

# Multiplexing—Client Access License (CAL) requirements

This brief applies to all Microsoft Volume Licensing programs.

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## Summary

This brief explains how multiplexing impacts the licensing of Microsoft server operating systems and server products licensed under the Microsoft server/Client Access License (CAL) model. "Multiplexing" is when customers use hardware or software to pool connections, reroute information, or reduce the number of devices or users that directly access or use a product. Multiplexing can also include reducing the number of devices or users a product directly manages.

## What's New in This Brief

This brief, published April 2014, replaces a previous version published December 2012. Changes include the following:

- ▶ Updates to reflect that Microsoft SQL Server is licensed on a per-core basis.

## Details

Multiplexing does not reduce the number of Microsoft licenses required. Users are required to have the appropriate licenses, regardless of their direct or indirect connection to the product. Any user or device that accesses the server, files, or data or content provided by the server that is made available through an automated process requires a CAL. Certain circumstances do not require CALs, and they are detailed below. Generally, if files, data, or content are available because of manual activity (a person uploading a file onto a server or emailing the file), a CAL is not required for users or devices accessing those manually transmitted files.

The following examples address specific products, but the same requirements apply to other Microsoft products. Assume that the Windows Server operating system and Microsoft Exchange Server are the networking and messaging platforms respectively.

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## Microsoft SQL Server

Figures 1, 2, and 3 illustrate representative multiplexing scenarios and licensing requirements for the Microsoft SQL Server database software. (**Note:** Windows Server and Exchange Server CAL requirements apply for any access either direct or indirect to these servers.)

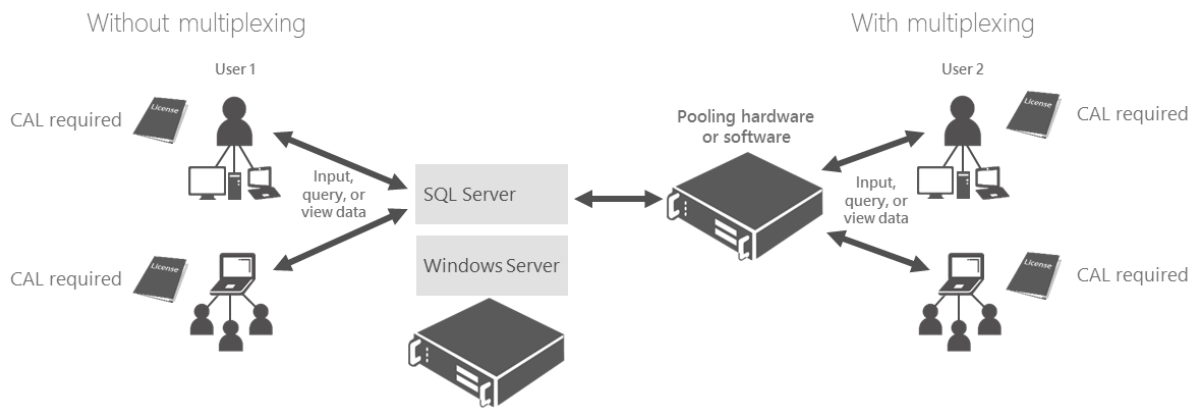


Figure 1: Inputting, querying, or viewing data

SQL Server CALs are required for users who directly input into, query, or view data from a SQL Server database (left side of Figure 1). Similarly, SQL Server CALs are required for users or devices that input data into, query, or view data from a SQL Server database through a pooling device (right side of Figure 1). This includes users who view data through web-based applications or enter information into a database through an intermediary product. (**Note:** Customers can also license SQL Server on a per-core basis, thus negating any need for SQL Server CALs.)

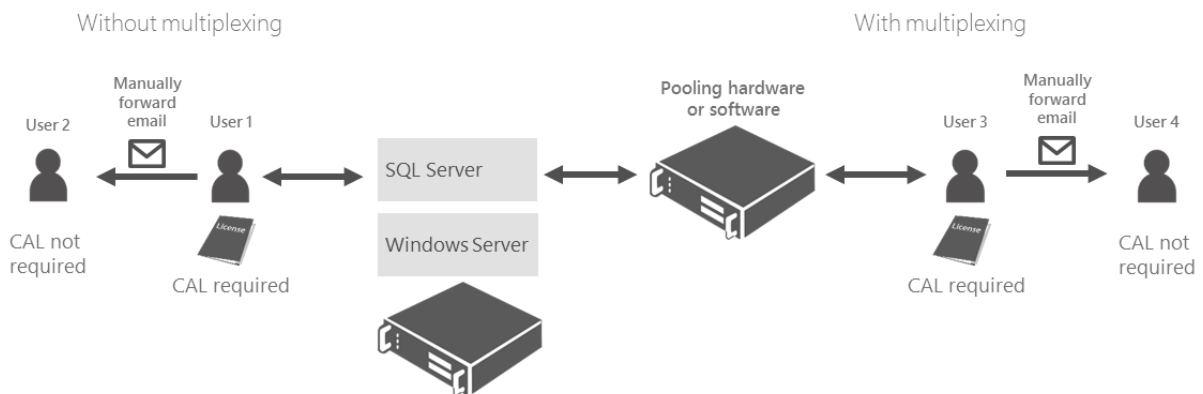


Figure 2: Messaging data

If a user (User 1 in Figure 2 above) retrieves data from SQL Server, that user requires a SQL Server CAL. If User 1 actively sends that data by email or other messaging technology to User 2; then User 2 does not require a SQL Server CAL. With multiplexing, these rules do not change. User 3, who receives data through a pooling application, must similarly have a SQL Server CAL. If User 3 actively sends that data by email or other messaging technology to User 4, then User 4 does not require a SQL Server CAL.

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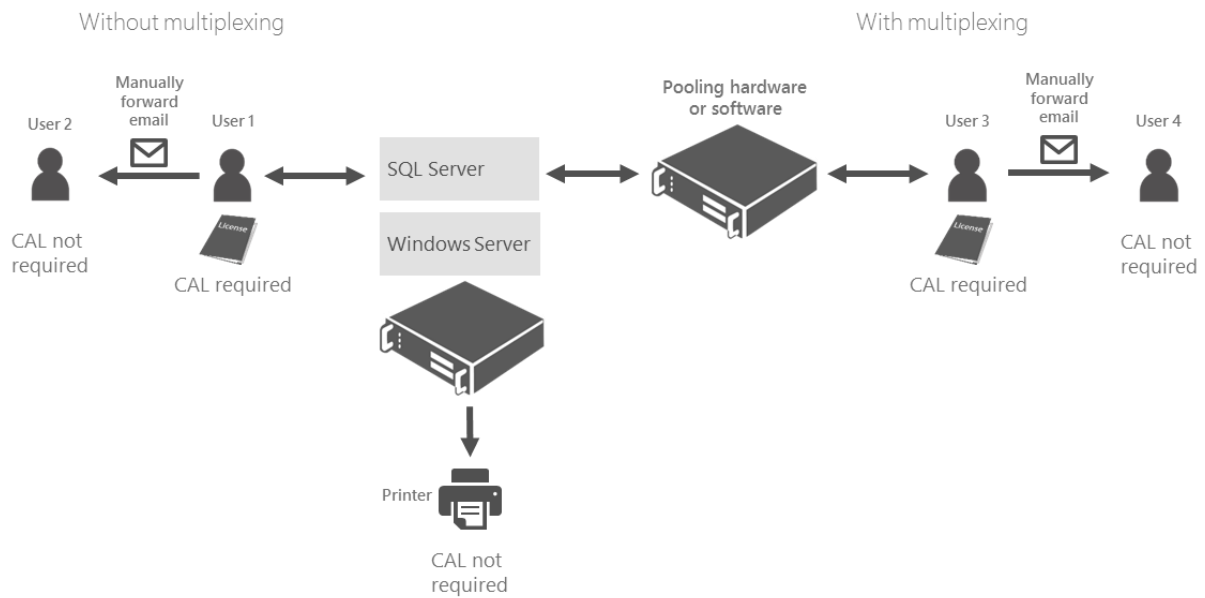


Figure 3: Hardcopy delivery of data

The paper distribution of data does not require SQL Server CALs for the recipients of the paper report. However, both User 1 and User 3 in the figure above receive data (directly or indirectly) from SQL Server and both require CALs. If each user prints the data and delivers it to another user (Users 2 and 4), these latter recipient users do not require a SQL Server CAL.

A printer connected directly to the server does not require a license to print data from the server, nor is a printer considered a multiplexing device.

### Microsoft Project Server

Figure 4 illustrates some multiplexing scenarios and licensing requirements for Microsoft Project Server. (**Note:** Windows Server and SQL Server [if licensed Server/CAL] CAL requirements apply for any access either direct or indirect to these servers.)

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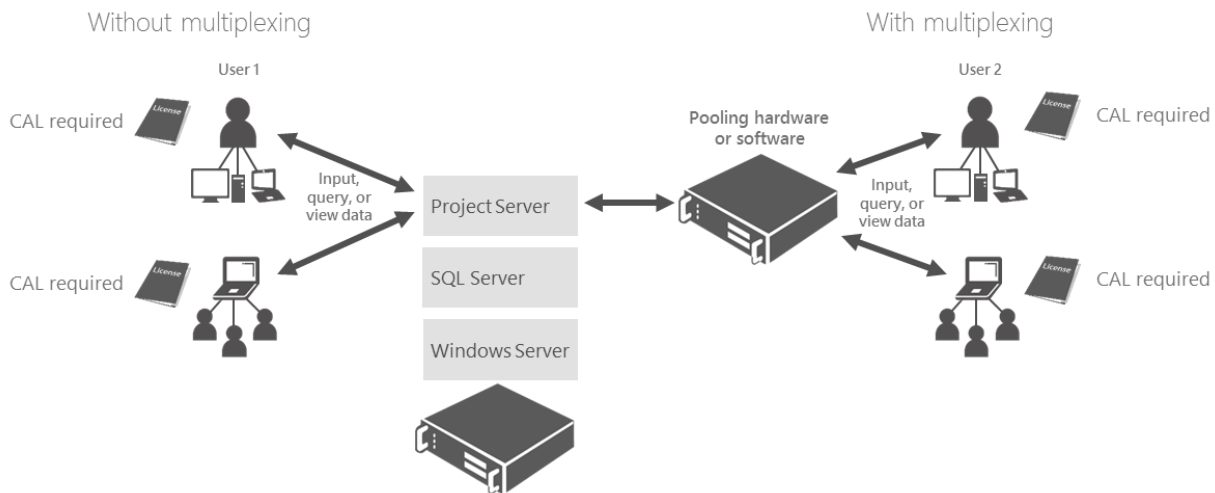


Figure 4: Basic Project Server configuration

Viewing or querying data from or entering data into Project Server through an intermediary multiplexing application, which could include a web-based application, requires CALs for Project Server. Like SQL Server, the same CAL requirements apply for the messaging of data through email or paper distribution shown in the examples above.

### Microsoft Visual Studio Team Foundation Server

As with SQL Server and other products in Microsoft's server/CAL licensing model, applying multiplexing rules to CAL requirements for Microsoft Visual Studio Team Foundation Server depends on the degree of automation involved in content, file, or data accessibility and distribution. Any device/user that accesses or deploys files, content, and data that is made available in an automated way (for example, directly from a server or automatically posted to a server) requires a CAL. However, if the availability results from manual activity, such as a person loading files onto a server or emailing the files, a CAL is not required for users and/or devices accessing those manually posted or emailed files. The following examples illustrate the Visual Studio Team Foundation Server CALs required (the CAL requirements for other server products used with Visual Studio Team Foundation Server still apply for any access either direct or indirect to the server).

#### Example 1

An automated process is set up to load files from a Visual Studio Team Foundation Server server to a server farm, and then that server farm automatically loads those files onto desktops. Visual Studio Team Foundation Server CALs requirement: Each server in the farm and each desktop/user require a Visual Studio Team Foundation Server CAL because of a continuous automatic link back to Visual Studio Team Foundation Server.

#### Example 2

A business decision maker (BDM) downloads a report generated by Visual Studio Team Foundation Server that was posted automatically to a server. Visual Studio Team Foundation Server CALs requirement: Each BDM requires a Visual Studio Team Foundation Server CAL because he or she is receiving the direct benefit of the automation of Visual Studio Team Foundation Server. Even though the BDM is reviewing a report posted to another server, he or she needs a CAL due to the directly realized benefit of the server's automatic posting.

For further information or questions, please consult [Product Use Rights](#) (PUR).

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## Multiplexing—Client Access License (CAL) requirements

### Frequently Asked Questions

**1. Do these rules apply to SQL Server only or to all products licensed under the server/CAL model?**

Multiplexing is a Universal License Term and, therefore, applies to all Microsoft products. Although, it is most commonly an issue with those products licensed under the server/CAL and server operating system models.

**2. Has Microsoft changed its position on multiplexing?**

No. This brief is simply to help clarify the PUR already in place.

**3. What is the difference between a device licensed with a device CAL and a multiplexing device?**

A device CAL allows one device, used by any user, to access instances of the server software on the licensed server. A multiplexing device pools connections from other devices, which users can license with a device CAL.

**4. Does having a chain of multiplexing devices change licensing requirements?**

No. Multiplexing does not reduce the number of CALs required, regardless of how many multiplexing devices are between the user/device and the server.

**5. Does the multiplexing device require a CAL?**

No. However, a CAL is required if the multiplexing device is also directly accessed by a user (not an administrator).

**6. Are multiplexing rules different for Windows Server CALs? Does authentication make a difference?**

No. Like the SQL Server examples previously detailed, CALs are required for access to Windows Server whether direct or indirect. Users who are authenticated or individually identified, whether by the Windows Server software or by multiplexing hardware or software, require a Windows Server CAL to access Windows Server.

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