* [Demonstrate Deployments & Deployment Strategies Lab](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_demonstrate_deployments_deployment_strategies_lab)
* [1. Demonstrate Authentication to OpenShift Master](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_demonstrate_authentication_to_openshift_master)
* [2. Demonstrate Creating a Project](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_demonstrate_creating_a_project)
* [3. Demonstrate Deploying an Application Using S2I](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_demonstrate_deploying_an_application_using_s2i)
* [4. Demonstrate Redeploying an Application](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_demonstrate_redeploying_an_application)
* [5. Demonstrate Triggering a Deployment by Configuration Change](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_demonstrate_triggering_a_deployment_by_configuration_change)
* [6. Demonstrate Changing a Deployment Strategy](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_demonstrate_changing_a_deployment_strategy)
* [7. Additional Demonstrations](https://cloud.scorm.com/content/courses/A9KI96X2QE/OpenShift_3_Foundations/8/04_CICD_and_Pipelines_OpenShift/04_01_Demonstrate_Deployments_Lab.html" \l "_additional_demonstrations)

## Demonstrate Deployments & Deployment Strategies Lab

Scenario

In the scenario for this demonstration lab, a developer needs to execute the following common sequence:

1. Deploy an application.
2. Scale the application.
3. Redeploy the application with a new environment variable.
4. View the deployment.
5. Change the deployment type.
6. Redeploy the application.

## 1. Demonstrate Authentication to OpenShift Master

1. Action: Log in to the OPENTLC shared OpenShift web console using either of these methods:
   * Method 1: Go to [https://master.na1.openshift.opentlc.com](https://master.na1.openshift.opentlc.com/)
   * Method 2: Use the command line from any host with the OpenShift client utility (oc) installed:

LocalMachine$ oc login https://master.na1.openshift.opentlc.com --username shacharb-redhat.com

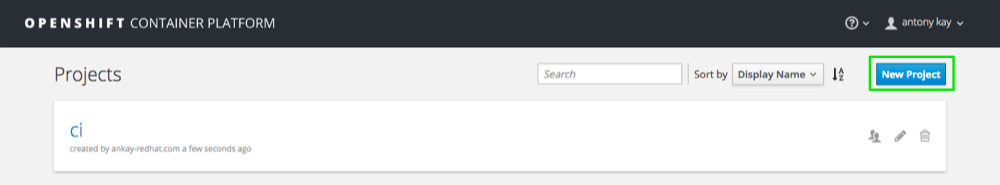
Username: shacharb-redhat.com

Password: \*\*\*\*\*\*\*\*\*\*

Logged into "https://master.na1.openshift.opentlc.com" as "shacharb-redhat.com" using existing credentials.

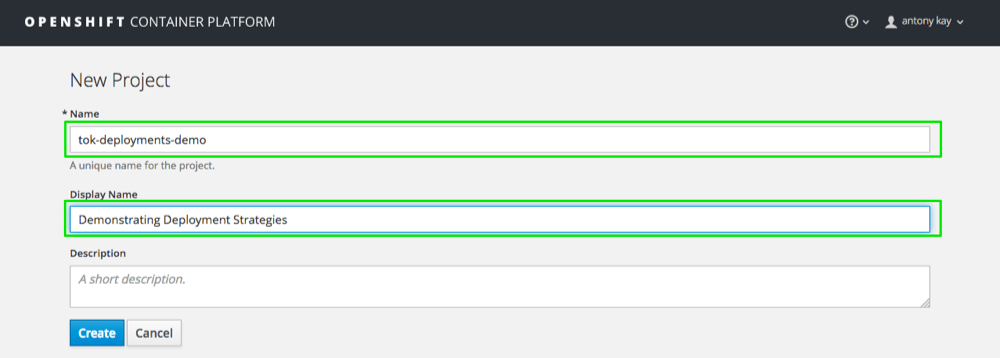
## 2. Demonstrate Creating a Project

1. Action: Click New Project to create a project for your demonstration:



* + Explain what projects are and how different projects can have different user permissions and quotas attached to them.

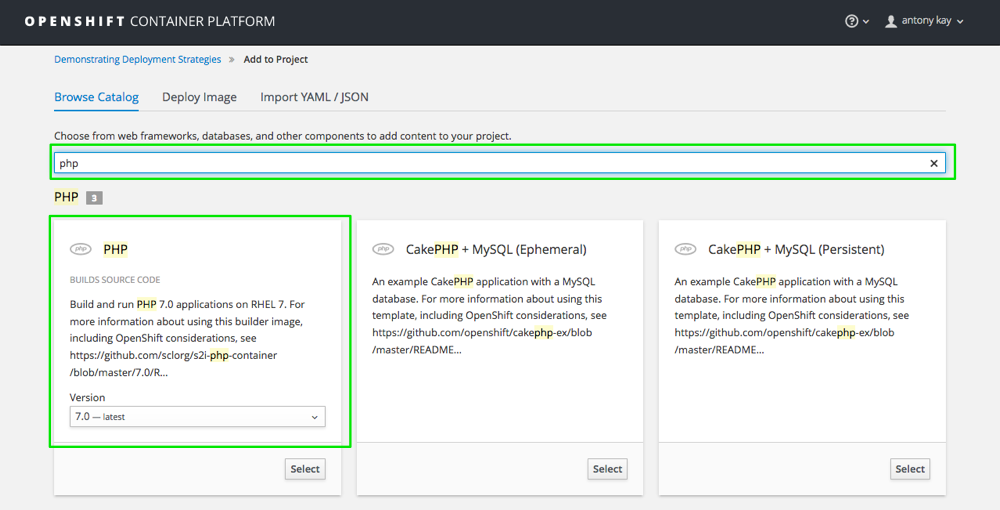
1. Action: Fill in the Name, Display Name, and Description fields:



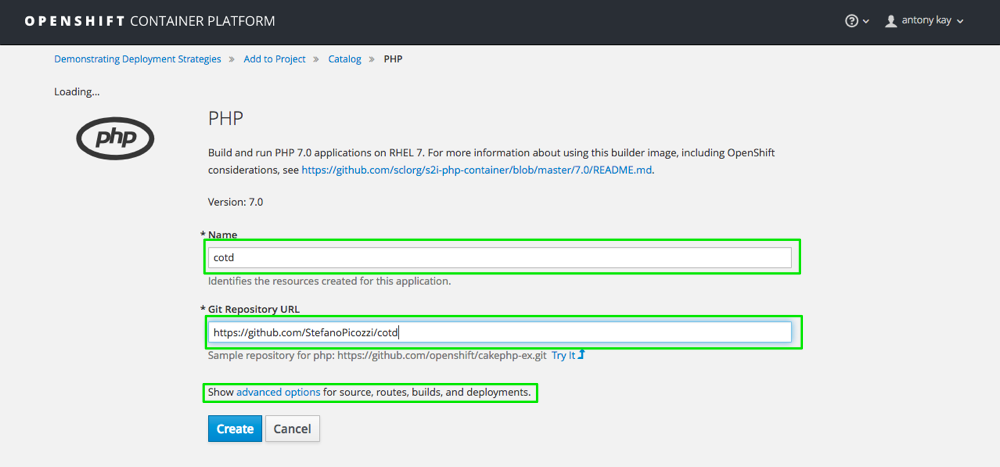
|  |  |
| --- | --- |
|  | Two other options for completing this task:   * Use the command line from any host with the OpenShift client utility (oc) installed:   [sborenst@ip-192-168-20-158 ~]$ oc new-project guid-deployments-demo --description="This is the project to host the deployments strategy demonstration" --display-name="Demonstrating Deployment Strategies"  Now using project "guid-deployments-demo" on server "https://master.na1.openshift.opentlc.com".   * Run the oc new-project guid-deployments-demo command without the description and display name information. |

## 3. Demonstrate Deploying an Application Using S2I

1. Action: After creating your project or after clicking Add to project, enter php in the catalog filter and select php:7.0:

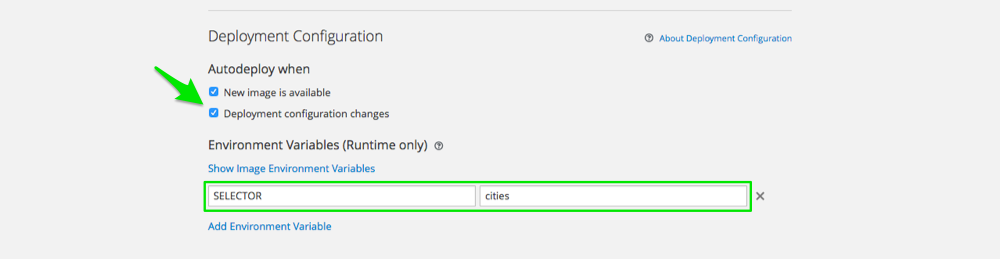


1. Action: Enter cotd in the Name field.
2. Action: Enter https://github.com/StefanoPicozzi/cotd in the Git Repository URL field.
3. Action: Click Show advanced routing, build, and deployment options:

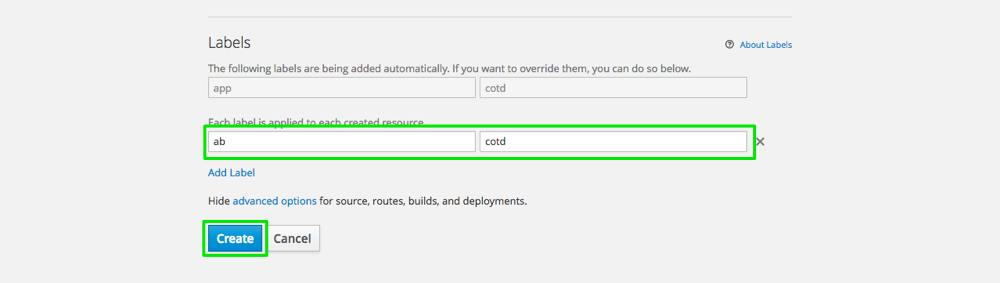


* + Explain the following aspects of the Environment Variables and Labels sections:
    - How labels are used in OpenShift and how easy it is to label new deployments.
    - How environment variables are used in OpenShift and how easy it is to set environment variables such as user names, database names, and others to modify deployment.

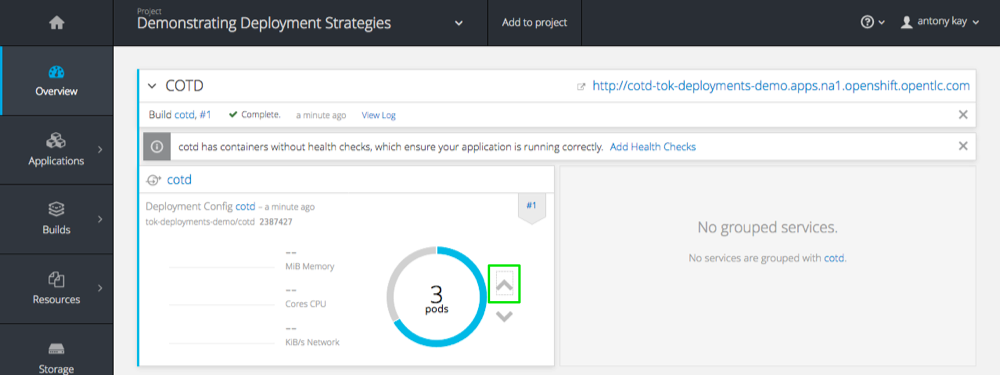
1. Action: Enter a new environment variable named SELECTOR, with cities as the value:



1. Action: Add labels for all of the resources in the deployment and click Create when you are done:

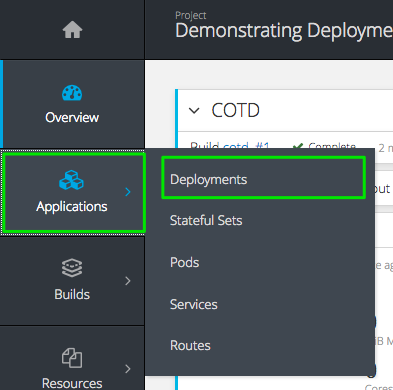


1. Action: From the Application created page, click Continue to overview.
   * Explain that the application has been deployed to display cities as you defined in the environment variable.
2. Action: Open the application route in a new tab and show that the application was deployed and displays cities.
3. Action: Scale your application to 3 pods by clicking the Up button (marked by the small green square) twice.
   * Explain that you can see OpenShift scaling up the pods.



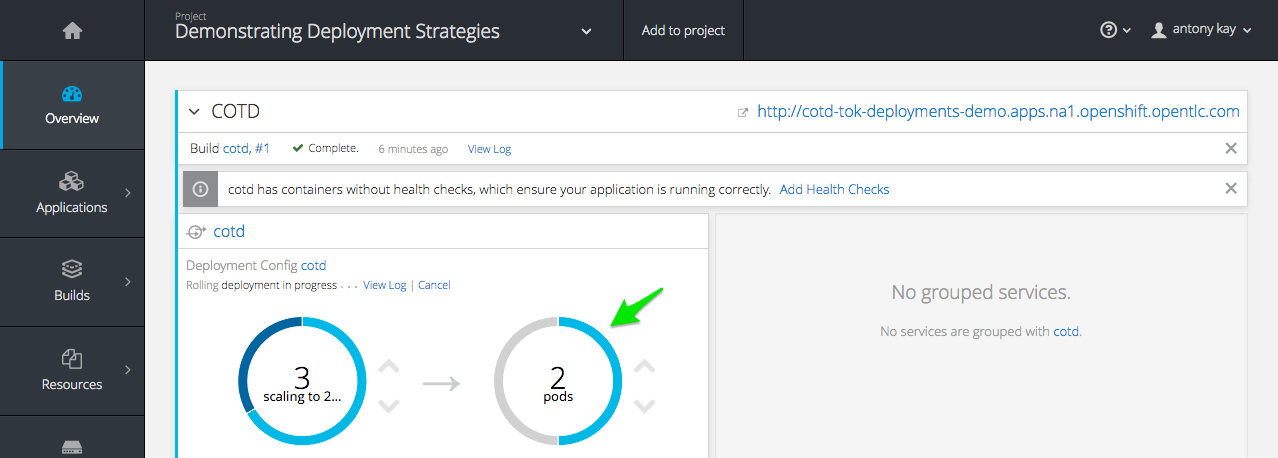
## 4. Demonstrate Redeploying an Application

1. Action: Navigate to Applications → Deployments and select your deployment:



* + Explain that this page displays your deployment configuration.
    - Point out that the deployment is set to Rolling and explain that OpenShift deploys a new pod replica and removes an old deployment pod replica repeatedly until the new deployment is at the required replica count and the old deployment is at zero.

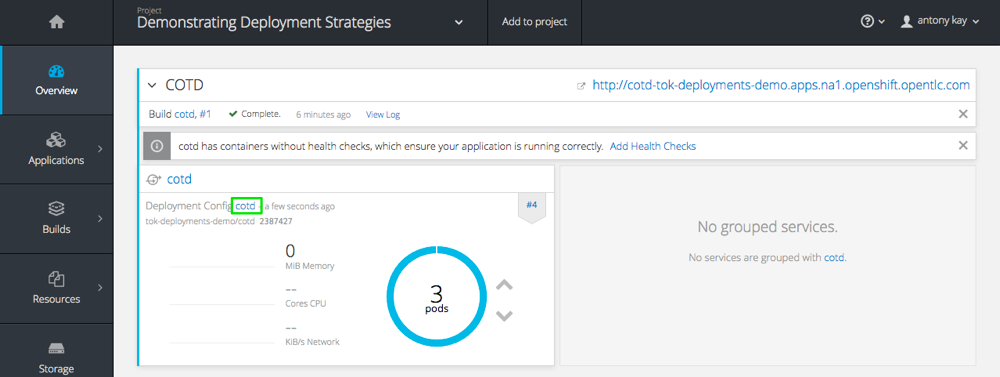
1. Action: Click Deploy to show the Overview page:
   * Explain the following aspects of the deployment now in progress using the Rolling deployment strategy:
     + Point out that a new pod is created for the new deployment, and after a health-check test, an old deployment pod is destroyed.
     + Point out that OpenShift continues to increase the size of the new deployment and decrease the old deployment one pod at a time.
     + Mention that using this deployment strategy is good for minimizing application downtime when the new and old deployments can live side by side for a short while.



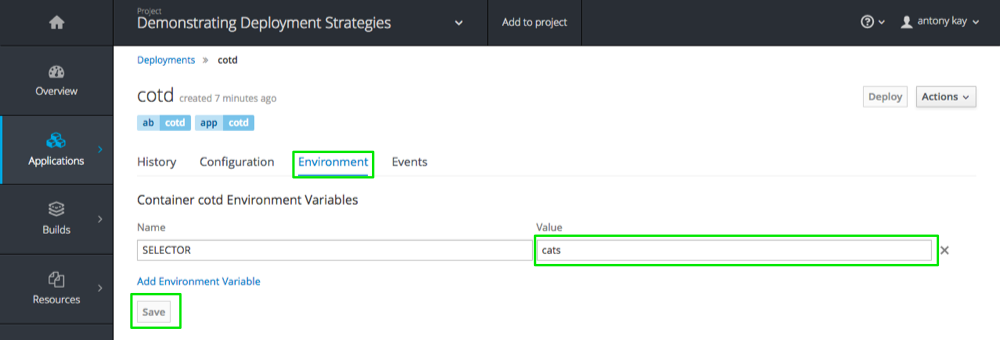
| → Step 1 | → Step 2 | → Step n |
| --- | --- | --- |
|  |  |  |

## 5. Demonstrate Triggering a Deployment by Configuration Change

1. Action: Navigate to your deployment page again, this time using the shortcut instead of the Applications menu:



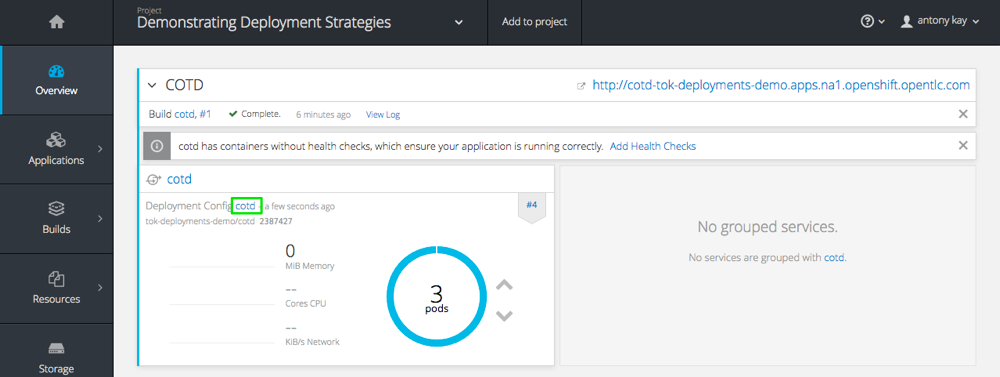
1. Action: Select the Environment tab, change the value of the SELECTOR environment variable to cats, and click Save:



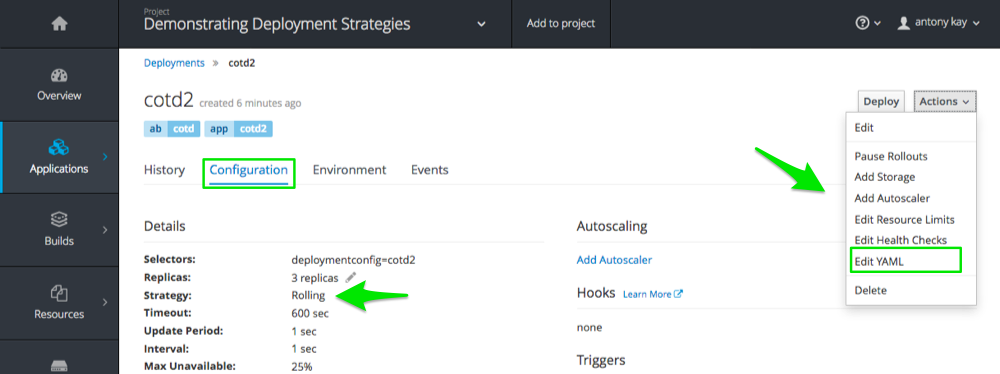
1. Action: Navigate back to the Overview page to show that a new deployment was triggered.
2. Action: Once the deployment is complete, show that the new deployment is displaying cats and not cities.

## 6. Demonstrate Changing a Deployment Strategy

1. Action: Navigate to your deployment page again using the shortcut:



1. Action: Open the Actions list on the top right and select Edit YAML to manually edit the deployment configuration.
   * Explain that you can also add storage, set resource limits, add an autoscaler, and edit health checks from this page.



1. Action: Edit the deployment configuration YAML by removing the Rolling strategy lines and replacing them with the single word Recreate:

| Original | After Modification |
| --- | --- |
|  |  |

1. Action: Trigger a new deployment and go to the Overview page.
   * Explain that in the Recreate deployment strategy all of the existing replicas are scaled to 0 and the new deployment is scaled up to the required number of replicas.
     + Mention that there is a short downtime for the application with this strategy, so it is mostly used when two versions of the application cannot coexist even for a short time.

| → Step 1 | → Step 2 | → Step 3 |
| --- | --- | --- |
| Recreate Deployment Triggered | Current Deployment Scaled to 0 | New Deployment Scaled to n |
|  |  |  |

## 7. Additional Demonstrations

You can do the following optional demonstrations:

* Demonstrate AB testing.
* Demonstrate setting autoscaling for a deployment.
* Demonstrate changing the health and readiness checks.