SECURITY
LICENSING
PERFECTION IN PROTECTION

All About FSBs

Everything You Always Wanted to Know About FSBs – But Were Afraid to Ask

Ruediger Kuegler
VP Sales & Professional Services

Wolfgang Voelker
Director Product Management & Support

© WIBU-SYSTEMS AG 2021 – Everything You Always Wanted to Know About FSBs – But Were Afraid to Ask

Where to find the accompanying audio

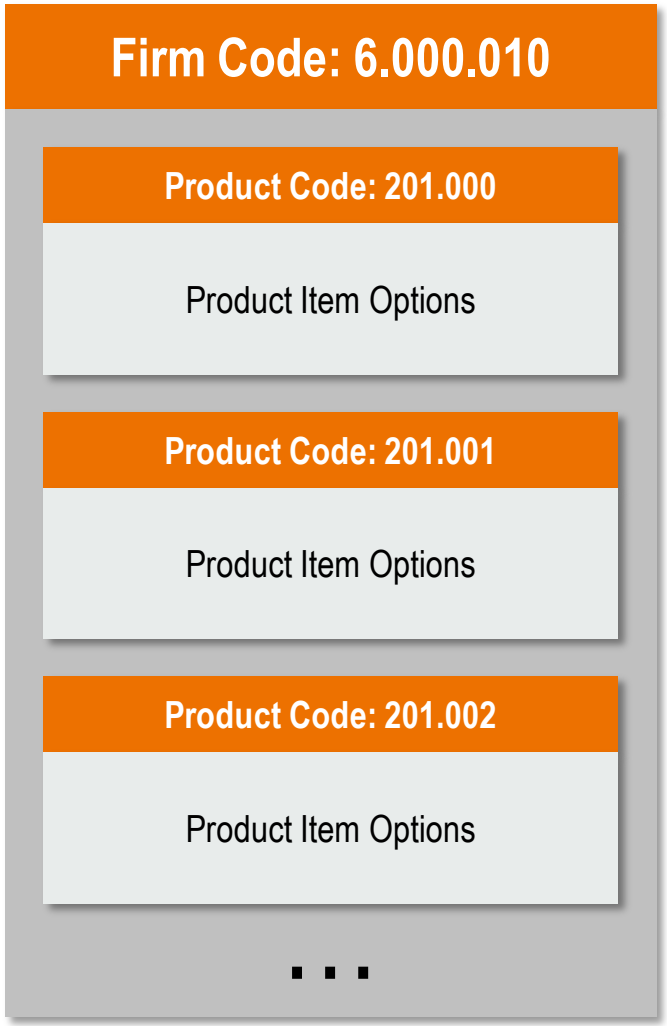
To access the on-demand replay of this masterclass, please visit

www.wibu.com/wibu-systems-webinars/2021/everything-about-fsb/access.html

The Firm Code

License Entries

- License entry = Firm Code | Product Code
- Firm Code: issued by Wibu-Systems
- Product Code:
  - Defined by the software vendor
  - Per Option / Module / Feature
  - 4 bn. Product Codes (UInt32)
- Up to 2,000 Product Items per CmContainer
- Product Item Options: Each license can include combinable options



Available Firm Codes

Firm Code	CmDongle	CmActLicense	CmCloud-Container	CmCloudLite-Container
1xx.xxx (CmDongle)	Yes	-	-	-
5.xxx.xxx (CmActLicense)	-	Yes	-	-
6.xxx.xxx (Universal)	Yes	Yes	Yes	Yes

CmFirm.wbc

```
[WIBU-SYSTEMS Control File]
Guid={00070000-0000-1100-8005-0000C06B5161}
Description=CodeMeter - Licensor's Site Firm Security (CmFirm)
Version=1.00

[FirmLicense 6000947]
Description=Professional Service
Text=Professional Service
Security=2
Type=4
FK=0123456789ABCDEF0123456789ABCDEF0123456789ABCDEF...
Crc=59707
```

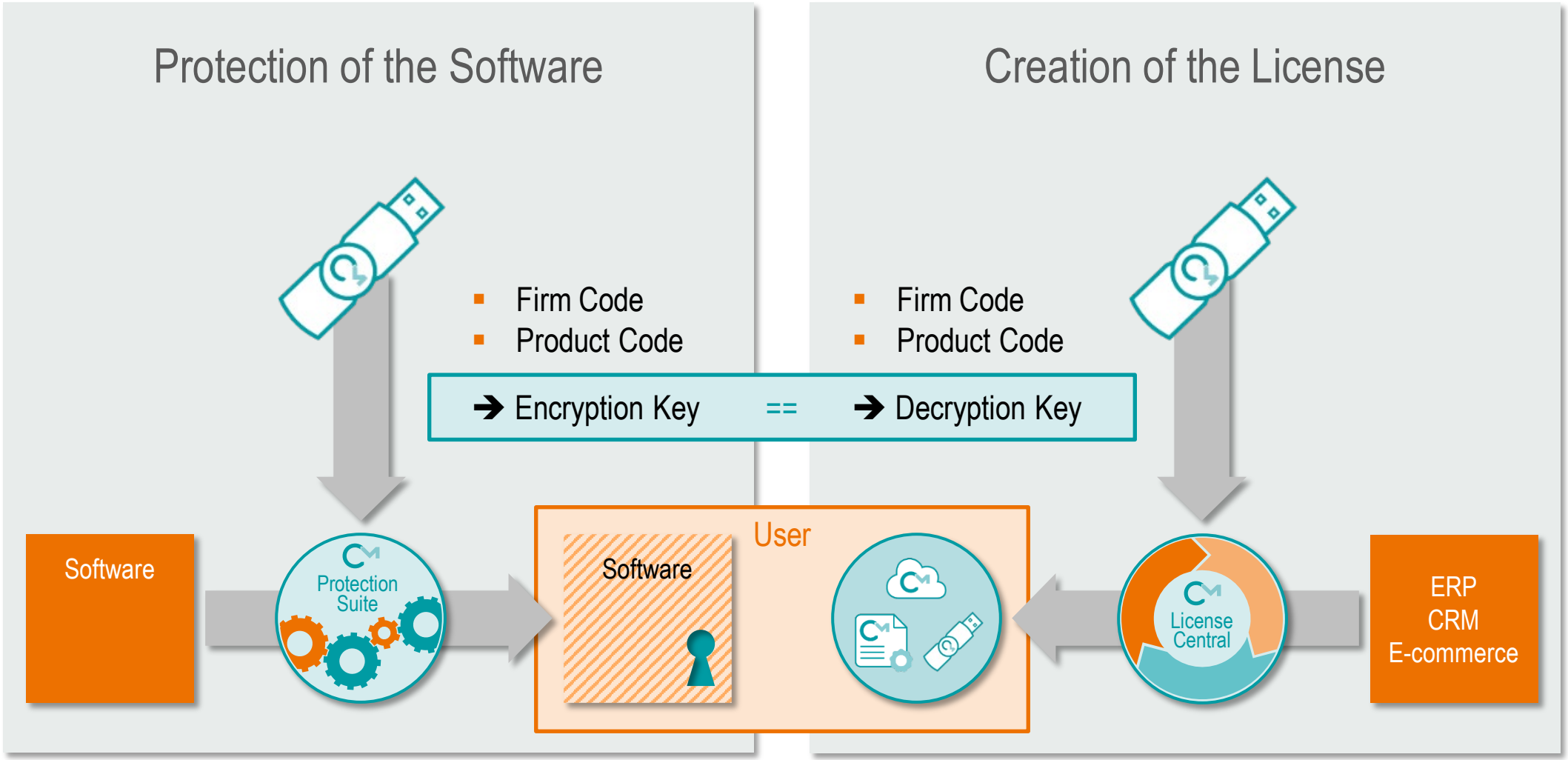
The Firm Security Box

Firm Security Box

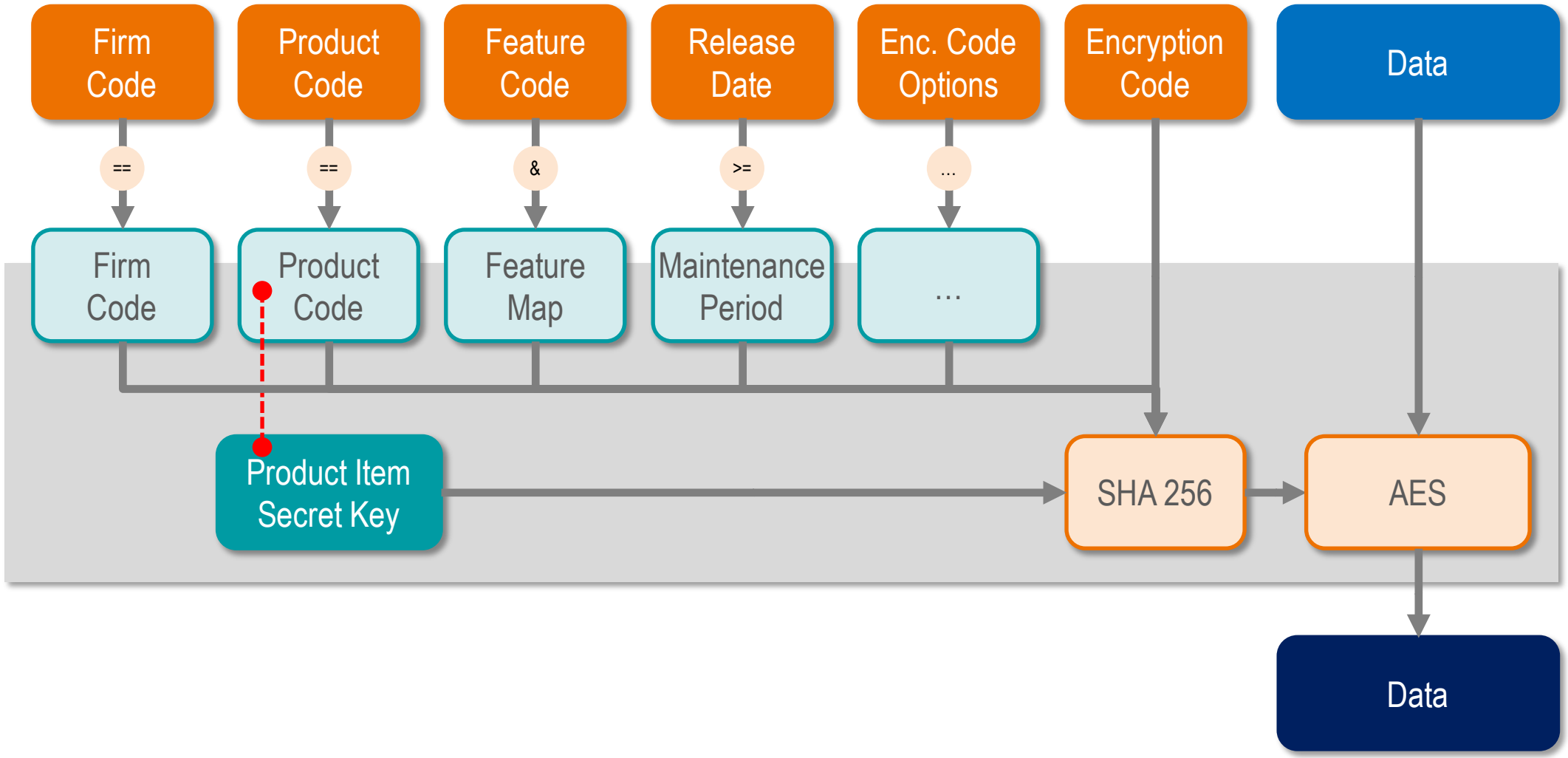
- “Master Dongle”
- Cryptographic key for
  - Creation of license entries
  - License signature
  - Software encryption
  - Software signature
- Available Options
  - Standard FSB
  - Encryption Only FSB

Key for Encryption / Decryption

Process Overview

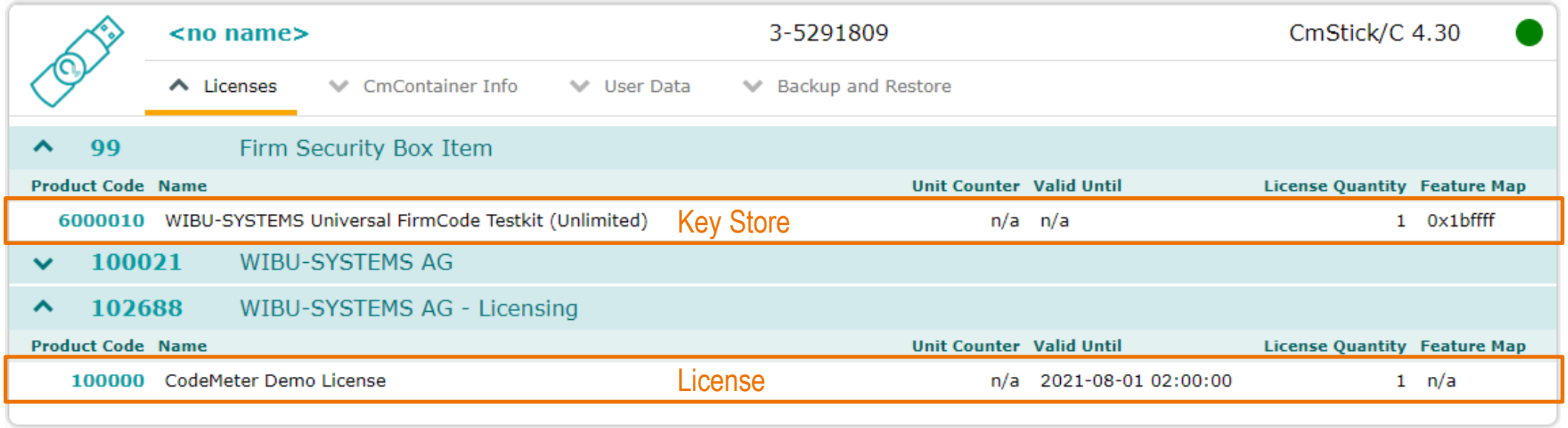


Key Derivation



FSB Entries

Evaluation FSB – Firm Code 6000010



Text, Feature Bits, and Certificates

Product Item Details

Product Item 99:6000010 of CmContainer "<no name>" (3-5291809)

Product Item Options		Size (Bytes)	Dependencies	Value
Text	Text	51		WIBU-SYSTEMS Universal FirmCode Testkit (Unlimited)
Feature Map	Feature Bits	4	data, serial, counter	0000 0000 0001 1011 1111 1111 1111 1111 (0x1bffff)
Extended Protected Data #0	Certificate	112	data, serial, counter	0x01 0x00 0x00 0x00 0x03 0x00 0x00 0x00 0x21 0xbf 0x50 0x00 0x8a 0x8d 0x5b 0x00 0x20 0x91 0x01 0x00 0x02 0x00 0x00 0x00 0xff 0xff 0x 13 0x00 0xa0 0x86 0x01 0x00 0x01 0x00 0x00 0x00 0x00 0x00 0x08 0x 00 0xa1 0x86 0x01 0x00 0x01 0x00 0x00 0x00 0xd5 0x00 0xa6 0xa7 0x 1e 0xfc 0xbb 0x07 0x21 0x4c 0xc8 0x22 0x50 0xa1 0xbb 0x44 0x97 0x9 e 0x00 0xdd 0xae 0x38 0x87 0xed 0xe1 0xd8 0x82 0xd9 0x00 0x00 0x0 0 0x00 0xa6 0x52 0x7a 0x5f 0xe1 0x93 0x87 0x33 0x9b 0x4d 0x8e 0x57 0x87 0xc6 0xbb 0x80 0xcf 0xc7 0xc6 0xdc 0xc5 0x02 0x24 0xf2 0x68 0x e8 0x09 0xad 0x00 0x00 0x00 0x00
Extended Protected Data #10		256	data, serial, counter	0x30 0x82 0x01 0xaf 0x30 0x82 0x01 0x5e 0xa0 0x03 0x02 0x01 0x02 0 x02 0x04 0xb2 0xd0 0x5e 0x12 0x30 0x0a 0x06 0x08 0x2a 0x86 0x48 0 xce 0x3d 0x04 0x03 0x02 0x30 0x31 0x31 0x15 0x30 0x13 0x06 0x03 0 x55 0x04 0x0a 0x0c 0x0c 0x57 0x49 0x42 0x55 0x2d 0x53 0x59 0x53 0 x54 0x45 0x4d 0x53 0x31 0x18 0x30 0x16 0x06 0x03 0x55 0x04 0x03 0 x0c 0x0f 0x57 0x69 0x62 0x75 0x2d 0x50 0x72 0x6f 0x64 0x75 0x63 0x 74 0x69 0x6f 0x6e 0x30 0x1e 0x17 0x0d 0x31 0x35 0x30 0x31 0x30 0x3 1 0x30 0x30 0x30 0x30 0x30 0x30 0x5a 0x17 0x0d 0x33 0x35 0x31 0x3 2 0x33 0x31 0x32 0x33 0x35 0x39 0x35 0x39 0x5a 0x30 0x20 0x31 0x1 0 0x30 0x0e 0x06 0x03 0x55 0x04 0x0a 0x0c 0x07 0x36 0x30 0x30 0x3 0 0x30 0x31 0x30 0x31 0x0c 0x30 0x0a 0x06 0x03 0x55 0x04 0x03 0x0 c 0x03 0x4c 0x50 0x4b 0x30 0x4e 0x30 0x10 0x06 0x07 0x2a 0x86 0x4 8 0xce 0x3d 0x02 0x01 0x06 0x05 0x2b 0x81 0x04 0x00 0x21 0x03 0x3

Keys

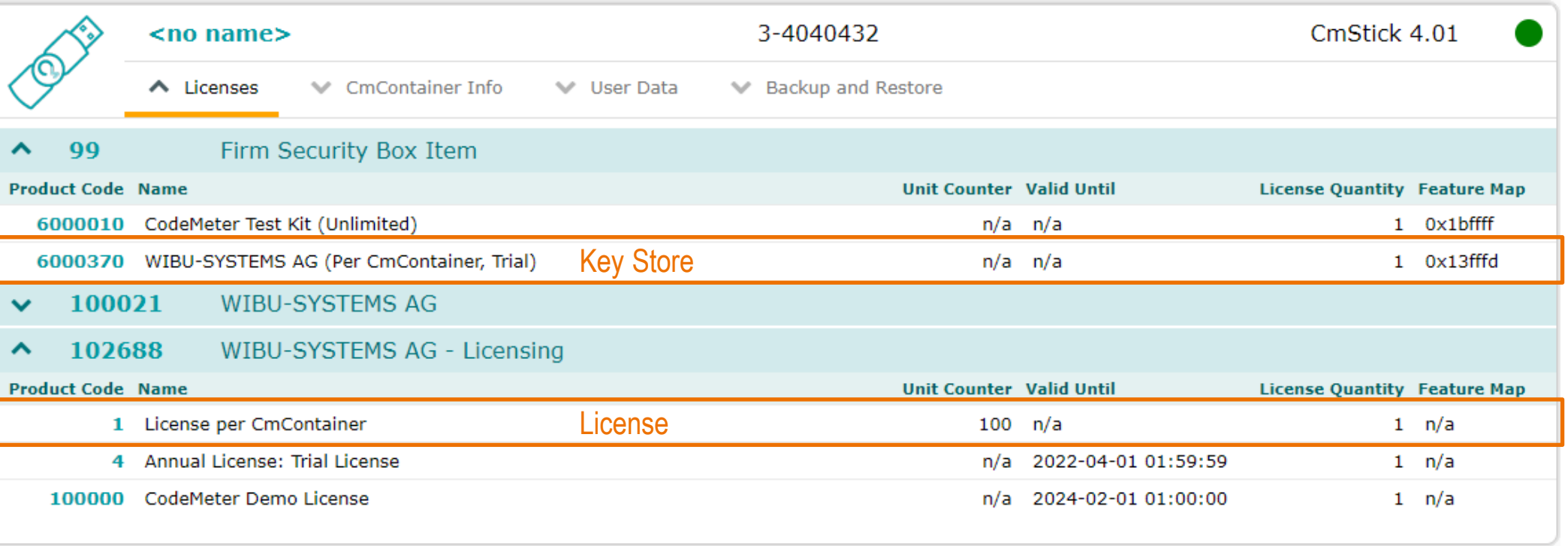
				b 0x81 0x04 0x00 0x21 0x03 0x3a 0x00 0x04 0x32 0x37 0xdd 0x50 0xe 5 0xa0 0xa5 0xa9 0x38 0xe2 0x88 0x47 0x36 0x13 0x12 0x39 0x26 0xb 1 0xc2 0xfb 0x11 0x52 0x77 0xbe 0x21 0x88 0x45 0xbd 0xa6 0xe0 0x14 0xec 0xf1 0xd1 0x99 0x05 0x8f 0x77 0x05 0x78 0x80 0xed 0x3c 0xc5 0x 83 0xf9 0xef 0x09 0xb9 0xe4 0x80 0xd7 0x8e 0x30 0xf2 0x4a 0x81 0x15 0x00 0x78 0xa4 0x68 0x59 0x55 0xf6 0x77 0x32 0x49 0xe8 0x57 0x6c 0 x2a 0x5d 0x48 0xfb 0xbb 0xea 0xc6
Extended Protected Data #31	Certificates	127	data, serial, counter	0xe2 0x82 0x15 0x00 0xc6 0x8c 0x60 0xc4 0xc5 0x15 0x26 0x82 0x20 0 x5b 0x1f 0x40 0x55 0xa3 0xf8 0x2d 0xb9 0xa6 0x08 0x87 0xa3 0x16 0x 30 0x14 0x30 0x12 0x06 0x03 0x55 0x1d 0x13 0x01 0x01 0xff 0x04 0x0 8 0x30 0x06 0x01 0x01 0xff 0x02 0x01 0x01 0x30 0x0a 0x06 0x08 0x2a 0x86 0x48 0xce 0x3d 0x04 0x03 0x02 0x03 0x41 0x00 0x30 0x3e 0x02 0x1d 0x00 0xe1 0x5d 0xf5 0x35 0x01 0x59 0x75 0x89 0x1e 0x7f 0x1a 0 xc8 0xf0 0xb1 0x7e 0x07 0x7c 0xc1 0x0e 0x67 0x45 0x27 0x46 0x67 0x 5a 0xe0 0x52 0x26 0x02 0x1d 0x00 0xb6 0xe5 0xa1 0xab 0xca 0x94 0xd 5 0xb8 0xfe 0xab 0xc7 0x94 0x94 0x10 0x07 0x83 0x92 0x61 0xf7 0x79 0xb4 0xdf 0xf4 0xb3 0x4b 0x7b 0xc7 0x74
Extended Protected Data #120		64	data, serial, counter	0x66 0x3b 0xb8 0xb4 0xcd 0x52 0xbd 0xf3 0xa0 0xb8 0x09 0xa6 0x22 0 xa7 0x52 0x47 0x47 0xad 0x6c 0xd1 0xf7 0x82 0x17 0x97 0x78 0x80 0x 46 0xee 0x00 0x00 0x00 0x00 0xae 0x77 0x0e 0x6a 0xc9 0x57 0x05 0x2 f 0x43 0x54 0xef 0x9a 0xb4 0x5e 0x6e 0xa2 0x8a 0xdd 0xeb 0xab 0x3b 0x91 0x25 0x7b 0x03 0x43 0xcc 0xf1 0x00 0x00 0x00 0x00
Hidden Data #120	Licensor Transfer Key	32	data, serial, counter	<hidden>
Secret Data #120	Licensor Private Key	32	data, serial, counter	<secret>
Secret Data #128	Firm Key	32		<secret>
Secret Data #129	Firm Root Key	32		<secret>

License Entries

License Models

- License per CmContainer
  - +Trial Licenses
  - +Protection Only Licenses
- License per Transaction
  - +Trial Licenses
  - +Protection Only Licenses
- Unlimited Licenses (Annual Flat Fee)
  - Including Trial Licenses and Protection Only Licenses

License per CmContainer



Details of a License Entry

Product Item Details

Product Item 102688:1 of CmContainer "<no name>" (3-4040432)

Product Item Options	Size (Bytes)	Dependencies	Value
Text	23		License per CmContainer
Unit Counter	4	data, serial, counter	100
License Information	25	data, serial, counter	Reseller: WIBU-SYSTEMS AG
Extended Protected Data #0	8	data, serial, counter	0x00 0x00 0x00 0x01 0x00 0x00 0x69 0x4f
Extended Protected Data #1	8	data, serial, counter	0x00 0x00 0x00 0x01 0x00 0x00 0x69 0x4f
Extended Protected Data #136	16	data, serial, counter	0x6c 0x63 0x64 0x63 0x00 0x01 0x3a 0xcc 0x00 0x00 0x00 0x00 0x00 0 x00 0x01 0x00

Amount of Licenses

Territorial Protection

Customer ID

License per Transaction

<no name> 3-4040430 CmStick 4.01

Licenses | CmContainer Info | User Data | Backup and Restore

99 Firm Security Box Item

Product Code	Name	Unit Counter	Valid Until	License Quantity	Feature Map
6000010	CodeMeter Test Kit (Unlimited)	n/a	n/a	1	0x1bffff
6000372	WIBU-SYSTEMS AG (Per Transaction, Trial)	n/a	n/a	1	0x13ffff

Key Store

100021 WIBU-SYSTEMS AG

102688 WIBU-SYSTEMS AG - Licensing

Product Code	Name	Unit Counter	Valid Until	License Quantity	Feature Map
2	License per Transaction	100	n/a	1	n/a
4	Annual License: Trial License	n/a	2017-10-05 08:26:46	1	n/a
100000	CodeMeter Demo License	n/a	2024-02-01 01:00:00	1	n/a

License

Trial License

<no name> 3-4040432 CmStick 4.01

Licenses | CmContainer Info | User Data | Backup and Restore

99 Firm Security Box Item

Product Code	Name	Unit Counter	Valid Until	License Quantity	Feature Map
6000010	CodeMeter Test Kit (Unlimited)	n/a	n/a	1	0x1bffff
6000370	WIBU-SYSTEMS AG (Per CmContainer, Trial)	n/a	n/a	1	0x13fffd

Key Store

100021 WIBU-SYSTEMS AG

102688 WIBU-SYSTEMS AG - Licensing

Product Code	Name	Unit Counter	Valid Until	License Quantity	Feature Map
1	License per CmContainer	100	n/a	1	n/a
4	Annual License: Trial License	n/a	2022-04-01 01:59:59	1	n/a
100000	CodeMeter Demo License	n/a	2024-02-01 01:00:00	1	n/a

License

Unlimited License

<no name> 3-4040434 CmStick 4.01

Licenses | CmContainer Info | User Data | Backup and Restore

99 Firm Security Box Item

Product Code	Name	Unit Counter	Valid Until	License Quantity	Feature Map
6000010	CodeMeter Test Kit (Unlimited)	n/a	n/a	1	0x1bffff
6000368	WIBU-SYSTEMS AG (Unlimited)	n/a	n/a	1	0x1bffff

Key Store

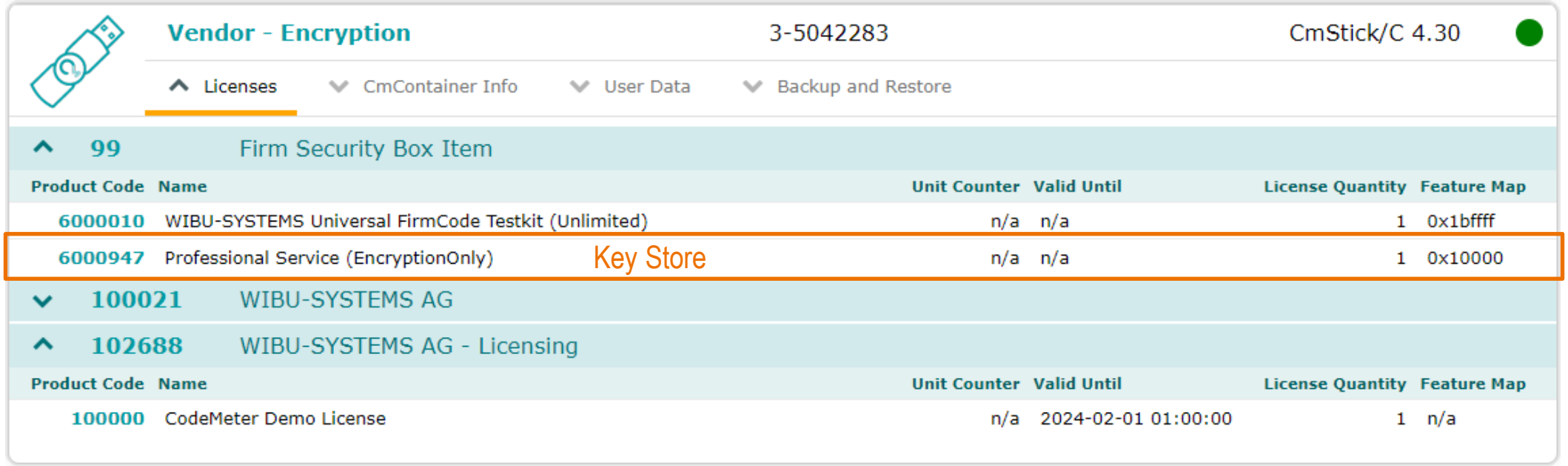
100021 WIBU-SYSTEMS AG

102688 WIBU-SYSTEMS AG - Licensing

Product Code	Name	Unit Counter	Valid Until	License Quantity	Feature Map
5	Annual License: Unlimited License	n/a	2022-04-01 01:59:59	1	n/a
100000	CodeMeter Demo License	n/a	2024-02-01 01:00:00	1	n/a

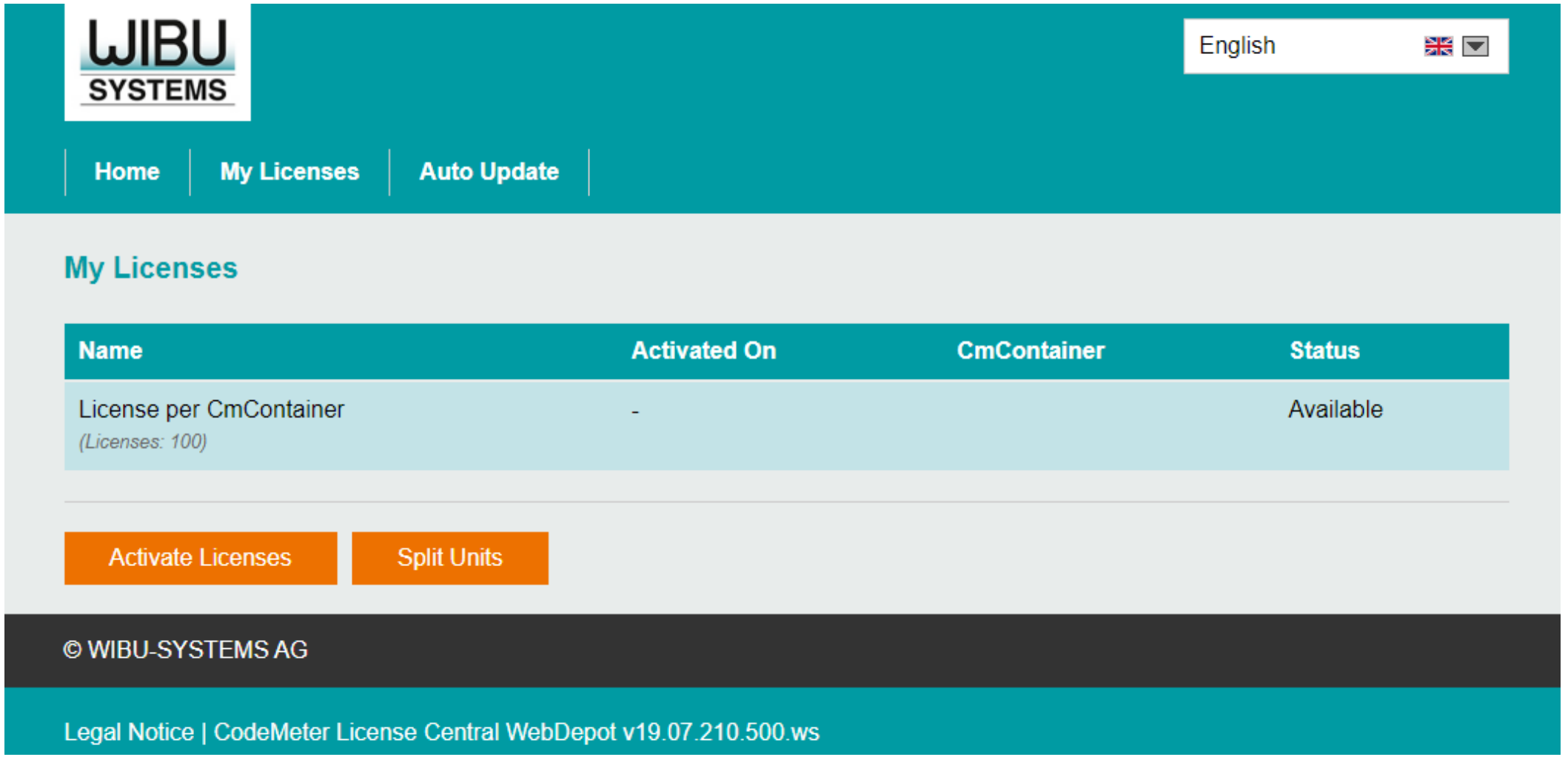
License

Encryption Only FSB



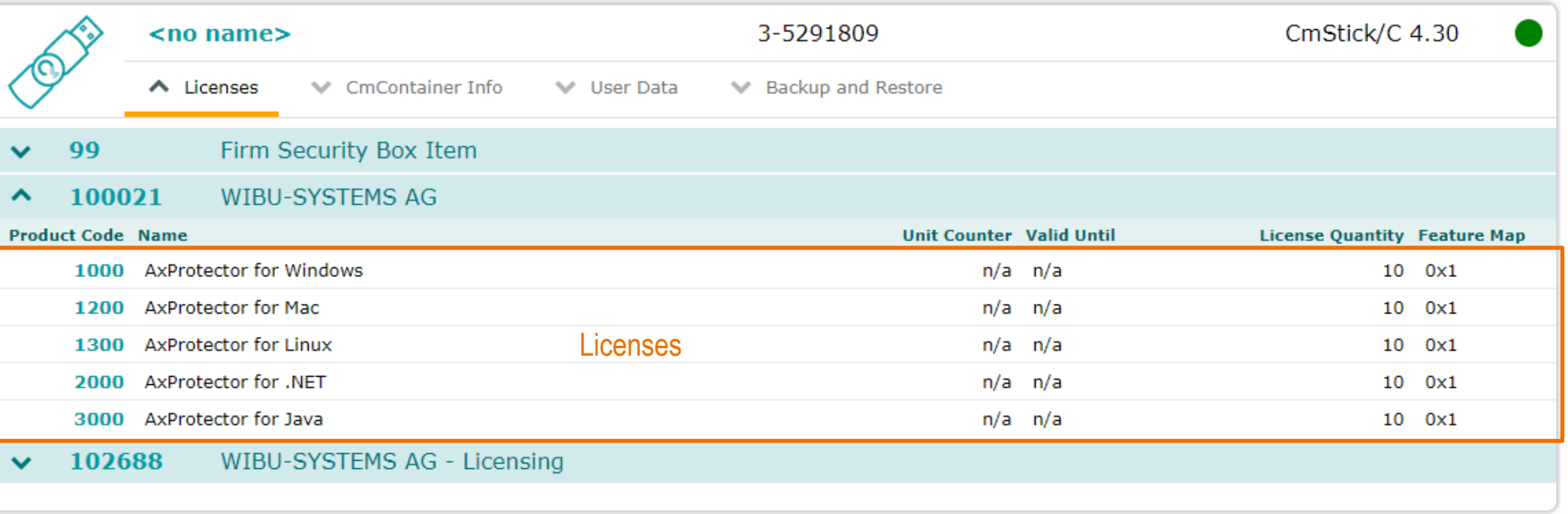
License Renewals

License Renewals – https://license.wibu.com

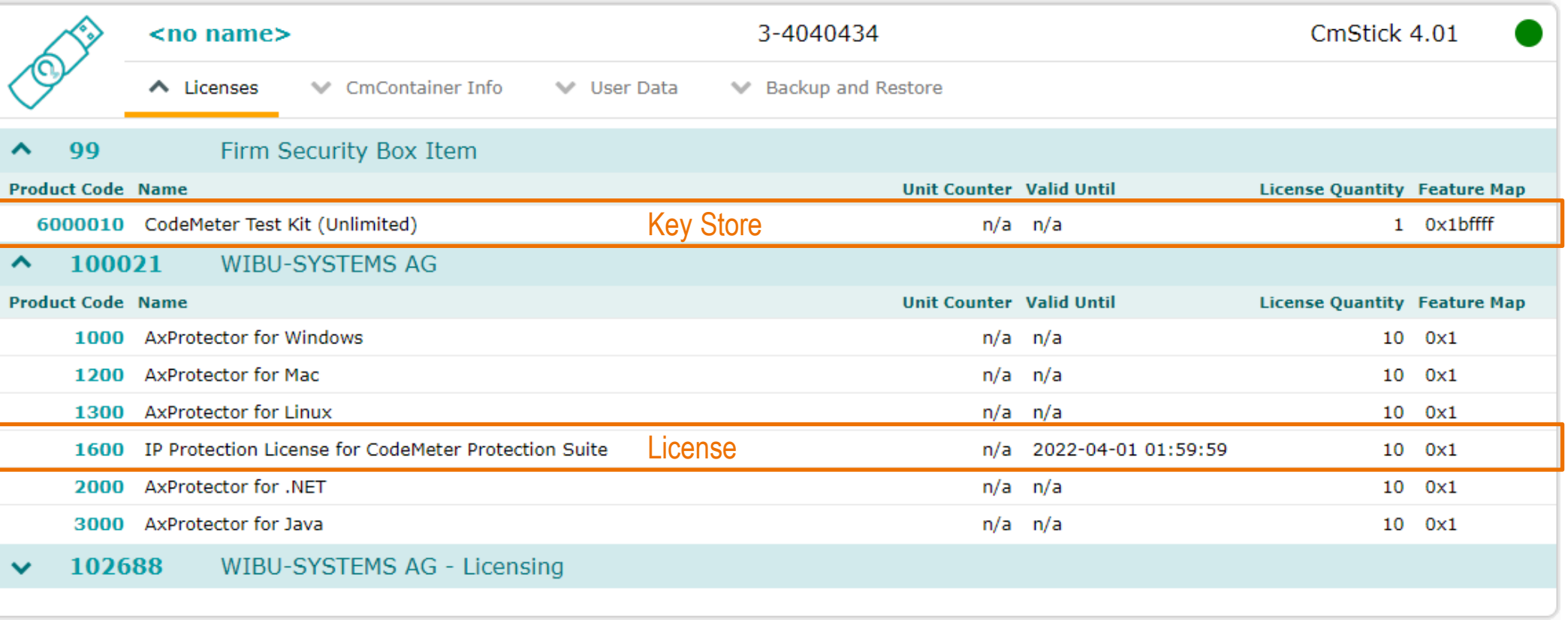


CodeMeter SDK Tools

CodeMeter SDK Tools



IP Protection FSB



Best Practice Scenarios

Best Practice Scenarios

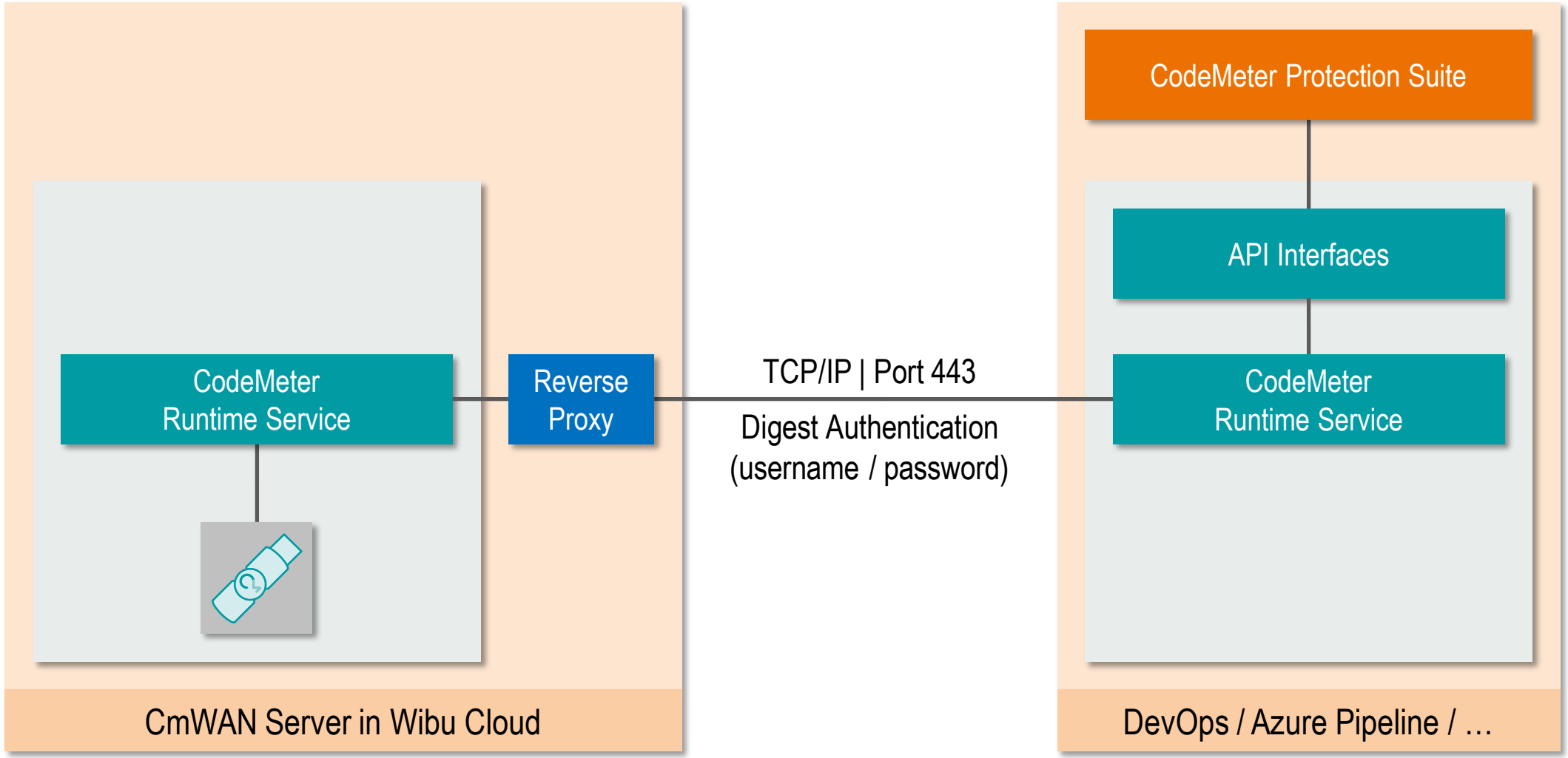
- Single Developer
  - One standard FSB
- Company with Continuous Integration
  - One or multiple Encryption Only FSB(s) at automatic build farm
  - One standard FSB at CodeMeter License Central
- Company with high amount of license transactions
  - Encryption Only FSB(s) for build system
  - One standard FSB for every CodeMeter License Central line
  - One spare standard FSB for all lines as fail-over

Delivery Options

Delivery Options

- CmDongle
- CmDongle via CmWAN for CodeMeter Protection Suite (newly available)

CmDongle via CmWAN for CodeMeter Protection Suite



© WIBU-SYSTEMS AG 2021 – Everything You Always Wanted to Know About FSBs – But Were Afraid to Ask

Delivery Options

- CmDongle
- CmDongle via CmWAN for CodeMeter Protection Suite (newly available)

- CmCloudContainer (Q4/2021, Universal Firm Code only)

Thank you very much for your attention

Europe: +49-721-931720

USA: +1-425-7756900

China: +86-21-55661790

Japan: +81-45-5659710

https://www.wibu.com

info@wibu.com