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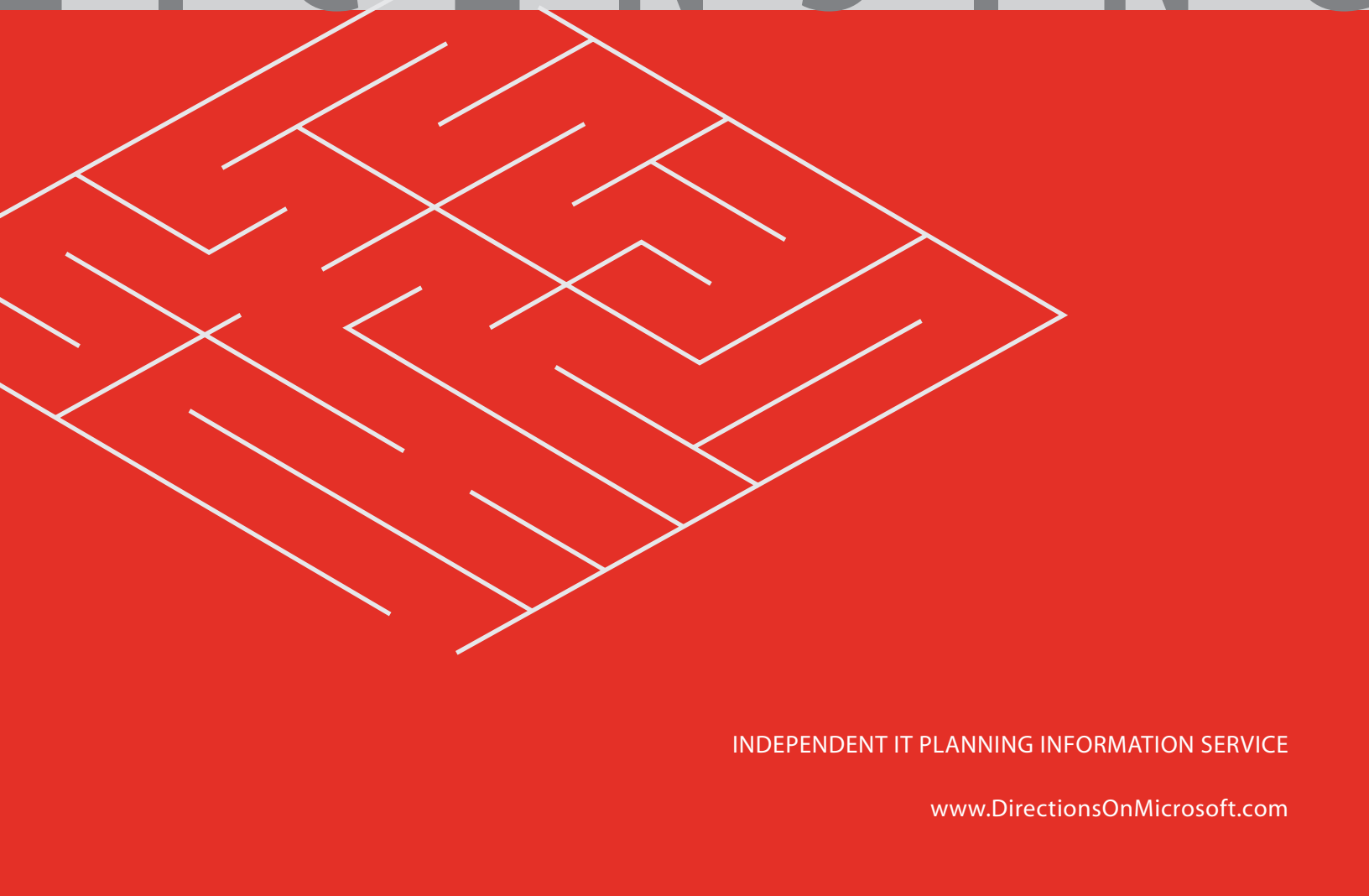


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Licensing Changes
for SQL Server 2014

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Licensing Changes for SQL Server 2014

By Rob Horwitz

Although SQL Server 2014 retains the same licensing models, edition lineup, and pricing, the new version introduces modest packaging and licensing alterations that impact Software Assurance (SA) and other purchasing decisions. A doubling of supported memory in Standard edition allows it to handle some database workloads that previously required Enterprise edition, and a new licensing exception for Business Intelligence (BI) edition helps minimize the number of Client Access License (CALs) required in some scenarios. Furthermore, SQL Server's passive failover exemption, which removes the need to license standby servers under certain circumstances, now explicitly requires SA.

Standard Edition Moves Upmarket

Most new and enhanced features in SQL Server 2014—such as in-memory online transaction processing (OLTP) and improvements to high-availability—are exclusive to the high-end SQL Server Enterprise edition. However, SQL Server 2014 Standard edition, whether licensed under the Server + CAL model or Per-Core model, has received memory-related performance enhancements that will be appreciated by customers with licenses covered by SA in anticipation of receiving a version upgrade.

Old rule. Starting with SQL Server 2008 R2, an instance of Standard edition was capped at 64GB of physical memory, inhibiting its scalability and causing significant consternation in the SQL Server community. (Prior versions of Standard edition could use as much memory as the OS could make available.) Standard edition's 64GB cap was continued with SQL Server 2012 as well as with the preview releases of SQL Server 2014. This memory cap, combined with the view that Standard edition was receiving only nominal improvements from version to version, caused some customers to question the value of covering Standard edition with SA.

New rule. Late in the product development cycle, Microsoft decided that each instance of SQL Server 2014 Standard edi-

tion's database engine would be able to use up to 128GB of physical memory, twice as much as before. Furthermore, Standard edition can take limited advantage of the new SQL Server 2014 buffer pool extension feature, which can improve both database throughput and latency significantly by using solid-state drives (SSDs) as a high-speed cache. However, in Standard edition, the buffer pool extension feature is limited to using a maximum of four times the RAM available to SQL Server.

Implications. The increased memory support and buffer pool features may make Standard edition viable for larger database workloads. Also, by increasing customers' confidence that Standard edition will continue to receive improvements, these features could make customers more comfortable with renewing SA coverage on existing Standard edition licenses. However, operating as a database, Standard edition is still constrained compared to SQL Server Enterprise edition, which can take advantage of 2TB RAM (or more, depending on the version of Windows Server) and SSD high-speed cache capacity of up to 32 times the RAM managed by SQL Server.

Passive Failover Exemption Requires Software Assurance

In general, under the Server + CAL and Per-Core licensing models, any server, developer workstation, or virtual machine that runs Standard, BI, or Enterprise editions of SQL Server must be licensed for SQL Server. The one major exception is for failover servers that remain inactive ("passive") until they take over when a primary server fails or is taken out of service. This switchover generally leverages a high-availability technology, such as failover clustering, that shifts the workload from one server to another. To qualify, the failover server cannot perform any type of production workload (including backups) while it is waiting for the primary server to fail.

Old rule. For SQL Server 2012 (and prior versions), the passive failover ex-

emption for fee-based editions was not predicated on having active SA coverage of the SQL Server licenses. However, concurrent with SQL Server 2012 Microsoft modified the rules for license reassignment, which, for all practical purposes, made SA a requirement for the passive failover exemption. Although this was mentioned in Microsoft's SQL Server 2012 licensing materials, albeit obliquely, it was not widely understood and thus was a point of confusion.

Two things changed with SQL Server 2012. First, in a revised interpretation of the licensing mechanics during failover, Microsoft indicated that for licensing purposes, once a failover server becomes active for any reason, it becomes the primary server and must be licensed as such. By reassigning the license(s) from the original primary server that went offline to the server that picked up the workload(s), the need to purchase additional licenses could be avoided. However, the second SQL Server 2012 change pertained to the allowable frequency of license reassignment. Absent SA, the maximum allowable reassignment frequency is once every 90 days, so in the failover scenario the original primary server could not reassume the workload(s) for at least 90 days. With SA, SQL Server 2012 Standard, BI, and Enterprise licenses can be reassigned as often as necessary within a server farm, which is defined by Microsoft as up to two data centers that are in time zones no more than four hours apart. (The four-hour rule is in place to prevent licenses from being used to "follow the sun" and being transferred globally throughout the workday.)

New rule. Licensing rules put in place for SQL Server 2014 explicitly require SA for the passive failover exemption to apply.

Implications. The change is not an issue for existing customers with passive failover server configurations as long as they continue SA coverage on licenses assigned to primary servers. However, dropping SA not only precludes the ability to use or claim passive failover rights for deployments of SQL Server 2012 or 2014

but it likely does the same even for deployments of older versions. Even though SQL Server 2008 R2 and older licenses originally came with passive failover rights and did not make this right contingent on SA, the net effect of carrying SA for these licenses is their eventual conversion to newer version licenses. For example, a customer who renewed SA on an Enterprise edition server license in May 2013 (a year after SQL Server 2012 shipped) officially owns a SQL Server 2012 Enterprise edition server license and is subsequently subject to the usage rules for that latest version, even if the customer runs an earlier version under downgrade rights. (Version downgrade rights entitle the owner of a product license to install and run an earlier version and equivalent edition of the same product in its place.)

For customers deploying new database systems requiring high-availability, the updated passive failover rules are likely irrelevant. This is because the AlwaysOn Availability Groups (AG) feature, first introduced in SQL Server 2012, has been the focus of Microsoft's high-availability engineering efforts. Going forward, customers would likely design new deployments to take advantage of AlwaysOn AG, which doesn't use passive servers—therefore, the passive failover exemption does not apply. Furthermore, even without AlwaysOn AG, many organizations design their high-availability architecture without idle passive systems; for example, servers that take over line-of-business workloads during failover might normally be used to run BI, data warehousing, reporting, or other noncritical tasks.

BI Edition Relaxes Multiplexing Rules

SQL Server BI edition, first introduced with SQL Server 2012, is licensed exclusively under the Server + CAL licensing model. Under this model, most forms of

client access (inputting, modifying, querying, and viewing data) generally require a SQL Server CAL regardless of whether the connection is direct from a client device to the SQL Server or indirect through an intermediary (sometimes referred to as a multiplexing or pooling device).

Old rule. BI systems, by their very nature, aggregate historical business data and other information from multiple sources into data warehouses for subsequent analysis. The indirect access rule means all the clients of systems feeding data into a SQL Server BI edition-based system need to be licensed via SQL Server CALs. For example, if an Oracle-based transaction processing application transfers data to SQL Server BI edition for analysis, all the clients of the Oracle-based application would, under the old rules, require a SQL Server CAL. With SQL Server 2012, the only workaround was to instead license Enterprise edition (which contains a superset of BI edition features) under the Per-Core licensing model, which could be an expensive proposition, especially for a departmental BI solution.

New rule. A new “waiver for batch jobs” is incorporated into SQL Server 2014 BI edition use rights and retroactively applied to SQL Server 2012 BI server licenses as well. Microsoft defines batching as “an activity that allows a group of tasks occurring at different times to be processed all at the same time.” Since data warehouses commonly import data from production systems in a delayed, non-transactional (batch) manner, this exception enables customers to use BI edition without exposing themselves to substantial license compliance issues or licensing costs.

Implications. By correcting a serious deficiency in SQL Server BI edition's original licensing model, the CAL waiver could make BI edition more attractive to customers as a departmental BI solution.

Resources

Directions on Microsoft licensing guides organized by topic are listed on <https://www.directionsonmicrosoft.com/microsoft-licensing-guides-topic>.

SQL Server 2012 and 2014 licensed under the Server + CAL model is covered in “Licensing SQL Server Under the Server + CAL Model” in the June 2014 *Update*.

Licensing SQL Server under the Per-Core model is detailed in “SQL Server 2012 Adopts Per-Core Licensing Model” [FREE SAMPLE] on page 16 of the Apr. 2012 *Update*.


Various aspects of SQL Server 2012 licensing are covered in “Licensing Rules May Favor SQL Server Enterprise” on page 21 of the Feb. 2014 *Update*, “Selecting an Edition of SQL Server 2012” on page 14 of the Nov. 2013 *Update*, and “Licensing SQL Server for Development and Test” [FREE SAMPLE] on page 15 of the Aug. 2013 *Update*.

SQL Server 2008 R2 licensing is detailed in the Nov. 2010 *Licensing Guide*, “Licensing SQL Server 2008 R2.”

Feature splits across SQL Server 2014 editions are listed in [msdn.microsoft.com/en-us/library/cc645993\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/cc645993(v=sql.120).aspx).

Special licensing programs for SQL Server purchases are covered in “Enrollment for Application Platform Phased Out” on page 18 of the Feb. 2014 *Update* and “New Server and Cloud Enrollment for EA” on page 32 of the Jan. 2014 *Update*.

SQL Server 2014 technological improvements are detailed in “SQL Server 2014 ColumnStore Enhanced” in the May 2014 *Update*, “SQL Server 2014 Improves Replication, High-Availability” on page 15 of the Apr. 2014 *Update*, and “First Release of SQL Server In-Memory OLTP Shows Promise” on page 12 of the Feb. 2014 *Update*.

The waiver for batch jobs and updated failover use rights are incorporated into the Apr. 2014 Product Use Rights (PUR) and Apr. 2014 Product List documents available at www.microsoft.com/licensing/about-licensing/product-licensing.aspx. 

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