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No OpenSSL sign-file signing_key.pem leads to error while loading kernel modules

Asked 6 years, 3 months ago Modified 6 months ago Viewed 20k times



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I am having problems while loading/installing a kernel module. The kernel module builds successfully, but whenever I try to make module_install, the kernel seems to fail to load. It leaves the below error message :-



```
At main.c:158:
- SSL error:02001002:system library:fopen:No such file or directory:
bss_file.c:175
- SSL error:2006D080:BIIO routines:BIIO_new_file:no such file: bss_file.c:178
sign-file: certs/signing_key.pem: No such file or directory
DEPMOD 4.10.0-20-generic
```

I have read about this problem and realized that the kernel has now started loading only properly signed modules. I find that the kernel source directory `/usr/src/<linux version>/certs` in my system does not have the `signing_key.pem` private key file because of which I see this error.

What should I do ? Can I manually generate a `signing_key.pem` file and use it further ? What would be some good methods to do so ? Will generating a private key/certificate file using `openssl.cnf` help me in this regard ? Or should I avoid using signed modules at all and try loading the modules as it is without any verification ?

I am using **Ubuntu 17.04 with kernel 4.10.0-20-generic**.

linux

ubuntu

ssl

kernel

kernel-module



I too am experiencing this. Even though I seem to compile everything fine, the kernel driver never gets loaded. – [ben-Nabiy Derush](#) Aug 13, 2017 at 21:14

3 Answers

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In your linux kernel root folder that you're compiling go to the certs folder and run:

```
openssl req -new -nodes -utf8 -sha512 -days 36500 -batch -x509 -config x509.genkey  
-outform DER -out signing_key.x509 -keyout signing_key.pem
```



Where x509.genkey is a file with the contents:



```
[ req ]  
default_bits = 4096  
distinguished_name = req_distinguished_name  
prompt = no  
string_mask = utf8only  
x509_extensions = myexts  
  
[ req_distinguished_name ]  
CN = Modules  
  
[ myexts ]  
basicConstraints=critical,CA:FALSE  
keyUsage=digitalSignature  
subjectKeyIdentifier=hash  
authorityKeyIdentifier=keyid
```

Refer to: https://wiki.gentoo.org/wiki/Signed_kernel_module_support

Option 2, is disable automated signing of modules in the config make menuconfig OR make xconfig



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Based on [cryptoboy's answer](#):

1. Create x509.genkey file



```
echo -e "[ req ] \n\  
default_bits = 4096 \n\  
distinguished_name = req_distinguished_name \n\  
prompt = no \n\  

```



```
x509_extensions = myexts \n\  
[ req_distinguished_name ] \n\  
CN = Modules \n\  
\n\  
[ myexts ] \n\  
basicConstraints=critical,CA:FALSE \n\  
keyUsage=digitalSignature \n\  
subjectKeyIdentifier=hash \n\  
authorityKeyIdentifier=keyid" > x509.genkey
```

2. Run:

```
openssl req -new -nodes -utf8 -sha512 -days 36500 -batch -x509 -config  
x509.genkey -outform DER -out signing_key.x509 -keyout signing_key.pem
```

3. Move key files to desired folder, for example:

```
mv signing_key.pem signing_key.x509 `find /usr/src/*-generic/certs`
```

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edited Feb 22 at 6:18



skytree
103 3

answered Jun 27, 2021 at 10:38



Trake Vital
141 3



this command works for me, on Manjaro Linux, 2023:

0

<https://github.com/webcamoid/akvcam/issues/15#issuecomment-612657792>



Some people reported that running `sudo depmod -a` may fix the problem.



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answered Mar 13 at 13:31



micfan
103 3