

Understanding Cascade Licensing for Autodesk Products

Cascade Licensing is implemented for mixed-product environments where a single license manager is servicing multiple Autodesk products and is most effective in a large user group when the Network License Manager (NLM) has a pool of different license types available for distribution.

Maximising License Availability:

With Cascade Licensing, lower ranking product licenses can be used before higher ranking product licenses; when all lower ranking product licenses are in use, a product will cascade up to use the license of a higher ranking product, maximizing license availability.

For example, if the pool includes product-specific licenses for several products, some licenses for a standard suite, and some licenses for an ultimate suite, the NLM has many options for efficient license management:

Single Product Assignment: NLM assigns a single-product licenses as individual products start up

Suite License Assignment: NLM releases the single-product licenses and replaces it with a suite license if a user runs multiple products in a suite

Ultimate Version Assignment: NLM releases the standard suite license and uses an ultimate license if a user invokes an advanced operation that requires a product from the ultimate suite

The ranking of a product is determined by its place in the cascading sequence for a given product. Cascading sequences—the order in which one product cascades to another—is pre-determined by individual product groups at Autodesk and cannot be changed or configured. When possible, licenses are shared to minimize total license usage however the order in which products are launched affects the way licenses are initially allocated.

Examples of Cascade Licensing:

#1: Mixed pool of Point product and Suite product licenses

A customer has two AutoCAD licenses, one Revit Architecture license, and one Building Design Suite Premium license, for a total of four licenses.

- User A runs AutoCAD and pulls one AutoCAD license.



- User A then runs Revit Architecture, pulling the one Revit Architecture license. At this point, User A has consumed two licenses on his machine.
- User B runs AutoCAD and pulls the remaining AutoCAD license.
- User B then runs Revit Architecture and, since the sole Revit Architecture license is already in use, it cascades up and uses the Building Design Suite Premium license. At this point, User B has consumed two licenses and all available licenses are in use.

Lesson: When a user starts a Point product, the Point product license will be checked out, if available. If there are no available Point product licenses, a Suite license will be checked out instead.

Within a couple minutes, the Cascade Licensing logic detects the Suite license and returns the AutoCAD license to the pool leaving User B as having consumed only one license on his machine.

Lesson: Once there is a Suite license on the user's machine, any lower ranking product licenses will automatically be returned.

#2: Mixed pool of Point product and Suite product licenses

A customer has one AutoCAD 2016 license, and one AutoCAD Design Suite Premium 2016 license, for a total of two licenses.

A user runs AutoCAD and pulls the one AutoCAD license.

The same user then runs Autodesk Showcase, pulling the one AutoCAD Design Suite Premium license. Because both products are part of AutoCAD Design Suite Premium, AutoCAD switches over to using the Design Suite Premium license. The AutoCAD license is returned to the pool and is available for another user.

The user then starts Autodesk 3ds Max on the same machine. Since Autodesk 3ds Max is also part of AutoCAD Design Suite Premium, it also uses the Design Suite Premium license. No new license is required and it shares the license with AutoCAD and Autodesk Showcase. There is still an AutoCAD license available in the pool.

Lesson: All products included in a Suite can run using a single Suite license on the same machine.

#3: Mixed pool of Suite product licenses

A customer has 10 AutoCAD Design Suite Premium licenses, one AutoCAD Design Suite Ultimate license, and two Autodesk Building Design Suite Ultimate licenses, for a total of 13 licenses.

11 users launch 3ds Max simultaneously. The first 10 users consume all the AutoCAD Design Suite Premium licenses and the 11th user takes the sole AutoCAD Design Suite Ultimate license.

Two more users launch 3ds Max, for a total of 13 licenses needed. These two users consume the two Building Design Suite Ultimate licenses. At this point, all 13 licenses are in use.



Lesson: If multiple suite licenses on a server share a common product—in this case, Autodesk 3ds Max—the first license that will be used will be the one listed first (lowest ranking) in the cascading sequence. When those licenses are all consumed, cascading will move to the next highest ranking product available in the license pool. For example, the cascading sequence for Autodesk 3ds Max 2016 includes the following order of products:

Autodesk 3ds Max 2016

AutoCAD Design Suite Premium 2016

3ds Max Entertainment Creation Suite Standard 2016

3ds Max with SoftImage 2016

AutoCAD Design Suite Ultimate 2016

Building Design Suite Premium 2016

Infrastructure Design Suite Premium 2016

Disabling Cascading:

In 2016 and later releases only, you can disable cascading by setting the value of the environment variable `ADSK_CASCADING_OVERRIDE` to 0 (a setting of 1 enables cascading). This setting applies across all products. Cascading is automatically disabled for Autodesk Enterprise Token Flex (using product code 535H1) regardless of the setting.

Important: Cascading is essential for suite licensing. Do not disable cascading for suites.

