Making HTTP requests

Why use HTTP?

HTTP requests are useful to communicate with web servers and other non-Godot programs.

Compared to Godot's other networking features (like High-level multiplayer), HTTP requests have more overhead and take more time to get going, so they aren't suited for real-time communication, and aren't great to send lots of small updates as is common for multiplayer gameplay.

HTTP, however, offers interoperability with external web resources and is great at sending and receiving large amounts of data, for example to transfer files like game assets. These assets can then be loaded using runtime file loading and saving.

So HTTP may be useful for your game's login system, lobby browser, to retrieve some information from the web or to download game assets.

HTTP requests in Godot

The HTTPRequest node is the easiest way to make HTTP requests in Godot. It is backed by the more low-level HTTPClient, for which a tutorial is available here.

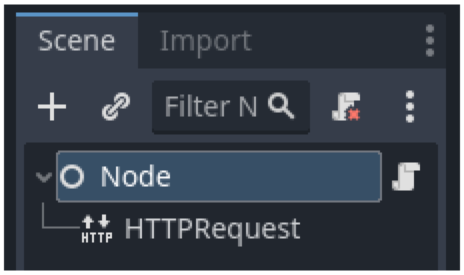
For this example, we will make an HTTP request to GitHub to retrieve the name of the latest Godot release.

Warning

When exporting to **Android**, make sure to enable the **Internet** permission in the Android export preset before exporting the project or using one-click deploy. Otherwise, network communication of any kind will be blocked by the Android OS.

Preparing the scene

Create a new empty scene, add a root Node and add a script to it. Then add an HTTPRequest node as a child.



Scripting the request

When the project is started (so in `_ready()`), we're going to send an HTTP request to Github using our HTTPRequest node, and once the request completes, we're going to parse the returned JSON data, look for the `name` field and print that to console.

GDScript C#

```
extends Node

func _ready():
    $HTTPRequest.request_completed.connect(_on_request_completed)

$HTTPRequest.request("https://api.github.com/repos/godotengine/godot/releases,

func _on_request_completed(result, response_code, headers, body):
    var json = JSON.parse_string(body.get_string_from_utf8())
    print(json["name"])
```

Save the script and the scene, and run the project. The name of the most recent Godot release on Github should be printed to the output log. For more information on parsing JSON, see the class references for JSON .

Note that you may want to check whether the `result` equals `RESULT_SUCCESS` and whether a JSON parsing error occurred, see the JSON class reference and HTT

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You have to wait for a request to finish before sending another one. Making multiple request at once requires you to have one node per request. A common strategy is to create and delete HTTPRequest nodes at runtime as necessary.

Sending data to the server

Until now, we have limited ourselves to requesting data from a server. But what if you need to send data to the server? Here is a common way of doing it:

GDScript C#

```
var json = JSON.stringify(data_to_send)
var headers = ["Content-Type: application/json"]
$HTTPRequest.request(url, headers, HTTPClient.METHOD_POST, json)
```

Setting custom HTTP headers

Of course, you can also set custom HTTP headers. These are given as a string array, with each string containing a header in the format `"header: value"` . For example, to set a custom user agent (the HTTP `User-Agent` header) you could use the following:

GDScript C#

```
$HTTPRequest.request("https://api.github.com/repos/godotengine/godot/releases,
["User-Agent: YourCustomUserAgent"])
```

Danger

Be aware that someone might analyse and decompile your released application and thus may gain access to any embedded authorization information like tokens, usernames or passwords. That means it is usually not a good idea to embed things such as database access credentials inside your game. Avoid providing information useful to an attacker whenever possible.

User-contributed notes

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Oldest Newest

Swarkin Jan 14, 2024

I made an `AwaitableHTTPRequest` Node to make HTTP requests more convenient and just in one line: https://github.com/Swarkin/Godot-AwaitableHTTPRequest