includes workspace assemblies and member formulas), Data Adapters, or both.

Once a scan is complete, a detailed report is generated containing the following:

- **Condition Name**: The name of the condition identified by the scan.
- **Scan Item Type**: The type of item containing the condition, either Business Rule or Data Adapter.
- **Scan Item**: The name of the file or item containing code that the scan detected with the condition.
- **Line Number Start**: Displays the first line number of the region of code where the scan has found its criteria.
- **Line Number End**: Displays the final line number of the region of code where the scan has found its criteria.

- **Severity Level**: Displays how detrimental this condition is to the performance of the system (Low, Medium, High). Some conditions are minor inconveniences to the system, while others play a vital role in the overall health of the environment. Any marked as High should be analyzed closely.
- **Explanation**: A Large Language Model (LLM)-generated explanation for why this region of code met the specified condition and why it is causing an inefficiency in their environment.
- **Suggested Fix**: An LLM-generated suggested fix for the region of code determined to meet the condition.

With AI System Diagnostics you can:

- Apply Predefined Conditions.
- Create and edit Custom Conditions.
- Run scans on the Home page.
- Run jobs asynchronously.
- Use multi-select tagging to filter and find relevant conditions easily.
- Download the report generated from a scan.

> **IMPORTANT:** AI System Diagnostics is a paid solution and runs on Platform 9.0. To access the SensibleAI Studio and verify your Platform version, contact your Account Executive.

Setup and Installation

AI System Diagnostics now comes preinstalled alongside System Diagnostics in your OneStream environment. To use AI capabilities, the appropriate AI package must be enabled, containing Xperiflow and AI Plugin - OneStream System Diagnostics. Please contact your OneStream Account Executive for further instructions.

AI System Diagnostics can be installed within an existing OneStream application, yet it enables you to analyze the performance of all applications in a given environment. See Install System Diagnostics for details.

This section contains important details related to the planning, configuring, and installation of your solution. Before you install the solution, familiarize yourself with these details.

Dependencies

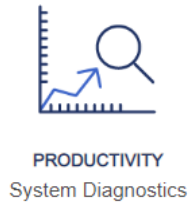
Component	Description
OneStream 9.0.0 or later	Minimum OneStream Platform version required to install this version of AI System Diagnostics.
Xperiflow 4.0.0 or later	Minimum Xperiflow Engine version required to install this version of AI System Diagnostics.

Component	Description
PSD Xperiflow 4.0.0 or later	Minimum Xperiflow Engine version required to install AI Plugin - OneStream System Diagnostics (PSD) which is needed for AI System Diagnostics.

Install AI System Diagnostics

AI System Diagnostics is an independent dashboard within System Diagnostics and it will install alongside it. Follow these steps to install the AI System Diagnostics dashboard:

1. In the OneStream Solution Exchange, go to **OneStream Solution** > **System Diagnostics**.



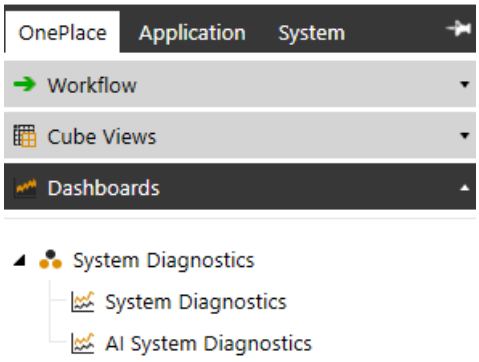
2. On the System Diagnostics Solution page, select the appropriate OneStream platform version from the **Minimum Platform Version** drop-down list.
3. Select the most recent version from the **Solution Version** drop-down list and click **Download**.
4. Log in to OneStream.
5. On the **Application** tab, click **Tools > Load/Extract**.
6. On the **Load** tab, locate the solution package using the **Select File** icons and click **Open**.
7. When the solution's file name appears, click **Load**.
8. Click **Close** to complete the installation.

Set Up AI System Diagnostics

> **IMPORTANT:** AI System Diagnostics is an independent dashboard within System Diagnostics and will install alongside System Diagnostics. See *Set Up System Diagnostics* in the *System Diagnostics Guide*.

The first time you run AI System Diagnostics, you are guided through the table setup process.

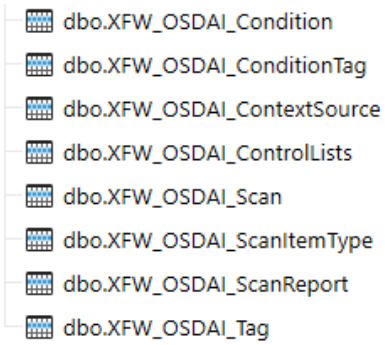
In OneStream, click **Community Solution** > **Dashboards** > **System Diagnostics** > **AI System Diagnostics**.



Create Tables

1. Click **Step 1: Setup Tables**.

   The following tables are created in the OneStream framework database:



2. Click **Step 2: Launch Solution** to open AI System Diagnostics.

Global Settings

The **Global Settings** page contains key properties that guide administration are set in the **Security Settings** tab, as well as the **Uninstall** tab, which provides solution uninstall options.

Security Settings

Administrators can use the Security Management settings to determine which groups can manage different parts of the AI System Diagnostics solution.

1. Select from the **Security Role** drop-down menu and choose a security group.
2. Click the **Save** button.

Uninstall

Use the Uninstall feature to uninstall the AI System Diagnostics interface or the entire solution. If done as part of an upgrade, any modifications performed on standard AI System Diagnostics objects are removed.

1. On the **Global Options** page, click the **Uninstall** tile.
2. On the **Uninstall** page, select **Uninstall UI** or **Uninstall Full**.
    - Use the **Uninstall UI** button to remove AI System Diagnostics, including related dashboards and business rules, but retain the database and related tables.

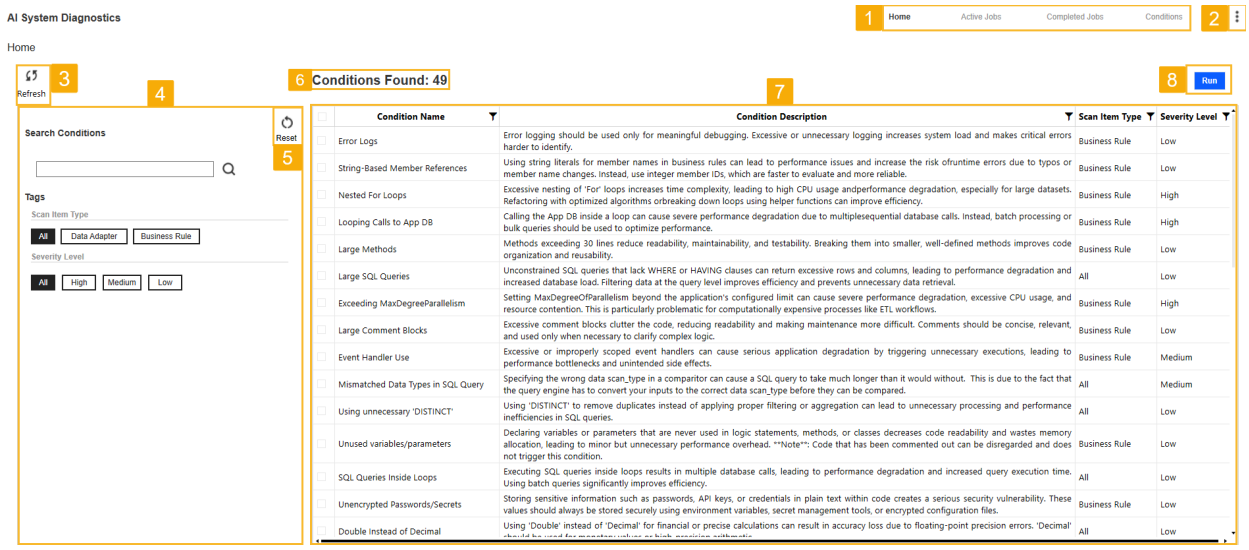
- Use the **Uninstall Full** button to remove all related data tables, data, and AI System Diagnostics dashboards and business rules. Choose this option to completely uninstall AI System Diagnostics or to perform an upgrade that is so significant in its changes to the data tables that this method is required.

  > **CAUTION:** Uninstall procedures are irreversible.

3. On the **Confirm** dialog box, click the **Uninstall** button to proceed.

Home

Use the Home page to view both Predefined and Custom Conditions.



1. **Navigational tabs**:
    - **Home**: View, search, and filter conditions; run scans
    - **Active Jobs**: View all active jobs
    - **Completed Jobs**: Download reports from completed jobs
    - **Conditions**: Create and edit Custom Conditions

    > **NOTE:** The Conditions tab can only be viewed by admins.

2. **Global Options**:
    - **GlobalSettings**: Contains Security Settings and Uninstall
    - **Help**: Contains documentation for AI System Diagnostics

3. **Refresh**: Use to clear cache. Refreshes the conditions found, the conditions table, and will clear the search and tags.
4. **Filter**:
    - **Search Condition**: Use the text box to search for conditions by name
    - **Tags**: Set filters to search for selected conditions. The Conditions Table will refresh to show search results. Multiple tags can be selected from each category.
        1. **Scan Item Type**: All, Data Adapter, Business Rule
        2. **Severity Level**: All, High, Medium, Low

    > **NOTE:** Clicking **Search** with nothing in the text field will reset the search filter, but selected tags remain.

5. **Reset**: Clears the filters and search box. The Conditions Table will show all conditions.
6. **Conditions Found**: Displays the number of conditions
7. **Conditions Table**:
    - **Name**: The condition name. This is set for Custom Conditions only on the Condition page, or are predefined by OneStream.
    - **Description**: Displays the description of the condition. This is set for Custom Conditions only on the Conditions page, or are predefined by OneStream.
    - **Scan Item Type**: Displays the Predefined or Custom Condition type. This is set for Custom Conditions only on the Conditions page, or are predefined by OneStream.

- **Severity Level**: Displays the priority that the condition should be addressed. This is set for Custom Conditions only on the Conditions page, or are predefined by OneStream

> **NOTE:** All fields can be filtered.

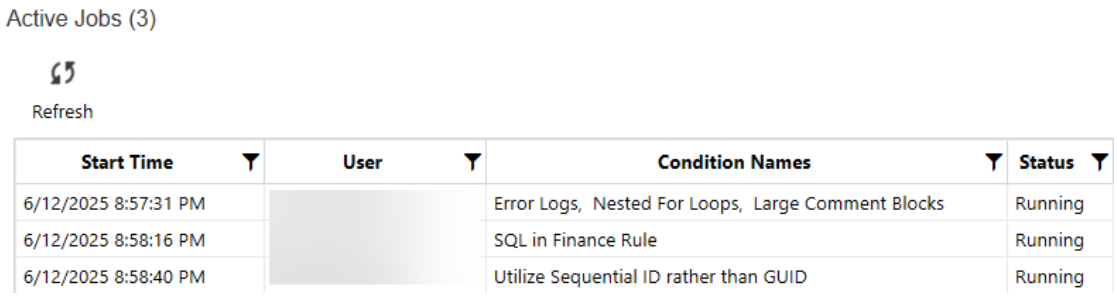
8. **Run**: Runs a report of specified conditions.
    1. Clicking **Run** after you have selected one or more condition will prompt a dialog box asking if you wish to proceed. Click **Confirm**.
    2. Clicking **Run** without selecting conditions will populate a dialog box prompting you to select the conditions you wish to run.

Active Jobs

The Active Jobs page shows all active jobs with a status of Queued or Running. The number of Active Jobs will appear at the top of the page.

- **Start Time**: Displays the local time setting when the job begins
- **User**: Displays the name of the user that initiates the run
- **Condition Name**: Displays the uniquely assigned name of the conditions that are run in the given job
- **Status**: Displays the Job Status from the AI Engine

Click the **Refresh** button to refresh the page and display active jobs.



> **IMPORTANT:** Run times may be impacted by varying factors, such as how many jobs are run at one time or the size of the packages. Additionally, while a job is running, you cannot create or edit Custom Conditions on the Conditions page.

Completed Jobs

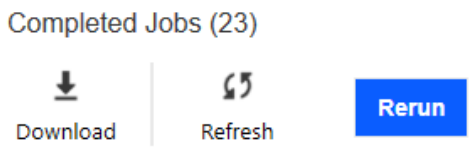
Use the Completed Jobs page to download reports of completed scans. Only jobs with the status of Completed or Failed display in the Conditions Table. The number of Completed Jobs is shown at the top of the page.

On this page you can:

- Download a job by selecting it and clicking **Download**.

> **NOTE:** If you select a failed condition and click Download, you are prompted to view the Error Log because there is no job report to download.

- Update the Completed Jobs table by clicking **Refresh**.
- Repeat a job by selecting it and clicking **Rerun**.



Completed Jobs Table

The table displays the following:

- **Start Time**: The local time when the job begins.
- **End Time**: The local time when the job ends.

- **User**: The name of the user that executed the run.
- **Condition Name**: The unique name of the conditions that the job ran.
- **Status**: The Job Status from the SensibleAI Studio.

Start Time	End Time	User	Condition Names	Status
6/6/2025 12:59:36 PM	6/6/2025 1:06:15 PM	OSDAI_edAdmin	Error Logs	Completed
6/6/2025 12:34:51 PM	6/6/2025 12:59:10 PM	OSDAI_edAdmin	Error Logs, String-Based Membe	Completed
6/6/2025 12:33:00 PM	6/6/2025 12:41:21 PM	OSDAI_edAdmin	Error Logs	Completed

Scan Report

From the Completed Jobs page, your downloaded report is saved in File Explorer.

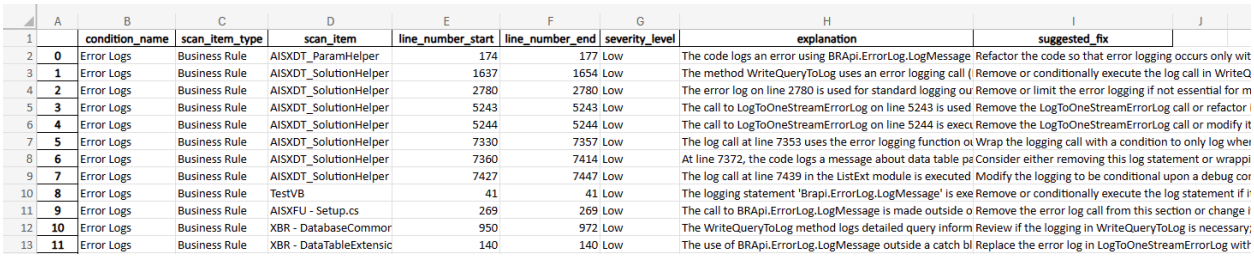
When selecting and downloading a report, it opens as an Excel File (.xslx file). A

Scan Report contains the following information:

- **Condition Name**: The unique name of the condition.
- **Scan Item Type**: The name of the type of scan the condition has run.
- **Scan Item**: The type of scan the condition has run.
- **Line Number Start**: The line of code where the scan detected the condition it was searching for.
- **Line Number End**: The final line of code where the scan detected the condition it was searching for.
- **Severity Level**: The severity of the condition.
- **Explanation**: Shows a detailed explanation of what the scan has picked up from searching the code it was applied to.

- **Suggested Fix**: Contains a detailed plan that you can perform to eliminate the errors in the code that the scan detected in the application where the condition was applied. Follow the steps outlined by the suggested fix to promote efficiency in the environment.

Scan Report Example



	condition_name	scan_item_type	scan_item	line_number_start	line_number_end	severity_level	explanation	suggested_fix
0	Error Logs	Business Rule	AISXDT_ParamHelper	174	177	Low	The code logs an error using BRApi.ErrorLog.LogMessage	Refactor the code so that error logging occurs only wit
1	Error Logs	Business Rule	AISXDT_SolutionHelper	1637	1654	Low	The method WriteQueryToLog uses an error logging call (	Remove or conditionally execute the log call in WriteQ
2	Error Logs	Business Rule	AISXDT_SolutionHelper	2780	2780	Low	The error log on line 2780 is used for standard logging ou	Remove or limit the error logging if not essential for m
3	Error Logs	Business Rule	AISXDT_SolutionHelper	5243	5243	Low	The call to LogToOneStreamErrorLog on line 5243 is used	Remove the LogToOneStreamErrorLog call or refactor
4	Error Logs	Business Rule	AISXDT_SolutionHelper	5244	5244	Low	The call to LogToOneStreamErrorLog on line 5244 is execu	Remove the LogToOneStreamErrorLog call or modify it
5	Error Logs	Business Rule	AISXDT_SolutionHelper	7330	7357	Low	The log call at line 7353 uses the error logging function ou	Wrap the logging call with a condition to only log whe
6	Error Logs	Business Rule	AISXDT_SolutionHelper	7360	7414	Low	At line 7372, the code logs a message about data table pa	Consider either removing this log statement or wrappi
7	Error Logs	Business Rule	AISXDT_SolutionHelper	7427	7447	Low	The log call at line 7439 in the ListExt module is executed	Modify the logging to be conditional upon a debug cor
8	Error Logs	Business Rule	TestVB	41	41	Low	The logging statement 'Brapi.ErrorLog.LogMessage' is exe	Remove or conditionally execute the log statement if i
9	Error Logs	Business Rule	AISXFU - Setup.cs	269	269	Low	The call to BRApi.ErrorLog.LogMessage is made outside o	Remove the error log call from this section or change i
10	Error Logs	Business Rule	XBR - DatabaseCommor	950	972	Low	The WriteQueryToLog method logs detailed query inform	Review if the logging in WriteQueryToLog is necessary;
11	Error Logs	Business Rule	XBR - DataTableExtensic	140	140	Low	The use of BRApi.ErrorLog.LogMessage outside a catch bl	Replace the error log in LogToOneStreamErrorLog with

- **Condition Name**: Error Log
- **Scan Item Type**: Business Rule
- **Scan Item**: AISXDT_ParamHelper
- **Line Number Start**: 174
- **Line Number End**: 177
- **Severity Level**: Low
- **Explanation**: The code logs an error using BRApi.ErrorLog.LogMessage outside of a catch block, which may lead to excessive and unnecessary logging. This can increase system load and make it harder to identify truly.
- **Suggested Fix**: Refactor the code so that error logging occurs only within catch blocks or remove the logging call if it's not providing meaningful debugging information. Alternatively, use conditional logging to ensure that only significant errors are recorded.

Conditions

On the Conditions Page you can view Predefined Conditions, or create and edit Custom Conditions. All conditions can be viewed from the Conditions Table. There are a total of 38 Predefined Conditions, and the total number of conditions, including Custom can also be found here.

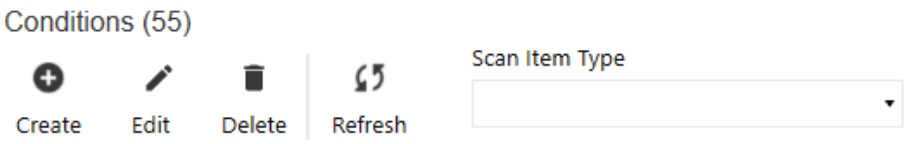
Conditions, either Predefined or Custom, will not scan OneStream Solutions and Partner Solutions. These are whitelisted.

On this page you can:

- **Create** a Custom conditions.
- **Edit** a Custom condition.
- **Delete** a Custom condition. This action cannot be undone.

  > **NOTE:** Predefined conditions cannot be deleted.

- Clear cache by selecting **Refresh**. The Conditions Table and the number of conditions refreshes.
- Filter conditions with the **Scan Item Type** drop-down menu.



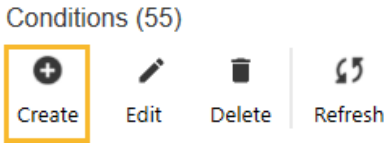
Conditions Table

- **Condition Name**: The uniquely assigned name of the condition
- **Condition Description**: A user-legible definition of the condition. This will appear on the Home page for users to select for future scans.
- **Natural Language Definition**: The prompt informs the Large Language Model on how the condition acts once created, and how it scans code. This additional context will help aide the LLM in determining what to look for. It is best to be as specific as possible with the NLD, describing why the coding practice that the condition will look for should be avoided.
- **Condition Type**: Defines whether a condition is either Custom or Predefined
- **Scan Item Type**: Displays the type of scan the condition will run, Business Rule, Data Adapter, or All
- **Severity Level**: Shows the severity of a condition, either High, Medium or Low
- **Refresh**: Use to clear cache. The Conditions Table and the number of conditions refreshes.

Condition Name	Condition Description	Natural Language Definition	Condition Type	Scan Item Type	Context Source	Severity Level
Error Logs	Error logging should be used only for meaningful debugging. Excessive or unnecessary logging increases system load and makes critical errors harder to identify.	Unnecessary error logging increases system load and makes debugging harder by adding too much noise to logs, which can hide important errors. Instead, logs should be used only for meaningful debugging and be removed when no longer needed. **Note**: An error log inside of a "Catch", such as "throw ErrorHandler.LogWrite(si, new XFException(si, ex))", is safe. Do not flag this.	Predefined	Business Rule	Business Rule API Documentation	Low
String-Based Member Re	Using string literals for member names in business rules can lead to performance issues and increase the risk ofruntime errors due to typos or member name changes. Instead, use integer member IDs, which are faster to evaluate and more reliable.	String literals representing member names in business rules should be avoided. Using strings can be error-prone and less efficient, especially when member names change or contain typos. Instead, reference members by their integer member IDs, which are more performant and reduce risk in production environments.	Predefined	Business Rule	Business Rule API Documentation	Low
Nested For Loops	Excessive nesting of 'For' loops increases time complexity, leading to high CPU usage andperformance degradation, especially for large datasets. Refactoring with optimized algorithms orbreaking down loops using helper functions can improve efficiency.	Nested For loops significantly slow down execution by increasing time complexity, often leading to exponential performance issues. This can cause unnecessary CPU usage, especially when handling large datasets. Instead, consider alternative approaches such as using caching, recursion, LINQ, or precomputing reusable values to improve efficiency.	Predefined	Business Rule	Business Rule API Documentation	High

> **IMPORTANT:** You cannot create or edit Custom Conditions while a scan is running. This will avoid a concurrency error.

Create a New Condition



1. To add a new condition, click the **Create** button to be guided through the AI Component Workflow.
2. In the **Condition Name** text box, enter a unique name for your new condition.

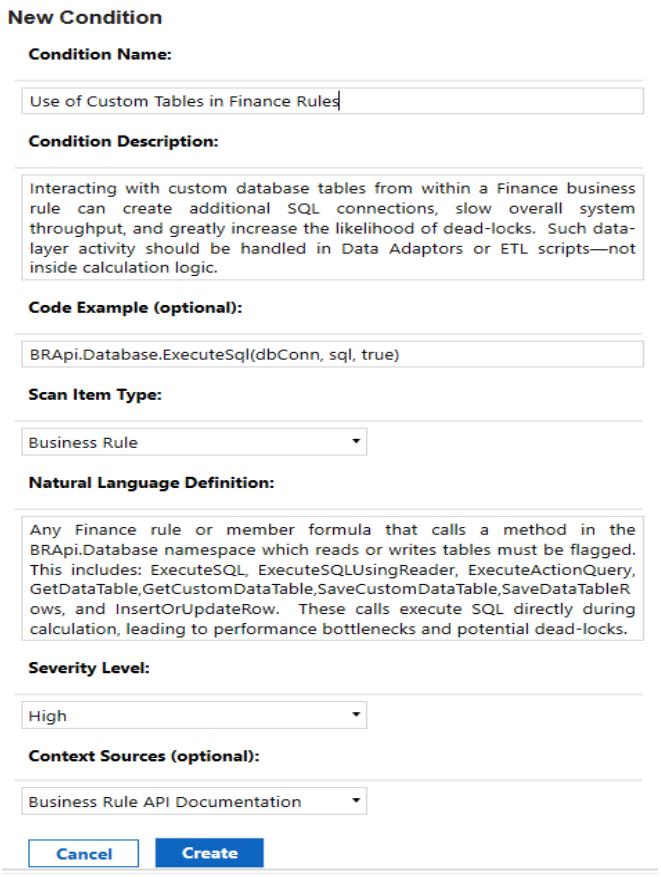
   > **NOTE:** Names of conditions are unable to be edited later.

3. Enter a description in the **Condition Description** text box of what the bad practice in the code is that the scan trying to catch.
4. In the **Code Example** text box, enter a short code snippet of the bad practice described in the Condition Description. This field is optional, but will highly aid in accuracy of code scan results if used.
5. The **Scan Item Type** will determine what types of OneStream artifacts will be scanned for this condition. Use the drop-down menu to choose one of the following scan item types:
   - All
   - Business Rule
   - Data Adapter
6. In the **Natural Language Definition** text box, enter a prompt to inform the model of the condition requirements. The more detailed and specific a prompt is will result in a narrow and efficient scope when the condition scans the code.

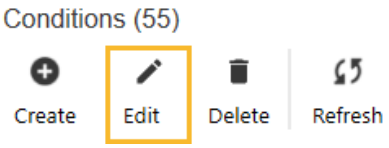
> **Example:** NLD prompt for an Error Log condition: Unnecessary logging with Brapi.ErrorLog.LogMessage increases system load and makes debugging harder by adding too much noise to logs, which can hide important errors. Instead, logs should be used only for meaningful debugging and be removed when no longer needed.

7. From the **Severity Level** drop-down menu, select the severity of your condition:
   - Low
   - Medium
   - High
8. Some conditions need additional context apart from face-value code to determine if it meets the criteria for being a bad practice. Context should be used only when necessary to increase accuracy in scans. If you specify unnecessary context to be included, it can lead to confusion and inconsistent results in the model. Use the **Context Sources (optional)** drop-down to select the parameter that the condition will be applied to:
   - Business Rule API Documentation
   - Database Table Schema
   - Application Metadata
9. Click **Create** and your saved condition will appear in the Conditions Table.

> **NOTE:** If you click **Cancel**, the AI Component Workflow field closes without saving any changes.



Edit a Custom Condition



To edit a Custom Condition, select the condition and click the **Edit** button and the AI Component Workflow will open.

You can make changes to the following:

- **Condition Description**: Edit the description describing the bad practice that informs how the condition will act
- **Code Example (optional)**: Input a different example of code that the scan will look for
- **Scan Item Type**: Change the condition type
- **Natural Language Definition**: Change the prompt that sets the model requirements and informs how the condition will act and scan code
- **Severity Level**: Select the severity level of your condition
- **Context Sources (optional)**: From the drop-down menu, can change the parameter that the condition will be applied to

Click the **Update** button and the Conditions Table will refresh with your saved changes. Clicking **Cancel** will cause the AI Component Workflow to close without saving any changes.

> **NOTE:** You are unable to edit Predefined Conditions.

Help and Miscellaneous Information

This page contains solution documentation.

Display Settings

OneStream Solutions frequently require the display of multiple data elements for proper data entry and analysis. Therefore, the recommended screen resolution is a minimum of 1920 x 1080 for optimal rendering of forms and reports.

Additionally, OneStream recommends that you adjust the Windows System Display text setting to 100% and do not apply any custom scaling options.

Package Contents and Naming Conventions

The package file name contains multiple identifiers that correspond with the platform. Renaming any of the elements contained in a package is discouraged in order to preserve the integrity of the naming conventions.

Example Package Name: OSD_PV8.5.0_SV100_PackageContents.zip

Identifier	Description
OSD	Solution ID
PV9.0.0	Minimum Platform version required to run solution

Identifier	Description
SV100	Solution version
PackageContents	File name

OneStream Solution Modification Considerations

A few cautions and considerations regarding the modification of OneStream Solutions:

- Major changes to business rules or custom tables within a OneStream Solution will not be supported through normal channels as the resulting solution is significantly different from the core solution.
- If changes are made to any dashboard object or business rule, consider renaming it or copying it to a new object first. This is important because if there is an upgrade to the OneStream Solution in the future and the customer applies the upgrade, this will overlay and wipe out the changes. This also applies when updating any of the standard reports and dashboards.
- If modifications are made to a OneStream solution, upgrading to later versions will be more complex depending on the degree of customization. Simple changes such as changing a logo or colors on a dashboard do not impact upgrades significantly. Making changes to the custom database tables and business rules, which should be avoided, will make an upgrade even more complicated.