



**acontis technologies GmbH**

**SOFTWARE**

# **Hypervisor-Protected-Version-Guide**

**acontis Real-time Hypervisor Protected Version Guide**

**Version 9.x**

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## 1 Introduction

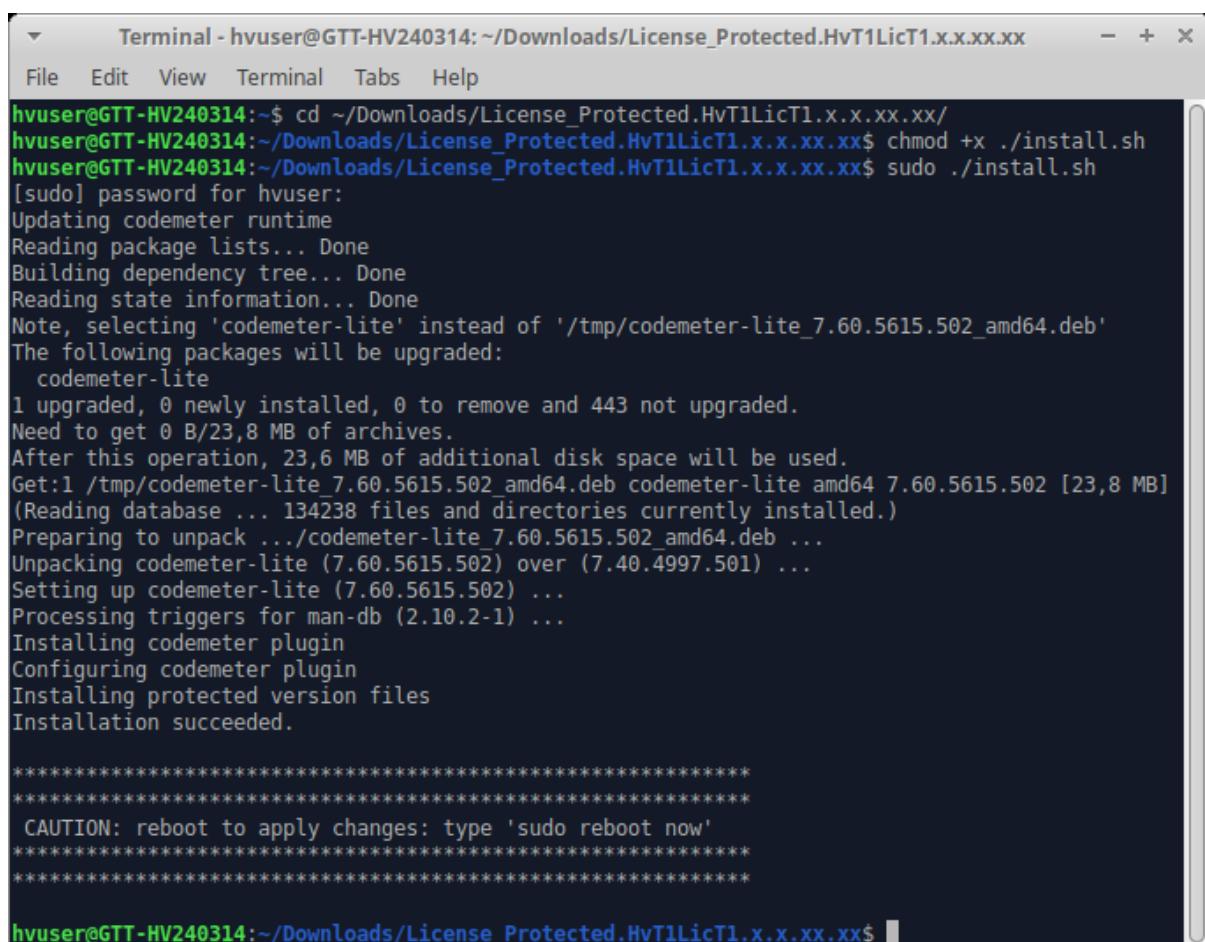
This guide describes how to set up CodeMeter license in the acontis Hypervisor. It is assumed that the steps listed in the Hypervisor Quick Start guide have been successfully executed.

## 2 Install RTOSVisor Protected-Package

- First copy or download the files from your License\_Protected.HvT1LicT1....zip package to RTOSVisor.
- Now ensure the installation script from the package is executable:
 

```
$ chmod +x ~/install.sh
```
- Next the installation can be started:
 

```
$ sudo ./install.sh
```
- Finish the installation by rebooting RTOSVisor.



```
Terminal - hvuser@GTT-HV240314: ~/Downloads/License_Protected.HvT1LicT1.x.x.xx.xx
File Edit View Terminal Tabs Help
hvuser@GTT-HV240314:~$ cd ~/Downloads/License_Protected.HvT1LicT1.x.x.xx.xx/
hvuser@GTT-HV240314:~/Downloads/License_Protected.HvT1LicT1.x.x.xx.xx$ chmod +x ./install.sh
hvuser@GTT-HV240314:~/Downloads/License_Protected.HvT1LicT1.x.x.xx.xx$ sudo ./install.sh
[sudo] password for hvuser:
Updating codemeter runtime
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'codemeter-lite' instead of '/tmp/codemeter-lite_7.60.5615.502_amd64.deb'
The following packages will be upgraded:
  codemeter-lite
1 upgraded, 0 newly installed, 0 to remove and 443 not upgraded.
Need to get 0 B/23,8 MB of archives.
After this operation, 23,6 MB of additional disk space will be used.
Get:1 /tmp/codemeter-lite_7.60.5615.502_amd64.deb codemeter-lite amd64 7.60.5615.502 [23,8 MB]
(Reading database ... 134238 files and directories currently installed.)
Preparing to unpack .../codemeter-lite_7.60.5615.502_amd64.deb ...
Unpacking codemeter-lite (7.60.5615.502) over (7.40.4997.501) ...
Setting up codemeter-lite (7.60.5615.502) ...
Processing triggers for man-db (2.10.2-1) ...
Installing codemeter plugin
Configuring codemeter plugin
Installing protected version files
Installation succeeded.

*****
***** CAUTION: reboot to apply changes: type 'sudo reboot now' ****
*****
```

Fig. 2.1: Install RTOSVisor Protected-Package

### 3 CmAct - Configure Binding Device

‘CmAct’ is a software-based licensing method using a virtual- instead of an USB- dongle. In order to use a virtual dongle license a network card has to be selected.

- The license will be bound to this card.

**Caution:** If the card is removed from the system or assigned to a guest (pass-through) the license will break until the card is returned.

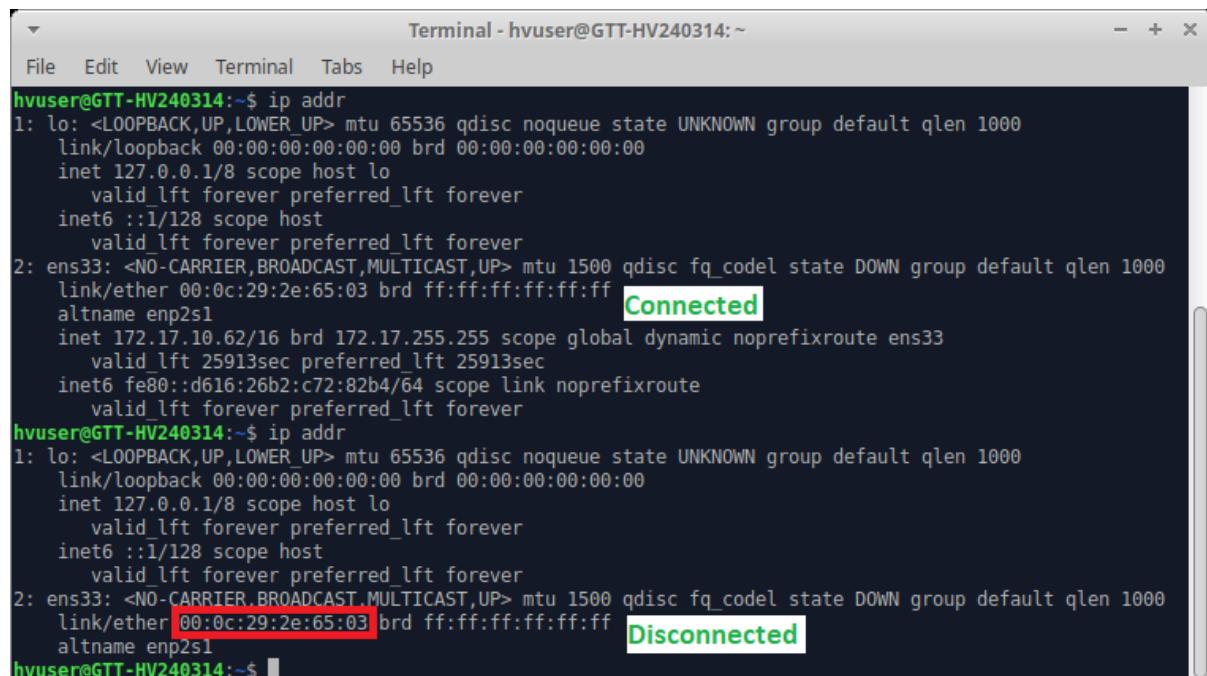
- List the cards available:

```
$ /hv/bin/hv_license.py list_mac
```

- If there are multiple cards you can identify the desired one by calling

```
$ ip addr
```

before and after disconnecting it.



```
Terminal - hvuser@GTT-HV240314:~  
File Edit View Terminal Tabs Help  
hvuser@GTT-HV240314:~$ ip addr  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: ens33: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc fq_codel state DOWN group default qlen 1000  
    link/ether 00:0c:29:2e:65:03 brd ff:ff:ff:ff:ff:ff  
    altname enp2s1  
    inet 172.17.10.62/16 brd 172.17.255.255 scope global dynamic noprefixroute ens33  
        valid_lft 25913sec preferred_lft 25913sec  
    inet6 fe80::d616:26b2:c72:82b4/64 scope link noprefixroute  
        valid_lft forever preferred_lft forever  
hvuser@GTT-HV240314:~$ ip addr  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: ens33: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc fq_codel state DOWN group default qlen 1000  
    link/ether 00:0c:29:2e:65:03 brd ff:ff:ff:ff:ff:ff  
    altname enp2s1  
hvuser@GTT-HV240314:~$
```

Fig. 3.1: Selecting a network card

- Select the card to be used for licensing using its MAC or PCI address:

```
$ sudo /hv/bin/hv_license.py set_mac --mac_or_pci_address  
→ 00:0c:29:2e:65:03
```

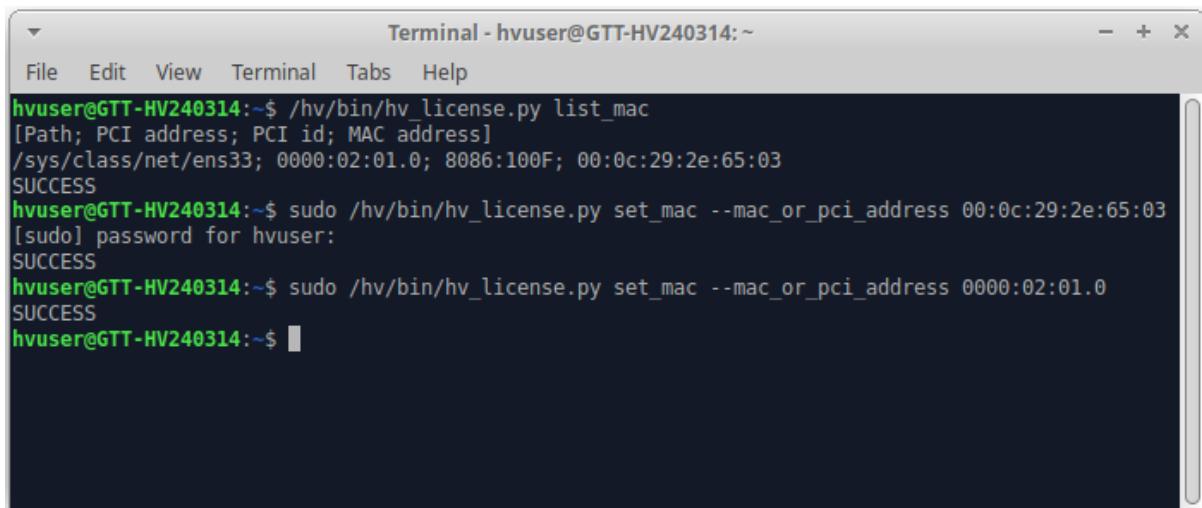
or

```
$ sudo /hv/bin/hv_license.py set_mac --mac_or_pci_address 0000:02:01.0
```

---

**Hint:** The information will be stored at `/usr/share/CodeMeter/Plugins/64/6001978/6001978-Mac.cfg`

---



```
Terminal - hvuser@GTT-HV240314:~  
File Edit View Terminal Tabs Help  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py list_mac  
[Path; PCI address; PCI id; MAC address]  
/sys/class/net/ens33; 0000:02:01.0; 8086:100F; 00:0c:29:2e:65:03  
SUCCESS  
hvuser@GTT-HV240314:~$ sudo /hv/bin/hv_license.py set_mac --mac_or_pci_address 00:0c:29:2e:65:03  
[sudo] password for hvuser:  
SUCCESS  
hvuser@GTT-HV240314:~$ sudo /hv/bin/hv_license.py set_mac --mac_or_pci_address 0000:02:01.0  
SUCCESS  
hvuser@GTT-HV240314:~$
```

Fig. 3.2: Configure the MAC address

Now everything is prepared to create a license request.

## 4 CmAct - Breaking the license

The license will **break** (become **invalid**) when

- the '**Binding Device**' is **not** available, **not** configured or **different** from the one **used** for the license request.
- the mainboard is **changed**.

## 5 CmAct - Create license request

**Caution:** Continue **only** if you already installed the '**Protected-Package**', configured the '**Binding Device**' and **rebooted** the system.

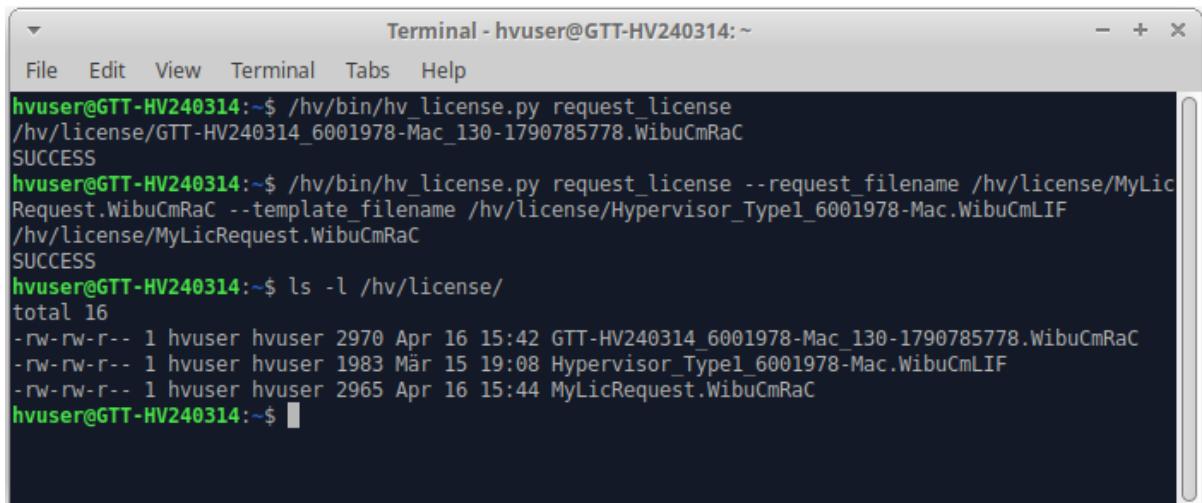
- Create a license request:

```
$ /hv/bin/hv_license.py request_license
```

You can *optionally* specify the output file or the template file to be used:

```
$ /hv/bin/hv_license.py request_license --request_filename
→ /hv/license/MyLicRequest.WibuCmRaC --template_filename
→ /hv/license/Hypervisor_Type1_6001978-Mac.WibuCmLIF
```

The default directory is `/hv/license` and the default name is constructed by the computername, the license type and the license's serial number.



```
Terminal - hvuser@GTT-HV240314: ~
File Edit View Terminal Tabs Help
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py request_license
/hv/license/GTT-HV240314_6001978-Mac_130-1790785778.WibuCmRaC
SUCCESS
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py request_license --request_filename /hv/license/MyLicRequest.WibuCmRaC --template_filename /hv/license/Hypervisor_Type1_6001978-Mac.WibuCmLIF
/hv/license/MyLicRequest.WibuCmRaC
SUCCESS
hvuser@GTT-HV240314:~$ ls -l /hv/license/
total 16
-rw-rw-r-- 1 hvuser hvuser 2970 Apr 16 15:42 GTT-HV240314_6001978-Mac_130-1790785778.WibuCmRaC
-rw-rw-r-- 1 hvuser hvuser 1983 Mär 15 19:08 Hypervisor_Type1_6001978-Mac.WibuCmLIF
-rw-rw-r-- 1 hvuser hvuser 2965 Apr 16 15:44 MyLicRequest.WibuCmRaC
hvuser@GTT-HV240314:~$
```

Fig. 5.1: Create a license request

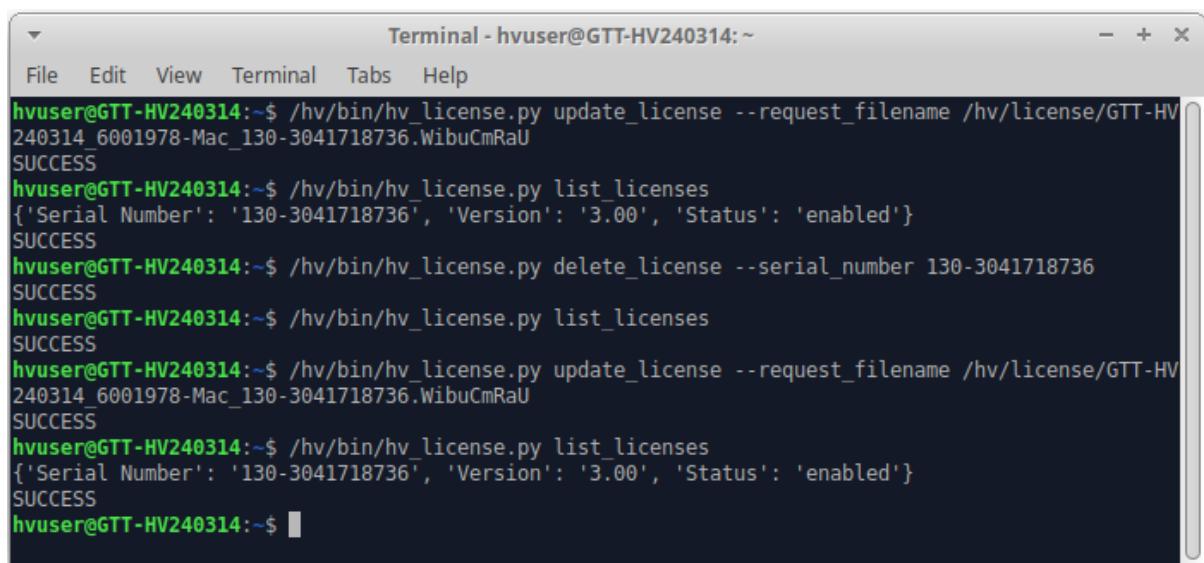
- Send the created file (in this example `GTT-HV240314_6001978-Mac_130-1790785778.WibuCmRaC`) to your distributor to receive a license update.

## 6 CmAct - Import license update

Import the license update from your distributor:

```
$ /hv/bin/hv_license.py update_license --request_filename  
→ /hv/license/GTT-HV240314_6001978-Mac_130-3041718736.WibuCmRaU
```

**Hint:** your filename will be different!



A screenshot of a terminal window titled "Terminal - hvuser@GTT-HV240314:~". The window has a standard OS X style with a menu bar (File, Edit, View, Terminal, Tabs, Help) and a scroll bar on the right. The terminal session shows the following commands and output:

```
File Edit View Terminal Tabs Help  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py update_license --request_filename /hv/license/GTT-HV  
240314_6001978-Mac_130-3041718736.WibuCmRaU  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py list_licenses  
{'Serial Number': '130-3041718736', 'Version': '3.00', 'Status': 'enabled'}  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py delete_license --serial_number 130-3041718736  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py list_licenses  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py update_license --request_filename /hv/license/GTT-HV  
240314_6001978-Mac_130-3041718736.WibuCmRaU  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py list_licenses  
{'Serial Number': '130-3041718736', 'Version': '3.00', 'Status': 'enabled'}  
SUCCESS  
hvuser@GTT-HV240314:~$
```

Fig. 6.1: Import a license update

## 7 CmAct - Additional actions

- List all licenses:

```
$ /hv/bin/hv_license.py list_licenses
```

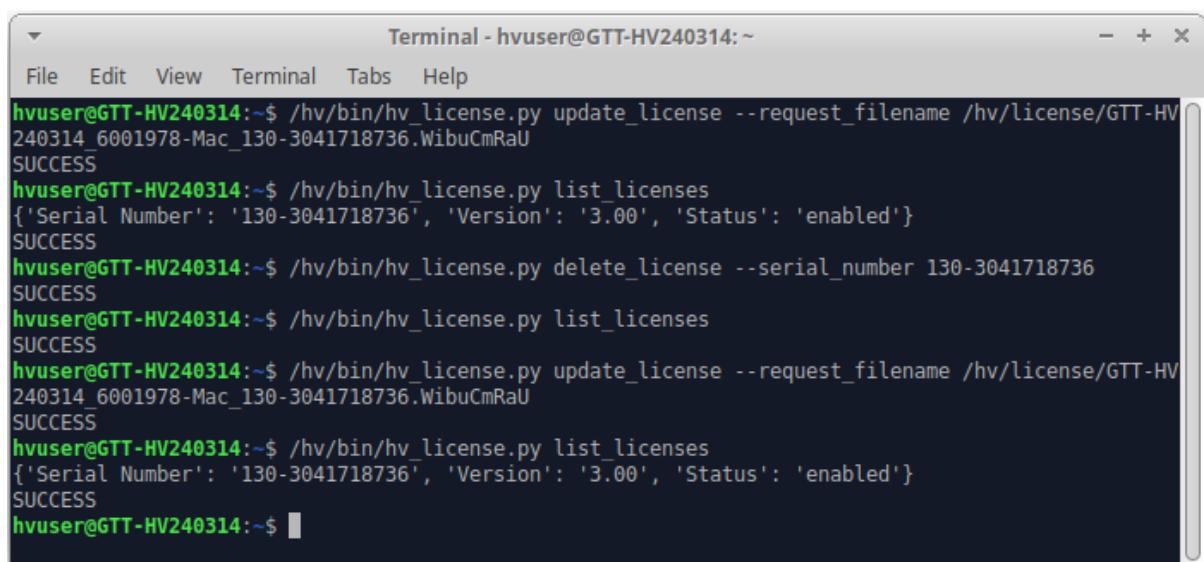
- Delete a license by its serial number:

```
$ /hv/bin/hv_license.py delete_license --serial_number 130-3041718736
```

- Re-import a license:

```
$ /hv/bin/hv_license.py update_license --request_filename  
→ /hv/license/GTT-HV240314_6001978-Mac_130-3041718736.WibuCmRaU
```

**Important:** Keep a backup of the license update file and the used MAC address so a *re-install* of the license is possible.



The terminal window shows the following session:

```
Terminal - hvuser@GTT-HV240314:~  
File Edit View Terminal Tabs Help  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py update_license --request_filename /hv/license/GTT-HV240314_6001978-Mac_130-3041718736.WibuCmRaU  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py list_licenses  
{'Serial Number': '130-3041718736', 'Version': '3.00', 'Status': 'enabled'}  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py delete_license --serial_number 130-3041718736  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py list_licenses  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py update_license --request_filename /hv/license/GTT-HV240314_6001978-Mac_130-3041718736.WibuCmRaU  
SUCCESS  
hvuser@GTT-HV240314:~$ /hv/bin/hv_license.py list_licenses  
{'Serial Number': '130-3041718736', 'Version': '3.00', 'Status': 'enabled'}  
SUCCESS  
hvuser@GTT-HV240314:~$
```

Fig. 7.1: Import a license update

## 8 CmAct - System Update/Restore

Keep a backup of the license update file and the used MAC address so you can re-install the license. In case you have to re-install the system these steps are required to re-install the license:

- *Install RTOSVisor Protected-Package*
- *CmAct - Configure Binding Device* (you have to configure the **same** MAC address)
- The reboot can be delayed until this step but is required **before** the next one.
- *CmAct - Import license update*

## 9 Troubleshooting

CodeMeter license problems can be analysed by:

```
$ sudo cmu --cmdust
```

The output can also be redirected to a file to be forwarded to your support:

```
$ sudo cmu --cmdust >~/Downloads/cmu_cmdust.txt
```

The following tables might help to *identify* some errors.

Table 9.1: General errors

Code	Description
E1	The plugin does not provide a required function.
E2	The plugin is deactivated for this start of CodeMeter because it previously caused, for example, a crash.
E3	The plugin could not be loaded (1).
E4	The plugin could not be loaded (2).
E6	These errors cover errors the plugin issued, or in exceptional cases, errors which CmActLicense “noticed” only after the plugin has been called.

Table 9.2: Plugin specific errors

Code	Description
E6-1	The plugin does not provide a required function.
E6-2	An exception was thrown.
E6-3	A waiting time exceeded.
E6-4	Writing did not consider buffer length.
E6-5	The format of the feature value is invalid or the feature value has not been set by the plugin.
E6-6	Internal error.
E6-10000	The feature value could not be calculated because, for example, the dongle or the SIM card is missing.
E6-20000 - E6-29999	Vendor-specific codes.

Table 9.3: acontis specific errors

Code	Description
E6-20000	The MAC address configuration could not be found or accessed.
E6-20001	The MAC address string contains less than 17 characters.
E6-20002	The device with the configured MAC address could not be found.
E6-20003	Open directory /sys/devices failed.