



DEVELOPER'S GUIDE

About Botprise

[Botprise](#) is a HyperAutomation platform. An enterprise can use it to automate the repetitive work they have been doing using it. Botprise is more focused on IT helpdesk automation but the same concept/platform can be used in other areas (like HR operations, sales operations, devops etc) as well.

Background

In case of IT helpdesk/operations automation, the platform integrates with ITSM system (ServiceNow) and monitoring systems (like Datadog and opManager). Whenever a new ticket is created on the ITSM platform, the Botprise ticket classifier is triggered. It classifies the ticket and assigns the ticket to the appropriate bot. Each bot has a workflow. The bot tries to resolve (or in some cases augment) the ticket by executing its workflow. A workflow is a contiguous but logical flow of subtasks that help achieve a task. One can think of it as a flowchart that represents the process or operational task that is to be automated.

As is typical in flowcharts, there are flow directions and blocks. In the context of Botprise's workflows, the blocks or nodes can be either of the following:

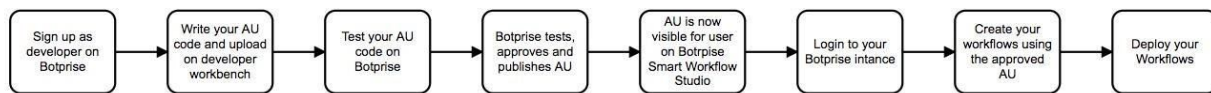
- Botprise Automation Units (BAUs)
- Botprise Decision Units
- Workflow Units

Purpose

Botprise offers off-the-shelf AUs, DUs and some pre-defined workflows/bots that can be used by users of the platform. However, these off-the-shelf units may not fit every customer's needs. With this in mind, Botprise offers an opportunity for users with development skills to write out some of these units to purpose-fit the tasks and automation goals that their organization may have. This document is meant to be a guide to a developer whose interest is to create automations, workflows and or bot. Here we try to break the process of AU creation, deployment, calling these AUs in your workflows, creating the workflow and finally getting them to perform the automation task that is intended. Furthermore, the AUs thus created can be shared to other users of the Botprise community so it is available to other users of the platform.



General Process for AU Contribution



1. Sign up as developer on Botprise
2. Log into your Botprise account
3. Goto the *developer workbench* page and start adding your AU by first giving it a name and a suitable description.
4. Upload your AU code and submit it for approval.
5. After the AU gets approved by the Botprise team, test your code on developer workbench
6. Botprise publishes the AU – unless and until this step is complete the AU is not visible to users on the platform for use in workflows. It is to be noted that the approval and publishing process can take upto 48 business hours
7. Log into your Botprise account and start creating your workflows with the AU

How Do I Register To and Start Contributing?

Once a user would select and click on any plan from Pricing page, they will be navigated to the registration page shown below.

Sandbox Free	Basic Production	Standard Mission Critical	Enterprise Custom
Free	\$0.20 Per Credit	\$0.15 Per Credit	\$0.10 Per Credit
100 CREDITS PER MONTH	5000 CREDITS MINIMUM PER MONTH - \$1,000 (CHARGED ANUALLY)	50,000 CREDITS MINIMUM PER MONTH - \$7,500 (CHARGED ANUALLY)	200,000 CREDITS MINIMUM PER MONTH - \$20,000 (CHARGED ANUALLY)
1 NUMBER OF USERS (CONCURRENT)	5 NUMBER OF USERS (CONCURRENT)	50 NUMBER OF USERS (CONCURRENT)	UNLIMITED NUMBER OF USERS (CONCURRENT)
5 NUMBER OF BOTS (ACTIVE)	25 NUMBER OF BOTS (ACTIVE)	200 NUMBER OF BOTS (ACTIVE)	UNLIMITED NUMBER OF BOTS (ACTIVE)
1 DAY DATA RETENTION	30 DAYS DATA RETENTION	90 DAYS DATA RETENTION	365 DAYS DATA RETENTION
1 NUMBER OF AGENTS	1-5 NUMBER OF AGENTS	1-15 NUMBER OF AGENTS	UNLIMITED NUMBER OF AGENTS
COMMUNITY CUSTOMER SUPPORT	9-5 CUSTOMER SUPPORT	9-5 CUSTOMER SUPPORT	24/7 CUSTOMER SUPPORT
↓ DOWNLOAD PRICING GUIDE	↓ DOWNLOAD PRICING GUIDE	↓ DOWNLOAD PRICING GUIDE	↓ DOWNLOAD PRICING GUIDE
Start For Free	Buy	Buy	Buy



Registration

Email address *

Enter your E-mail Address

First name *

Enter your first name

Last name *

Enter your last name

Company Name *

Enter company name

Create a password *

Create a password

Confirm password *

Confirm password

I agree to [Terms of Use](#), [Privacy Policy](#) and [MSA](#)

Submit

Already have an account? [Log In](#)

After entering required information and agreeing upon terms and conditions, the user would be sent an confirmation email. On click of link sent over email user will be redirected to login page. After successful login they would be asked to do Monitoring System/Ticketing System configuration. Though these steps are optional. If skipped they would be landed upon default account and walk through the application in view mode.

How Do I Write My Code For My AUs?

Automation units are the building blocks of Botprise's smart workflows. These automation units have to be deployed on a AWS lambda runtime environment. The Automation Unit blocks has some input dependency. Simple simple terms, the AU does some processing and produces some output. The input and output should be explicitly defined in a yaml file very similar to swagger docs.



Botprise automation unit requires Python (<https://www.python.org/>) v3.6+ to run.

Install the dependencies and devDependencies and start the server.

```
``sh
$ cd automation-unit
$ python3 -m venv env # For Windows py -m venv env
$ source env/bin/activate # For Windows .\env\Scripts\activate
``
```

We follow the camelcase naming convention. Create a file named `lambda_function.py` with following content-

```
``
import json

def lambda_handler(event, context):

    return event
``
```

Add your custom code for the automation unit. Also add the unit tests. You save the file locally and proceed to the next step detailed below.

How To Create My AUs





- A. Sign-in to your Botprise account
- B. Go to Left Side Bar and select “Developer Workbench”



















Botprise Lab

Home / Developer Workbench

Manage AUs +

AU Name	Owner	Description	Last Modified	Status	Last Runtime	
updateCommentOnsNOW	NA	NA	NA	NA	NA	   

Manage DUs +





DU Name	Owner ↑	Description	Last Modified	Status	Last Runtime	
TicketCategorisationBDU	NA	NA	NA	NA	NA	   
HighCPUUsageBDU2	NA	NA	NA	NA	NA	   
MemoryUsageBDU	NA	NA	NA	NA	NA	   
DeviceUsageBDU	NA	NA	NA	NA	NA	   

C. Click on “Add AU”

















Botprise Lab

Home / Developer Workbench

Manage AUs +

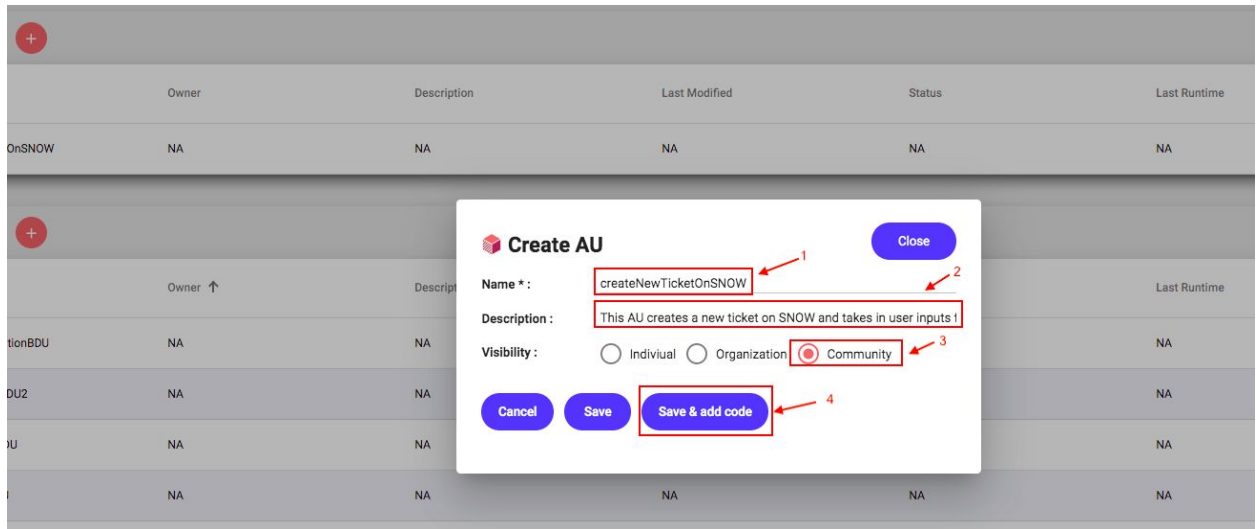
AU Name	Owner	Description	Last Modified	Status	Last Runtime	
updateCommentOnsNOW	NA	NA	NA	NA	NA	   

Manage DUs +

DU Name	Owner ↑	Description	Last Modified	Status	Last Runtime	
TicketCategorisationBDU	NA	NA	NA	NA	NA	   
HighCPUUsageBDU2	NA	NA	NA	NA	NA	   
MemoryUsageBDU	NA	NA	NA	NA	NA	   
DeviceUsageBDU	NA	NA	NA	NA	NA	   



D. Upon the above you will be presented with a popup window



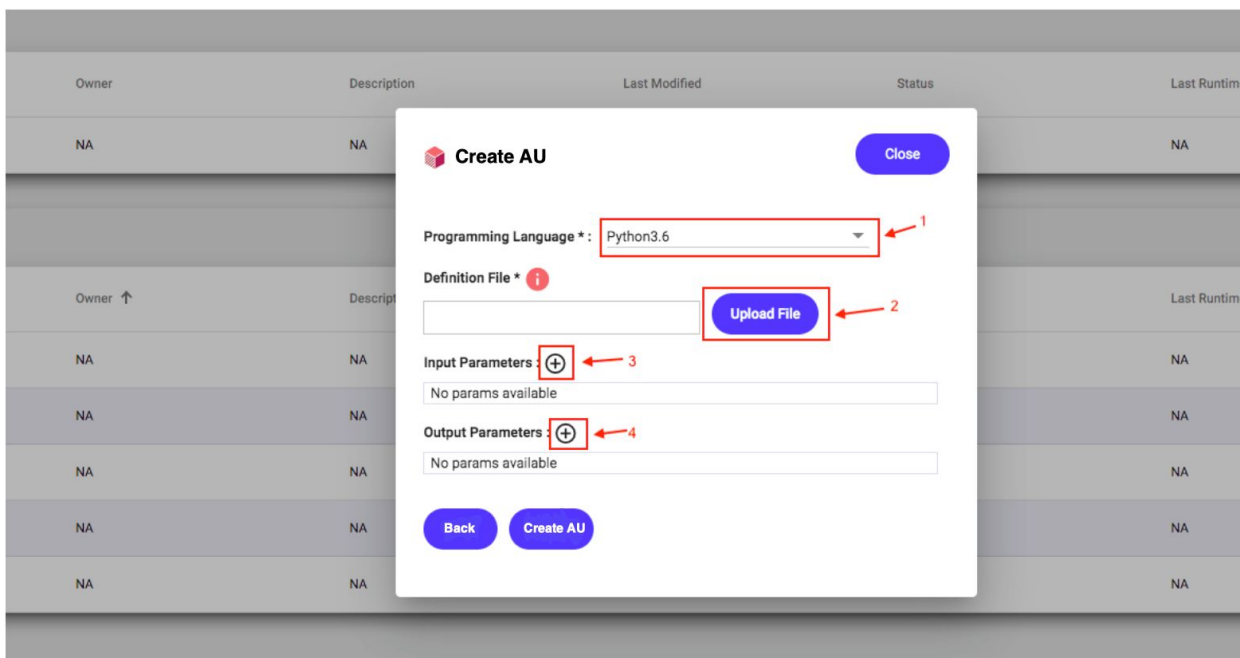
Here you do the following:

1. Type a suitable AU name
2. Type the appropriate AU description
3. Select validity as community
4. Click "Save and Add" code

It is to be noted that the AU name has to be unique across your account. The description has to be appropriate and indicate what the AU is expected to achieve. These two are very important steps and are required to move to the next steps, which is the approval process for your AU by Botprise.

E. Upload your AU Code

Upon clicking on "Save and Add" in the above step you will be presented with another popup window as show below:



Perform the following steps here:

1. Choose the programming language from the drop down list that represents the language in which your AU code was written
2. Upload your AU code file. Your file should be zipped and have extension “.zip”
3. Input parameter should be added and defined
4. Output parameters should be added and defined

Note: Make sure the name of the AU (defined in the previous step) and zip filename are the same and it should be always unique.

E.g, AU Name: *demotest*

Zipfilename: *demotest.py.zip* (make sure zip is created with *demotest.py*)

Content of *demotest.py*

```
def au_handler(event, context):  
    # TODO implement  
    return {  
        'statusCode': 200,  
        'body': json.dumps('Hello!')  
    }
```

Function definition could be anything but you need to ensure name of function shall be **au_handler**

AU Name: *demotest1*

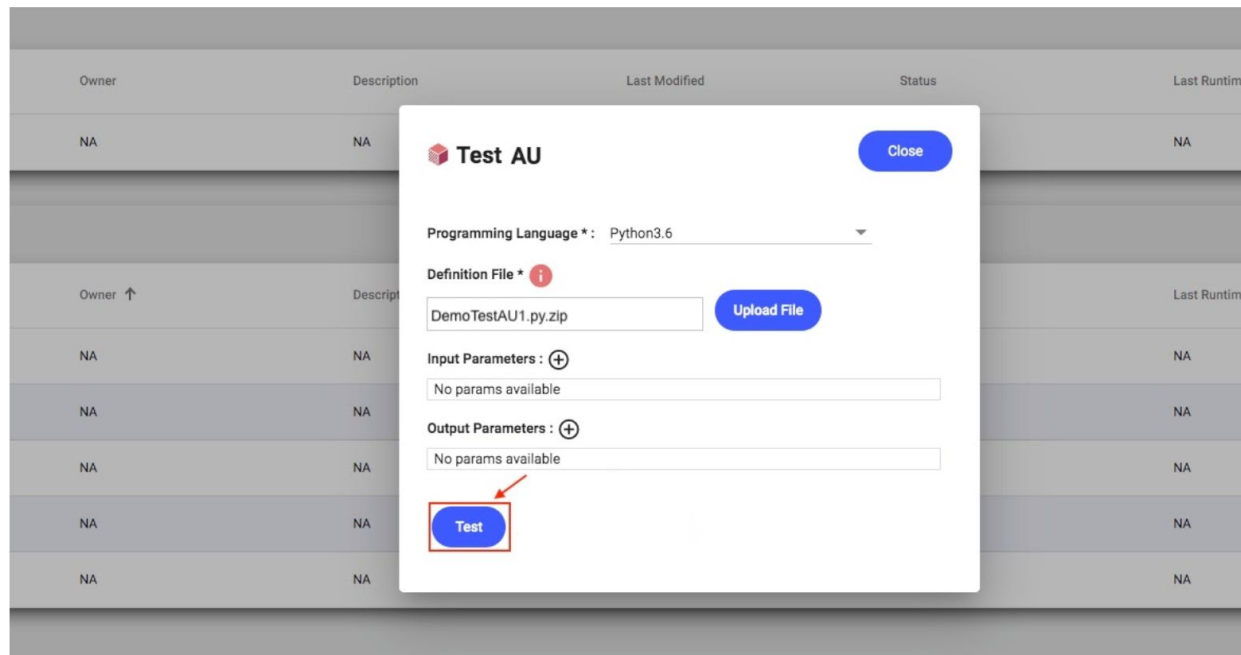


Zipfilename: *demotest1.js.zip* (make sure zip is created with *demotest1.js*)
Content of *demotest1.js*

```
exports.au_handler = async (event) => {  
  // TODO implement  
  const response = {  
    statusCode: 200,  
    body: JSON.stringify('Hello from Lambda!'),  
  };  
  return response;  
};
```

After uploading code and defining input/output parameters, users need to click on the 'Create AU' button. An email would be triggered to the botprise team and AU would be created. Status of created AU would be set as 'Not approved'. Once botprise team would approve the AU code then status would be set as 'Approved'. Also newly added AU would be merged in "Automation Units" repo and would be available on Bot Workflow builder page to reference it in any workflow.

F. Test AU



"Test" button would be disabled for AU with status as 'Not Approved'. Once AU would be approved by botprise team, the user should be able to test the created AU behavior. For modifying AU code, users can edit existing AUs with updated zipped code.



G. AU Approval

Once User would click on the Publish button an email would be triggered to botprise team. Botprise team would review the code and approve it. For any code changes email would be sent to the code owner with review comments. Users shall upload modified code for corresponding AU and click on the 'Update' button. Once AU would be Approved, it will be available for workflow creation. Also AU code would be merged in the 'Automation Units' Repo.

AU Name	Owner	Last Runtime			
createGraphAndUploadOnS3	NA	NA			
getDiskUsageForLast2Months	NA	NA			
getCPUUsageForLast2Months	NA	NA			
getCPUUsageForLast10Min	NA	NA			
getCPUUsageForLast15Min	NA	NA			
getOpManagerMetricData	NA	NA			
isActiveAlarm	NA	NA			
isValidAlarm	NA	Checks if alarm exists on associated monitoring tool(OpManager/Datadog)	NA	NA	NA
getCPUUsageFromDatadog	NA	Get CPU Usage from Datadog	NA	NA	NA
getInterfaceUsage	NA	Get interface usage	NA	NA	NA

H. AU will now be available in your Smartworkflow Builder

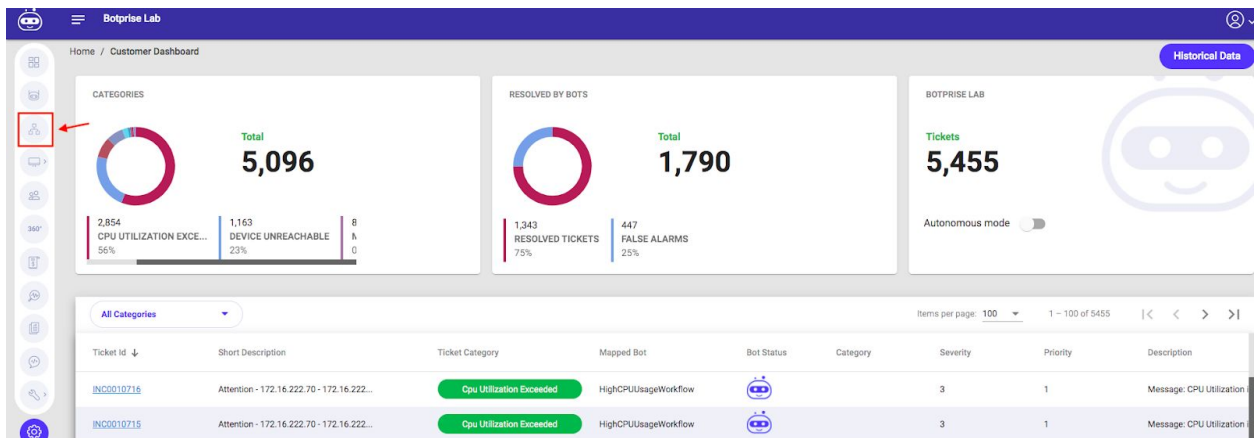
How Does My AU Get Approved and how do I know its status?

Once AU would be created/updated it would be sent for review to botprise team. For any correction/modification review comments would be sent over registered email to AU owners. AU's approval status can be viewed on AU list page. There is one column 'review_status' which shows approval status as 'Not Approved/Approved'. Also on approval, an email would be sent to the AU owner.

Building a workflow with your AUs

Botprise platform comes with a Workflow Studio. One can use it to create workflows using following steps-

- A. Click on the "Smart Workflow Studio" link/icon in the left side bar.



B. The page shows the list of existing Workflows. Create a new Workflow-

Home / Smart Workflow Studio

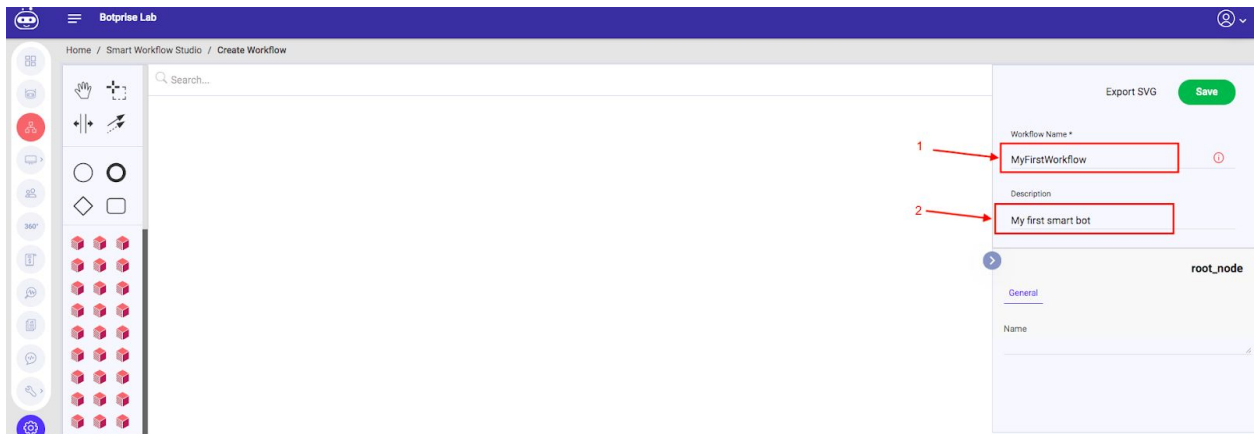
Workflow Name	Actions	Description	Created At
DeleteAuTest		testing delete au	Nov 11, 2020, 4:57:55 AM
DeviceUnreachableWorkflow		Bot to resolve tickets related to device unreachable	Oct 5, 2020, 10:13:23 AM
VpnSupportBot		Bot to fix issues with VPN connection establishments	Sep 30, 2020, 11:55:59 AM
DeleteApplicationUser		Bot to delete application user if it exists	Sep 29, 2020, 11:14:30 AM
ActiveDirUserSupportBot		Bot to reset password for active directory user	Sep 28, 2020, 12:12:43 PM
HighDiskUsageBot		Bot to clear space for high disk usage	Sep 28, 2020, 6:36:31 AM
CreateApplicationUser		Create a User for Botprise from a Service TicketNow t	Sep 25, 2020, 10:16:11 AM
AstreyaSampleWorkflow		High CPU Usage Workflow	Aug 26, 2020, 12:09:02 PM
TriggerEmailWorkflow		send email	Aug 26, 2020, 8:00:55 AM

Home / Smart Workflow Studio

[Create Workflow](#)

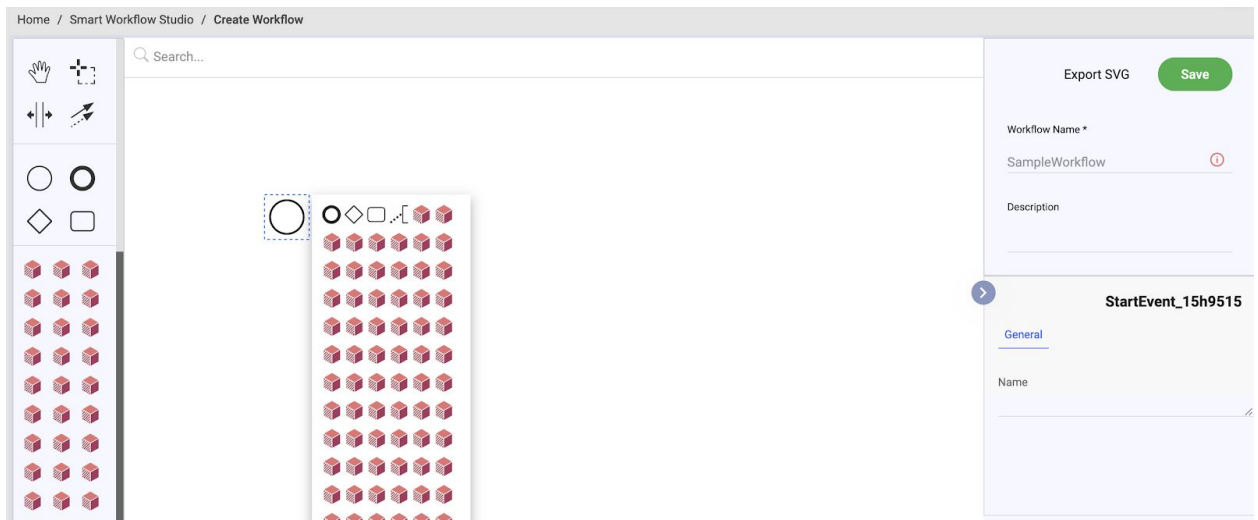
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TriggerEmailWorkflow		send email	Aug 26, 2020, 8:00:55 AM

- C. Create a Simple Workflow. Let's put in a name and a description as shown below

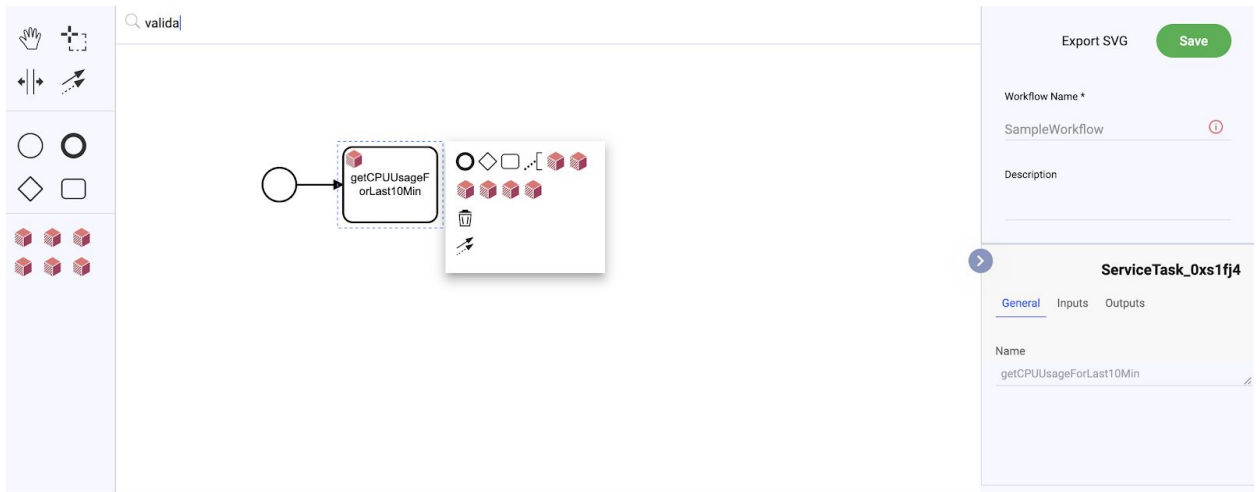


- D. Build your workflow blocks

To start building workflow we need to first drag Start(circle listing in left panel) block

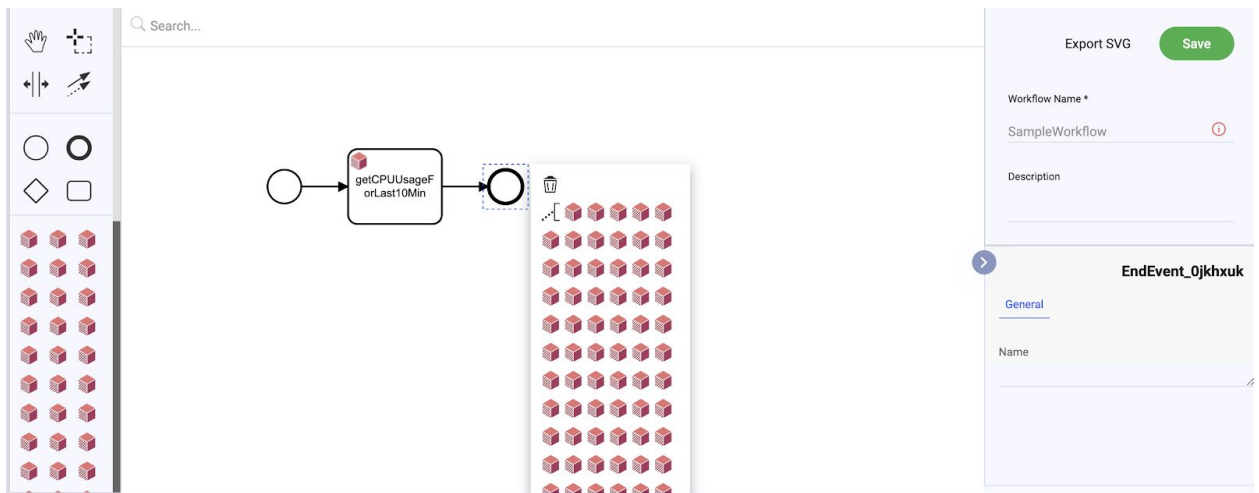


After the start block we need to add respective AUs mapped with Workflow steps. E.g. if a user wants to validate an alarm at one of the steps they need to add mapped AU 'isValidAlarm' in the workflow. Users can search AU by putting text in the top search bar. It would help the user to narrow down the extensive AUs list.



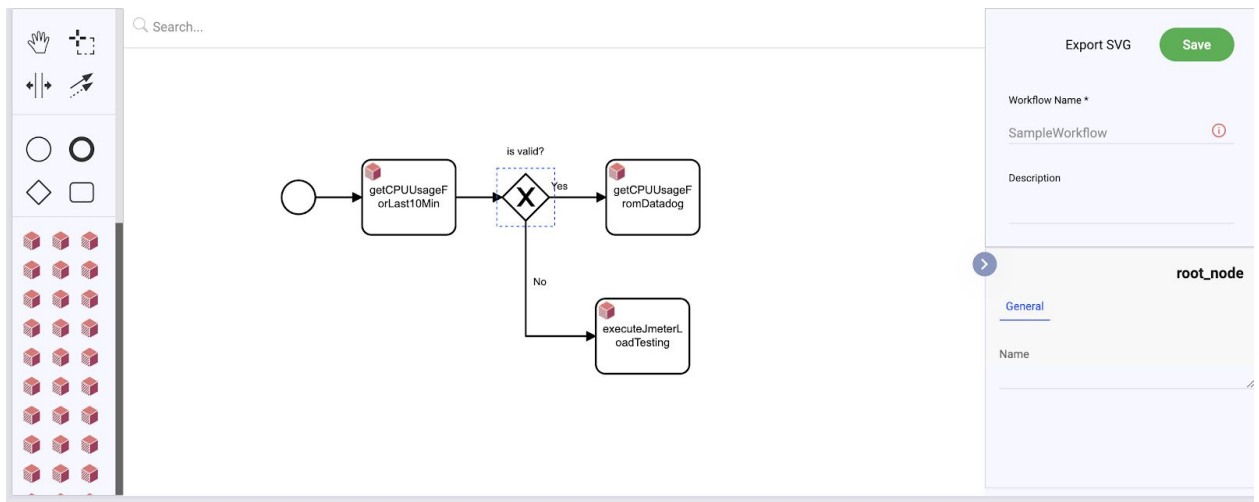
The screenshot shows the Botprise workflow editor interface. On the left is a toolbar with various icons for actions like pan, zoom, and delete. A search bar at the top left contains the text "valida". The main workspace contains a single task block labeled "getCPUUsageForLast10Min". A tooltip is visible over the task block, showing a palette of icons. On the right side, a configuration panel is open for a "ServiceTask_0xs1fj4". It includes fields for "Workflow Name" (SampleWorkflow), "Description", and "Name" (getCPUUsageForLast10Min). There are "Export SVG" and "Save" buttons at the top of the panel.

To close the workflow users need to add a “Close” block as shown below.



The screenshot shows the Botprise workflow editor with a search bar containing "Search...". The workflow diagram now includes a second block, a circle with a trash icon, representing a close block. The configuration panel on the right is now for an "EndEvent_0jkhxuk". It has the same "Workflow Name" (SampleWorkflow) and "Description" fields, but the "Name" field is empty. The "Export SVG" and "Save" buttons are still present.

Sometimes as part of workflow we also need to add conditional blocks. We can add condition block as shown below



The screenshot shows the Botprise workflow editor with a search bar containing "Search...". The workflow diagram is more complex, starting with a task block "getCPUUsageForLast10Min", followed by a decision diamond labeled "is valid?". The "Yes" path leads to another task block "getCPUUsageFromDatadog", and the "No" path leads to a task block "executeJmeterLoadTesting". The configuration panel on the right is for a "root_node" and is mostly empty, with only the "Workflow Name" (SampleWorkflow) and "Description" fields visible. The "Export SVG" and "Save" buttons are at the top.



For the condition block we need to define a param whose value would be checked to decide upon the 'Yes' and 'No' route. Users can right click on the condition block to add params.

Context Menu

Shape Input Parameter(s)

New Variable Type
Boolean ✕

Variable name *
isValid →

We need to ensure the variable which we have been adding on the conditional block should be of **'boolean'** type. Also ensure that variable should be the output of previous AU. In the above example 'isValid' parameter is one of the output parameters of 'getCPUusageForLast10min' AU.

Add input parameters required for workflow by right clicking on 'Start' block

Context Menu

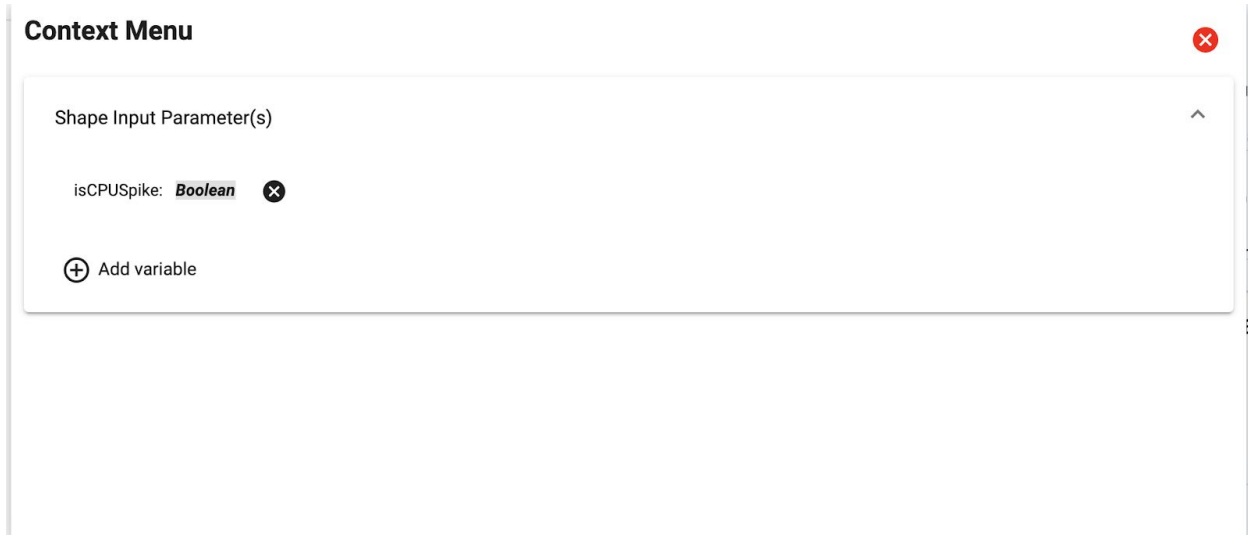
Workflow Input Parameter(s)

- ip_address: **String** ✕
- server_type: **String** ✕
- username: **String** ✕
- password: **String** ✕

⊕ Add variable



Also set boolean parameter for conditional blocks which would be checked to decide whether to follow Yes/No route. To decide upon the name of parameter you can check input parameters of following AU(updateCommentOnSNOW)



FAQ

Q: Whom do I contact if I get stuck at some point in the AU or workflow creation process?

A: Email you queries to support@botprise.com