4.1.x Application Resource Definition

The application provides the actual data required to create the clusters, start the instances and specifies how to connect them in the run-time. A sample application definition, together with information on all the properties that can be added in an application definition JSON are as follows:

- Sample application definition JSON
- Property definitions

Sample application definition JSON

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

Property definitions

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

- applicationId
- multiTenant
- name
- description
- alias
- status
- components
  - groups
    - name
    - alias
    - groupMinInstances
    - groupMaxInstances
    - deploymentPolicy
    - cartridges
    - groups
  - dependencies
    - startupOrders
    - scalingDependents
    - terminationBehaviour
  - cartridges
    - type
    - cartridgeMin
    - cartridgeMax
    - subscribableInfo
      - alias
      - deploymentPolicy
      - autoscalingPolicy
      - maxMembers
      - minMembers
      - dependencyAliases
      - artifactRepository
        - alias
        - privateRepo
        - repoUrl
        - repoUsername
        - repoPassword
      - property
      - persistence
        - isRequired
        - volumes
          - id
          - size
          - device
          - removeOnTermination
          - mappingPath
          - snapshotId
          - volumeId
- property
  - name
  - value

Main properties

Property			Description			Data	Example

JSON	UI	Writable	Readable	Updatable		Required	Default Value	Type	
appli cation Id	Ap plic atio n Id			X	A unique ID to identify the application.	Yes	N/A	String	test_ap p_3
multi Tenant				X	Whether the application supports multi-tenancy.	No	false	Boole an	true
name				X	The name of the application	No	N/A	String	
descr iption				X	A summarized description of the application.	No	N/A	String	
status				X				String	
alias	Alias			X	The alias for the application	Yes	N/A	String	phpapp2
compo nents	Co mp one nts			X	The components section for the applications will comprise of groups and cartridges. While, each of the children groups can have nested groups. For more information on the sub-properties, see components.	Yes	N/A	compo nents	N/A
prope rty				X	This defines any properties that need to be passed in the application JSON. For more information on the sub-properties, see property.	No	N/A	proper ty array	N/A

Sub-properties

components

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
group s	Gro ups			X	This section will have a list of groups that are referred in this application. The groups should have a reference to an already deployed cartridge group definitions using the group name. For more information on the sub-properties, see groups.	No	N/A	groups array	N/A

| dependencies | Dependencies | | | X | The dependencies define the order to instantiate and the groups and cartridges referred in the application definition. For more information on the sub-properties, see dependencies.

A sample rule for startup order is shown below:

`"group.<GROUP_ALIAS>,cartridge.<CARTRIDGE_ALIAS>"`

This would mean the group denoted by `<GROUP_ALIAS>` should be started before starting the cartridge denoted by `<CARTRIDGE_ALIAS>`. There can be multiple such rules. The rules should be applicable for only the top level groups and cartridges defined in the application. Startup orders for the elements in the groups will be defined in the group definition itself. | No | N/A | dependencies | N/A |
| cartridges | Cartridges | | | X | Defines that cartridges that exist in the application. For more information on the sub-properties, see cartridges. | No | N/A | cartridges array | N/A |

groups

Property		Writable	Readable		Description	Required	Default Value	Data Type	Example
JSON	UI								
name	name			X	The name of the group.	Yes		String	group2
alias	alias			X	The alias of the group should be unique.	Yes		String	mygroup2
groupMinInstances	groupMinInstances				The minimum number of instances that needs to be maintained in a group.	Yes		Int	1
groupMaxInstances	groupMaxInstances				The maximum number of instances that needs to be maintained in a group.	Yes		Int	2
deploymentPolicy				X	The deployment policy being used for the group			String	
cartridges				X	Defines that sub-cartridges that exist within the group. For more information on the sub-properties, see cartridges.			cartridges array	

| groups | Groups | | | X | Defines the nested groups (sub-groups). The groups should have a reference to an already deployed group definition using the group name. For more information on the sub-properties, see groups. | No | | groups array | N/A |

dependencies

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
startupOrders	Startup Orders			X	The order in which the applications's children (sub-groups and sub-cartridges) need to started up. If it is a group, it should use the format of `"group.<GROUP_ALIAS>"` and if it is a cartridge, it should be `"cartridge.<CARTRIDGE_ALIAS>"` when defining startupOrder. Multiple startupOrders can also be defined as String array. However, the startupOrder should not create a cyclic dependency. By defining multiple startupOrders, parallel dependencies can be identified to start them in parallel. For example if the application startupOrder is as follows:	No	N/A	startup Orders array	group.mygroup2

```
"startupOrders": [
   {
     "aliases": [
        "group.group2",
        "cartridge.tomcat"
     ]
   }
],
```

					• Based on this Stratos will identify that `group2` will need to start before `tomcat`. Initially, Stratos will check the `startupOrder` in the group2 cartridge group definition, which appears as follows:
					
					``
					"startupOrders": [
					  {
					    "aliases": [
					      "group.group1",
					      "cartridge.tomcat"
					    ]
					  }
					],
					``
					
					• Based on this Startos will identify that it needs to startup `group1` before the `tomcat` cartridge.
					• This will in turn require Stratos to check the `startupOrder` in the `group1` cartridge group definition.
					• If `group1` does not have a `startupOrder` defined, Stratos will start the `tomcat` and `tomcat1` cartridges, which are in `group1`, in parallel to each other.
					• Thereafter, it will start the `tomcat` cartridge in group2.
					• Finally, it will start the `tomcat` cartridge, which has the `mytomcat` alias, defined in the application definition.				

scalingDependents				X				scalingDependents array	

| termination Behaviour | Termination Behaviour | | | X | This determines how the instances need to be terminated. The `terminationBehaviour` has been explained provided the `startupOrder` is as follows:

```"startupOrders": [```
``` {```
```   "aliases": [```
```   "group.group2",```
```   "cartridge.tomcat"```
```   ]```
``` },```
``` {```
```   "aliases": [```
```   "group.group3",```
```   "cartridge.mytomcat222"```
```   ]```
``` }```
```],```

The available terminationBehaviours are as follows:

• `terminate-none` None of them will be terminated. For example, if something happens to `my group1`, it will not have an impact on the `tomcat` cartridge.
• `terminate-all` All the elements in that dependency tree are terminated. For example, if something happens to any of `mygroup1`, then all the children of the group that `mygroup1` belongs to, are terminated regardless of the other dependency information.
• `terminate-dependent` Only the dependents will be terminated. For example, if something happens to `group2`, then `tomcat` is terminated. However, if any other cartridge or group is found in the parent group that `group2` belongs to, then that cartridge or group will remain as it is in Stratos. | No | N/A | String | `terminate-none` |

cartridges

Property	Writable	Readable	Updatable	Description	Required		Data Type	Example

JSON	UI						Default Value			
type	Cartridge Type			X	Type of the cartridge.	Yes		String	PHP
cartridgeMin	Cartridge Min				The maximum number of instances that needs to be maintained in a cartridge.	Yes		Int	1
cartridgeMax	Cartridge Max				The minimum number of instances that needs to be maintained in a cartridge.	Yes		Int	2
subscribableInfo	Subscribable Info			X	Contains the information about all the subscribables that is a part of the cartridge. The fields under artifactRepository must be updated when a cartridge belonging to the Framework category is added (e. g., PHP cartridge, Tomcat cartridge). For more information on the sub-properties, see subscribableInfo.	Yes		subscribableInfo	

subscribableInfo

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
alias	Alias			X	The alias of the cartridge.	Yes	N/A	String	mygroup2tomcat
deploymentPolicy				X				String	
autoscalingPolicy	Auto-scaling Policy			X	The autoscaling policy used by the cartridge.	Yes	N/A	String	autoscaling_policy_1
maxMembers				X				Int	

minMembers				X				Int	
dependency Aliases				X				String	
artifactRepository				X	The details of the remote Git repository that corresponds to the cartridge. The artifact repository details only need to be mentioned if the cartridge is a single tenant framework cartridge. For more information on the sub-properties, see artifactRepository.			artifactRepository	
persistence				X	Details of the persistence volume that should be attached to the cartridge. For more information on the sub-properties, see persistence. For more information on persistence volume mapping, see Persistence Volume Mapping.			persistence	
property				X	This defines any properties that need to be passed in the application JSON. Generally, the properties will be listed as name value pairs. However, it is possible to pass the properties as payload parameters if required. For more information on the sub-properties, see property. For more information on how to pass the auto-commit property as a pay load parameter, see Auto Commit.			property array	

persistence

Property		Writable	Readable	Updatable	Description	Required	Default Value	Data Type	Example
JSON	UI								
isRequired				X	Whether an extra volume is required to be attached to the cartridge to store content.			Boolean	
volumes				X	Details of the persistence volume that should be attached to the cartridge. Details of the persistence volume that should be attached to the cartridge. For more information on the sub-properties, see volumes.			volumes array	

volumes

Property				Description			Data	Example

JSON	UI	Writable	Readable	Updatable		Required	Type	
id				X			String	
size				X	Capacity of the persistence volume that should be attached to the cartridge.		String	
device				X			String	
remove OnTe rmina tion				X	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.		Boolean	true
mappi ngPath				X	Folder path of the directory onto which the Linux device will be mounted. You should not specify the same `mappingPath` to multiple volumes. If the latter takes place the volume will be mapped to the volume defined last and it is unpredictable whether the other volumes will be mapped to a directory.		String	
snaps hotId				X			String	
volum eId				X	ID of the persistence volume.		String	

artifactRepository

Property		Writable	Readable	Updatable	Description	Default Value	Data Type	Example
JSON	UI							
alias	Reposi tory URLAli as			X	The URL of the Git repository.The alias of the cartridge.	N/A	String	www. mygit. com/php. git mygroup 2tomcat

privateRepo	Private Repository			X	Whether the Git repository is a private or public repository. If the value assigned to this field is "true", it indicates that the repository is a private repository.	false	Boolean	true
repoUrl				X	The URL of the Git repository.	N/A	String	
repoUsername	Repository Username			X	If you have defined a private Git repository, enter the username used to access the repository.	N/A	String	admin
repoPassword	Repository Password			X	If you have defined a private Git repository, enter the password used to access the repository.	N/A	String	test_password

property

Property		Writable	Readable	Updatable	Description	Required	Default Type	Data Type	Example
JSON	UI								
name				X	Name of the property being passed as a name value pair.	No	N/A	String	
value				X	Value that corresponds to the name value pair.	No	N/A	String	