



This PDF is generated from authoritative online content, and is provided for convenience only. This PDF cannot be used for legal purposes. For authoritative understanding of what is and is not supported, always use the online content. To copy code samples, always use the online content.

Supplement to Orchestration Server Deployment Guide

Configuring FIPS for ORS on Windows

12/16/2025

Configuring FIPS for ORS on Windows

With the newer OpenSSL 3.x that comes supported with ORS 8.1.401.11+, in addition to setting the option **scxml/fips-enabled**, additional configuration steps are necessary to enable FIPS.

In ORS 8.1.401.11 and later versions, FIPS related modules/tools are located as follows:

- **fips.dll** is located in **<ORS_installation_folder>\fips\fips.dll**
- **openssl.exe** is located in **<ORS_installation_folder>\tools\openssl.exe**

To enable FIPS, follow these steps:

Important

The sample commands given in this procedure are based on the following assumptions which can vary depending on the user environments:

- ORS installation path - **C:\GCTI\ORS_8.1.401.11**
- Custom path for FIPS related config files - **C:\GCTI\ORS_FIPS_CFG**

1. Create an FIPS module configuration file, **fipsmodule.cnf** using the openssl utility:

```
openssl fipsinstall -out C:\GCTI\ORS_FIPS_CFG\fipsmodule.cnf -module C:\GCTI\
ORS_8.1.401.11\fips\fips.dll
```

2. Create an OpenSSL configuration file, **openssl.cnf** that includes **fipsmodule.cnf**, in the **C:\GCTI\ORS_FIPS_CFG** folder.

```
config_diagnostics = 1
openssl_conf = openssl_init

.include C:/GCTI/ORS_FIPS_CFG/fipsmodule.cnf

[openssl_init]
providers = provider_sect

[provider_sect]
fips = fips_sect
base = base_sect

[base_sect]
activate = 1
```

Important

When mentioning the path for **fipsmodule.cnf**, you must use forward slashes, for example, **C:/GCTI/ORS_FIPS_CFG/fipsmodule.cnf**.

3. Set the OPENSSL_CONF environment variable that points to the location and filename of **openssl.cnf**.

```
set OPENSSL_CONF=C:\GCTI\ORS_FIPS_CFG\openssl.cnf
```

4. Set the OPENSSL_MODULES environment variable that points to the folder with **fips.dll**.

```
set OPENSSL_MODULES=C:\GCTI\ORS_8.1.401.11\fips
```

5. (Optional) You can verify that FIPS is configured properly using the `openssl list -providers` command before starting ORS.

```
openssl list -providers
Providers:
  base
    name: OpenSSL Base Provider
    version: 3.0.10
    status: active
  fips
    name: OpenSSL FIPS Provider
    version: 3.0.10
    status: active
```

6. Start ORS only after the variables OPENSSL_CONF and OPENSSL_MODULES are set.