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Software Licensing in the cloud: flexibility is king



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Does a day go by now when you don't hear a reference to the term "Cloud" computing? For all intents and purposes, the "Cloud" is ubiquitous, the universal enabler behind everything, from our personalized music streaming services, to the next IoT invention that allows us to control something remotely with voice commands, all from the comfort of our own living room. Beyond consumer comforts, you hear about the Cloud most everywhere in the business and industrial world as well – with terms like software as a service, platform as a service, and data storage and access in the Cloud to name just a few.

It's more of the same in the software licensing world as well. Cloud computing affords a high level of scalability, flexibility and elasticity that has made a dramatic impact to the way ISVs can license software. Most consumers now fully embrace the new licensing models enabled by the Cloud, like on-demand, pay-per-use, and other short-range, consumption-based approaches.

In this article, we'll delve deeper into Cloud licensing, but before going down that path, perhaps it would be helpful to re-trace the origins of Cloud computing and agree upon a definition that will help make sense in the software licensing world, at least for the purposes of this article.

Cloud Computing: Where did it begin?

The term Cloud was used to refer to platforms for distributed computing as early as 1993; today it is generally used to describe data centers available to many users over the Internet, perhaps best personified by the introduction of Amazon's Web Services in 2006. Ten years prior, a group of technologists at Compaq discussed software and file access in the web via their term Cloud computing-enabled applications. Others believe that the earliest instance of Cloud computing was invented by Joseph Licklider in the 1960s with his work on ARPANET to connect people and data from anywhere at any time, which was considered to be the pre-cursor to the Internet. Soon thereafter, the Cloud symbol appeared to represent Internet-based networks of computing equipment in almost every network diagram.

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But is there one universally accepted definition for the Cloud? Wikipedia defines Cloud computing as the “on-demand availability of computer system resources, especially data storage and computing power, without direct active management by the user.” In other Web searches, you might find definitions like “the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer”.

Or perhaps an even broader and simpler definition: “Cloud computing is a general term for anything that involves delivering hosted services over the Internet.” This description has given rise to the use of the term Cloud computing by vendors in the broadest of terms and caused some level of confusion as to whether an application is truly Cloud based or not.

For our purposes here, let’s just say that Cloud computing is the “processing of data by a remote device” to make the definition as broad as possible.

Now, let’s take a look at the many options that can exist for Cloud licensing.

Cloud Licenses for Local Applications:

Software developers want to enable their users to access local software with a license kept in the Cloud.

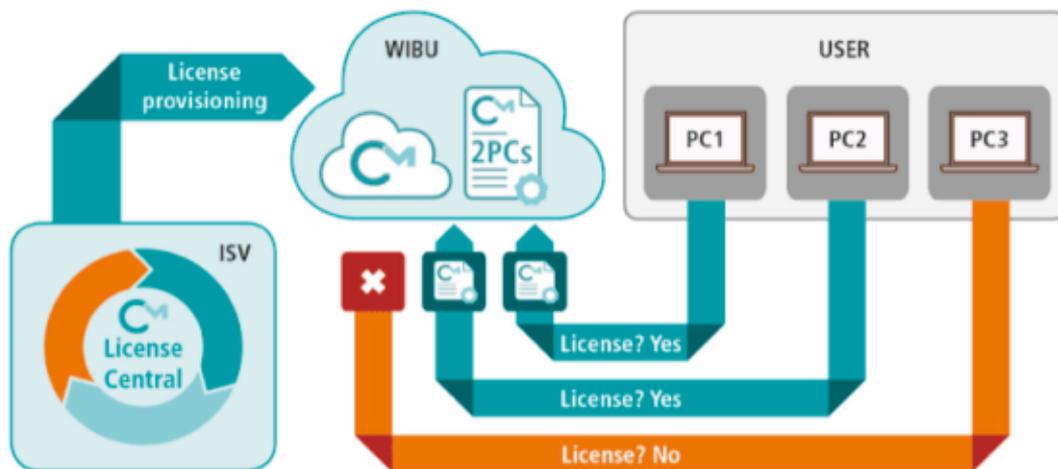
In this case, the software is a classic desktop application, which the ISV sells to users and delivers on a traditional CD or as a download. The user receives not only the software itself, but also an activation code in the form of a ticket that is created by the License Management System, in this scenario, CodeMeter LicenseCentral. When creating the ticket, the ISV can determine how

many devices the software can operate on at the same time and for how long it can be used without a permanent connection to the Internet. Within this scenario, the process is flexible enough so that the user can continue to work with the software even after reaching the maximum number of devices, and transparent enough for the ISV to uncover fraudulent use and take the necessary countermeasures.

Cloud Licenses for SaaS Applications:

Software developers supply their users with SaaS solutions operated in the Cloud. The required licenses might be tied to a single user or a given number of devices.

ISVs can offer users a SaaS application with unrestricted or temporary licenses for different features. The licenses for SaaS applications are created in the same manner that is used for on-premise licenses; they only differ in the binding scheme.



Authentication for SaaS Applications:

ISVs provide their users with a reliable means of authentication for using their SaaS applications, using private keys kept in local licenses, stored securely on a dongle or computer binding.

In this scenario, the SaaS software creates a challenge that the local application responds to by signing it with the private key kept in the local license. Up in the Cloud, the SaaS application user's the public key to verify the identity of the user, with the users' identities managed and recorded in the Cloud according to your specific needs.

Standard Applications in Private Clouds:

Users might want to install and run software independently on their own private Clouds.

A private Cloud would typically be a farm of virtual machines operated in a company's own data center or at a specialized provider on other hardware known neither to you nor to the user.

License Provisioning in the Cloud: Hypothetical Use Case

To describe a common license provisioning process in the Cloud, let's look at a hypothetical example with a fictional ISV called Aardvark Technologies and their customer, Wombat, Inc. The software purchased by Wombat needs to be licensed properly to ensure its legitimate use, to protect both the ISV's revenue and the customer against usage audits. Aardvark places the software on their website where Wombat can download it. Aardvark uses the CodeMeter License Central licensing system from Wibu-Systems to manage its provisioning capabilities in the Cloud. Aardvark takes the process a step further by encrypting its software with CodeMeter, which protects the software from illegal copying or reverse engineering, because only those with the proper license key can decrypt and use the software.

Upon download of the software, Wombat has several licensing options available and all can be managed via Cloud licensing:

- Wombat Inc. might decide that they are best served with soft licensing since they know that the software will only be run on a specific computer and nowhere else. In that case, Aardvark Technologies would request a fingerprint

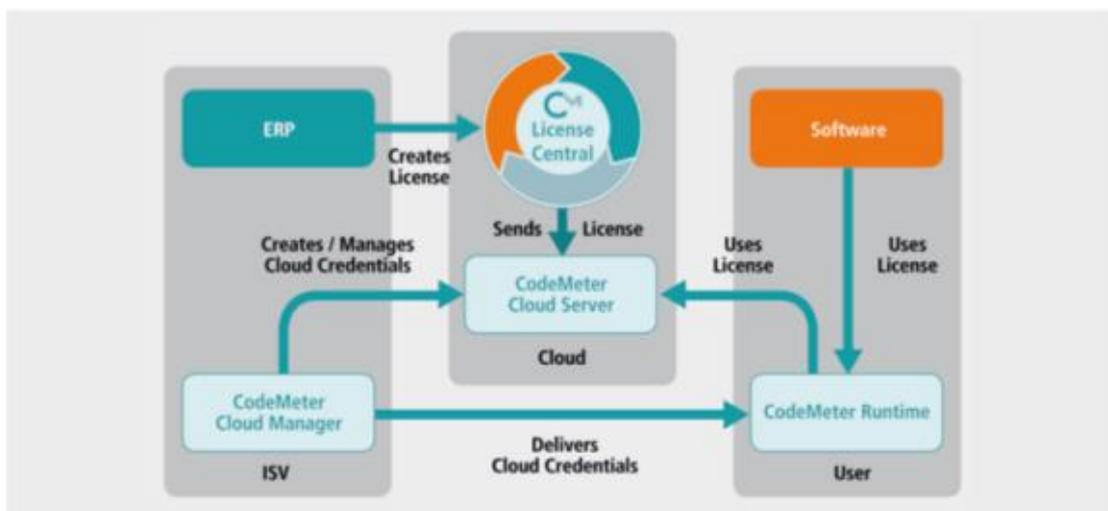
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file that Wombat Inc. can easily generate using a special tool that has been integrated into the software. Using this file, Aardvark Technologies can create a license file for Wombat Inc. to install: this can be installed in seconds and grants entitlement to use the software.

- Wombat Inc. might decide they need more flexibility, wanting to purchase a single license that can be used on various machines. Aardvark can provide Wombat customer with a special USB dongle that would be required for the software to operate on each machine and can only be physically attached to one computer at a time, preserving the license integrity. This then provides a clear path to the stated requirement, since the dongle can only be physically plugged into one computer at a time.

These two examples illustrate the use of license provisioning in the Cloud. Aardvark Technologies can choose to host CodeMeter License Central on their own servers (private Cloud) or to have it professionally hosted by Wibusystems itself. Though this latter approach may be considered a public Cloud, the reality is that they have exclusive access to their own instance of the service, so it doesn't have to be a public Cloud where multiple users are hosted on the same site. This approach provides yet another level of security.

This form of Cloud provisioning offers great flexibility to the ISV, as no special software needs to be installed by the ISV in order to achieve their licensing goals.



Licenses in the Cloud: More Flexibility

Here are some additional use cases where Cloud licenses come into play and provide needed flexibility to address even the most complicated licensing scenarios.

Let's Play: Peter is sitting at home playing on his own favorite computer game, "Beam Me Up", when his best friend Simon calls him on his mobile and asks if they could play the game together at Simon's house. Peter heads over to Simon's house and they sit at Simon's computer. Because "Beam Me Up" is licensed in the Cloud, Peter is able to log in to his account, download his license, and continue to play the game, this time in two-player mode with Simon.

Cad-Me-Up: Wolfgang is an architect who travels frequently with his job. Half of the time he sits in his office working on his desktop computer using an expensive CAD package, Cad-me-up; the rest of the time, he needs to

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be at a customer site presenting his work on his laptop. The software is too expensive to purchase two licenses, but this is ok, because the license is stored in the Cloud and Wolfgang is able to run the license on either machine under a single user license.

Flexi-Licensing: Let's go back to Wombat Inc: They have many consultants working for them, who frequently work remotely from customer sites. George and Roger are two such consultants, both visiting their clients on the same day. On one particular day, George finds that he needs to use a rather expensive piece of software. Both he and Roger have it installed on their laptops but Wombat only purchased a single license for the software due to the prohibitive cost. George calls Roger to confirm that Roger does not need the software on that particular day. George is able to run the software using the single license that Wombat Inc. has purchased and is therefore entitled to use. If Roger subsequently tried to use the software, he would be automatically informed that the single license was already in use. It would then be possible for Wombat Inc. to purchase a second license (that Roger would then be able to use immediately), if the business case justified it, or transfer the license to Roger when George completes his work.

All of these scenarios are made possible because the license itself is stored and can be provisioned in the Cloud. Together with a license server operated in the Cloud, Cloud licensing provides a great deal of flexibility for ISVs to meet the unique needs of each customer, by unveiling a host of new licensing scenarios and business models.