

Data Definition Designer

Quick Reference Guide

Introduction

The Data Definition Designer application is used to manage and create Resource Type metadata Descriptions.

Starting the DDD loads the Resource Types workbench Page.

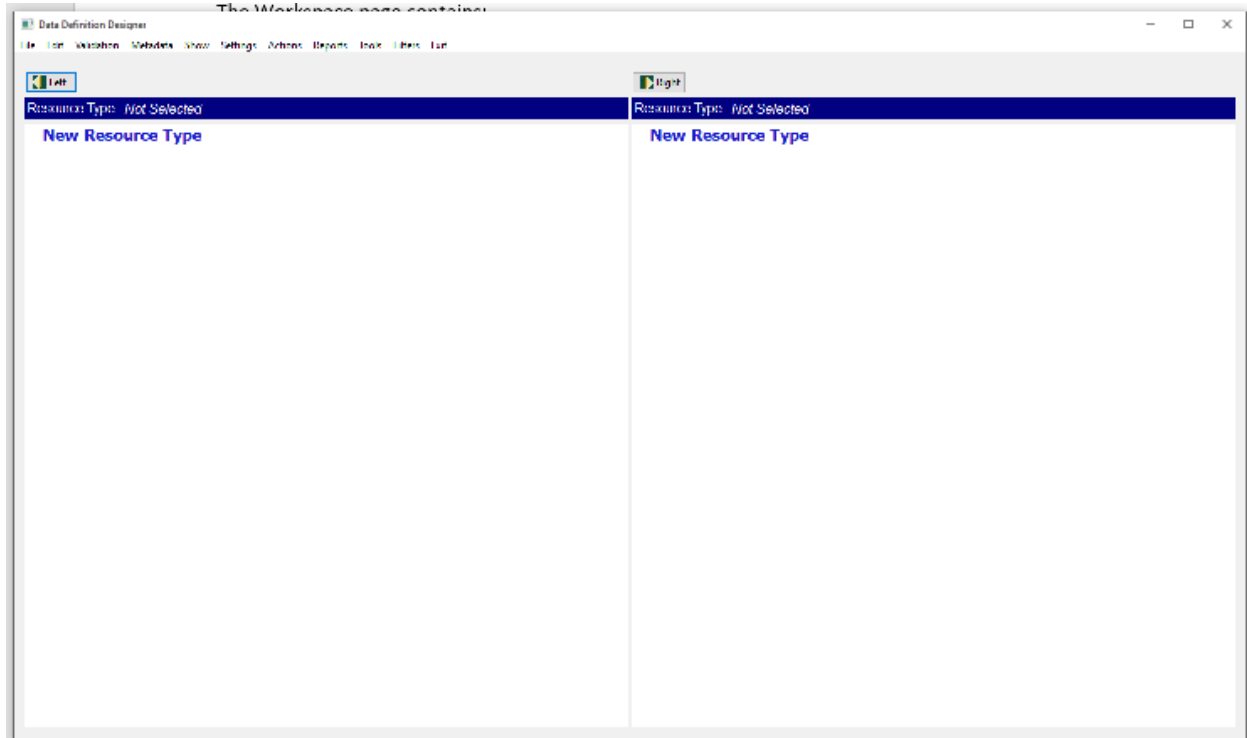


Figure 1 - The workbench Page

The workbench page contains:

- Menu bar
- Left Resource Type selection Icon
- Right Resource Type selection Icon
- Status Bar
- Left and Right Resource Types Tree View

Use the workbench Page to work with two resource types simultaneously. There is a vertically split space between the view areas for each resource type selected.

Load a resource type by selecting either the [Left or Right Resource Type Selection Icons](#) or use the Menu Option [File | Load Left Resource Type](#) or [File | Load Right Resource Type](#).

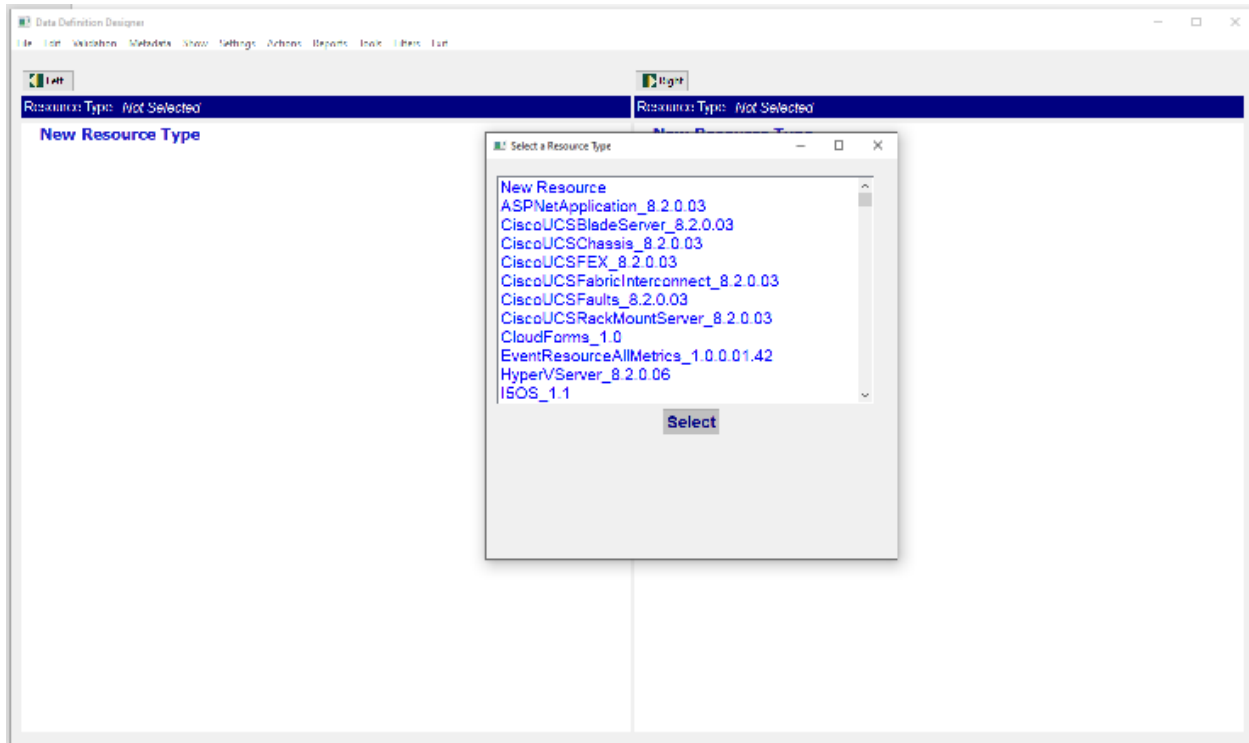


Figure 2 – The Resource Type Selector

When a Resource Type is loaded to either the left or right portion of the workbench, its name is displayed.

The Name is the root of a tree that can be expanded that shows the Resource Type structure and detailed information within each structured category.

All entries on the tree view have invocable editors or display dialogs for the item selected. The Editors are opened by double-clicking an item on the tree view.

The structured categories are:

- Resource Type Description
 - Resource Editor to define the Resource Type Description properties and behaviors.
- Custom Property Descriptions
 - Custom Properties Editor to define the Resource Type custom properties.
- Member Table/Group Descriptions
 - Table or Group Member Editor to define characteristics of a collection of columns/overrides belonging to a table or group.
- Relationship Descriptions
 - Relationship Editor to define relationships to other resource types or Identity Rules.
- Method Descriptions
 - Method Editor allows the definition of specialized generation of KPIs, Merge and Match Tokens, Payload Manipulation and other calculated values to be used elsewhere in the Resource Description.

- **Override Column Descriptions**
 - Override Editor to define column level attributes and behaviors
- **Component Descriptions**
 - Component Editor allows the definition of a component, which can be for sub resources, threshold groups, or other logically aggregated information.
 - Components embed structured categories for Custom Property Descriptions, Member Table/Group Descriptions, Method Descriptions and Override Column Descriptions that apply to the component.

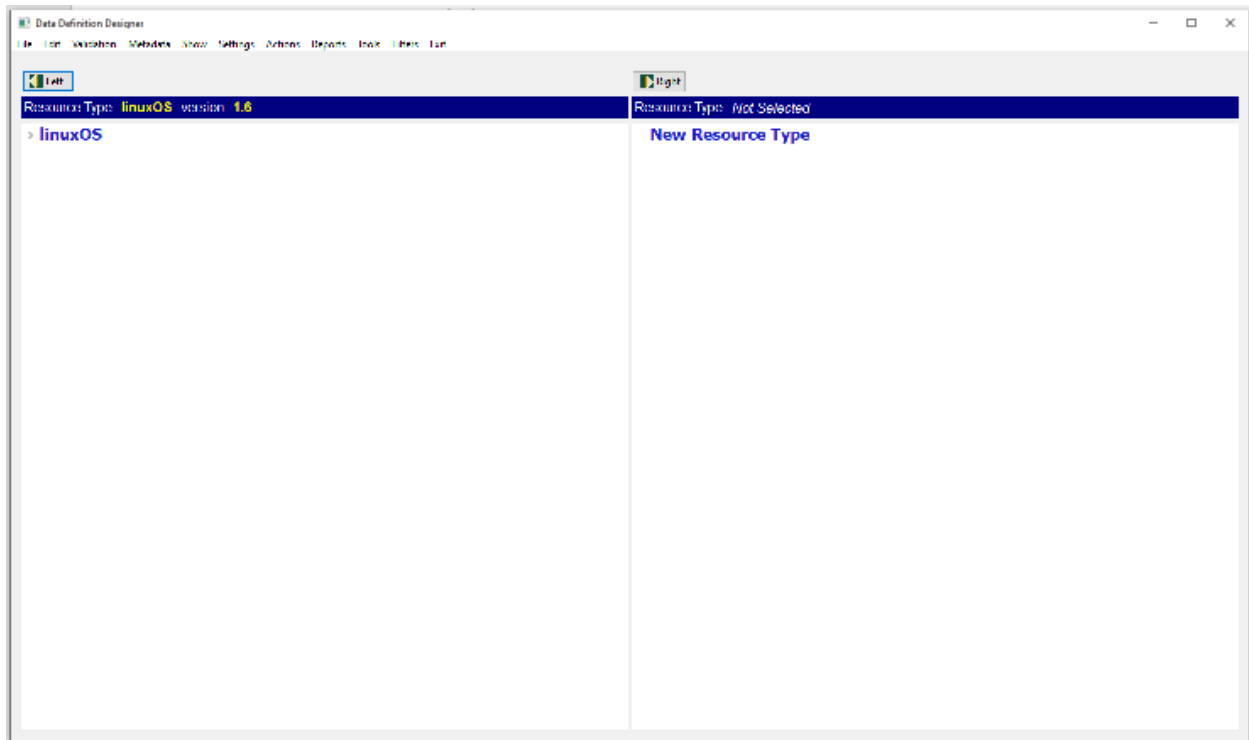


Figure 3 – Initial View of Loaded Resource Type in the workbench

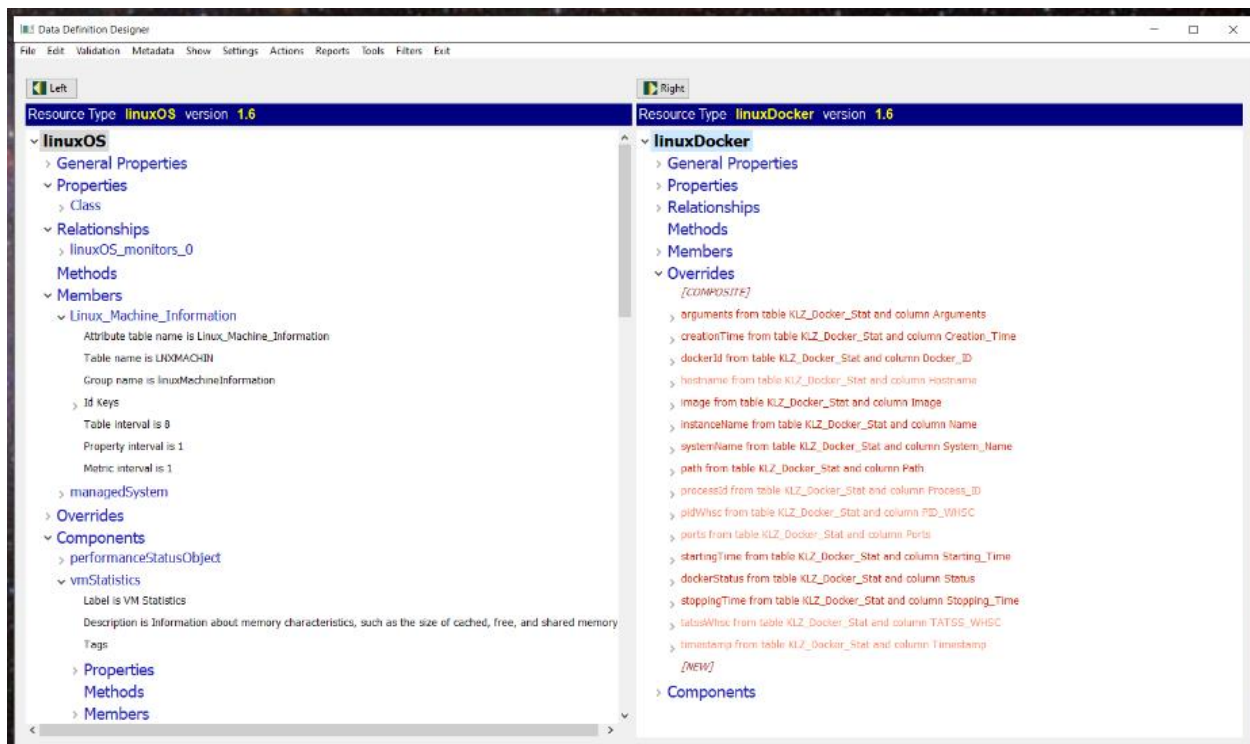


Figure 4 – Workbench resource types that are loaded in both areas showing expanded tree views

General Characteristics of the Editor Operations

The editors available from the tree view items in the workbench all have 'Save' buttons, which save the resource-mapping document in both memory and on disk. As a result, the document is always current on disk and its state is preserved when the Data Definition Designer is used later to modify the same Resource Type Mapping file.

The editors also support validation to keep most common mistakes from happening as items are added or modified. Some of this validation attempts to enforce a set of best practices. When validation issues are encountered, you see either an error dialog, which prevents the change or a warning dialog, which requests you to confirm the change.

The root tree items of Properties, Methods, and Relationships when selected are used to create new entries for these definitions.

Editors

Resource Properties Editor

The Resource Properties Editor defines the general properties and behaviors of the resource type.

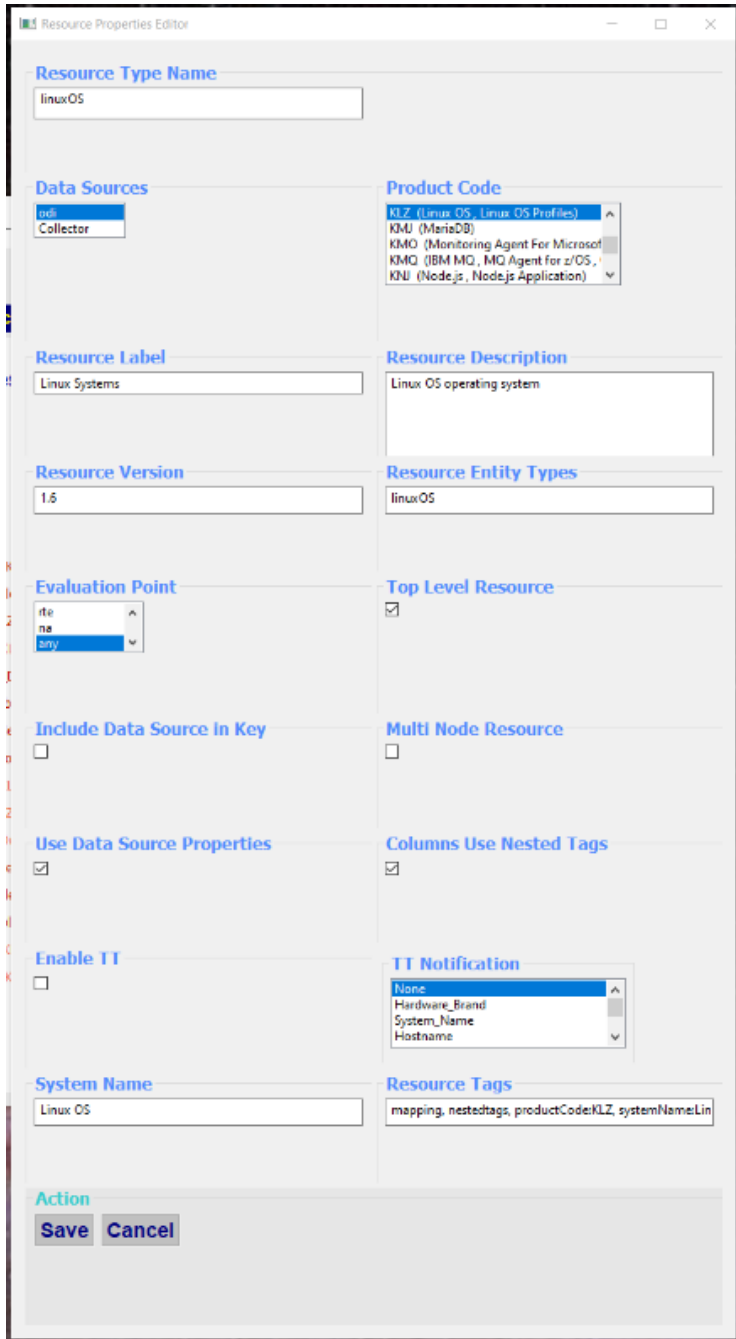


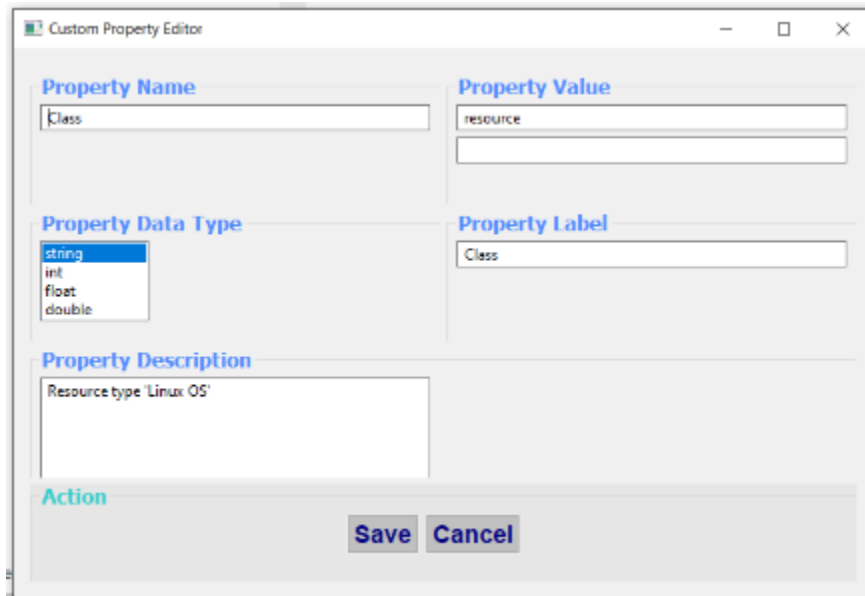
Figure 5 – Resource Properties Editor

Fields

- Resource Type Name
 - Name of the resource type.
- Data Sources
 - The source of information used to define the resource type.
 - This is Collector or ODI (new versus legacy)
- Product Code
 - Product code the resource type is derived from.
- Resource Label
 - Display name of the resource type.
- Resource Description
 - Description of the resource type.
- Resource Version
 - Version of the resource type.
- Resource Entity Types
 - Entity types of the resource type.
 - Currently, this should have one entry that is matching the resource type name.
- Evaluation Point
 - How to evaluate thresholds for this resource type.
 - tema – Evaluates at agent endpoint
 - rte – Evaluates at the server
 - na – No threshold evaluation
 - any –depending on threshold content, evaluates at server or endpoint
- Top Level Resource
 - Mark as a top-level UI Resource Type initially visible.
- Include Data Source in Key
 - Applies the agent provider name as part of calculated uid resource instance identifier.
- Multi Node Resource
 - Same resource instances are expected from multiple endpoints.
- Use Data Source Properties
 - Enable data source properties to be used for relationships and methods.
- Columns Use Nested Tags
 - This should always be set – older tag settings are now deprecated.
- Enable TT
 - Enables Transaction Tracking for this resource type.
- TT Notification
 - Selected columns to be included in notifications to Agent Management for additional information that is required to distribute resource information to effected endpoints.
- System Name
 - Friendly name to describe original description of the monitoring agent or collector responsible for populating resource instances of this resource type.
- Resource Tags
 - Tag values that are associated to the resource type.

Custom Properties Editor

The Custom Properties Editor defines any special user-defined properties and associated values that associate with the Resource Type or a component of the resource type.



The screenshot shows a window titled "Custom Property Editor" with standard window controls (minimize, maximize, close). The window is divided into several sections:

- Property Name:** A text input field containing the text "Class".
- Property Value:** A text input field containing the text "resource", with an empty input field below it.
- Property Data Type:** A dropdown menu with "string" selected. Other options visible are "int", "float", and "double".
- Property Label:** A text input field containing the text "Class".
- Property Description:** A text area containing the text "Resource type: Linux OS".
- Action:** A section at the bottom containing "Save" and "Cancel" buttons.

Figure 6 – Custom Properties Editor

Fields

- Property Name
 - Name of the custom property.
- Property Value
 - One or more associated values for the custom property.
- Property Data Type
 - Data type of the custom property.
 - One of {string, int, float, or double}.
- Property Label
 - Display value of the custom property.
- Property Description
 - Description of the custom property.

Relationship Editor

The Relationship Editor defines what and how to create links from the current resource type to other resource types.

The Relationship Editor also can define Identity Definitions that allow the current resource type to be matched with other resource types to reconcile targeted resource types and instances of targeted resource types.

- Note – The Identity Definitions are to be used in AHA 312 and 321 initiatives.

The screenshot shows the 'Relationship Editor' window for 'linuxOS' version 1.6. The interface is divided into several sections:

- Relationship Name:** A text input field containing 'linuxOS_monitors_0'.
- Edge Type:** A dropdown menu with options: 'definesType', 'monitors' (selected), 'assignedTo', 'manages', and 'uses'.
- Identity:** A checkbox that is currently unchecked.
- Scope to Provider Only:** A checkbox that is unchecked.
- Create as Reference:** A checkbox that is unchecked.
- Reverse Link Direction:** A checkbox that is checked.
- Has Multiple Providers:** A checkbox that is unchecked.
- Currently Targeted Types:** A list box containing 'itmAgent' and a dropdown menu with options: 'itmAgent_1.2' (selected), 'jBossApplication_8.2.0.04', 'jBossServer_8.2.0.04', 'k45AgentDataSource_1.3', 'k45AgentDataSource_1.2', and 'k45AgentMultiRowDataSource_1.2'.
- Match Expressions:** A section with a single expression 'systemName equals \$node' and 'Edit' and 'Remove' buttons.
- New Condition:** A section with a 'New' button.
- Action:** A section with 'Save' and 'Exit' buttons.

Figure 7 – Relationship Editor

Fields

- Relationship Name
 - The name of the relationship definition.
- Edge Type
 - The type of link – its context.
- Identity
 - Changes the editor prompts to identity terms.
- Scope to Provider Only
 - Links are created with the restriction that both resource instances linked together are from the same monitoring endpoint.
- Create as Reference
 - Currently, unused – here for possible embedded references (URLs) for embedded resource type properties.
- Reverse Link Direction
 - Switches the link 'from' and 'to' resource instances link direction traversal.
- Has Multiple Providers
 - Matching with one of any providers seen when using data source properties to match.
- Currently, Targeted Types
 - The targeted resource types to link with.
- Match Expressions
 - Current match expressions defining criteria of how source and destination resource properties are checked to qualify link discovery.
 - Modify any by clicking Edit – starts Match Editor.
 - Remove any by clicking Remove – removes the expression.
- New Condition
 - Adds a match expression.
 - Starts the Match Editor to author a new expression.

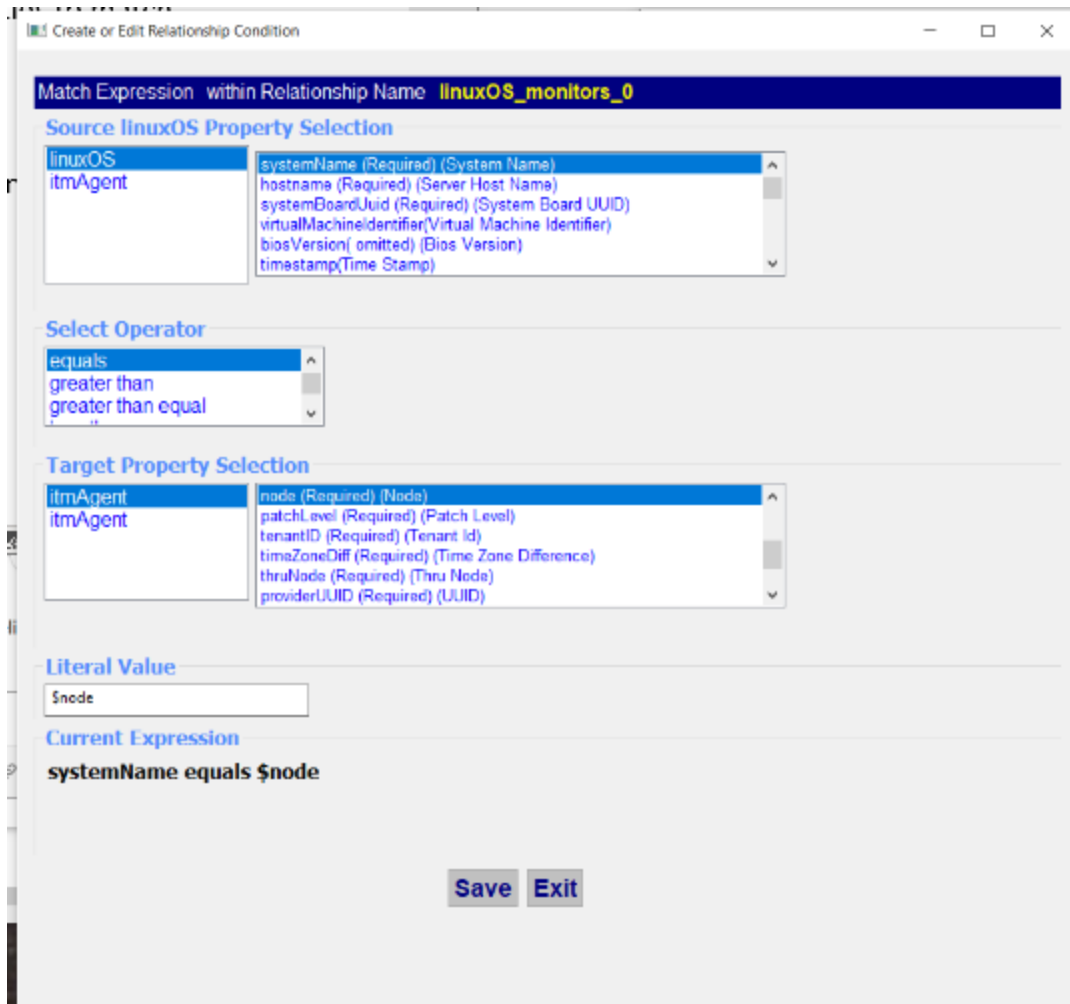


Figure 8 – The Match Editor

Fields

- Source Property Selection
 - Displays and allows selection of current resource type properties that are restricted to what can be published as part of a resource instance.
 - Supports selection of properties that are from the data source of the resource instance that is being checked.
 - Calculated 'Method' properties appear here also for comparing calculated results.
- Select Operator
 - The operator involved in the match expression.
 - One of {equal, greater than, greater than equal, equals, not equals, less than, less than equals, contains and not contains}
- Target Property Selection
 - Displays and allows selection of target resource type properties that are restricted to what can be published as part of the target resource instance.

- Supports selection of properties that are from the data source of the target resource instance being checked.
 - Calculated 'Method' properties of the target resource types appear here also for comparing calculated results.
- Literal Value
 - Value to use in lieu of a property selection that is compared against using the Source Property Selection.

Method Editor

The Method Editor defines custom calculated values to be supplied for use elsewhere or for enrichment defines payload content modification processing.

The screenshot shows the 'Method Editor' window for a method named 'messageRate'. The interface is organized into several sections:

- Method Name:** 'messageRate'
- Method Label:** 'Message Rate per minute'
- Method Description:** 'Message Rate per minute'
- Publish and Order Settings:** Includes a 'Publish Result' checkbox and a 'Run after' field.
- Instance Persistence:** Includes a checkbox.
- Mark as Property:** Includes a checkbox.
- Metrics Required:** A list box containing 'channels', 'connections', 'consumers', and 'exchanges', with 'connections' selected.
- Parameters:** A list of parameters with their types and values. The first parameter is 'messages' with type 'node <Node>' and value 'timestamp <Timestamp>', 'url <URL>', and 'name1 <Name>'. There is an 'Apply' button next to it.
- Parameter 4:** A parameter with type 'node <Node>' and value 'timestamp <Timestamp>', 'url <URL>', and 'name1 <Name>'. There is an 'Apply' button next to it.
- Method Function:** A code editor containing the following code:

```
function messageRate(messages,timestamp,name1)
{
  // Surface JAVA Bindings
  var c = scriptcache;
  var r = http;
  var l = logger;
  // CYYMMDDHHMMSSnnn
```
- Method Return Type:** A dropdown menu with options 'int', 'double', and 'string', where 'string' is selected.
- Enrichment Service Publish:** Includes a checkbox.
- Action:** A bar at the bottom with 'Run', 'Save', and 'Exit' buttons.

Figure 9 – Method Editor

Fields

- Method Name
 - The name of the method and the name referenced elsewhere treated like a metric or property name.
- Method Label
 - Display value for the method name.
- Method Description
 - Method description.
- Publish and Order Settings
 - Mark to publish as either part of the resource instance or as a metric to the metric service.
- Instance Persistence
 - Currently, reserved (unused).
- Mark as Property
 - When selected the calculated method name value is treated as a property and not as a metric.
- Metrics Required
 - When Enrichment Service Publish is marked this selection of metrics must exist to start this enrichment method definition.
- Parameters
 - One or more parameters that given as arguments to the Java Script function that executes on behalf of the method definition.
 - Parameters are limited to properties and metrics that are found in the resource type. If the method definition is in a component the selection of properties and metrics is what is known to the component.
- Method Function
 - A Java Script function to run with the given parameters.
 - Bindings are available to the function for payload row contents, metric values and tags, http, cache and logging operations.
 - Current bindings are:
 - tags – tags
 - row – payload contents
 - http – rest interface library
 - scriptcache – cache library
 - logger – logging library
- Method Return Type
 - When a value is returned using the method to calculate a returned value then this gives its data type.
 - One of {int, double, string}
- Enrichment Service Publish
 - When marked the method is started only for enrichment processing.

Run Option

The Run button in the Method Editor starts a dialog that allows the method to be tested where parameter values can be entered and tried. The dialog also has an 'Advanced' button for testing methods that are for enrichment purposes.

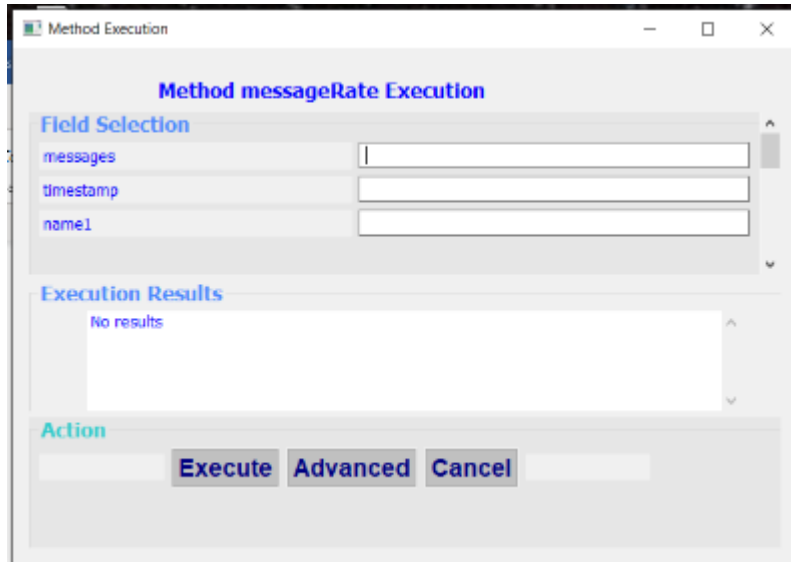


Figure 10 – Test Method dialog

Selecting Advanced starts the dialog that is shown in Figure 11.

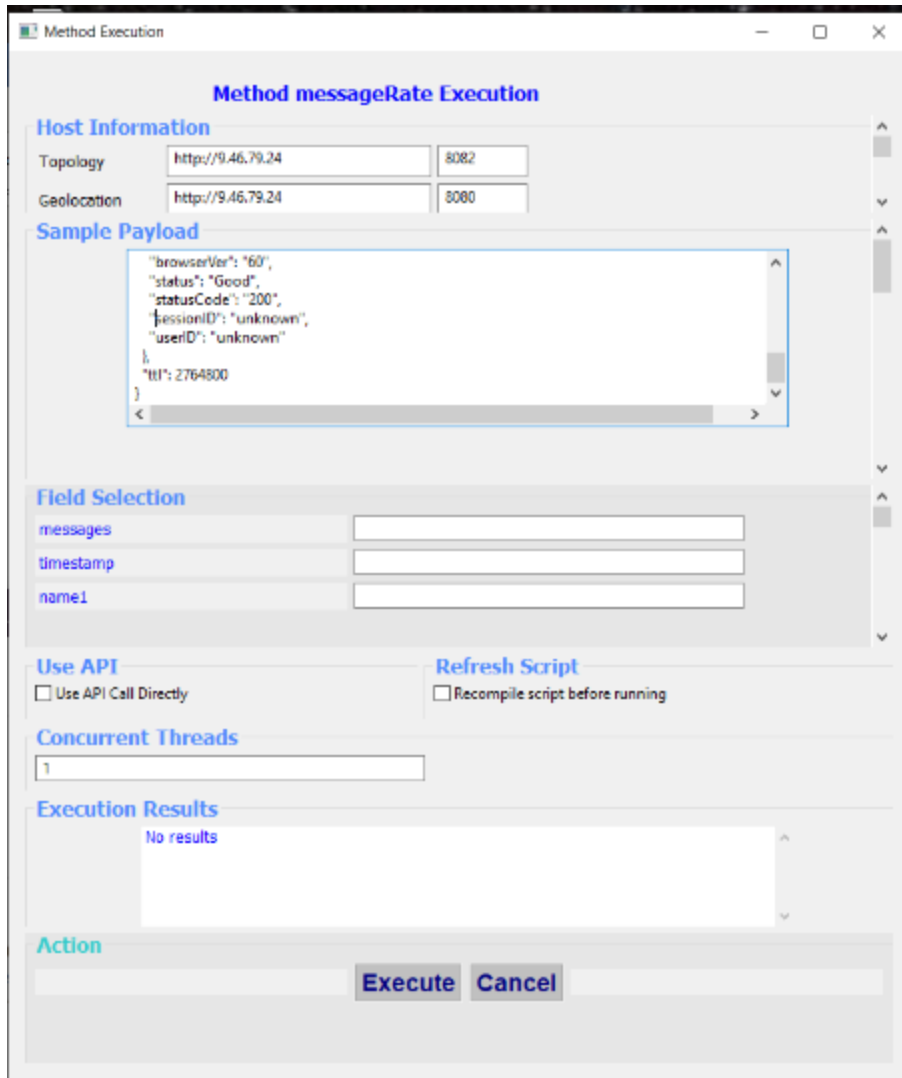
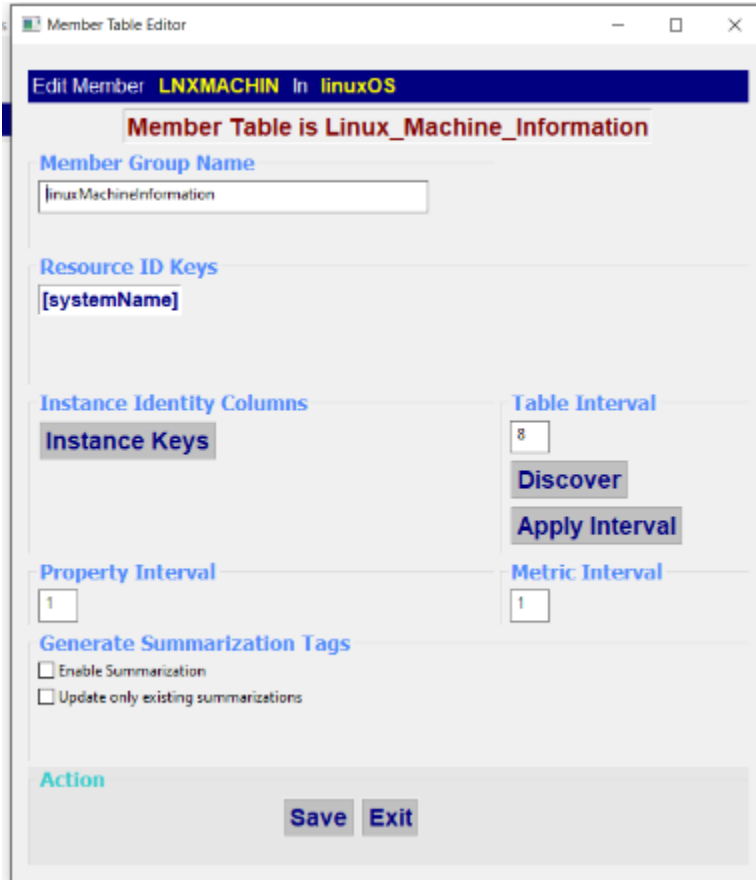


Figure 11 – Advanced Enrichment Method Testing dialog

Member Editor

The Member Editor associates a table or group to the enclosing resource type or component. These are settings for the table/group that apply to all Override column members of the group.

Multiple Members (one per table) can be specified for a resource type or component.



The screenshot shows the 'Member Table Editor' window. The title bar reads 'Member Table Editor'. The main content area is titled 'Edit Member LNXMACHIN In linuxOS' and 'Member Table is Linux_Machine_Information'. The configuration fields are as follows:

- Member Group Name:** A text box containing 'linuxMachineInformation'.
- Resource ID Keys:** A text box containing '[systemName]'.
- Instance Identity Columns:** A section with a 'Instance Keys' button.
- Table Interval:** A numeric input box with '8', a 'Discover' button, and an 'Apply Interval' button.
- Property Interval:** A numeric input box with '1'.
- Metric Interval:** A numeric input box with '1'.
- Generate Summarization Tags:** Two checkboxes: 'Enable Summarization' (unchecked) and 'Update only existing summarizations' (unchecked).
- Action:** A section at the bottom with 'Save' and 'Exit' buttons.

Figure 12 – Member Editor

When first creating a member, the opportunity is given to select a table if the data source is ODI. Collectors allow entry of a group name that is the equivalent of a selected table name.

This is shown below:

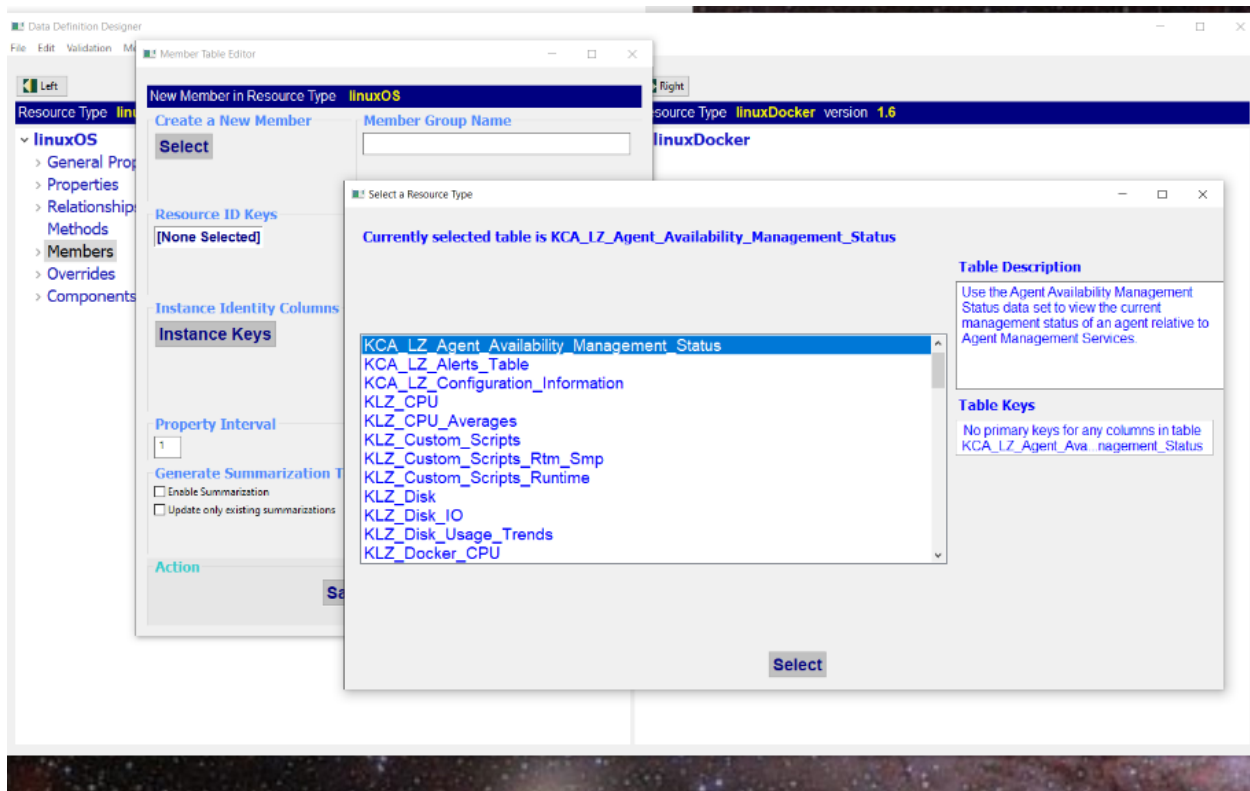


Figure 13 – Table Selector from creating a new Member with the Member Editor

Fields

- Create a New Member
 - Starts the table selector as shown in figure 13.
- Member Group Name
 - Name of the Member group. This value appears associated to any columns in the Member as groupname tags.
- Resource ID Keys
 - Display of existing columns from this table or group that are used in the order they appear in to formulate a unique identifier for generated resource instance of the Resource Type using the values that are found in these columns.
- Instance Identity Columns
 - Starts the Unique Resource Id dialog that allows columns to be applied or unapplied for the unique identifier formulation as described in Resource ID Keys.
 - See figure 14.
- Table Interval
 - The monitoring interval of the table or group, which is how often data for the table or group is sent by the endpoint in minutes.
- Property Interval

- The number of consecutive Table Intervals for properties in the table to wait before publishing properties.
- Metric Interval
 - The number of consecutive Table Intervals for metrics in the table to wait before publishing metrics.
- Generate Summarization Tags
 - Automatically creates summarization tags with a Group By applied using the columns marked as required, making them dimensions that are published as tags to the metric service.
 - The Update only existing summarizations is used to modify existing summarization tags already applied to columns with refreshed group by dimensions.

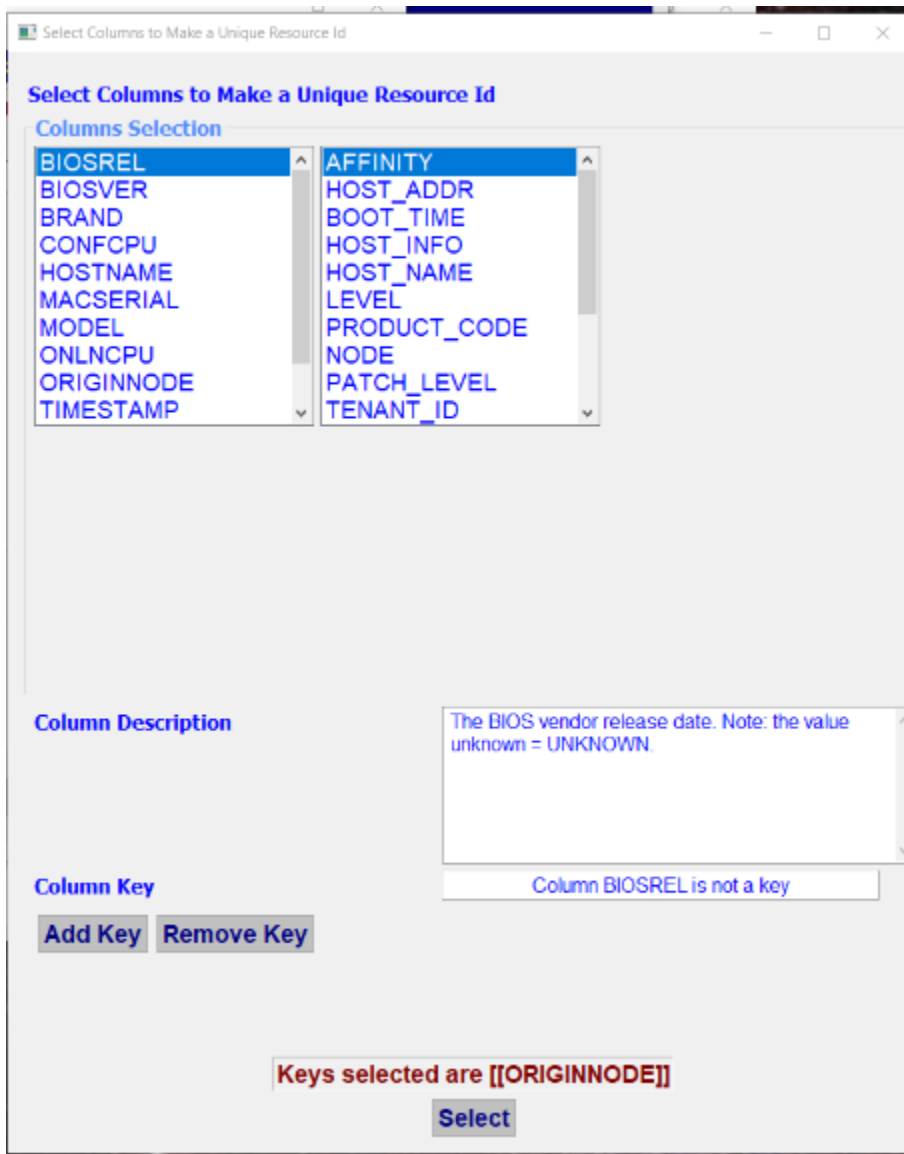
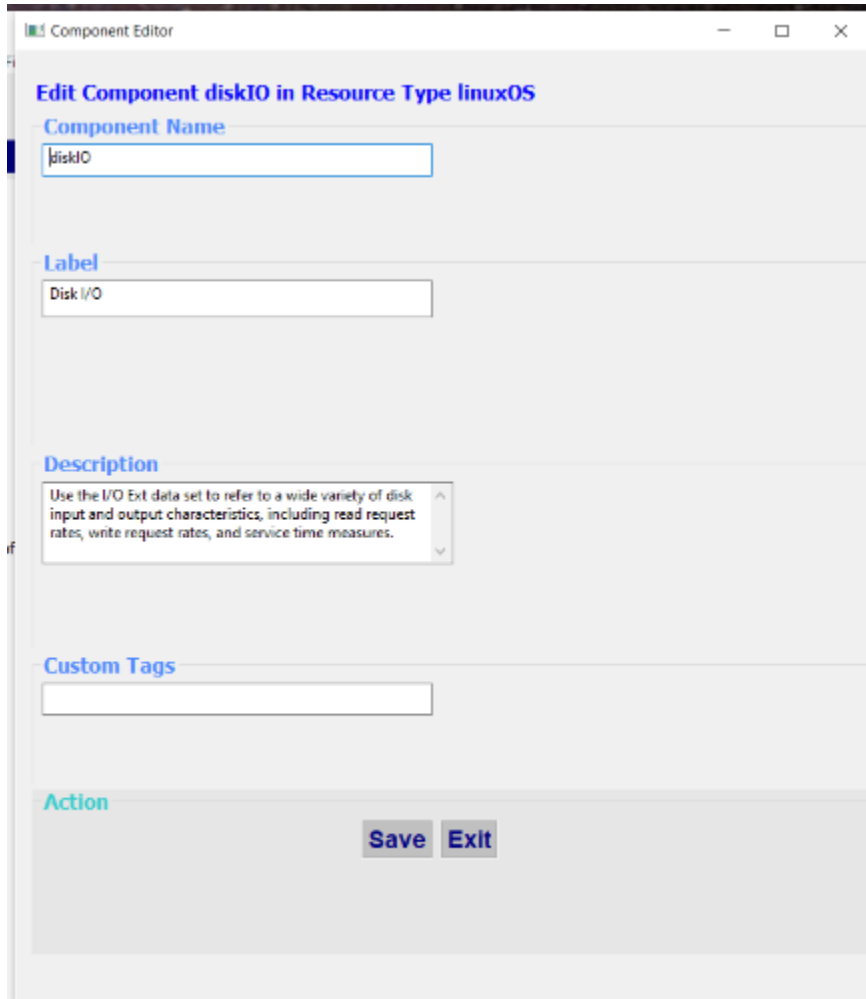


Figure 14 – Instance Identity Columns dialog

Component Editor

The Component Editor creates or modifies a component belonging to the resource type. Components are used to describe information that is associated to sub resources, threshold groups, or other logical groupings managed by the resource type.



The screenshot shows a window titled "Component Editor" with a subtitle "Edit Component diskIO in Resource Type linuxOS". The window contains several input fields and buttons:

- Component Name:** A text box containing "diskIO".
- Label:** A text box containing "Disk I/O".
- Description:** A text area containing the text: "Use the I/O Ext data set to refer to a wide variety of disk input and output characteristics, including read request rates, write request rates, and service time measures." The text area has scrollbars.
- Custom Tags:** An empty text box.
- Action:** Two buttons labeled "Save" and "Exit".

Figure 15 – Component Editor

Fields

- Component Name
 - The name of the component.
- Label
 - The display name of the component.
- Description
 - The component description.
- Custom Tags
 - Associated tag values belonging to the component.

Override Editor

The Override Editor is used to define column attributes for properties or metrics within the resource type or a component.

Starting the Override Editor by double-clicking the Overrides provides navigation to any of the included override columns through a list box selector.

Invoking the Override Editor on a selected override column allows editing of just that override column.

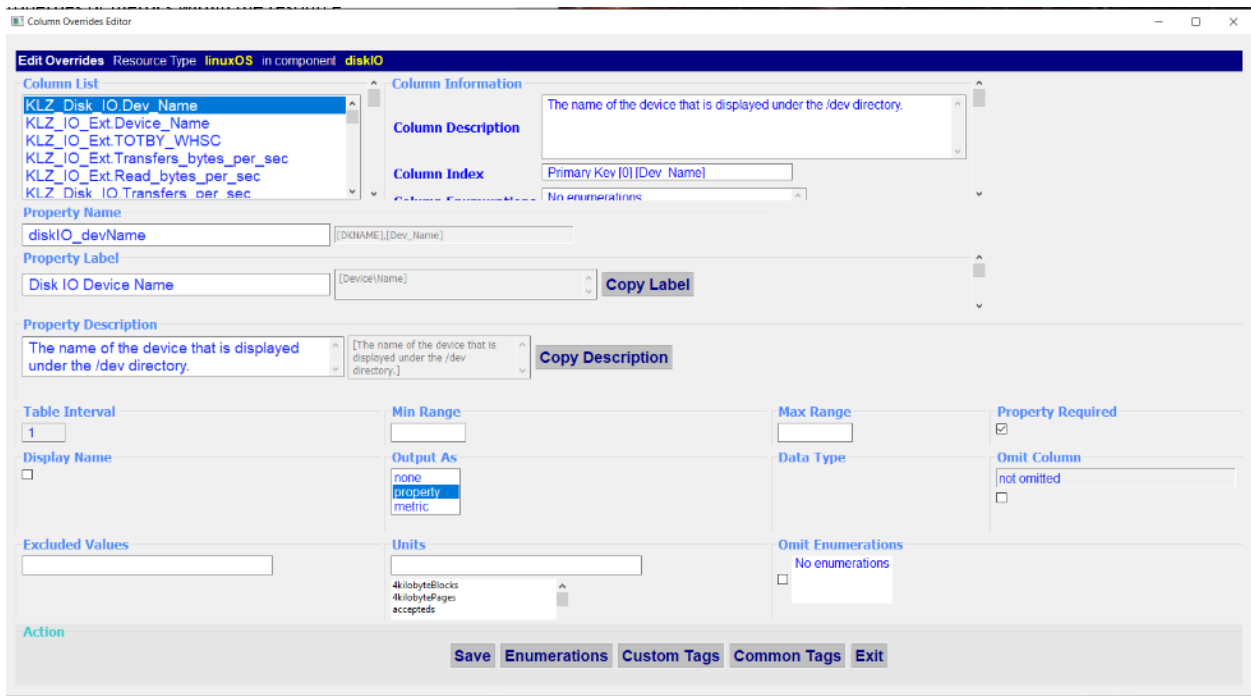


Figure 16 – Overrides Editor – started by double-clicking Overrides tree item.

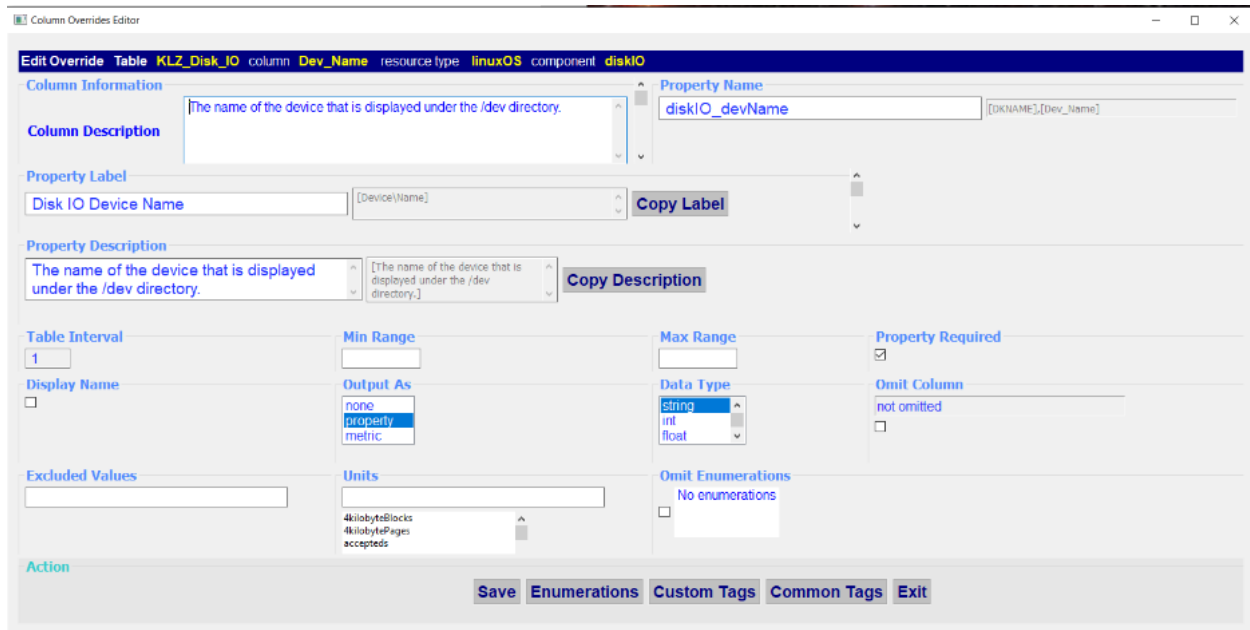


Figure 17 – Override Editor started by double-clicking a selected Override column tree item.

Fields

- Column List
 - Visible when 'Overrides' started to show all the columns in a resource type or component.
 - Any Override column can be selected from this list to work on.
- Column Information
 - Column Description
 - If the data source for the resource type is ODI (Traditional Agent) then the original column description is displayed.
 - Column Index
 - If the data source for the resource type is ODI (Traditional Agent) then the index key order is displayed if any.
 - Column Enumerations
 - If the data source for the resource type is ODI (Traditional Agent) then its possible enumerated values are displayed.
- Property Name
 - The name of the column that is known to the Cloud Pak for Multicloud Manager Monitoring System.
 - If the data source for the resource type is ODI (Traditional Agent) then additional information is shown giving the original name and object name of the column as known in ODI.
- Property Label
 - Display label for the column to be used.
- Property Description
 - Description for the column to be used.

- Table Interval
 - Displays the assigned interval to the Override column
 - This value can only be changed for a table or group and is modified using the Member Editor as described previously above.
- Min Range
 - Minimum value this override column can be. (Optional)
- Max Range
 - Maximum value this override column can be. (Optional)
- Property Required
 - When marked as a property and this field is checked, the override column is treated as a dimension and is published as a tag in the metrics that are sent to the metric service.
- Display Name
 - When marked this override column is used as the display value on the UI whose value is a given instance of this resource type.
 - Note – only one override column should be selected as the display name.
- Output As
 - Output the override column as either a metric or property.
- Data Type
 - The data type of the override column's value.
 - One of {string, int, float, double, timestamp, date, time}
- Omit Column
 - When marked this override column is ignored in the Cloud Pak for Multicloud Manager Monitoring environment.
- Excluded Values
 - A comma-delimited list of values that are ignored for publishing.
 - If a value is encountered that is for exclusion, and the override column is marked as required it might cause a resource or metric payload to not publish.
- Units
 - Units of the override column that values represent.
- Omit Enumerations
 - When selected any enumerated values previously defined in ODI are not to be described in the consumer metadata.

Override Editor Dialogs are started by clicking one of the buttons at the bottom of the Overrides Editor. These include Enumerations, Custom Tags, and Common Tags.

Enumeration dialog

The Enumeration dialog is started by pressing the Enumerations button at the bottom of the Override Editor. The dialog allows any changes to existing enumerations to be made, define new ones or remove existing ones.

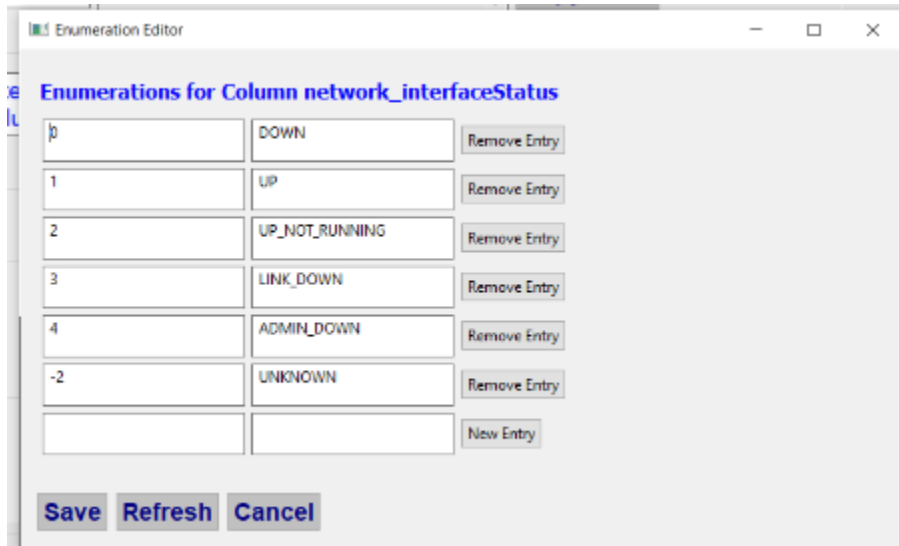


Figure 18 – Enumerations Dialog

Fields

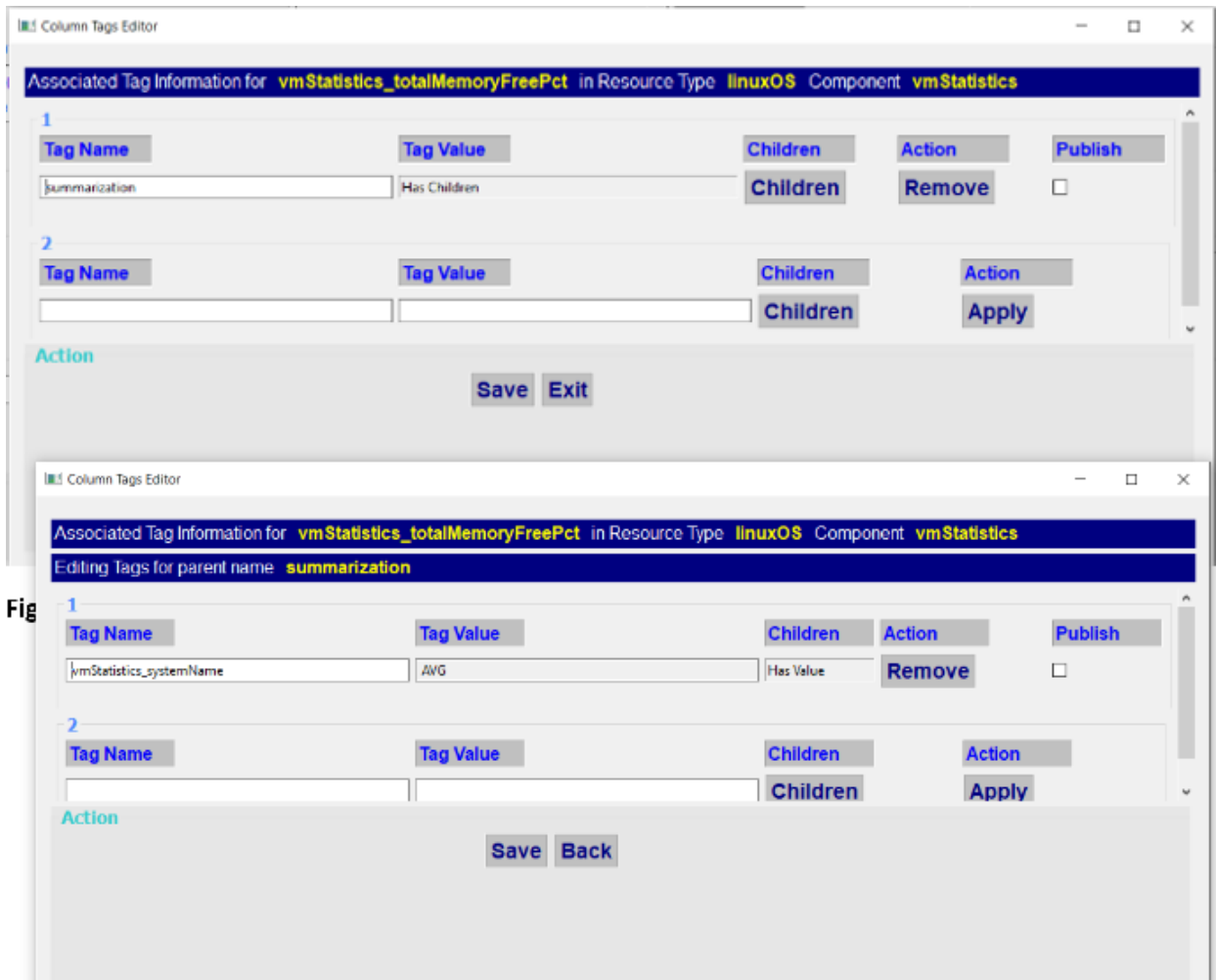
- Internal Value Columns
 - Displays the internal value of a given enumerated pair.
- External Value Columns
 - Displays the external value of a given enumerated pair.
- Remove Entry
 - Removes an enumerated pair.
- New Entry
 - Create an enumeration pair.

Custom Tags dialog

The Custom Tags dialog is started by pressing the Custom Tags button at the bottom of the Override Editor.

The Custom Tags dialog is used to manage any tag and tag values that are associated to the override column.

Tags are nested, as a result, a tag can have a simple value or it can have a set of other tags and values that are associated to. There is no restriction to the depth of tags and are thus called 'Nested Tags'.



Fig

Figure 19 - Nested Tags dialog (Top Level & Children)

Fields

- Tag Name
 - Name of the tag at the current depth level.
- Tag Value
 - Value for the tag if the tag has no other children tags.
- Children
 - This button used to edit tag children of the current tag.
- Remove
 - Removes the tag entry.
- Publish
 - Tag is to be published when the override column is a metric and the metric publishes to the metric service.
- Apply
 - Adds a tag element.

Common Tags dialog

The Common Tags dialog is started by pressing the Common Tags button at the bottom of the Override Editor.

The Common Tags dialog presents a set of common tags that are used widely for resource types; this provides contextual aid.

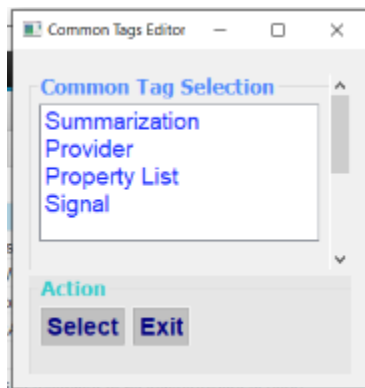


Figure 20 – Common Tag Selector

The current set of choices for which tags to work with include summarization, provider, property list and signal tags.

(Individual dialogs exist for each kind of tag)

Menu Options

The menu bar appears at the topmost location on the workbench Page.

Menu Item General Descriptions:

- File
 - Load Left Resource Type
 - Starts the resource type selector to load a resource type to the left side of the workbench Page. (Same as left arrow icon)
 - Load Right Resource Type
 - Starts the resource type selector to load a resource type to the right side of the workbench Page (Same as right arrow icon)
 - Save Left Resource Type
 - Starts a dialog box that provides save output options for the left side resource type.
 - Performs the save operation that updates or creates a consumer resource type metadata document.
 - Save Right Resource Type
 - Starts a dialog box that provides save output options for the right resource type.
 - Performs the save operation that updates or creates a consumer resource type metadata document.
- Edit
 - Table Editor
 - Not currently available
- Validation
 - Validate Resource Type
 - Starts a dialog box where setup occurs to visualize one or more categories of issues that were found scanning the resource type definition.
 - The filters are one or more of {Info, Warning, Error}
 - Once options are selected a further dialog displays each issue that is discovered. This provides a means of correcting the issue for the current line or for all analogous issues that are discovered at once.
 - Left Snapshot Resource Type
 - Takes a snapshot of the current document that further edit changes are shown against later for the resource type that is loaded on the left side of the workbench page.
 - Right Snapshot Resource Type
 - Takes a snapshot of the current document that further edit changes are shown against later for the resource type that is loaded on the right side of the workbench page.
 - View Differences from Snapshot
 - Starts a viewer dialog that shows all edit changes for the currently snapshotted resource type.
- Metadata

- Starts the Consumer Metadata Resource workbench
- Show
 - Left Collapse
 - Collapse the left side resource type tree view on the Workbench Page.
 - Left Expand Properties
 - Expand Custom Properties on the left side resource type tree view on the workbench Page.
 - Left Expand Relationships
 - Expand Relationships on the left side resource type tree view on the workbench Page.
 - Left Expand Methods
 - Expand Methods on the left side resource type tree view on the workbench Page.
 - Left Expand Members
 - Expand Members on the left side resource type tree view on the workbench Page.
 - Left Expand Components
 - Expand Components on the left side resource type tree view on the workbench Page.
 - Left Expand Overrides
 - Expand Override Columns on the left side resource tree view on the workbench Page.
 - Left Expand Id Keys
 - Expand Override Columns that are used for resource instance identity on the left side resource tree view on the workbench Page.
 - Left Expand Required Columns
 - Expand Override Columns that are marked as required dimensions on the left side resource tree view on the workbench Page.
 - Right Collapse
 - Collapse the right side resource type tree view on the Workbench Page.
 - Right Expand Properties
 - Expand Custom Properties on the right-side resource type tree view on the workbench Page.
 - Right Expand Relationships
 - Expand Relationships on the right-side resource type tree view on the workbench Page.
 - Right Expand Methods
 - Expand Methods on the right-side resource type tree view on the workbench Page.
 - Right Expand Members
 - Expand Members on the right-side resource type tree view on the workbench Page.
 - Right Expand Components

- Expand Components on the right-side resource type tree view on the workbench Page.
 - Right Expand Overrides
 - Expand Override Columns on the right-side resource tree view on the workbench Page.
 - Right Expand Id Keys
 - Expand Override Columns that are used for resource instance identity on the right-side resource tree view on the workbench Page.
 - Right Expand Required Columns
 - Expand Override Columns that are marked as required dimensions on the right-side resource tree view on the workbench Page.
 - Settings
 - Not used currently
 - Actions
 - Add
 - Applies the selected left or right tree item to be added to the opposite side where highlighted. The item can also be renamed.
 - Edit
 - Starts Editor from highlighted location.
 - Copy
 - Copies the selected left or right tree item to be copied to the opposite side where highlighted.
 - Remove
 - Remove the selected left or right tree item.
 - Move
 - Moves the selected item.
 - View
 - TBD
 - Reports
 - Resource Type Reports
 - Starts Table Report dialog that allows reports to be generated for any selected fields in any category.
 - Reports are generated as HTML documents and can be saved to disk.
 - Resource API Viewer
 - Starts API Resource Type or Consumer Resource Type selection that then displays in a tree view to show API views of the resource type.
 - Rest Call Editors are also invocable as tree items in the resource type tree view.
 - Column Tagging Reports
 - Reports on tags that are applied to the resource type.
 - Table Members Report
 - Shows table memberships across all available resource types.
 - Tools
 - Not currently available
 - Filters

- Subscription Filters
 - Starts a dialog that provides a means for the currently selected resource type to read a subscription file and apply it for omission filters and interval assignments across the resource type automatically.
- Labels
 - Starts a dialog that enables a prefix for display labels to be applied component by component that helps to eliminate duplicate labels.
- Exit
 - Exit the Data Definition Designer Application