

4.1.x Cartridge Resource Definition

A cartridge is a container for a framework, load balancer or data management system. You can add a cartridge in a platform as a service (PaaS) for scalability. A sample cartridge definition, together with information on all the properties that can be added in a cartridge definition JSON are as follows:

- [Sample cartridge definition JSON](#)
- [Property definitions](#)

Sample cartridge definition JSON

The following are sample configurations that can be used in a JSON to define a cartridge:

Property definitions

All the properties that correspond to the cartridge parameter resource are explained as follows:

- type
- provider
- category
- host
- displayName
- description
- version
- multiTenant
- deployment
 - baseDir
 - dir
- portMapping
 - protocol
 - port
 - proxyPort
 - kubernetesPortType
- iaasProvider
 - type
 - name
 - className
 - imageId
 - provider
 - identity
 - credential
 - property
 - networkInterfaces
 - networkUuid
 - fixedIp
 - portUuid
 - floatingNetworks
 - name
 - networkUuid
 - floatingIP
- persistence
 - isRequired
 - volumes
 - id
 - size
 - device
 - removeOnTermination
 - mappingPath
 - snapshotId
 - volumeId
- loadBalancingIPType
- metadataKeys
- property
 - name
 - value

property definitions

Property	Writable	Readable	Updatable	Description	Required	Data Type	Example

JSON	UI					Default Value			
type	Type				Type of the cartridge.	Yes	N/A	String	php, tomcat
category	Category				Category that the cartridge belong to. The possible categorizes are as follows: data, lb and framework For more information, see Customizing Cartridges .	Yes	N/A	String	framework , application , data, lb
provider	Provider				Provider of the cartridge.	Yes	N/A	String	apache, php.net, wso2
host	Host				Domain where the cartridge will be hosted.	Yes	N/A	String	stratos.org
displayName	Display Name				The name in which the cartridge will be displayed.	Yes	N/A	String	PHP
description	Description				A short description about the cartridge.	No	N/A	String	PHP Cartridge
version	Version				The version of the cartridge application.	Yes	N/A	String	7
loadBalancingIPType	Load Balancing IP Type				Determines whether the members IP is private or public. If this property is set to 'private', the load balancer delegates requests to member's private IP address. If it is set to 'public', requests are delegated to the member's public IP address.			String	public, private
multiTenant	Multi Tenant				Whether the cartridge supports multi tenancy. For more information, see Customizing Cartridges .	Yes	false	Boolean	true/false
portMapping	Port Mapping				Details of the port mapped to the cartridge. For more information on the sub-properties, see portMapping . Add parameter definitions on multiple port mappings if required.	Yes	N/A	portMapping array	N/A
deployment	-				The deployment details need to be specified when working with Kubernetes. For more information on the sub-properties, see deployment .	No	N/A	deployment	

iaasProvider	iaas Provider				<p>Details of the IaaS provider that is used for the cartridge. For more information on the sub-properties, see iaasProvider.</p> <p>If required, add parameter definitions on multiple IaaS providers. These values will override the values in the cloud-controller.xml file, which is in the <apache-stratos-version-SNAPSHOT>/repository/conf/ directory. Where <apache-stratos-version-SNAPSHOT> is the location of the unzipped Stratos binary package.</p>	Yes	N/A	iaasProvider array	N/A
persistence	Persistence				<p>Details of the persistence volume that should be attached to the cartridge. For more information on the sub-properties, see persistence.</p> <p>For more information, see Customizing Cartridges.</p>	No	N/A	persistence	N/A
metadataKeys								String	
property								property array	

Sub-property definitions

portMapping

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
protocol	Protocol				The protocol that is used to map the ports	Yes	N/A	String	http
port	Port				The port to which the cartridge is mapped	Yes	N/A	Int	80
proxyPort	Proxy Port				The proxy port to which the cartridge is mapped	Yes	N/A	Int	8280

kubernetesPortType	Kubernetes Port Type				<p>The Kubernetes port type to which the cartridge is mapped</p> <p>The following can be assigned for the Kubernetes port type:</p> <ul style="list-style-type: none"> • NodePort • ClusterIP <p>Access URLs are generated only for the NodePort service type.</p>	No	N/A	String	NodePort
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deployment

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
baseDir	-				Base directory of the cartridge where artifacts should be deployed. The Cartridge Agent will deploy the artifacts that are checked out from the Git repository to this location. It is recommended to only set the base directory when working with Kubernetes, as it generally needs to be set in the Puppet Master configurations when working with VM scenarios (i.e., EC2, OpenStack)	No	N/A	String	/var/www
dir	-							dir array	

iaasProvider

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
type	Type				Type of the IaaS provider	Yes	N/A	String	ec2, mock, openstack, kubernetes
name	-				Name of the IaaS provider.	No	N/A	String	
className	-					No		String	

imageId	Image ID				The unique ID of the IaaS image.	Yes	N/A	String	ap-southeast-1/ami-2e0d5a7c
provider	-				The name of the IaaS provider.			String	
identity	-							String	
credential	-							String	
networkInterfaces	Network Interfaces				<p>The list of network configuration tuples attached when launching cartridges. The possible values for networkInterfaces tuples are as follows:</p> <ul style="list-style-type: none"> • OpenStack: {"networkUuid", "fixedIp", "portUuid"} • AWS EC2: {"networkUuid"} <p>For more information on how multiple network interfaces are used in Stratos, see Multiple Network Interfaces. For more information on the sub-properties, see networkInterfaces.</p>	No	N/A	networkInterfaces array	fb9c21f4-0672-48b2-8279-77334bb63a53
property	Property				<p>The IaaS provider properties are listed as name value pairs. It is mandatory that IaaS provider definitions include the following property configurations:</p> <pre>{"name": "instanceType", "value": "m1.medium"}, {"name": "keyPair", "value": "xxxxxxx"}</pre> <p>Administrators can use this property parameter to define other dynamic parameters and their corresponding values that need to be set when an instance is spawned. For more information, see IaaS provider properties. For more information on the sub-properties, see property.</p>	Yes	N/A	property array	N/A

networkInterfaces

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								

networkUuid	Network UUID				The universal unique identifier (UUID) that corresponds to the network.			String	ba667f72-7ba8-4b24-b360-b74a0211c83c
fixedIp	-				The fixed IP that corresponds to the network.			String	
portUuid	-				The universal unique identifier (UUID) that corresponds to the port.			String	
floatingNetworks	-				For more information on the sub-properties, see floatingNetworks .	No		floatingNetworks array	

floatingNetworks

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
name	-				The name assigned to the floating network.	No	N/A	String	externalThree
networkUuid	-				The universal unique identifier (UUID) that corresponds to the floating network.	No	N/A	String	ba667f72-7ba8-4b24-b360-b74a0211c83c
floatingIP	-				The IP that corresponds to the floating network.	No	N/A	String	192.168.17.227

property

The IaaS provider properties will override the cartridge level properties that are defined in the `<apache-stratos-version-SNAPSHOT>/repository/conf/cloud-controller.xml`.

Property Name	Relevant IaaS		Description	Default Value	Example Values
	EC2	OpenStack			
associatePublicIpAddress		X	When using virtual private cloud (VPC) this property needs to be assigned to true, so that your cartridge instance will be assigned a public IP.	true	true, false

autoAssignIp			This is used to determine whether your cartridge will be assigned a public IP or private IP. If this property, is true a public IP will be assigned to your cartridge. If this property is false the IP will be assigned manually.	true	true, false						
availabilityZone			The name of the availability zone . If you are using more than one partition, define the availability zone only in the cartridge definition and make sure not to define the availability zone in the cloud-controller.xml. This will enable the Autoscaler to dynamically select availability zone based on the partition.	N/A	ap-southeast-1a						
blockUntilRunning	X		This will determine whether or not the instance spawning call to the IaaS will be blocked, in order to retrieve IP addresses. If you wish to auto assign IPs, the instance spawning call should be blocking, but if you wish to assign IPs manually, it can be non-blocking.	false	true, false						
defaultFloatingIPPool	X		If the floating IPs have not been pre-allocated for the respective tenant, when launching a cartridge, the floating IP allocation will fail. This property is used to specify the name of the floating IP pool that needs to be used.	N/A	PublicPool1						
instanceType			The type of instance that determines the instance size, which needs to be used. In OpenStack this is referred to as flavor. The instance type value needs to be specified differently based on the IaaS. For example:	N/A	EC2 m1.small OpenStack RegionOne/2						
			<table border="1"> <thead> <tr> <th>IaaS</th> <th>Value Format</th> </tr> </thead> <tbody> <tr> <td>EC2</td> <td>N/A</td> </tr> <tr> <td>OpenStack</td> <td><REGION>/<ID></td> </tr> </tbody> </table>	IaaS	Value Format	EC2	N/A	OpenStack	<REGION>/<ID>		
IaaS	Value Format										
EC2	N/A										
OpenStack	<REGION>/<ID>										
keyPair			The name of the private key that corresponds to the key pair used to connect to the instance.	N/A	apache-stratos-key1						
securityGroupIds			When defining a security group in a VPC scenario, this property should be used instead of the <code>securityGroups</code> property.	N/A	sg-c999f7a6						
securityGroups			The name of the security group that is used to define the IP filter rules for the instance.	N/A	sg-c999f7a6						
shellType	X	X	The type of shell scripting language being used in the cartridge. This property is used to identify the correct customization script to use when passing the payload to the cartridge.	N/A	bash, sh, cmd						
subnetId		X	ID used to identify the virtual private cloud (VPC). For more information, go to Amazon VPC .	N/A	subnet-3b8a7d2g						

tag		X	A tag is a name value pair used to filter instances. For more information, go to Using Tags . For example: <code><property name="tag.a" value="x" /></code>	N/A	a
tags		X	Defines the names of multiple tags. For example: <code><property name="tags" value="a,b,c,d" /></code>	N/A	a,b,c,d

persistence

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
isRequired	Is Required				Whether an extra volume is required is required to be attached to the cartridge to store content	No	N/A	Boolean	true
volumes	Volume				Details of the persistence volume that should be attached to the cartridge. For more information on the sub-properties, see volumes .	No	N/A	volumes array	N/A

volumes

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
id	-							String	
device	Device				Linux device of the volume that will be mounted to the mapping path.	No	N/A	String	/dev/sdc
mappingPath	Mapping Path				Folder path of the directory onto which the Linux device will be mounted.	No	N/A	String	/home/ubuntu/sdc
size	Size				Capacity of the persistence volume that should be attached to the cartridge If you provide different value during subscription, the value provided here is overridden.	Yes	N/A	String	11

removeOnTermination	Remove on Termination				Whether the volume should be removed after termination of the instance If the value is set to false, the volume and its data will exist even after the instance is terminated, so that the data will not be deleted.	No	N/A	Boolean	false
snapshotId	-							String	
volumeId	-							String	