



[] | ../../docs/keysafe5-api/modules/ROOT/images/partner-logo.png

ENTRUST

Entrust KeySafe 5 Diagnostics API

Users Guide

2026-06-09

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Chapter 1. Introduction

Entrust KeySafe 5 is a centralized solution for configuring and controlling your Entrust nShield HSM. This document explains how to gather health status information and troubleshoot KeySafe 5 logs.

1.1. Product configurations

Entrust has successfully tested the following configurations:

Product	Version
Entrust KeySafe 5	v1.7.0 + hotfix-TAC1336
Operating System	Windows Server 2025

1.2. Requirements

- Access to the [Entrust TrustedCare Portal](#). This portal is available to customers with an active maintenance contract. To request an account, contact nshield.support@entrust.com.
- Familiarize yourself with the [nShield Security World](#) documentation.
- Familiarize yourself with the [KeySafe 5](#) documentation.

Chapter 2. Configure the connection to the KeySafe 5 server

1. Copy the executable `ks5diagnostics.exe` to a location on the server hosting KeySafe 5.
2. Specify the local KeySafe 5 server URL.



This operation might take a few minutes to execute.

For example:

```
>ks5diagnostics.exe server https://127.0.0.1:18080
Server set to https://127.0.0.1:18080
```

A configuration file named `.ks5api` is created in the local directory.

3. Display the configuration file.

```
>ks5diagnostics.exe config
openapi: C:\Users\ADMINI~1.INT\AppData\Local\Temp\2\_MEI84202\hsm-mgmt.yaml
server: https://127.0.0.1:18080
```

Chapter 3. Examine the log

- Find the keys, softcard, OCS, and world
- Find the HSM configuration information

3.1. Find the keys, softcard, OCS, and world

1. Generate the log file.



This operation might take a few minutes to execute.

For example:

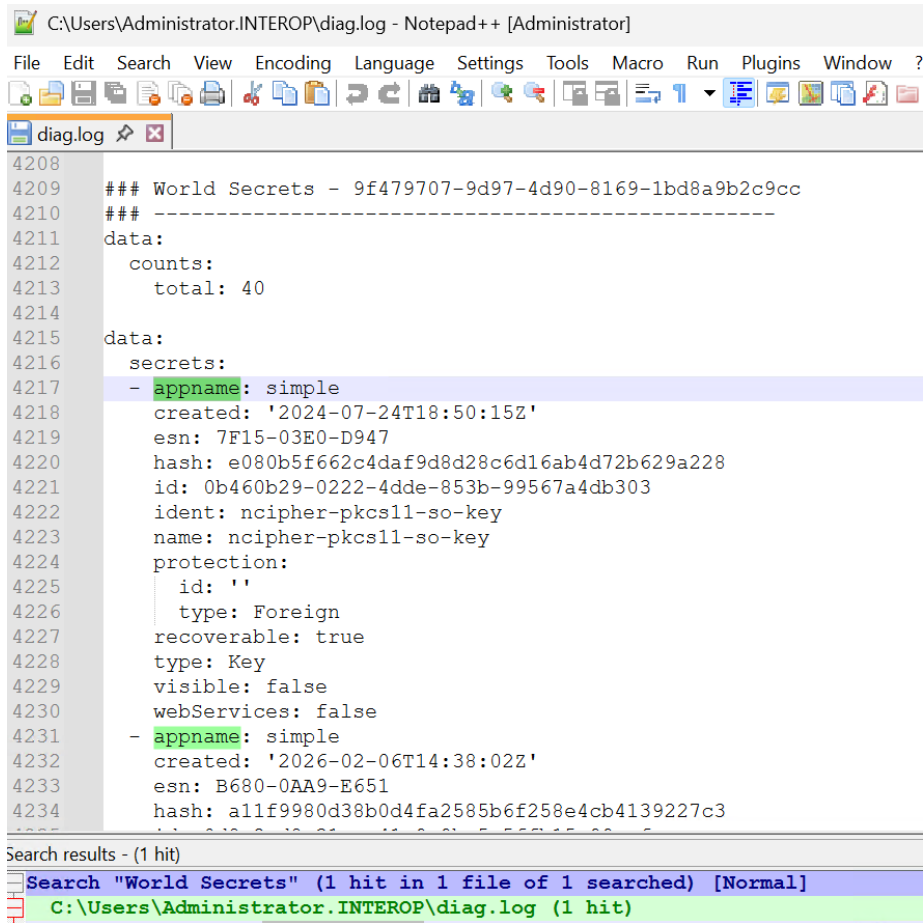
```
>ks5diagnostics.exe diag -a -f diag.log
Writing diagnostics to: diag.log

>dir
...
05/29/2026 10:12 PM <DIR>      .
05/29/2026 09:10 PM <DIR>      ..
05/29/2026 10:13 PM             118 .ks5api
05/29/2026 10:13 PM           196,236 diag.log
05/29/2026 09:10 PM           9,541,419 ks5diagnostics.exe
          3 File(s)          9,737,773 bytes
          2 Dir(s) 48,508,301,312 bytes free
```

2. Search the **diag.log** file using the following table for reference.

To find	Search for
keys	World Secrets
Softcard	World Softcard
OCS	World Cardsets
World	WORLD INFORMATION

For example - keys:



The screenshot shows a Notepad++ window titled "C:\Users\Administrator.INTEROP\diag.log - Notepad++ [Administrator]". The main text area contains log data with the following content:

```
4208
4209   ### World Secrets - 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
4210   ### -----
4211   data:
4212     counts:
4213       total: 40
4214
4215   data:
4216     secrets:
4217     - appname: simple
4218       created: '2024-07-24T18:50:15Z'
4219       esn: 7F15-03E0-D947
4220       hash: e080b5f662c4daf9d8d28c6d16ab4d72b629a228
4221       id: 0b460b29-0222-4dde-853b-99567a4db303
4222       ident: ncipher-pkcs11-so-key
4223       name: ncipher-pkcs11-so-key
4224       protection:
4225         id: ''
4226         type: Foreign
4227       recoverable: true
4228       type: Key
4229       visible: false
4230       webServices: false
4231     - appname: simple
4232       created: '2026-02-06T14:38:02Z'
4233       esn: B680-0AA9-E651
4234       hash: a11f9980d38b0d4fa2585b6f258e4cb4139227c3
```

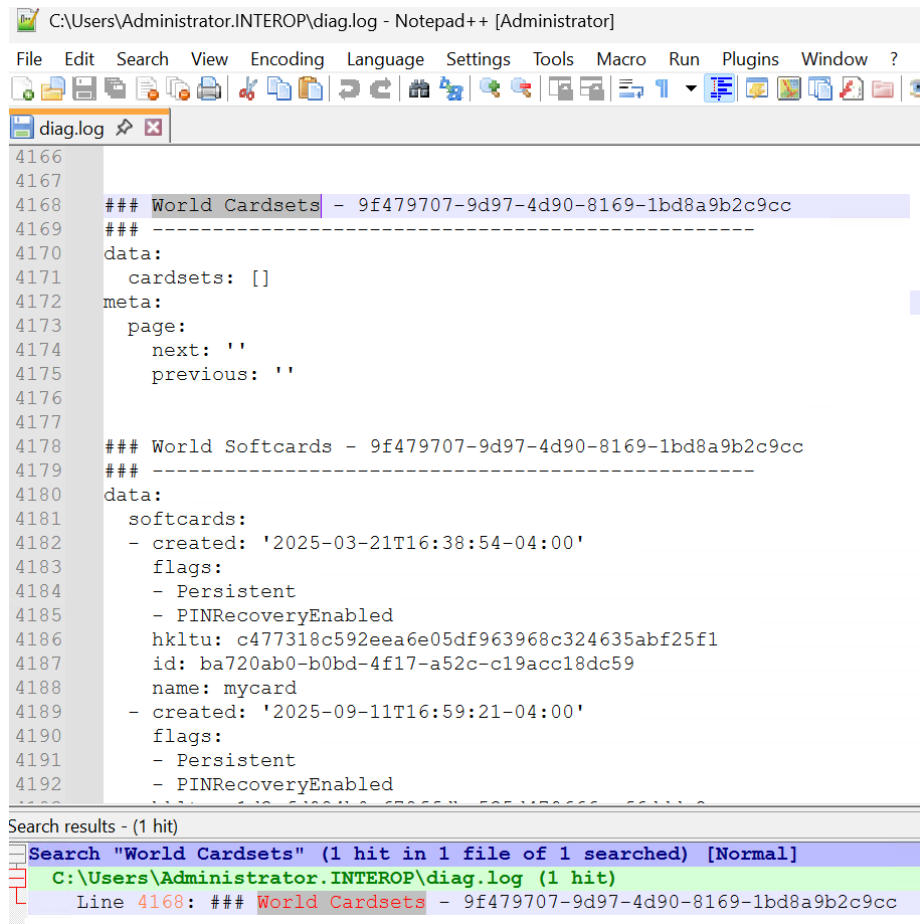
Below the main text area, a search results pane is visible, showing:

```
Search results - (1 hit)
Search "World Secrets" (1 hit in 1 file of 1 searched) [Normal]
C:\Users\Administrator.INTEROP\diag.log (1 hit)
```

For example - softcard:

```
C:\Users\Administrator.INTEROP\diag.log - Notepad++ [Administrator]
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
diag.log
4176
4177
4178   ### World Softcards - 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
4179   ### -----
4180   data:
4181     softcards:
4182     - created: '2025-03-21T16:38:54-04:00'
4183       flags:
4184         - Persistent
4185         - PINRecoveryEnabled
4186         hkltu: c477318c592eea6e05df963968c324635abf25f1
4187         id: ba720ab0-b0bd-4f17-a52c-c19acc18dc59
4188         name: mycard
4189     - created: '2025-09-11T16:59:21-04:00'
4190       flags:
4191         - Persistent
4192         - PINRecoveryEnabled
4193         hkltu: 1d3efd984b0a678ffdbe535d479666caf6dddc2e
4194         id: cee8648b-0ea8-4082-956c-f35332dd1b0b
4195         name: TestSoftcard1234
4196     - created: '2026-02-05T17:05:50-05:00'
4197       flags:
4198         - Persistent
4199         - PINRecoveryEnabled
4200         hkltu: 146235c564d202ea345c70c2b06e875898d2f050
4201         id: e6a533ca-25bc-4d0e-a341-24486db36aaf
4202         name: softcard1
...
search results - (1 hit)
Search "World Softcard" (1 hit in 1 file of 1 searched) [Normal]
C:\Users\Administrator.INTEROP\diag.log (1 hit)
Line 4178: ### World Softcards - 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
```

For example - OCS:



The image shows a Notepad++ window titled "C:\Users\Administrator.INTEROP\diag.log - Notepad++ [Administrator]". The window contains a log file named "diag.log" with the following content:

```
4166
4167
4168   ### World Cardsets - 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
4169   ### -----
4170   data:
4171     cardsets: []
4172   meta:
4173     page:
4174       next: ''
4175       previous: ''
4176
4177
4178   ### World Softcards - 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
4179   ### -----
4180   data:
4181     softcards:
4182       - created: '2025-03-21T16:38:54-04:00'
4183         flags:
4184           - Persistent
4185           - PINRecoveryEnabled
4186         hkltu: c477318c592eea6e05df963968c324635abf25f1
4187         id: ba720ab0-b0bd-4f17-a52c-c19acc18dc59
4188         name: mycard
4189       - created: '2025-09-11T16:59:21-04:00'
4190         flags:
4191           - Persistent
4192           - PINRecoveryEnabled
```

Below the log content, a search results pane is visible, showing the following information:

```
Search results - (1 hit)
Search "World Cardsets" (1 hit in 1 file of 1 searched) [Normal]
C:\Users\Administrator.INTEROP\diag.log (1 hit)
Line 4168: ### World Cardsets - 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
```

For example - world:

```

C:\build\ks5diagnostics\dist\diag.log - Notepad++ [Administrator]
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
diag.log
4005
4006 # =====
4007 # WORLD INFORMATION
4008 # =====
4009
4010 # OPENAPI - C:\Users\ADMINI~1.INT\AppData\Local\Temp\2\_MEI86642\sw-mgmt.yaml
4011 OpenAPI set to C:\Users\Administrator.INTEROP\AppData\Local\Temp\2\_MEI86642\sw-mgmt.yaml
4012
4013 # -----
4014 # WORLD: 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
4015 # -----
4016
4017 ## World Information - 9f479707-9d97-4d90-8169-1bd8a9b2c9cc
4018 ## -----
4019 data:
4020   world:
4021     acsQuorum:
4022       threshold: 1
4023       total: 6
4024     auditLogging: true
4025     ciphersuite: D1f3072s256mAEScSP800131Ar1
4026     disablePkcs1Padding: false
4027     features:
4028       dsee:
4029         enabled: true
4030         threshold: 1
4031       dseeall:
4032         enabled: true
4033       fto:
4034         enabled: true
4035         threshold: 1
4036     m:

```

Search results - (1 hit)

Search "WORLD INFORMATION" (1 hit in 1 file of 1 searched) [Normal: Case]

C:\build\ks5diagnostics\dist\diag.log (1 hit)

Line 4007: # WORLD INFORMATION

Normal text file length: 196,236 lines: 4,740 Ln: 4,007 Col: 20 Sel:

3.2. Find the HSM configuration information

1. Display the HSM configuration.

For example:

```

>ks5diagnostics.exe diag -l

```

TYPE	ESN	ID	PRODUCT	MODE
PLATFORM	A918-4E05-A879	05cfc18a-9a4f-4f67-8d72-081d29f6a5c2	-	Operational
PLATFORM	1D50-EEDC-4D77	42d99cda-ed75-434a-9dda-79d311a16bc6	nShield 5c 10G	-
HSM	1D50-EEDC-4D77	4447d86f-d619-4cf5-8482-cd0c55ae9c4b	nShield 5c 10G	Operational
PLATFORM	A815-03E0-D947	477ffe31-b23d-40dc-9e79-9bb0a315fd12	nShield Connect XC	Operational
PLATFORM	2F29-03E0-D947	4f29e68b-b0c5-4a08-94af-7a5a58fa8cfc	nShield Connect XC	Operational
PLATFORM	DC84-D006-35FF	73840840-0aca-4986-bd55-f8509114599e	nShield 5c	Operational
PLATFORM	B680-0AA9-E651	aa8a7cc8-502e-4924-92b7-b3fb43079754	nShield 5c	Operational
PLATFORM	7F15-03E0-D947	d6053466-7973-497e-9319-a73a4edbb950	nShield Connect XC	Operational

2. Generate a log file for a given HSM using the ESN.

For example:

```

>ks5diagnostics.exe diag -e 1D50-EEDC-4D77 -f 1D50-EEDC-4D77.log
Writing diagnostics to: 1D50-EEDC-4D77.log

>dir
...
05/29/2026 10:16 PM <DIR> .

```

```

05/29/2026 09:10 PM <DIR> ..
05/29/2026 10:16 PM          119 .ks5api
05/29/2026 10:17 PM       78,890 1050-EEDC-4077.Log
05/29/2026 10:13 PM       196,236 diag.log
05/29/2026 09:10 PM     9,541,419 ks5diagnostics.exe
          4 File(s)      9,816,664 bytes
          2 Dir(s)  48,507,961,344 bytes free
    
```

3. Search the <ESN>.log file using the following table for reference.

To find	Search for
Features, versions	enquiry
Clients	Client list
Dynamic Slots	Dynamic Slots
Network configuration	Network Configuration
CodeSafe loading	Codesafe Loading
Sys Log Settings	Log

For example - enquiry:

C:\build\ks5diagnostics\dist\1D50-EEDC-4D77.log - Notepad++ [Administrator]

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

1D50-EEDC-4D77.log

```

18
19 ## enquiry - PLATFORM - 6cf1ef1c-a244-4e2c-99bf-9e8224f98c02
20 ## -----
21 data:
22   hsm:
23     esn: 1D50-EEDC-4D77
24     features:
25       enabled:
26         - EllipticCurve
27         - HSMSPeeds0
28         - ECCMQV
29         - StandardKM
30         - HSMSPeeds2
31         - ExportCGEA
32         - AcceleratedECC
33     hardwareRevision: '1'
34     hsmType: platform
35     id: 6cf1ef1c-a244-4e2c-99bf-9e8224f98c02
36     labels: []
37     lastUpdated: '2026-05-28T23:25:46.1432404Z'
38     manufactureEnd: '2026-03-19T10:55:26.610172Z'
39     manufactureStart: '2025-10-24T09:09:12.03824Z'
40     minimumVSN: 2
41     physicalSerial: 46-RC0132
42     powerState: 'on'
43     productModel: NH3010-0M
44     productName: nShield 5c 10G
45     recoveryMode: false
46     remoteModuleInfo:
47       agent:

```

Search results - (2 hits)

Search "enquiry" (2 hits in 1 file of 1 searched) [Normal: Case]

C:\build\ks5diagnostics\dist\1D50-EEDC-4D77.log (2 hits)

- Line 19: ## enquiry - PLATFORM - 6cf1ef1c-a244-4e2c-99bf-9e8224f98c02
- Line 791: ## enquiry - HSM - 4447d86f-d619-4cf5-8482-cd0c55ae9c4b

Normal text file length: 78,890 lines: 1,347 Ln: 19 Co

Chapter 4. How to build the executable

Perform the following steps on a Windows server. It does not necessarily need to be one that is hosting KeySafe 5.

- [Install Python](#)
- [Install source files](#)
- [Build the Windows executable](#)

4.1. Install Python

1. Check the version of Python installed.

```
>python --version  
Python was not found ...
```

2. If no version is installed or the currently installed version is older than v3.8, download and install the latest version from [Python download](#).

```
>python --version  
Python 3.11.9
```

3. Verify the following Python packages: requests and pyyaml.

```
>pip show requests  
WARNING: Package(s) not found: requests  
  
>pip show pyyaml  
WARNING: Package(s) not found: pyyaml
```

4. If they are missing, install them.

```
>pip install requests pyyaml
```

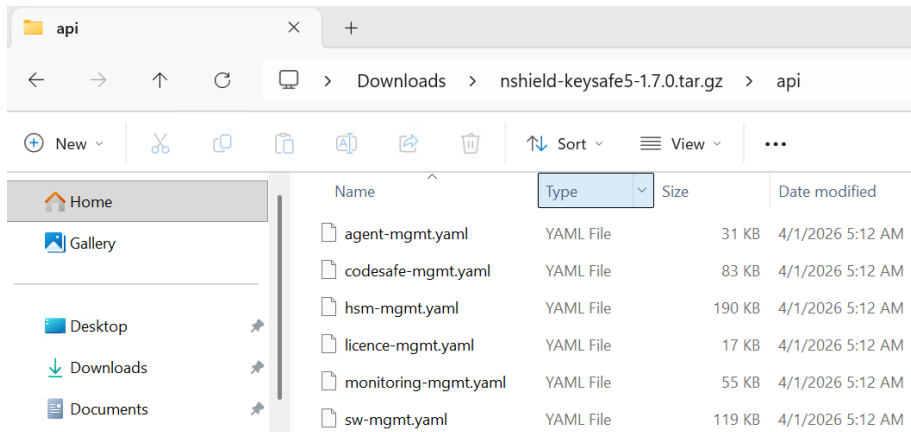
5. Verify the installation.

```
>pip show requests  
Name: requests  
Version: 2.34.2  
  
>pip show pyyaml  
Name: PyYAML  
Version: 6.0.3
```

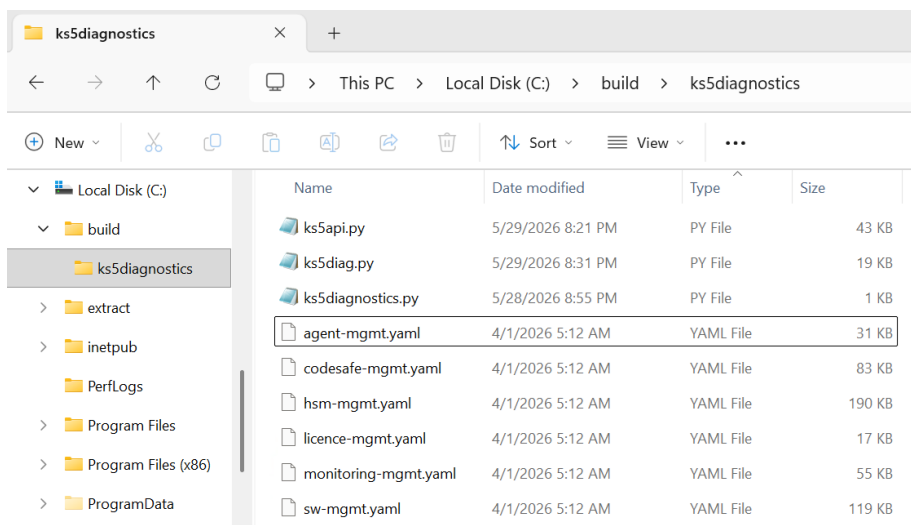
4.2. Install source files

These steps require the compressed KeySafe 5 installer.

1. Open the compressed KeySafe 5 installer and locate the YAML files.



2. Copy the YAML files to a location in the server.
3. Copy the Python source files to the same location.



4.3. Build the Windows executable

1. Construct the following build command.

```
pyinstaller ks5diagnostics.py --onefile ^
--add-data "ks5api.py;" ^
--add-data "ks5diag.py;" ^
--add-data "agent-mgmt.yaml;" ^
--add-data "codesafe-mgmt.yaml;" ^
--add-data "hsm-mgmt.yaml;" ^
--add-data "licence-mgmt.yaml;" ^
--add-data "monitoring-mgmt.yaml;" ^
```

```
--add-data "sw-mgmt.yaml;."
```

2. Build the executable.

```
>pyinstaller ks5diagnostics.py --onefile ^
More? --add-data "ks5api.py;." ^
More? --add-data "ks5diag.py;." ^
More? --add-data "agent-mgmt.yaml;." ^
More? --add-data "codesafe-mgmt.yaml;." ^
More? --add-data "hsm-mgmt.yaml;." ^
More? --add-data "licence-mgmt.yaml;." ^
More? --add-data "monitoring-mgmt.yaml;." ^
More? --add-data "sw-mgmt.yaml;."
195 INFO: PyInstaller: 6.20.0, contrib hooks: 2026.5
195 INFO: Python: 3.11.9
211 INFO: Platform: Windows-10-10.0.26100-SP0
211 INFO: Python environment: C:\Users\Administrator.INTEROP\AppData\Local\Programs\Python\Python311
213 INFO: wrote C:\build\ks5diagnostics\ks5diagnostics.spec
222 INFO: Module search paths (PYTHONPATH):
['C:\\Users\\Administrator.INTEROP\\AppData\\Local\\Programs\\Python\\Python311\\Scripts\\pyinstaller.exe',
 'C:\\Users\\Administrator.INTEROP\\AppData\\Local\\Programs\\Python\\Python311\\python311.zip',
 'C:\\Users\\Administrator.INTEROP\\AppData\\Local\\Programs\\Python\\Python311\\DLLs',
 'C:\\Users\\Administrator.INTEROP\\AppData\\Local\\Programs\\Python\\Python311\\Lib',
 'C:\\Users\\Administrator.INTEROP\\AppData\\Local\\Programs\\Python\\Python311',
 'C:\\Users\\Administrator.INTEROP\\AppData\\Local\\Programs\\Python\\Python311\\Lib\\site-packages',
 'C:\\build\\ks5diagnostics']
593 INFO: Appending 'datas' from .spec
...
14551 INFO: Building EXE from EXE-00.toc completed successfully.
14555 INFO: Build complete! The results are available in: C:\build\ks5diagnostics\dist
```

3. Test the build.

```
C:\build\ks5diagnostics>cd dist

C:\build\ks5diagnostics\dist>ks5diagnostics.exe
Usage:
  ks5diagnostics.exe diag [options]
  ks5diagnostics.exe <ks5api command>
```