

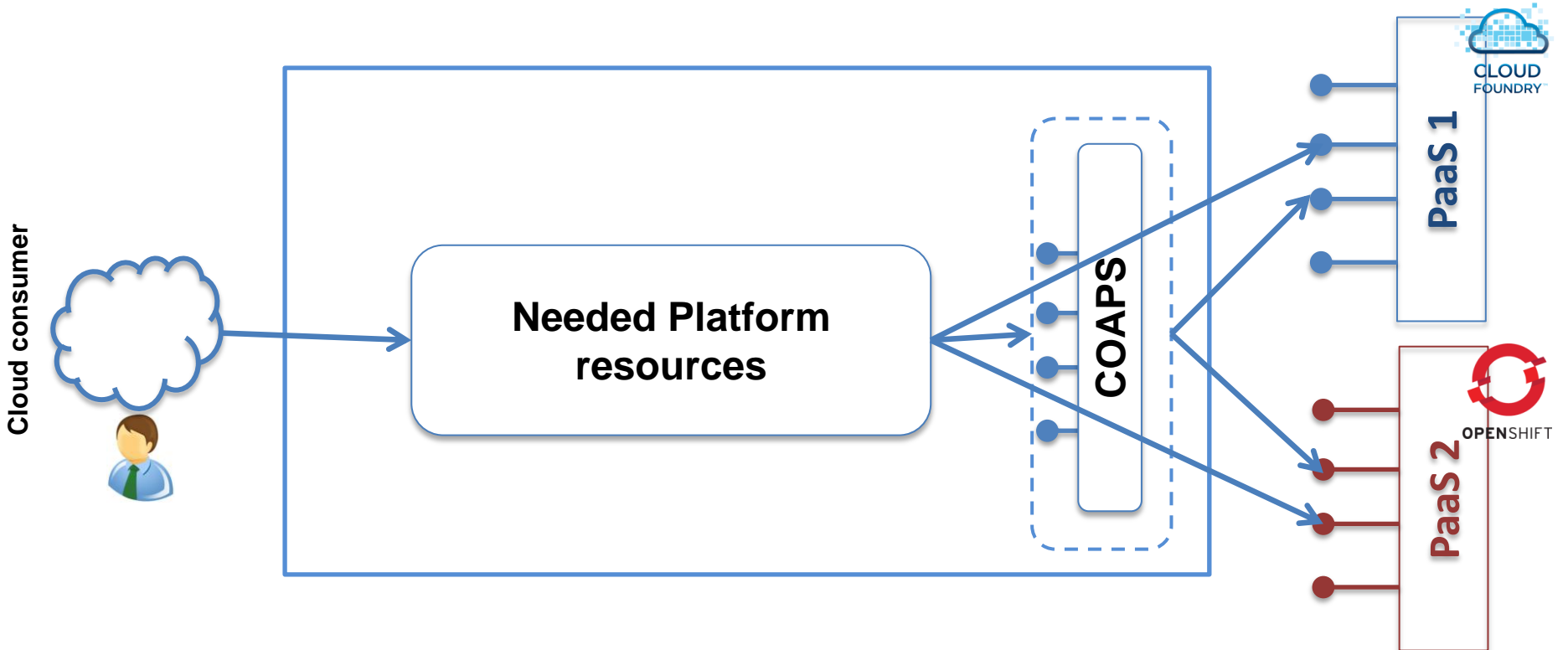
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# COAPS API

A Generic Cloud Application Provisioning and  
Management API

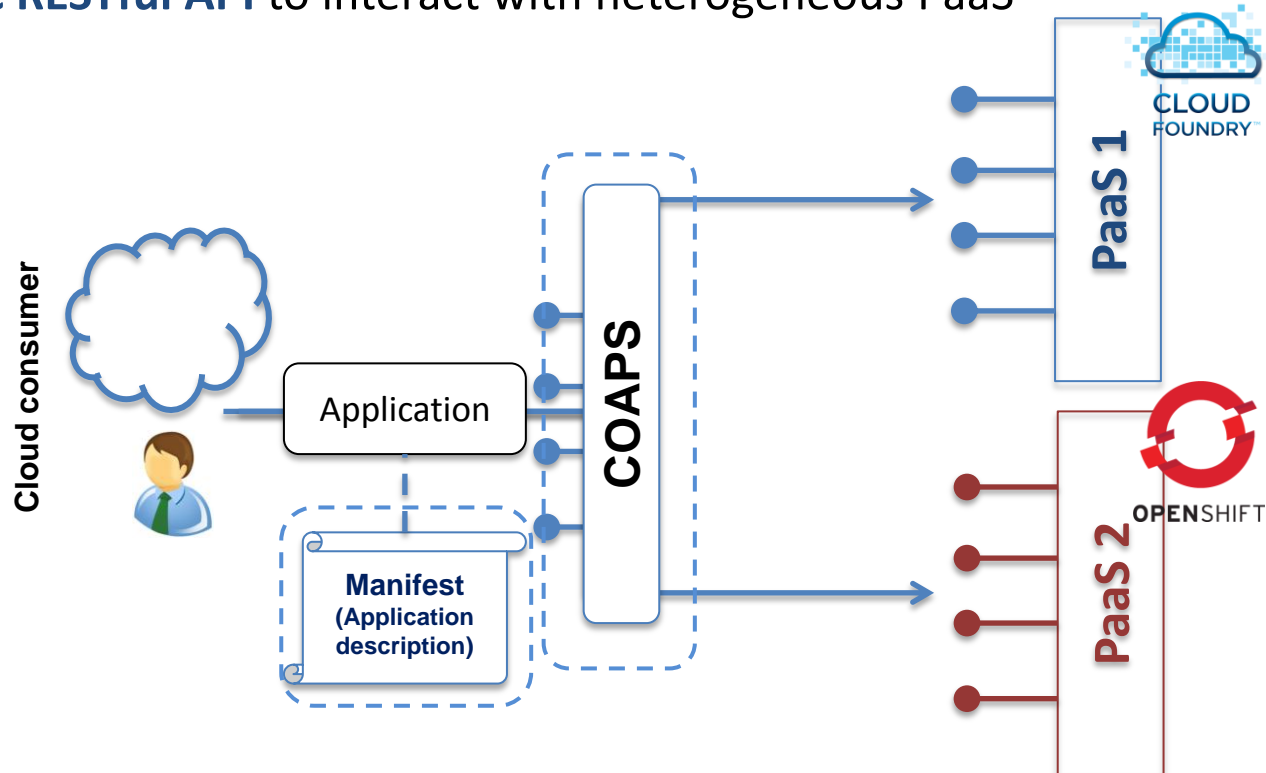
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# Why COAPS ?

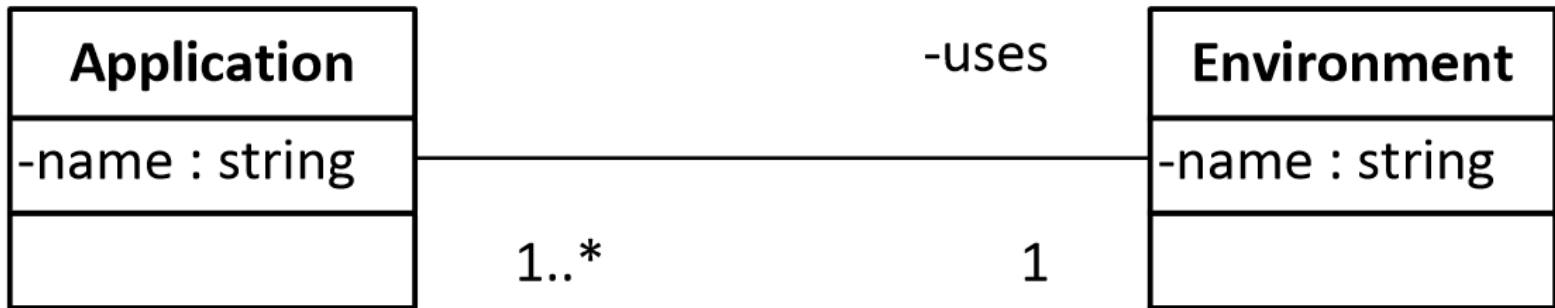


# What's COAPS ?

- **PaaS-independent** approach for the provisioning and management of applications in the Cloud
  - **Resource description manifest** to express user requirement
  - **Unified description model** for cloud application description
  - **Generic RESTful API** to interact with heterogeneous PaaS



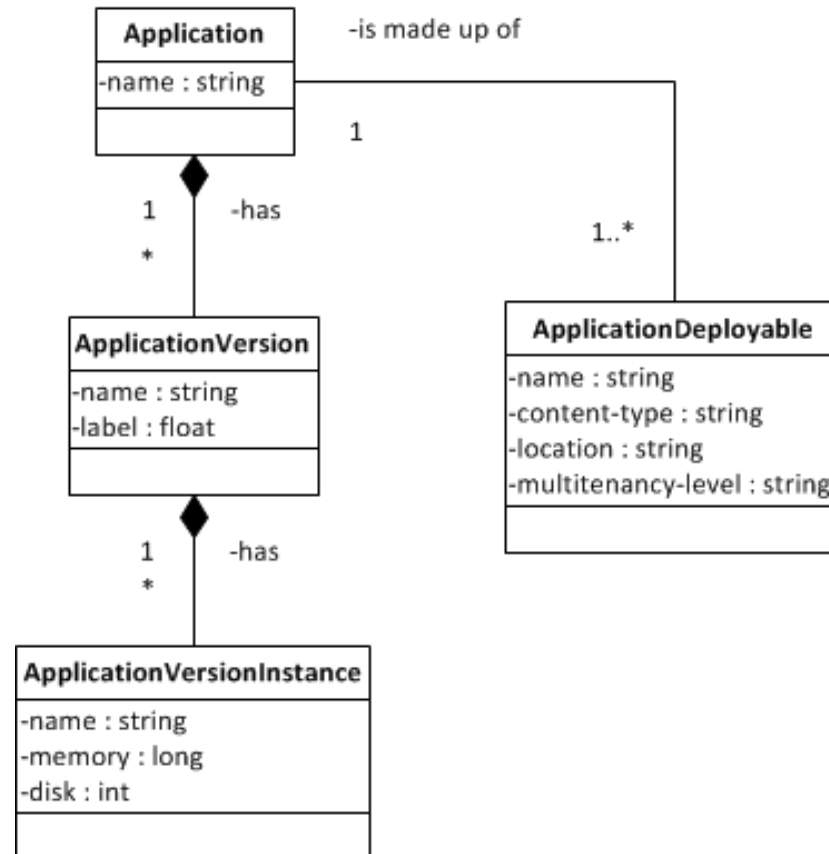
# COAPS : Resource description manifest



- **Application:** Any computer software or program that can be hosted and executed by a PaaS.
- **Environment :** All platform components/resources needed to host and execute the application to deploy.

# COAPS unified description model

- Application model



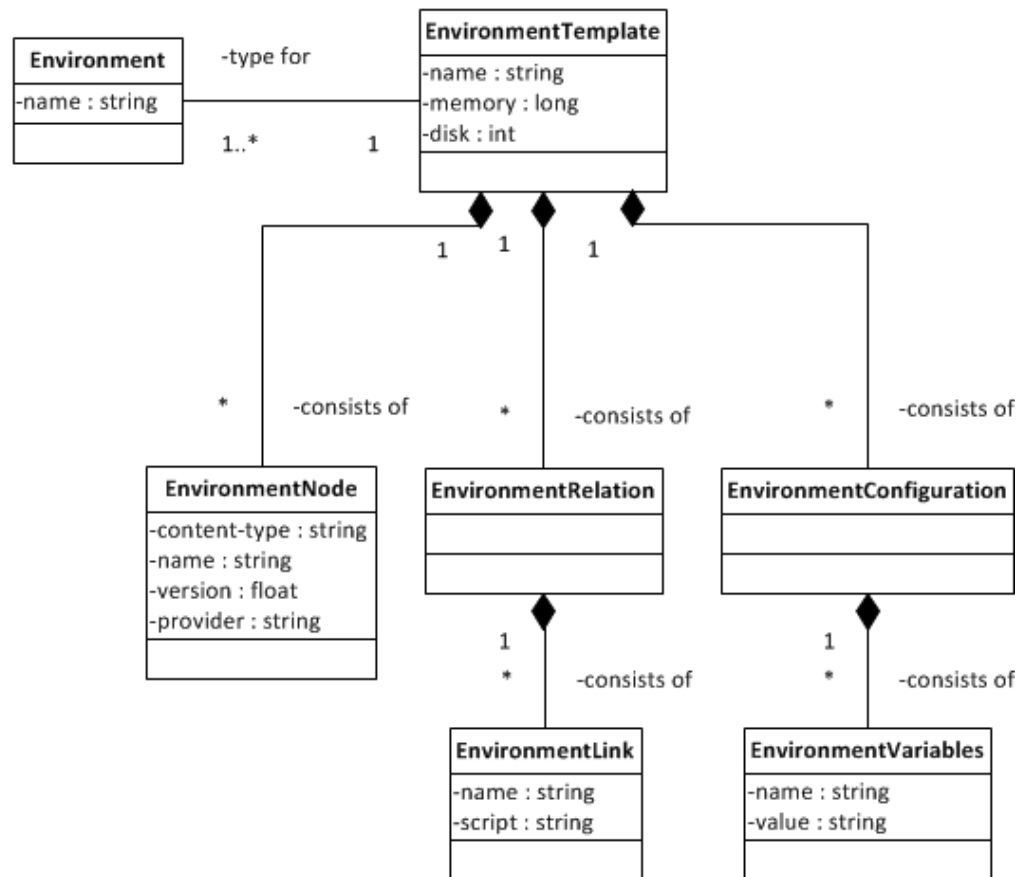
# COAPS unified description model

- Application manifest

```
<?xml version="1.0" encoding="UTF8"?>
<paas_application_manifest name="ServletSampleApplicationManifest" xmlns="http://www.compatibleone.fr/schemes/paasmanifest.xsd">
<description>This manifest describes a Sample Servlet.</description>
  <paas_application name="ServletSampleApplication" environnement="JavaWebEnv">
    <description>Sample Servlet application description.</description>
    <paas_application_version name="version1.0" label="1.0">
      <paas_application_deployable name="SampleServlet.war" content_type="artifact"
location="C:\Users\yangui\Desktop\SampleServlet\deployable" multitenancy_level="SharedInstance"/>
      <paas_application_version_instance name="Instance1" initial_state="1" default_instance="true" memory="128" disk="2"/>
      <paas_application_version_instance name="Instance1" initial_state="1" default_instance="true" memory="256" disk="2"/>
    </paas_application_version>
  </paas_application>
</paas_application_manifest>
```

# COAPS unified description model

- Environment model



# COAPS unified description model

- Environment manifest

```
<paas_environment name="JavaWebEnv" template="TomcatEnvTemp">
  <paas_environment_template name="TomcatEnvTemp" memory="" disk="">
    <description>TomcatServerEnvironmentTemplate</description>
    <paas_environment_node content_type="container" name="tomcat" version="" provider="CF"/>
    <paas_environment_node content_type="database" name="mysql" version="" provider="OS"/>
    <paas_environment_relation>
      <paas_environment_link name="dbBinding" script=""/>
      <paas_environment_link name="" script=""/>
    </paas_environment_relation>
    <paas_environment_configuration>
      <paas_environment_variable name="" value=""/>
      <paas_environment_variable name="" value=""/>
    </paas_environment_configuration>
  </paas_environment_template>
</paas_environment>
</paas_application_manifest>
```



# COAPS: A Generic RESTful API

<b>Application management operations</b>	
<b>Operation</b>	<b>Method</b>
<i>Create Application</i>	POST /app
<i>Update Application</i>	POST /app/{appId}/update
<i>Find Applications</i>	GET /app
<i>Start Application</i>	POST /app/{appId}/start
<i>Stop Application</i>	POST /app/{appId}/stop
<i>Restart Application</i>	POST /app/{appId}/restart
<i>Describe Application</i>	GET /app/{appId}
<i>Destroy Application</i>	DELETE /app/{appId}
<i>Destroy Applications</i>	DELETE /app/delete
<i>Deploy Application</i>	POST /app/{appId}/action/deploy/env/{envId}
<i>Undeploy Application</i>	POST /app/{appId}/action/undeploy/env/{envId}
<b>Environment management operations</b>	
<b>Operation</b>	<b>Method</b>
<i>Create Environment</i>	POST /environment
<i>Update Environment</i>	POST /environment/{envId}/update
<i>Destroy Environment</i>	DELETE /environment/{envId}
<i>Find Environments</i>	GET /environment
<i>Describe Environment</i>	GET /environment/{envId}
<i>Get Deployed Applications</i>	GET /environment/{envId}/app
<i>Get information</i>	GET /environment/info