

# AMAZON GAMESLIFT PLUGIN USER GUIDE

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*v.0.1.0*



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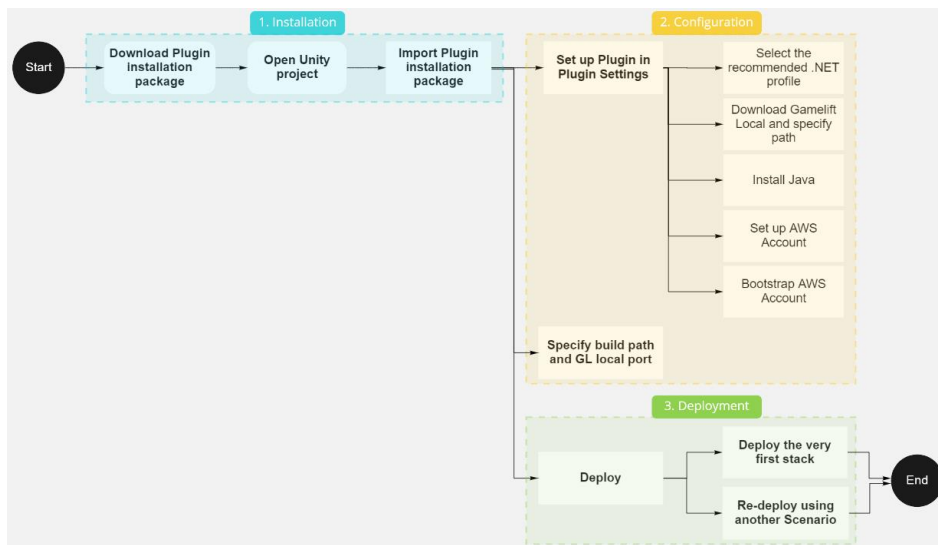
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## ABOUT AMAZON GAMELIFT PLUGIN

Amazon GameLift Plugin is a binary plugin that can be used by Unity developers and integrated into their game code without recompiling from the source. The plugin is available from the Unity marketplace and provides easy use of Amazon GameLift functions in hosting, running, and scaling session-based multiplayer games. The plugin supports 5 key deployment scenarios.

The diagram below represents the user interaction with the Amazon GameLift Plugin starting from installing the plugin finishing with stack deployment:



1. **Installation.** Download the Amazon GameLift Plugin installation package and import it in the Unity project.
2. **Configuration.** Configure the plugin as follows:
  - Select the recommended version of .NET (.NET 4.x profile for compatibility with external plugin libraries in current Unity project)
  - Download GameLiftLocal.jar and specify the path to it

- Install the latest version of Java
  - Provide the credentials of an existing AWS account or create a new one and specify the region
  - Bootstrap the AWS account by choosing an existing S3 bucket or creating a new one
  - Specify the build path and GL Local port
3. **Deployment.** Deploy the stack using one of 5 deployment scenario templates (Auth Only, Single Region Fleet, Multi-Region Fleets with Queue and Custom Matchmaker, SPOT Fleets with Queue and Custom Matchmaker, and FlexMatch) or the custom one.

## Recommended minimum system requirements

- The Amazon GameLift Plugin is compatible only with officially supported versions of Unity for Windows. It is recommended to use it with the following ones:
  - 2018.4 LTS
  - 2019.4.LTS
  - 2020.2.X

## AMAZON GAMELIFT PLUGIN INSTALLATION

### Step 1. Download the installation package

To download Amazon GameLift Plugin, do the following:

1. Open the [Amazon GameLift Getting Started](#) page.
2. Find the Amazon GameLift Plugin card and click the **Download** button.
3. The `com.amazonaws.gamelift.zip` file will be downloaded and saved on your computer.

**Commented [MV1]:** Need to add a title of the card and screenshot then

### Step 2. Unzip the installation package

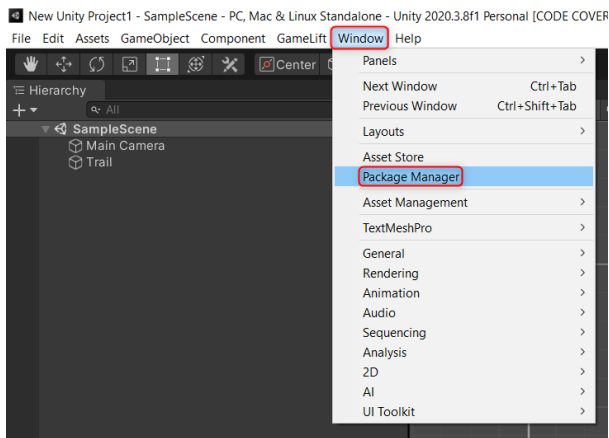
When the `com.amazonaws.gamelift.zip` file is downloaded, unzip it. The `com.amazonaws.gamelift` folder has the following structure:

Location	Description
Editor/	Editor platform-specific assets folder. The predefined deployment scenarios are stored in <b>Editor/Resources</b> .
Examples~/	Contains the game sample package.
Runtime/	Runtime platform-specific assets folder.
Tests/	Package tests folder.
CHANGELOG.md	Description of plugin changes by versions.
LICENSE.md	Contains license information.
package.json	Defines package dependencies and other metadata.
README.md	Developer package documentation.

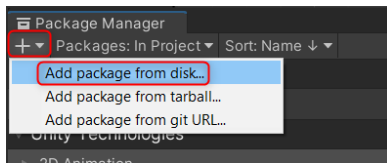
### Step 3. Import the installation package in your Unity project

To import the plugin installation package, do the following:

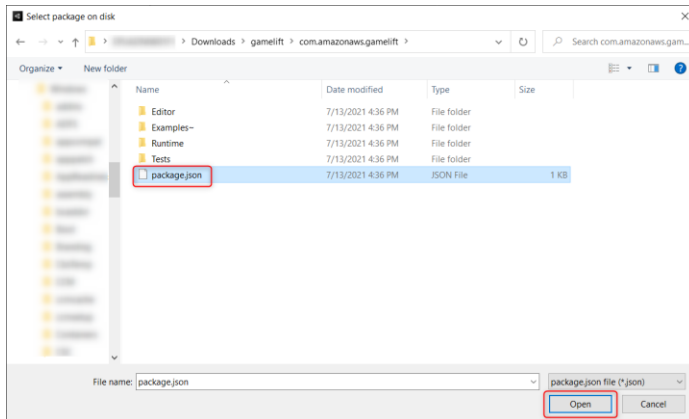
1. Run Unity and open the project needed.
2. Navigate to **Window > Package Manager**.



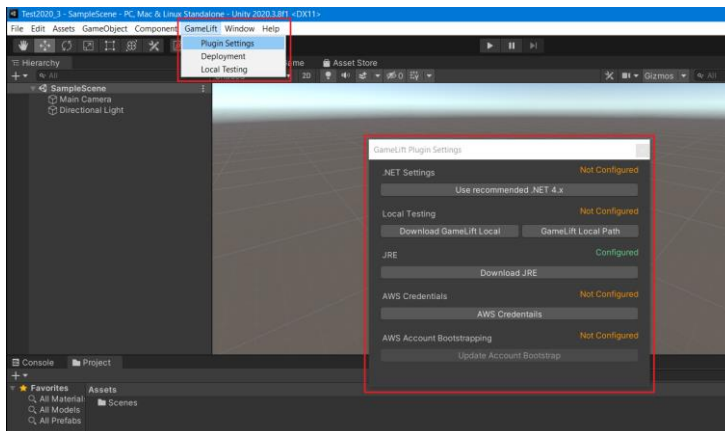
3. In the opened **Package Manager** window, click the “+” button and select the **Add package from disk** option.



4. In the window opened, specify the path to the **package.json** file and click **Open**.



- Once the package is imported, the **GameLift** menu item will be added in the Unity menu bar, and the **GameLift Plugin Settings** window will be opened automatically, and you can start configuring the [Amazon GameLift Plugin](#).





## AMAZON GAMELIFT PLUGIN CONFIGURATION

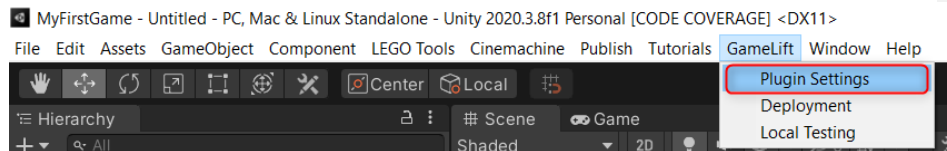
You should configure the plugin as follows:

- [Select the recommended version of .NET profile](#)
- [Configure GameLift Local](#) by downloading the GameLiftLocal.jar and specifying the path to it
- [Install the latest version of Java](#)
- [Provide the credentials of an existing AWS account or create a new one and specify the region](#)
- [Bootstrap the AWS account](#) by choosing an existing S3 bucket or creating a new one
- [Specify the build path and GL Local port](#)

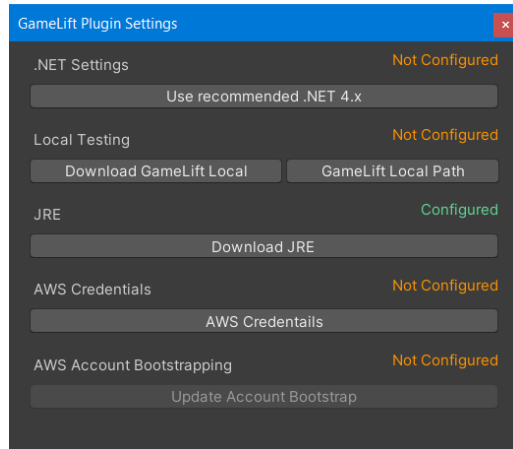
### Selecting the recommended version of .NET

To select the recommended version of .NET, do the following:

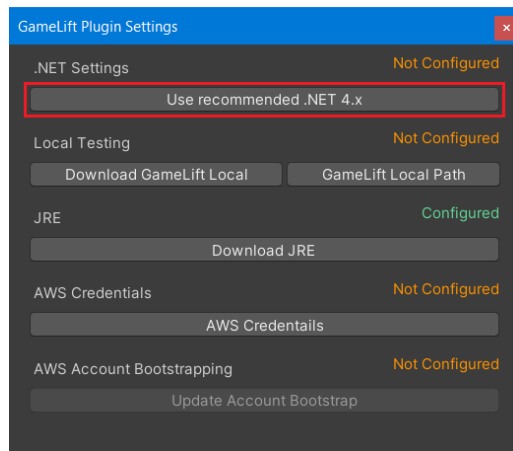
1. Open the **GameLift Plugin Settings** window by clicking **GameLift > Plugin Settings** in the menu bar.



2. In the opened **GameLift Plugin Settings** window, you can see the list of settings and the **“Configured”** and **“Not Configured”** statuses.



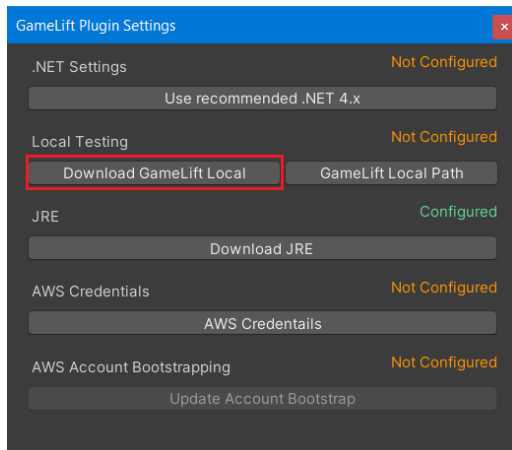
3. If the .NET profile is not 4.6, the **“Not Configured”** status is displayed. Click the **Use recommended .NET 4.6** button to select the .NET profile. After it is done, the status is changed to **“Configured”**.



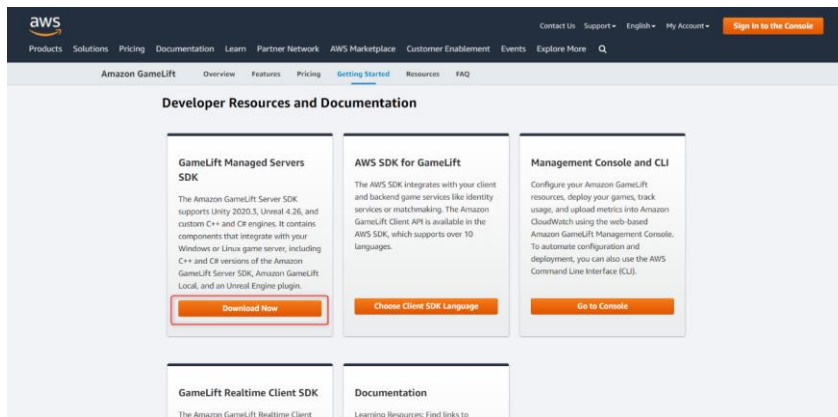
## Configuring GameLift Local

To configure GameLift Local, do the following:

1. In the **GameLift Plugin Settings** window, click the **Download GameLift Local** button.

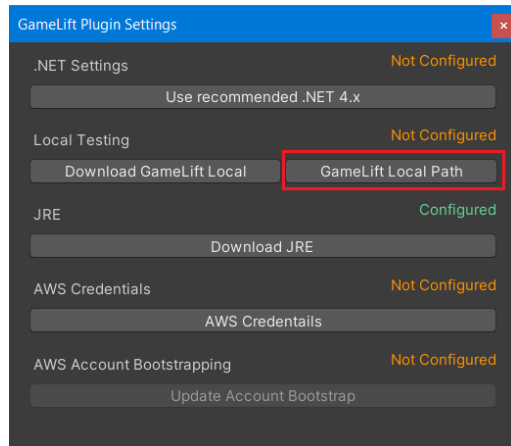


2. The **Getting Started with Amazon GameLift** page is opened in the browser tab. Scroll down, find the **GameLift Managed Servers SDK** card, and click the **Download Now** button.

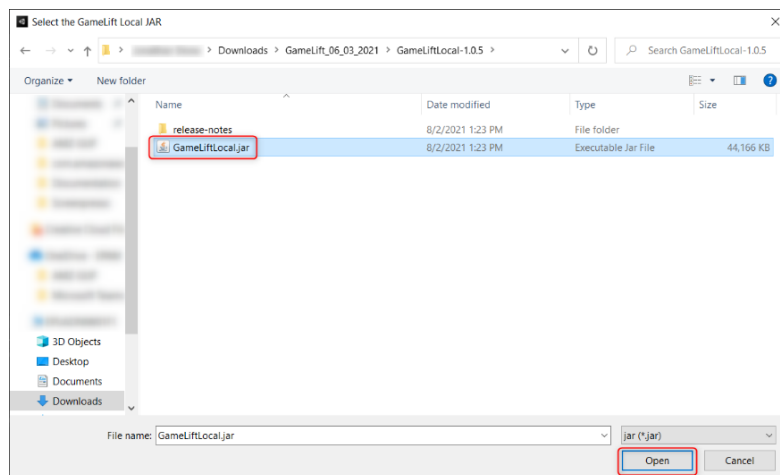


3. Save the **GameLift\*.zip** file, and then unzip it.

4. In the **GameLift Plugin Settings**, click the **GameLift Local Path** button.



5. In the **GameLiftLocal** folder, find the **GameLiftLocal.jar** file, and click **Open**.

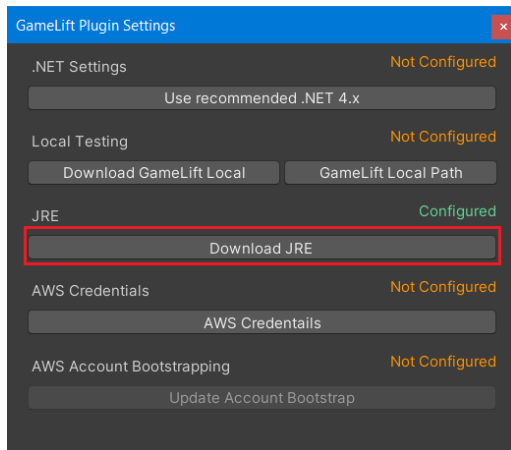


6. The status of the **Local Testing** setting is changed to **“Configured”**.

## Installing Java

To install Java, do the following:

1. In the **GameLift Plugin Settings** window, click the **Download JRE** button.



2. The **Download Java** page is opened. Click the **Agree and Start Download** button.
3. Download Java and install it.
4. The status of the **JRE** setting is changed to **“Configured”**.

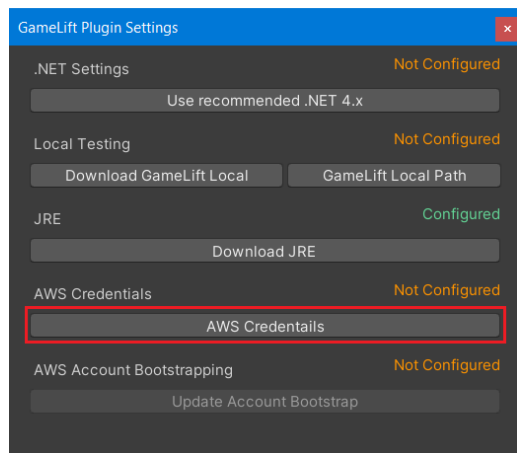
## Configuring the AWS account credentials

You can either [add a new AWS account](#) or [choose the existing one](#) if it was already added in Unity.

### Adding a new AWS account

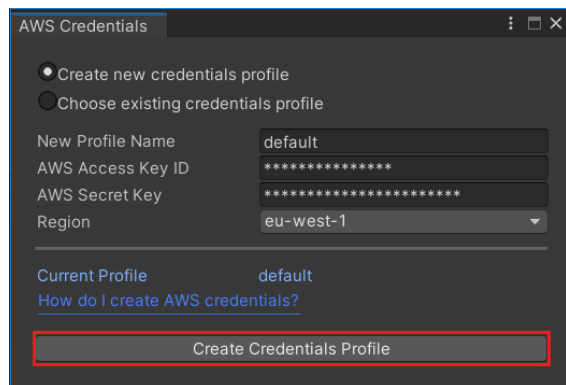
To add a new AWS account, do the following:

1. In the **GameLift Plugin Settings** window, click the **AWS Credentials** button.



2. In the opened **AWS Credentials** window, select the **Create new credentials profile** radio button and fill the following fields in:
  - **New Profile Name.** Enter your AWS account name.
  - **AWS Access Key ID.** Enter the key ID.
  - **AWS Secret Key.** Enter the secret key.
  - **Region.** Select the region from the list and Amazon will create an S3 bucket in it afterwards. It is recommended to choose the region that is geographically close to you to optimize latency, minimize costs, or address regulatory requirements.

**NOTE.** To manage your AWS credentials, follow the instructions described in the [AWS documentation](#).

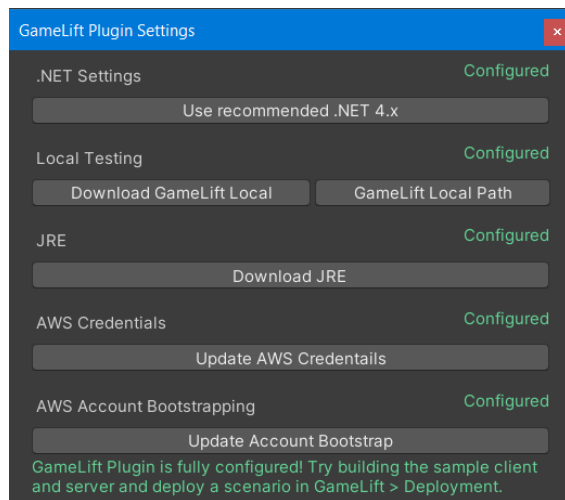


3. Click the **Create Credentials Profile** button.
4. The status of the **AWS Credentials** setting is changed to **“Configured”**.

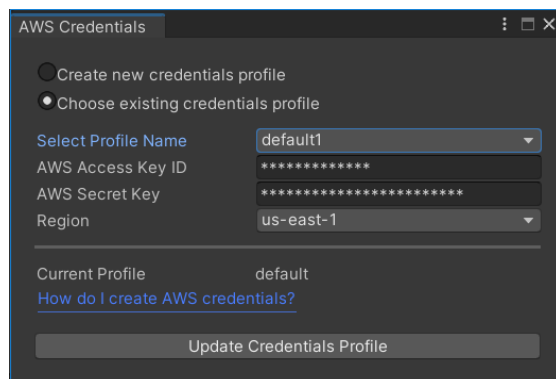
## Choosing an existing AWS account

To choose an existing AWS account if it was added in Unity earlier, do the following:

1. In the **GameLift Plugin Settings** window, click the **Update AWS Credentials** button.



2. In the opened **AWS Credentials** window, select the **Choose Existing credentials profile** radio button, choose the profile name in the **Select Profile Name** drop-down list, enter other access key ID, secret key, and region in the appropriate fields if needed, and then click the **Update Credentials Profile** button.





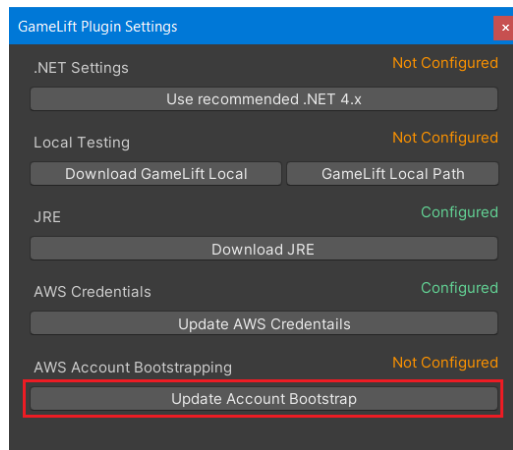
## AWS account bootstrapping

When the credentials of the AWS account are provided, you can either [create a new S3 bucket](#) or [choose the existing one](#).

### Creating a new S3 bucket

To create a new S3 bucket, do the following:

1. In the **GameLift Plugin Settings** window, click the **Update Account Bootstrapping** button.



2. In the opened **Account Bootstrapping** window, select the **Create new S3 bucket** radio button, and choose an expiration date of your S3 bucket in the **Policy** drop-down list.

Account Bootstrapping

☒ Create new S3 bucket  
☐ Choose existing S3 bucket

Using S3 will incur costs to your account via Storage, Transfer, etc. See S3 Pricing Plan (<https://aws.amazon.com/s3/pricing/>) for details.

Name of S3 bucket: do-not-delete-gamelift-bootstrap-892228716938-eu-west-1  
Region: eu-west-1  
Policy: 7 days

Current S3 bucket

Create

3. The name of your future S3 bucket is displayed in the **Name of S3 bucket** field.
4. Click the **Create** button.

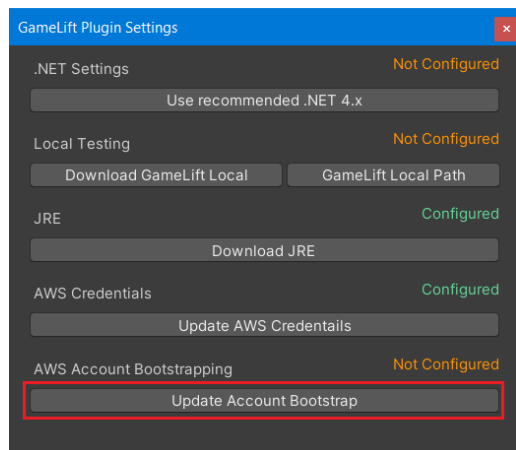
**Note.** Creation of an S3 bucket can potentially incur costs to your account.

5. To view the bucket in the S3 console, click the **Go to S3 console** link.
6. The status of the **AWS Account Bootstrapping** setting is changed to **“Configured”**.

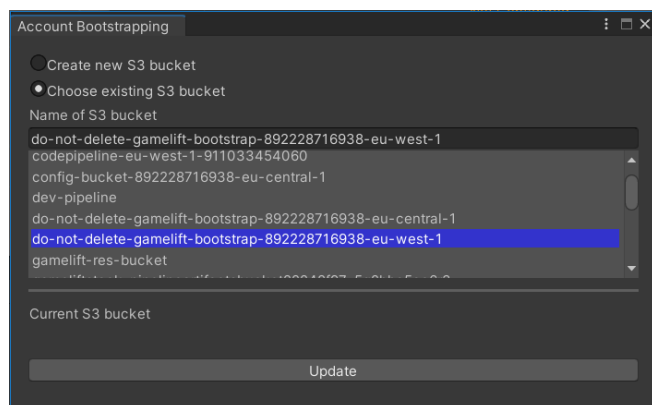
## Choosing an existing S3 bucket

To choose an existing S3 bucket, do the following:

1. In the **GameLift Plugin Settings** window, click the **Update Account Bootstrapping** button.



2. In the opened **Account Bootstrapping** window, select the **Choose existing S3 bucket** radio button, and choose the bucket from the list. If needed, enter the name of the bucket in the search field under the list.



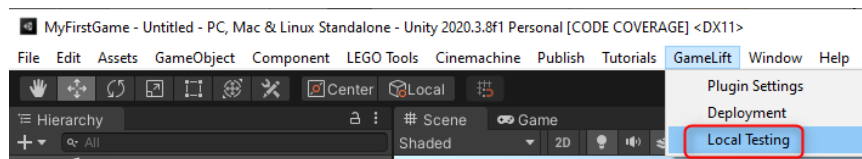
**Note.** The name of the currently selected bucket is displayed in the **Current S3 bucket** field. To view the bucket in the S3 console, click the **Go to S3 console** link.

3. When the bucket is selected, click the **Update** button.

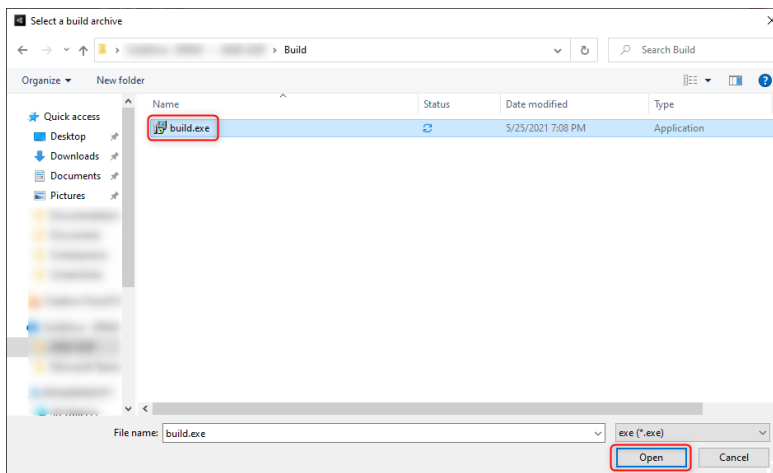
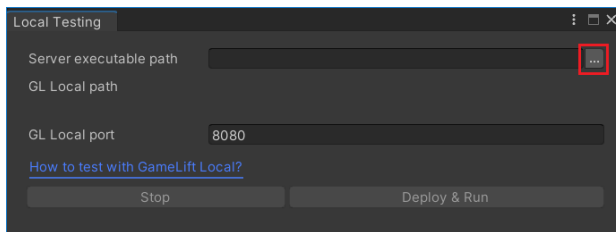
## Specifying the build path and GL Local port

To specify the build path and GL Local port, do the following:

1. Open the **Local Testing** window by clicking **GameLift > Local Testing** in the menu bar.



2. In the opened **Local Testing** window, specify the server path by clicking "...".



3. Specify the port in the **GL Local port** field and click the **Deploy & Run** button.



## STACK DEPLOYMENT

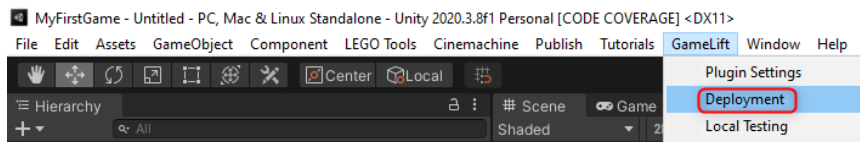
After you finished [configuring the plugin](#), you can start deployment. The plugin supports 5 predefined deployment scenarios, thus you can [deploy one of them](#) or [use the custom scenario](#).

**Note.** The predefined deployment scenarios are stored in the following location: `com.amazonaws.gamelift\Editor\Resources\CloudFormation` folder.

### Deploying a predefined scenario

To deploy a predefined scenario, do the following:

1. Open the **Deployment** window by clicking **GameLift > Deployment** in the menu bar.



2. In the **Deployment** window, find the scenario needed in the drop-down list. A brief description of each scenario is displayed below the drop-down.

**Commented [MV2]:** custom scenario button is proposed to be removed, if Amazon approves -- need to update wording

Deployment

⚠️ Deploying and running various AWS resources in the CloudFormation template will incur costs to your account. See AWS Pricing Plan (<https://aws.amazon.com/pricing/>) for details on the cost of each resource in the CloudFormation template.

Select scenario: **Auth Only**

Scenario Path: C:\Temp\com.amazonaws.gamelift\Editor\Resources\CloudFormation\scenario1\_auth\_only

This CloudFormation template sets up a minimal game backend service with only 1 functionality -- player authentication. Lambda handler to start a game and view game connection information are stubbed to always return 501 error (Unimplemented).

[Learn more](#)

Game Name:

Build Folder Path:

Build Exe File Path:

Region: eu-west-1

S3 Bucket: do-not-delete-gamelift-bootstrap-892228716938-eu-west-1

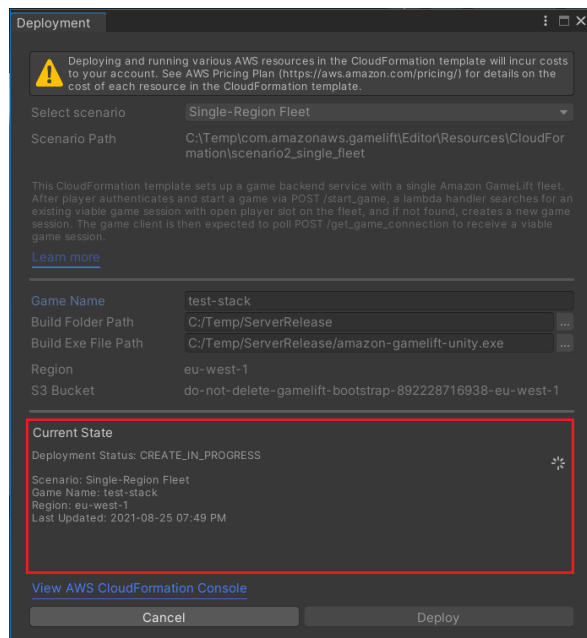
Current State

Nothing is deployed. Click on the «Deploy» button below.

[How to deploy your first game?](#)

Cancel Deploy

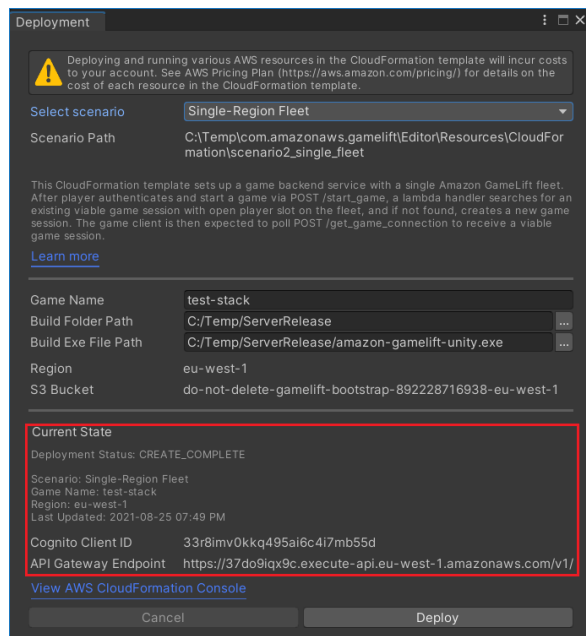
3. Specify the name of your game in the **Game Name** field.
4. Specify your server build root folder path in the **Build Folder Path** field and the game server executable path in the **Build Exe File Path** field (for Single-Region Fleet, Multi-Region, Spot Fleets, and Flex Match scenarios). The region and S3 bucket name which you created during configuring the plugin are displayed below in the appropriate fields.
5. Click the **Deploy** button to start deployment. The stack statuses and details will be displayed in the **Current State** section.



**Note.** For more details about CloudFormation stacks and stack status codes, read the [AWS CloudFormation guide](#).

- When the deployment process is completed, the status, Cognito Client ID, and API Gateway Endpoint will be displayed in the **Current State** section.





**Note.** While deployment is in progress, you can close the **Deployment** window if needed and then open it again. The process will not be interrupted.

You can interrupt the deployment process by clicking the **Cancel** button.

7. If needed, you can redeploy stack using another scenario or changing deployment parameters.

## Deploying a custom scenario

To create a custom scenario based on the existing one, do the following:

1. In Unity 2018.4, you need to open the **com.amazonaws.gamelift\Examples~\CustomScenario** folder of the plugin and import the .unitypackage file into your project or

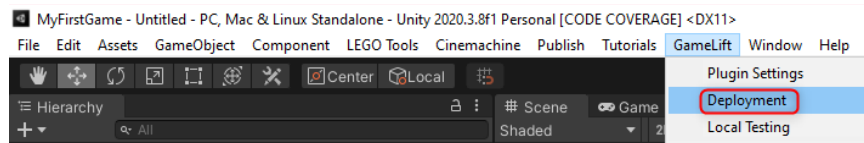
2. In Unity 2019.1 and newer, open your project in Unity, go to **Window > Package Manager > Amazon GameLift Plugin**; find **Custom Scenario** in the **Samples** section and click **Import**.
3. Find the **Custom Scenario** folder in **Assets/Editor/** and customize it as needed.

Also, you can create the custom scenario manually based on an existing scenario, customize it, and deploy:

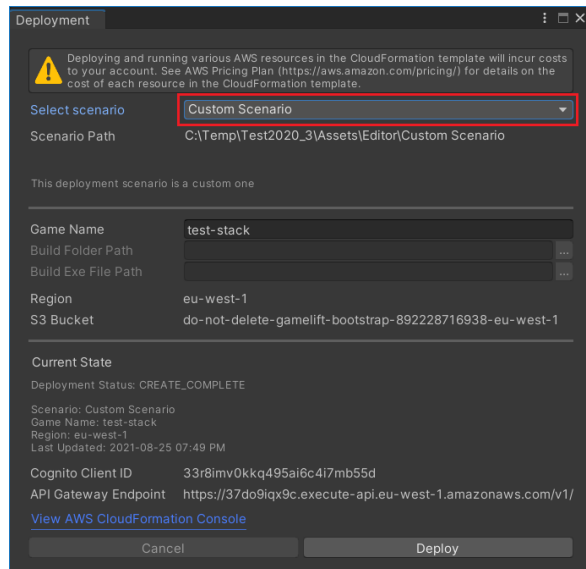
1. Go to the **com.amazonaws.gamelift\Editor\Resources\CloudFormation** folder.
2. Copy a scenario folder and paste it somewhere in your project's Assets folder.
3. Open the scenario folder.
4. Change the scenario assembly definition name.
5. Open the **Deployer.cs** and change:
  - the namespace to a new unique value,
  - the **DisplayName** property to a new unique value,
  - the **ScenarioFolder** property value to your relative folder path (starting with Assets),
  - other properties you need.

**To deploy a custom scenario, do the following:**

1. Open your project in **Unity** and navigate to the **Deployment** window by clicking the **GameLift > Deployment** menu item.



2. In the **Deployment** window, find the custom scenario in the **Select scenario** drop-down list.



3. Do the same further steps as described in **Deploying a predefined scenario**.

Commented [MV3]: custom scenario button is removed, if Amazon approves -- need to update instruction

**Note.** While deployment is in progress, you can close the **Deployment** window if needed and then open it again. The process will not be interrupted.

You can interrupt the deployment process by clicking the **Cancel** button.

4. If needed, you can redeploy stack using another scenario or changing parameters.

## FAQ

## How to run unit and integration tests

There is a list of the test types by their location:

Location	Description
AmazonGameLiftPlugin.Core	Unit tests can be found in the <b>AmazonGameLiftPlugin.Core.Tests</b> project. They can be run from your IDE.
GameLift-Unity (plugin)	Unit tests can be found at <b>GameLift-Unity\Assets\com.amazonaws.gamelift\Tests\Editor\Unit</b> , or in the <b>AmazonGameLiftPlugin.Editor.UnitTests</b> project in your IDE. They can be run from the <b>Unity Editor: Window &gt; General &gt; Test Runner</b> .
GameLift-SampleGame	<ul style="list-style-type: none"> <li>Unit tests can be found at <b>GameLift-SampleGame\Assets\Tests\Editor\Unit</b>, or in the <b>SampleTests.Unit</b> project in your IDE. They can be run from the <b>Unity Editor: Window &gt; General &gt; Test Runner, EditMode</b>.</li> <li>Play mode integration UI tests can be found at <b>GameLift-SampleGame\Assets\Tests\UI</b>, or in the <b>SampleTests.UI</b> project in your IDE. They can be run from the <b>Unity Editor: Window &gt; General &gt; Test Runner, PlayMode</b>. These tests need <b>**GameLift-SampleGame\UiTestSettings.json**</b> filled with your test parameters.</li> </ul>

## Where to find logs?

An additional error log file related to the Unity game project can be found in the following location: **logs/amazon-gamelift-plugin-logs[YYYYMMDD].txt**. Note that the log file is created once a day.