

CXS1888BCN

vmware® **EXPLORE**

Automating with VMware Aria Automation Orchestrator

Brian Watrous
Technical Learning Engineer

#vmwareexplore #CXS1888BCN



Disclaimer

- This presentation may contain product features or functionality that are currently under development.
- This overview of new technology represents no commitment from VMware to deliver these features in any generally available product.
- Features are subject to change, and must not be included in contracts, purchase orders, or sales agreements of any kind.
- Technical feasibility and market demand will affect final delivery.
- Pricing and packaging for any new features/functionality/technology discussed or presented, have not been determined.

Presenter



Brian Watrous

Technical Learning Engineer



Learning Strategy & Architecture Team

Technical Learning Engineers:

Brian Watrous

Joe Cooper

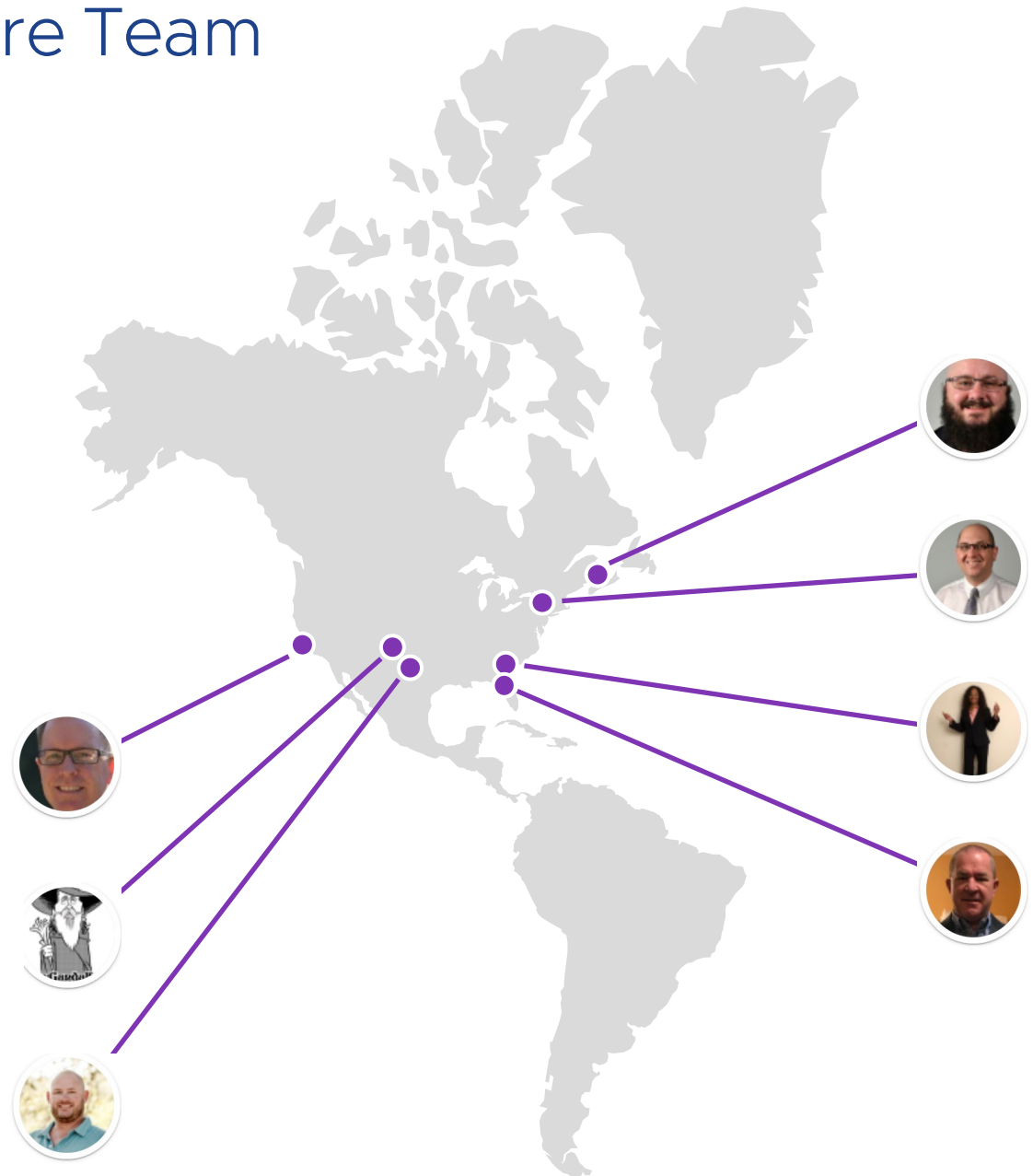
Joel West

Linus Bourque

Matt Callaway

Tim Burkard

Trina Love



Agenda

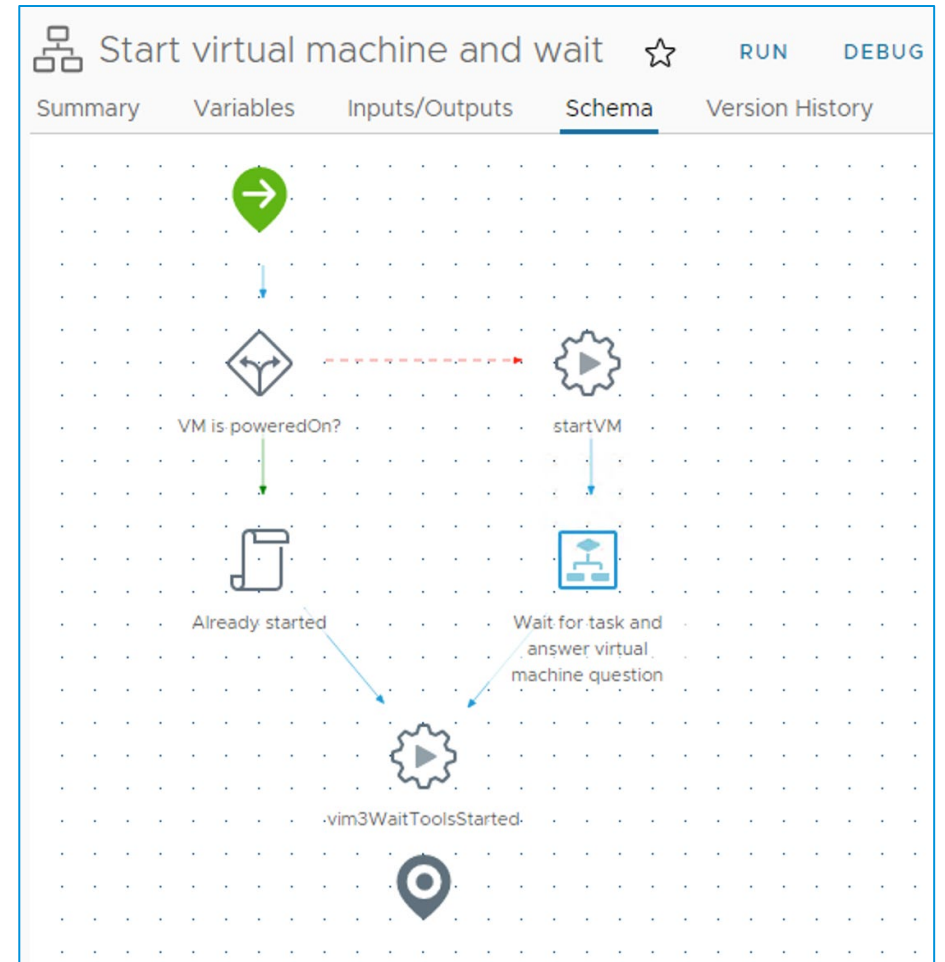
- What is Orchestrator?
- How to download and license Orchestrator?
- Orchestrator Plug-ins
- Workflow schemas and schema elements
- Inputs, Outputs, and Variables
- Binding
- Q & A

What is Orchestrator?

What is VMware Aria Automation Orchestrator?

Orchestrator:

- Is an automation platform
- Is used to automate complex tasks and processes
- Accelerates development by providing a library of built-in workflows



Components of a Workflow

Create custom virtual machine

Summary Variables Inputs/Outputs Schema Version History Audit

Create VM

General Scripting

Runtime Environment
JavaScript > API Explorer

Inputs:

- disk1SizeInGB : number
- disk1ThinProvisioned : boolean
- disk2SizeInGB : number
- disk2ThinProvisioned : boolean
- disk3SizeInGB : number
- disk3ThinProvisioned : boolean
- generateMacAddress1 : boolean
- generateMacAddress2 : boolean
- generateMacAddress3 : boolean
- hasDisk1 : boolean
- hasDisk2 : boolean
- hasDisk3 : boolean
- hasNetwork1 : boolean
- hasNetwork2 : boolean
- hasNetwork3 : boolean
- macAddress1 : string
- macAddress2 : string
- macAddress3 : string
- network1 : VC:Network
- network2 : VC:Network
- network3 : VC:Network
- vmDatastore : VC:Datastore
- vmFolder : VC:VmFolder
- vmGuestOs : VC:VirtualMachineGuestOsIdentifier
- vmHost : VC:HostSystem
- vmMemorySize : number
- vmName : string
- vmNbOfCpus : number
- vmResourcePool : VC:ResourcePool

Outputs:

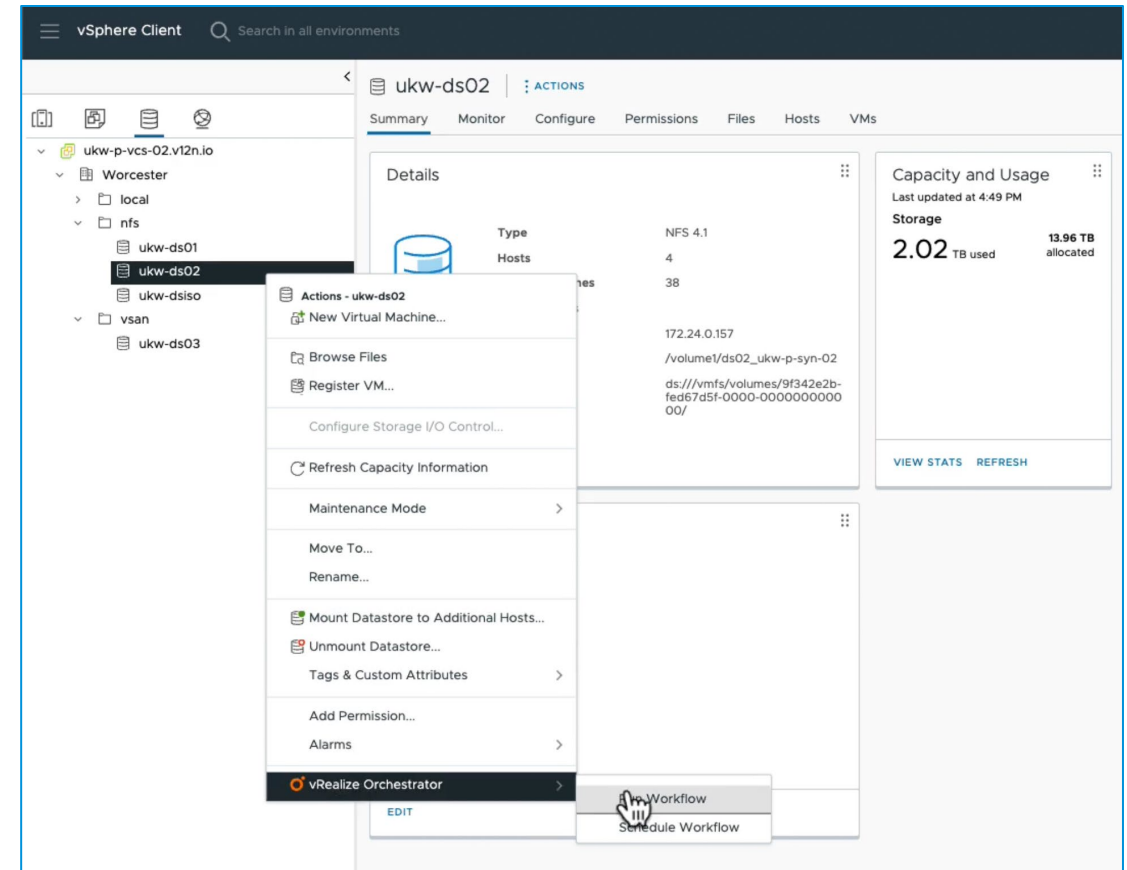
- task : VC:Task

```
1 var configSpec = new VcVirtualMachineConfigSpec();
2 configSpec.name = vmName;
3 configSpec.guestId = vmGuestOs.name;
4 configSpec.memoryMB = vmMemorySize;
5 configSpec.numCPUs = vmNbOfCpus;
6
7 // Compute vmxFilePath
8 var datastorePath = "[" + vmDatastore.info.name + "]";
9 var files = new VcVirtualMachineFileInfo();
10 files.vmxPathName = datastorePath;
11 configSpec.files = files;
12
```


Invoking Orchestrator Workflows

Orchestrator workflows can be invoked from:

- vSphere Client
- VMware Aria Automation
 - Service Broker self-service catalog
 - Event Broker Service subscriptions
- Third-party applications
- REST clients



How to download and license Orchestrator

Downloading Orchestrator

Log into your account at
customerconnect.vmware.com

vmware® CUSTOMER CONNECT

GG

Home / VMware Aria Automation

Download VMware Aria Automation

Select Version:

8.13

VMware Aria Automation 8.12 (formerly known as vRealize Automation) continues to improve the speed and ease of IT service delivery making your hybrid cloud easier to operate and use.

Customers who have purchased Aria Automation can download their installation package

[Read More](#)

Product Resources

[View My Download History](#)
[Product Info](#)
[Documentation](#)
[Community](#)
[Download Free Trial](#)

Product Downloads

Drivers & Tools

Open Source

Custom ISOs

OEM Addons

Product	Release Date	
▼ VMware Aria Automation		
VMware Aria Automation 8.13.1	2023-09-07	GO TO DOWNLOADS
▼ VMware Aria Automation Orchestrator		
VMware Aria Automation Orchestrator 8.13.1	2023-09-07	GO TO DOWNLOADS

Licensing Orchestrator

You license Orchestrator using either:

- VMware Aria Automation license
- VMware vSphere license



A Few Miscellaneous Notes

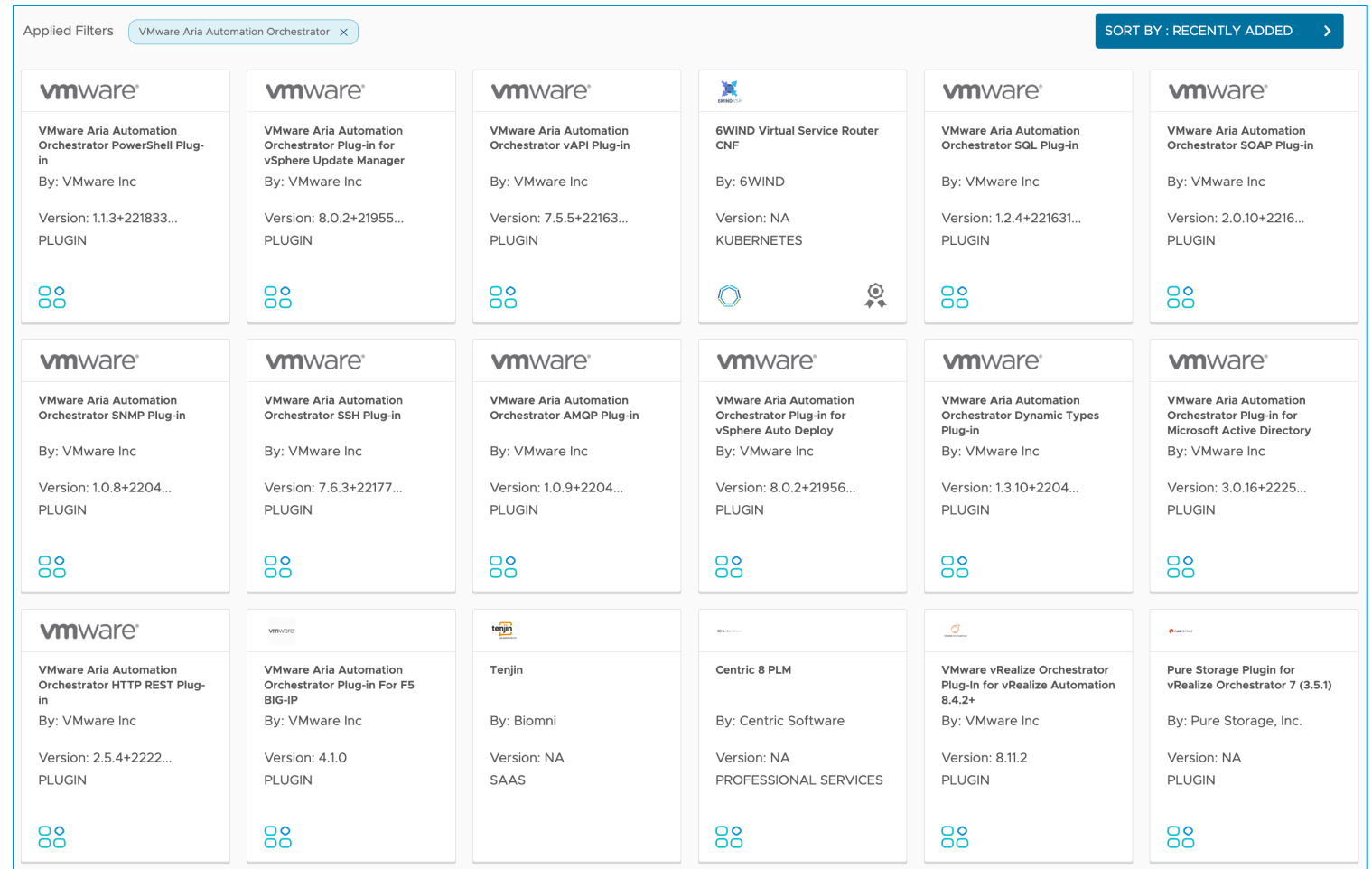
- VMware Aria Suite Easy Installer makes installation even easier.
- There is an embedded Orchestrator server.
- There is a standalone Orchestrator server.

The screenshot shows the VMware Customer Connect portal for VMware Aria Automation Orchestrator 8.13.1. The page has a dark blue header with the VMware logo and 'CUSTOMER CONNECT' text. Below the header, the breadcrumb 'Home / VMware Aria Automation Orchestrator 8.13.1' is visible. The main content area is titled 'Download Product' and includes a 'Select Version' dropdown set to '8.13.1', a 'Documentation' link to 'Release Notes', a 'Release Date' of '2023-09-07', and a 'Type' of 'Product Binaries'. To the right, there is a 'Product Resources' sidebar with links for 'View My Download History', 'Product Information', 'Documentation', 'vSphere Community', 'Support Resources', and a 'Download Free Trial' button. Below this, a horizontal navigation bar shows 'Product Downloads' as the active tab, with other tabs for 'Drivers & Tools', 'Open Source', 'Custom ISOs', and 'OEM Addons'. The main content area displays two download options: 'VMware Aria Automation Orchestrator 8.13.1 Virtual Appliance' (3.14 GB, ova format) and 'VMware Aria Automation Orchestrator 8.13.1 Update Repository' (2.91 GB, iso format). Each option has a 'Read More' link and a 'DOWNLOAD NOW' button. At the bottom, there are links for 'MD5 checksums, SHA1 checksums and SHA256 checksums' and 'VMware General Terms: Accept VMware General Terms'.

Orchestrator Plug-ins

Orchestrator Plug-ins

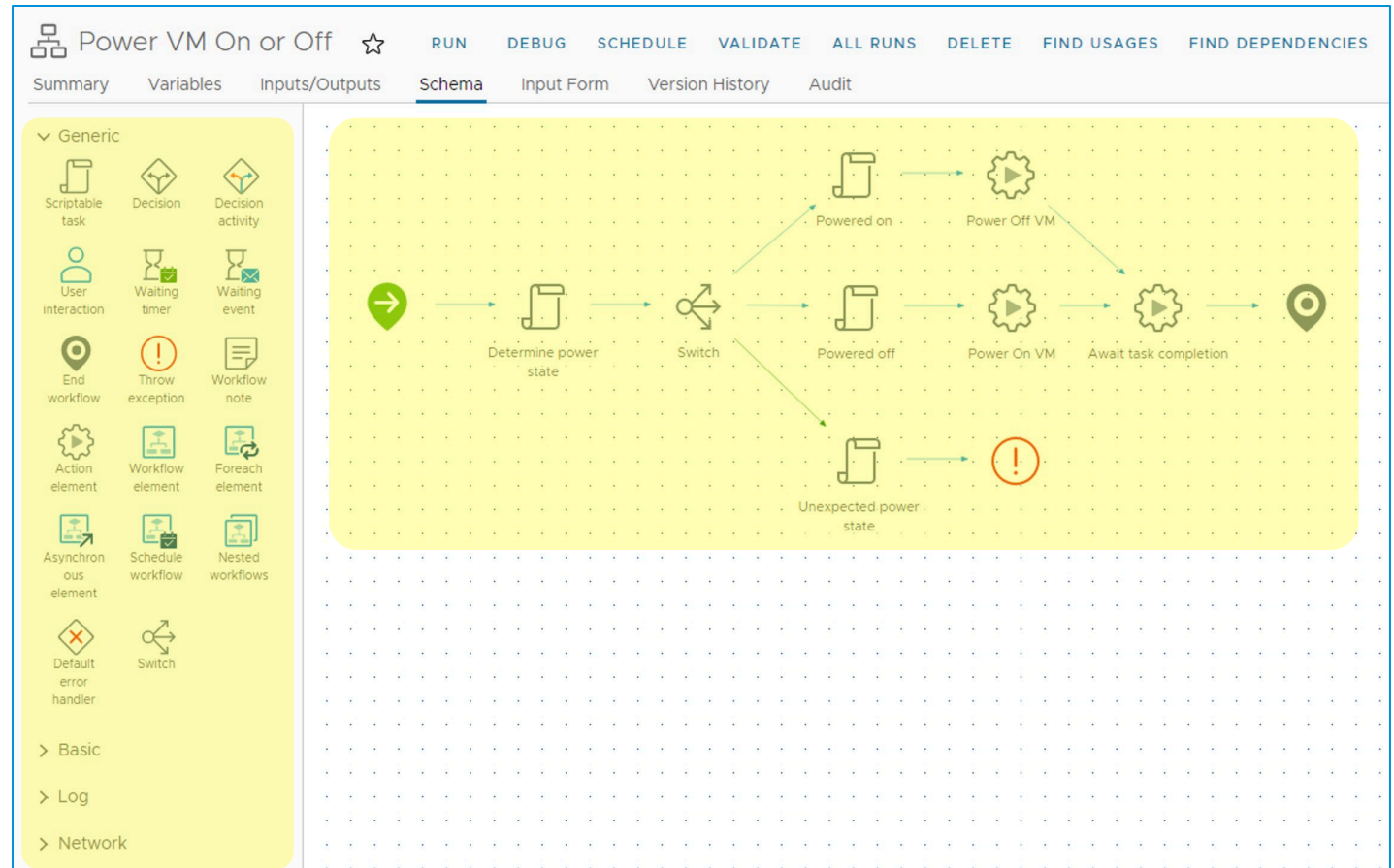
- Built into Orchestrator
- Downloadable from the VMware Marketplace
- Enhance Orchestrator's capabilities:
 - More system integrations
 - More workflows
 - More actions
 - More objects



Workflow schemas and schema elements

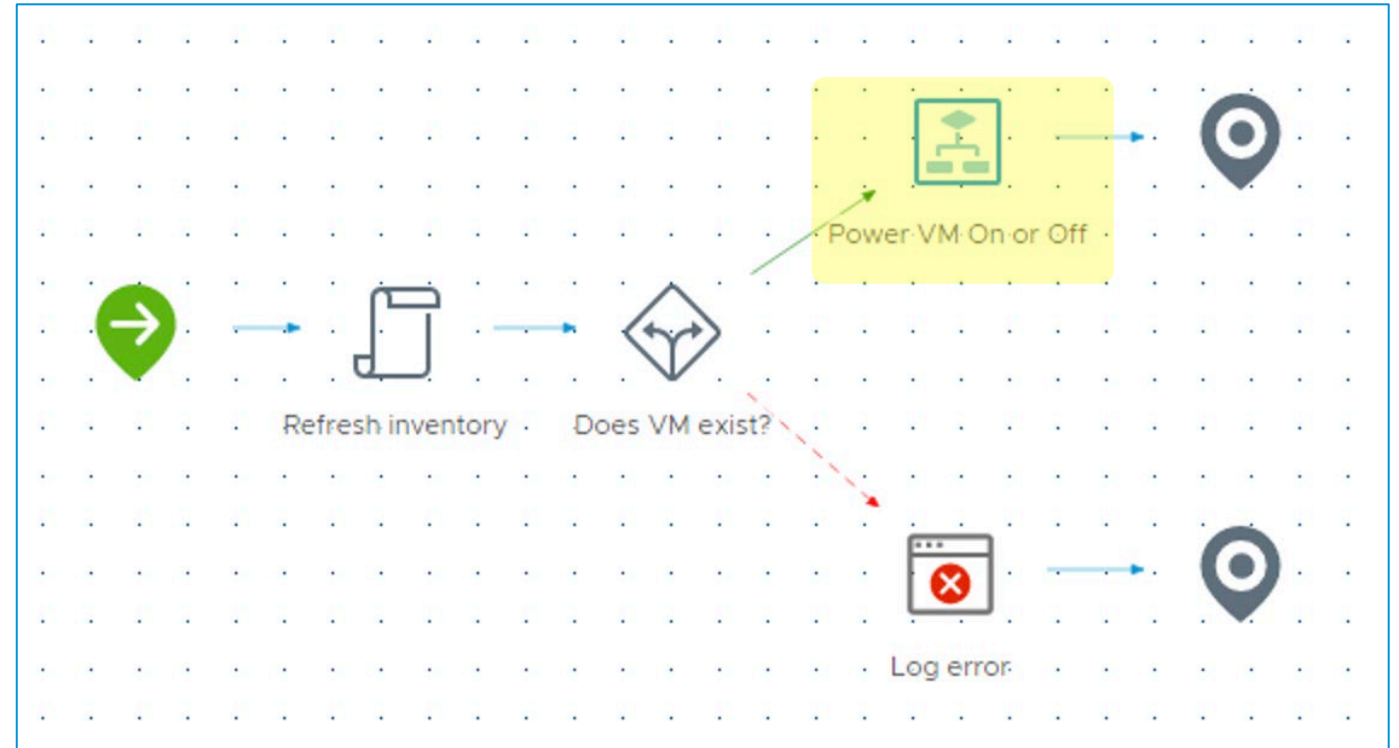
Workflow Schemas and Schema Elements

- The workflow schema defines what the workflow does.
- The workflow schema is built out of schema elements.
- Frequently used schema elements include:
 - Scriptable tasks
 - Actions
 - Decisions & Switches
 - Workflow elements



Encapsulation

- A workflow can call other workflows.
- This enables rapid workflow development.
- You don't have to re-implement functionality*.

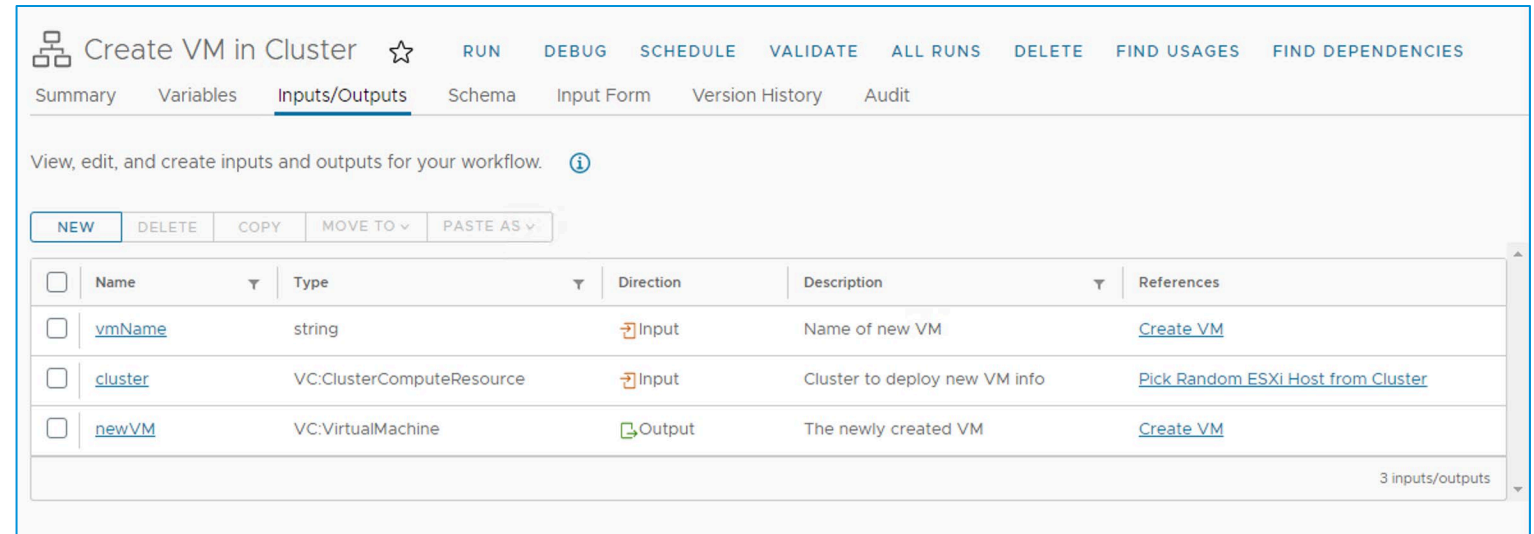


* But you do need to learn “binding”.

Inputs, Outputs, and Variables

Inputs and Outputs

- You define your workflows inputs and outputs.
- Inputs feed info into your workflow.
- Outputs define what your workflow returns.



Create VM in Cluster ☆ RUN DEBUG SCHEDULE VALIDATE ALL RUNS DELETE FIND USAGES FIND DEPENDENCIES

Summary Variables Inputs/Outputs Schema Input Form Version History Audit

View, edit, and create inputs and outputs for your workflow. ⓘ

NEW DELETE COPY MOVE TO ▾ PASTE AS ▾

<input type="checkbox"/>	Name ▾	Type ▾	Direction	Description ▾	References
<input type="checkbox"/>	vmName	string	Input	Name of new VM	Create VM
<input type="checkbox"/>	cluster	VC:ClusterComputeResource	Input	Cluster to deploy new VM info	Pick Random ESXi Host from Cluster
<input type="checkbox"/>	newVM	VC:VirtualMachine	Output	The newly created VM	Create VM

3 inputs/outputs

Variables

Inputs and outputs are used to pass information into and out of your workflow.

Variables* are used to pass information between schema elements within your workflow.

* Variables were formerly called “attributes”.

View, edit, and create local variables for your workflow. ⓘ

NEW DELETE COPY PASTE MOVE TO ▾

<input type="checkbox"/>	Name ▾	Value	Type ▾	Description ▾	References
<input type="checkbox"/>	> vmGuestOs	[object VC:VirtualMachineGuestOsIdentifier]	VC:VirtualMachineGuestOsIdentifier	The guest OS that will be installed into the new VM	Create VM
<input type="checkbox"/>	> vmFolder	[object VC:VmFolder]	VC:VmFolder	VM folder in which to create the new VM	Create VM
<input type="checkbox"/>	vmResourcePool	VROE lab environment defaults: defaultResourcePool	VC:ResourcePool	The resource pool in which to place the new VM	Create VM
<input type="checkbox"/>	vmHost	VROE lab environment defaults: defaultEsxiHost	VC:HostSystem	ESXi host on which to run the new VM	Create VM , Pick Random ESXi Host from Cluster
<input type="checkbox"/>	vmDiskSize	100	number	Virtual disk size in GB	Create VM
<input type="checkbox"/>	vmMemorySize	256	number	Amount of vRAM in MB	Create VM
<input type="checkbox"/>	vmNbOfCpus	1	number	Number of vCPUs	Create VM
<input type="checkbox"/>	vmNetwork	VROE lab environment defaults: defaultNetwork	VC:Network	Network to connect new VM to	Create VM
<input type="checkbox"/>	vmDatastore	VROE lab environment defaults: defaultDatastore	VC:Datastore	The datastore in which to create the new VM	Create VM
<input type="checkbox"/>	diskThinProvisioned	true	boolean	Thin provision the disk?	Create VM

10 variables ▾

Binding



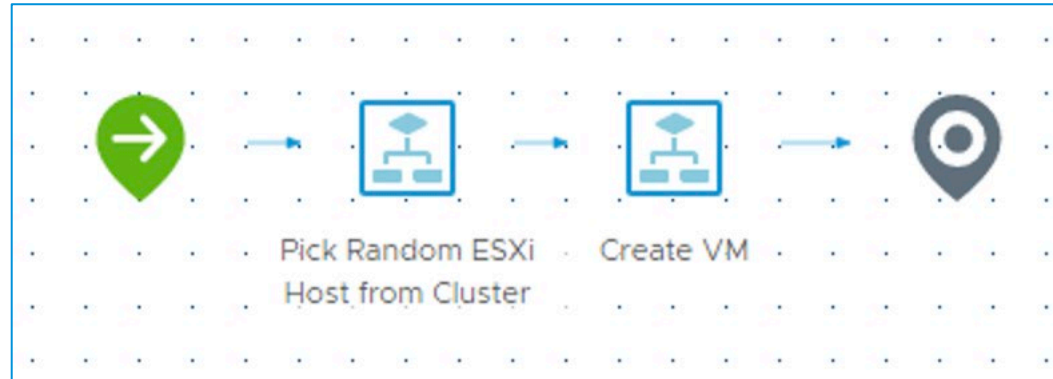
Binding controls
where data is allowed
to flow within a
workflow.

Inputs, outputs, and
variables have the
potential to be seen
by every schema
element.

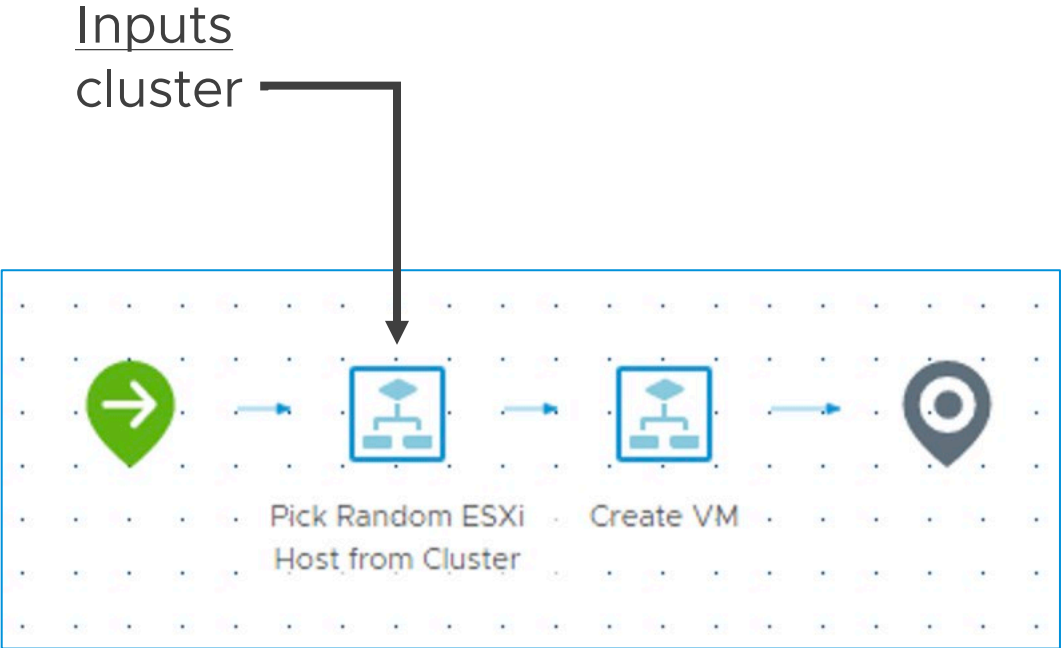
By default, no
schema elements see
any inputs, outputs,
or variables.

Consider this Workflow

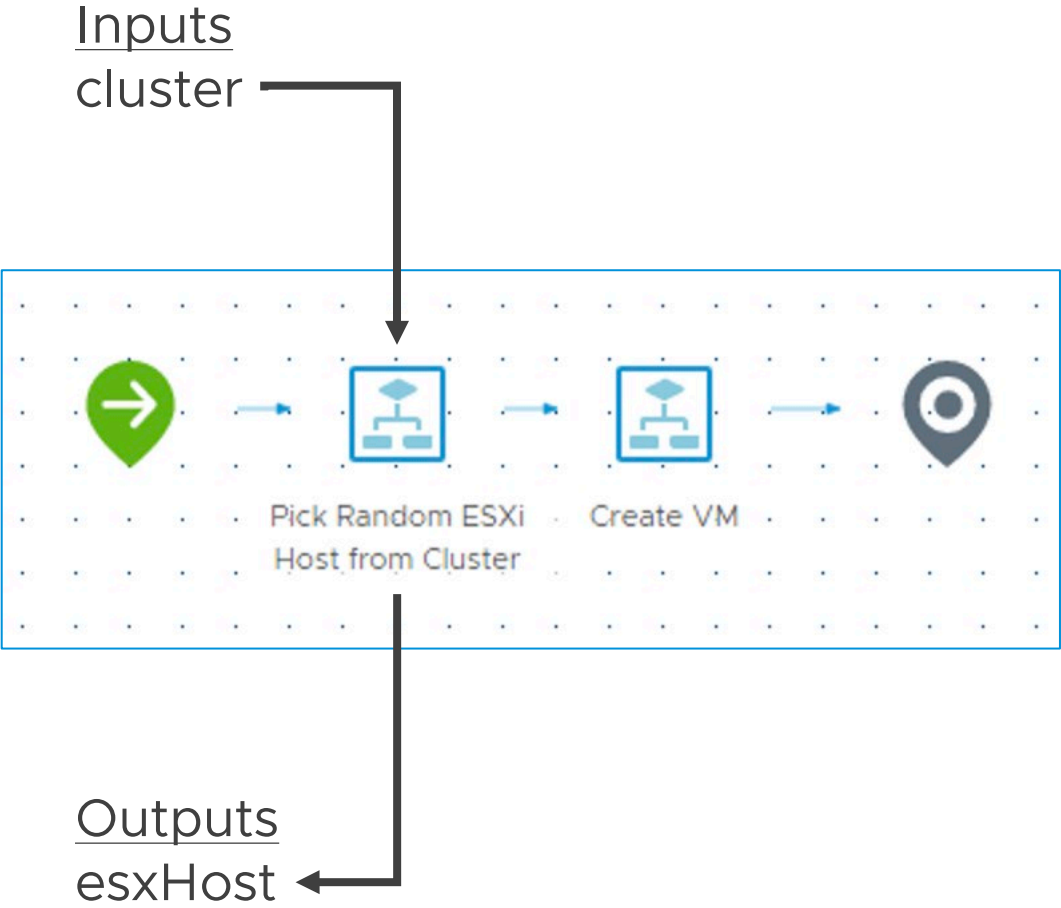
Create VM in Cluster



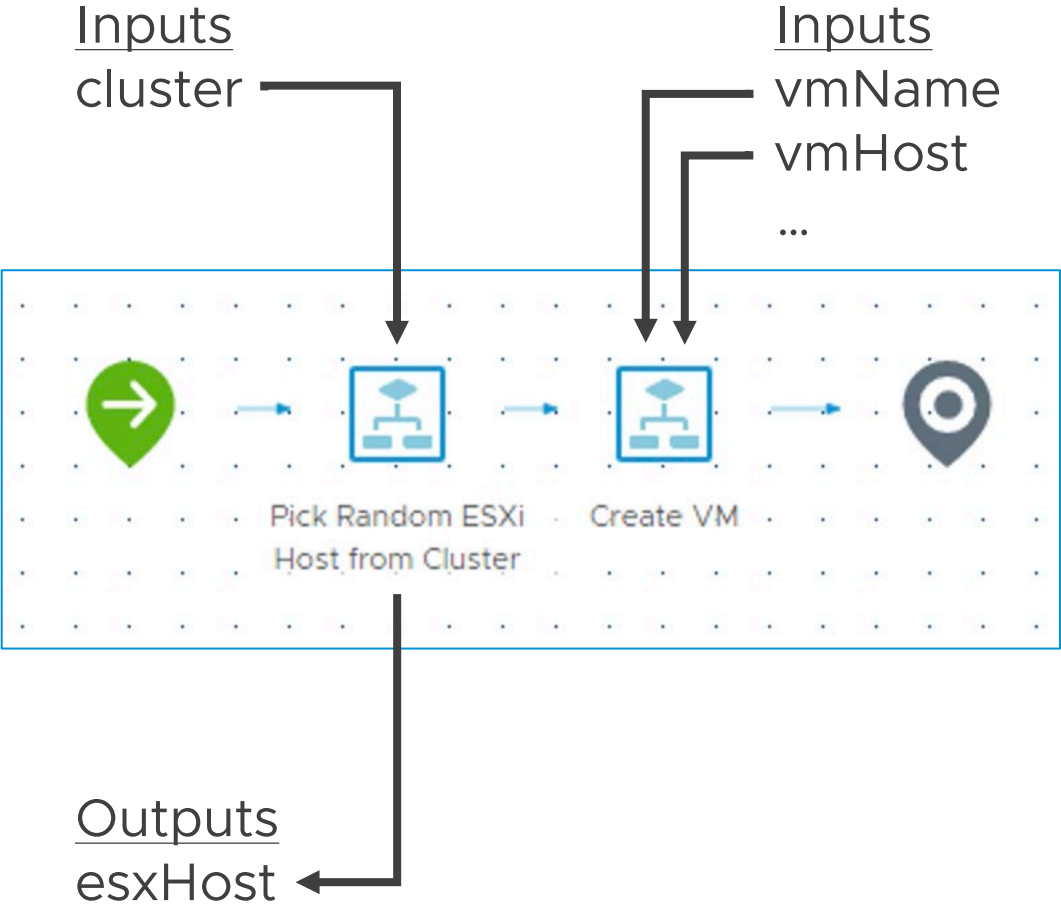
Data Flow (1)



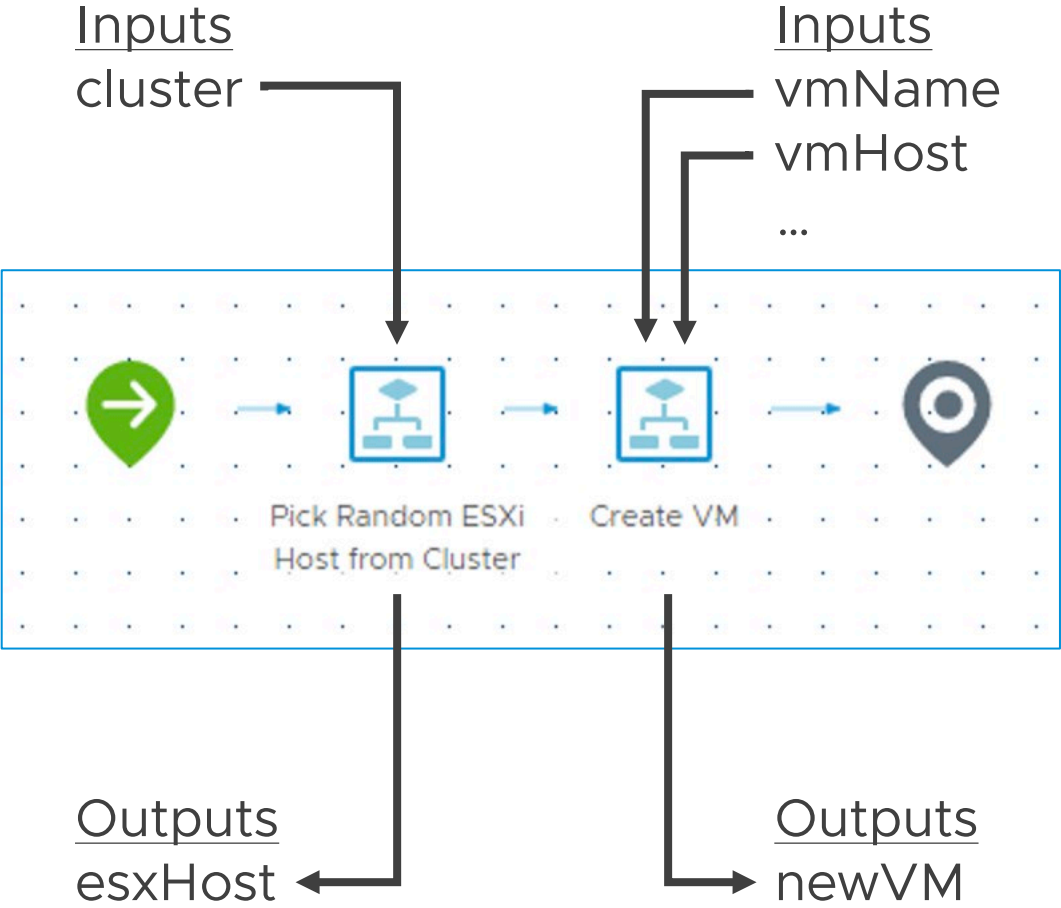
Data Flow (2)



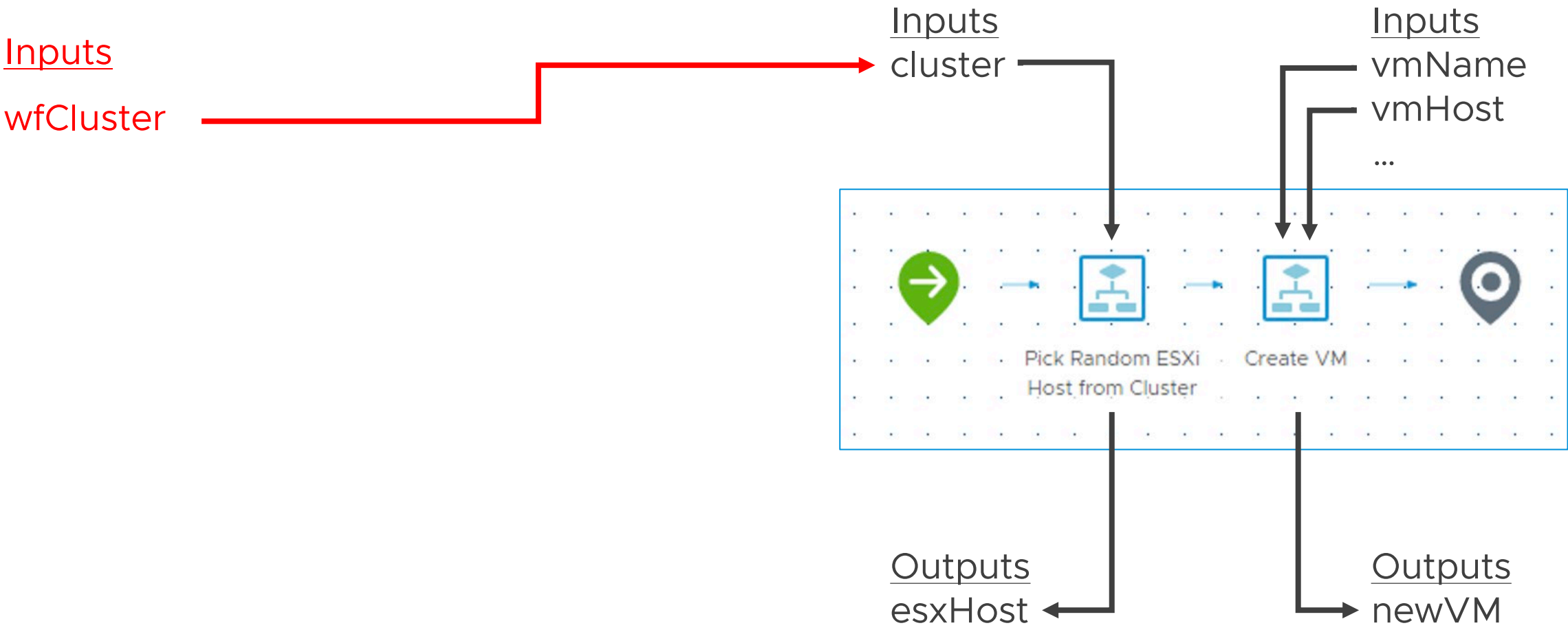
Data Flow (3)



Data Flow (4)



Let's Do Some Binding (1)



Let's Do Some Binding (2)

Inputs

wfCluster

wfVMName

wfVmHost

Inputs

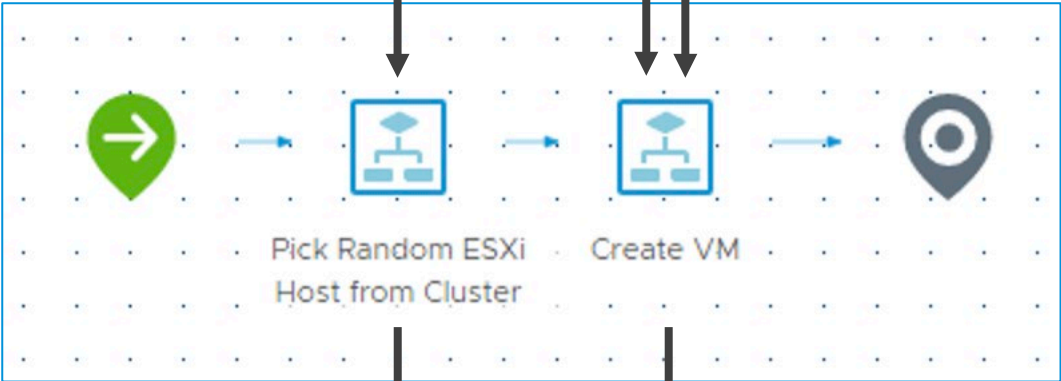
cluster

Inputs

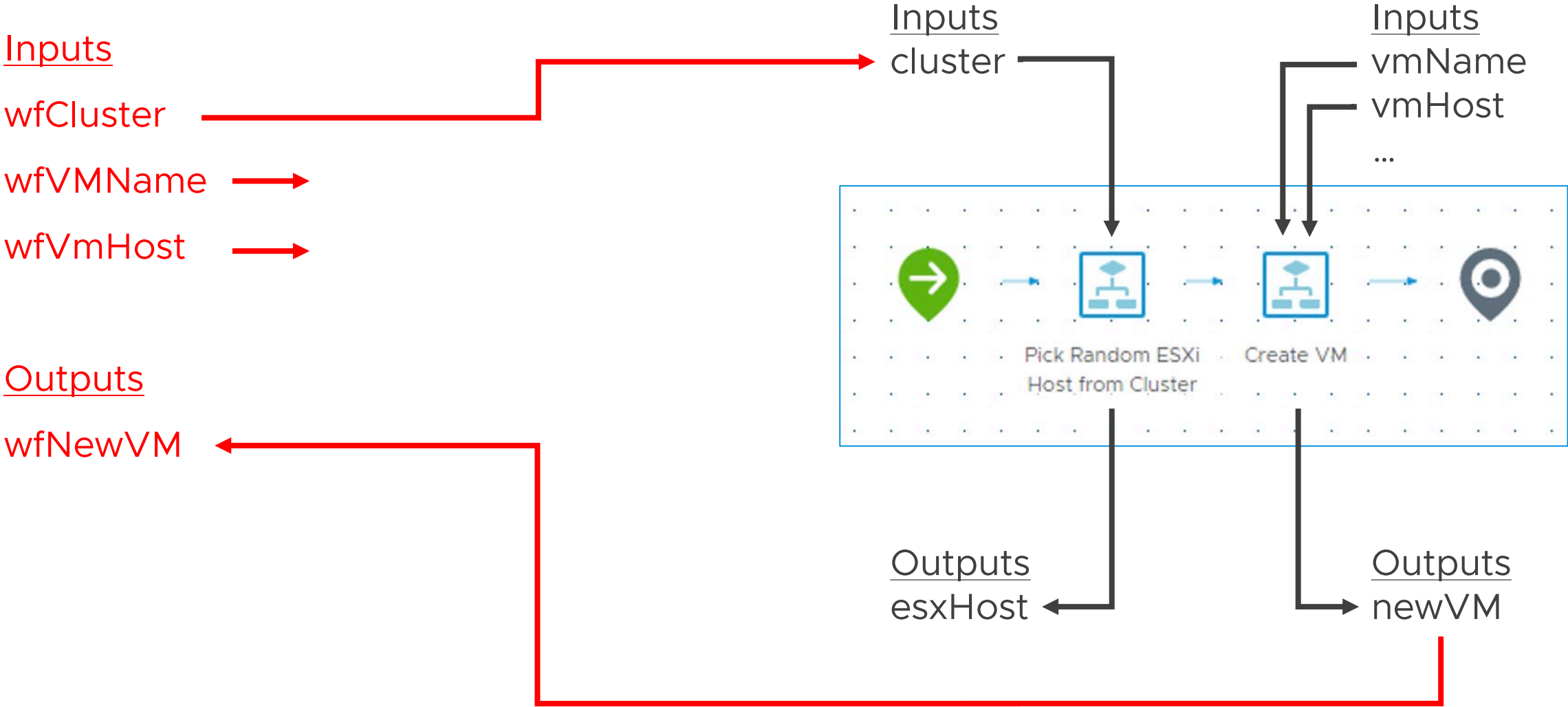
vmName

vmHost

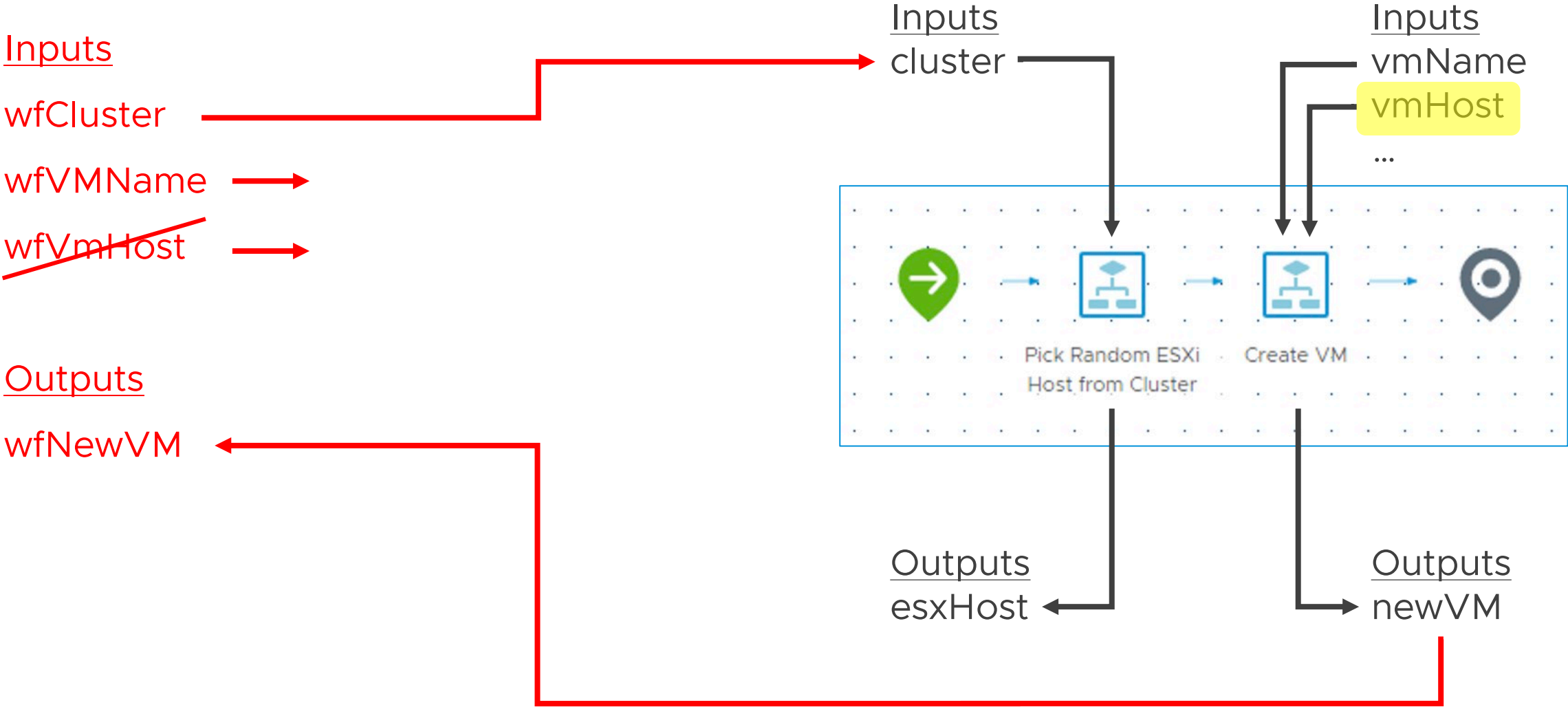
...



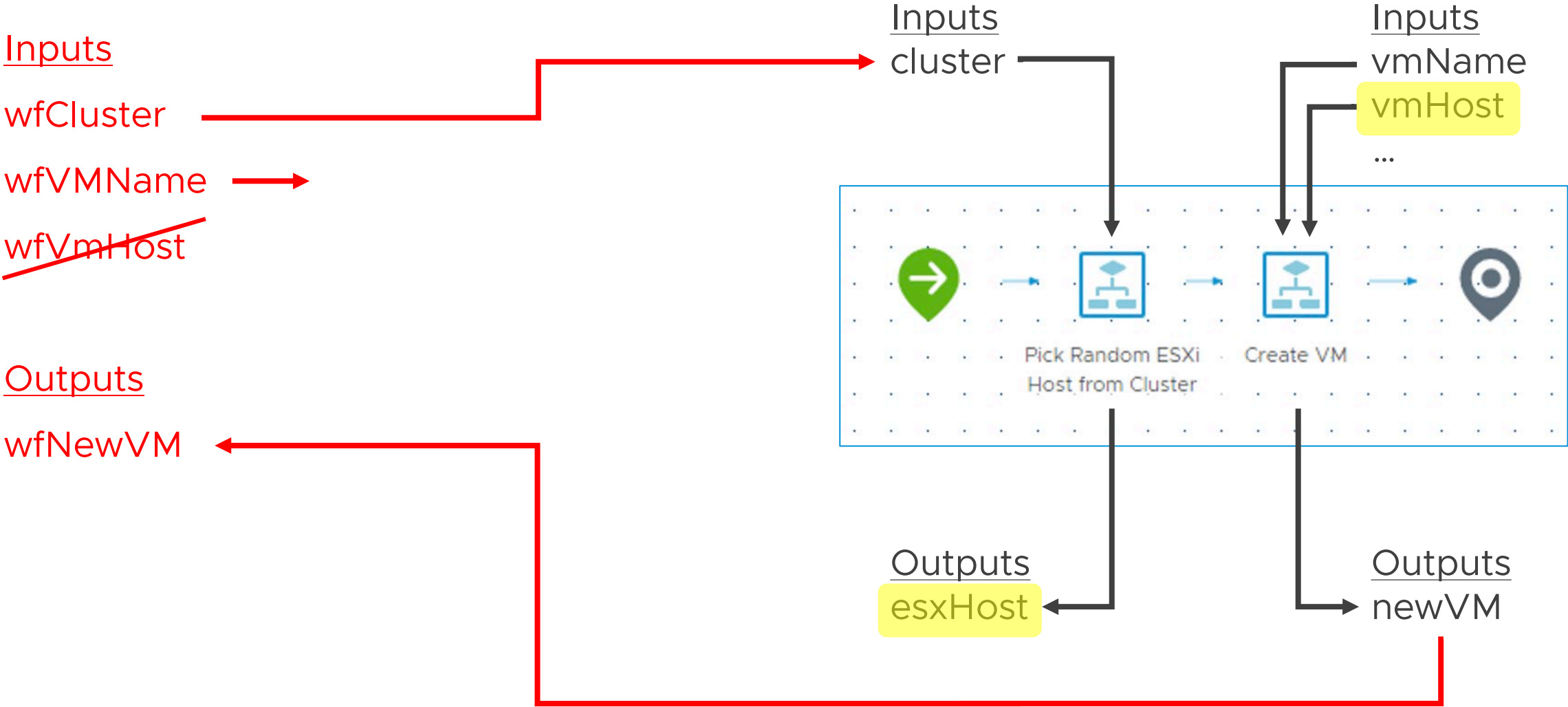
Let's Do Some Binding (3)



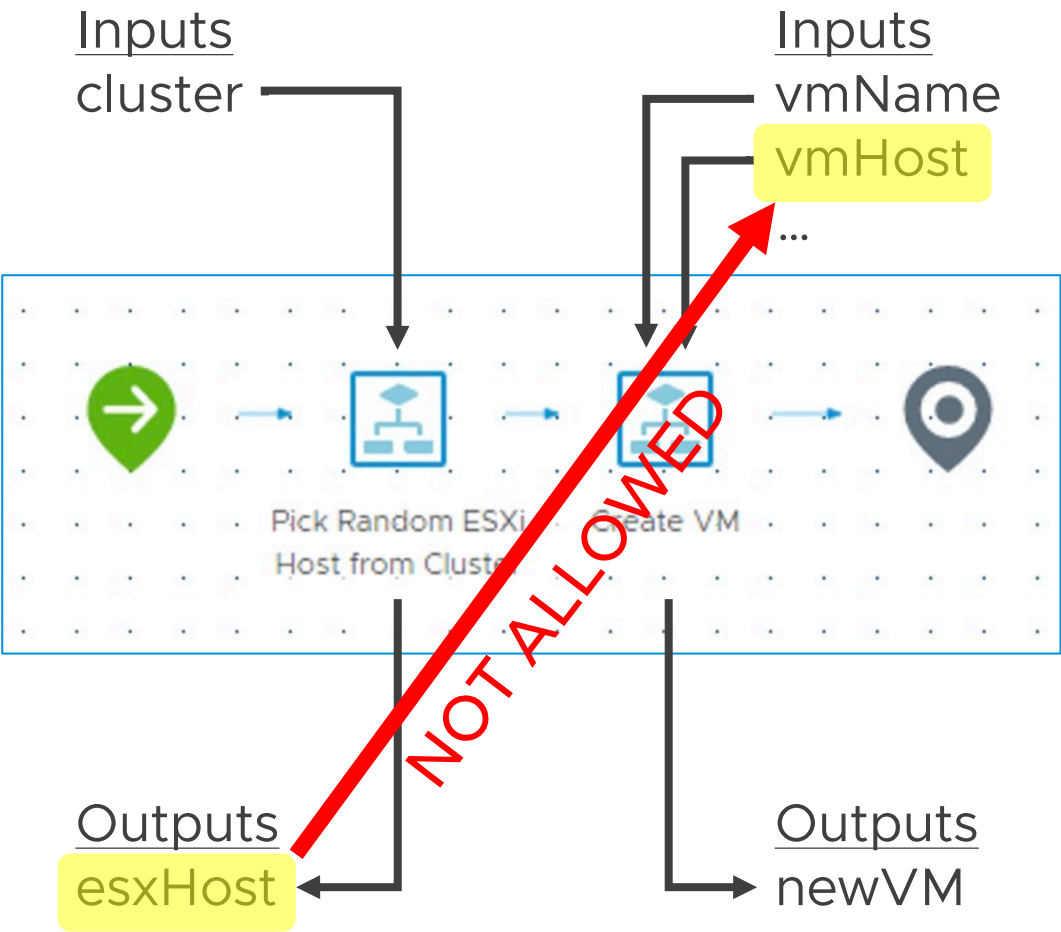
Let's Do Some Binding (4)



Let's Do Some Binding (5)



Let's Do Some Binding (6)



Let's Do Some Binding

Inputs

wfCluster →

wfVMName →

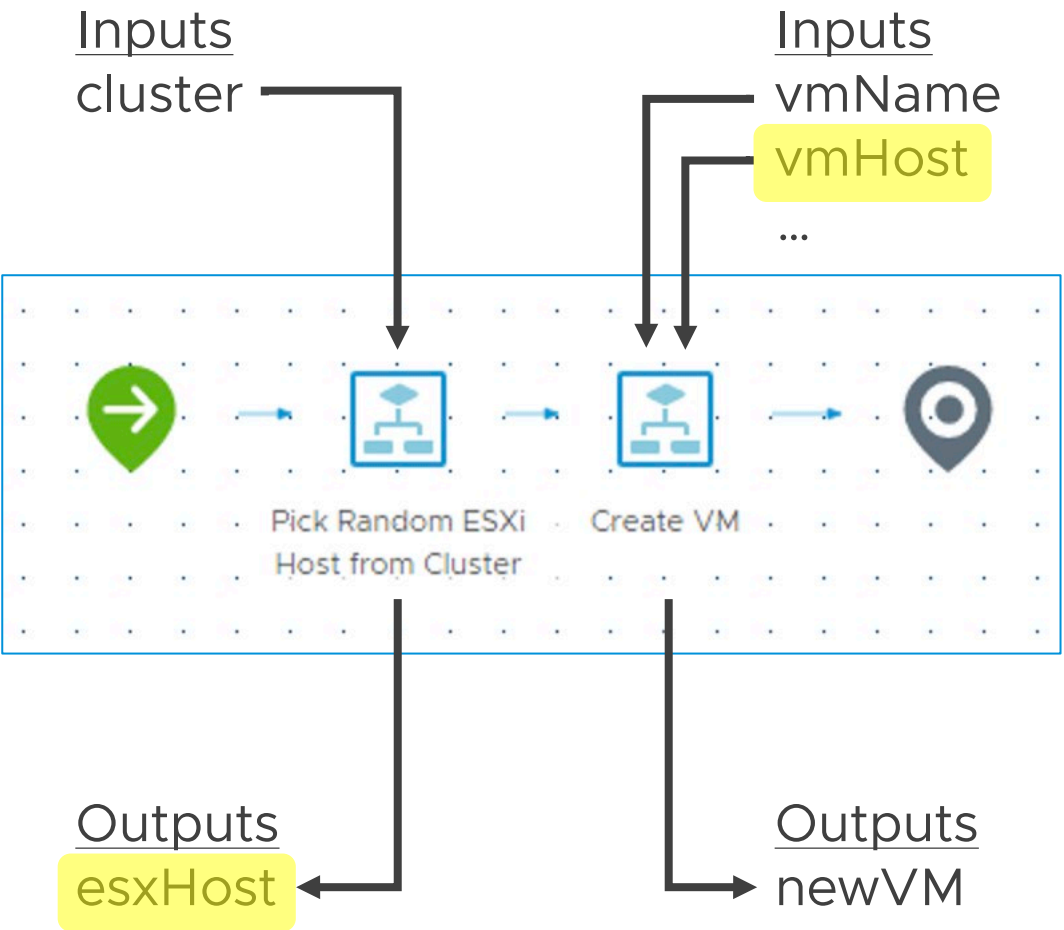
~~wfVmHost~~

Outputs

wfNewVM ←

Variables

wfHost



Let's Do Some Binding (8)

Inputs

wfCluster →

wfVMName →

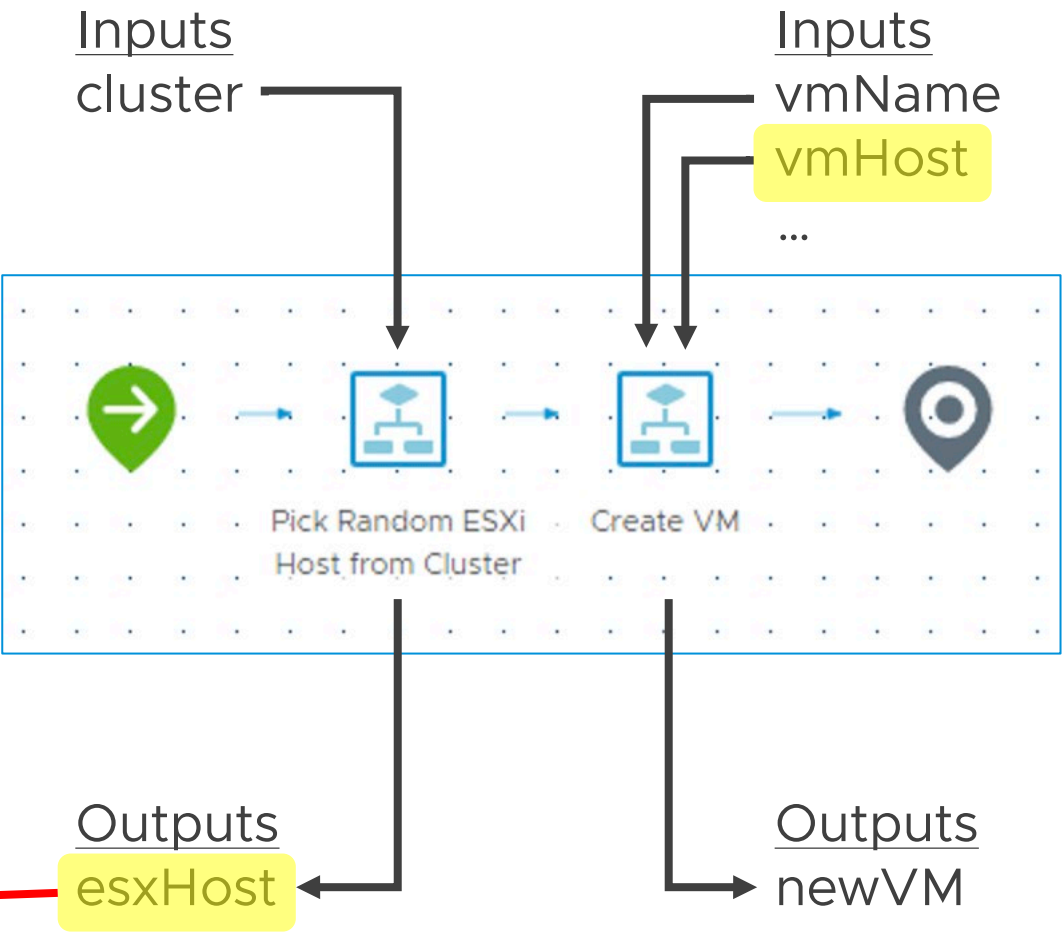
~~wfVmHost~~

Outputs

wfNewVM ←

Variables

wfHost ←



Let's Do Some Binding (9)

Inputs

wfCluster →

wfVMName →

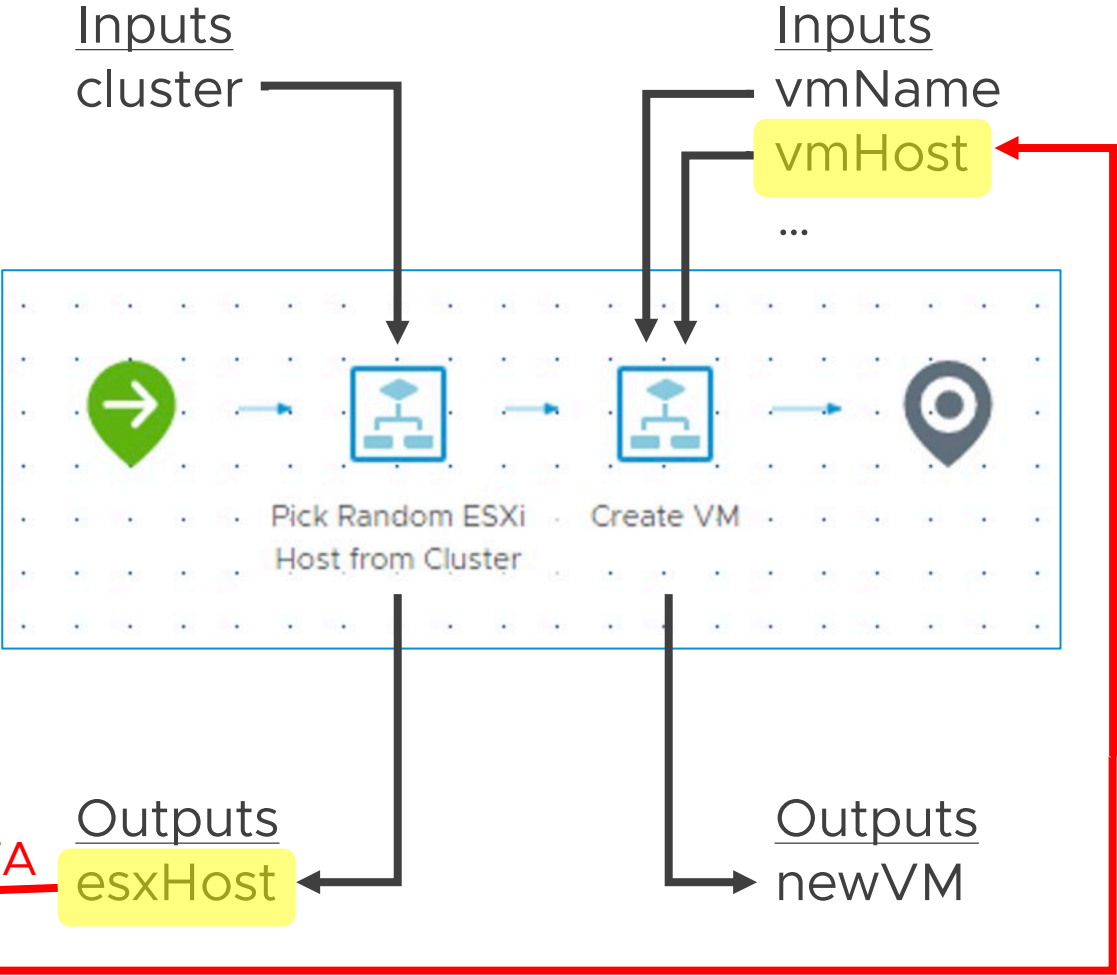
~~wfVmHost~~

Outputs

wfNewVM ←

Variables

wfHost ←



Q & A

Thank You

