



## White Paper Executive Summary

# CodeMeter in Virtual Environments

## Secure Licensing for Virtual Machines and Terminal Servers

While IT professionals enjoy the advantages offered by virtual machines and terminal servers, software publishers and vendors have reason to be a bit more wary. On the one hand, virtual machines give ISVs an easy means of testing their software in a freely definable environment. On the other, virtual machines and terminal servers create major new challenges for licensing products – at a time when licensing and protection against piracy are indispensable ingredients for the success of any software.

A virtual machine is hardware, simulated on a (host or master) computer. This virtual hardware runs a complete (guest or child) operating system, while severely restricting its ability to interact with the real environment around it. All guest systems and the host share the same physical hardware, but without immediate access allowed to the guest systems. They see a simulated – virtual – machine, which can be saved and recovered with considerable ease.

For ISVs and vendors, virtual machines are vulnerable to threats from several directions. For dongle users, there is the potential illicit multiple usage of a single license when using one dongle for several guest systems. In the event of pure software licenses, time-limited or pay-per-use licenses can be reset by making a copy or snapshot. Machine-bound licenses can indeed be duplicated by cloning the allocated machine in its entirety.

Terminal servers, on the other hand, host the software installed on them. The applications are executed on the servers, and users only have access to a client system that mirrors the server's display output on

the user's hardware. Many users can use the same terminal server simultaneously, each being given a distinct session which operates independently from the other users. The licensing threats here involve the illicit multiple use of single licenses in simultaneous sessions on the terminal server or the use of a single-user license as a floating network license.

This white paper introduces CodeMeter, a powerful tool for safe and reliable licensing for both virtual machines and terminal servers. It describes in detail a number of use cases where CodeMeter has proven effective in various real-world environments, such as:

- Licenses on network license servers using CodeMeter Runtime Service
- Dongles (CmDongles) for one user, on a host system, on USB-over-Ethernet
- Software-only licenses (CmActLicenses) on a host system or a guest system
- License management for users, groups, or specific machines
- License storage on a terminal server client
- Redundancy for high availability and security in non-trusted environments

Learn how CodeMeter makes licensing models for virtual environments as versatile and secure as licenses for conventional hardware.