

## 12.9.3 Digital Content Management Facts

PC administrators need to be familiar with the following digital content management issues:

- Software licensing
- Digital Rights Management (DRM)

### Software Licensing

It is important to understand how software licensing works because violating software license agreements could potentially expose your organization to litigation. There are two general software licensing models that you need to be familiar with:

License Type	Description
Proprietary	<p>The proprietary licensing model is used by many software vendors. Each vendor you purchase a proprietary license from should provide an End User License Agreement (EULA) that dictates the specific terms for that particular software title. There are several key facts that you need to remember about proprietary software licensing:</p> <ul style="list-style-type: none"> <li>▪ When you purchase this type of software, you are not purchasing the software itself. Instead, you are purchasing a license to use the software.</li> <li>▪ You are not allowed to access the software's source code and make modifications. Usually, the source code is not made available to customers. A EULA does not typically allow you to reverse engineer the software to recreate the source code.</li> <li>▪ The license usually permits you to install the software only on a fixed number of computers. Installation limits are commonly enforced by the software vendor using online software activation. If you try to use the same activation code too many times, the software will not activate and can't be used.</li> </ul> <p>Two different, general types of licenses are usually offered by software vendors:</p> <ul style="list-style-type: none"> <li>▪ Personal licenses are intended for home and small business customers. Usually, they allow the software to be installed on only one to three systems. Because they are limited in the number of allowed installs, personal licenses are usually less expensive than other alternatives. However, personal licenses may not be the best choice for large organizations, which may need to purchase hundreds or even thousands of licenses for a given software title.</li> <li>▪ Enterprise licenses (which are also sometimes called volume licenses) are intended for medium and large organizations. Enterprise licenses allow the customer to install the software without restriction using the same activation code (typically until a maximum cap is reached). Because of the volume involved, the customer is usually able to purchase an enterprise license for much less than the cost of purchasing individual personal licenses. Enterprise licenses are usually too expensive for most home or small business users.</li> </ul>
Open Source	<p>Open source software used to be exclusive to Linux and Unix operating systems. However, many open source applications are now available for Windows and Mac operating systems. Open source licensing is very different from proprietary licensing:</p> <ul style="list-style-type: none"> <li>▪ Open source software is usually freely distributed. You can typically download, install, and use the software without paying a license fee.</li> <li>▪ Most open source software is distributed under the GNU General Public License (GPL), which requires that the source code for the software to be freely distributable to anyone who wants it. This means you can download the source code for an application, modify it, recompile it, and then use the modified version of the software. In fact, you could even post it for others to use as long as you make your source code freely available as well.</li> </ul> <p>Organizations that release open source applications typically use a variety of means to generate revenue so they can keep developing new products:</p> <ul style="list-style-type: none"> <li>▪ Contributions. Some open source projects ask you to contribute financially if you use their software.</li> <li>▪ Added functionality. Some open source projects release a base version of their software for free, but then charge a fee for highly desirable add-ons.</li> <li>▪ Support contracts. Some open source projects release their software for free, but then charge a fee for technical support.</li> <li>▪ Training contracts. Like support contracts, some open source projects also provide training for a fee.</li> <li>▪ Partnerships. Sometimes an open source project will partner with a commercial organization. In this situation, two versions of an application will be created, one that is proprietary and one that is open source. The proprietary version is typically used to finance the development of the free version.</li> <li>▪ Subscriptions. Sometimes an open source project will sell subscriptions for online accounts or server access.</li> </ul>

### Digital Rights Management

System administrators are frequently responsible for ensuring that intellectual property rights are observed on the computers and mobile devices they are responsible for. To protect the intellectual property rights of publishers, several Digital Rights Management (DRM) technologies have been implemented over the years. The goal of these technologies is to restrict the use of copyrighted works to only those who have paid the necessary licensing fees:

DRM Technology	Description
Software Activation	<p>Many proprietary software vendors use online software activation. Before the user can run a newly installed application, it must be activated online with the software vendor. The software vendor tracks how many times each license code is activated and will block further activations after the license limit has been met. For personal software licenses, the limit is usually one to three activations. Enterprise license limits are governed by the enterprise license agreement. For example, an organization may purchase a 100-user license from the software vendor.</p> <p>Two different forms of online software activation are used by software vendors:</p> <ul style="list-style-type: none"> <li>▪ <i>One-time activation.</i> With one-time activation, the license is activated once, usually right after the product is installed. Once activated, the product remains activated.</li> <li>▪ <i>Persistent activation.</i> With persistent activation, the license is continuously re-activated online at a preconfigured interval. This allows the software vendor to deactivate installations if the conditions of the license agreement have been violated.</li> </ul> <p>Using online activation helps software vendors ensure their products are used in compliance with the license agreement. However, it also has several drawbacks:</p> <ul style="list-style-type: none"> <li>▪ Online activation mechanisms can fail if an internet connection isn't available.</li> <li>▪ A small system change can deactivate the software. For example, adding RAM to the system or upgrading the CPU could cause the activation system to think the application has been illegally copied to a new computer system. The customer typically has to contact the vendor to reactivate the software.</li> <li>▪ Operating system upgrades or migrations can deactivate the software.</li> </ul>
Media DRM	<p>DRM has commonly been used with digital media files, including books, music, and videos. In the late 2000's most online digital media vendors implemented DRM to encrypt media files. Without the appropriate key, the files couldn't be decrypted and played by the customer.</p> <p>In recent years, however, there has been a movement away from DRM on the part of many large digital media vendors. This has occurred because of several key shortcomings of DRM, including:</p> <ul style="list-style-type: none"> <li>▪ A lack of portability. For example, DRM-protected digital files from a given vendor would play only using software or hardware from that same vendor.</li> <li>▪ A lack of backup support. DRM protection frequently made it such that protected digital files could not be backed up.</li> <li>▪ Weak encryption. Many applications are available on the internet that can strip DRM protection from digital files.</li> <li>▪ Obsolescence could cause older digital files to no longer be playable on newer hardware.</li> <li>▪ Excessive management overhead. Trying to manage DRM for legally purchased digital files required an excessive amount of management overhead on the part of the digital media vendor. Small system errors on the vendor's network could cause customers to lose access to digital files that were legally purchased.</li> </ul> <p>To address these shortcomings, many vendors have adopted DRM alternatives such as:</p> <ul style="list-style-type: none"> <li>▪ Encouraging customers to not illegally share digital files</li> <li>▪ Making digital files so inexpensive and easy to access that it doesn't make sense to make illegal copies</li> </ul>