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THE WIBU-MAGAZINE

First Look: A New Home for Wibu-Systems

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WIBU SYSTEMS

Content

Dear Clients and Partners!

"Unrelenting change" has become the theme for our time, for our economy, and for society at large. The Corona pandemic has turned out to be an unexpected driver for the digital revolution. To keep pace with all these changes, we have only one real option: To keep innovating.

This is not about turning a quick profit, but rather about making sustainable progress for the long term. At Wibu-Systems, our research and development efforts are targeted at such diverse areas as novel applications for our protection, licensing, and security technologies in the cloud, post-quantum cryptography, and artificial intelligence for our clients' applications as well as our own tools. We want to do our part to seize the benefits of digitalization for businesses and all of society e.g., in 3D printing, medical technology, or advanced robotics. We are also proud to be one of Germany's SMEs whose products are promoting progress in microelectronics.

One very visible expression of our sustainable investments is the new headquarters we are opening in Karlsruhe. Designed to be as energy efficient as possible and equipped with cutting-edge technology and production facilities, our new site represents our vision of how our way of working will evolve. With our new resources and creative contributors, we will continue to design products that not only anticipate the needs of our clients and end-users but exceed their expectations. We have also expanded our footprint in Japan with new office spaces near Shin-Yokohama station.

Joining our new head office on our campus, the House of IT Security is bringing together the competencies and potential of dedicated research institutes, start-ups, and development teams from established names in our industry. It will be a hotbed for innovation, where the combined intelligence on site will make progress faster than any one entity could achieve on their own.

This issue of our KEYnote magazine brings you interesting news and insights about cloud licensing, subscription models, our CodeMeter Protection Suite, and our support policy for older operating systems. I hope that we will soon be able to meet again in person and wish us all a kinder summer, with more freedoms to enjoy safely and responsibly.

Kind regards,

Oliver Winzenried

CEO

ALERT

One idea at the right time can change everything.

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First Look: A New Home for Wibu-Systems

The time has come: On 14 April 2021, WIBU-SYSTEMS AG changed its entry in the company register to Zimmerstrasse 5, 76137 Karlsruhe, Germany. At the new address, an amazing new building, constructed from sustainable materials and with an exceptional environmental footprint, offers over 90,000 square feet of space for more innovation and continued growth.

Impressive Stats

The new building rests on no fewer than 500 pillars, sunk to a depth of 40 feet, each measuring two feet in diameter and filled with four metric tons of concrete for a solid foundation that could withstand even an unlikely Rhine valley earthquake. Inside, the building is kept warm with distance heating, using only 240 kW power, often from renewable sources, and cooled with a 420 kW water-driven cooling unit, whose max. 65 kW power intake is supplied by our new 80 kWp photovoltaic system. Quiet heating / cooling fans offer comfortable air conditioning without annoying drafts and with excellent acoustic properties. An additional ventilation system with waste heat recovery adds "fresh air" in transit spaces, meeting rooms, the lobby and foyer, conference facilities, cafeteria, and the production unit for more concentrated work.

Our very own substation connects the new HQs to the 20 kV ring network for reliable "green" electricity. The underground and public parking spaces include 20 fully compliant EV chargers with clever load management, as well as additional chargers for electric bicycles. To bridge any power outages, the entire system is fitted with a battery-based UPS (400 V, 40 kW) and a 65 kW Diesel emergency generator.

Modern access controls without mechanical keys, a special security zone with turnstiles for the hardware, embedded, and CodeMeter Protection Suite development teams, and burglar alarms with exterior CCTV monitoring, protect the facilities from physical threats. The server and electrical rooms are fitted with separate, redundant AC facilities and ASD early warning smoke detectors for immediate emergency responses and greater reliability. The fire alarms are also connected with a direct line to the Karlsruhe municipal fire department.

The building facilities use a cleverly designed, consistent building control system with energy management, PLC, and flexroom controllers made by WAGO. The system is fed with data from weather monitors, DALI motion and constant light detectors, carbon dioxide monitors, and EnOcean panels and switches that operate the blinds via the SMI bus, DALI-controlled lights and lamps, the six-way valves for heating / cooling, and volume control valves for superior air quality.

The sanitary facilities use mechanical ventilation and include touchless taps, soap dispensers, and hand dryers with HEPA filters – hygiene precautions that are proving their worth in the current environment.

A redundant 1 GBit/s fiber optic connection and internal IT infrastructure with copper and fiber optic cables, switches with up to 40 GBit/s and around fifty Wifi 6 WPA3 access points distributed through the building guarantee excellent access, with a conscious decision to go for "Security made in Germany" in the form of hardware by Lancom, a subsidiary of Rhode & Schwarz.

The liberal scale of the building's windows let in abundant natural light, adjusted with intelligent blinds. The post-and-beam construction of the ground and top floor façade itself ensures optimum insulation for both heat and noise. Its premium insulation materials and elegant and durable Alucobond shell,

mirrored in the handcrafted VMZinc cladding on the upper floor, are both long-lasting and sustainable – qualities that match Wibu-Systems' principles and work discipline.

Testing, Production, and Warehousing Facilities

A crammed production site makes it harder to keep processes clean and organized, stands in the way of efficiency and quality improvements, and makes it virtually impossible to track reliably what is going on. The new building gave Wibu-Systems the opportunity to create a completely new production unit from scratch. The new facilities not only add to the production capacities, but also make possible the vision of fully automated manufacturing, even at night.

It quickly became clear how error-prone the conventional approach to planning the facilities was, as it lacked the ability to simulate processes meaningfully. The DigiFab4KMU project, supported by the German Ministry of Economics and Technology BMWi and the Bundestag, allowed the entire space to come to virtual life in the Karlsruhe Institute of Technology – KIT's "Cave", long before the work had broken ground. The project brought together Wibu-Systems with archis, specialist architects and engineers from Karlsruhe, the Institute for Information Management in Engineering at the KIT, and systems vendor Arnold IT. The simulations made in the Cave revealed how a systematic value flow analysis could pave the way for more productivity and efficiency with an autonomous internal logistics system. Along the way, the shop floor layout could be remodeled and tinkered with to achieve the optimum flow for the production system without the effort of doing so in real life. Digital 3D laser scans were recorded throughout the construction process to keep the physical building aligned with the original plans and to produce a digital twin at the same time.

The EPA area in our testing facilities includes our current and new test units and 7 m high shelves with lifts for enormous storage space. Our intensive planning process guarantees an efficient flow of all materials from the semi-finished and component stores, where new parts arrive after careful incoming goods checks, to the post-production stores, where finished products are waiting for dispatch orders.

Office Space

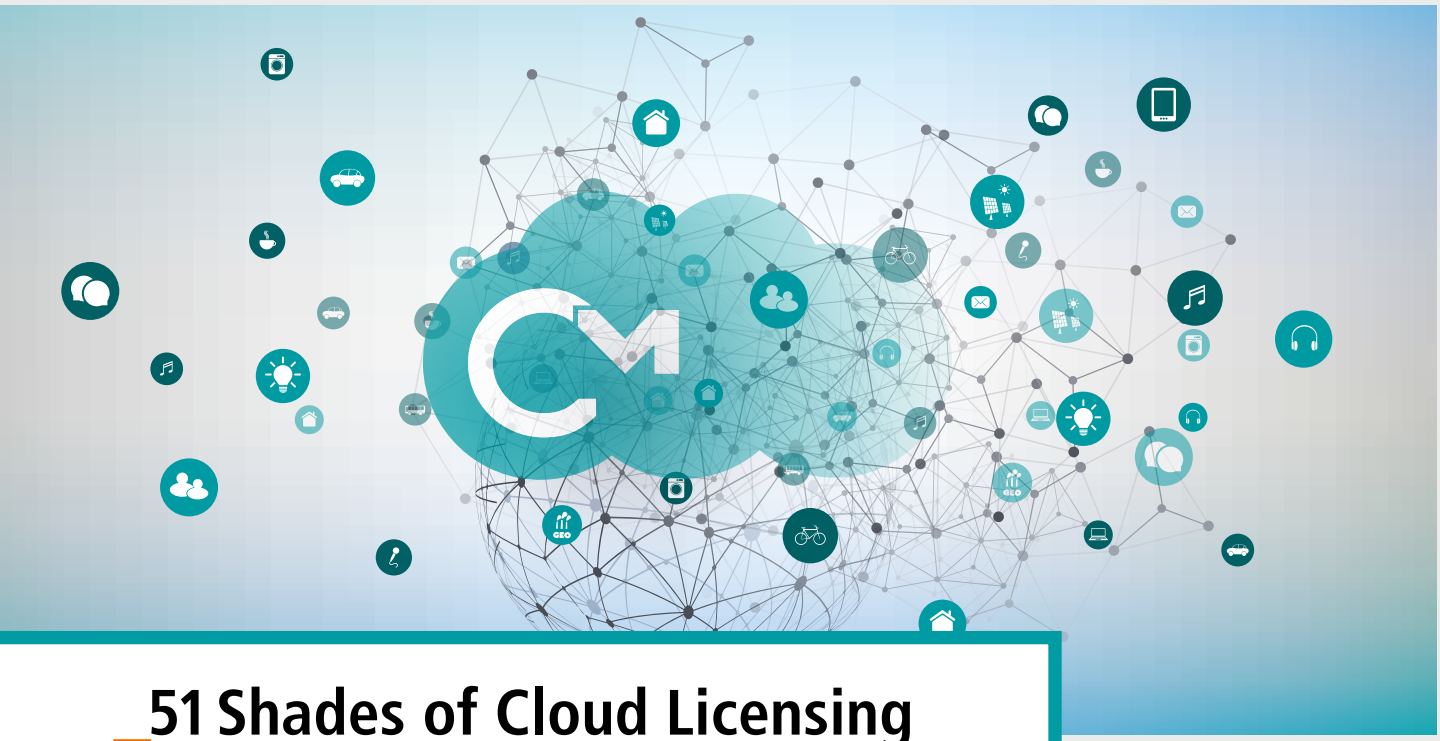
We want to give the creative people here at Wibu-Systems a pleasant and healthy place to work in, with our own restaurant, a rooftop cafeteria, and a hybrid open-plan/individual office landscape. Adjustable tables, ergonomic chairs, and a number of meeting zones for spontaneous and creative get-togethers make for a varied and enjoyable working day. High-quality, sustainable carpets made by Interface cover all office floors, with minimal emissions and the ability to capture fine dust. The 100% carbon-neutral and recyclable carpets add to a creatively modular and quiet office experience, an atmosphere also supported by the acoustic ceiling panels and other clever acoustic design features.

An Investment by Us – A Promise to You

We are passionate about our new site, and we are taking this passion forward to forge new opportunities for growth in all our units. We strive to offer the solutions that your business needs to advance; to continue to improve the quality of our processes, service, and products; and to create added value with innovative solutions for you, your business, and society at large. And we thank you for enabling us to do so with your support and your loyalty.

House of IT Security

The new HQs' sister on the Wibu-Systems' campus, the House of IT Security, already has tenants for all of its fixed-lease units. Space remains available in the IT Security Club, its dedicated co-working area for researchers, start-ups, and industry enterprises interested in team and project spaces with all-inclusive service and special private areas. For enquiries visit www.wibu.com/hoits or send an email to team@itsec.house.



51 Shades of Cloud Licensing

"Cause you know sometimes words have two meanings": Robert Plant reminds us when singing about the stairway to heaven. If he had known about the term "cloud licensing" at that time, he might have upped that number. Cloud licensing comes in so many shades, flavors, shapes, and sizes that having only two meanings sounds appealingly unambiguous. This article introduces the most common variants and CodeMeter's solutions for them. The four basic constituents are an ERP system, license management system, license containers, and the protected and licensed application. All of them can exist either on premise or in the cloud, and many other combinations and permutations are conceivable.

ERP, E-Commerce CRM Solution	License Management	License Storage	Protected and Licensed Application
Cloud	**Cloud**	**Cloud**	**Cloud**
■ Salesforce ■ Digital River ■ Cleverbridge ■ Magento	■ License Central Internet Edition ■ Hosting Services ■ License Portal	■ CmCloud ■ CmCloudLite ■ CmActLicense for Azure and AWS	■ SaaS Application ■ Mobile Application ■ Private Cloud
On-Premises	**On-Premises**	**On-Premises**	**On-Premises**
■ SAP/R3 ■ Navision ■ Home-grown App	■ License Central Desktop Edition ■ Home-grown App	■ CmDongle ■ CmActLicense	■ Offline Device ■ Online Device ■ License Server

The Swiss Army Knife of Licensing

CodeMeter offers a perfectly balanced and coherent solution for all these combinations. Even complicated mixed setups are not a problem for it, but rather an opportunity to shine. License creation is made easy with its standardized integration into ERP, CRM, or e-commerce systems, where the recipients send a ticket to redeem their licenses. The activation process is also designed to be adjusted for each given use case: Licenses can be activated automatically when their recipient is already known e.g. from the original purchase; if the intended user is not known when the license is first created, it can be activated and bound to the user when the user enters the ticket.

The Core Modules

CodeMeter License Central

CodeMeter License Central is the software developers' go-to place for creating, managing, and distributing licenses. This is where licenses for their software products are configured and created, again with extensive automation capabilities by integrating a CRM, ERP, or e-commerce system. The developers also have the option to allow their users to move licenses or recover lost licenses, to change existing licenses, or to revoke licenses if need be.

License Portal

The license portal is an add-on module of CodeMeter License Central, designed to give end users round-the-clock self-service access to their licenses. Depending on the settings chosen by the developers, users can go to the portal to activate, move, or return their licenses or pick up any license updates from their vendor. These updates are enforced automatically and in the background before any other action can be done, and they cannot be skipped by users, making them the perfect vehicle for expanding or indeed withdrawing licenses. An API, called the Gateway, is also available to access the license portal from within a licensed application. The system makes license updates transparent, but unobtrusive for users who just want to get on with their software lives.

CodeMeter Cloud Lite

CodeMeter Cloud Lite is a server application that is used to provide licenses created with CodeMeter License Central for SaaS applications or software on mobile devices. When CodeMeter License Central first creates a license, it is not assigned to any user or device; it is only when the license is activated that it is sent to its intended device or bound to its intended user in the case of CodeMeter Cloud Lite. CodeMeter Cloud Lite does not have any user management system on board, but instead links up with the existing user management system of the vendor's SaaS service.

CodeMeter Cloud

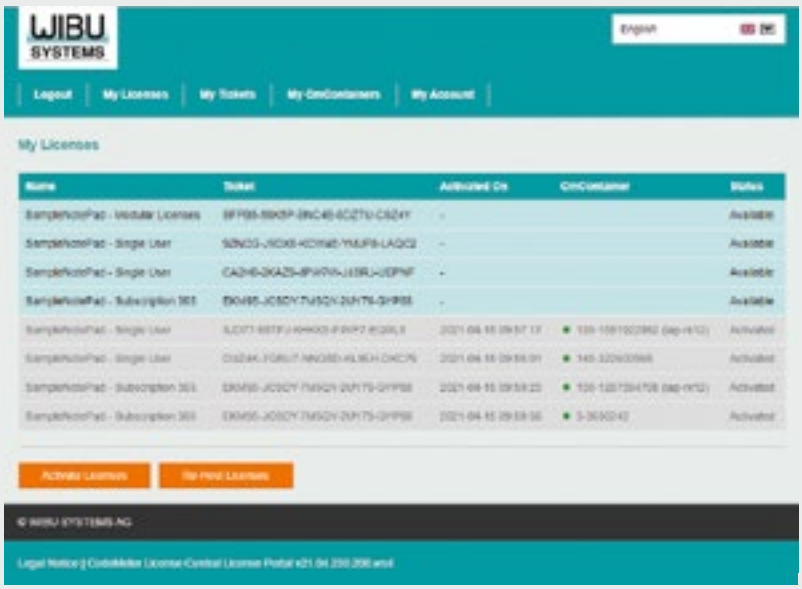
CodeMeter Cloud is the comprehensive solution for protecting and licensing mobile or cloud software. The licenses are stored in the cloud and can be accessed by their users on the go. All the users need is access data (in the form of a credential file) to get to their licenses in their CmCloudContainer.

CodeMeter Cloud Lite uses a barebones REST/SOAP licensing API, whereas CodeMeter Cloud works in full compatibility with regular CmDongles and CmActLicenses and has APIs for native, .NET, and Java applications. It also offers the automated protections of CodeMeter Protection Suite. An integration with an existing user management system is possible via the license portal, but it is not required by the system.

The server for CodeMeter Cloud is operated by Wibu-Systems as a ready-to-go turnkey service.

CmActLicense with SmartBind

A CmActLicense is an encrypted license file that is bound to a physical device or a virtual environment by cryptographic means. CodeMeter SmartBind is the technology with which CodeMeter recognizes the environment and creates the best possible binding. Should certain properties of the hardware change, the technology allows a defined level of tolerance. For virtual or cloud environments, the binding relies on the identifiers of the provider. Due to Wibu-System's cooperation with the two leading providers, particularly reliable binding is guaranteed with Amazon Web Services (AWS) and Microsoft Azure.

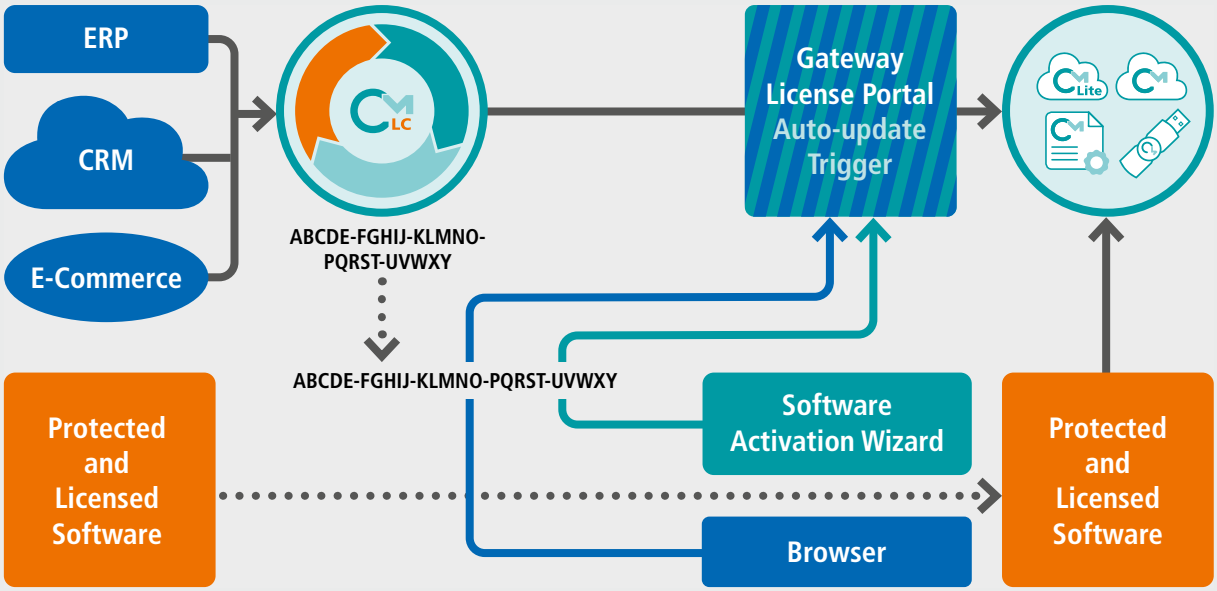


Use Cases

On-Premise Software Managed by the Cloud

The most common use case in B2B installations is conventional, locally installed software with a local license or a license kept on a server in the Local Area Network (LAN).

For this case, CodeMeter License Central and CmActLicenses are the preferred choice, with an optional license portal or an integrated activation wizard. CodeMeter License Central lets users activate, move, and possibly recover lost licenses by themselves. If a regular, but not permanent Internet connection exists, the checkpoint mechanism can be used to enforce



regular license renewals. Should a license already be recovered on another device, the license at the first device would either be withdrawn or simply left to lapse.

SaaS Software

For licensing Software-as-a-Service that is hosted by its vendor, CodeMeter Cloud Lite combined with CodeMeter License Central are the right choice: Users can access and log on to the SaaS application via their browsers. In the background, the SaaS solution communicates with CodeMeter Cloud Lite to get up-to-date information about the licensed features and the license terms, such as expiry dates.

On-Premise Software in a Private Cloud

In this case, the vendor sells regular on-premise software, but the user has outsourced the IT infrastructure and uses only thin clients. The software itself is then run in virtual machines in a private cloud, e.g. AWS or Azure.

CodeMeter has two equally suitable options for this scenario: CmActLicenses with SmartBind could be used, since the cooperation of Wibu-Systems with Microsoft and Amazon promises high security and top reliability. The virtual machines can even be moved in this case. A CmActLicense would only be invalidated if a virtual machine is duplicated or reverted to a snapshot.

The other option is CodeMeter Cloud. The credential file needed to access the license container would be placed in the virtual machine, and since the licenses are tracked by Wibu-Systems itself, the virtual machines can be moved, copied, or reverted to the users liking – without ever allowing more licenses to be used than the user actually owns.

Mobile Online Usage of On-Premise Software

The users are always online and want to use their software on the go, e.g. moving between their office and home office.

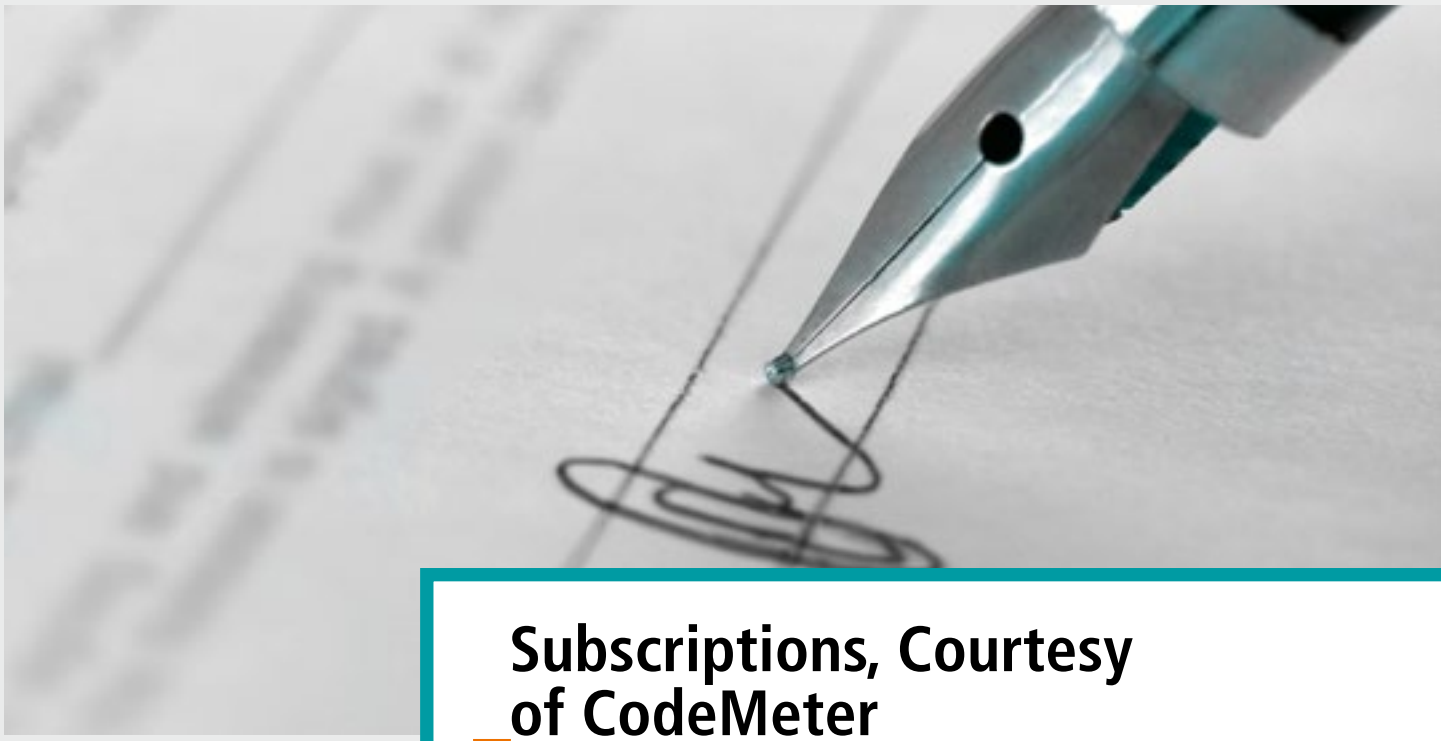
This is the use case CodeMeter Cloud was made for. The credential file would be imported to all devices of the users, allowing them to access their software wherever they want. The number of licenses is carefully tracked in the cloud, so that e.g. a single-user license can only be used on one device at any one time. Should more than one user share the device, the credential file can be removed after use, using the license portal to manage the credential files. Typically, the necessary licenses are created with CodeMeter License Central.

Mobile Offline Usage of On-Premise Software

In this scenario, the users move between online and offline environments. For them to be able to start licensed software offline, precautions have to be in place to prevent the potential – unintentional or fraudulent – multiple use of a license. The typical solution is to give the users a certain number of licenses that they can activate offline on a certain number of devices in the form of CmActLicenses. This resembles the „On-Premise Software Managed by the Cloud“ approach, but it requires a periodic connection to the Internet to use the checkpoint license model. These are licenses that can be activated on other devices when they or the device they were originally on are removed upon reaching a checkpoint. If users want to move on to another device without waiting for a checkpoint, they can deactivate it early by going through CodeMeter License Central.

Summary

CodeMeter has all shades and flavors of cloud licensing covered with its array of components. CodeMeter License Central offers a simple and standardized way to create licenses for all possible use cases. Licenses can be stored in any one of three ways: CmCloudContainers, CmCloudLiteContainers, and CmActLicenses. And Wibu-Systems' experts are on hand to help design the perfect cloud licensing architecture to keep you from tripping up on the stairway into the cloud.



Subscriptions, Courtesy of CodeMeter

More and more software developers are reaching out to Wibu-Systems with their vision to offer their software by subscription. This sounds straightforward, but a quick conversation often reveals that people have very different ideas about how a subscription system should work and how their existing sales systems might affect its eventual character. The good news is that CodeMeter offers an effective solution for any type of subscription model we have encountered to date.

The Technical Underpinnings

A look at the technology behind a subscription model shows that it can indeed be a simple and elegant solution if CodeMeter is given an opportunity to work its magic. In essence, CodeMeter simply has to be integrated into the software, and CodeMeter Runtime takes care of everything else. It does not matter whether CodeMeter was integrated automatically using CodeMeter Protection Suite or manually via our Core API.

A typical subscription model uses a time-limited license, i.e. the end users need to get their licenses renewed to continue using their software, which they can either do by buying an extension to their subscription or by having a contract in place to do so in the background. Licenses can be set to expire by configuring an expiration date in the license options. As long as that date is still in the future, the license can be used; when the expiration date arrives, it cannot. Software can, of course, include a mechanism for checking the expiration date and either starting an automatic renewal process or reminding the user to do so manually.

Technically, subscriptions end when the expiration date is not re-set and the license automatically becomes invalid at the end of the active date.

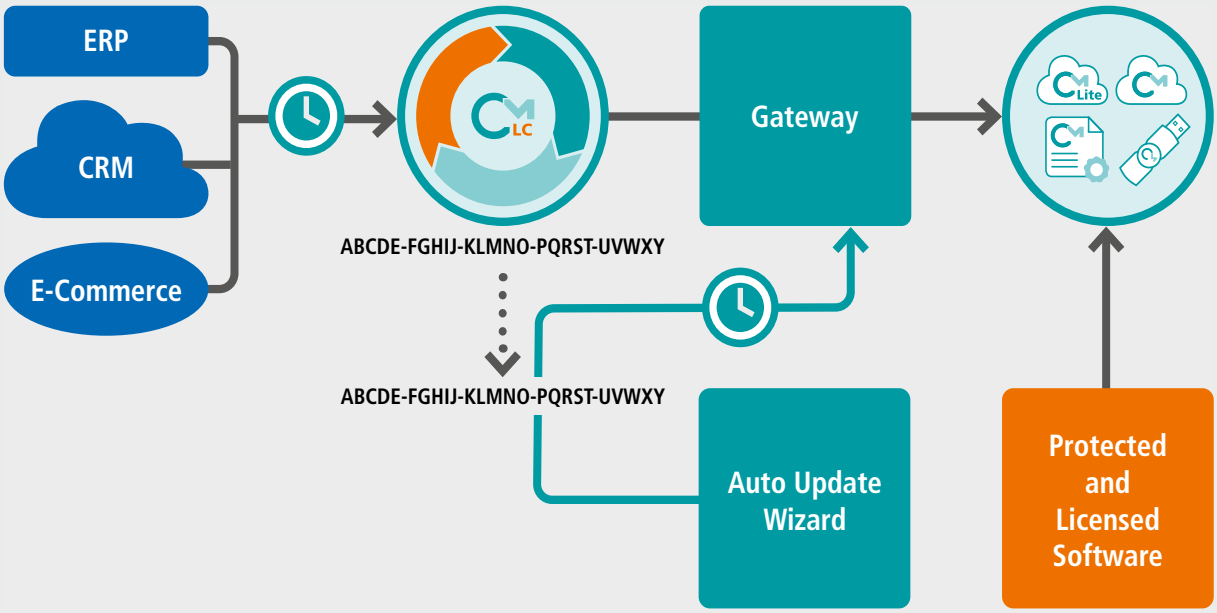
Unlimited Licenses?

An alternative to temporary, regularly renewed licenses is offered by unlimited licenses: The users can use their licenses for as long as their subscription is active, without having to update their license. Only when they cancel their subscription would the license be turned into a temporary version that expires with the end of their contract.

The advantage of this approach is that it avoids all possible disruptions relating to the regular license renewals. But it also comes with drawbacks: Users might find a way to stop their licenses from being turned into temporary, expiring licenses to keep using their software even after their subscription ends. Subscriptions based on temporary licenses also make life easier if there are any hardware problems. If a license is lost in this way, the vendor can simply re-issue it and does not have to worry about fraud and malfeasance, because only allegedly lost licenses that a user wants to keep using illegitimately would expire soon enough. The risk is far greater with unlimited licenses, which might be in use for a long time after their purported "loss".

The Users' Perspective

The most convenient way to renew temporary licenses is a simple activation mechanism that works in the background, e.g. every time the software is launched. This requires the system to be online. If there is no way for the software to automatically check for updates and renewals over the Internet, push updates are an alternative, as they need little input from the user: The vendor can create a license update for the users' CmContainers, which is emailed to the users. They simply have to download it and can continue to enjoy their software. Alternatively, the files required



for this operation can be provided via WebDepot.

The Vendor's Perspective

The interesting side of subscription models can be found with the software vendor: The possible commercial options and technical requirements are endless and allow for lots of creativity. The only common denominator is that there needs to be a way to let licenses expire or renewed with a new expiration date.

In most cases, users will enter an explicit subscription contract, which defines when the next renewal can and should be bought. The renewal can be done either by invoicing the user or by automatically charging their accounts. If users do not want the software anymore, they need to actively cancel their contract and can then continue to enjoy their software until the end of the subscription contract.

Automatic Extensions via an ERP System

For this setup, the ERP system needs to know exactly when the next subscription payment is due. When the software is first bought, a license is created by CodeMeter License Central and given a fixed expiration date (optionally with a certain grace period).

As long as the subscription remains active, a new license is created with each payment or whenever a cancellation deadline passes. This license then simply replaces the old, expiring license.

Automatic Extensions with the Renewal Concept

The renewal concept works by creating licenses that are valid for a defined period of time, which is configured in the item within CodeMeter License Central and given a specific expiration date. In a subscription model, the user would then have to regularly renew the license via CodeMeter License Central. As described above, this can be done either by sending the users a timely reminder or – even better – by automating the entire process to work from within the software itself.

Should a user cancel their subscription, the backend system in charge creates a new license, with a fixed expiration date set to the end of the final period of use the user paid for. When the license renewal comes up again, the renewal mechanism is ended, and the license becomes a simple temporary and expiring license.

For the vendor's workflow, this acts just like an unlimited license, which is only transformed into a regular time-limited license upon cancellation of the subscription. The difference is that the renewed license is technically always time-limited, which prevents fraudulent use from the get-go.

The 365-Day Mechanism

Since it was first introduced by some of the big names in the software industry, this model has steadily grown into a fan favorite, continuing the success story of similar models that were long used by leading game console makers.

The beauty of this mechanism is the choice of sales channels it gives the vendor: Users can buy a renewal for a new period to add to their existing license wherever they prefer. Once they activate it, there is no way back, that is, the renewal is bound to the specific license and not a user. This takes away a certain quality of customer relationship for the vendor, but it also means that no special sales structures need to be put in place to maintain such a direct transactional relationship. Activation codes could just as easily be sold at supermarket checkouts.

Users can also choose to enter a contract for automatic renewals when they activate their first period, taking us back to the active license renewal via the ERP system. The only difference here is that the expiration date is calculated from the software's first activation and not from its original sale.

Conclusion

Subscription models come in all shapes and sizes, and the relationship they create between vendor and user can take many different technical forms. CodeMeter and its ability to enforce license expiration dates are a great way to realize many of these setups, and CodeMeter License Central works perfectly with many popular back-office systems to make finding the right sales structure for a subscription model an enjoyable and creative experience.

Runtime Environment for CodeMeter Protection Suite

A new native component has arrived to keep software even better protected with novel mechanisms. Learn all the benefits and how this module can safely link up with your protected applications.

Software technology never stops evolving. What is hot today will be old hat tomorrow. Long-suffering software developers will be familiar with this merciless aspect of their trade: They pick a programming language that is all the rage, only for them to have to rewrite their entire application for a different language or a completely new technology soon after and be able to keep up with the newest trends and fads. CodeMeter Protection Suite is always kept up-to-date and brimming with new functions and capabilities that equip software developers with top-flight protections for whatever novel environment or technology they are dealing with. One example of this concept is the all-new AxProtector Python, currently in its beta tests. Python scripts are enjoying record popularity at the moment and are a favorite for routine software development tasks. However, when these little helpers grow up and become valuable IP in their own right, software developers will want the best means to protect and license the fruit of their labor.

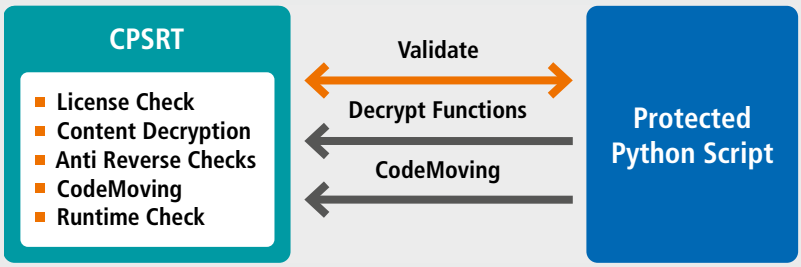
Protecting script languages?

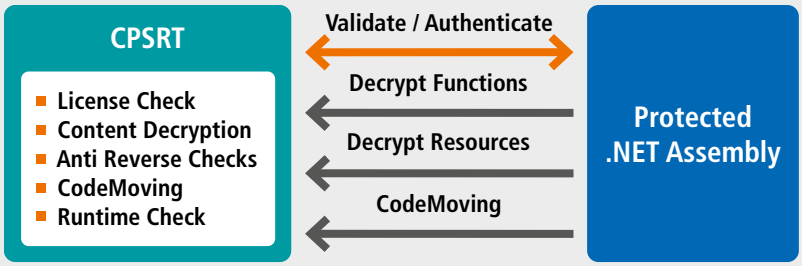
Python is a script language that lives in source code form. Can Python code be protected? One option – a good enough choice for many situations – is to translate it into native code and to then encrypt the resulting binaries with AxProtector. But software developers usually need to produce their work in many different binary forms for different platforms to give their customers the freedom of choice. And they would have to trust their compilation tool to create native code that is not only correct, but also works as smoothly as they expect it to. In some cases, translating the code into native form makes certain use cases difficult or even completely impossible, such as the ability for customers to integrate protected functions into their own Python scripts. That's more than enough reason to look for a new solution that could protect script languages like Python without the hassle of going through a third-party tool.

The greatest challenge lies in checking the licenses and decrypting the code in an environment that is safe from snooping and tampering – at first sight an impossible endeavor for scripts that the user can access in source code form. But a solution is available: A native component developed by Wibu-Systems that can handle all these operations far away from prying eyes: the new CodeMeter Protection Suite runtime component CPSRT (CodeMeter Protection Suite Runtime).

Native library

The contents of the functions in question are





encrypted in a protected script, alongside the means for handing over the encrypted code to the native CPSRT component. This checks the required licenses, decrypts the functions, and sends them back to the interpreter, where they can be executed. The native component could also take over other jobs for the script language, e.g. conducting regular license checks or tracking debuggers.

The native component is protected by AxProtector to stop would-be attackers from tampering with itself. Hardening its own protections is just as important as having the right safeguards for the communication between it and the protected application. This would seem an ideal target for attackers – simply listen in on the communication to find out everything you need to know, or even to inject your own malicious instructions like the classic man-in-the-middle attack. This is why Wibu-Systems' developers teamed up with the company's security experts and came up with a foolproof communication system.

Encrypted communication

When loading the native component, an encrypted line of communication is started that uses certificates created for the protected application. The two certificates, a copy protection key certificate and a protectee certificate, form links in a chain of signatures connecting the licensor's private key certificate provided by Wibu-Systems to software developers back to Wibu-Systems' very own root certificate.

The protected application – the protectee – can use the protectee certificate to authenticate itself to the native component and show that it has the right to access licenses and decrypt functions. Vice versa, the native component has a certificate signed by Wibu-Systems to identify itself with the protected application and prove its genuineness. With the trust ensured by this process, the two can work together to negotiate the communication key without any outside party ever getting near it.

The native component will also only execute the instructions (e.g. for decrypting code) for Firm Codes that the protected application has the right certificate for. It can also use these certificates to check the integrity of the protected application, stopping manipulated software in its tracks from its very first launch.

Certificates

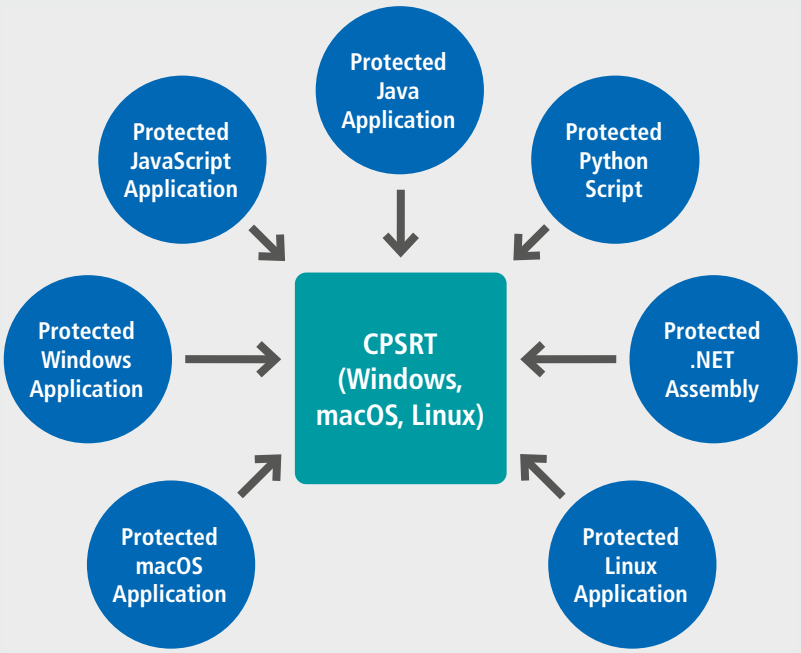
The certificate chain is based on the infrastructure first introduced for the Universal Firm Code (Firm Codes higher than 6.000.000), although this does not exclude software developers using older CodeMeter Firm Codes or even its predecessor WibuKey. They can also use the new native component with the same certificate infrastructure by going through their Firm Security Box (FSB). The required certificates will be rolled out automatically with the next update for all CodeMeter Firm Codes; developers who do not want to wait can update at any time and free of charge. Should your FSB lack the certificate, you will be notified when you next try to encrypt an application, with detailed information about the next steps you should take.

The new native component is currently used by AxProtector .NET and AxProtector Python but will soon be rolled out to other AxProtector variants and provide the additional capabilities of the native component to the protection mechanisms for even safer and more secure software.

Installation required

The native component needs to be available on the user's computer. With AxProtector .NET, it is copied into the protected folder in which the encrypted assembly and the other required files are kept. Since the platform on which the assembly is eventually executed cannot be known beforehand with .NET, the native component is included in versions for different platforms, as a CPSRT.dll file in several subfolders. Beginning from version 10.70a, the mechanism with which assemblies protected with AxProtector .NET look for the CPSRT.dll has been refined: It initially looks in the application's folder and its subfolders and then in all other places named in the PATH variable.

The next CodeMeter version 7.30 will come with CPSRT.dll included with the installers and install the latest version of the new component to avoid the need to distribute it manually. As always, Wibu-Systems is committed to backward compatibility, so that any application protected with CodeMeter Protection Suite will continue to work perfectly with newer incarnations of CPSRT.dll.



Extended CodeMeter Lifecycle

It is a rule of life: All good things must come to an end. And this axiom is true for old applications and entire operating systems, even though they may still have a loyal following or some users may continue to depend on them. A famous example is Windows 7, for which support was discontinued by Microsoft in early 2020 – even though it was still running on countless devices the world over.

CodeMeter serves a vast range of operating systems and platforms. It is Wibu-Systems' policy to continue supporting these platforms as long as they are supported with regular maintenance agreements.

Lifecycle

Wibu-Systems is committed to the following lifecycle principles:

1. All new versions of CodeMeter are backward compatible and replace the previous versions completely.
2. Operating systems are typically supported for as long as they also receive free support from their developers.
3. For operating systems that have moved into their developers' extended support phase, an extended support contract from Wibu-Systems can be entered to receive prolonged support for CodeMeter.

Wibu-Systems distinguishes between two levels of support for operating systems of their makers.

Standard Support

The current release of CodeMeter enjoys the full range of support services as part of standard support. It is the baseline for new developments and innovations, any extensions, and technical improvements. Of course, security patches and bug fixes are available free of charge with each release.

Standard Support can be included in an optional support agreement, which offers users guaranteed response times and faster access to hotfixes (depending on the chosen support level).

Extended Support

When an OS developer moves an older version of an operating system into its extended support phase, any version of CodeMeter developed for that OS version will join it under Wibu-Systems' extended support terms.

Development of those versions will cease, but users will be notified about the possibility of buying an extended support package.

From this point on, new releases will only include security patches and bug fixes for runtime components.

The current and upcoming deadlines for CodeMeter versions for different operating systems moving from standard to extended support are published in our lifecycle document. Should no demand exist for extended support for an older OS version within half a year from the start of the extended support period, Wibu-Systems can terminate this option completely.

Extended support packages can be acquired from Wibu-Systems, separate from any active support agreements. For current prices, please contact your sales representative.

For detailed and date information about the standard and extended support phases your products, please see our lifecycle document on website: http://s.wibu.com/lifecycle.

Managing Legacy Licenses

Many software developers turn to CodeMeter for their licensing needs, not just for the ease with which it can be integrated in a vast range of software platforms, but also for its ability to slot right into existing processes and back-office solutions. In practice, it does so with CodeMeter License Central as the universal and versatile tool for creating and managing licenses in perfect combination with established ERP, CRM, or e-commerce systems and, of course, for actually getting the licenses delivered to the end users' systems.

Very few software developers, however, have CodeMeter integrated with their software from the very first moment of its inception. All software grows, evolves, and matures over time, and the same is true for its licensing system. Software developers might initially start out with a homegrown solution, before switching to a third-party system and discovering the many benefits of CodeMeter. But what happens with the software they had already sold with their legacy licensing system? The software on the end user's computer has no way of knowing what is happening on the developer's end, and it expects the same type of license to work as it has always worked. To avoid compatibility issues, the software developer needs to find the smoothest possible strategy for migrating to CodeMeter.

Hard Cut

Simply switching over abruptly to a new software version makes life harder for many developers and end users. Users might have long-term maintenance agreements in place; they expect the amount of licenses they need to increase or decrease depending on circumstances, but they do not expect that they will have to migrate to a new version, if they simply need one more seat. Certification processes can also make the switch to a completely new software version a tough, lengthy, and costly endeavor, making this hard-cut move to CodeMeter an unpopular or even unfeasible option.

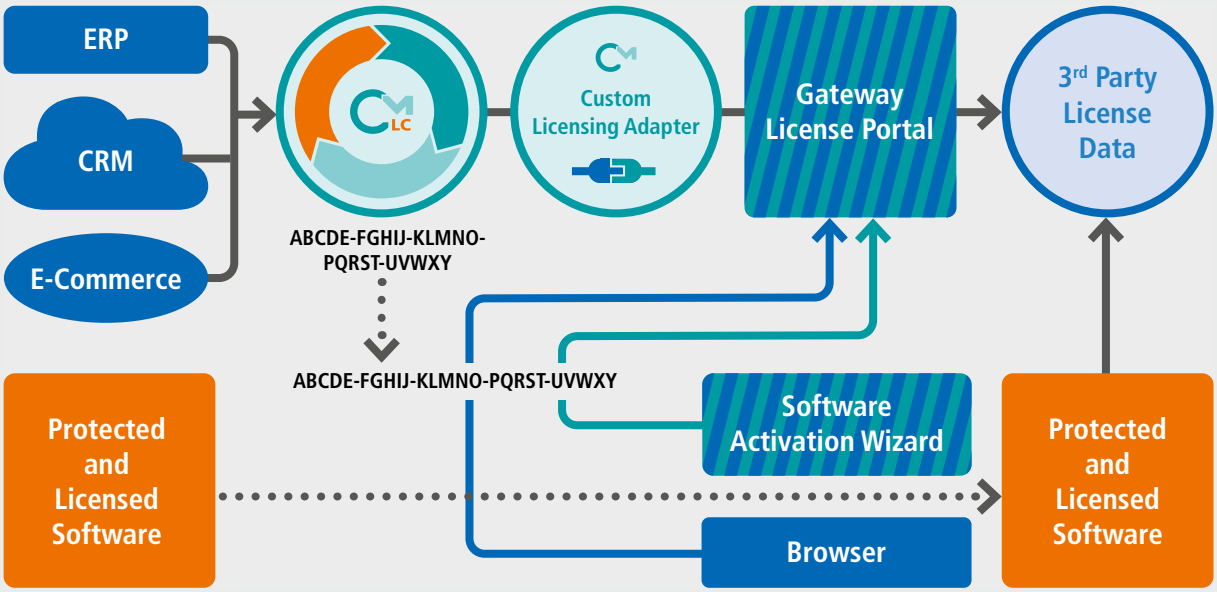
Another aspect that should not be underestimated is the simple logistics of the process: With an abrupt cut potentially affecting many different products from many different teams and departments, simply agreeing on the right date for the transition can prove nearly impossible.

Patches or Parallel Versions

A common choice of software developers is to patch their old software or to run two licensing systems in parallel. The advantages are obvious, as end users can keep using the version of the software they know. But both options have definite drawbacks that need to be considered.

Legacy software can be patched to bring it up to speed with CodeMeter, giving the end users a new version of their software without the "noise" of releasing a completely new generation of it. It is a light-touch, easy-sell option, but it comes at a price: The patch has to be produced first, and existing licenses need to be migrated, requiring a change in the end users' licenses.

Running multiple versions in parallel can break homogeneity in the data and make maintenance and support more complicated and potentially costly. The parallel processes are often not a perfect mirror image of each other, which again needs some careful fine-tuning with a licensing manager or activation



assistant. The sheer effort involved does not seem commensurate with the idea of a short, temporary phase of parallel operations.

The Solution: Custom Licensing Adapter

Custom Licensing Adapter (CLA) is an extension of CodeMeter License Central, designed specifically for this challenge. It lets CodeMeter License Central be the one, shared license admin solution and the "arbiter of truth" in the foreground, while it takes care of the legacy licenses in the background.

One of the great advantages of the CLA is that it allows standard workflows to be used with all licenses, and all it needs is for the ERP system (e.g. SAP) to be properly integrated with CodeMeter License Central. No changes are needed on the side of the software that is already in the users' hands, since the CLA is there to create legacy licenses. The move to CodeMeter License Central can be made with full transparency and no effort for the end users; alternatively, a license portal can be set up for users to view their licenses.

The Standard Workflow

The standard workflow of CodeMeter License Central is excellent for legacy licenses.

The ERP system would send a request to CodeMeter License Central, where a ticket is created and sent back. This ticket entitles the user to obtain their license; by contrast with the regular CodeMeter license, no CodeMeter context file is used in this case, but the binding property of the legacy license instead. Its actual form is irrelevant, as anything that can be turned into a generic byte buffer or file is fit for the purpose. The process again forks off when the license is created: The CLA accesses a part of the legacy system in the background, records, and sends back the data it needs.

CmContainer Type and Mapping

To create a legacy license in the format that the legacy software expects, CodeMeter License Central creates a special type of CmContainer, configured for the product items in question. The required license information is mapped in them to the licensing options and data used under the new CodeMeter system, so that CodeMeter License Central can then create the right licenses via the usual back-office processes. This means that the same process is used for software newly licensed with CodeMeter and software still tied to a legacy licensing system.

Licenses Going Out…

For the end users, the great benefit lies in the simple fact that they can get all their licenses by the same route.

When the licenses are shipped via WebDepot / Gateways or some proprietary solution, the special legacy CmContainer would not communicate directly with CodeMeter License Central, but with the CLA interfaces, which take care of all of the relevant operations in CodeMeter License Central and make sure that all licenses are recorded correctly and are up to date, while also creating a license that has the right format for the legacy software.

…and Coming Back

If the legacy system was able to deactivate licenses, this can also be done via the CLA. In this case, the CLA would be contacted with the instruction to delete the license in question. It is even possible to send back a formal receipt for this action into the licensing system.

Modular Structure

To enable all these functions in the simplest manner possible, the CLA uses a modular structure.

Core

The core module oversees the provision of the right interfaces and the handling of all the communication with CodeMeter License Central. This makes sure that e.g. each license can only be sent a single time to a user and that all other processes, such as moving licenses or recovering lost licenses, are also handled correctly.

The module also stores all the data it needs to do its job in an internal database, so that e.g. a license key can be accessed again without having to call back the client's systems.

Common

This module contains all of the internal facilities for mapping the CodeMeter licensing options and data to the legacy format of the existing software.

Customer

This is where the actual custom legacy license is created in the required format, either directly in this module or via a third-party service for producing the required licensing data.

Conclusion

The CLA is a perfect addition for CodeMeter License Central's processes that enables software developers to create CodeMeter integrated licenses in the right format for the licensing system of their legacy software. For more information, please contact our Professional Services Team.

News in Brief

CodeMeter 7.20 released with support for Big Sur

CodeMeter Runtime and CodeMeter SDK 7.20, including CodeMeter Protection Suite 10.70, were rolled out in December 2020 for Windows, macOS, and Linux. The highlights include the improved support for CodeMeter SmartBind in AWS, new support for Apple's new M1 processor and Big Sur operating system (macOS 11), and addition of the CPSRT library for even better protection for applications protected with CodeMeter Protection Suite.

CodeMeter Embedded 2.51

Included in the new releases of December 2020 was CodeMeter Embedded 2.51, including an SDK for VxWorks 7 and an installer for the Wind River Workbench. The new version also allows the dynamic loading of CmActLicense Adapter integrations for several bindings running in parallel.

CM Embedded

CodeMeter Embedded 2.52

The second quarter of 2021 will bring the new version of CodeMeter Embedded 2.52, adding the ability to return moved or borrowed licenses to their origin.

CodeMeter Certificate Vault 2.0

In March 2021, CodeMeter Certificate Vault 2.0 was released with full support for PKCS#11 and RSA 4096-bit keys. Key pairs can be created and certificates imported in CmDongles.

CM Certificate Vault

CodeMeter Cloud 2.0

CodeMeter Cloud 2.0 saw the light in February. It is fully compatible with CodeMeter Runtime and CodeMeter SDK and includes new statistical functions (number of API calls) for the entire traffic of a developer or for individual CmContainers. CmContainers can now also be deleted.

CodeMeter Cloud Lite 2.1

CodeMeter Cloud Lite is the lean SOAP/REST-based licensing solution for SaaS applications. It requires CodeMeter License Central and supports most CodeMeter licensing options. In January 2021, the new version 2.1 added new license options: Module items, activation-specific parameters, and unit counter.

AxProtector Python

Wibu-Systems launched a pre-release version of CodeMeter Protection Suite (AxProtector) for Python in December in response to and appreciation for the great interest and invaluable feedback from our clients. This version is still available on request. The full release of AxProtector Python is scheduled to accompany CodeMeter SDK 7.30 in Q3/2021.

Virtualized FSB via CmWAN

An FSB (Firm Security Box) is a secure hardware unit used to contain the software developers' private and secret keys. As of April 2021, virtualized FSBs can be used in the Wibu Cloud, using the CmWAN protocol and supporting application encryption via CodeMeter Protection Suite. This allows cloud-based build environments like Azure pipelines to be used. Virtual FSBs for creating licenses will be coming in the near future.

Test simulation for CodeMoving

For greater protection against reverse engineering, CodeMoving allows sensitive code of a protected application to be moved for execution on a CmDongle. CodeMeter Protection Suite 10.70 introduced the ability to debug the moved code during development.

Expanded CERT process

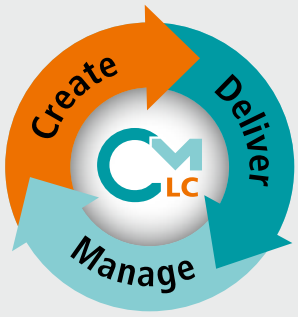
As part of our continuous improvement of internal systems and processes at Wibu-Systems, we have introduced a new relevance check by our security response team, in which all reported or identified bugs or flaws are viewed and rated for their security impact. Additional security tests and scans are now included in our established test and release processes.

New version of SmartShelter

The SmartShelter plugin to view protected PDF files in Adobe Acrobat Reader has been updated for version 21.02, with support for Adobe Acrobat Reader 8 to 21.

CodeMeter License Central 4.01

CodeMeter License Central 4.01 is set for release in April 2021, with the long-term support (LTS) version for Ubuntu (20.04) and expanded support for Triple Mode Redundancy (TMR) servers and CmCloudContainers.



ALERT

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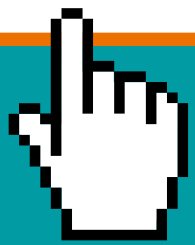

Wibu-Systems Training

Wibu-Systems offers custom training to get you off to a running start with CodeMeter software protection and licensing. The training is offered in the form of company courses, typically hosted as in-house classes on your premises. The standard training program includes three days of courses, which can be adjusted to your needs and level of expertise. You can pick and choose the contents you need and shorten the program to 1 or 2 days. Alternatively, you can add a hands-on workshop to allow your participants to try out their own practice cases.

www.wibu.com/tr

Available Courses

CodeMeter Core Features
- CodeMeter at a glance
- Configuring licenses
- The components of CodeMeter Runtime
- Use as a network server

Software Integration for .NET Assemblies with AxProtector .NET and API
- Encrypting .NET assemblies
- Encrypting individual classes and methods
- Integrating Wibu Universal Protection Interface (WUPI)
- Using CodeMeter Core API

Back Office Integration with CodeMeter License Central
- Configuring products
- Creating licenses
- Integrating license activation in applications
- Setting up and configuring license portals

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As in-person trade shows are still unlikely to take place in the upcoming months, we will intensify the pace of our monthly fully immersive masterclasses. Each session focuses on unique content and is designed for beginner, intermediate, or advanced users of our CodeMeter technology. The 2021 season will initially cover the latest features and functionalities introduced in the following areas:

- Digital commerce: Your licenses around the globe
- SAP Entitlement Management with CodeMeter
- CodeMeter License Central's new major release
- Using CodeMeter with embedded devices
- Protecting .NET applications
- Licensing HTML 5 applications

Watch out for our forthcoming announcements either on our website or via newsletter and get ready to register for the sessions that are most helpful to you.

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