Feature Flags

Lab Manual

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Lab : Feature Flags

Introduction

In this lab, you will work with LaunchDarkly to implement feature flags, exploring their available functionality.

Objectives

After completing this lab, you will be able to:

- Use Feature Flags effectively

Prerequisites

None

Estimated Time to Complete This Lab

30 minutes

For More Information

Microsoft and LaunchDarkly: https://launchdarkly.com/microsoft/

LaunchDarkly: https://launchdarkly.com/

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Exercise 1: Create a feature flag

Introduction

Feature flags are an important DevOps technique that makes the process of continuous delivery a lot easier. They help with the following aspects of the release process:

- Nearly eliminate integration (merge) conflicts.
- Toggle features to hide, disable, or enable features at run-time.
- Revert a change deployed to production without rolling back your release.
- Present users with variants of a feature, to determine which one performs better.

Objectives

After completing this lab, you will be able to:

- Understand and control feature flags to turn features on/off

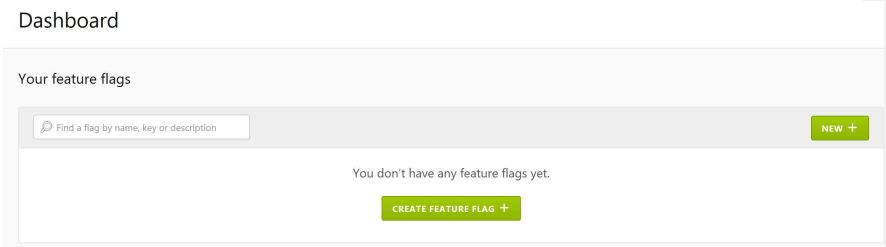
Prerequisites

None

Tasks

Implementing feature flags can either be achieved by building your own infrastructure or by leveraging one of the many products in the marketplace. In this hands-on lab, we have chosen the latter. We will use a product called LaunchDarkly. **Our choice is not a recommendation of the product**. You should evaluate the solution that best meet your needs.

- Go to this web site and sign up for a **free trial version**: https://launchdarkly.com/start/index.html#signup
- Open a shell window (Bash, Windows Command Line or PowerShell). You can use the integrated command line from within VS Code.
- Go to the solution root folder of your "ModernUISolution", and then to the "ModernUIApp" folder: "cd ModernAppUISolution"
  (Make sure this name matches the name you chose for the UI solution folder)
- From the "LaunchDarkly" portal add a new entry for the feature flag:



- Click on "Create feature flag", then enter the following information:

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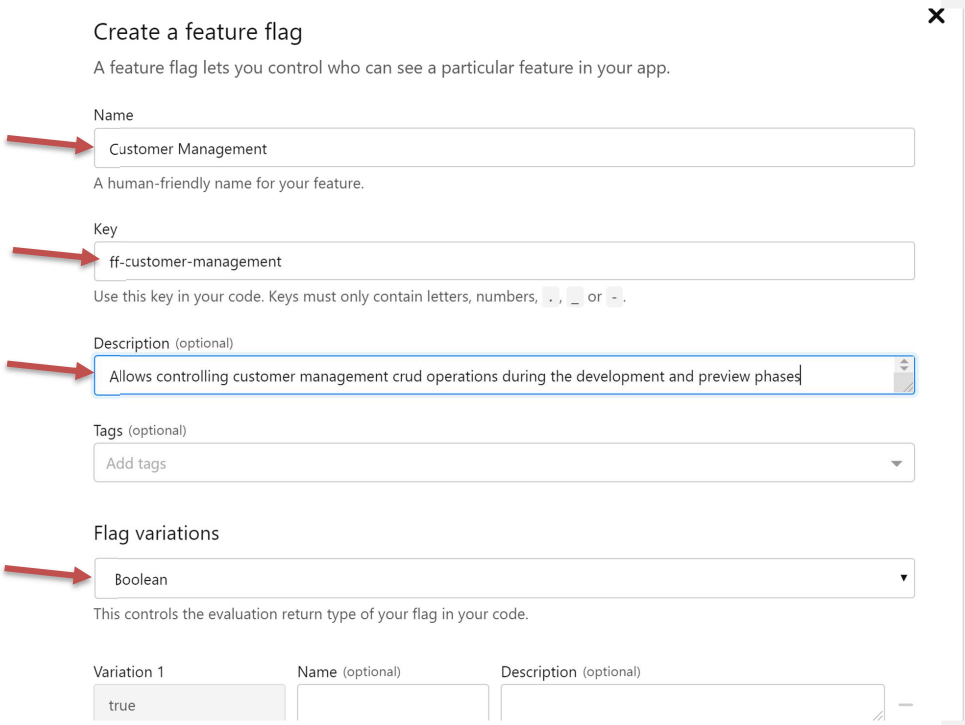
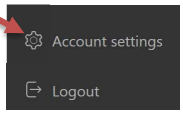


Click "Save Flag".

Note: Make sure you take note of the feature flag key you entered in this screen, you will refer to it in the rest of this lab.

- From the "Launchdarkly" dashboard, go to the account settings.



- Copy the production SDK key for the "Production" environment. You will need it to integrate the code with the feature flag:

- Go to the feature flags dashboard and click on the feature flag you created.

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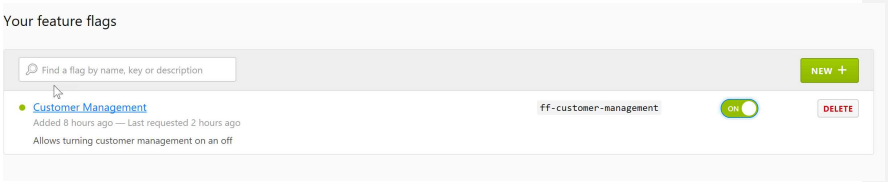
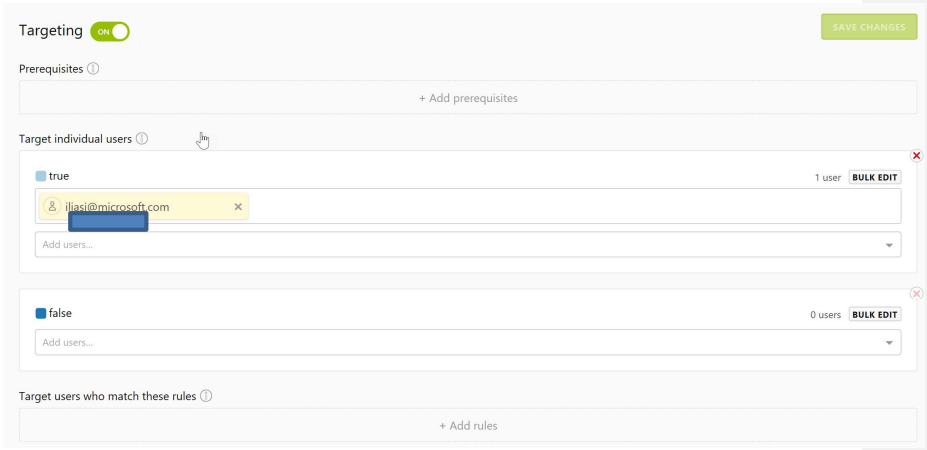


- Click on the "Customer Management" feature flag:
- Enable targeting, and add a user in the true section (you can enter your own email address for instance):



- Make sure the default rule is false:

- Save the changes you've made.

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Exercise 2: Use a feature flag in your application

Objectives

After completing this lab, you will be able to:

- Integrate feature flags with your code.

Prerequisites

None

- Replace the content of your "ModernUIAppSolution" folder with the content of the "..\Exercice 2\ModernUIAppSolution" folder.
  We are now ready to test the full application interaction.
- Open a PowerShell window and go to the root folder containing both your "ModernApiAppSolution" and your "ModernUIAppSolution".
- Use the following command to open Visual Studio Code:
  Code .
- Open the "ui.Dockerfile" and replace the "LaunchDarklyKey" environment variable with the key you have copied in the previous step.

Startup.cs | ui.Dockerfile | CustomersController.cs

```
1  FROM microsoft/dotnet:2.1-sdk AS build
2  WORKDIR /app
3
4  # Copy csproj and restore as distinct layers
5  COPY . .
6  RUN dotnet restore /app/ModernUIApp/ModernUIApp.csproj
7  RUN dotnet publish /app/ModernUIApp/ModernUIApp.csproj --output /out/ --configuration Release
8
9
10
11
12 FROM microsoft/dotnet:2.1-aspnetcore-runtime AS runtime
13 WORKDIR /app
14 COPY --from=build /out .
15
16 ENV ApiURL http://modernapiapp/api/customers
17 ENV ASPNETCORE_ENVIRONMENT Development
18 ENV LauchDarklyKey sdk-c9[redacted]abc9a1a91eb7
19 ENV APPINSIGHTS_INSTRUMENTATIONKEY 553ee494-f1ee-444e-99af-b623e761c82e
20 EXPOSE 80
21
22 ENTRYPOINT ["dotnet", "ModernUIApp.dll"]
```

Commented [JB1]: I had issues with this and had to make certain the ASPNETCORE_ENVIRONMENT was the same as the environment defined in the Account Settings in Launch Darkly.

Commented [IJ2R1]: Indeed.
Need two keys for Dev and Prod.

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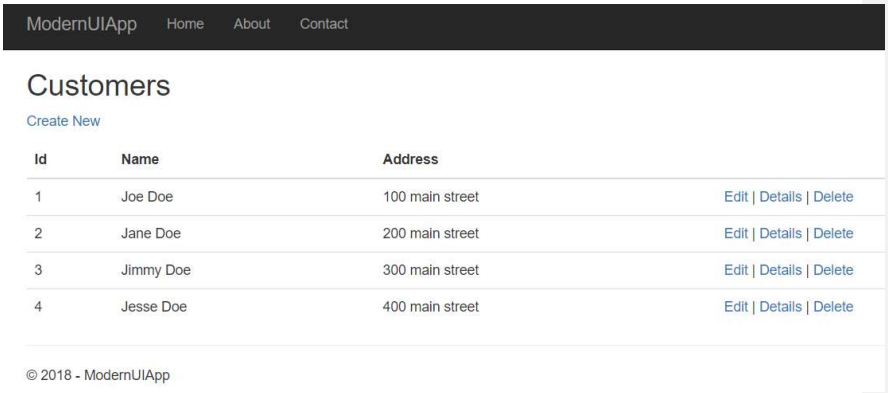
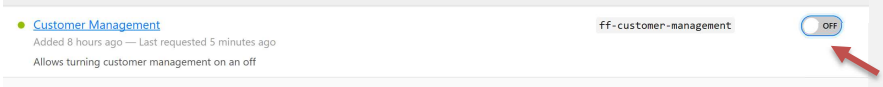
- Change the username in the "CustomersController.cs"

- Run the following commands:
  ".\stopApiAndUi.ps1" (Please note that if there are not running containers, you will get an error message informing you that there aren't any running containers)
  ".\startApiAndUi.ps1"
- Once the application runs go to the page: http://localhost:9090/Customers, you should be able to see the list of customers:



- Go to the Feature flag dashboard, and turn it off:



- Refresh the customers page in your application. You should now get the following response:

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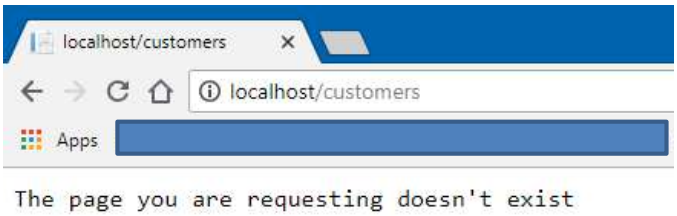

You are now able to control the visibility of this feature directly from the launch darkly site by targeting specific users. Please note that in a real application, you will most likely get the user ids from the application itself instead of having them hardcoded, and you would use the JavaScript SDK as well so that the UI doesn't even offer a link to the page we requested if the feature is off.

Examine the code responsible of enabling the feature flag on and off. It is in the "CustomersController.cs" class in the "ModernUIApp" application:

```
public CustomersController(ICustomerDataService customerDataService,
IFeatureFlagService featureFlagService)
        {
            _customerDataService = customerDataService;
            _featureFlagService = featureFlagService;
        }
        public IActionResult Index()
        {
            if (_featureFlagService.ViewFeature(_userName))
            {
                var customers = _customerDataService.GetAll();
                return View(customers);
            }
            else
            {
                return Content("The page you are requesting doesn't exist");
            }
        }
```

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