VMware Cloud Director Extension for Data Solutions
API Guide
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Overview
VMware Cloud Director Extension for Data Solutions is a VMware Cloud Director plug-in that allows cloud providers to offer various data solutions to multi-tenant users such as RabbitMQ, MySQL, and PostgreSQL with enterprise VMware support. The Data Solutions Extension also provides event alerting, monitoring, and visualization of the provisioned data services through Grafana and Prometheus open-source tools.

Scope
This guide explains how to use REST APIs to execute main Data Solutions Extension operations. The Data Solution Extension does not use new APIs but rather creates particular data schemas and instances in the VMware Cloud Director Runtime Defined Entities (RDEs). Clients can interact with RDEs to perform the same operations as those through the extension UI. This guide does not introduce new APIs, but helps you use existing VMware Cloud Director Defined Entity APIs to manage Data Solutions. For more information about VMware Cloud Director APIs and SDKs, please refer to https://docs.vmware.com/en/VMware-Cloud-Director/index.html.

User Personas
There are four user personas in Data Solutions Extension: Provider Administrator, Tenant Administrator, Tenant Data Solutions Operator, and Tenant Data Solutions User. Here is a list of the main operations those users are entitled to.

<table>
<thead>
<tr>
<th>Operations</th>
<th>Provider Administrator</th>
<th>Tenant Administrator</th>
<th>Tenant Data Solutions Operator</th>
<th>Tenant Data Solutions User</th>
</tr>
</thead>
<tbody>
<tr>
<td>List data solutions</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Publish data solutions</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>List published data solutions</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Deploy a solution instance</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Upgrade solution instance</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Delete solution instance</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes¹</td>
<td>Yes¹</td>
</tr>
</tbody>
</table>

¹ Own data solution instances.
**Authentication and Authorization**

The VMware Cloud Director Defined Entity API accepts user authentication tokens - the same as other VMware Cloud Director APIs, and honors VMware Cloud Director role-based access control (RBAC) mechanism to validate user permissions.

**VCD API request with JWT token - Sample**

```plaintext
GET /api/session HTTP/1.1
Host: my-vcd-cloud.local
Accept: application/*+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2lI
```


**Data Models**

Data Solutions Extension creates several domain-specific Runtime Defined Entity types during the installation. Almost all Data Solutions Extension API calls are related to these data models.

<table>
<thead>
<tr>
<th>Schema</th>
<th>Interface</th>
<th>Scope</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSInstance</td>
<td>DSOBJECT</td>
<td>Namespace</td>
<td>Data solution instances for RabbitMQ, MySQL, and PostgreSQL. API/UI clients do not interact with Kubernetes resources directly but instead manipulate DSInstance for data solution deployment, update, and deletion. A DSInstance represents a data solution deployment.</td>
</tr>
<tr>
<td>DSInstanceTemplate</td>
<td>DSOBJECT</td>
<td>Global</td>
<td>Templates for data solution instance creation. There are a few pre-defined templates for each kind of data solution. A DSInstanceTemplate is global and public to all users. Essentially a DSInstanceTemplate contains a set of pre-defined Custom Resource (CR) properties.</td>
</tr>
</tbody>
</table>
### DSProvisioning

- **DSObject**
- **Namespace**

A plugin operator that provisions data services in each Kubernetes cluster.

DSProvisioning is used by Data Solutions Operator (DSO) to reconcile data operator provisioning.

Configurations, description, source package, availability, and access control.

### DSConfig

- **DSObject**
- **Global**

DSConfig stores information for container registry, and package location for data solutions.

Provider Administrator also uses DSConfig instance to control tenant’s accessibility to data solutions.

### DSCluster

- **DSObject**
- **Cluster**

Info from each cluster.

A DSCluster records Data Solutions Operator (DSO)’s version and health.

---

To look up the definition of these data models, you can call the VCD API `/cloudapi/1.0.0/entityTypes?filter=name==ds*`. The API reference is [Get Defined Entity Types](https://example.com/docs/api-reference).
DSInstance

This section explains the DSInstance RDE type since it's the primary data model for the data solutions deployment. The data model is aligned with Kubernetes CRD, although some metadata fields are reserved and will not function as in Kubernetes.

The definition type of DSInstance can be retrieved by the following VCD API call:

```
GET /cloudapi/1.0.0/entityTypes/urn:vcloud:type:vmware:dsInstance:0.1.1.
```

The type name is `urn:vcloud:type:vmware:dsInstance` and version is 0.1.1.

The type definition for this RDE is `urn:vcloud:type:vmware:dsInstance:0.1.1`.

The following table provides information on the DSInstance type properties.

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metadata</td>
<td></td>
<td></td>
<td>Metadata that all used resources must have. This includes all objects users</td>
</tr>
<tr>
<td>metadata.uid</td>
<td>string</td>
<td></td>
<td>The same as entity id.</td>
</tr>
<tr>
<td>metadata.name</td>
<td>string</td>
<td>YES</td>
<td>Name must be unique within a namespace.</td>
</tr>
<tr>
<td>metadata.labels</td>
<td>object</td>
<td></td>
<td>Map of string keys and values that can be used to organize and categorize</td>
</tr>
<tr>
<td>metadata.namespace</td>
<td>string</td>
<td></td>
<td>Fixed value &quot;vcd-ds-workloads&quot;. It cannot be customized.</td>
</tr>
<tr>
<td>metadata.finalizers</td>
<td>string[]</td>
<td></td>
<td>Alerts the operator to clean up resources for the owned deleted object.</td>
</tr>
<tr>
<td>metadata.generation</td>
<td>integer</td>
<td></td>
<td>Reserved.</td>
</tr>
<tr>
<td>metadata.annotations</td>
<td>object</td>
<td></td>
<td>An unstructured key value map stored with a resource that may be set by</td>
</tr>
<tr>
<td>metadata.generatedName</td>
<td>string</td>
<td></td>
<td>Retrieved by the operator utility function.</td>
</tr>
<tr>
<td>metadata.ownerReferences</td>
<td>object[]</td>
<td></td>
<td>Reserved.</td>
</tr>
<tr>
<td>metadata.resourceVersion</td>
<td>string</td>
<td></td>
<td>Reserved.</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>metadata.creationTimestamp</td>
<td>date-time</td>
<td>The time when the object is created.</td>
<td></td>
</tr>
<tr>
<td>metadata.deletionTimestamp</td>
<td>date-time</td>
<td>The time when the object is deleted.</td>
<td></td>
</tr>
<tr>
<td>metadata.deletionGracePeriodSeconds</td>
<td>integer</td>
<td>Reserved.</td>
<td></td>
</tr>
<tr>
<td>spec</td>
<td></td>
<td>Specifies the desired state of DSInstance.</td>
<td></td>
</tr>
<tr>
<td>spec.resource.kind</td>
<td>string</td>
<td>A string value representing the kind of the specific data solution Custom Resource.</td>
<td></td>
</tr>
<tr>
<td>spec.resource.apiVersion</td>
<td>string</td>
<td>APIVersion defines the group and version of the specific data solution Custom Resource.</td>
<td></td>
</tr>
<tr>
<td>spec.resource.spec</td>
<td>object</td>
<td>Spec of the desired resource state. This is the Custom Resource (CR) of the specific data solution instance.</td>
<td></td>
</tr>
<tr>
<td>spec.solutionType</td>
<td>string</td>
<td>The type of data solution.</td>
<td></td>
</tr>
<tr>
<td>spec.additionalResources</td>
<td>object[]</td>
<td>Additional Kubernetes resources of the data solution.</td>
<td></td>
</tr>
<tr>
<td>status</td>
<td></td>
<td>The observed state of a DSInstance.</td>
<td></td>
</tr>
<tr>
<td>status.version</td>
<td>string</td>
<td>Deprecated</td>
<td></td>
</tr>
<tr>
<td>status.transport.ip</td>
<td>string</td>
<td>IP is set for load balancer ingress points that are IP-based (typically GCE or OpenStack load balancers) or the clusterIP if the service is not externally exposed.</td>
<td></td>
</tr>
<tr>
<td>status.transport.port</td>
<td>integer</td>
<td>The port that will be exposed by this service.</td>
<td></td>
</tr>
<tr>
<td>status.transport.caBundle</td>
<td>string</td>
<td>CABundle is a PEM-encoded CA bundle of the data solution server.</td>
<td></td>
</tr>
<tr>
<td>Status Field</td>
<td>Type</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>--------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>status.transport.hostname</td>
<td>string</td>
<td>Set for load balancer ingress points that are DNS-based (typically AWS load balancers) or the service name if the service is not externally exposed. e.g.: <code>&lt;name&gt;.&lt;ns&gt;.svc.cluster.local</code></td>
<td></td>
</tr>
<tr>
<td>status.transport.protocol</td>
<td>string</td>
<td>The IP protocol for this port. Supports &quot;TCP&quot;, &quot;UDP&quot;, and &quot;SCTP&quot;.</td>
<td></td>
</tr>
<tr>
<td>status.transport.appProtocol</td>
<td>string</td>
<td>The application protocol for this port.</td>
<td></td>
</tr>
<tr>
<td>status.conditions</td>
<td>object</td>
<td>Conditions contain details for one aspect of the current state of DSInstance.</td>
<td></td>
</tr>
<tr>
<td>status.conditions[].type</td>
<td>string</td>
<td>Type of condition in CamelCase or in foo.example.com/CamelCase.</td>
<td></td>
</tr>
<tr>
<td>status.conditions[].reason</td>
<td>string</td>
<td>A programmatic identifier indicating the reason for the condition's last transition.</td>
<td></td>
</tr>
<tr>
<td>status.conditions[].status</td>
<td>etum</td>
<td>Status of the condition.</td>
<td></td>
</tr>
<tr>
<td>status.conditions[].message</td>
<td>string</td>
<td>A human readable message indicating details about the transition.</td>
<td></td>
</tr>
<tr>
<td>status.conditions[].lastTransitionTime</td>
<td>date-time</td>
<td>The last time the condition transitioned from one status to another.</td>
<td></td>
</tr>
<tr>
<td>status.conditions[].observedGeneration</td>
<td>integer</td>
<td>The metadata generation that the condition was set based upon.</td>
<td></td>
</tr>
<tr>
<td>status.management.caBundle</td>
<td>string</td>
<td>CABundle is a PEM-encoded CA bundle of the management server.</td>
<td></td>
</tr>
<tr>
<td>status.management.url</td>
<td>string</td>
<td>The management server URL.</td>
<td></td>
</tr>
<tr>
<td>status.engineVersion</td>
<td>string</td>
<td>The engine version of this instance.</td>
<td></td>
</tr>
<tr>
<td>status.grafana.caBundle</td>
<td>string</td>
<td>CABundle is a PEM-encoded CA bundle of the Grafana server.</td>
<td></td>
</tr>
<tr>
<td>status.grafana.dashboards</td>
<td>string</td>
<td>The Grafana dashboard URL.</td>
<td></td>
</tr>
</tbody>
</table>
Sample of DSInstance RDE Type

```json
{
    "id": "urn:vcloud:entity:vmware:dsInstance:24f26078-82e1-48ab-a40b-569e96ee1c60",
    "entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
    "name": "mysql-z",
    "externalId": null,
    "entity": {
        "kind": "DSInstance",
        "spec": {
            "resource": {
                "kind": "MySQL",
                "spec": {
                    "tls": {
                        "secret": {
                            "name": "mysql-z-mysql-tls"
                        }
                    },
                    "resources": {
                        "mysql": {
                            "limits": {
                                "cpu": "500m",
                                "memory": "500Mi"
                            },
                            "requests": {
                                "cpu": "500m",
                                "memory": "500Mi"
                            }
                        }
                    },
                    "storageSize": "500Mi",
```
```
"mysqlVersion": {
  "name": "mysql-8.0.29"
},

"highAvailability": {
  "enabled": false
},

"persistentVolumeClaimPolicy": "Delete"
},

"metadata": {
  "annotations": {},
  "creationTimestamp": "2023-03-23T08:12:19Z"
},

"apiVersion": "with.sql.tanzu.vmware.com/v1"
},

"solutionType": "MySQL",

"additionalResources": [
  {
    "kind": "Secret",
    "type": "Opaque",
    "metadata": {
      "name": "mysql-z-credentials"
    },
    "apiVersion": "v1"
  },
  {
    "kind": "Certificate",
    "spec": {
      "usages": [
        "server auth",
        "client auth"
      ]
    }
  }
]
"subject": {
  "organizations": [
    "ACME"
  ]
},
"dnsNames": [
  "mysql-z.vcd-ds-workloads.svc.cluster.local",
  "mysql-z.vcd-ds-workloads.svc",
  "mysql-z.vcd-ds-workloads",
  "mysql-z"
],
"duration": "87600h0m0s",
"issuerRef": {
  "kind": "Issuer",
  "name": "vcd-ds-ca-issuer",
  "group": "cert-manager.io"
},
"commonName": "mysql-z",
"secretName": "mysql-z-mysql-tls",
"renewBefore": "360h0m0s"
},
"metadata": {
  "name": "mysql-z-mysql"
},
"apiVersion": "cert-manager.io/v1"}
"grafana": {
  "caBundle": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tCk1JSURYekNDQWt1Z0F3SUJBZ01RRXzhb0Z4cVRXaW12OC9VTDdzeDYyREFOQmdrcWhaUc5dzBCQFVZrkRFEQXYKTjVkJn0ZnWURUWVFLRxc5UWNTdOXaV04wSUVEv1XWnhb0UV4R
XpBUkJnT1ZCQU1UQz2tkEv1XWnhb0UVnUTBFdwpIaGNONTWdNd01qRTBNGRT4TURRdidoY05Ne0k13TWPFeE1Ea3hNN
RFF3V2pBdk1SZ3dGZ1LEVLFRS0V3OFjbT1xClpXTjBJRWR5WVdaaGJTnXFekFSQmdOWeJTVR9Da2R5WVdaaGJ
rTWRdMEV3Z2dFaU1BMDedu3FHU01lM0RRRUlKQVFVQUE0SUJEd0F3Z2dFS0FSvSUJBUUN2STkU0Gh2S1BJTDTfN2
dtM2V6MXwv1JiHSmVMaGbEBDBUA05QbkNxWq4SDdqXZescksIuFHV91V1TivVtG5ZnpqNjdxbWZ4WzRwRWr
VdLMUFsKdIZOUzlqK2xxUVFxSVQ2R3dUbHHzCmltSNWpWHNSTUROsFBEQU4WQS9NVFhQ0NBSDYnNFCMWMRTNGFJ
L2VxY29LSEJVnh2ME5Bc1RZeXM0NtNhUWUKVEXexeWes5ZUF4V3FYNHfpbUdUTcTsdi9Qc2EwS3ZKEOVNY09OGL
yXYZOU9WFOHgzZHVT2NnNWozc1l3XkxYwpLaEi1wRzF3N1U0dkNWQ1NIWWJpCfYcNcmRNnnNNZtBV2Np0d53bG
1FWULzMK4yJFWZmMnVlIDWQnbqhtT2VWC1FKvb1weDEGvzbh3tbk555bTThGU3RlaUVVVG1NRUV0eEl10VPqcvWcO
zRGS1ZKGqNdqFkR2pkeKxUX0E0ExVQXKHRDHpQ193UUVPb01DqRBEZJnT1ZIU1VFMPbSVUJn3ZJCZ0VQG1Fj
REFRWUL0d1lC1QFVSF3XDed1EVL1vVApBUUvgqFKvF03RU1veKqFQmdOvhKrhRnZrNCTL3B
2cuOvaO25WTNtGR90TEnd0ZBWUWJUJBScKJBMHdN1ElkWjKnaFpntRnZV50oTUEwR0NtcUdTSWIZrRFFQkN3VU
FBNLcQCVFVBUU0WTO2ZM02LVpsekhkTAyYrMkBBzYrMr2QZQKRXSEhGp3MlRNNtlaniraUY5eWkzenvkTKCN
k9LqLdINWn1d0t5aElH1kJJFZJcnB2Qp1RC9Z2nFVdGN0Gdja0t5Ykoxa3pVRW1NaiselRfTm5eExt1l5
YWZCQXphWGF5eUrwbDBGWVX00E9NVxkBChAxrY94c2FFN3ZL2w3TVdaVzFIZo4w4W1vcDJVZm5RZE9qWHEhESbE
2dHJMKzMrNNnS35MhDOU3creStdLQKRKXUR3G0ZnZpMVMOeHChEq0R3IIV15dmUXWUZNMK9MRllvU3Y3T3G
1Wmm1UE01QmFCCDBCjuc4ySF2MZWFEZApss09QKzhLQUXzdk44V21KV1ZITUlUTXOyTnF0W1tw0S0hFbi8xVGPAY
k5Ji0p3SDJTFtMRS9uULZT09WU1F0Cm1CRC8KLS0tLS1FTqQgOSV38LSUNBVEUfLSoL0tLQo=",
  "dashboards": [
    {
      "url": "https://grafana.10.89.133.34.nip.io/d/MQWgroiiz/mysql-overview?var-instance=mysql-z"
    }
  ]
},
"transport": {
  "ip": "100.66.237.215",
  "port": 3306,
  "caBundle": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tCk1JSURYekNDQWt1Z0F3SUJBZ01RRXzhb0Z4cVRXaW12OC9VTDdzeDYyREFOQmdrcWhaUc5dzBCQFVZrkRFEQXYKTjVkJn0ZnWURUWVFLRxc5UWNTdOXaV04wSUVEv1XWnhb0UV4R
XpBUkJnT1ZCQU1UQz2tkEv1XWnhb0UVnUTBFdwpIaGNONTWdNd01qRTBNGRT4TURRdidoY05Ne0k13TWPFeE1Ea3hNN
RFF3V2pBdk1SZ3dGZ1LEVLFRS0V3OFjbT1xClpXTjBJRWR5WVdaaGJTnXFekFSQmdOWeJTVR9Da2R5WVdaaGJ
rTWRdMEV3Z2dFaU1BMDedu3FHU01lM0RRRUlKQVFVQUE0SUJEd0F3Z2dFS0FSvSUJBUUN2STkU0Gh2S1BJTDTfN2
dtM2V6MXwv1JiHSmVMaGbEBDBUA05QbkNxWq4SDdqXZescksIuFHV91V1TivVtG5ZnpqNjdxbWZ4WzRwRWr
VdLMUFsKdIZOUzlqK2xxUVFxSVQ2R3dUbHHzCmltSNWpWHNSTUROsFBEQU4WQS9NVFhQ0NBSDYnNFCMWMRTNGFJ
L2VxY29LSEJVnh2ME5Bc1RZeXM0NtNhUWUKVEXexeWes5ZUF4V3FYNHfpbUdUTcTsdi9Qc2EwS3ZKEOVNY09OGL
yXYZOU9WFOHgzZHVT2NnNWozc1l3XkxYwpLaEi1wRzF3N1U0dkNWQ1NIWWJpCfYcNcmRNnnNNZtBV2Np0d53bG
1FWULzMK4yJFWZmMnVlIDWQnbqhtT2VWC1FKvb1weDEGvzbh3tbk555bTThGU3RlaUVVVG1NRUV0eEl10VPqcvWcO
zRGS1ZKGqNdqFkR2pkeKxUX0E0ExVQXKHRDHpQ193UUVPb01DqRBEZJnT1ZIU1VFMPbSVUJn3ZJCZ0VQG1Fj
REFRWUL0d1lC1QFVSF3XDed1EVL1vVApBUUvgqFKvF03RU1veKqFQmdOvhKrhRnZrNCTL3B
2cuOvaO25WTNtGR90TEnd0ZBWUWJUJBScKJBMHdN1ElkWjKnaFpntRnZV50oTUEwR0NtcUdTSWIZrRFFQkN3VU
FBNLcQCVFVBUU0WTO2ZM02LVpsekhkTAyYrMkBBzYrMr2QZQKRXSEhGp3MlRNNtlaniraUY5eWkzenvkTKCN
k9LqLdINWn1d0t5aElH1kJJFZJcnB2Qp1RC9Z2nFVdGN0Gdja0t5Ykoxa3pVRW1NaiselRfTm5eExt1l5
YWZCQXphWGF5eUrwbDBGWVX00E9NVxkBChAxrY94c2FFN3ZL2w3TVdaVzFIZo4w4W1vcDJVZm5RZE9qWHEhESbE
2dHJMKzMrNNnS35MhDOU3creStdLQKRKXUR3G0ZnZpMVMOeHChEq0R3IIV15dmUXWUZNMK9MRllvU3Y3T3G
1Wmm1UE01QmFCCDBCjuc4ySF2MZWFEZApss09QKzhLQUXzdk44V21KV1ZITUlUTXOyTnF0W1tw0S0hFbi8xVGPAY
k5Ji0p3SDJTFtMRS9uULZT09WU1F0Cm1CRC8KLS0tLS1FTqQgOSV38LSUNBVEUfLSoL0tLQo=",
  "dashboards": [
    {
      "url": "https://grafana.10.89.133.34.nip.io/d/MQWgroiiz/mysql-overview?var-instance=mysql-z"
    }
  ]
}
```json
{
    "hostname": "mysql-z.vcd-ds-workloads.svc.cluster.local",
    "protocol": "TCP",
    "appProtocol": "mysql"
},
"conditions": [
    {
      "type": "ReconcileSucceeded",
      "reason": "UpToDate",
      "status": "True",
      "message": "",
      "lastTransitionTime": "2023-03-23T09:01:51Z"
    },
    {
      "type": "Ready",
      "reason": "MySQLAvailable",
      "status": "True",
      "message": "Current phase: Running",
      "lastTransitionTime": "2023-03-23T08:15:34Z"
    }
]
```
"management":{},
"engineVersion":{
  "image":"registry.tanzu.vmware.com/packages-for-vmware-tanzu-data-services/tds-packages@sha256:fd706c2075896bf75f1af533cce9ce411bb57595d3da2a50ed7a407bd2bd58ca",
  "version":"8.0.29"
},
"metadata":{
  "uid":"urn:vcloud:entity:vmware:dsInstance:24f26078-82e1-48ab-a40b-569e96e1c60",
  "name":"mysql-z",
  "namespace":"vcd-ds-workloads",
  "finalizers":[
    "finalizers.dsinstances.vcloud.vmware.com/deletion"
  ],
  "annotations":{
    "vcd-ds-meta/cluster-id":"urn:vcloud:entity:vmware:capvcdCluster:3d4ff0d1-5991-43ba-81f1-775831c10265",
    "vcd-ds-meta/object-hash":"9746bc88c",
    "vcd-ds-meta/cluster-name":"tkgm1"
  },
  "creationTimestamp":"2023-03-23T08:11:28Z"
},
"apiVersion":"vcloud.vmware.com/v1alpha1"
},
"state":"RESOLVED",
"owner":{
  "name":"ta",
  "id":"urn:vcloud:user:69974616-950e-4b76-a5ad-1489d3d8b8e"
},
"org":{
"name": "ACME",
"id": "urn:vcloud:org:614b8c90-5bd5-4cb2-afca-34bd8aaaf26c"
}
Data Solutions Extension Operations

The following list of Data Solutions Extension operations is organized by a user persona and provides a sample API request.

Provider Administrator

The API requests that the provider administrator can make on data solution instances include listing the data solutions available through the extension and publishing data solutions to a tenant organization.

List Data Solutions

A provider administrator needs to list available data solutions before taking action on any solution. Here is a sample of the API request that the provider administrator needs to make to get information on the available data solutions.

### List Data Solutions - Sample

<table>
<thead>
<tr>
<th>Method</th>
<th>GET</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entities/types/vmware/dsConfig/0.1?filter=state==RESOLVED</td>
</tr>
<tr>
<td>Request Payload</td>
<td>N/A</td>
</tr>
<tr>
<td>Response Payload</td>
<td>DSConfig</td>
</tr>
<tr>
<td>API Reference</td>
<td>Get Defined Entities By Entity Type</td>
</tr>
</tbody>
</table>

**REQUEST**

```
GET /cloudapi/1.0.0/entities/types/vmware/dsConfig/0.1?pageSize=64&page=1&filter=state==RESOLVED HTTP/1.1
Accept: application/*+json;version=36.0,application/json;version=36.1
Host: my-vcd-cloud.local
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...
```

**RESPONSE**

```
HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location: https://my-vcd-cloud.local/cloudapi/1.0.0/entities/types/vmware/dsConfig/0.1

{
    "resultTotal":4,
    "pageCount":1,
    "page":1,
...}
```
"values": [
  {
    "id": "urn:vcloud:entity:vmware:dsConfig:72595ccb-651f-4ec8-8f9d-35b30be0b897",
    "entityType": "urn:vcloud:type:vmware:dsConfig:0.1.1",
    "name": "VCD Data Solutions Essentials",
    "externalId": null,
    "entity": {
      "kind": "DSConfig", "spec": ...
    },
    "state": "RESOLVED",
    "owner": {
      "name": "admin",
      "id": "urn:vcloud:user:66c814ed-079b-483c-8e52-6ffa8a007786"
    },
    "org": {
      "name": "System",
      "id": "urn:vcloud:org:a93c9db9-7471-3192-8d09-a8f7ea85f9"
    }
  },
  {
    "id": "urn:vcloud:entity:vmware:dsConfig:33d3f0cb-ad36-4d79-a82f-aa050c4f4543",
    "entityType": "urn:vcloud:type:vmware:dsConfig:0.1.1",
    "name": "VMware SQ with MySQL",
    "externalId": null,
    "entity": {
      "kind": "DSConfig", "spec": ...
    },
    "state": "RESOLVED",
    "owner": {
      "name": "admin",
      "id": "urn:vcloud:user:66c814ed-079b-483c-8e52-6ffa8a007786"
    },
    "org": {
      "name": "System",
      "id": "urn:vcloud:org:a93c9db9-7471-3192-8d09-a8f7ea85f9"
    }
  }
]
"id":"urn:vcloud:user:66c814ed-079b-483c-8e52-6ffa8a007786",
"org":{
    "name":"System",
    "id":"urn:vcloud:org:a93c9db9-7471-3192-8d09-a8f7eeda85f9"
}
},
{
    "id":"urn:vcloud:entity:vmware:dsConfig:0ede0297-035d-4398-9ae9-00a9ce5c8872",
    "entityType":"urn:vcloud:type:vmware:dsConfig:0.1.1",
    "name":"VMware SQL with Postgres",
    "externalId":null,
    "entity":{
        "kind":"DSConfig","spec":...
    },
    "state":"RESOLVED",
    "owner":{
        "name":"admin",
        "id":"urn:vcloud:user:66c814ed-079b-483c-8e52-6ffa8a007786"
    },
    "org":{
        "name":"System",
        "id":"urn:vcloud:org:a93c9db9-7471-3192-8d09-a8f7eeda85f9"
    }
},
{
    "id":"urn:vcloud:entity:vmware:dsConfig:38788df4-5196-4b25-a545-6daee7bf8288",
    "entityType":"urn:vcloud:type:vmware:dsConfig:0.1.1",
    "name":"VMware RabbitMQ",
    "externalId":null,
    "entity":{
        "kind":"DSConfig","spec":...
    }
}
In the above sample, the response contains 3 data solutions: VMware SQL with MySQL, VMware SQL with PostgreSQL, and VMware RabbitMQ. Please note the entity VCD Data Solutions Essentials is a built-in resource, and you will also use it later.
Publish Data Solutions
The provider administrator can publish a data solution to a tenant organization. The sequence to publish a data solution is the following:

1. Look up rights bundle by name `vmware:dataSolutionsRightsBundle`.
2. Publish the rights bundle to the tenant organization.
3. Publish the VCD Data Solutions Essentials entity to the tenant organization.
4. Publish the data solution entity to the tenant organization.

DSE has a bundle of rights called `vmware:dataSolutionsRightsBundle`. This bundle needs to be published to a tenant organization.

Here we will outline the process of publishing a VMware SQL with MySQL data solution to a tenant organization.

1. First, we need to query the tenant organization id by providing the rights bundle name.

<table>
<thead>
<tr>
<th>Method</th>
<th>GET</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>/cloudapi/1.0.0/rightsBundles?filter=name==vmware:dataSolutionsRightsBundle</td>
</tr>
<tr>
<td>Request Payload</td>
<td>N/A</td>
</tr>
<tr>
<td>Response Payload</td>
<td>Page&lt;RightBundle&gt;</td>
</tr>
<tr>
<td>API Reference</td>
<td>Query Rights Bundles</td>
</tr>
</tbody>
</table>

Publishing a Rights Bundle to a Tenant Organization - Sample

------------------------REQUEST------------------------

GET /cloudapi/1.0.0/rightsBundles?filter=name==vmware:dataSolutionsRightsBundle
HTTP/1.1
Accept: application/*+json;version=36.1,application/json;version=36.1
Host: my-vcd-cloud.local
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMzdlZTFkNC1iNmUzLTQz...

------------------------RESPONSE------------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location: https://my-vcd-cloud.local/cloudapi/1.0.0/rightsBundles

{ "resultTotal":1,
  "pageCount":1,
}
"page":1,
"pageSize":25,
"associations":null,
"values":[
{
  "name":"vmware:dataSolutionsRightsBundle",
  "id":"urn:vcloud:rightsBundle:8c9de287-258f-40d4-a8d7-4caf3d17d1b5",
  "description":"Data Solutions Rights Bundle",
  "bundleKey":"com.vmware.vcloud.undefined.key",
  "readOnly":false,
  "publishAll":false
}
]

2. The rights bundle has ID urn:vcloud:rightsBundle:8c9de287-258f-40d4-a8d7-4caf3d17d1b5. We will then publish it to the tenant organization.

<table>
<thead>
<tr>
<th>Method</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>/cloudapi/1.0.0/rightsBundles/{id}/tenants/publish</td>
</tr>
<tr>
<td>Request Payload</td>
<td>Array&lt;Id&gt;</td>
</tr>
<tr>
<td>Response Payload</td>
<td>Page&lt;Organization&gt;</td>
</tr>
<tr>
<td>API Reference</td>
<td>Post Rights Bundle Publish</td>
</tr>
</tbody>
</table>
How to Look up Tenant Name by Rights Bundle vmware:dataSolutionsRightsBundle - Sample

-----------------------------REQUEST-----------------------------

POST /cloudapi/1.0.0/rightsBundles/urn:vcloud:rightsBundle:8c9de287-258f-40d4-a8d7-4caf3d17d1b5/tenants/publish HTTP/1.1
Accept: application/*+json;version=36.1,application/json;version=36.1
Host: my-vcd-cloud.local
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...

{  
  "values": [  
    {  
      "id":"urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
    }  
  ]
}

-----------------------------RESPONSE-----------------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location: https://my-vcd-cloud.local/cloudapi/1.0.0/rightsBundles/urn:vcloud:rightsBundle:8c9de287-258f-40d4-a8d7-4caf3d17d1b5/tenants/publish

{
  "resultTotal": 3,
  "pageCount": 1,
  "page": 1,
  "pageSize": 128,
  "associations": null,
  "values": [
    {  
      "name": "ACME",
      "id": "urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
    }
  ]
}
"id":"urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f"
},
{
"name":"Tenant1",
"id":"urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
},
{
"name":"Tenant2",
"id":"urn:vcloud:org:0f5f2742-6388-4119-bf2c-f080183d9ef1"
}

3. The next step is to grant access control of the VMware Cloud Director Data Solutions Essentials entity to the tenant organization.

<table>
<thead>
<tr>
<th>Method</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>/cloudapi/1.0.0/entities/{id}/accessControls</td>
</tr>
<tr>
<td>Request Payload</td>
<td>Grant</td>
</tr>
<tr>
<td>Response Payload</td>
<td>AccessControl</td>
</tr>
<tr>
<td>API Reference</td>
<td>Create Entity Access Control Grant</td>
</tr>
</tbody>
</table>
Publish VCD Data Solutions Essentials Entity to a Tenant Organization - Sample

------------------------REQUEST------------------------

POST /cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsConfig:72595ccb-651f-4ec8-8f9d-35b30be0b897/accessControls HTTP/1.1
Accept: application/*+json;version=36.1,application/json;version=36.1
Host: my-vcd-cloud.local
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IlLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...
{
  "tenant":{
    "id":"urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
  },
  "grantType":"MembershipAccessControlGrant",
  "accessLevelId":"urn:vcloud:accessLevel:ReadOnly",
  "memberId":"urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
}

------------------------RESPONSE------------------------

HTTP/1.1 201 Created
Content-Type: application/json;version=36.1
Content-Location: https://my-vcd-cloud.local/cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsConfig:72595ccb-651f-4ec8-8f9d-35b30be0b897/accessControls
{
  "id":"urn:vcloud:accessControl:f3572dce-1412-49a0-b2c0-c084f4aee97d",
  "tenant":{
    "name":"Tenant1",
    "id":"urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
  },
  "grantType":"MembershipAccessControlGrant",
  "objectId":"urn:vcloud:entity:vmware:dsConfig:72595ccb-651f-4ec8-8f9d-35b30be0b897",
}
Finally, we will grant access control over a VMware SQL with MySQL entity to the tenant organization.

Publish VMware SQL with MySQL Entity to the Organization - Sample

-------------REQUEST----------------------

POST /cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsConfig:33d3f0cb-ad36-4d79-a82f-aa050c4f4543/accessControls HTTP/1.1
Accept: application/*+json;version=36.1,application/json;version=36.1
Host: my-vcd-cloud.local
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...

{
    "tenant":{
        "id": "urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
    },
    "grantType": "MembershipAccessControlGrant",
    "accessLevelId": "urn:vcloud:accessLevel:ReadOnly",
    "memberId": "urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
}

------------------------RESPONSE------------------------

HTTP/1.1 201 Created
Content-Type: application/json;version=36.1
Content-Location: https://my-vcd-cloud.local/cloudbapi/1.0.0/entities/urn:vcloud:entity:vmware:dsConfig:33d3f0cb-ad36-4d79-a82f-aa050c4f4543/accessControls

{
    "id": "urn:vcloud:accessControl:79ee7ee0-be55-46b8-8ec5-d7abd74812d8",
}
"tenant":{
    "name":"Tenant1","id":"urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"
},
"grantType":"MembershipAccessControlGrant",
"objectId":"urn:vcloud:entity:vmware:dsConfig:33d3f0cb-ad36-4d79-a82f-aa050c4f4543",
"accessLevelId":"urn:vcloud:accessLevel:ReadOnly",
"memberId":"urn:vcloud:org:a9eb338c-473f-436d-81e2-c60ffa2c995d"}
Tenant User
The tenant user persona can execute the following API queries: view published data solutions service, deploy, update, and delete a data solutions instance.

View Published Data Solutions
A tenant user can query published data solutions by RDE type DSConfig.

<table>
<thead>
<tr>
<th>Method</th>
<th>GET</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entities/types/vmware/dsConfig/0.1?filter=state==RESOLVED</td>
</tr>
<tr>
<td>Request Payload</td>
<td>N/A</td>
</tr>
<tr>
<td>Response Payload</td>
<td>Page&lt;DSConfig&gt;</td>
</tr>
<tr>
<td>API Reference</td>
<td>Get Defined Entities By Entity Type</td>
</tr>
</tbody>
</table>

List Published Solutions - Sample
--------------------------REQUEST--------------------------

GET /cloudapi/1.0.0/entities/types/vmware/dsConfig/0.1?pageSize=64&page=1 HTTP/1.1
Host: my-vcd-cloud.local
Accept: application/**+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...

--------------------------RESPONSE--------------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location: https://my-vcd-cloud.local/cloudapi/1.0.0/entities/types/vmware/dsConfig/0.1

{
  "resultTotal": 2,
  "pageCount": 1,
}
"page": 1,
"pageSize": 25,
"associations": null,
"values": [
{
   "id": "urn:vcloud:entity:vmware:dsConfig:b9c6cf0d-3c4c-4841-97fd-a6e3b004e1f7",
   "entityType": "urn:vcloud:type:vmware:dsConfig:0.1.1",
   "name": "VCD Data Solutions Essentials",
   "externalId": null,
   "entity": {
      "kind": "DSConfig",
      "spec": {
         "artifacts": [
            {
               "name": "VCD Data Solutions",
               "type": "PackageRepository",
               "version": "1.1.0-dev.271.g38a9dd31",
               "manifests": "...",
               "defaultImage": "projects.registry.vmware.com/vcdds/vcd-data-solutions-package-repo:1.1.0",
               "defaultVersion": "1.1.0"
            }
         ],
         "description": "Data solutions essentials",
         "dockerConfig": {
            "auths": {
               "harbor-repo.vmware.com": {
                  "password": "K^q4Ev.Ry9VBd58i.1^",
                  "username": "svc.bot.alp-devops",
               }
            }
         }
      }
   }
}
"description": "",
},
"demo-registry.vmware.com": {
  "password": null,
  "username": null,
  "description": ""
},
"registry.tanzu.vmware.com": {
  "password": "ca$hC0w2022",
  "username": "alp.test.user1@vmwareone.com",
  "description": ""
}
},
"solutionType": "Essentials"
},
"status": {},
"metadata": {
  "name": "default-essentials-config",
  "creationTimestamp": null
},
"apiVersion": "vcloud.vmware.com/v1alpha1"
},
"state": "RESOLVED",
"owner": {
  "name": "admin",
  "id": "urn:vcloud:user:1042e076-484d-4bd3-9bc4-b0cdbc4da3a"
},
"org": {
  "name": "System",}
"id": "urn:vcloud:org:a93c9db9-7471-3192-8d09-a8f7eeda85f9"
}
},
{
"id": "urn:vcloud:entity:vmware:dsConfig:fc7d693f-9763-4ab0-a47a-9f6596ff95da",
"entityType": "urn:vcloud:type:vmware:dsConfig:0.1.1",
"name": "VMware SQL with MySQL",
"externalId": null,
"entity": {
"kind": "DSConfig",
"spec": {
"summary": "Auto provisioning of MySQL with enterprise-grade support from VMware.",
"artifacts": [
{
"name": "VMware SQL with MySQL",
"type": "PackageRepository",
"image": "registry.tanzu.vmware.com/packages-for-vmware-tanzu-data-services/tds-packages:1.6.0",
"version": "1.6.2",
"defaultImage": "registry.tanzu.vmware.com/packages-for-vmware-tanzu-data-services/tds-packages:1.6.0",
"defaultVersion": "1.6.2"
}
],
"description": "VMware SQL with MySQL provides automate provisioning, management, and operations of dedicated MySQL instances running on Kubernetes.",
"solutionType": "MySQL"
},
"status": {},
"metadata": {
"name": "default-mysql-config",
"creationTimestamp": null
},
"apiVersion": "vcloud.vmware.com/v1alpha1"
},
"state": "RESOLVED",
"owner": {
"name": "admin",
"id": "urn:vcloud:user:1042e076-484d-4bd3-9bc4-b0cdbf4da3a"
},
"org": {
"name": "System",
"id": "urn:vcloud:org:a93c9db9-7471-3192-8d09-a8f7eeda85f9"
}
]}
}
Deploy a Data Solution Instance

You can use Data Solutions API to deploy a data solutions instance as a tenant user. The following is the structure of the API POST request that you need to execute to deploy a data solutions instance. This section provides sample API queries to deploy the following data solutions - RabbitMQ, VMware SQL with MySQL, and VMware SQL with PostgreSQL.

<table>
<thead>
<tr>
<th>Method</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entityTypes/{id}</td>
</tr>
<tr>
<td>Request Payload</td>
<td>DefinedEntityType&lt;DSInstance&gt;</td>
</tr>
<tr>
<td>Response Payload</td>
<td>N/A</td>
</tr>
<tr>
<td>API Reference</td>
<td>Create Defined Entity Type</td>
</tr>
</tbody>
</table>

Deploy RabbitMQ with Minimal Template - Sample

------------------------REQUEST------------------------

POST /cloudapi/1.0.0/entityTypes/urn:vcloud:type:vmware:dsInstance:0.1.1 HTTP/1.1
Host: http://localhost:4200
Accept: application/*+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...
Content-Type: application/json

{
    "name": "rabbitmq-minimal",
    "entity": {
        "metadata": {
            "annotations": {
                "vcd-ds-meta/cluster-name": "tkgm1",
                "vcd-ds-meta/cluster-id": "***"
            },
            "name": "rabbitmq-minimal",
            "creationTimestamp": "2023-03-15T06:12:25.563Z"
        }
    }
}
"apiVersion": "vcloud.vmware.com/v1alpha1",
"kind": "DSInstance",
"spec": {
    "resource": {
        "apiVersion": "rabbitmq.com/v1beta1",
        "kind": "RabbitmqCluster",
        "spec": {
            "replicas": 1,
            "resources": {
                "requests": {
                    "cpu": "1",
                    "memory": "2Gi"
                },
                "limits": {
                    "cpu": "1",
                    "memory": "2Gi"
                }
            },
            "rabbitmq": {
                "additionalConfig": "cluster_partition_handling = pause_minority\nvmm_memory_high_watermark_paging_ratio = 0.99\ndisk_free_limit.relative = 1.0\ncollect_statistics_interval = 10000"
            },
            "persistence": {
                "storage": "10Gi"
            },
            "affinity": {
                "podAntiAffinity": {

            
```
"requiredDuringSchedulingIgnoredDuringExecution": [
{
  "labelSelector": {
    "matchExpressions": [
      {
        "key": "app.kubernetes.io/name",
        "operator": "In",
        "values": [
          "rabbitmq-minimal"
        ]
      }
    ]
  },
  "topologyKey": "kubernetes.io/hostname"
}
],
"solutionType": "RabbitMQ",
"additionalResources": [
{
  "apiVersion": "v1",
  "kind": "Secret",
  "metadata": {
    "name": "rabbitmq-minimal-default-user"
  },
  "type": "Opaque",
  "stringData": {

"username": "***",
"password": "***",
"default_user.conf": "default_user = ***
default_pass = ***
"

-----------------------
RESPONSE
----------------------

HTTP/1.1 202 Accepted

Content-Type: application/json;version=36.1
Content-Location: http://localhost:4200/cloudapi/1.0.0/entityTypes/urn:vcloud:type:vmware:dsInstance:0.1.1

Deploy MySQL Instance with Minimal Template - Sample

-----------------------
REQUEST
----------------------

POST /cloudapi/1.0.0/entityTypes/urn:vcloud:type:vmware:dsInstance:0.1.1 HTTP/1.1
Host: http://localhost:4200
Accept: application/*+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...

Content-Type: application/json

{
    "name": "mysql-minimal",
    "entity": {}
"metadata": {
  "annotations": {
    "vcd-ds-meta/cluster-name": "tkgml",
    "vcd-ds-meta/cluster-id": "urn:vcloud:entity:vmware:capvcdCluster:30106b0e-433d-408b-b0b1-e4eccf680a41"
  },
  "name": "mysql-minimal",
  "creationTimestamp": "2023-03-15T06:22:28.419Z"
},
"apiVersion": "vcloud.vmware.com/v1alpha1",
"kind": "DSInstance",
"spec": {
  "resource": {
    "apiVersion": "with.sql.tanzu.vmware.com/v1",
    "kind": "MySQL",
    "spec": {
      "tls": {
        "secret": {
          "name": "mysql-minimal-mySQL-tls"
        }
      },
      "highAvailability": {
        "enabled": false
      },
      "storageSize": "500Mi",
      "persistentVolumeClaimPolicy": "Delete",
      "resources": {
        "mysql": {
          "limits": {
            "cpu": "500m",
            "memory": "500Mi"
          },
          "requests": {
            "cpu": "100m",
            "memory": "100Mi"
          }
        }
      }
    }
  }
}
{"memory": "500Mi"},
"requests": {
    "cpu": "500m",
    "memory": "500Mi"
}]
},
"solutionType": "MySQL",
"additionalResources": [
    {
        "apiVersion": "v1",
        "kind": "Secret",
        "metadata": {
            "name": "mysql-minimal-credentials"
        },
        "type": "Opaque",
        "stringData": {
            "appUserPassword": ""
        }
    },
    {
        "apiVersion": "cert-manager.io/v1",
        "kind": "Certificate",
        "metadata": {
            "name": "mysql-minimal-mysql"
        },
        "spec": {
            "controller": true,
            "issuer": "letsencrypt-free"
"subject": {
    "organizations": [
    "ACME"
  ]
},
"commonName": "mysql-minimal",
"dnsNames": [
    "mysql-minimal.vcd-ds-workloads.svc.cluster.local",
    "mysql-minimal.vcd-ds-workloads.svc",
    "mysql-minimal.vcd-ds-workloads",
    "mysql-minimal"
],
"duration": "87600h0m0s",
"issuerRef": {
    "group": "cert-manager.io",
    "kind": "Issuer",
    "name": "vcd-ds-ca-issuer"
},
"renewBefore": "360h0m0s",
"secretName": "mysql-minimal-mysql-tls",
"usages": [
    "server auth",
    "client auth"
]
Deploy PostgreSQL Instance with Minimum Template - Sample

POST /cloudapi/1.0.0/entityTypes/urn:vcloud:type:vmware:dsInstance:0.1.1 HTTP/1.1
Host: http://localhost:4200
Accept: application/*+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTRz...
Content-Type: application/json

{
    "name": "postgres-minimal",
    "entity": {
        "metadata": {
            "annotations": {
                "vcd-ds-meta/cluster-name": "tkgm1",
                "vcd-ds-meta/cluster-id": "urn:vcloud:entity:vmware:capvcdCluster:30106b0e-433d-408b-b0b1-e4ecf680a41"
            },
            "name": "postgres-minimal",
            "creationTimestamp": "2023-03-15T06:26:10.348Z"
        }
    }
}
"apiVersion": "vcloud.vmware.com/v1alpha1",
"kind": "DSInstance",
"spec": {
  "resource": {
    "apiVersion": "sql.tanzu.vmware.com/v1",
    "kind": "Postgres",
    "spec": {
      "highAvailability": {
        "enabled": false
      },
      "storageSize": "250Mi",
      "persistentVolumeClaimPolicy": "delete",
      "certificateSecretName": "postgres-minimal-postgresql-tls",
      "resources": {
        "data": {
          "limits": {
            "cpu": "450m",
            "memory": "450Mi"
          },
          "requests": {
            "cpu": "450m",
            "memory": "450Mi"
          }
        }
      }
    }
  },
  "solutionType": "Postgres",
  "additionalResources": []
}
"apiVersion": "v1",
"kind": "Secret",
"metadata": {
  "name": "postgres-minimal-db-secret"
},
"type": "Opaque",
"stringData": {
  "dbname": "postgres-minimal",
  "instancename": "postgres-minimal",
  "namespace": "vcd-ds-workloads",
  "password": "***",
  "username": "***"
}
},
{
  "apiVersion": "cert-manager.io/v1",
  "kind": "Certificate",
  "metadata": {
    "name": "postgres-minimal-postgresql"
  },
  "spec": {
    "subject": {
      "organizations": [
        "ACME"
      ]
    },
    "commonName": "postgres-minimal",
    "dnsNames": [
      "*.postgres-minimal-agent.vcd-ds-workloads.svc.cluster.local"
    ]
  }
}
"postgres-minimal.vcd-ds-workloads.svc.cluster.local",
"postgres-minimal.vcd-ds-workloads.svc",
"postgres-minimal.vcd-ds-workloads"
},
"duration": "87600h0m0s",
"issuerRef": {
  "group": "cert-manager.io",
  "kind": "Issuer",
  "name": "vcd-ds-ca-issuer"
},
"renewBefore": "360h0m0s",
"secretName": "postgres-minimal-postgresql-tls",
"usages": [
  "server auth",
  "client auth"
]

---------------------RESPONSE---------------------

HTTP/1.1 202 Accepted
Content-Type: application/json;version=36.1
Content-Location: 
http://localhost:4200/cloudapi/1.0.0/entityTypes/urn:vcloud:type:vmware:dsInstance:0.1.1
Update Solution Instance

A tenant user can update one or more solution instances within the same cluster. Before updating, we need to get the latest ETag of the instance, and it will be returned in the GET response header as a key-value pair. For example, ID urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754.

<table>
<thead>
<tr>
<th>Method</th>
<th>GET</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entities/{id}</td>
</tr>
<tr>
<td>Request Payload</td>
<td>N/A</td>
</tr>
<tr>
<td>Response Payload</td>
<td>DefinedEntity</td>
</tr>
<tr>
<td>API Reference</td>
<td>Get Defined Entity</td>
</tr>
</tbody>
</table>

Get the Latest Etag - Sample

--------------------------REQUEST--------------------------

GET /cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754 HTTP/1.1
Host: http://localhost:4200
Accept: application/**+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...

--------------------------RESPONSE--------------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location: http://localhost:4200/cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754
ETag: NvnWg3GQiNWrxUzUzI/WpbETi72L2Q0rhCjU4+jkA==--gzip

{
  "id": "urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754",
  "entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
}
Then when updating, copy and paste the ETag to the request header of the PUT query. For example, "If-Match: NvnWg3GQicWrNxUzUZi/WpbETi72L2O0rhCjU4+jkA=--gzip"

<table>
<thead>
<tr>
<th>Method</th>
<th>PUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entities/{id}</td>
</tr>
<tr>
<td>Request Payload</td>
<td>DefinedEntity&lt;DSInstance&gt;</td>
</tr>
<tr>
<td>Response Payload</td>
<td>DefinedEntity</td>
</tr>
<tr>
<td>API Reference</td>
<td>Update Defined Entity</td>
</tr>
</tbody>
</table>

------------REQUEST--------------

PUT /cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754 HTTP/1.1
Host: http://localhost:4200
Accept: application/**+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...
Content-Type: application/json
If-Match: NvnWg3GQicWrNxUzUZi/WpbETi72L2O0rhCjU4+jkA=--gzip
```json
{
    "id": "urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754",
    "name": "mysql-z1",
    "entity": {
        "kind": "DSInstance",
        "spec": {
            "resource": {
                "kind": "MySQL",
                "spec": {
                    "tls": {
                        "secret": {
                            "name": "mysql-z1-mysql-tls"
                        }
                    },
                    "resources": {
                        "mysql": {
                            "limits": {
                                "cpu": "500m",
                                "memory": "500Mi"
                            },
                            "requests": {
                                "cpu": "500m",
                                "memory": "500Mi"
                            }
                        }
                    },
                    "storageSize": "500Mi",
                    "highAvailability": {
                        "enabled": false
                    }
                }
            }
        }
    }
}
```
},
"persistentVolumeClaimPolicy": "Delete",
"mysqlVersion": {
  "name": "mysql-8.0.28"
}
},
"metadata": {
  "creationTimestamp": "2023-01-31T13:04:37Z",
  "annotations": {
    "mysql.with.sql.tanzu.vmware.com/update": "once"
  }
},
"apiVersion": "with.sql.tanzu.vmware.com/v1"
},
"solutionType": "MySQL",
"additionalResources": [
  {
    "kind": "Secret",
    "type": "Opaque",
    "metadata": {
      "name": "mysql-z1-credentials"
    },
    "apiVersion": "v1"
  },
  {
    "kind": "Certificate",
    "spec": {
      "usages": [
        "server auth",
        "client auth"
      ]
    }
  }
]
},
"subject": {
  "organizations": [
    "ACME"
  ]
},
"dnsNames": [
  "db-001.vcd-ds-workloads.svc.cluster.local",
  "db-001.vcd-ds-workloads.svc",
  "db-001.vcd-ds-workloads",
  "db-001"
],
"duration": "87600h0m0s",
"issuerRef": {
  "kind": "Issuer",
  "name": "vcd-ds-ca-issuer",
  "group": "cert-manager.io"
},
"commonName": "mysql-z1",
"secretName": "mysql-z1-mysql-tls",
"renewBefore": "360h0m0s"
},
"metadata": {
  "name": "mysql-z1-mysql"
},
"apiVersion": "cert-manager.io/v1"
]
"grafana": {
    "caBundle": "LS0tL...",
    "dashboards": [
    {
        "url": "https://grafana.10.89.132.16.nip.io/...?var-instance=mysql-z1"
    }
    ],
    "transport": {
        "ip": "100.66.112.54",
        "port": 3306,
        "caBundle": "LS0tLS1...",
        "hostname": "mysql-z1.vcd-ds-workloads.svc.cluster.local",
        "protocol": "TCP",
        "appProtocol": "mysql"
    },
    "conditions": [
    {
        "type": "Ready",
        "reason": "MySQLAvailable",
        "status": "True",
        "message": "Current phase: Running",
        "lastTransitionTime": "2023-01-31T13:06:28Z"
    },
    {
        "type": "ReconcileSucceeded",
        "reason": "SolutionTypeNotSupported",
        "status": "False",
        "message": "solution type MySQL is not supported",
    }
    ]
}
"lastTransitionTime": "2023-02-24T10:06:52Z"
}

"management": {}
}

"metadata": {
    "uid": "urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754",
    "name": "mysql-z1",
    "namespace": "vcd-ds-workloads",
    "finalizers": [ 
        "finalizers.dsinstances.vcloud.vmware.com/deletion"
    ],
    "annotations": { 
        "vcd-ds-meta/cluster-id": "urn:vcloud:entity:vmware:capvcdCluster:30106b0e-433d-408b-b0b1-e4eccf680a41",
        "vcd-ds-meta/object-hash": "6b8cf79d68",
        "vcd-ds-meta/cluster-name": "tkgm1"
    },
    "creationTimestamp": "2023-01-31T13:03:53Z"
},

"apiVersion": "vcloud.vmware.com/v1alpha1"
}

---------------------------------RESPONSE---------------------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content Location:
http://localhost:4200/cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754

{
  "id": "urn:vcloud:entity:vmware:dsInstance:c1f87ae4-b50c-4eea-a751-d784bf7f6754",
  "entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
  "name": "mysql-z1",
  "externalId": null,
  "entity": {
    "kind": "DSInstance",
    "spec": ...
  },
  "state": "RESOLVED",
  "owner": { "name": "ta", "id": "urn:vcloud:user:34d11c84-3dfc-4fb8-b280-d4b84214dc43" },
  "org": { "name": "ACME", "id": "urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f"
}
}
Delete Solution Instance

A tenant user can delete data solutions. Before deleting, you need to get the latest ETag of the instance, and it will be returned in the GET response header as a key-value pair.

<table>
<thead>
<tr>
<th>Method</th>
<th>GET</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entities/{id}</td>
</tr>
<tr>
<td>Request Payload</td>
<td>N/A</td>
</tr>
<tr>
<td>Response Payload</td>
<td>DefinedEntity</td>
</tr>
</tbody>
</table>

Get the Latest Etag - Sample

-----------------------------REQUEST-----------------------------

GET /cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd HTTP/1.1
Host: http://localhost:4200
Accept: application/+json;version=36.1,application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz...  

-----------------------------RESPONSE-----------------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location: http://localhost:4200/cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd
ETag: P0wVQ0Da31qD39ODVqY/az0a2w4Ids1gM7B72i8U1dQ==

```json
{
  "id": "urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd",
  "entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
  "name": "rabbitmq-minimal",
}  
```
"externalId": null,
"entity": {
    "kind": "DSInstance",
    "spec": ...
},
"state": "RESOLVED",
"owner": { "name": "ta", "id": "urn:vcloud:user:34d11c84-3dfc-4fb8-b280-d4b84214dc43" },
"org": { "name": "ACME", "id": "urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f" }
}

Then when deleting, copy and paste the ETag to the request header of the PUT API request. For example, "If-Match: P0wVQ0Da31qD39ODVqY/azOa2w4Ids1gM7B72i8U1dQ=--gzip"

<table>
<thead>
<tr>
<th>Method</th>
<th>PUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entities/{id}</td>
</tr>
<tr>
<td>Request Payload</td>
<td>DefinedEntity&lt;DSInstance&gt;</td>
</tr>
<tr>
<td>Response Payload</td>
<td>DefinedEntity</td>
</tr>
</tbody>
</table>

API Reference
Update Defined Entity

Use the Latest Etag to Delete Rabbitmq Instance - Sample

------------------------------- REQUEST -----------------------------

PUT /cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd HTTP/1.1
Host: http://localhost:4200
Accept: application/++json;version=36.1,application/json;version=36.1
Content-Type: application/json;version=36.1
Authorization: Bearer eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiJjaHJpc2IiLCJpc3MiOiJiMDljZTFkNC1iNmUzLTQz... Content-Type: application/json
If-Match: P0wVQ0Da31qD39ODVqY/azOa2w4Ids1gM7B72i8U1dQ=--gzip
{
    "id": "urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd",
    "entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
    "name": "rabbitmq-minimal",
    "externalId": null,
    "entity": {
        "kind": "DSInstance",
        "spec": {
            "resource": {
                "kind": "RabbitmqCluster",
                "spec": {
                    "affinity": {
                        "podAntiAffinity": {
                            "requiredDuringSchedulingIgnoredDuringExecution": [
                                {
                                    "topologyKey": "kubernetes.io/hostname",
                                    "labelSelector": {
                                        "matchExpressions": [
                                            {
                                                "key": "app.kubernetes.io/name",
                                                "values": [
                                                    "rabbitmq-minimal"
                                                ],
                                                "operator": "In"
                                            }
                                        ]
                                    }
                                }
                            ]
                        }
                    }
                }
            }
        }
    }
}
"rabbitmq": {
    "additionalConfig": "cluster_partition_handling = pause_minority\nvmm_memory_high_watermark_paging_ratio = 0.99\ndisk_free_limit.relative = 1.0\ncollect_statistics_interval = 10000\n",
    "replicas": 1,
    "resources": {
        "limits": {
            "cpu": "1",
            "memory": "2Gi"
        },
        "requests": {
            "cpu": "1",
            "memory": "2Gi"
        }
    },
    "persistence": {
        "storage": "10Gi"
    }
},
"metadata": {
    "creationTimestamp": "2023-03-15T06:43:06Z"
},
"apiVersion": "rabbitmq.com/v1beta1"
}
"type": "Opaque",
"metadata": {
    "name": "rabbitmq-minimal-default-user"
},
"apiVersion": "v1"
}
,
"status": {
    "grafana": {
    "caBundle": "LS0tL...",
    "dashboards": [
    
    "url": "https://grafana.10.89.133.34.nip.io/d/Kn5xm-gZk/rabbitmq-overview?var-rabbitmq_cluster=rabbitmq-minimal"
    
    ]
    
    },
,
    "transport": {
    "ip": "100.64.190.40",
    "port": 5672,
    "hostname": "rabbitmq-minimal.vcd-ds-workloads.svc.cluster.local",
    "protocol": "TCP",
    "appProtocol": "amqp"
    },
,
    "conditions": [
    
    "type": "Ready",
    "reason": "RabbitmqClusterUnavailable",
    "status": "False",
}
"message": "NoEndpointsAvailable: The service has no endpoints available",
"lastTransitionTime": "2023-03-15T06:43:15Z"
},
{
"type": "ReconcileSucceeded",
"reason": "RabbitmqClusterOutOfDate",
"status": "Unknown",
"message": "Initialising",
"lastTransitionTime": "2023-03-15T06:43:15Z"
}
",
"management": {},
"engineVersion": {
"image": "registry.tanzu.vmware.com/p-rabbitmq-for-kubernetes/tanzu-rabbitmq-package-repo@sha256:b9503ef7a6288b5a59193a225a677d1bbee395c7a853328ba54d34f1a3737e7",
"version": "3.11.2"
}
",
"metadata": {
"uid": "urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd",
"name": "rabbitmq-minimal",
"namespace": "vcd-ds-workloads",
"finalizers": [
  "finalizers.dsinstances.vcloud.vmware.com/deletion"
],
"annotations": {
  "vcd-ds-meta/cluster-id": "urn:vcloud:entity:vmware:capvcdCluster:3d4ff0d1-5991-43ba-81f1-775831c10265"
"vcd-ds-meta/object-hash": "6f9b69d4c9",
"vcd-ds-meta/cluster-name": "tkgm1"
},
"creationTimestamp": "2023-03-15T06:42:39Z",
"deletionTimestamp": "2023-03-15T06:47:49.579Z"
},
"apiVersion": "vcloud.vmware.com/v1alpha1"
},
"state": "RESOLVED",
"owner": {
"name": "ta",
"id": "urn:vcloud:user:69974616-950e-4b76-a5ad-1489d3dddbbe"
},
"org": {
"name": "ACME",
"id": "urn:vcloud:org:614b8c90-5bd5-4cb2-afca-34bd8aaaf26c"
}
}

------------------------RESPONSE----------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location:
http://localhost:4200/cloudapi/1.0.0/entities/urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd

{
"id": "urn:vcloud:entity:vmware:dsInstance:96c3b071-b809-4636-a337-12cc7bd5a6bd",
"entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
"name": "mysql-z1",
}
"externalId": null,
"entity": {
    "kind": "DSInstance",
    "spec": ...
},
"state": "RESOLVED",
"owner": { "name": "ta", "id": "urn:vcloud:user:34d11c84-3dfc-4fb8-b280-d4b84214dc43"
},
"org": { "name": "ACME", "id": "urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f"
}
List Solution Instances

A tenant user can query deployed data instances by RDE type DSInstance.

<table>
<thead>
<tr>
<th>Method</th>
<th>GET</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>cloudapi/1.0.0/entities/types/vmware/dsInstance/0.1?filter=state==RESOLVED</td>
</tr>
<tr>
<td>Request Payload</td>
<td>N/A</td>
</tr>
<tr>
<td>Response Payload</td>
<td>Page&lt;DSInstance&gt;</td>
</tr>
<tr>
<td>API Reference</td>
<td>Get Defined Entities By Entity Type</td>
</tr>
</tbody>
</table>

List Data Instances - Sample

-----------------------------REQUEST-----------------------------

GET /cloudapi/1.0.0/entities/types/vmware/dsInstance/0.1?pageSize=64&page=1 HTTP/1.1
Host: my-vcd-cloud.local
Accept: application/*+json;version=36.1,application/json;version=36.1

-----------------------------RESPONSE-----------------------------

HTTP/1.1 200 OK
Content-Type: application/json;version=36.1
Content-Location: https://my-vcd-cloud.local/cloudapi/1.0.0/entities/types/vmware/dsInstance/0.1

{
  "resultTotal":4,
  "pageCount":1,
  "page":1,
  "pageSize":64,
  "associations":null,
  "values":[
  
}
"id": "urn:vcloud:entity:vmware:dsInstance:5b1de861-1401-49da-a4f5-5eda55857f81",
"entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
"name": "db1",
"externalId": null,
"entity": {
  "kind": "DSInstance",
  "spec": ...
},
"state": "RESOLVED",
"owner": {
  "name": "k8s",
  "id": "urn:vcloud:user:d0cb7269-c5d5-4cd5-a3e7-1eb58a78b258"
},
"org": {
  "name": "ACME",
  "id": "urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f"
}
},
{
  "id": "urn:vcloud:entity:vmware:dsInstance:c30edfed-f6fb-4a32-a187-5e630bc91a27",
  "entityType": "urn:vcloud:type:vmware:dsInstance:0.1.1",
  "name": "db-002",
  "externalId": null,
  "entity": {
    "kind": "DSInstance",
    "spec": ...
  },
  "state": "RESOLVED",
  "owner": {
    "name": "k8s",
  }
}
"id":"urn:vcloud:user:d0cb7269-c5d5-4cd5-a3e7-1eb58a78b258"},

"org":{
    "name":"ACME",
    "id":"urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f"
}
},
{
    "id":"urn:vcloud:entity:vmware:dsInstance:2467bc88-5912-46b0-9424-119cd17f00fa",
    "entityType":"urn:vcloud:type:vmware:dsInstance:0.1.1",
    "name":"db-001",
    "externalId":null,
    "entity":{
        "kind":"DSInstance",
        "spec":...
    },
    "state":"RESOLVED",
    "owner":{
        "name":"k8s",
        "id":"urn:vcloud:user:d0cb7269-c5d5-4cd5-a3e7-1eb58a78b258"
    },
    "org":{
        "name":"ACME",
        "id":"urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f"
    }
},
{
    "id":"urn:vcloud:entity:vmware:dsInstance:71c94271-cc52-4edf-a733-ec23a80788ad",
    "entityType":"urn:vcloud:type:vmware:dsInstance:0.1.1",
    "name":"db-test1"
"externalId":null,

"entity":{
    "kind":"DSInstance",
    "spec":...
},

"state":"RESOLVED",

"owner":{
    "name":"k8s",
    "id":"urn:vcloud:user:d0cb7269-c5d5-4cd5-a3e7-1eb58a78b258"
},

"org":{
    "name":"ACME",
    "id":"urn:vcloud:org:dd95b1b1-3dfb-4754-b5ef-0025bbdc237f"
}

]}

}