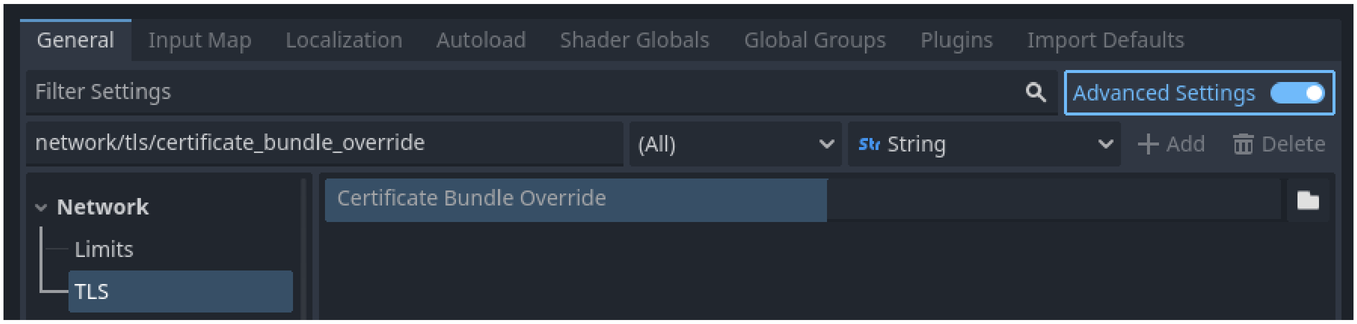
TLS/SSL certificates

Introduction

It is often desired to use TLS connections (also known as SSL connections) for communications to avoid "man in the middle" attacks. Godot has a connection wrapper, StreamPeerTLS , which can take a regular connection and add security around it. The HTTPClient and HTTPRequest classes also support HTTPS using this same wrapper.

Godot will try to use the TLS certificate bundle provided by the operating system, but also includes the TLS certificate bundle from Mozilla as a fallback.

You can alternatively force your own certificate bundle in the Project Settings:



network/tls/certificate_bundle_override (All) String

Network > TLS: Certificate Bundle Override

Setting the TLS certificate bundle override project setting

When set, this file *overrides* the operating system provided bundle by default. This file should contain any number of public certificates in PEM format .

There are two ways to obtain certificates:

Obtain a certificate from a certificate authority

The main approach to getting a certificate is to use a certificate authority (CA) such as Let's Encrypt . This is a more cumbersome process than a self-signed certificate, but it's more "official" and ensures your identity is clearly represented. The resultin by applications such as web browsers, unlike a self-signed certificate configuration on the client side before it's considered trusted.

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These certificates do not require any configuration on the client to work, since Godot already bundles the Mozilla certificate bundle in the editor and exported projects.

Generate a self-signed certificate

For most use cases, it's recommended to go through certificate authority as the process is free with certificate authorities such as Let's Encrypt. However, if using a certificate authority is not an option, then you can generate a self-signed certificate and tell the client to consider your self-signed certificate as trusted.

To create a self-signed certificate, generate a private and public key pair and add the public key (in PEM format) to the CRT file specified in the Project Settings.

> Warning
>
> The private key should **only** go to your server. The client must not have access to it: otherwise, the security of the certificate will be compromised.

> Warning
>
> When specifying a self-signed certificate as TLS bundle in the project settings, normal domain name validation is enforced via the certificate CN and alternative names. See TLSOptions to customize domain name validation.

For development purposes Godot can generate self-signed certificates via Crypto.generate_self_signed_certificate.

Alternatively, OpenSSL has some documentation about generating keys and certificates.

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