Platform Validation on VMware Marketplace

Solution Test Packaging Guidelines for Publishers



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Overview

This document shows VMware Marketplace publishers how to submit their solution in a Kubernetes form-factor to VMware Marketplace Platform Validation (PV) Pipeline Engine. This document also outlines a set of guidelines for publishers to follow when packaging their solution/application-specifics tests in 'Test Case Container image' and running that container image on the VMware Marketplace Platform Validation (PV) Pipeline Engine.

Assumptions

- Each solution is packaged as Kubernetes form factor with artifact-type as Helm Chart
- All the Docker images referenced in the Helm Charts are stored in a public registry
- Each solution may optionally provide a single test case container image. This container image when launched will run a battery of tests against a previously deployed Helm chart
- The test case container image should also be stored in a public registry and accessible to VMware
- Multiple versions of the solution/application can choose to use the same test case container image or different version of test case container image
- Publisher test case container image is not accessible to Consumers
- Terms "Solution" & "Application" are used interchangeably in this document

Requirements

Publisher to provide two things:

- 1. (Must) Solution as Helm chart and any additional helm-install options
- 2. (Optional) Test Case Container image and associated parameters to launch the test cases

Helm Chart Requirements

The deployed application must have one and only one Kubernetes Service deployed as Load Balancer. If no services or more than one is set as Load Balancer, the PV test run will be aborted. Currently the VMware Marketplace PV Pipeline Engine does not support applications deployed with ingress.

Test Case Container Requirements

Publishers to provide a standalone self-contained test container image. Publishers are free to choose the base-image and test-framework.

The container **must**:

- Run the battery of tests. Test Cases must be packaged in the image such that a docker run should trigger execution of all test cases one after the other
- Return status code=0 when the tests pass or another value otherwise
- Expose logs and errors to STDOUT, STDERR respectively

The container optionally **can**:

- Leverage the Kubernetes config file that can be found at /tmp/kubeconfig. VMware Marketplace Platform Validation Pipeline Engine will mount the kubeconfig.yaml file of the pertaining cluster as /tmp/kubeconfig. With it, the Publisher can introspect the environment where the application is being run
- The container should use the networking directly from the host. The VMware Marketplace Platform Validation Pipeline Engine will add the "--network=host" option by default to the docker run command
- Any additional parameters that need to be added to docker run command, should be given in the "Test Case Launch Options" field of the VMware Marketplace UI. (see Figure-3)
- Place a single *xUnit* or any format report in /tmp/output/reports. VMware Marketplace Platform Validation Pipeline Engine will pick it up from this location & provide an option to download from VMware Marketplace (see Figure 4)

Examples

The following examples will show how to run the application and tests locally and how they will map to the continuous validations in VMware Marketplace. The examples used here are based on open source Bitnami packaged applications.



Example 1:

In the VMware Marketplace UI navigate to Publish->Solution workflow to create a new listing. Here select "Distributed Solution" to allow validation to select form-factor. Publishers can select the Kubernetes Form-Factor with Artifact as Helm-Chart. See Figure 1 below:

vmw VMware Marketplace			?	Satya Dillikar Marketplace-Publish
View -> Publish -> Manage -> Se	ings ~			
Create Solution				
Distributable	Technical			
O Marketing	Form Factor *			
Support	Blueprints Containers Content	Management Packs Vubernetes	Others	
Technical	Plug-In Professional Services Virtual Machine	15		
O Pricing	Artifact Type *			
Version	Helm Chart			
Compliance	Deployment Platforms *			
Submit	VMware Tanzu			
Review & Publish	Category * Select	· ·		
	Sub-Category * Select	~		
	Operating System Select	~		
	TAP Franchise () Select			5
	\leftarrow		SAVE AS DRAFT	CANCEL NEXT

Figure 1: Form Factor & Artifact Type

Helm-Chart:

Chart Name	Redis-12.7.4
Chart Version	12.7.4
Public URL or Helm Chart tar file	redis-12.7.4.tgz
Chart Install Options	set cluster.slaveCount=5

Table 1: Example-1 Helm Chart

vmw VMware Marketplace			⊘ Satya Dillikar Marketplace-Publish ≻ 🗰
View -> Publish -> Manage -> Settings ->	Add Helm Chart	,	×
Create Solution	Chart Name *	Redis-12.7.4	
Distributable	Chart Url	bitnami/redis	
→ Marketing	Chart Version *	12.7.4	
⊘ Support	Public URL for Helm chart tar file ()	Upload Add Url	D VERSION AND COMPATIBILITY
VM			Action
Pricing Heir		redis-12-1620243017837.tgz	
Version	Deployment Instructions * ①	Normal ≎ B I U � ⊨ ≔ I _x	ADD HELM CHART
Compliance		Deployment Instructions goes here.	Action
O Submit ←			DRAFT CANCEL NEXT
Review & Publish		34/100	0
	Chart Install Options (Required to validate solution in order to approve)	set cluster.slaveCount=5	
VMware Marketplace		CANCEL	Vhy Our Cloud
Discover and deploy validated third- party and open-source solutions for various clouds	Getting Started 🤌	Technology Partner Hub. $ \mathscr{O} $ Documentation. $ \mathscr{O} $	Mware Cloud Trust Center

Figure 2: Add Helm Chart

Test Case Container

Test Case Container Image	gcr.io/vmware-marketplace-bitnami/validationtest/bitnami-redis-verification-tests:0.2
Public Container Registry	
Test Case Launch Options	pod-selector role=master

Table 2: Example-1 Test Case Container

vmw VMware Marketplace				Satya Dillikar Marketplace-Publish ×
Redis DEMO by Satya Redis DEMO Short Suprasur By: Marketplace-Publis KUBERNETES AN AD	pplication Validation		×	
Product Status	Target Platform*	1 on VMC-on-AWS		
PENDING	Chart Name* 12.7.4	~		
Latest Version	Chart Install Options*	cluster.slaveCount=5		APPLICATION VALIDATION
2.0 ^			h	Test Result Logs Actions
Deployable Platforms	Test Case Container Image*	ice-bitnami/validationte: Or UPLC	DAD FILE 🛆	
12	(Public Container Registry)	selector role=master	Æ	
EULA End User License Agreement			CANCEL	
VMware Marketplace			For Developers	Why Our Cloud
Discover and deploy validated third- party and open-source solutions for	General Program Guide ∂ Getting Started ∂	Publish with Us 🔗 Technology Partner Hub 🔗	API Reference 🖉	VMware Cloud Trust Center

Figure 3: Application Specific Validation

Final Validation (Publisher Only) View

VMware Marketplace							?	Marketplace-	Publish
Publish - Manage - Setti	ngs ~								
Redis DEMO & Redis DEMO B Redis DEMO Shor By: Marketplace-F (KUBERNETES)	t Summary Publisher	FREE							
Product Status	Overview	Pricing Resource & Support	Version Validation (Publisher (Dnly)					
Latest Version					① PLATFC	RM VALIDATIO	N APF	LICATION VA	LIDATION
2.0 ^	Chart Version	Validation Type	Added By	Platform	Start Date	Status	Test Result	Logs	Actions
Deployable Platforms	12.7.4	Application	sdillikar	\bigcirc	5/2/2021	Δ	$\underline{\downarrow}$	$\underline{\vee}$	₽
\bigcirc	12.7.4	Application	sdillikar	\bigcirc	4/30/2021	\oslash	$\underline{\downarrow}$	\downarrow	₽
	12.7.4	Platform	sdillikar	\bigcirc	4/30/2021	\oslash	$\underline{\downarrow}$	$\underline{\downarrow}$	\rightleftharpoons
							5 ~	K < [I / 1 → →
EULA End User License Agreement 亿									
VMware Marketplace		Resources	For Partners	F	or Developers		Why Our Clo	bd	
Discover and deploy validated third- party and open-source solutions for		General Program Guide ∂ Getting Started ∂	Publish with Us 🔗 Technology Partner Hub 🔗		PI Reference 🖉		VMware Cloud Skyline	Trust Center	
		Figure A.	Validation Publisher	Only Vic	2147				

helm install redis-12.7.4.tgz \
generate-name \
set cluster.slaveCount=5
Run verification tests
docker run -itnetwork=host \
-v /tmp/reports:/tmp/output/reports \
-v ~/.kube/config:/tmp/kubeconfig \
projects.registry.vmware.com/marketplacetest/bitnami-redis-verification-tests:0.2 \
pod-selector role=master

Table 3: Example-1 CLI Commands



Example 2:

Helm-Chart

Chart Name	wordpress-10.6.8
Chart Version	10.6.8
Public URL or Helm Chart tar file	wordpress-10.6.8.tgz
Chart Install Options	set wordpressPassword=mytestpassword1
	set service.type=LoadBalancer
	Table 4: Example-2 Helm Chart

Test Case Container

Test Case Container Image Public Container Registry	gcr.io/vmware-marketplace-bitnami/validationtest/bitnami-wordpress- functional-tests:0.2
Test Case Launch Options	host \$APPLICATION_HOSTport 80
	input password=mytestpassword1
	Table 5: Example-2 Test Case Container

The equivalent manual commands:

Install chart
helm install wordpress wordpress-10.6.8.tgz \
set wordpressPassword=mytestpassword1 \
set service.type=LoadBalancer
Get hostname
APPLICATION_HOST = \$(kubectl get svc wordpress -o jsonpath={.status.loadBalancer.ingress[0].ip})
Run functional tests
docker run -itnetwork=host -v /tmp/reports:/tmp/output/reports \
$projects.registry.vmware.com/marketplacetest/bitnami-wordpress-functional-tests: 0.2 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
host \$APPLICATION_HOSTport 80 \
input password=mytestpassword1

Table 6: Example-2 CLI Commands

The VMware Marketplace Platform Validation Pipeline will automatically fetch the application IP-address and populate the environment variable \$APPLICATION_HOST





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