



6.8 User Guide

Blue Prism and IBM Business Automation
Workflow on Cloud Integration

Document Revision 1.0



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Blue Prism Limited, 2 Cinnamon Park, Crab Lane, Warrington, WA2 0XP, United Kingdom
Registered in England: Reg. No. 4260035. Tel: +44 870 879 3000. Web: www.blueprism.com

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Introduction

This document outlines the integration and configuration of Blue Prism and the IBM Business Automation Workflow on Cloud platform; commonly referred to as IBM BPM on Cloud. It is also available on the Blue Works Live platform.

IBM Business Automation Workflow is widely used enterprise software suite that combines business process management and use-case management in a single integrated workflow solution. It combines information, processes, and users to provide a 360-degree view of work to help drive more successful business outcomes.

Business Automation Workflow on Cloud provides the same capabilities as the on-prem BPM offering, within a ready-to-use, cloud-based environment hosted and managed by IBM.

This document assumes a general understanding of Blue Prism Processes as well as the IBM BPM platform.

Details on the IBM Business Automation Workflow on Cloud Platform can be found here:

<https://www.bpm.ibmcloud.com/auth/index.html>

Requirements include:

- Blue Prism Software
- An IBM Cloud account and access to the IBM Business Automation Workflow on Cloud Platform. As of July, 2020, IBM offers a free 30-day trial.

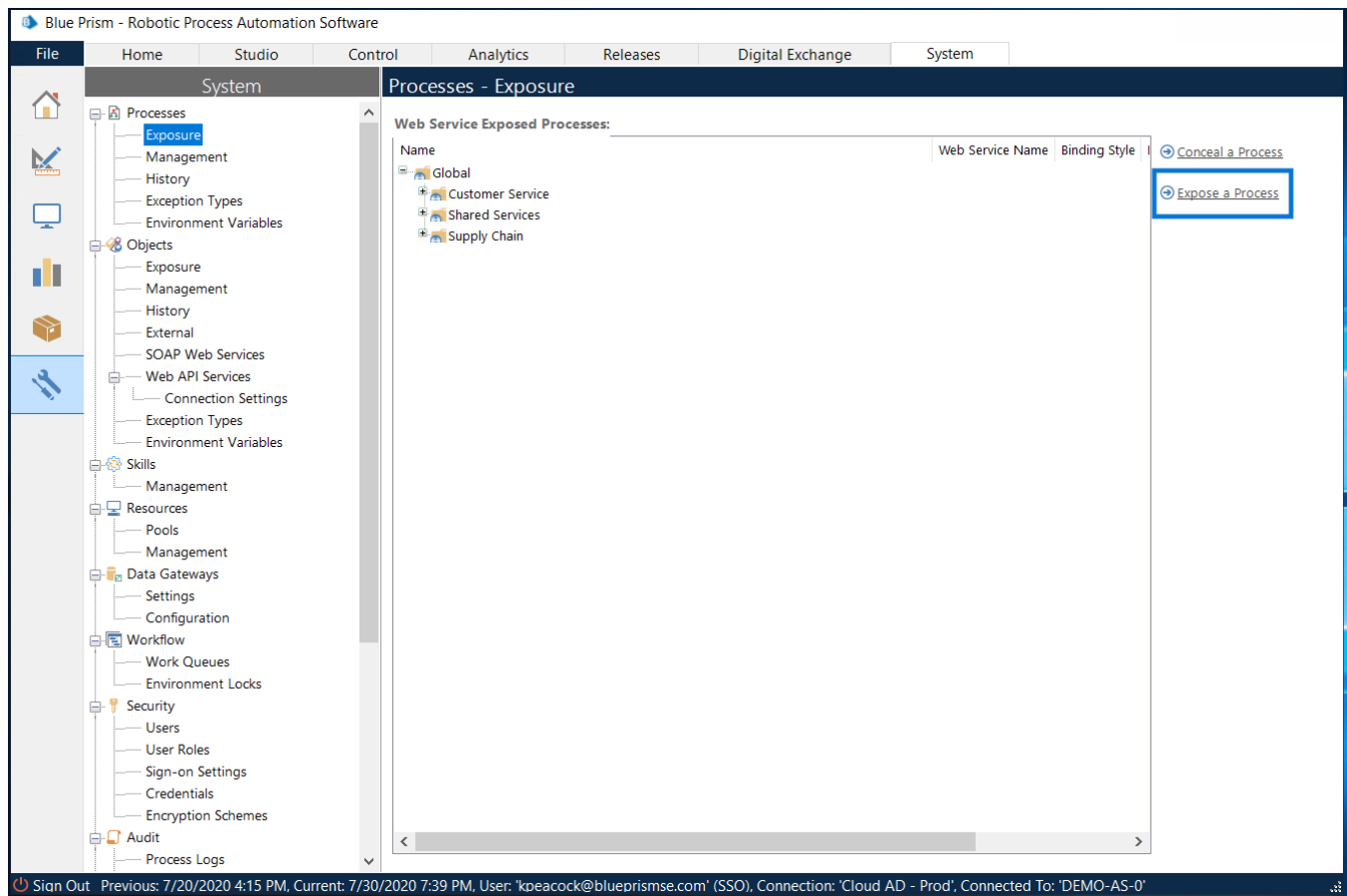
Flow to Blue Prism Integration

Components of the Solution

- Blue Prism process exposed as SOAP Web Service
- Configure IBM BPM on Cloud to invoke a Web Service
- Test Blue Prism Web Service from IBM BPM on Cloud

Blue Prism process exposed as SOAP Web Service

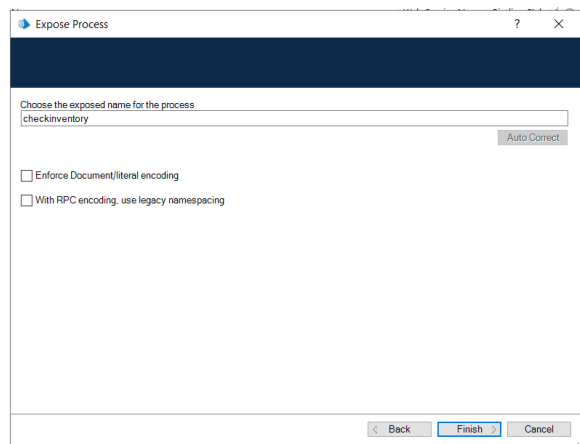
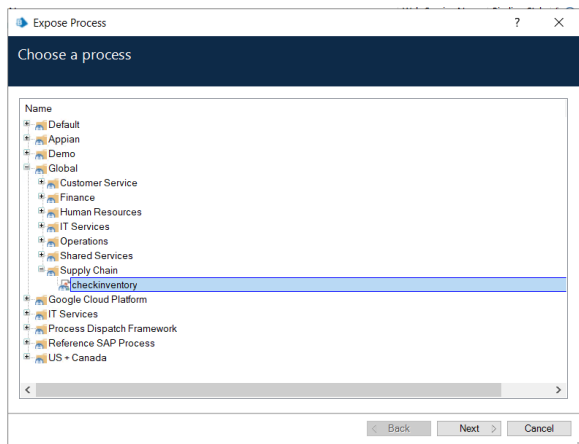
Expose the Blue Prism process as a SOAP Web Service.



The screenshot displays the Blue Prism software interface. The left-hand navigation pane shows a tree structure under the 'System' tab, with 'Processes' expanded and 'Exposure' selected. The main window, titled 'Processes - Exposure', contains a table with the following data:

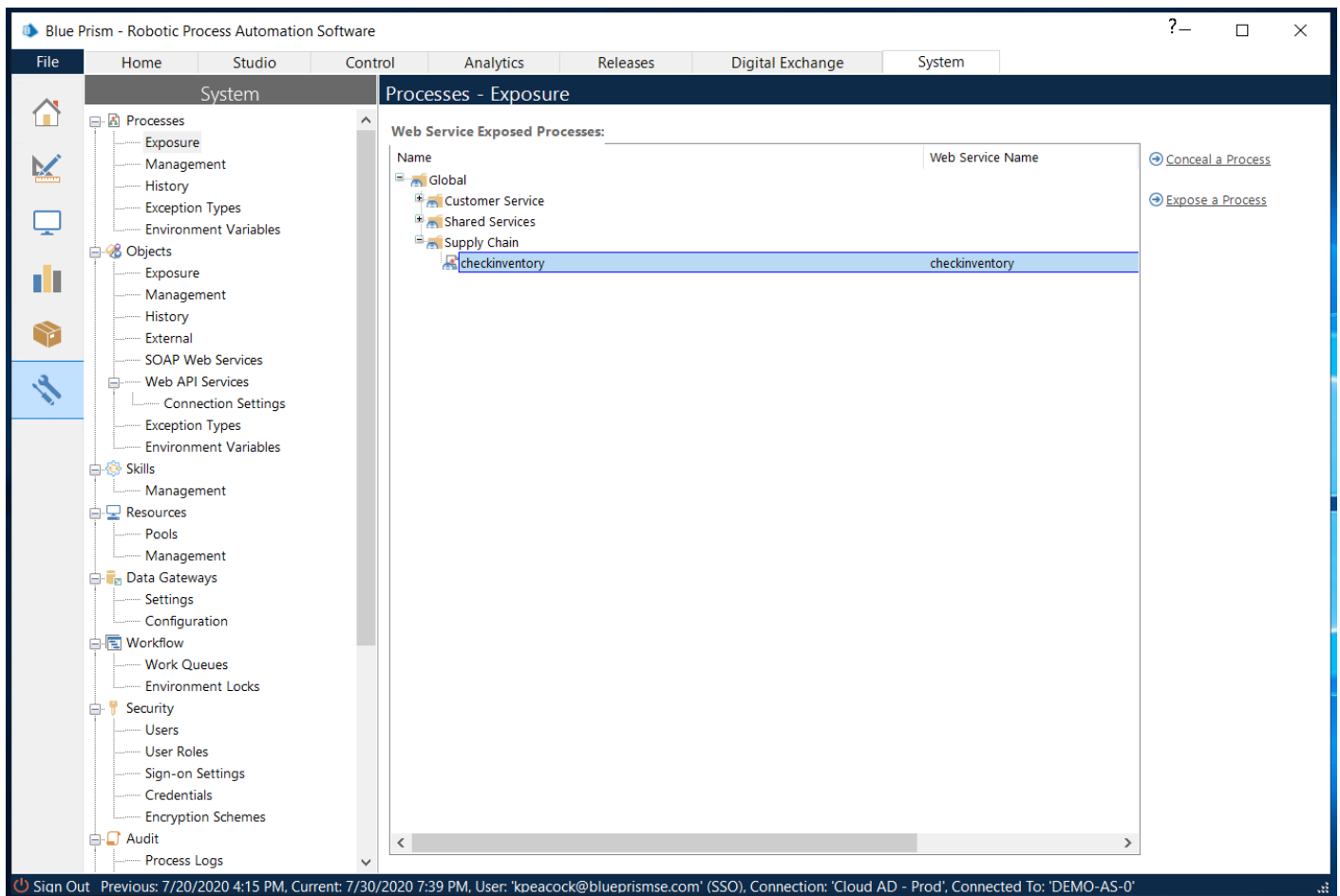
Name	Web Service Name	Binding Style
Global		
Customer Service		
Shared Services		
Supply Chain		

On the right side of the table, there are two buttons: 'Conceal a Process' and 'Expose a Process'. The 'Expose a Process' button is highlighted with a red rectangle. At the bottom of the interface, a status bar shows the following information: 'Sign Out Previous: 7/20/2020 4:15 PM, Current: 7/30/2020 7:39 PM, User: 'kpeacock@blueprismse.com' (SSO), Connection: 'Cloud AD - Prod', Connected To: 'DEMO-AS-0'



It isn't necessary to specify Document/literal encoding or RPC encoding, unless your environment calls for it.

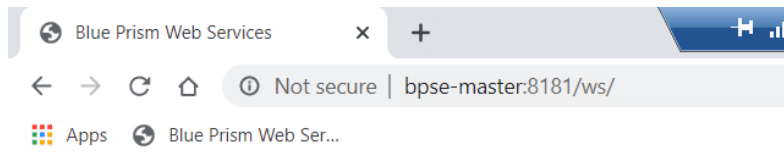
Once your process is exposed, it will appear in the Exposure tree.



You can test to make sure the SOAP service is available by using the URL in a browser window:

`http://<<machinename>>:<<resource agent port>>/ws/`
(in this example, my hostname is **bpse-master** and the Web Service Port is **8181**)

IMPORTANT: you must add the trailing “/” for the URL to work.



Web service - Processes

addItemtoQueue -

<http://bpse-master:8181/ws/addItemtoQueue?wsdl>

checkinventory -

<http://bpse-master:8181/ws/checkinventory?wsdl>

Dispatch Technician -

<http://bpse-master:8181/ws/DispatchTechnician?wsdl>

Web service - Business objects

None

If you click on the newly added Exposed Web Service, you'll get the XML definition:



Pay attention to the URL for the SOAP call inside the XML: (it's below the fold in this screenshot.)

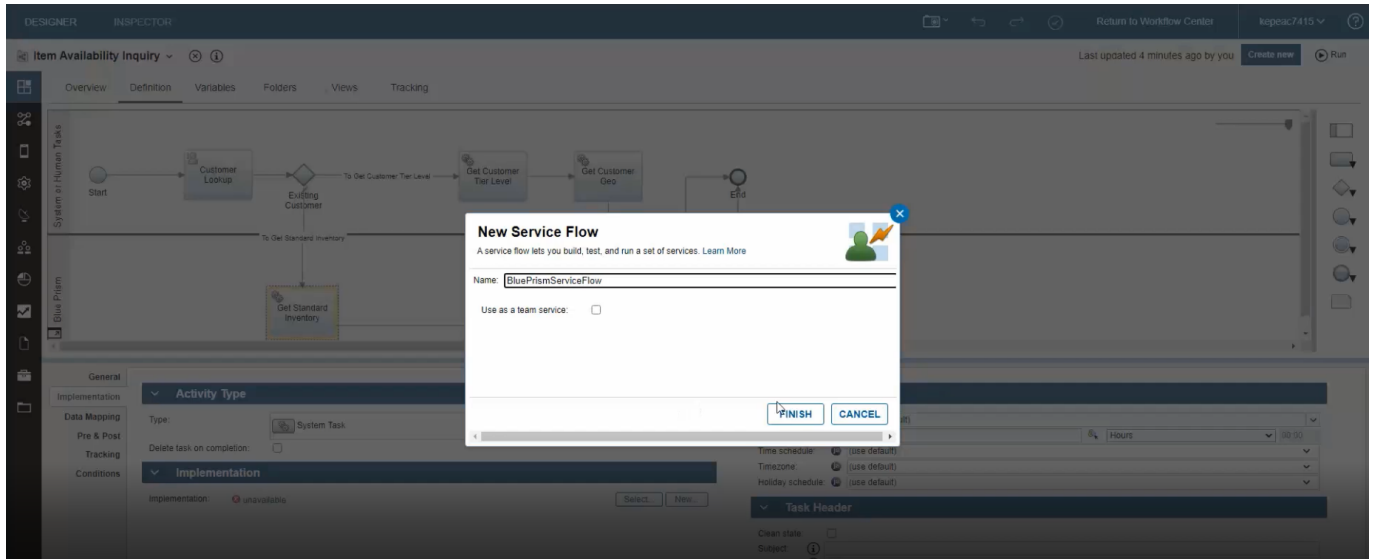
```
<soap:body use="literal" namespace="urn:blueprism.webservice.checkinventory" encoding="utf-8"/>
</wsdl:output>
</wsdl:operation>
</wsdl:binding>
▼ <wsdl:service name="checkinventoryService">
  ▼ <wsdl:port name="checkinventorySoap" binding="tns:checkinventorySoapBinding">
    <soap:address location="http://bpse-master:8181/ws/checkinventory"/>
  </wsdl:port>
</wsdl:service>
</wsdl:definitions>
```

This is the URL another application will use to communicate with our Blue Prism Web Service. Unfortunately, this URL is the short hostname for our Web Service. Blue Prism assumes we're working on the same network. When communicating between clouds (IBM BPM on Cloud to our Blue Prism Azure Cloud instance) we need to change this URL to the fully qualified hostname. We'll do that in the next section.

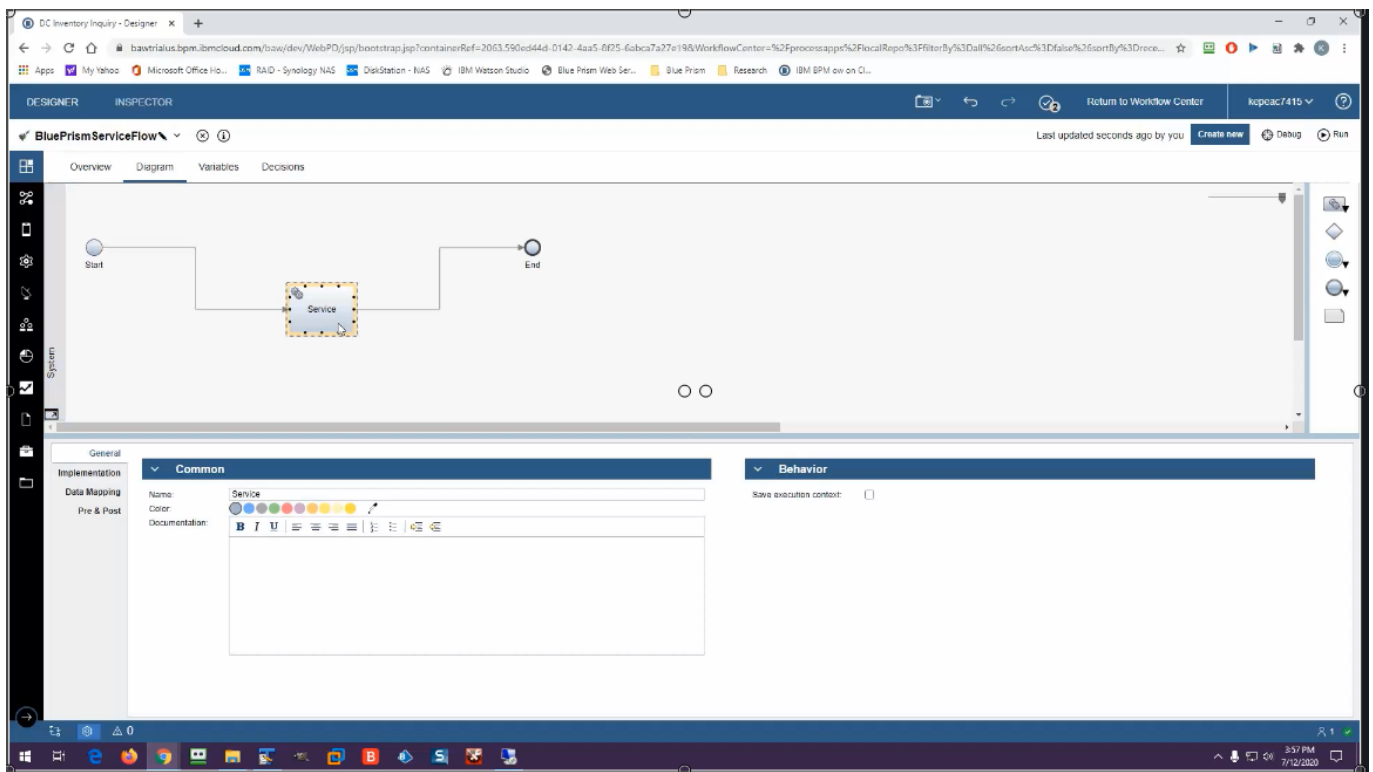
Configure IBM BPM on Cloud to invoke a Web Service

Once inside the IBM Business Automation Workflow on Cloud Platform, we need to create a Service Flow. The Service Flow will make the Web Service call to Blue Prism. You should already be familiar with business flow diagrams inside of BPM on Cloud. The topic of business flows and how to create and manage business flows is beyond the scope of this document.

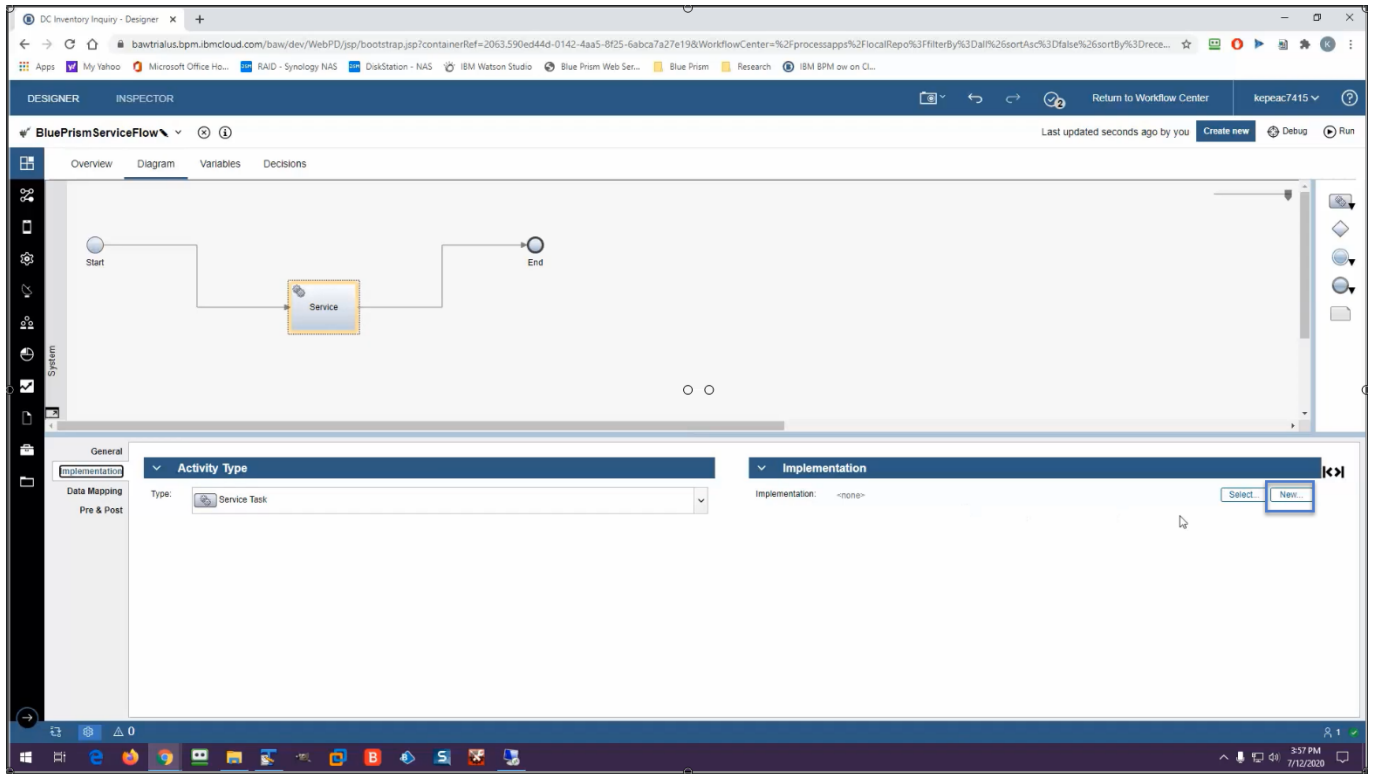
Here's our new Service Flow:



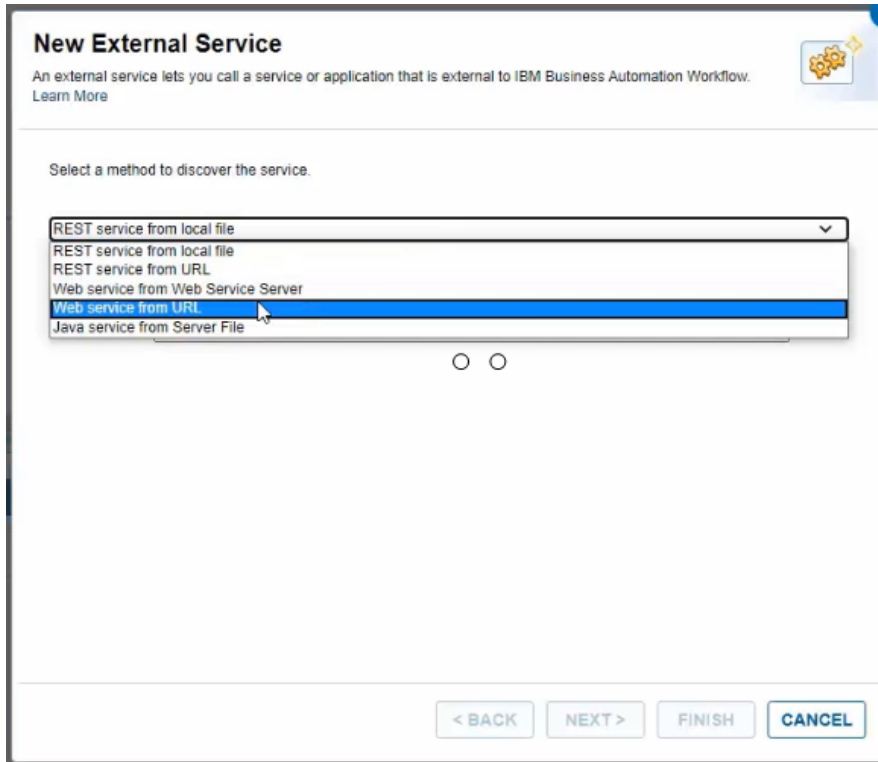
Create a service flow diagram and include a **Service Task** that looks like this:



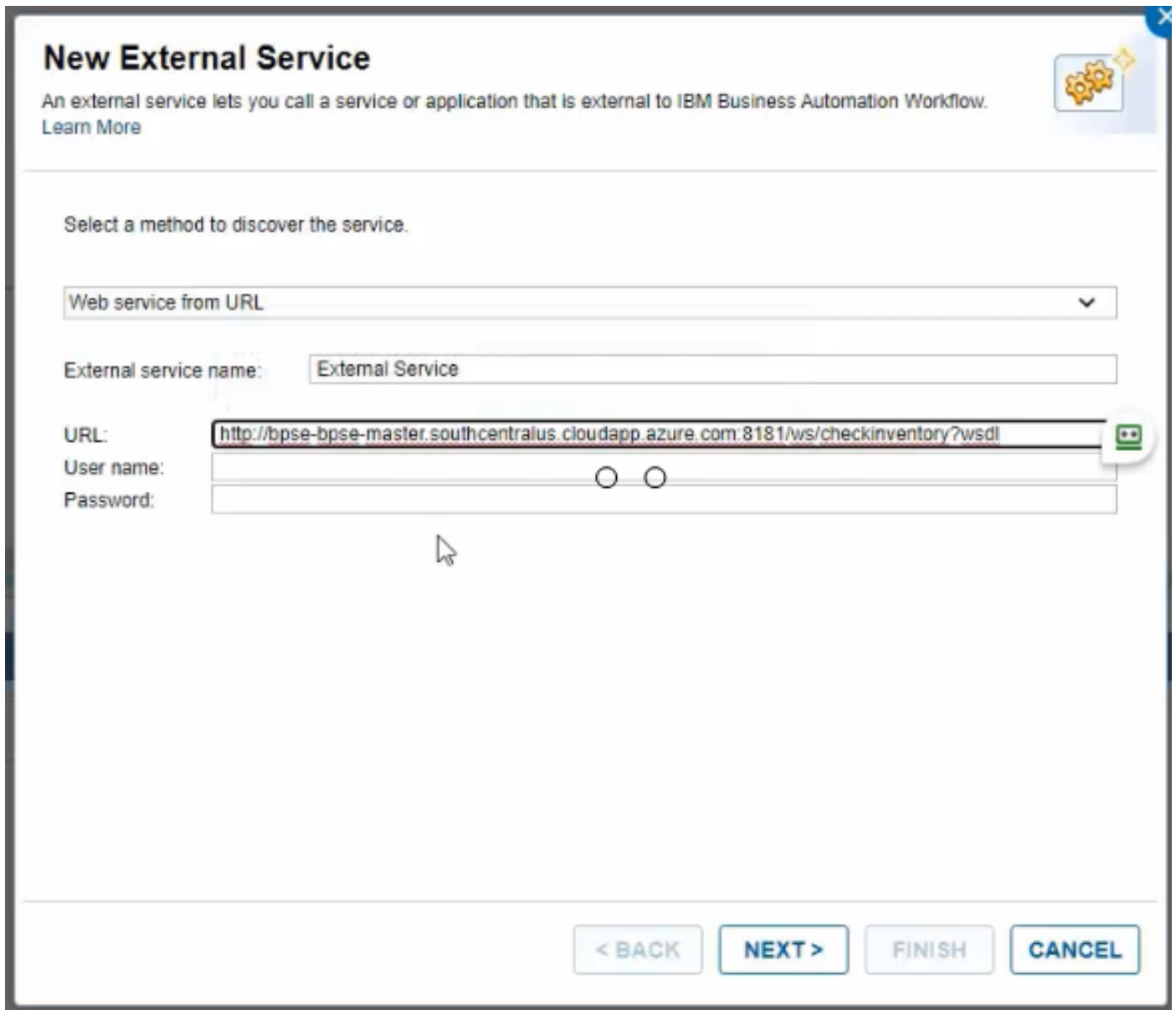
Click on the **Service Task**, and in the lower pane, click **Implementation** and **New**.



Now, select **Web service from URL**.



Here, we need to specify the full qualified hostname our of Blue Prism Web Service on the Azure Cloud. We'll give it the name **External Service**.



New External Service

An external service lets you call a service or application that is external to IBM Business Automation Workflow.
[Learn More](#)

Select a method to discover the service.

Web service from URL

External service name: External Service

URL: `http://bpse-bpse-master.southcentralus.cloudapp.azure.com:8181/ws/checkinventory?wsdl`

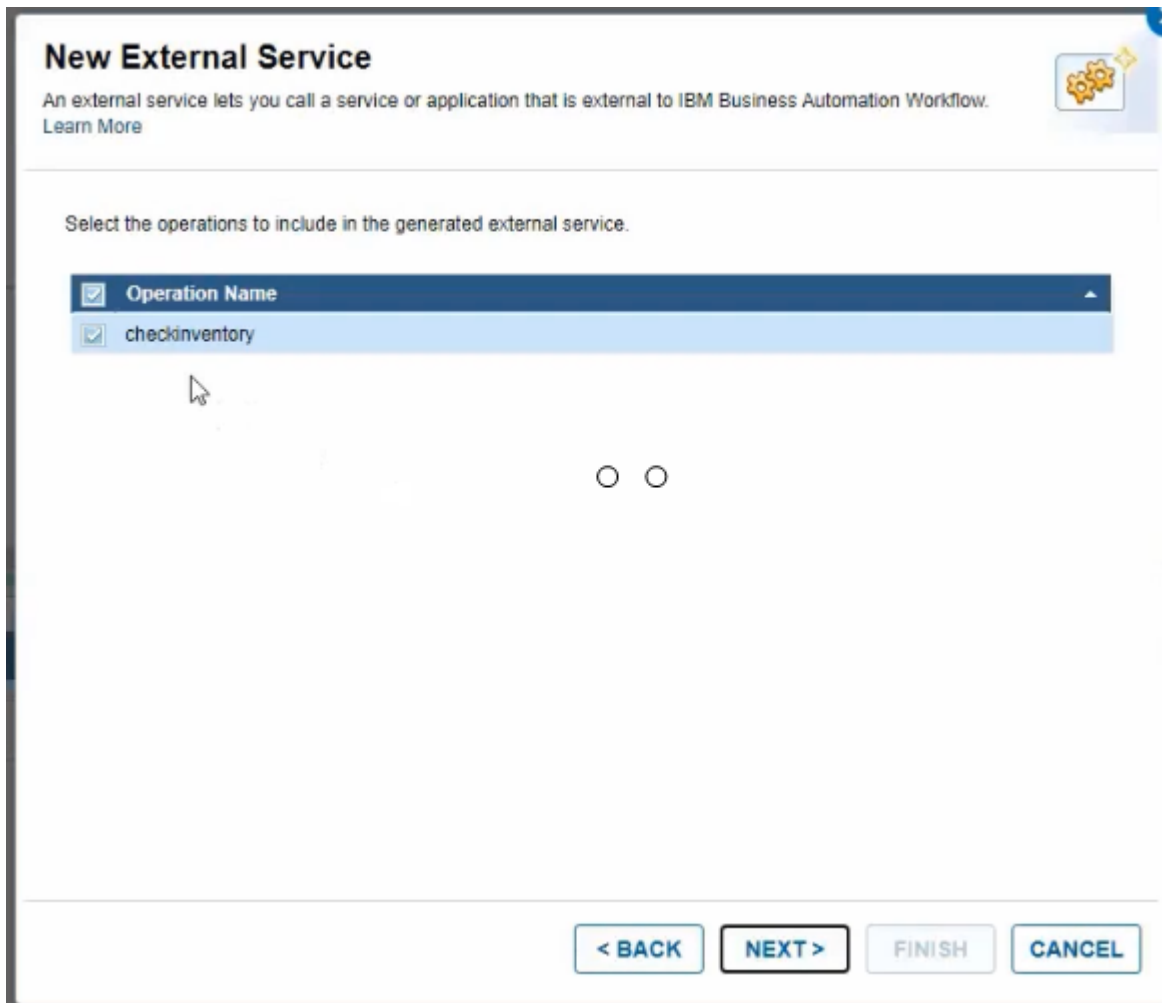
User name:

Password:

< BACK NEXT > FINISH CANCEL

Click **Next**.

IBM BPM on Cloud will retrieve the WSDL from Blue Prism and display the available Operations.



New External Service

An external service lets you call a service or application that is external to IBM Business Automation Workflow.
[Learn More](#)

Select the operations to include in the generated external service.

<input checked="" type="checkbox"/> Operation Name
<input checked="" type="checkbox"/> checkinventory

< BACK **NEXT >** FINISH CANCEL

Select the **checkinventory** Operation and click **NEXT**.

You'll see the Inputs and Outputs from the Web Service Definition Language (WSDL) that Blue Prism has exposed.

New External Service

An external service lets you call a service or application that is external to IBM Business Automation Workflow.
[Learn More](#)

The following business objects will be created for the corresponding XML Schema Type.

XML Schema Type	Business Object
{http://www.w3.org/2001/XMLSchema}string	String
{urn:blueprism:webservice:checkinventory}checkinventory-Out-CurrentInventory	checkinventory_Out_CurrentInventory
{urn:blueprism:webservice:checkinventory}checkinventory-Out-CurrentInventory-Row	checkinventory_Out_CurrentInventory_Row

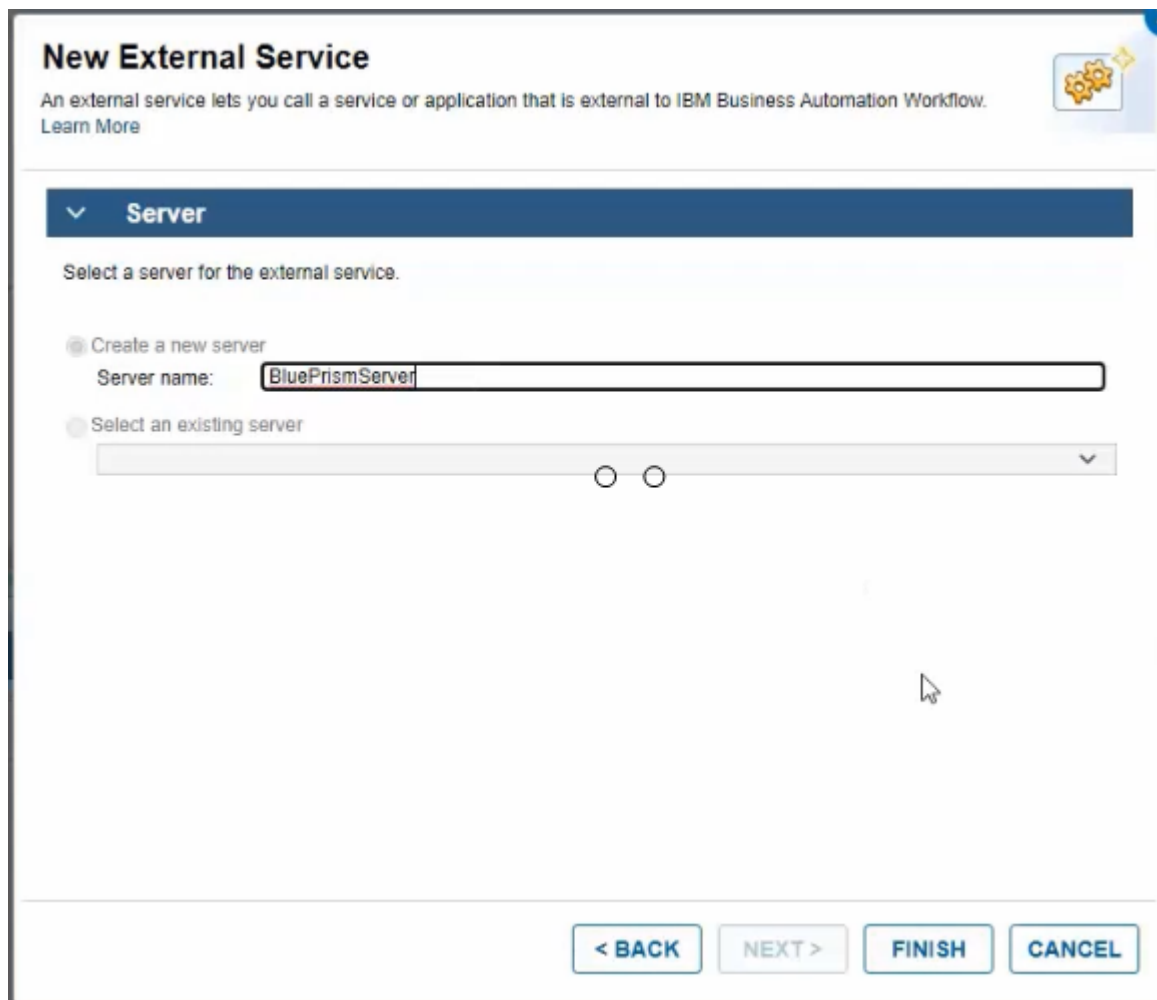
☐ ☐

Generate request and response wrappers. ☐

[< BACK](#) [NEXT >](#) [FINISH](#) [CANCEL](#)

Click **NEXT**.

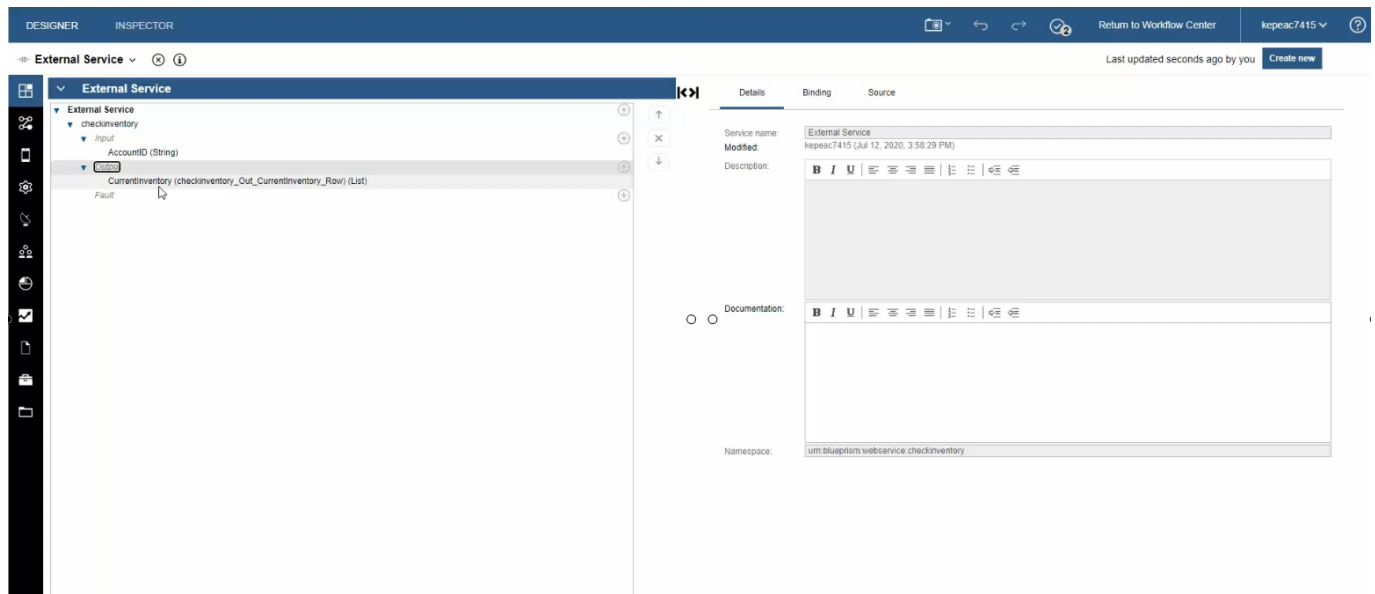
The new external service needs to rely on a server to communicate. Let's set up the **New External Service**. Give the Server a name:



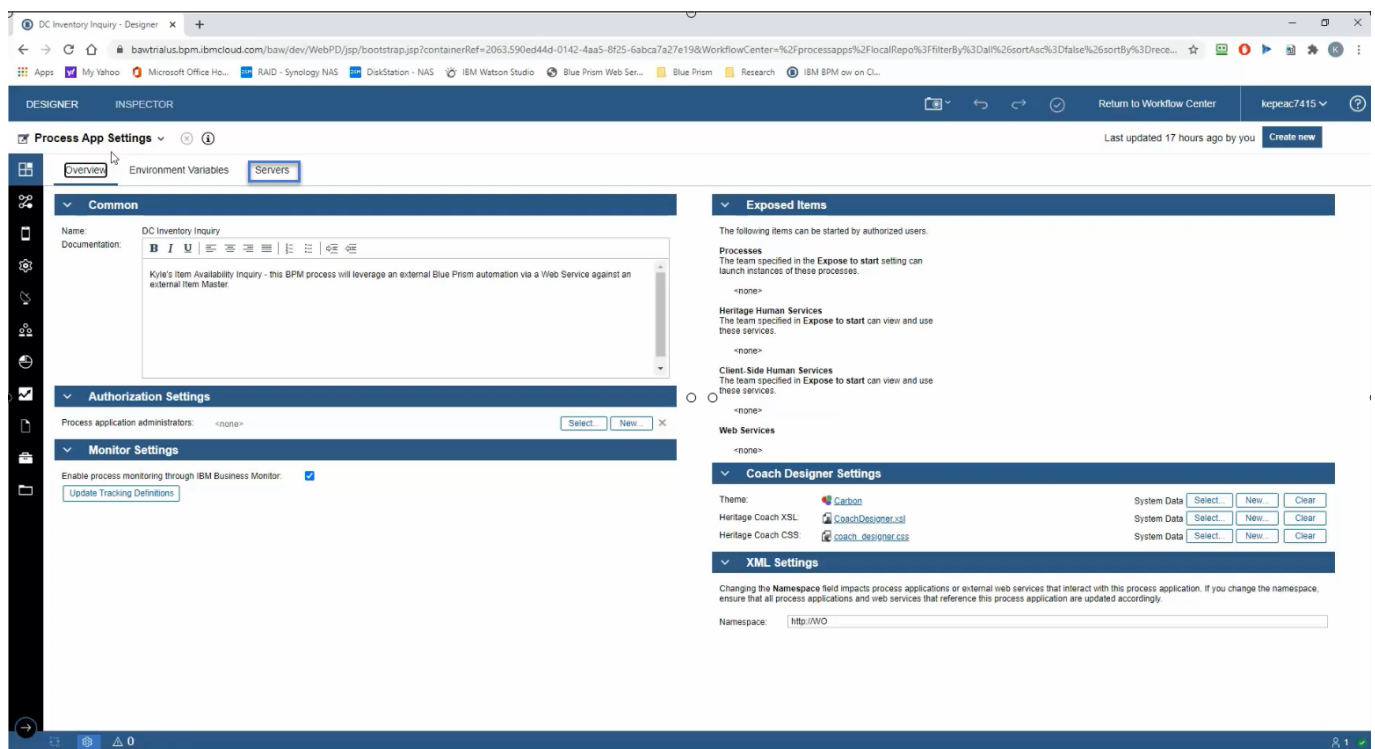
The screenshot shows the 'New External Service' configuration window. At the top, there's a title bar with the text 'New External Service' and a subtitle 'An external service lets you call a service or application that is external to IBM Business Automation Workflow.' with a 'Learn More' link. Below this is a tab labeled 'Server'. The main content area has the instruction 'Select a server for the external service.' and two radio button options: 'Create a new server' (which is selected) and 'Select an existing server'. Under 'Create a new server', there is a text input field for 'Server name:' containing the text 'BluePrismServer'. At the bottom of the window are four buttons: '< BACK', 'NEXT >', 'FINISH', and 'CANCEL'.

Click **FINISH**.

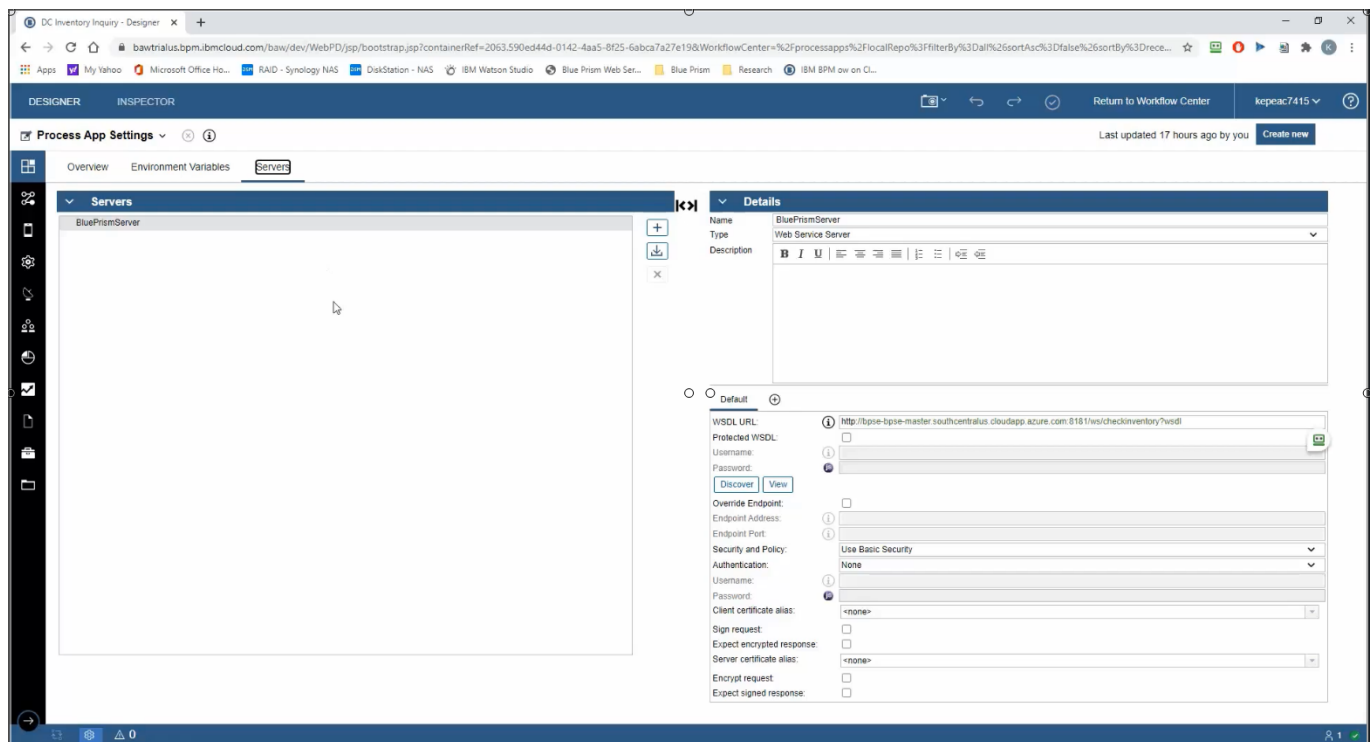
You'll see the Blue Prism Web Service as exposed in IBM BPM on Cloud; including the Inputs and Outputs as defined in the WSDL.



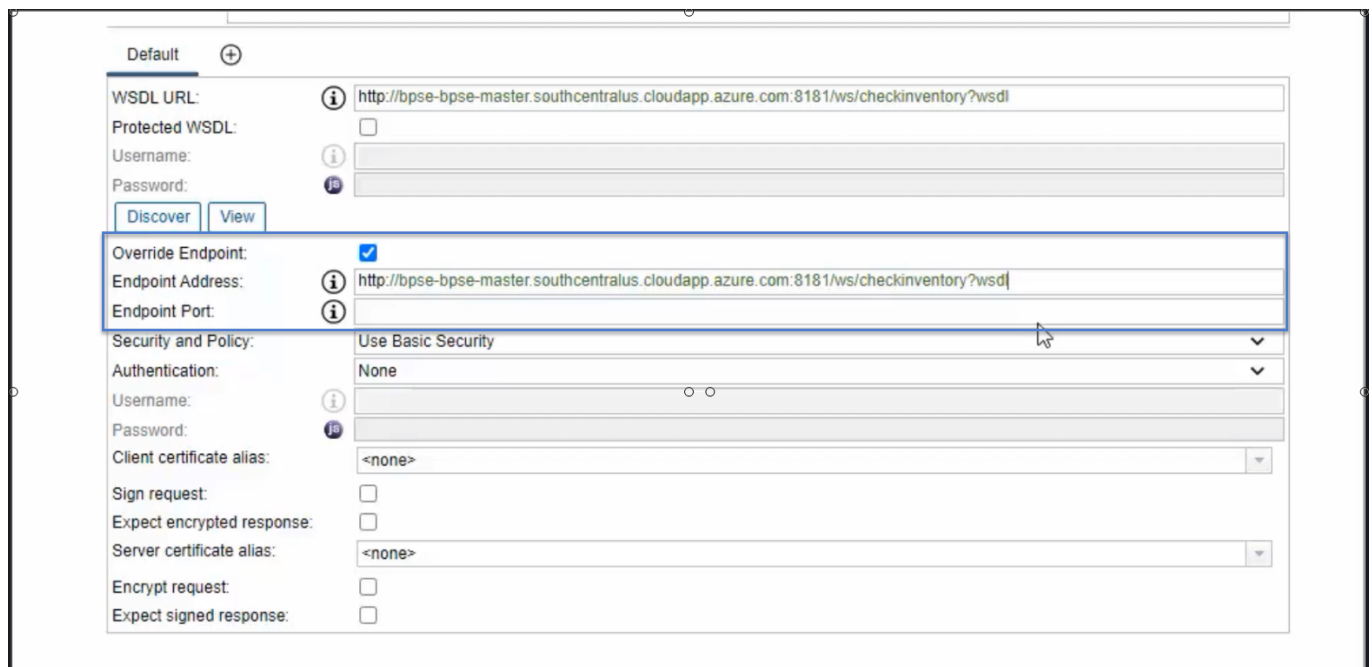
Now, let's update the Server definition to include a fully qualified hostname. Go back to Servers tab, which is on the DESIGNER page for your IBM BPM on Cloud process.



For our **BluePrismServer** Server, we'll see the details for the Web Service call on that server.



Here, we need to override the local hostname that's part of the Blue Prism Web Service WSDL.



In the **Override Endpoint** section, specify the fully qualified hostname, or the IP address of the Blue Prism Server in the **Endpoint Address**. Make sure to leave the **Endpoint Port** empty. If necessary, also specify any Authentication information required for your Web Service. Save your work by clicking this icon.



Let's finish the configuration by going back to the **Service Flow** definition. Here we'll complete the implementation and define how Blue Prism variables are converted to BPM on Cloud data objects.

In the Service Flow diagram, on the **Service** task, click on **Implementation**, and click **Select**.

Implementation

Implementation: <none>

Select...

New...

Now, select the **External Service** we just created above. IBM BPM on Cloud will use the WSDL to allow you to select the Operation to perform.

Implementation

Implementation: External Service

Select...

New...

Operation: checkinventory

Port: checkinventorySoap (SOAP 1.1)

Now, let's map our Blue Prism data to BPM on Cloud internal data objects. On the **Data Mapping** tab, click the **Auto-map** icon for the **Input Mapping** and again for the **Output Mapping**.

General Implementation

Data Mapping

Pre & Post

Input Mapping

AccountID (String)

Input Header Mapping

Request SOAP Header

Output Mapping

CurrentInventory (List of checkinvento...)

Output Header Mapping

Response SOAP Header

When complete, it should look like this for the input:

Input Mapping

tw.local.AccountID

AccountID (String)

Input Header Mapping

Request SOAP Header

And this for the output:

Output Mapping

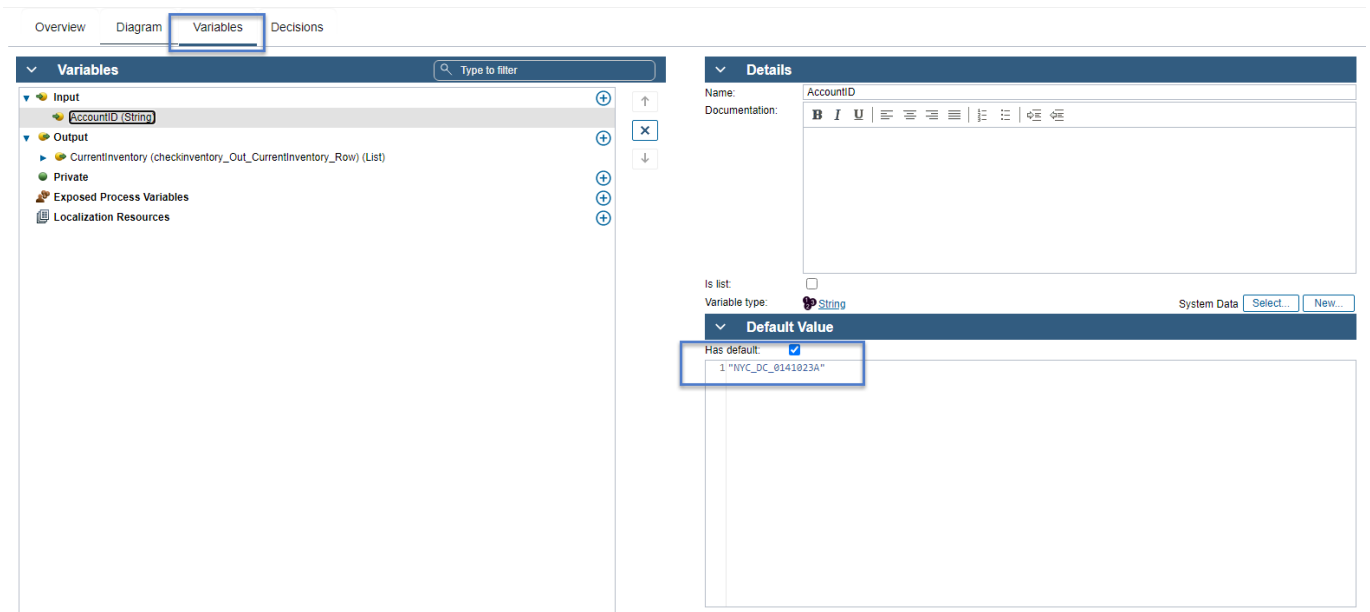
CurrentInventory (List of checkinvento...)

tw.local.CurrentInventory

Output Header Mapping

Response SOAP Header

If desired, you can set a default value for the AccountID sent to the Blue Prism Web Service by clicking on the **Variables** tab.



The screenshot shows the Blue Prism interface with the **Variables** tab selected. On the left, the **Variables** pane shows a tree view with **Input** and **Output** sections. Under **Input**, the **AccountID (String)** variable is selected. On the right, the **Details** pane shows the variable configuration. The **Name** is **AccountID**. The **Variable type** is **String**. The **Default Value** section is expanded, showing **Has default:** checked and the value **1 "NYC_DC_0141823A"** entered in the text box.

Once again, save all your work by clicking the **Finish Editing** icon.



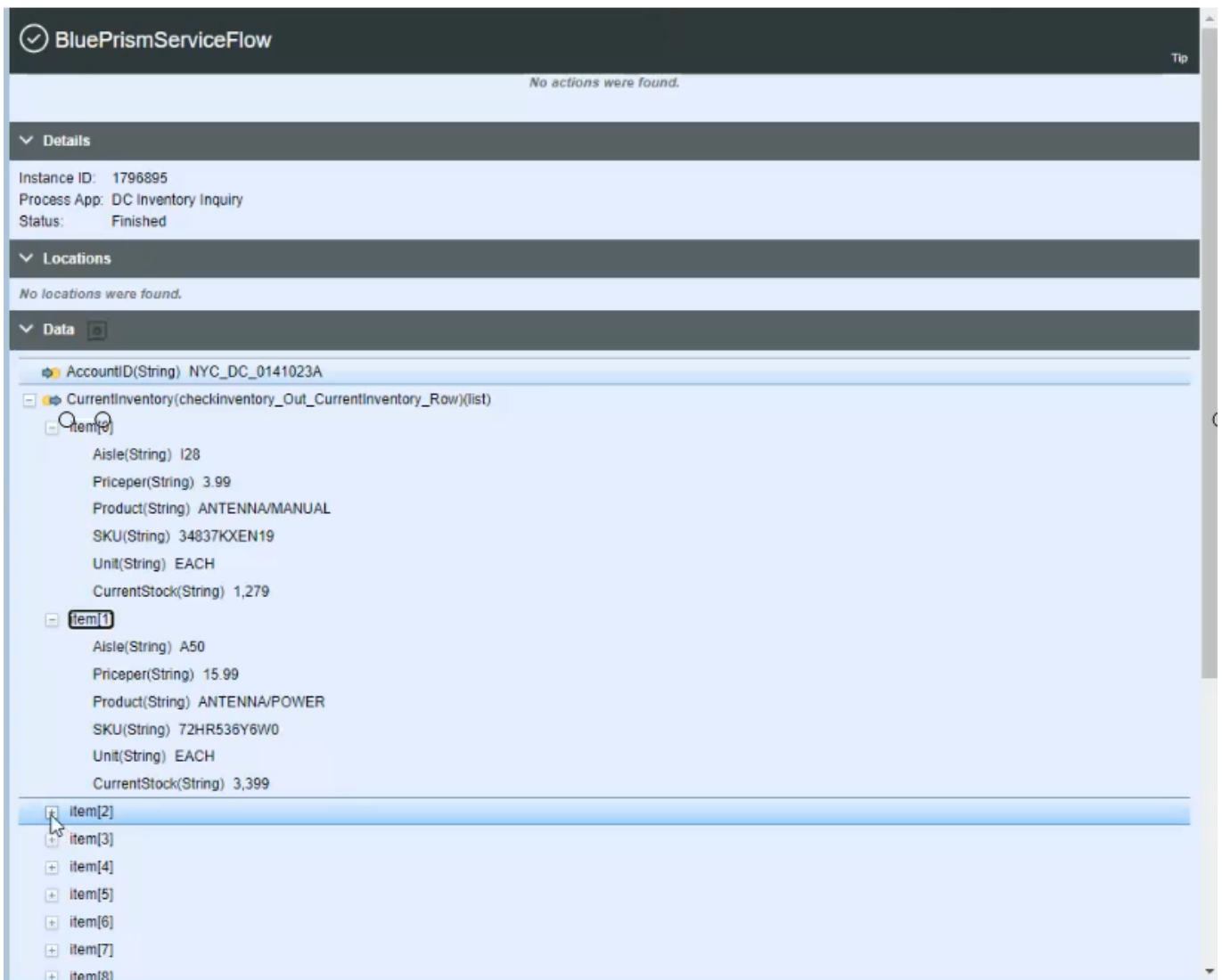
Test BPM on Cloud integration to Blue Prism

Now, let's test our Blue Prism Web Service. Click on **Debug**.

The screenshot displays the Blue Prism user interface. At the top, there is a navigation bar with a search icon, a camera icon, and a 'Return to Workflow Center' button. The user's name 'kepeac7415' and a help icon are also visible. Below the navigation bar, the text 'Last updated 4 minutes ago by you' is shown. To the right of this text are two buttons: 'Create new' and 'Debug'. The 'Debug' button is highlighted with a red box. To the right of the 'Debug' button is a 'Run' button, which is also highlighted with a red box. The main area of the interface is divided into two sections. On the left is a large empty space for the process flow diagram. On the right is a details panel for the 'BluePrismServiceFlow' process. The details panel includes a 'Tip' icon, a 'Details' section with the following information: Instance ID: 1997567, Process App: DC Inventory Inquiry, Status: Running. Below the details section is a 'Locations' section with a 'Service' location. At the bottom of the details panel are two expandable sections: 'Data' and 'Evaluator'.

Step through the process by clicking on the **Run** Icon.

Once the Blue Prism Web Service runs, click on the **Data** tab.



The screenshot shows the Blue Prism Service Flow interface. The top bar indicates 'BluePrismServiceFlow' and 'No actions were found.' Below this, there are sections for 'Details', 'Locations', and 'Data'. The 'Data' section is expanded, showing a list of items. The first item, 'item[0]', is expanded to show its details:

- AccountID(String) NYC_DC_0141023A
- CurrentInventory(checkInventory_Out_CurrentInventory_Row)(list)
 - item[0]
 - Aisle(String) I28
 - Priceper(String) 3.99
 - Product(String) ANTENNA/MANUAL
 - SKU(String) 34837KXEN19
 - Unit(String) EACH
 - CurrentStock(String) 1,279
 - item[1]
 - Aisle(String) A50
 - Priceper(String) 15.99
 - Product(String) ANTENNA/POWER
 - SKU(String) 72HR536Y6W0
 - Unit(String) EACH
 - CurrentStock(String) 3,399
 - item[2]
 - item[3]
 - item[4]
 - item[5]
 - item[6]
 - item[7]
 - item[8]

We have successfully invoked a Blue Prism Web Service inside of IBM Business Automation Workflow on Cloud.

Congratulations!