



INTEGRATION MODULE FOR CHERWELL SERVICE MANAGEMENT

For Keverion Runbook Studio and Azure Automation

User Guide

Version 1.4

Microsoft
Azure

Certified

Kelverion Integration Module for Cherwell Service Management

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Getting Started

The following sections outline how to deploy and configure the Keverion Integration Module for Cherwell Service Management.

System Requirements

The Integration Module for Cherwell Service Management 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 4.7
- Microsoft .NET Framework 4.7.2

Keverion Service Management requirements:

- Cherwell Service Management 9.6.3, 9.7.0, 10.0.1, 10.1.2

Deploying the Integration Module

The easiest way to install and deploy the Integration Module for Cherwell Service Management 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 runbook 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 Cherwell Service Management 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 or hybrid runbook worker:

1. Confirm that you the PowerShellGet module installed.
2. Start a PowerShell window as Administrator and run the command:

```
Install-Module -Name Keverion.Cherwell -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.

Important: When installing the Integration Module on a hybrid runbook worker, you must use a location that is accessible to all users of the computer.

Install the integration module on your local computer or hybrid runbook worker:

1. Copy the **Keverion.Cherwell.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.Cherwell.zip** file.
5. Copy the **Keverion.Cherwell** folder to a location in the `%PsModulePath%` path.

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.Cherwell.zip** file that you downloaded.
6. Click **OK**. Importing the module make take several minutes.

Licensing the Integration Module

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

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

Register an Integration Module license with Runbook Studio:

1. Open **Keverion 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**.

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.

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 Keverion Integration Module for Cherwell Service Management.

The integration module includes the following activities:

Add-CherwellAttachmentContent	Uploads an attachment to a specified Business Object
Get-CherwellAttachmentContent	Downloads content from a Business Object attachment
Get-CherwellAttachmentInfo	Get attachment information for a record
Get-CherwellRecord	Gets Business Objects records
New-CherwellRecord	Creates a new Business Object record
Remove-CherwellRecord	Deletes a Business Object record
Set-CherwellRecord	Modifies a Business Object record

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.

Smart Connections

In Keverion Runbook Studio you can configure one or more Smart Connections in order to establish reusable links between Runbook Studio and a specific Cherwell Service Management 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.

Add a Smart Connection in Keverion Runbook Studio:

1. Click **Connections** in the Runbook Studio toolbar.
2. In the **Smart Connections** dialog click **Add**.

In the **Name** box, type a name for the configuration. This could be the name of the instance or a descriptive name to distinguish the type of configuration.
3. In the **Connection Type** box, select **Keverion.Cherwell**.
4. In the **WebServiceUrl** box, type the URL of the Cherwell Service Management REST API end point (ex. https://<cherwell server>/Cherwellapi)

5. In the **ClientKey** box, type the Client Key provided by your Cherwell Service Management administrator.
6. In the **Username** and **Password** boxes, type the credentials that activity will use to connect to the Cherwell instance. **It is highly recommended to use a dedicated Cherwell user for your smart connection, to ensure proper runbook operation during design and runtime.**
7. In the **SkipCertificateCheck** box, specify if the Integration Module should validate the HTTPS server certificate, when connecting to the Cherwell instance. By default, certificate validation is enabled.
8. In the **TargetVersion** box, specify the version number of your Cherwell Service Management instance. You can specify a two digit or three-digit version number, for example: **9.7** or **10.1.2**. The integration module deploys with several configuration files to support different Cherwell Service Management versions. The **TargetVersion** value helps the integration module determine which configuration file should be used for your Cherwell instance.
9. Click **OK** to close the configuration dialog box, and then click **OK**.

Global Connection Assets

The activities in the Keverion Integration Module for Cherwell Service Management require connection information to connect to instances of Cherwell as well as the Keverion Management server.

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.

Add a global connection asset in Runbook Studio:

1. In Keverion Runbook Studio, click the **Azure** panel.
2. Select your Azure subscription.
3. Select your Automation account.
4. Select **Connections** and right click.
5. Select **Add New Connection**.
6. In the **Name** box, type a name for the configuration. This could be the name of the instance or a descriptive name to distinguish the type of configuration.
7. In the **Connection Type** box, select *Keverion.Cherwell*.
8. In the **WebServiceUrl** box, type the URL of the Cherwell Service Management REST API end point (ex. `https://<cherwell server>/Cherwellapi`)
9. In the **ClientKey** box, type the Client Key provided by your Cherwell Service Management administrator.

10. In the **Username** and **Password** boxes, type the credentials that activity will use to connect to the Cherwell instance. **It is highly recommended to use a dedicated Cherwell user for your connection, to ensure proper runbook operation during design and runtime.**
11. In the **SkipCertificateCheck** box, specify if the Integration Module should validate the HTTPS server certificate, when connecting to the Cherwell instance. By default, certificate validation is enabled.
12. In the **TargetVersion** box, specify the version number of your Cherwell Service Management instance. You can specify a two digit or three-digit version number, for example: **9.7** or **10.1.2**. The integration module deploys a number configuration files to support different Cherwell Service Management versions. The **TargetVersion** value helps the integration module determine which configuration file should be used for your Cherwell instance.
13. Click **OK** to close the New Connection dialog box.

Activity Properties

All activities in the Keverion Integration Module for Cherwell Service Management have the following properties:

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	<p>Indicates whether or not a checkpoint is set in the runbook workflow after the activity runs. Checkpoints are only available for Graphical PowerShell Workflow runbooks.</p> <p>If the runbook uses Azure cmdlets, you should follow best practices and follow a check-pointed activity with an Add-AzureRMAccount in case the runbook is suspended and restarts from this checkpoint on a different worker.</p>

Smart Discovery

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

All activities in the Keverion Integration Module for Cherwell Service Management have a **Connection** option on the **Discovery** panel which lets you specify how Runbook Studio should connect to Cherwell.

When connected to Cherwell, Runbook Studio will provide additional discovery options, **Record Type** 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.

Smart Parameters

Unlike standard command activities, whose parameters are determined by the Parameter Set that is selected, the parameters in the Keverion Integration Module for Cherwell Service Management are determined by the Discovery options that you specify.

For example, when using the **New-CherwellRecord** activity, the Discovery panel will contain options for selecting a Cherwell Service Management business object. Once you have selected a business object, Runbook Studio will provide you with parameters that coincide with the fields in the business object. If you select another business object, Runbook Studio will provide you with a different set of parameters.

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 Kelverion Integration Module for Cherwell Service Management include a **Connection** parameter which is used to specify information that the activity will use to connect to Cherwell when it is executed as part of a runbook running on a hybrid runbook 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 Cherwell 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.

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">• String• DateTime• Timespan• Decimal• Double <p>When assigning a constant DateTime and Time values, Runbook Studio assumes the value is in UTC.</p>

Connection asset	<p>Specify the name of the global connection 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 connections that are available.</p>
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	<p>Specify a <i>simple</i> PowerShell expression whose output will be assigned to the parameter.</p> <p>You can use variables in the expression to access the output of an activity or a runbook parameter.</p>
Runbook input	<p>Specify the name of the runbook input parameter whose value will be assigned to the parameter.</p> <p>Available when the runbook has one or more input parameters.</p>
Variable asset	<p>Specify the name of the global variable 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 variables that are available.</p>

Smart Filters

Some of the activities in the Kelverion Integration Module for Cherwell Service Management include a **Filters** panel which lets you specify filters that can be used to retrieve specific records in Cherwell.

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

Filter	The name of the filter.
Operation	<p>The operation 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"> • Equals • Is less than • Is greater than • Contains • Starts with
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>

Known Filtering Issues

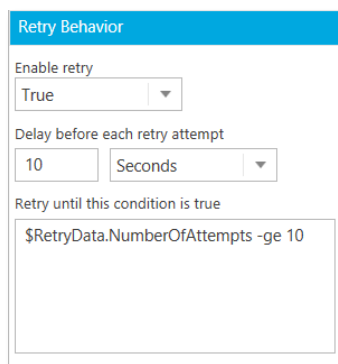
Several cases have been identified where the Cherwell search API does not filter records as expected:

- For some numeric fields, zero records are returned when specifying an equal to zero filter.
- For some reference fields, zero records are returned when using reference field names in filters. When filtering by reference fields, it is recommended to use reference IDs. For example, filter incident records by Subcategory ID instead of Subcategory Name.
- Zero records are returned when filtering by matrix dimension fields. You can filter by the matrix result field, instead. For example, it is recommended to filter by Priority instead of filtering by Impact or Urgency.
- When using the **Contains** or **Starts with** filter operators to filter strings, the asterisk (*) is interpreted as a wildcard character.

Retry Behavior

The activities in the Kelverion Integration Module for Cherwell Service Management 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 screenshot shows a 'Retry Behavior' configuration window. It has three main sections: 'Enable retry' with a dropdown set to 'True', 'Delay before each retry attempt' with a text box containing '10' and a dropdown set to 'Seconds', and 'Retry until this condition is true' with a text box containing the PowerShell expression '\$RetryData.NumberOfAttempts -ge 10'.

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.

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 5 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 Kolverion Integration Module for Cherwell Service Management 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**

Working with Configuration Files

Integration with Cherwell CSM is supported by a set of JSON (JavaScript Object Notation) formatted configuration files that are co-located in the integration module folder. Each configuration file contains the business object definitions for a particular version of Cherwell CSM and this information is used to support discovery in Runbook Studio and to run your runbooks in Azure Automation. Each version of the Integration Module for Cherwell contains standard configuration files for the versions of Cherwell CSM that it supports.

In addition to supporting integration with different versions of Cherwell CSM, these configuration files can also be used to customize how Runbook Studio and the Integration Module for Cherwell integrate with your Cherwell CSM instance. These customizations can include adding new field definitions to existing Cherwell business objects, such as Incident or Problem, or adding definitions for new business objects that are not supported by default.

Support for Multiple Versions

Configuration files are named using the format **Kelverion.Cherwell-Configuration-`<major>.<minor>.<build>`** with the major, minor and build suffices being used to specify a particular version of Cherwell CSM. The major and minor suffices are required; however, the build suffix is optional and only necessary you need to provide a configuration file for a specific Cherwell CSM build.

When working with smart connections and Azure Automation connection assets in Runbook Studio, the Integration Module for Cherwell provides a **TargetVersion** property, and this property is used to identify the configuration file that will be used to integrate with the Cherwell CSM instance you are targeting. For example, if you specify a TargetVersion of *10.1.2*, the integration module will look for a configuration file name with the name *Kelverion.Cherwell-Configuration-10.1.2* or *Kelverion.Cherwell-Configuration-10.1*.

An exception will be raised if the module cannot locate an appropriately named configuration file for the target version that you specified.

Deploying Your Changes

If you make changes to the set of configuration files in your on-premises deployment of the Integration Module for Cherwell, you must copy your update Kelverion.Cherwell module folder to each hybrid windows worker and Azure Automation account that you will be using. Note that when uploading a module from your local system to Azure Automation, you must first create a compressed (zipped) folder.

Uploading your customized configuration to Azure Automation:

1. Open **File Explorer** and navigate to the folder that contains your customized integration **Kelverion.Cherwell** module.
2. Right-click on **Kelverion.Cherwell** folder and select **Send to > Compressed (zipped) folder**.
3. Sign into [Microsoft Azure](#).
4. Open the Automation Account that you want to upload the module to.

5. Click **Modules** under Shared Resources. The list of installed modules is displayed.
6. Click **Add a module** at the top of the list.
7. In the **Upload File** box, select the **Kelverion.Cherwell.zip** file that you created in step 2.
8. Click **OK**. Importing the module may take several minutes.

Important: When you deploy a new version of the Integration Module for Cherwell that you downloaded from Kelverion or from the PowerShell gallery, you will overwrite any customizations that you made to your current configuration files. Therefore, it is important that you copy your changed files to a safe location so that they can be restored after you have upgraded the module.

Configuration File Schema

The business object definitions in the configuration file used by the Integration Module for Cherwell are formatted using JSON. The following JSON Schema outlines the JSON used for configuration files.

```
{
  "$schema": "https://json-schema.org/draft/2020-12/schema",
  "$id": "https://example.com/product.schema.json",
  "description": "Cherwell configuration file.",
  "properties": {
    "BusinessObjects": {
      "description": "Array of Cherwell business object definitions.",
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "RecordType": {
            "description": "The internal name of the business object type.",
            "type": "string"
          },
          "DisplayName": {
            "description": "The name used to display the business object",
            "type": "string"
          },
          "Fields": {
            "description": "Array of field definitions.",
            "type": "array",
            "items": {
              "type": "object",
              "properties": {
                "Name": {
                  "description": "The internal field name.",
                  "type": "string"
                },
                "DisplayName": {
                  "description": "The name used to display the field.",
                  "type": "string"
                },
                "DataType": {
                  "description": "The name of a .NET data type.",
                  "type": "string"
                }
              }
            }
          }
        }
      }
    }
  }
}
```


Defining Business Objects

Business object definitions provide the integration module with the information used to integrate with Cherwell CSM.

RecordType Property

The **RecordType** property specifies the internal name of the business object that is being defined.

DisplayName Property

The **DisplayName** property specifies the name used to display the business object in Runbook Studio.

Fields Property

The **Fields** property is used to specify the fields that are associated with the business object. Field definitions will be used to support smart parameter and filter discovery in Runbook Studio. See the next section for more information on defining fields.

Defining Business Object Fields

Field definitions provide the integration module with information used to support a specific business object field. This information will be used to present appropriate input parameter and filter options, when configuring activities that target the object in Runbook Studio.

Name Property

The **Name** property specifies the internal name of the field as defined in Cherwell CSM. For example, *Incident* or *ChangeRequest*.

DisplayName Property

The **DisplayName** property specifies the name used to display the field in Runbook Studio.

DataType Property

The **DataType** property specifies the .NET data type used to support the field in Runbook Studio and Azure Automation. For example, string fields will use *System.String* and numeric fields may use *System.Int32* or *System.Double* depending on whether the field supports decimal digits.

HasValues Property

The **HasValues** property indicates whether the field supports lookup values. When set the *True*, the integration module will attempt to lookup values for the field. If the lookup was successful, Runbook Studio will display browser lists when configuring constant value data sources for parameters and filters.

Required Property

The **Required** property indicates whether the field is mandatory for new objects. When set to *True* the field will become a required parameter when configuring the **New-CherwellRecord** activity in Runbook Studio.

TargetReference Property

The **TargetReference** property is used to define fields that reference other business objects. See the next section for more information.

Defining Reference Targets

Reference field definitions are used to define business object fields that reference other business objects. Reference definitions are used by the integration module to provide browser lists for reference fields in Runbook Studio and for resolving field input mappings when creating and updating business objects.

The complexity of reference definitions can vary significantly, even when referencing the same business object. For example, the **TeamInfo** reference definition for the **Level2EscalationTeam** field for the incident business object is quite simple and requires that you specify only the **RecordType** and **BrowserField** properties. In comparison, the **AssignedTeam** incident property, which also references TeamInfo, requires the **RecordType**, **BrowserField**, **MatchField** and **InputResolution** properties to be specified.

RecordType Property

The mandatory **RecordType** property specifies the internal name of the Cherwell business object that the field is referencing.

MatchField Property

The optional **MatchField** property specifies one or more internal field names for the business object that is being referenced. These fields are used to resolve the parameter and filter input values into an actual object reference. Match fields are tested in order from left to right

For example, the MatchField property for the AssignedTeam incident specifies the *Name*, *RecID* and *TeamID* fields.

```
"MatchField": ["Name", "RecID", "TeamID"],
```

This means that when creating or updating an incident object, the integration module will use the value provided for the AssignedTeam parameter to lookup the referenced team object first by trying to match the team by Name, then by RecID and finally by TeamID.

BrowserField Property

The optional **BrowserField** property specifies the internal names of the fields in the referenced business object that will be used to select values for constant value data sources in Runbook Studio.

For example, the BrowserField property for the AssignedTeam incident field, specifies the *Name* field.

```
"BrowserField": ["Name"]
```

This means that the integration will use the Name field when selecting appropriate values for parameter and filter browsers associated with the AssignedTeam field.

InputResolution Property

The optional **InputResolution** property defines how to map field values from the referenced object (found using the fields specified by the Match property) to the fields required by the object that you are updating or creating. The InputResolution field consists of one or more name and value pairs

with the left-side property name specifying a field name in the reference target and the right-side property value specifying the corresponding field in the object that you are creating or updating.

For example, the `InputResolution` field for the `AssignedTeam` incident field maps the values of the `TeamID` and `Name` fields in the referenced `Team` object to the `AssignedTeamID` and `AssignedTeam` fields in the incident object that is being updated or created, respectively.

```
"InputResolution": {  
  "TeamID": ["AssignedTeamID"],  
  "Name": ["AssignedTeam"]  
}
```

Add-CherwellAttachmentContent

The **Add-CherwellAttachmentContent** activity uploads an attachment to a Cherwell Business Object.

Discovery Options

This activity provides the following smart discovery options:

Connection	The name of the Smart Connection used to connect Runbook Studio to Cherwell.
Record Type	The type of Business Object that is being modified.

Required Parameters

This activity requires the following parameters.

Connection	Hashtable containing information used to connect to Cherwell.
Record ID	The record ID of the Business Object that is being modified.
Attachment	The content of the attachment.
Filename	The filename of the attachment.

Optional Parameters

This activity provides the following optional parameters.

Display Text	Alternate file link display text. If specified, this will be displayed instead of the filename.
---------------------	---

Outputs

This activity returns the ID of the attachment that was created.

Get-CherwellAttachmentContent

The **Get-CherwellAttachmentContent** activity downloads the content of an attachment that is associated with a Cherwell Business Object.

Discovery Options

This activity provides the following smart discovery options:

Connection	The name of the Smart Connection used to connect Runbook Studio to Cherwell.
Record Type	The type of Business Object record.

Required Parameters

This activity requires the following parameters.

Connection	Hashtable containing information used to connect to Cherwell.
Record ID	The record ID of the Business Object that contains the attachment.
Attachment ID	The ID of the attachment to download.

Optional Parameters

This activity does not have any optional parameters.

Output

This activity returns a byte array containing the content of the attachment.

Get-CherwellAttachmentInfo

The **Get-CherwellAttachmentInfo** activity gets attachment information for a Cherwell Business Object record.

Discovery Options

This activity provides the following smart discovery options:

Connection	The name of the Smart Connection used to connect Runbook Studio to Cherwell.
Record Type	Specifies the type of Business Object.

Required Parameters

This activity requires the following parameters.

Connection	Hashtable containing information used to connect to Cherwell.
Record ID	The record ID of the Business Object to retrieve attachments from.

Filters

This activity provides the following filters.

AttachmentId	The unique attachment ID.
DisplayText	The alternate display text
FileName	The filename including extension
FileType	The file type, or extension.

Output

This activity returns an object that contains information about an attachment. This object does not include the content of the attachment. To download attachment content, use the **Get-CherwellAttachmentContent** activity.

Get-CherwellRecord

The **Get-CherwellRecord** activity retrieves Cherwell Business Objects records using criteria that you specify.

Discovery Options

This activity provides the following smart discovery options:

Connection	The name of the Smart Connection used to connect Runbook Studio to Cherwell.
Record Type	The type of Business Objects to retrieve.
Search By	The method used to retrieve the Business Objects. Select Filters to use filters or Record ID to get by record ID.

Required Parameters

This activity requires the following parameters.

Connection	Hashtable containing information used to connect to Cherwell.
Record ID	The record IDs of the Business Objects to retrieve.

Optional Parameters

This activity provides the following optional parameters.

Limit	The maximum number of records to retrieve. When 0 is specified, all records are retrieved. Default value is 1000.
Ascending	Indicates that records should be sorted in ascending order. This parameter is used only when Order By is specified.
Order By	The field used to order the records by.

Filters

This activity provides filters based on the **Record Type** that is specified.

Output

This activity returns an object that represents the Business Object records that were retrieved. The Business Object record type you selected during discovery will determine which properties the objects will have.

Remarks

We **highly recommend** specifying a limit when retrieving records from Cherwell to avoid the negative performance associated with retrieving large record sets.

New-CherwellRecord

The **New-CherwellRecord** activity creates a new Cherwell Business Object.

Discovery Options

This activity provides the following smart discovery options:

Connection	The name of the Smart Connection used to connect Runbook Studio to Cherwell.
Record Type	The type of Business Object to be created.

Required Parameters

This activity requires the following parameters. Additional parameters may be provided depending on the type of record that is being created.

Connection	Hashtable containing information used to connect to Cherwell.
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Optional Parameters

This activity may provide additional optional parameters depending on the type record that is being created.

Output

This activity returns the record ID of the Business Object that was created.

Remove-CherwellRecord

The **Remove-CherwellRecord** activity removes a Cherwell Business Object.

Discovery Options

This activity provides the following smart discovery options:

Connection	The name of the Smart Connection used to connect Runbook Studio to Cherwell.
Record Type	The type of Business Object to remove.

Required Parameters

This activity requires the following parameters.

Connection	Hashtable containing information used to connect to Cherwell.
Record ID	The record ID of the Business Object to remove.

Output

This activity returns the record ID of the Business Object that was removed.

Set-CherwellRecord

The **Set-CherwellRecord** activity modifies an existing Business Object.

Discovery Options

This activity provides the following smart discovery options:

Connection	The name of the Smart Connection used to connect Runbook Studio to Cherwell.
Record Type	The type of Business Object to modify.

Required Parameters

This activity requires the following parameters.

Connection	Hashtable containing information used to connect to Cherwell.
Record ID	The record ID of the Business Object to modify.

Optional Parameters

This activity provides additional optional parameters depending on the type record that is being modified.

Output

This activity returns the record ID of the Business Object that was modified.