**autodesk®** | White Paper

# Abstract

This white paper describes the Product Activation and registration process as it pertains to Autodesk® products released after March 2004.  Product Activation is a process that verifies that the installed software is legitimate and has not been activated on more systems than are allowed by the Software License Agreement.

Product registration is also required on all Autodesk products that require activation.  The registration information is collected during the activation process.

This white paper is specific to stand-alone licensed product.  It does not address behaviors of a network licensed product.

# Contents

# Product Activation Overview

When a software product is purchased from Autodesk, the product is assigned a unique serial number. The format of the serial number is a hyphenated eleven-digit number (for example: 567-12345678).  The serial number is an important part of the product purchase and activation process.  It provides a link into an Autodesk database which contains information about the type of software license that was purchased and the history of that purchase.

For example, the serial number record contains information about: What product license was purchased; How many seats were purchased; What type of license was purchased (Commercial, Not for Resale, Educational, etc.); Whether the purchase was for a network or stand-alone license; and whether the license is perpetual or has a time-limited expiration date.

During product installation, the user is required to enter a valid product serial number and after successful installation, the product can be started.

The process to activate the software is initiated when the product is launched for the first time.  For the first-time installation on a machine, the software provides an initial 30-day activation grace period (duration may vary by product) to complete the activation.  The activation can be completed any time within the first 30 days.  After the first 30 days, the software must be activated in order for it to continue operating.

## Trial Version

If the user has not yet purchased the software and does not have a valid serial number, the product installation allows the user to install the product as a Trial version, using the Trial serial number 000-00000000.  This Trial serial number cannot be activated in the future.

The duration of the Trial period is the same as the activation grace period and is available for a stand-alone license installation only.  It is not available for network licenses.

The product serial number must also be registered with Autodesk.  If the serial number is not pre-registered with Autodesk at the time of purchase, the activation process also collects and transmits the required registration information.

## Methods of Activation

The activation process is most easily and efficiently completed electronically over the Internet.  However, Autodesk also supports product activation via email, fax or mail.  These options are available in the product through the same interface as the Internet method.  The user may choose the option that best meets his or her needs.

# The Activation Process

When the product is launched, the Autodesk License Manager performs checks of the software license on the machine. When a machine has a valid license for the software, the product is launched. When the machine does not have a valid license for the software, activation is required.

## Activation Technology

When the product is launched, the following activation technology processes are initiated on the machine:

A process named AdskScSrv.exe starts running on the computer. This is the Autodesk Licensing Service, which is a system service used by the activation technology used to manage the Autodesk software licenses.

A process named "AdskCleanup.xxxx" starts running on the computer and a similarly named folder is created in the user's local Temp directory. This is an auxiliary process and temporary set of files also used by the activation technology to manage the Autodesk software licenses.

The processes are active only when the Autodesk product is running and are closed shortly after the Autodesk product is closed. Since the process is idle most of the time, there is virtually no effect on the overall performance of a user's computer.

When the product is first launched and during periodic attempts to verify the software license, negligible processor cycles are used. Additionally, the system memory usage is about 400k (although the operating system may inaccurately report a higher usage number).

Tampering with or altering the licensing processes used by the activation technology may invalidate the software license and may require reactivation of the product.

## Product Activation Interface

When the product is run for the first time on a machine that does not have a software license, the user is presented with the following Product Activation page:

After selecting the "Activate the product" option on the Product Activation page, the user is presented with the following Registration and Activation page:

**Register Today**

# autodesk®

## Register your Autodesk product

### Software Information

Product:        AutoCAD 2005
Serial number:  567-12345678
Request code:   Z963 F969 5L1A 0DDP RS88
                YR1Y AQ6Y

### Registration and Activation

Please select an option and click Next.

◉ Register and activate (get an activation code)

○ Enter activation code (have an activation code)

*(Activation codes can be obtained from your dealer or https://register.autodesk.com)

[Back] [Next] [Cancel]

Version: 13.0.1.16

## Request Code and Machine ID

When activating a product, the software creates an anonymous activation Request Code. The Request Code is constructed as follows:

- Information used to identify a particular activation request; including a random request identifier, request type, and license history.

- A Machine ID code. The Machine ID is a 64-bit random number that is stored in the license on the user's machine. The make or model of the computer or its components cannot be determined from the Machine ID.

The Machine ID is embedded as part of the final activation Request Code. The final Request Code is completely anonymous and is encrypted before being sent. An example of a Request Code with the Machine ID embedded is as follows:

> Z963 F969 5L1A 0DDP RS88 YR1Y AQ6Y

## Packet Transmission

After selecting the "Register and activate (get an activation code)" option, the product attempts to transmit a minimal set of required activation data to Autodesk via the Internet. The communication is made using a secure HTTPS form post. The structure of the data passed is as a defined set of key/value pairs constructed from the activation technology and the installed product.

An example of the minimal activation data packet:

```
<input type="hidden" name="packetver" value="slim">
<input type="hidden" name="ver" value="rt05">
<input type="hidden" name="sernum" value="567-12345678">
<input type="hidden" name="product" value="ACD">
<input type="hidden" name="rel" value="2005.0.0">
<input type="hidden" name="reqtype" value="1">
<input type="hidden" name="req" value="Z963 F969 5L1A 0DDP RS88 YR1Y AQ6Y">
<input type="hidden" name="date" value="2004/01/30:12:58">
<input type="hidden" name="rtcodepage" value="iso-8859-1">
<input type="hidden" name="prodlang" value="en-us">
<input type="hidden" name="rtdynamic" value="TRUE">
```

The information is received and processed by the Autodesk activation server. If the serial number is registered with Autodesk and entitled to receive activation, the activation server returns a success response to the product along with the product activation code. The activation code is validated in the product, activation is complete, and the product can be used.

If the serial number is not registered, the activation server returns a corresponding response to the product, and the user is presented with additional pages that collect their registration information. Once the required registration information is collected, the product again attempts to transmit the required activation data to Autodesk via the Internet. This time, however, the data packet also includes the user's registration data.

As before, the communication is made via a secure HTTPS form post. The structure of the data passed is as a set of defined key/value pairs, constructed from the activation technology, the installed product, and user-provided registration information.

An example of the full activation data packet, containing the required activation and registration data:

```
<input type="hidden" name="ver" value="rt05" maxlength=300>
<input type="hidden" name="date" value="2004/01/30:13:43" maxlength=300>
<input type="hidden" name="packetver" value="full" maxlength=300>
<input type="hidden" name="rtcodepage" value="iso-8859-1" maxlength=300>
<input type="hidden" name="sernum" value="567-12345678" maxlength=300>
<input type="hidden" name="product" value="ACD" maxlength=300>
<input type="hidden" name="rel" value="2005.0.0" maxlength=300>
<input type="hidden" name="country" value="US" maxlength=300>
```

```
<input type="hidden" name="reqtype" value="1" maxlength=300>
<input type="hidden" name="req" value="Z963 F969 5L1A 0DDP RS88 YR1Y AQ6Y"
maxlength=300>
<input type="hidden" name="customertype" value="c" maxlength=300>
<input type="hidden" name="comp" value="Autodesk Example" maxlength=300>
<input type="hidden" name="add1" value="111 McInnis Parkway" maxlength=300>
<input type="hidden" name="add2" value="" maxlength=300>
<input type="hidden" name="add3" value="" maxlength=300>
<input type="hidden" name="city" value="San Rafael" maxlength=300>
<input type="hidden" name="state" value="CA" maxlength=300>
<input type="hidden" name="zip" value="94903" maxlength=300>
<input type="hidden" name="sal" value="" maxlength=300>
<input type="hidden" name="lname" value="UserLastName" maxlength=300>
<input type="hidden" name="fname" value="UserFirstName" maxlength=300>
<input type="hidden" name="phone" value="415-507-5000" maxlength=300>
<input type="hidden" name="fax" value="-" maxlength=300>
<input type="hidden" name="email" value="" maxlength=300>
<input type="hidden" name="nomail" value="0" maxlength=300>
<input type="hidden" name="appusage" value="01,23,64" maxlength=300>
<input type="hidden" name="dealer" value="" maxlength=300>
<input type="hidden" name="behav" value="0" maxlength=300>
<input type="hidden" name="usage" value="0" maxlength=300>
<input type="hidden" name="expdate" value="" maxlength=300>
<input type="hidden" name="prodlang" value="en-us" maxlength=300>
<input type="hidden" name="rtdynamic" value="FALSE" maxlength=300>
```

## Activation Complete

When a product is successfully activated, the software can be used as per the license rights purchased and within the terms of the Software Licensing Agreement.

The licensing rights for the product are stored into three different locations:

- An encrypted data file, (.dat) located in the following hidden system directory for Autodesk licenses:

    *\Documents and Settings\All Users\Application Data\Autodesk\Software Licenses*

- The Windows system registry.

- A location on the hard drive called the anchor file.  The anchor file is written to a safe location in an unused part of track zero on the hard drive, which is outside of the normal file system.  The anchor file is stored in a proprietary binary format.

## Persistent Registration Data

When the product is activated and registered with the product activation and registration interface, there are three files that may be created and saved on the machine:

- An ASCII file (.ini) used to store the registration information entered by the user.  This file is used only to pre-populate the registration form pages in case the user needs to go through the registration interface again.

- An HTML file (.html) provided as a user-readable reference file, which retains a history of the information that was sent to and received from Autodesk during the last activation transaction.

- An XML file (.xml), which is required to support the email-based method of activation.  If a user chooses to activate the product using the email method, an email is automatically sent to Autodesk with this XML file attached.  The XML file contains all of the same information that is required for activation and registration.

These files are stored in the following location:

*\Documents and Settings\All Users\Application Data\Autodesk\<product name>\<release>\ADLM*

Tampering with or altering any of the license information found in these outlined locations cause the activation to fail or invalidate the software license, and may require reactivation of the product.

## Reactivation

If a software license becomes invalid due to changes to the boot hard drive, accidental tampering of license files, etc., the product may require reactivation.

In this condition, when the product is launched, the activation technology detects the need for reactivation and attempts to reactivate the license via the Internet, without requiring any user interaction.  When this occurs, the user sees the following message:
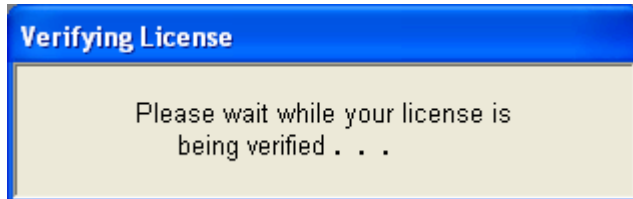


As described previously for the initial activation process, the product passes the minimal data required for product activation (via a secure HTTPS form post) to the Autodesk activation server.

The information is received and processed by the Autodesk activation server.  If the serial number is registered and entitled to receive activation, the activation server returns a success response to the product along with the product activation code.  The activation code is validated, reactivation is complete, and the product can be used.

If the serial number is not entitled to activation or has reached a limit of allowed activation codes, the user is presented with a corresponding message and instructions about how to proceed.

## Conclusion

Product activation is a secure and easy-to-use technology that is designed to prevent unlicensed use of Autodesk software.  This document provides a walkthrough of the activation user interface.  It also outlines technical details regarding the safeguarding of personal information and the behavior or the activation technology.

In summary, the activation and registration process provides a simple and flexible customer experience while reducing and deterring unlicensed use.

Autodesk has worked very hard to make the registration and product activation process as user-friendly, invisible, and safe as possible while still allowing Autodesk to protect its intellectual property and allow users to effectively manage their software licenses.

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