



# INTEGRATION MODULE FOR BMC HELIX ITSM

*For Keverion Runbook Studio and Azure Automation*

## User Guide

Version 1.3



# Kelverion Integration Module for BMC Helix ITSM

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Published: May 2024

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# Getting Started

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The following sections outline how to deploy and configure the Keverion Integration Module for BMC Helix ITSM.

## System Requirements

The Integration Module for BMC Helix ITSM requires the following software to be installed and configured prior to implementing the integration. For more information on installing Keverion Runbook Studio, please refer to the Keverion Runbook Studio User Guide.

- Keverion Runbook Studio 5.6
- Microsoft .NET Framework 4.8
- BMC Helix ITSM Online
- BMC Remedy ITSM 20.02

## Installing the Integration Module

The easiest way to install and deploy the Integration Module for BMC Helix ITSM is from the PowerShell Gallery, but you can also download the module from Keverion and perform the steps manually.

You must install and deploy the Integration Module to each Azure Automation Account and Hybrid Worker host system that you plan to use to run your runbooks. You must also install the Integration Module on any Runbook Studio host systems that you will be using to build and manage your runbooks.

## Using the PowerShell Gallery

Using the commands in the **PowerShellGet** module you can download the Keverion Integration Module for BMC Helix ITSM from the PowerShell Gallery and install it on your local computer. You can also deploy the module directly from the PowerShell Gallery to any of your Azure Automation Accounts.

### *Install the Integration Module on your local computer:*

1. Confirm that you have the PowerShellGet module installed.
2. Start a PowerShell window as Administrator and run the command:  
**Install-Module -Name Keverion.BMC.Helix.Itsm -Scope AllUsers**

### *Upload the Integration Module to an Azure Automation Account:*

1. Go to the [PowerShell Gallery](#).
2. Click the **Azure Automation** tab.
3. Click **Deploy to Azure Automation**. You will be directed to Microsoft Azure.
4. Select the **Automation Account** that you want to deploy the module to.

5. Click **OK**.

## Manual Installation

Alternatively, you can download the Integration Module package from Keverion and deploy it manually to your local computer, hybrid workers and Automation Accounts.

The download package from Keverion includes a **.zip** file containing the Integration Module as well as the User Guide and Release Notes. The following instructions assume that you have unzipped the download package and have access to the **.zip** file containing the Integration Module.

### *Install the Integration Module on your local computer:*

1. Copy the **Keverion.BMC.Helix.Itsm.zip** file to your local computer.
2. Right click on the file and select **Properties**.
3. Click the **General** tab. If necessary, click **Unblock**, and then click **OK**.
4. Unzip the **Keverion.BMC.Helix.Itsm.zip** file.
5. Copy the **Keverion.BMC.Helix.Itsm** folder to a location in the `%PsModulePath%` path.

**Important:** When installing the Integration Module on a Hybrid Worker, you must use a location that is accessible to all users of the computer.

### *Upload the Integration Module to an Azure Automation Account:*

1. Sign into [Microsoft Azure](#).
2. Open the Automation Account that you want to upload the module to.
3. Click **Modules** under Shared Resources. The list of installed modules is displayed.
4. Click **Add a module** at the top of the list.
5. In the **Upload File** box, select the **Keverion.BMC.Helix.Itsm.zip** file that you downloaded.
6. Click **OK**. Importing the module may take several minutes.

## Upgrading from Version 1.0

This version of the Integration Module for BMC Helix ITSM includes new connection asset options. Azure Automation does not support updating Integration Modules that contain connection fields changes. Before uploading this version of the Integration Module for BMC Helix ITSM to your Automation accounts, it is necessary to remove all BMC Helix ITSM connection assets and types. [Appendix A](#), outlines a PowerShell script that you can use to cleanly remove connection assets and connection types from your Automation account(s).

**Important:** Make sure to record your connection asset settings before removing them so that they can be restored.

## Licensing the Integration Module

Licenses for Keverion Integration Modules are managed and deployed using the *Keverion Runbook Studio* and *Automation Connection Assets*.

### *Register an Integration Module license with Runbook Studio:*

1. Open **Kelverion Runbook Studio**.
2. On the **File** tab, click **About**.
3. Click **License Information**.
4. Click the **Integration Modules** tab, and then click **Add License**.
5. Select the integration module license file (.kaml) and click **Open**.
6. You should see your entitlements displayed in the list.
7. Click **OK**.

**Important:** Entitlements will not display until after the Integration Module has been installed on the Runbook Studio computer.

### *Create a Connection Asset with a license key and upload it to Azure:*

1. On the **Home** tab, click **Sign In**. The Sign In dialog appears.
2. Sign into your account.
3. In the **Active Azure Automation Account** box, select the account that you want to add the connection asset to.
4. Click **New Asset** and then click **Connection**. The New Connection dialog appears.
5. In the **Name** field, enter a name to identify the connection.
6. In the **Connection Type** field, select the desired connection type.
7. Enter the appropriate connection information in the provided fields.
8. Click **OK**.

### *Update all Connection Assets license keys and upload them to Azure:*

1. On the **Home** tab, click **Sign In**. The Sign In dialog appears.
2. Sign into your account.
3. In the Explorer panel, click the **Azure (Online)** group.
4. Right-click the Azure Automation Account that contains the connection assets you want to update, and then click **Update License Keys**. A summary is displayed.

## Connecting Kelverion Runbook Studio to Helix ITSM

In Kelverion Runbook Studio you can configure one or more Smart Connections to establish reusable links between Runbook Studio and a specific Helix ITSM instance. You can create as many Smart Connections as you require, specifying links to multiple instances. You can also create multiple Smart Connections to the same instance to allow for differences in security privileges for different user accounts.

### **Adding a Smart Connection to Kelverion Runbook Studio:**

1. Click **Smart Connections**  , on the **Quick Access Toolbar**, or press CTRL+SHIFT+C.

2. In the **Smart Connections** dialog, click **New**.
3. In the **Name** box, enter a name for the configuration. This could be the name of the instance or a descriptive name to distinguish the type of configuration.
4. In the optional **Description** box, enter a description of the Smart Connection.
5. From the **Connection type** menu, select **Kelverion.BMC.Helix.Itsm**.
6. In the **HelixUrl** box, type the URL of the Helix ITSM instance. You may need to Include the Port number, for example: `https://mycompany.on.bmc.com:443`
7. In the **Username** and **Password** boxes, type the credentials that activities will use to connect to the Helix ITSM instance.
8. In the **Authentication** box, type the optional authentication string that may be required by your Helix ITSM instance.
9. Optionally, use the **ProxyServer**, **ProxyServerUsername** and **ProxyServerPassword** boxes to specify proxy server settings.
10. Optionally, in the **AccessTokenLifetime**, type the access token lifetime (in minutes). The default is **60** minutes.
11. Optional, in the **DefaultLimit** box, specify the maximum number of entries to retrieve by default when using the **Get-HelixItsmEntry** command. The default is **1000** entries. This limit can be overridden when configuring an activity.
12. Click **OK** to close the configuration dialog box, and then click **OK**.

## Azure Global Connection Assets

The activities in the Kelverion Integration Module for BMC Helix ITSM require connection information to connect to instances of Helix ITSM.

The recommended way to pass connection information to your activities in your runbooks is to use Global Connection Assets. Global connection assets let you securely define connection information in Azure which can then be retrieved on demand using either the *Get-AutomationConnection* cmdlet or Connection Asset Data Source.

### Adding a global connection asset to your Azure Automation Account:

1. In Kelverion Runbook Studio, click the **Azure** panel.
2. Select your Azure subscription and Automation Account
3. Select **New Asset** in the main toolbar and select **Connection**.
4. In the **Name** box, enter a name for the connection asset.
5. In the optional **Description** box, enter a brief description describing the connection.
6. From the **Connection type** menu, select **Kelverion.BMC.Helix.Itsm**.
7. In the **HelixUrl** box, type the URL of the Helix ITSM instance. You may need to Include the port number, for example: `http://192.168.10.100:8008`
8. In the **Username** and **Password** boxes, type the credentials that activities will use to connect to the Helix ITSM instance.
9. In the **Authentication** box, type the optional authentication string that may be required by your Helix ITSM instance.



10. Optionally, in the **AccessTokenLifetime**, type the access token lifetime (in minutes). The default is **60**.
11. Click **OK** to close the New Connection dialog box.

# Working With Activities in Runbook Studio

The following sections outline some of the common configuration options that are available to you when working with the activities in the Kelverion Integration Module for BMC Helix ITSM.

## Activity Properties

All activities in the Kelverion Integration Module for BMC Helix ITSM have the following properties:

Property	Description
Label	A unique label that identifies the activity in the runbook. Runbook Studio will provide a default name for each activity, but you can provide your own labels to make their role in the runbook more obvious.
Description	An optional description of the activity. Providing a description is a great way to let everyone understand the function of the activity in the runbook.
Checkpoint	Indicates whether a checkpoint is set in the runbook workflow after the activity runs. Checkpoints are only available for Graphical PowerShell Workflow runbooks. If the runbook uses Azure cmdlets, you should follow best practices and follow a check-pointed activity with an <a href="#">Add-AzureRMAccount</a> in case the runbook is suspended and restarts from this checkpoint on a different worker.

## Discovery

When designing runbooks in Kelverion Runbook Studio, you will notice that the activities in the Kelverion Integration Module for BMC Helix ITSM include a **Discovery** panel instead of the **Parameter Sets** panel that is present for standard command activities. This is because the activities in the Kelverion Integration Module for BMC Helix ITSM support interactive discovery of the Helix ITSM assets in your environments.

All activities in the Kelverion Integration Module for BMC Helix ITSM have a **Connection** option on the **Discovery** panel which lets you specify how Runbook Studio should connect to Helix ITSM.

When connected to Helix ITSM, Runbook Studio will provide additional discovery options, such as **Application** and **Form**, which can be used to specify the resources that you want to integrate with. Once you have filled in the discovery options Runbook Studio will provide additional parameters and, in some cases, filters which can be used to configure the activity.

## Parameters

Unlike standard command activities, whose parameters are determined by the Parameter Set that is selected, the parameters in the Kelverion Integration Module for BMC Helix ITSM are determined by the Discovery options that you specify.

For example, when using the **New-HelixItsmEntry** activity, the Discovery panel will contain options for selecting a Helix ITSM Application and Form. Once you have selected a form, Runbook Studio will

provide you with parameters that coincide with the fields in the form. If you select another form, Runbook Studio will provide you with a different set of parameters automatically.

**You must configure all mandatory parameters.** To view the optional parameters that are associated with an activity, click **Optional** at the top of the Parameters tab.

In addition, all activities in the Keverion Integration Module for BMC Helix ITSM include a **Connection** parameter which is used to specify information that the activity will use to connect to Helix ITSM when it is executed as part of a runbook running on a Hybrid Worker. Typically, you will assign a Connection Asset data source to this parameter so that the activity can securely use connection information stored in Azure.

The Connection parameter should not be confused with the similarly named Connection option on the Discovery panel which is used to specify how Runbook Studio connects to Helix ITSM to provide design-time configuration options.

Several factors determine the data sources that are available when configuring a parameter. They include: the parameter's data type, whether it is linked to another activity and whether the runbook has any input parameters.

Runbook studio supports the following data sources.

Data Source	Description
Activity output	<p>Specify activity whose output will be assigned to the parameter. You may also provide an optional Path to select a specific property of the output objects that are generated by the activity.</p> <p>Available when the activity is linked to a source activity.</p>
Not configured	<p>Clears any value that was previously configured. You must configure all mandatory parameters.</p>
Certificate asset	<p>Specify the name of the global certificate asset that will be used to provide a value for the parameter.</p> <p>If you have connected to Azure and selected a Subscription and Automation Account on the toolbar, the data source will provide the names of the certificates that are available.</p>
Credential asset	<p>Specify the name of the global credential asset that will be used to provide a value for the parameter.</p> <p>If you have connected to Azure and selected a Subscription and Automation Account on the toolbar, the data source will provide the names of the credentials that are available.</p>
Constant	<p>Specify a constant value to assign to the parameter.</p> <p>Available for parameters that have the following data types:</p> <ul style="list-style-type: none"><li>• String</li><li>• DateTime</li><li>• Timespan</li><li>• Decimal</li><li>• Double</li></ul>

	When assigning a constant DateTime and Time values, Runbook Studio assumes the value is in UTC.
Connection asset	Specify the name of the global connection asset that will be used to provide a value for the parameter.  If you have connected to Azure and selected a Subscription and Automation Account on the toolbar, the data source will provide the names of the connections that are available.
Empty string	An empty string will be assigned to the parameter. Available when the parameter is type <i>System.String</i>
Null	A null (\$null) value will be assigned to the parameter. Available when the parameter type is a reference type.
PowerShell expression	Specify a <i>simple</i> PowerShell expression whose output will be assigned to the parameter.  You can use variables in the expression to access the output of an activity or a runbook parameter.
Runbook input	Specify the name of the runbook input parameter whose value will be assigned to the parameter.  Available when the runbook has one or more input parameters.
Variable asset	Specify the name of the global variable asset that will be used to provide a value for the parameter.  If you have connected to Azure and selected a Subscription and Automation Account on the toolbar, the data source will provide the names of the variables that are available.

## Filters

Some of the activities in the Kolverion Integration Module for BMC Helix ITSM include a **Filters** panel which lets you specify filters that can be used to retrieve specific entries in Helix ITSM.

To add a filter to your activity, select the **Filters** panel and click **Add**. Filters have the following properties.

Property	Description
Filter	The name of the filter.
Operation	<p>The operation is used to evaluate the filter. Different operators will be provided based on the filter that is selected. Possible filter operators include:</p> <ul style="list-style-type: none"> <li>• Equals</li> <li>• Does not equal</li> <li>• Is less than</li> <li>• Is less than or equal to</li> <li>• Is greater than</li> <li>• Is greater than or equal to</li> <li>• Contains</li> <li>• Does not contain</li> <li>• Matches</li> <li>• Does not match</li> <li>• Starts with</li> <li>• Ends with</li> </ul>

Value	<p>The data source used to retrieve the value to use to evaluate the filter.</p> <p>The value used to evaluate the filter will be obtained. For more information on data sources, please refer to the Parameters section for more information on configuring data sources.</p>
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## Retry Behavior

The activities in the Kolverion Integration Module for BMC Helix ITSM can be configured to run multiple times until a condition, which you specify, is satisfied. You can use the retry behavior options to configure activities that should run multiple times, that are error prone or may need more than one attempt for success.

When you enable retry for an activity, you can configure the runbook to wait a specified number of minutes or seconds before running the activity again. If no delay is specified the runbook will run the activity again, immediately after it completes.

The retry condition lets you specify a PowerShell expression that the runbook will evaluate after each time the activity runs. If the result of the expression is true the activity does not run again, and the runbook moves on to the next child activity in the runbook.

When defining the retry conditions for your activity you can take advantage of a global variable called **\$RetryData**. Specific information about the last time the activity ran can be accessed using the following properties.

Property	Description
NumberOfAttempts	Number of times that the activity has ran
Output	Output that was generated by the activity the last time that it ran
TotalDuration	Time elapsed since the activity was started
StartedAt	Time in UTC when the activity was first started

The following are some examples of activity retry conditions.

```
# Run the activity exactly five times
$RetryData.NumberOfAttempts -eq 5

# Run the activity until it produces some output
$RetryData.Output.Count -ge 1

# Run the activity until at least 2 minutes has elapsed
$RetryData.TotalDuration.TotalMinutes -ge 2
```

## Additional Parameters

The activities in the Keverion Integration Module for BMC Helix ITSM let you specify additional PowerShell parameters that you can use to control the behavior of the activity.

For example, to output detailed information about the operation performed by an activity you would specify **-Verbose:\$True**

# Activity Reference

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The following sections describe how to configure the activities in the Keverion Integration Module for BMC Helix ITSM in conjunction with Keverion Runbook Studio.

**The advanced discovery capabilities provided by the activities in this integration module are only supported when authoring runbooks in Keverion Runbook Studio.**

When you publish your runbooks from Keverion Runbook Studio to Azure Automation or when you generate PowerShell code snippets for Service Management Automation, Runbook Studio will automatically convert the dynamically generated parameters and filters of Smart activities into the parameters provided by the underlying command activities.

The Keverion Integration Module for BMC Helix ITSM includes the following activities.

Activity	Description
Get-HelixItsmEntry	Retrieves entries from a Helix ITSM form
Get-HelixItsmEntryAttachment	Downloads the binary content from an attachment field
New-HelixItsmEntry	Create entries in a Helix ITSM form
Remove-HelixItsmEntry	Remove entries Helix ITSM form
Set-HelixItsmEntry	Update entries in a Helix ITSM form
Set-HelixItsmEntryAttachment	Uploads binary content to an attachment field

## Get-HelixItsmEntry

The **Get-HelixItsmEntry** activity retrieves form entries from a Helix ITSM form. This activity can be configured to retrieve entries by ID or to search for form entries using filters or query expressions.

### Discovery Options

You can use the following discovery options to connect to Helix ITSM and configure the activity:

<b>Connection</b>	The name of the Smart Connection used to connect Runbook Studio to Helix ITSM.
<b>Form</b>	The name of the Helix ITSM form to retrieve instances from.
<b>Search By</b>	Indicates the method that you want to use to search with. Options include <b>Query</b> , <b>Filters</b> , and <b>ID</b> .

### Required Parameters

You must configure the following parameters:

<b>Connection</b>	A hashtable containing connection information. This is typically obtained using a Connection Asset data source or <b>Get-AutomationConnection</b> activity.
<b>Query</b>	A Helix ITSM query expression. Available when <b>Search By</b> is set to <b>Query</b> .
<b>Request ID</b>	The Request ID of the entry that you want to retrieve. Available when <b>Search By</b> is set to <b>ID</b> . <b>Note:</b> The name of this parameter will correspond to the name given to the Request ID field in the Helix ITSM form that you are targeting.

### Optional Parameters

You can use the following optional parameters to modify the results.

<b>Ascending</b>	Specifies whether to output the entries in ascending order.
<b>Fields</b>	Specifies an array containing the names of the fields to include in the result
<b>Limit</b>	The maximum number of entries to retrieve.
<b>Offset</b>	The index of the first request to retrieve.
<b>Order By</b>	The name of the field that should be used to order the output.

### Filters

When **Search By** is set to **Filters** the activity will provide filters that correspond to the fields in the Helix ITSM **Form** that was selected. The activity will only output those form entries that match all the filters that you have configured.

### Output

This activity outputs objects that represent that form entries that were retrieved. The properties of the objects are based on the fields in the form that you selected. Property names are determined using the field labels that have been assigned to the form's default view.



## Advanced Search Query Syntax

### Fields

Enclose field labels, names, or IDs in single quotation marks. For example, 'Short Description'.

If a field label or name contains a single quotation mark (such as an apostrophe), add another single quotation mark next to it. For example, if the field is named Submitter's Phone Number, enter it as 'Submitter''s Phone Number'.

If you need to search on a field that does not have a label, see your administrator for the field ID. Use this ID instead of the name enclosed in single quotation marks.

### Status history fields

Status history fields must have all the following information enclosed within single quotation marks:

- The name or ID of the status history field (followed by a period).
- The name or index of the status value you want to match (followed by a period).
- The keyword USER (for the user who changed the request to that status) or TIME (for the time last changed to that status). For example, 'Status History.Fixed.TIME' < "07/01/99"

### Currency fields

For currency fields, you must have *one* of the following enclosed within single quotation marks:

- The name or ID of the currency field. For example, 'Currency Field' = \$NULL\$
- The name of the currency field, followed by a period, followed by a specific portion of the currency field's value, such as the date or a functional currency value. For example, 'Currency Field.VALUE' < 5000

### Keywords

You can use keywords anywhere that you can enter character values. For information about keywords, refer to the Helix ITSM documentation.

You can use the \$NULL\$ keyword to search for requests that have *no* value in a field. For example, to search for requests that have not been assigned (requests with no value in the Assigned to field), enter 'Assigned to' = \$NULL\$.

### Values

Enclose nonnumeric values (including time, selection, and currency values) in double quotation marks (for example, "07/01/01" for July 1, 2001).

### Selection field values

Selection field values can be specified as text values in quotation marks or numeric values or indexes *not* in quotation marks. For example, if you have a Status field with the option buttons labeled Open, Fixed, and Verified, you can enter either "Open" or 0 to specify the value of Open, because Open is the first selection value in the selection field.

### Currency field values

For currency fields, use the Currency Codes submenu to choose an available currency code. When you choose a currency code, the double quotation marks are automatically entered (such as "USD"). Add the currency value within the double quotation marks (for example, "100 USD"). If you do not

specify a currency code, the primary allowable currency type is assumed.

### Relational Operators

Relational operators are useful especially in non-text fields (such as date and time fields) when you want to search for a value within a numerical range.

<b>()</b>	Use parentheses to control the order in which the expression is carried out. Operations found within parentheses are executed together as a unit.
<b>AND</b>	Logical AND of the result of two conditions. The result is true only if both conditions are true. For example, 'Status'="New" AND 'Assigned to'="David" finds all new requests assigned to David.  You can use two ampersands (&&) instead of the word AND.
<b>OR</b>	Logical OR of the result of two conditions. The result is true if either condition is true. For example, 'Status'="New" OR 'Assigned to'="David" finds all new requests (regardless of who they are assigned to) and all requests assigned to David (no matter what their status).  You can use two vertical lines (  ) instead of the word OR.
<b>NOT</b>	Negates the condition that follows. If the condition is false, the result is true. For example, NOT 'Status'="New" finds all requests that are not new.  You can use an exclamation point (!) instead of the word NOT.
<b>LIKE</b>	Performs a pattern search. For example, 'Submitter' LIKE "Bob%ton" finds all requests with a submitter name that begins with the letters Bob and ends with the letters <b>ton</b> —such as Bob Compton and Bobby Fenton. The LIKE operator is useful only with character and diary fields.  Use square brackets and the LIKE operator for flat-file and Sybase databases. Square brackets and the LIKE operator do not work with Oracle or Informix databases.
<b>+</b>	<ul style="list-style-type: none"><li>• Adds two numerical values (integer, real values, or decimal).</li><li>• Adds an integer interval to a date/time value.</li><li>• Adds two-character strings.</li></ul> <p>For example, 'Create date' &gt; \$DATE\$ + (8*60*60) finds all requests that were created after 8:00 a.m. today.</p>
<b>-</b>	<ul style="list-style-type: none"><li>• Subtracts two numerical values (integer, real values, or decimal)</li><li>• Subtracts two date/time values. Subtracts an integer value from a date/time value.</li></ul> <p>For example, 'Create date' &gt; \$TIMESTAMP\$ - (7*24*60*60) finds all requests that were created within the past week.</p>
<b>*</b>	Multiplies two numeric values. For example, 'Quantity' * 'Price' > 50 finds all requests where the contents of the Quantity field multiplied by the contents of the Price field is over 50.
<b>/</b>	Divides two numeric values. For example, 'Total Expenses' / 'Total Income' = 2 finds all requests where the total amount spent for expenses is twice the total amount of income.
<b>%</b>	Modulo of two integer values (the remainder of a division of the values). Because a percent sign is also a valid wildcard symbol, the context determines how it is interpreted. When used as part of a search statement, it is interpreted as a wildcard symbol; when used in the expression where an operator is expected, it is interpreted as modulo.

<	Matches contents that are less than the value. For example, 'Create date' < (\$TIMESTAMP\$ - 24*60*60) finds all requests created more than 24 hours ago. ([24*60*60] or 86400, is the number of seconds in 24 hours.)
>	Matches contents that are greater than the value. For example, 'Create date' > "09/24/01 00:00:00" finds all requests with Create dates that are newer than midnight September 24, 2001.
!=	Matches contents that are not equal to the value. For example, 'Status' != "Closed" finds all requests that are not closed.
<=	Matches contents that are less than or equal to the value. For example, 'Salary' <= 30000 finds all requests where the contents of the Salary field are less than or equal to 30000.
>=	Matches contents that are less than or equal to the value. For example, 'Salary' <= 30000 finds all requests where the contents of the Salary field are less than or equal to 30000.

### Operator precedence

When you use multiple operators to construct qualification criteria, they are executed in the following order of precedence: ( ) !, NOT, \_ (unary minus) \*, /, %, +, - < <=, >, >+, =, != & & (AND) || (OR)

If the qualification contains multiple operators of the same precedence value, they are executed in the order that they occur (from left to right). For example, in the expression A + (B\*C), the multiplication takes first precedence because it occurs within parentheses, which are of a higher precedence than addition.

### Using wildcard symbols in qualifications

When you specify search criteria to find requests, you can use wildcard symbols as shown in the following table to indicate one or more characters:

#### Wildcards

Wildcard	Action
%	Use to match any string of 0 or more characters. For example: J%son matches Jackson, Johnson, Jason, and Json.
_	Use to match any single character. For example: B_b matches Bab, Bob, and Bub.
-	Use to indicate a range. Always use within square brackets ([ ]).
[^]	Use to match any single character not within a specified range or set. For example, [^a-f] matches all characters except the range a through f, and [^abcf] matches all characters except a, b, c, or f.

In qualifications, wildcard symbols are interpreted as wildcards only when used with the LIKE operator; otherwise, they are interpreted as explicit characters. You must use the percent symbol (%) when you want to include leading or trailing characters in your search. For example, if you want to find all requests submitted by Jill Bobbington, Bobby Fenton, and Bob Comptonson, enter the following text in the advanced search bar:

```
'Submitter' LIKE "%Bob%ton%"
```

**Note:** Square brackets and the symbols associated with them do not work with Oracle or Informix databases.

## Get-HelixItsmEntryAttachment

The **Get-HelixItsmEntryAttachment** activity downloads content to an attachment field in a specified Helix ITSM entry.

### Discovery Options

You can use the following discovery options to connect to Helix ITSM and configure the activity:

<b>Connection</b>	The name of the Smart Connection used to connect Runbook Studio to Helix ITSM.
<b>Form</b>	The name of the form from which to download the attachment.

### Required Parameters

You must configure the following parameters:

<b>Connection</b>	A hashtable containing connection information. This is typically obtained using a Connection Asset data source or <b>Get-AutomationConnection</b> activity.
<b>Field Name</b>	The name of the attachment field.
<b>File Name</b>	The name of the file that is associated with the attachment.
<b>Request ID</b>	The Request ID of the entry to upload the attachment to. <b>Note:</b> The name of this parameter will correspond to the name given to the Request ID field in the Helix ITSM instance that you are targeting.

### Output

This activity outputs the content of the downloaded attachment as a byte array.

## New-HelixItsmEntry

The **New-HelixItsmEntry** activity adds a new entry to a Helix ITSM form.

### *Discovery Options*

You can use the following discovery options to connect to Helix ITSM and configure the activity:

<b>Connection</b>	The name of the Smart Connection used to connect Runbook Studio to Helix ITSM.
<b>Form</b>	The name of the Helix ITSM form to retrieve instances from.

### *Required Parameters*

#### *Required Parameters*

You must configure the following parameters:

<b>Connection</b>	A hashtable containing connection information. This is typically obtained using a Connection Asset data source or <b>Get-AutomationConnection</b> activity.
-------------------	---

**Note:** The activity provides additional required and optional parameters based on the Helix ITSM form that you selected. Parameter names are determined using the field labels that have been assigned to the form's default view.

### *Output*

If the Helix ITSM form that you selected is a regular form, the activity will output the Request ID of the new entry. For other forms, notably join forms, the activity will output an empty string.

## Remove-HelixItsmEntry

The **Remove-HelixItsmEntry** activity removes an entry from a Helix ITSM form.

### Discovery Options

You can use the following discovery options to connect to Helix ITSM and configure the activity:

<b>Connection</b>	The name of the Smart Connection used to connect Runbook Studio to Helix ITSM.
<b>Application</b>	The name of the Helix ITSM application that contains the request to be removed.
<b>Form</b>	The name of the Helix ITSM form that contains the request to be removed.

### Required Parameters

You must configure the following parameters:

<b>Connection</b>	A hashtable containing connection information. This is typically obtained using a Connection Asset data source or <b>Get-AutomationConnection</b> activity.
<b>Request ID</b>	The Request ID of the request to remove. <b>Note:</b> The name of this parameter will correspond to the name given to the Request ID field in the Helix ITSM instance that you are targeting.

### Optional Parameters

You may configure the following optional parameters.

<b>Force</b>	Indicates that you want to remove individual entries that are not retrieved from the join form. Only available when the selected <b>Form</b> is a join form.
<b>No Cascade</b>	Indicates that you do not want to run the workflow when removing form entries.

### Output

This activity outputs the unique ID of the entry that was removed.

## Set-HelixItsmEntry

The **Set-HelixItsmEntry** activity updates one or more fields in a Helix ITSM entry.

### *Discovery Options*

You can use the following discovery options to connect to Helix ITSM and configure the activity:

<b>Connection</b>	The name of the Smart Connection used to connect Runbook Studio to Helix ITSM.
<b>Application</b>	The name of the Helix ITSM application that contains the request to update.
<b>Form</b>	The name of the Helix ITSM form to update the request in.

### *Required Parameters*

You must configure the following parameters:

<b>Connection</b>	A hashtable containing connection information. This is typically obtained using a Connection Asset data source or <b>Get-AutomationConnection</b> activity.
<b>Request ID</b>	The Request ID of the request to update. <b>Note:</b> The name of this parameter will correspond to the name given to the Request ID field in the Helix ITSM instance that you are targeting.

### *Optional Parameters*

The activity will provide optional parameters to represent the fields in the Helix ITSM form that you selected. Parameter names are determined using the field labels that have been assigned to the form's default view.

### *Output*

This activity outputs the unique ID of the entry that was updated.



## Set-HelixItsmEntryAttachment

The **Set-HelixItsmEntryAttachment** activity uploads content to an attachment field in a specified Helix ITSM entry.

### Discovery Options

You can use the following discovery options to connect to Helix ITSM and configure the activity:

<b>Connection</b>	The name of the Smart Connection used to connect Runbook Studio to Helix ITSM.
<b>Form</b>	The name of the form that contains the request to upload the attachment to.

### Required Parameters

You must configure the following parameters:

<b>Connection</b>	A hashtable containing connection information. This is typically obtained using a Connection Asset data source or <b>Get-AutomationConnection</b> activity.
<b>Content</b>	The content of the attachment as an array of bytes.
<b>Field Name</b>	The name of the attachment field.
<b>File Name</b>	The name of the file that is associated with the attachment.
<b>Request ID</b>	The Request ID of the entry to upload the attachment to. <b>Note:</b> The name of this parameter will correspond to the name given to the Request ID field in the Helix ITSM instance that you are targeting.

### Output

This activity outputs the unique ID of the entry that was updated.

## Appendix A: Removing Connection Type/Assets

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Azure Automation prevents you from uploading a newer version of an integration module when changes have been made to the module's connection type definition (the import will fail with an error). To resolve this issue, you must remove all Kelverion.BMC.Helix.Itsm connection assets as well as the Kelverion.BMC.Helix.Itsm connection type. Connection assets can be removed in the Azure Automation portal, but you must use PowerShell to remove the connection type.

**Important:** Before removing connection assets, you should document the connection asset name(s) and field values so that they can be recreated. Using the same connection asset names will save you from having to update your runbooks.

The following PowerShell script can be used to remove the Kelverion.BMC.Helix.Itsm connection type and connection assets from an Azure Automation account.

```
param(
    [Parameter(Mandatory = $true)]
    [ValidateNotNullOrEmpty()]
    [string] $AutomationAccountName,

    [Parameter(Mandatory = $true)]
    [ValidateNotNullOrEmpty()]
    [string] $ResourceGroupName,

    [Parameter(Mandatory = $true)]
    [ValidateNotNullOrEmpty()]
    [string] $SubscriptionId
)

Connect-AzAccount
Set-AzContext -Subscription $SubscriptionId

$commonParams = @{
    ResourceGroupName = $ResourceGroupName
    AutomationAccountName = $AutomationAccountName
}

#Find and remove all connections for the specified connection type name
$connections = Get-AzAutomationConnection @commonParams `
    -ConnectionTypeName Kelverion.BMC.Helix.Itsm

foreach ($connection in $connections) {
    Remove-AzAutomationConnection @commonParams `
        -Name Kelverion.Kelverion.BMC.Helix.Itsm
}

# Remove the connection type
Remove-AzAutomationConnectionType @commonParams `
    -Name Kelverion.Kelverion.BMC.Helix.Itsm `
    -Force
```