Create classification schemas 

Before you can assign a classification schema to your organization, you must create it by defining the configuration options for the classification in a valid JSON file. The classification schema you create must adhere to the classification grammar, a JSON schema included with Portal for ArcGIS that describes and validates classification schemas.  

Depending on your organization’s needs, you can create a simple schema that, at minimum, defines only the required properties or a complex schema that uses [Arcade expressions](https://developers.arcgis.com/arcade/) for highly detailed classification of items. See [a complete example](bookmark://complete_example) of a classification schema or download sample schemas from the [ArcGIS/Classification GitHub repository](https://github.com/ArcGIS/classification).

 When creating a classification schema, start by defining the following properties:

**Note:** A property is optional unless specified otherwise. 

**Note:** Arcade expressions do not support **<** and **>** characters. 

* **name**—A required property that identifies the name of the classification schema.
* **version**—A required property that identifies the version of the classification schema.
* **grammarVersion**—A required property that specifies the version of the classification grammar the schema adheres to. You can access the classification grammar version using the URL https://webadaptorhost.domain.com/webadaptorname/sharing/rest/portals/<org Id>/classification.
* **helpToolTip**—The help text that appears when you hover over Information at the top of the classification form.
* **helpURL**—The URL of the schema help document that opens in a new tab when you click Information at the top of the classification form.
* **bannerExpression**—The classification information that appears under **Classification** on the item details page. You can use Arcade expressions to create banner texts or set the value to an empty string to implement generic encoding logic defined for [**uiElements**](bookmark://uiElement) in the classification form (for example, [bannerOrder](bookmark://bannerOrder), [bannerLabel](bookmark://bannerLabel), [labelDelimiter](bookmark://labelDelimiter)).

**Note:** If you omit this property or define it as an empty string, you must have at least one attribute with [**bannerOrder**](bookmark://bannerOrder) defined to implement generic encoding logic. 

* **selectionTextExpression**—The classification information that appears on the **Edit Classification** dialog box. You can use Arcade expressions to create banner texts or set the value to an empty string to implement generic encoding logic defined for [**uiElements**](bookmark://uiElement) in the classification form (for example, [selectionDisplayOrder](bookmark://selectionDisplayOrder), [selectionDisplayLabel](bookmark://selectionDisplayLabel), [labelDelimiter](bookmark://labelDelimiter)).

**Note:** If you omit this property or define it as an empty string, you must have at least one attribute with [**selectionDisplayOrder**](bookmark://selectionDisplayOrder) defined to implement generic encoding logic. 

* **attributeCategories**—The list of attribute categories that appear as sections or tabs in the classification form.   
     
  **Note**: “**Default**” is a reserved keyword and cannot be used as an attribute category.

{   
  **"name"**: "academic-institution-classification-schema",   
  **"version"**: "2.0",   
  **"grammarVersion"**: "2.0",   
  **"helpURL"**: "https://ansible.hynes.com/portal/home/schema\_help.pdf",   
  **"helpTooltip"**: "Click to open the schema help document",   
  **"bannerExpression"**: "",   
  **"selectionTextExpression"**: "",   
  **"attributeCategories"**: []   
}

Define classificationMetadata

The required **classificationMetadata** object can include the following properties: 

* **primaryAttribute**—A required property that identifies the attribute that appears as the primary classification field in the classification form.
* **defaultValue**—A required property that specifies the default value for the [**primaryAttribute**](bookmark://primaryAttribute).
* **classificationValueProperties**—A required array of objects, where each object represents a classification option of the attribute identified as the [**primaryAttribute**](bookmark://primaryAttribute) and defines specific properties for the option. The following properties can be defined for each classification option:
* **value**—A required property that specifies the label for the option used in the classification form.
* **acronym**—The acronym for the option.
* **textColor**—When the option is selected, its label will appear in this color under **Current Selections** in the classification form. Color can be specified with predefined color names, or with RGB and HEX values.
* **backgroundColor**—When the option is selected, its label will be highlighted in this color under **Current Selections** in the classification form. Color can be specified with predefined color names, or with RGB and HEX values.

{   
...   
   
**"classificationMetadata"**: {   
    **"primaryAttribute"**: "classification",   
    **"defaultValue"**: "Public Data",   
    **"classificationValueProperties"**: [   
      {   
        **"value"**: "Public Data",   
        **"acronym"**: "Public Data",   
        **"backgroundColor"**: "Green",   
        **"textColor"**: "Black"   
      },   
      {   
        **"value"**: "Restricted",   
        **"acronym"**: "Restricted",   
        **"backgroundColor"**: "Yellow",   
        **"textColor"**: "Black"   
      },   
      {   
        **"value"**: "Confidential",   
        **"acronym"**: "Confidential",   
        **"backgroundColor"**: "Red",   
        **"textColor"**: "Black"   
      }   
    ]   
  }   
}

Define attributes

Each attribute defined in the required **attributes** object corresponds to an input field in the classification form. The following properties can be defined for each attribute: 

* **label**— A required property that specifies the label for the attribute used in the classification form.
* **description**—The description used as a placeholder in the input field.
* **type**—A required property that identifies the attribute's data type. Supported data types are string, date, integer, float, and Boolean.
* **isRequired**—A Boolean (true or false) value that specifies if the attribute is considered a required attribute. It cannot be defined as an empty string.
* **uiElement**—A required property that identifies the attribute’s UI element type in the classification form. The six possible values are:
* **text**— A single-line text box.
* **checkbox**— A standard checkbox.
* **date**— A date picker that lets you select a date from the calendar in the format DD/MM/YYYY.
* **single-select**—A dropdown menu that lets you select a single option.
* **multi-select**—A dropdown menu that lets you select multiple options.
* **multi-grouped-select**— A dropdown menu that lets you select individual options from groups of related options but not the top-level groups themselves.
* **multi-grouped-select-nested**—A dropdown menu that lets you select groups of related options or individual options from those groups.
* **defaultValue**—The default value assigned for the attribute. This property can only be set for single-select, multi-select, multi-grouped-select, multi-grouped-select-nested [**uiElement**](bookmark://uiElement) types.
* **defaultDateTimeline**—Used in combination with defaultDateTimelineUnits to set the default date for the attribute. This property can only be set for date [**uiElement**](bookmark://uiElement) type.
* **defaultDateTimelineUnits**—Used in combination with defaultDateTimeline to set the default date for the attribute. The three possible values are **years**, **months**, and **days**. This property can only be set for date [**uiElement**](bookmark://uiElement) type.
* **validValues**—The list of options that appear in single-select or multi-select [**uiElement**](bookmark://uiElement) type dropdowns in the classification form. It can be defined as an empty string if the options are generated by the Arcade expression for [**valueExpression**](bookmark://valueExpression).
* **validValuesMap**—The map of options that appear in multi-grouped-select or multi-grouped-select-nested [**uiElement**](bookmark://uiElement) type dropdowns in the classification form. It can be defined as an empty string if the options are generated by the Arcade expression for [**valueExpression**](bookmark://valueExpression).

* **valueExpression**—An Arcade expression that returns a list of options when [**validValues**](bookmark://validValues) and [**validValuesMap**](bookmark://validValuesMap) are not defined or defined as an empty string.
* **isAttributeEnabled**—An Arcade expression that returns a Boolean value that specifies if the attribute will appear or be hidden in the classification form.
* **attributeValidation**—An Arcade expression that returns either an empty string or an error message based on the value selected for the attribute in the classification form.
* **arcadeResultLookup**—A map of keys and values that lets the Arcade expression defined for [**valueExpression**](bookmark://valueExpression) generate the list.
* **attributeCategory**—The [**attributeCategories**](bookmark://attributeCategories) section or tab under which the attribute appears in the classification form.

* **selectionDisplayOrder**—The order in which the attribute appears in the [**selectionTextExpression**](bookmark://selectionTextExpression)text.    
     
  **Note:** You must define this property for at least one attribute in your classification if you omit [**selectionTextExpression**](bookmark://selectionTextExpression)or define it as an empty string.
* **selectionDisplayLabel**—The label for the attribute used in the [**selectionTextExpression**](bookmark://selectionTextExpression)text.

* **bannerOrder**—The order in which the attribute appears in the [**bannerExpression**](bookmark://bannerExpression)text.

**Note:** You must define this for at least one attribute in your classification if you omit [**bannerExpression**](bookmark://bannerExpression)or define it as an empty string.

* **bannerLabel**—The label for the attribute used in the [**bannerExpression**](bookmark://bannerExpression)text.

* **labelDelimiter**—The delimiter that separates the attribute’s label and value in the [**selectionTextExpression**](bookmark://selectionTextExpression)and [**bannerExpression**](bookmark://bannerExpression)texts.

* **valueDelimiter**—The delimiter that separates the values selected in a multi-select **uiElement** type when they appear in the [**selectionTextExpression**](bookmark://selectionTextExpression)and [**bannerExpression**](bookmark://bannerExpression)texts.
* **attributeDelimiter**—The delimiter separates the attribute and its preceding attribute in the [**selectionTextExpression**](bookmark://selectionTextExpression)and [**bannerExpression**](bookmark://bannerExpression)texts.
* **labelTooltip**—The help text that appears when you hover over Information next to the attribute’s label.

{   
...   
   
**"attributes"**: {   
    **"classification"**: {   
      **"label"**: "Classification",   
      **"description"**: "Classification",   
      **"type"**: "string",   
      **"uiElement"**: "single-select",   
      **"validValues"**: [{**"label"**: "Public Data", **"value"**: "Public Data"}, {**"label"**: "Restricted", **"value"**: "Restricted"}, {**"label"**: "Confidential", **"value"**: "Confidential"}],   
      **"selectionDisplayOrder"**: 1,   
      **"bannerOrder"**: 1,   
      **"labelDelimiter"**: "",   
      **"valueDelimiter"**: "-",   
      **"attributeDelimiter"**: ";"   
    },   
    **"program"**: {   
      **"label"**: "Program",   
      **"description"**: "Program",   
      **"type"**: "string",   
      **"uiElement"**: "single-select",   
      **"valueExpression"**: "function getProgramValidValues(schemaJsonString, valueJsonString, attributeId) {\n    var valueJson = Dictionary(valueJsonString)\n    var schemaJson = Dictionary(schemaJsonString)\n    if (!HasKey(valueJson, \"classification\"))\n        return null;\n    if (valueJson.classification == \"Public Data\")\n        return schemaJson.attributes[attributeId].arcadeResultLookup[\"Public\_Data\_List\"];\n    if (valueJson.classification == \"Restricted\")\n        return schemaJson.attributes[attributeId].arcadeResultLookup[\"Restricted\_List\"];\n    if (valueJson.classification == \"Confidential\")\n        return schemaJson.attributes[attributeId].arcadeResultLookup[\"Confidential\_List\"];\n    return null;\n}\ngetProgramValidValues(schemaJsonString, valueJsonString, attributeId)",   
      **"arcadeResultLookup"**: {   
        **"Public\_Data\_List"**: [{**"label"**: "Intra-agency", **"value"**: "Intra-agency"}, {**"label"**: "Marketing", **"value"**: "Marketing"}, {**"label"**: "Promotional", **"value"**: "Promotional"}],   
        **"Restricted\_List"**: [{**"label"**: "Compliance", **"value"**: "Compliance"}, {**"label"**: "Financial", **"value"**: "Financial"}, {**"label"**: "Human Resources", **"value"**: "Human Resources"}, {**"label"**: "Market Data", **"value"**: "Market Data"}, {**"label"**: "PII", **"value"**: "PII"}, {**"label"**: "Proprietary", **"value"**: "Proprietary"}],   
        **"Confidential\_List"**: [{**"label"**: "Intellectual Property", **"value"**: "Intellectual Property"}, {**"label"**: "Legal", **"value"**: "Legal"}, {**"label"**: "Security", **"value"**: "Security"}]   
      },   
      **"selectionDisplayOrder"**: 2,   
      **"bannerOrder"**: 2,   
      **"labelDelimiter"**: "",   
      **"valueDelimiter"**: "-",   
      **"attributeDelimiter"**: ";"   
    }   
  }   
}

Define layouts

The required **layouts** object specifies the order in which attributes appear in the classification form. It can include the following:

* **default**—The object that includes the details of a specific layout. You can define the following property within the object.
* **layoutElements**—A required object that maps attributes and their order in the classification form. The following property can be defined for each attribute in the object:
* **formDisplayOrder**—A required integer that identifies the order in which the attribute appears in the classification form.

{   
...   
   
**"layouts"**: {   
    **"default"**: {   
      **"layoutElements"**: {   
        **"classification"**: {   
          **"formDisplayOrder"**: 1   
        },   
        **"program"**: {   
          **"formDisplayOrder"**: 2   
        }   
      }   
    }   
  }   
}

The following is a complete example of a classification schema:

{    
  **"name"**: "academic-institution-classification-schema",    
  **"version"**: "2.0",    
  **"grammarVersion"**: "2.0",    
  **"helpURL"**: "https://ansible.hynes.com/portal/home/schema\_help.pdf",    
  **"helpTooltip"**: "Click to open the schema help document",    
  **"bannerExpression"**: "",    
  **"selectionTextExpression"**: "",    
  **"attributeCategories"**: [],   
  **"classificationMetadata"**: {    
    **"primaryAttribute"**: "classification",    
    **"defaultValue"**: "Public Data",    
    **"classificationValueProperties"**: [    
      {    
        **"value"**: "Public Data",    
        **"acronym"**: "Public Data",    
        **"backgroundColor"**: "Green",    
        **"textColor"**: "Black"    
      },    
      {    
        **"value"**: "Restricted",    
        **"acronym"**: "Restricted",    
        **"backgroundColor"**: "Yellow",    
        **"textColor"**: "Black"    
      },    
      {    
        **"value"**: "Confidential",    
        **"acronym"**: "Confidential",    
        **"backgroundColor"**: "Red",    
        **"textColor"**: "Black"    
      }    
    ]    
  },   
  **"attributes"**: {    
    **"classification"**: {    
      **"label"**: "Classification",    
      **"description"**: "Classification",    
      **"type"**: "string",    
      **"uiElement"**: "single-select",    
      **"validValues"**: [{**"label"**: "Public Data", **"value"**: "Public Data"}, {**"label"**: "Restricted", **"value"**: "Restricted"}, {**"label"**: "Confidential", **"value"**: "Confidential"}],    
      **"selectionDisplayOrder"**: 1,    
      **"bannerOrder"**: 1,    
      **"labelDelimiter"**: "",    
      **"valueDelimiter"**: "-",    
      **"attributeDelimiter"**: ";"    
    },    
    **"program"**: {    
      **"label"**: "Program",    
      **"description"**: "Program",    
      **"type"**: "string",    
      **"uiElement"**: "single-select",    
      **"valueExpression"**: "function getProgramValidValues(schemaJsonString, valueJsonString, attributeId) {\n    var valueJson = Dictionary(valueJsonString)\n    var schemaJson = Dictionary(schemaJsonString)\n    if (!HasKey(valueJson, \"classification\"))\n        return null;\n    if (valueJson.classification == \"Public Data\")\n        return schemaJson.attributes[attributeId].arcadeResultLookup[\"Public\_Data\_List\"];\n    if (valueJson.classification == \"Restricted\")\n        return schemaJson.attributes[attributeId].arcadeResultLookup[\"Restricted\_List\"];\n    if (valueJson.classification == \"Confidential\")\n        return schemaJson.attributes[attributeId].arcadeResultLookup[\"Confidential\_List\"];\n    return null;\n}\ngetProgramValidValues(schemaJsonString, valueJsonString, attributeId)",    
      **"arcadeResultLookup"**: {    
        **"Public\_Data\_List"**: [{**"label"**: "Intra-agency", **"value"**: "Intra-agency"}, {**"label"**: "Marketing", **"value"**: "Marketing"}, {**"label"**: "Promotional", **"value"**: "Promotional"}],    
        **"Restricted\_List"**: [{**"label"**: "Compliance", **"value"**: "Compliance"}, {**"label"**: "Financial", **"value"**: "Financial"}, {**"label"**: "Human Resources", **"value"**: "Human Resources"}, {**"label"**: "Market Data", **"value"**: "Market Data"}, {**"label"**: "PII", **"value"**: "PII"}, {**"label"**: "Proprietary", **"value"**: "Proprietary"}],    
        **"Confidential\_List"**: [{**"label"**: "Intellectual Property", **"value"**: "Intellectual Property"}, {**"label"**: "Legal", **"value"**: "Legal"}, {**"label"**: "Security", **"value"**: "Security"}]    
      },    
      **"selectionDisplayOrder"**: 2,    
      **"bannerOrder"**: 2,    
      **"labelDelimiter"**: "",    
      **"valueDelimiter"**: "-",    
      **"attributeDelimiter"**: ";"    
    }    
  },   
  **"layouts"**: {    
    **"default"**: {    
      **"layoutElements"**: {    
        **"classification"**: {    
          **"formDisplayOrder"**: 1    
        },    
        **"program"**: {    
          **"formDisplayOrder"**: 2    
        }    
      }    
    }    
  }   
}