

## Experiment No. 4

### Title:

Provisioning and Scaling a Website Using Codenvy.

### Objective:

To demonstrate the provisioning and scaling of a website using Codenvy, an integrated development environment (IDE) for cloud-based projects.

### Tools used:

Codenvy, Internet, Web Browser

### Prerequisite:

Basic understanding of website development, infrastructure provisioning, and scaling concepts.

### Theory:

Codenvy is a cloud-based development environment that allows collaborative coding, debugging, and deployment of applications. It provides a platform for teams to work together on projects, offering support for various programming languages and integration with version control systems like Git. With Codenvy, users can develop and deploy applications without worrying about setting up individual development environments.

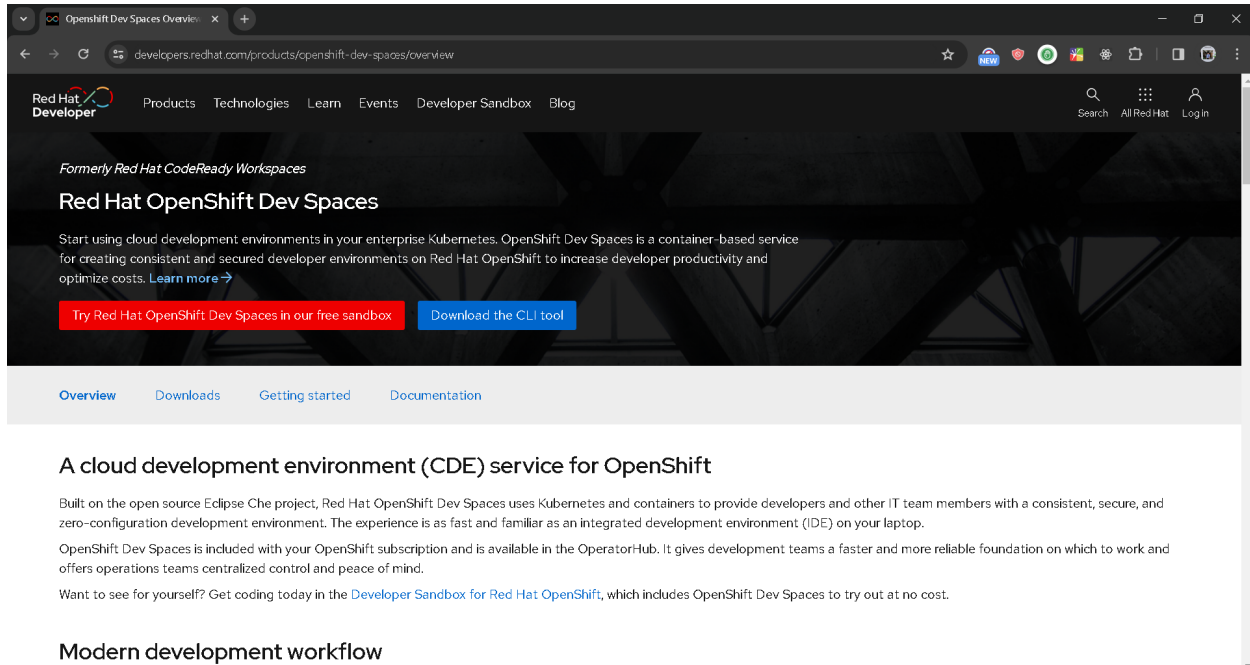
## Steps to Setup and Demonstrate Provisioning and Scaling:

To access Codenvy, visit Codenvy's website [www.codenvy.com](https://www.codenvy.com) But it is taken over by [www.developers.redhat.com/products/openshift-dev-spaces/overview/](https://www.developers.redhat.com/products/openshift-dev-spaces/overview/)

Once logged in, you can create a workspace and perform the steps mentioned above within the Codenvy interface.

### Step 1: Sign in to Codenvy

- Access the Codenvy platform using your credentials via a web browser.



The screenshot shows a web browser window displaying the Red Hat OpenShift Dev Spaces Overview page. The browser's address bar shows the URL `developers.redhat.com/products/openshift-dev-spaces/overview`. The page features a dark header with the Red Hat Developer logo and navigation links: Products, Technologies, Learn, Events, Developer Sandbox, and Blog. On the right side of the header are links for Search, All Red Hat, and Login. The main content area has a dark background with the text "Formerly Red Hat CodeReady Workspaces" and "Red Hat OpenShift Dev Spaces". Below this, it states: "Start using cloud development environments in your enterprise Kubernetes. OpenShift Dev Spaces is a container-based service for creating consistent and secured developer environments on Red Hat OpenShift to increase developer productivity and optimize costs. [Learn more](#) →". Two buttons are present: "Try Red Hat OpenShift Dev Spaces in our free sandbox" (red) and "Download the CLI tool" (blue). At the bottom, there is a light blue navigation bar with links: Overview (active), Downloads, Getting started, and Documentation. The main text below the navigation bar reads: "A cloud development environment (CDE) service for OpenShift". It then describes the service: "Built on the open source Eclipse Che project, Red Hat OpenShift Dev Spaces uses Kubernetes and containers to provide developers and other IT team members with a consistent, secure, and zero-configuration development environment. The experience is as fast and familiar as an integrated development environment (IDE) on your laptop. OpenShift Dev Spaces is included with your OpenShift subscription and is available in the OperatorHub. It gives development teams a faster and more reliable foundation on which to work and offers operations teams centralized control and peace of mind. Want to see for yourself? Get coding today in the [Developer Sandbox for Red Hat OpenShift](#), which includes OpenShift Dev Spaces to try out at no cost." The section "Modern development workflow" is partially visible at the bottom.

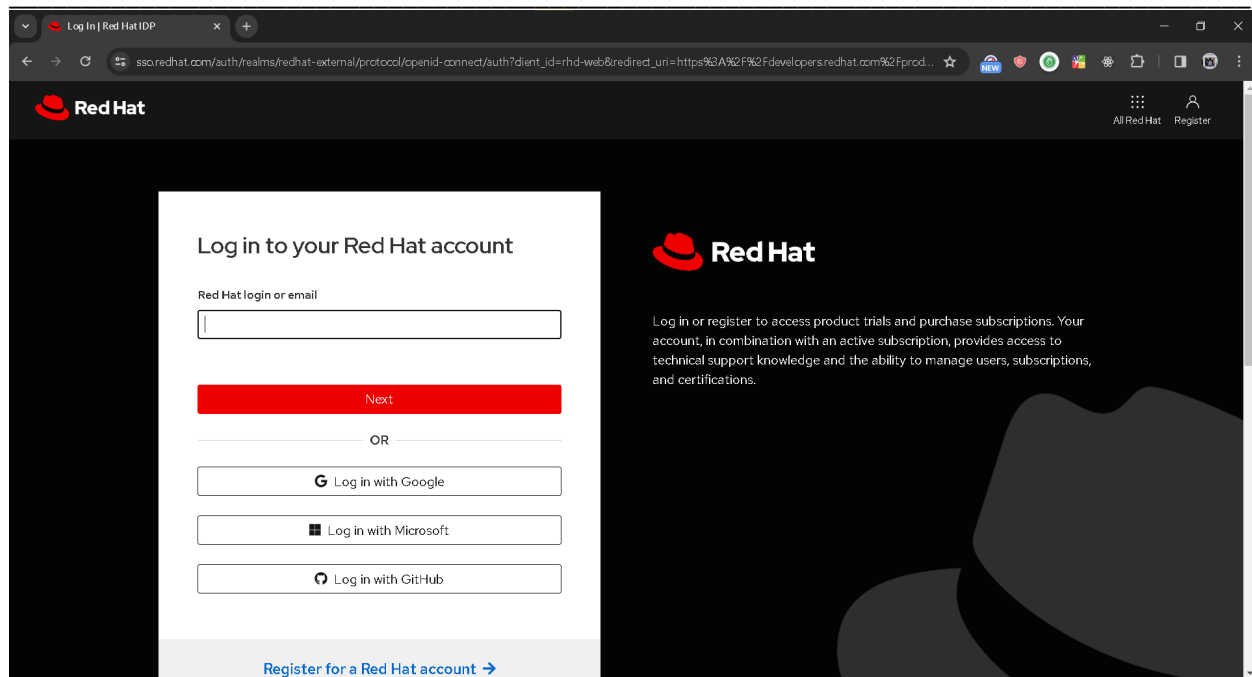
### A cloud development environment (CDE) service for OpenShift

Built on the open source Eclipse Che project, Red Hat OpenShift Dev Spaces uses Kubernetes and containers to provide developers and other IT team members with a consistent, secure, and zero-configuration development environment. The experience is as fast and familiar as an integrated development environment (IDE) on your laptop.

OpenShift Dev Spaces is included with your OpenShift subscription and is available in the OperatorHub. It gives development teams a faster and more reliable foundation on which to work and offers operations teams centralized control and peace of mind.

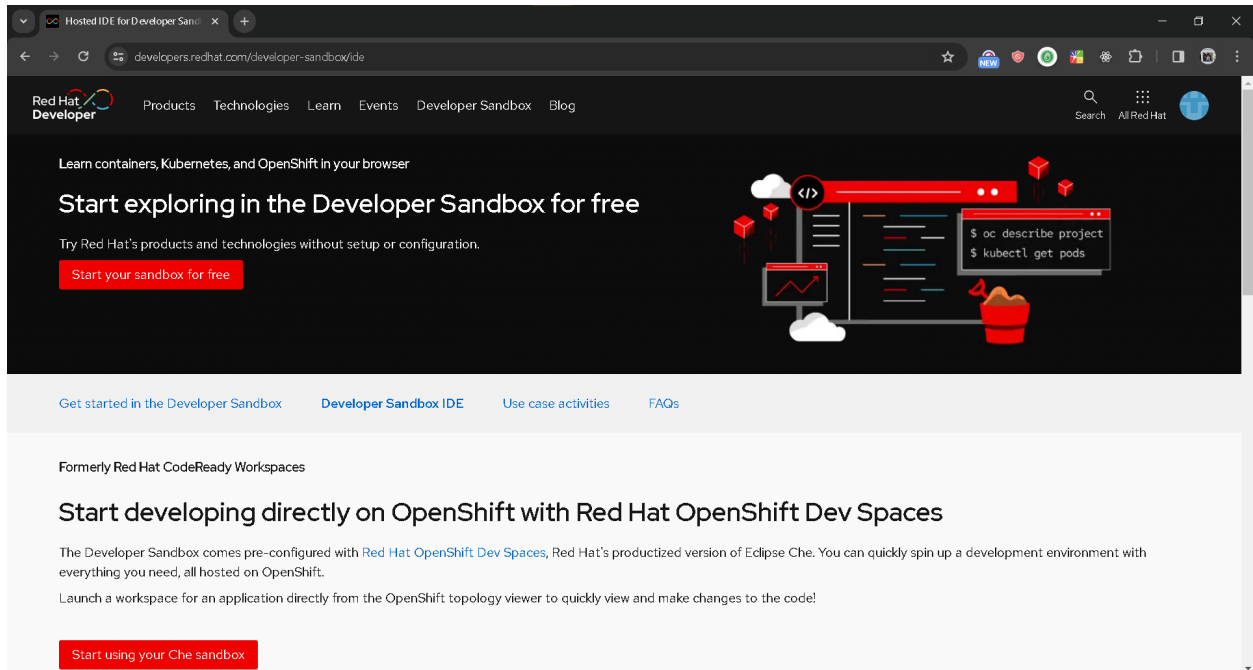
Want to see for yourself? Get coding today in the [Developer Sandbox for Red Hat OpenShift](#), which includes OpenShift Dev Spaces to try out at no cost.

### Modern development workflow



## Step 2: Create a New Workspace

- Create a new workspace within Codenvy for your website project.
- Select the appropriate stack/environment based on your website's technology stack(ex-php,etc)



Hosted IDE for Developer Sand... x +

developers.redhat.com/developer-sandbox/ide

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## Start exploring in the Developer Sandbox for free

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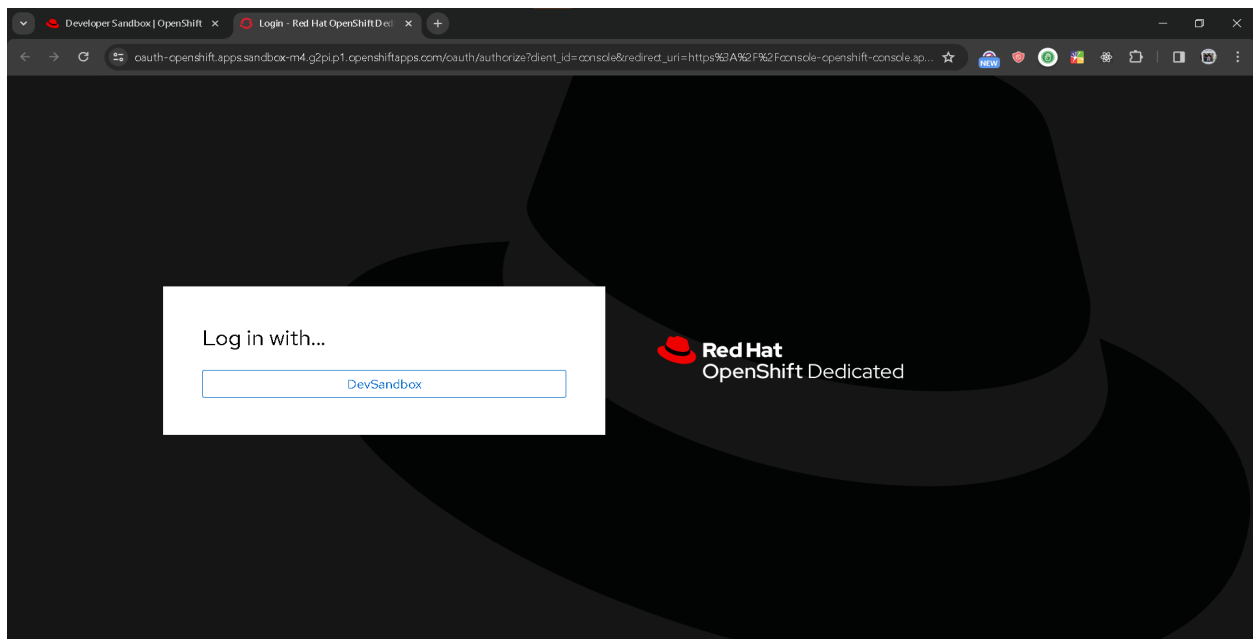
Formerly Red Hat CodeReady Workspaces

## Start developing directly on OpenShift with Red Hat OpenShift Dev Spaces

The Developer Sandbox comes pre-configured with [Red Hat OpenShift Dev Spaces](#), Red Hat's productized version of Eclipse Che. You can quickly spin up a development environment with everything you need, all hosted on OpenShift.

Launch a workspace for an application directly from the OpenShift topology viewer to quickly view and make changes to the code!

[Start using your Che sandbox](#)



Developer Sandbox | OpenShift x Login - Red Hat OpenShift De... x +

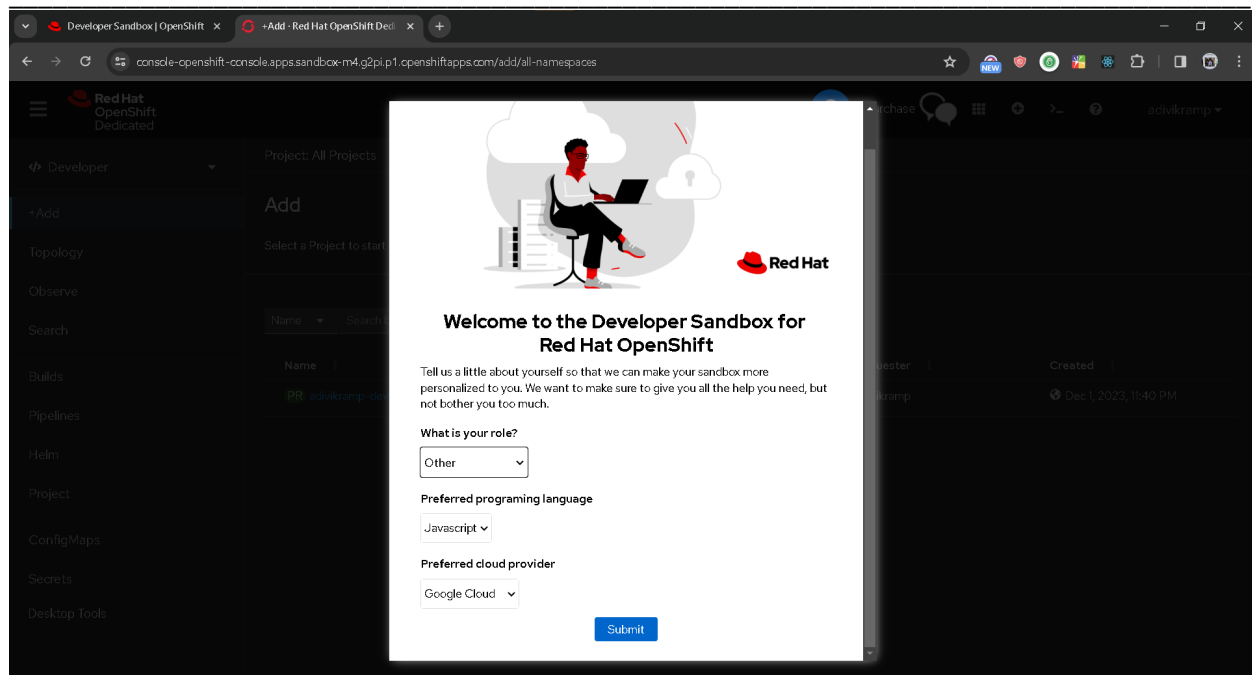
oauth-openshift.apps.sandbox-m4.g2plp1.openshiftapps.com/oauth/authorize?client\_id=console&redirect\_uri=https%3A%2F%2Fconsole-openshift-console.ap...

Log in with...

[DevSandbox](#)

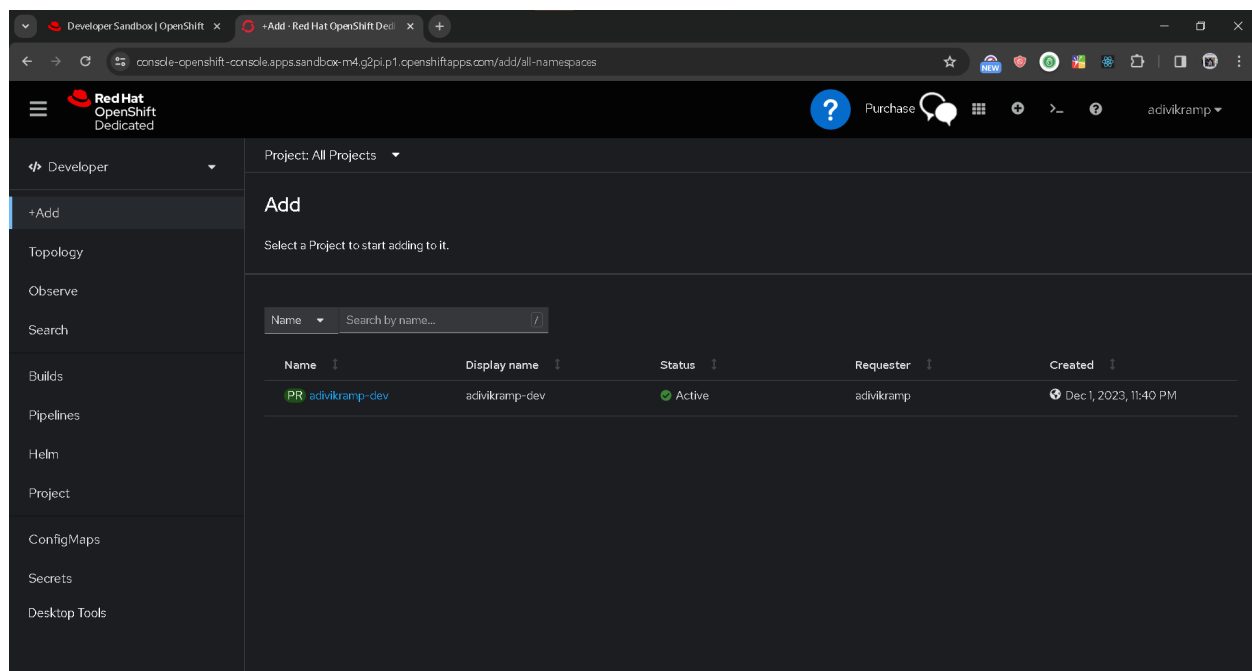
Red Hat  
OpenShift Dedicated

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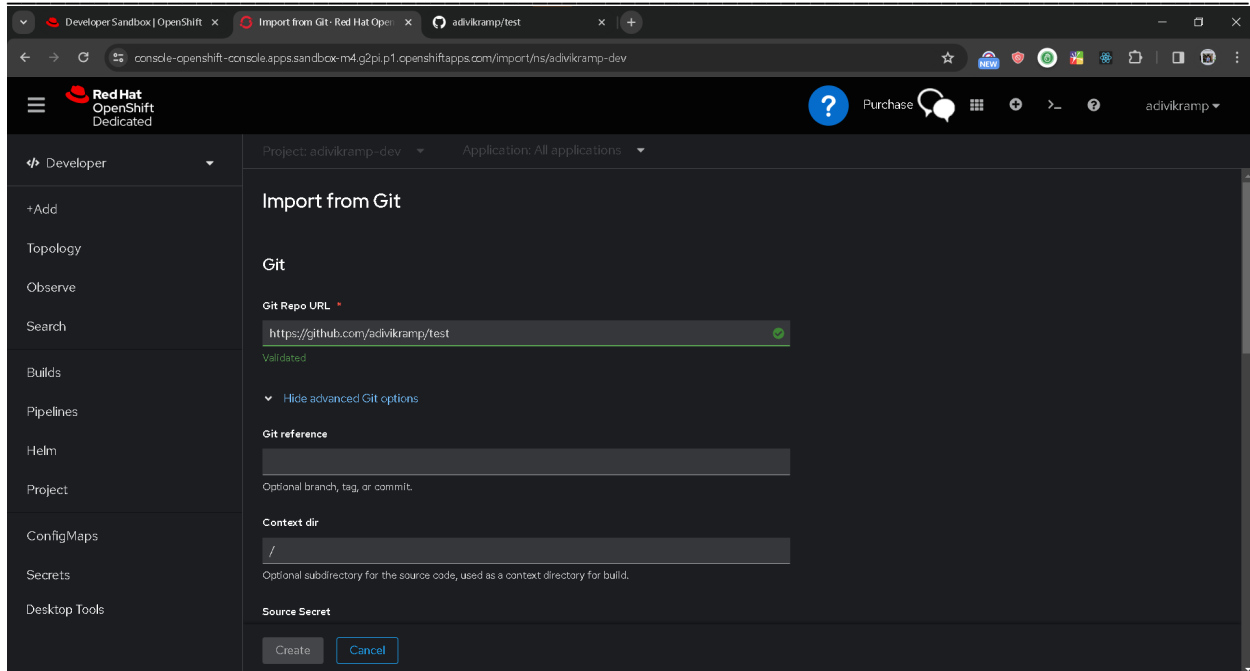


### Step 3: Code Development

- Develop or import the website/application code into the Codenvy workspace.
- Ensure the code is functional and works within the Codenvy environment.



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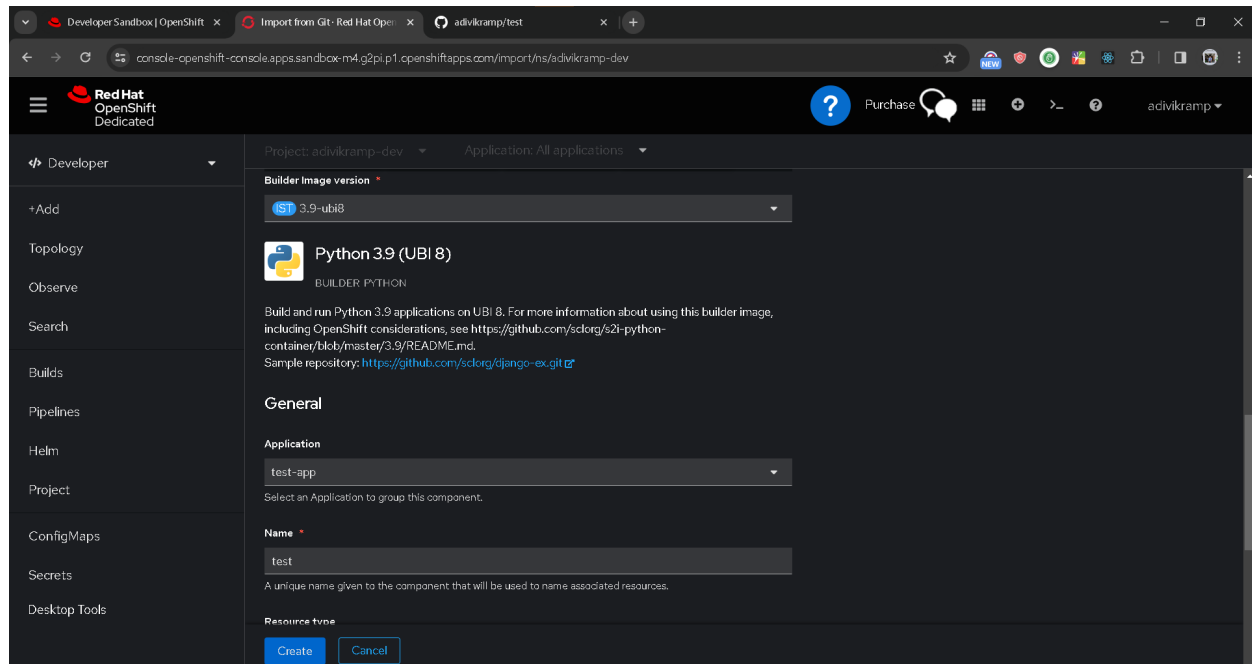


The screenshot shows the Red Hat OpenShift console interface. The left sidebar contains a navigation menu with options: Developer, +Add, Topology, Observe, Search, Builds, Pipelines, Helm, Project, ConfigMaps, Secrets, and Desktop Tools. The main panel displays the 'Import from Git' dialog for the project 'adivikramp-dev'. The dialog includes the following fields and options:

- Git Repo URL:** A text input field containing 'https://github.com/adivikramp/test', which is marked as 'Validated' with a green checkmark.
- Git reference:** A text input field for optional branch, tag, or commit.
- Context dir:** A text input field containing '/', with a note: 'Optional subdirectory for the source code, used as a context directory for build.'
- Source Secret:** A section for selecting a source secret.
- Buttons:** 'Create' and 'Cancel' buttons at the bottom.

## Step 4: Containerization (Optional)

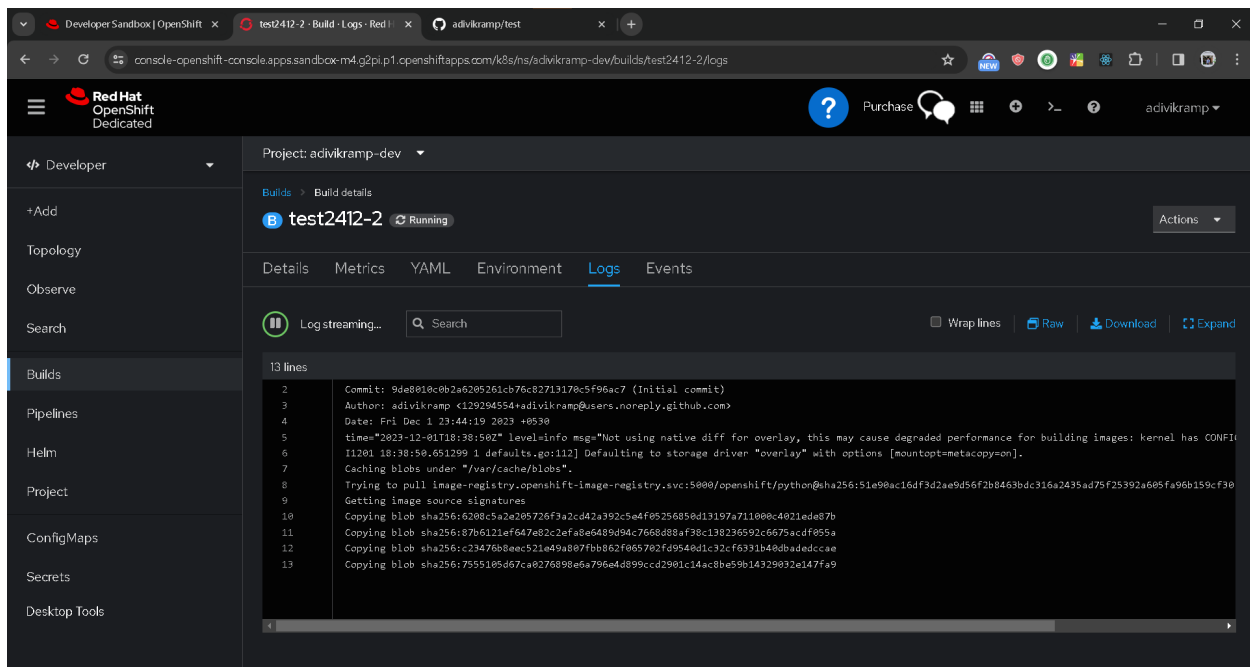
- Dockerize the application if not already containerized.
- Create a Dockerfile within the Codenvy workspace and build the Docker image if needed.



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## Step 5: Deployment

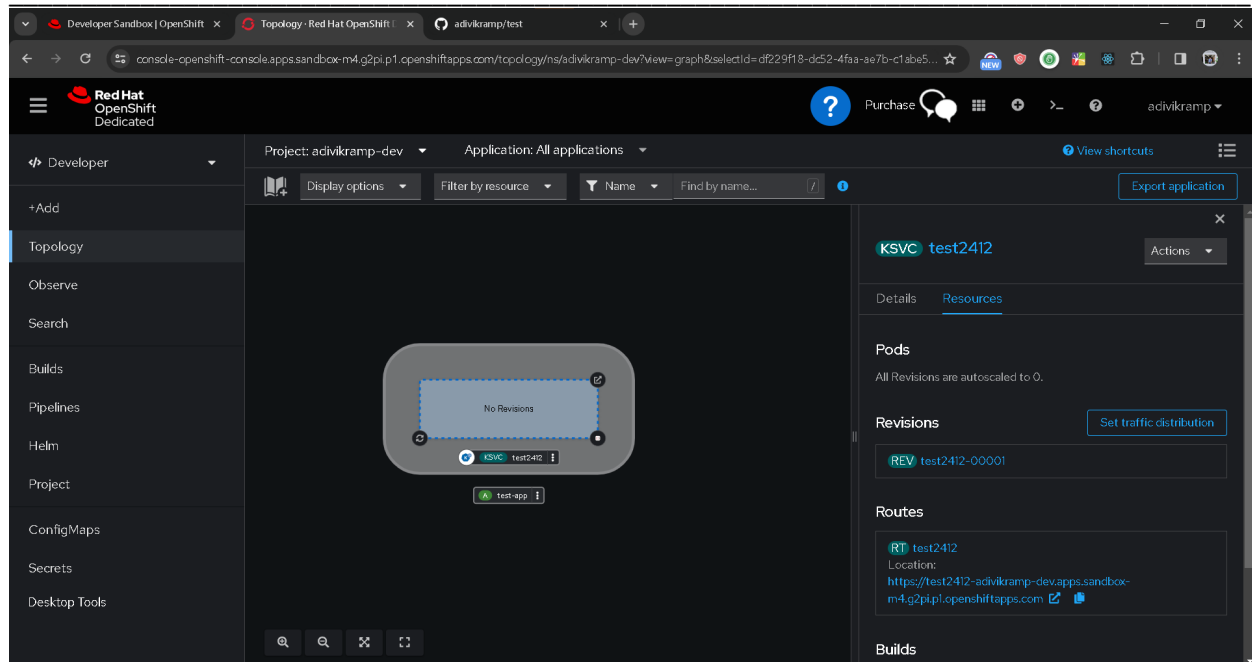
- Deploy the website/application within the Codenvy workspace.
- Verify the successful deployment and functionality of the website.



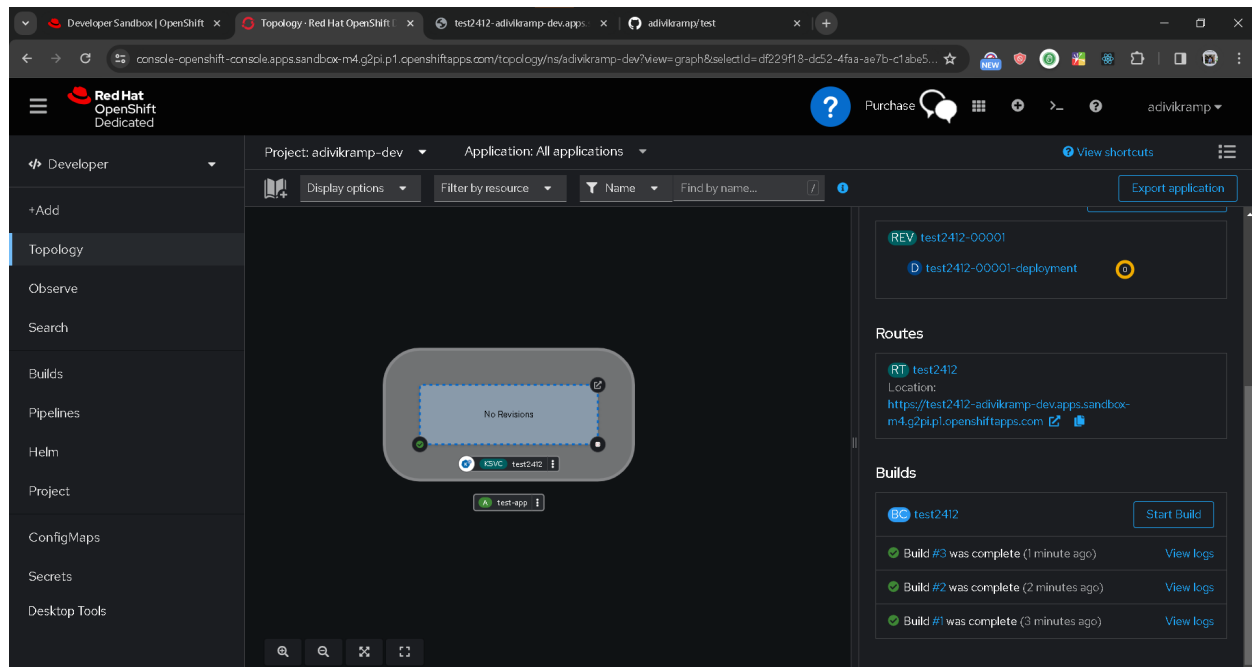
The screenshot shows the Red Hat OpenShift console interface. The left sidebar contains navigation options: Developer, +Add, Topology, Observe, Search, Builds (selected), Pipelines, Helm, Project, ConfigMaps, Secrets, and Desktop Tools. The main panel displays the 'Builds' section for the project 'adivikramp-dev'. It shows a build named 'test2412-2' in a 'Running' state. The 'Logs' tab is active, displaying the build log output. The log shows the build process starting with a commit, author, and date, followed by messages about using native diff, defaulting to storage driver 'overlay', caching blobs, and pulling image source signatures. The log ends with copying blobs.

```
13 lines
2   Commit: 9de8010c0b2a6205261cb76c02713170c5f96ac7 (Initial commit)
3   Author: adivikramp <129294554+adivikramp@users.noreply.github.com>
4   Date: Fri Dec 1 23:44:19 2023 +0530
5   time="2023-12-01T18:38:50Z" level=info msg="Not using native diff for overlay, this may cause degraded performance for building images: kernel has CONFIG_I1201 18:38:59.651299 1 defaults.go:112] Defaulting to storage driver "overlay" with options [mountopt=metacopyson].
6   Caching blobs under "/var/cache/blobs".
7   Trying to pull image-registry.openshift-image-registry.svc:5000/openshift/python@sha256:51e90ac16df3d2ae9d56f2b8463bdc316a2435ad75f25392a605fa96b159cf30
8   Getting image source signatures
9   Copying blob sha256:6208c5a2e205726f3a2cd42a392c5e4f05256858d13197a711000c4021ede87b
10  Copying blob sha256:07b6121ef647e82c2efa8e6489d94c7668d88af38c138236592c6675acdf055a
11  Copying blob sha256:c23476b8eac521e49a807fbb862f065702fd9548dc32cf6331b48dbadedcae
12  Copying blob sha256:7555105d67ca0276898e6a796e4d899cc2901c14ac8be59b14329032e147fa9
```





The screenshot shows the Red Hat OpenShift console interface. The left sidebar contains navigation options: Developer, Topology, Observe, Search, Builds, Pipelines, Helm, Project, ConfigMaps, Secrets, and Desktop Tools. The main area displays a topology diagram with a single node labeled 'test2412' and a status 'No Revisions'. The right sidebar shows details for the 'test2412' resource, including a 'Resources' tab, 'Pods' (All Revisions are autoscaled to 0), 'Revisions' (REV test2412-00001), and 'Routes' (RT test2412 with location https://test2412-advikramp-dev.apps.sandbox-m4-g2pi.p1.openshiftapps.com).



The screenshot shows the Red Hat OpenShift console interface after a deployment. The left sidebar is the same as the previous screenshot. The main area displays the same topology diagram, but the status of the 'test2412' resource has changed to 'test2412-00001-deployment'. The right sidebar shows details for the 'test2412-00001-deployment' resource, including a 'Routes' tab (RT test2412 with location https://test2412-advikramp-dev.apps.sandbox-m4-g2pi.p1.openshiftapps.com) and 'Builds' (Build #3 was complete (1 minute ago), Build #2 was complete (2 minutes ago), Build #1 was complete (3 minutes ago)).

**Conclusion:**



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Successfully demonstrated the provisioning and scaling of a website using Codenvy. This experiment highlighted the process of setting up a development environment, deploying a website, and dynamically adjusting resources to accommodate varying loads, ensuring efficient performance under different conditions.