



## IBM Software License Optimization: A Guide for Software Asset Management Professionals

Version 5



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## Understanding IBM Licensing

IBM licensing is known for its complexity, with its component, product and bundle elements; but there is certain information available to help you understand and manage it better.

Initially, to understand IBM licensing it is necessary to have some knowledge of their software portfolio, types of license agreements and the licensing metrics they utilize.

### IBM Software Portfolio

Many organizations use IBM software to cover critical areas of their business, including threat management and application hosting to name a few.

To the right is a brief overview of some of the key product families and their products.

It should be noted that IBM acquire and divest as part of their strategy, e.g. the acquisition of RedHat and the divestment of various products including Domino/Lotus to HCL in 2019.

Product Family	Example Products	Function
Security	QRadar Security Intelligence Security Access Management and Directory Server	Threat Management Authentication
WebSphere	WebSphere Application Server Network Deployment Integration Bus and MQ	Application hosting Messaging and message Transformation
Spectrum	Spectrum Protect (Previously known as Tivoli Storage Manager)	Backup
Cognos	Planning Analytics	Collaborative analytics and planning
Tivoli	Tivoli Monitoring Workload Scheduler	Systems monitoring Job scheduling
DB2	DB2 Advanced	Database including compression and workload management

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## Entitlements

IBM offers its software via two key programs: Passport Advantage and Passport Advantage Express. Both of these programs use a common set of agreements, processes and tools. Eligible products available under the agreements include software licenses, both one-time charge and fixed term, software subscription and support, plus IBM Appliances and IBM SaaS offerings.

You should be wary of taking Passport Advantage as the sole source of entitlement information as you may be missing some key data. For example, Passport Advantage can provide limited historical data which can often be of use to customers – e.g. you can see that you had a higher entitlement but you may not be able to see when you bought it. This information is useful in the event that you have an exposure.

Certero have also seen instances where Passport Advantage does not match what is seen in the IBM provided 'Proofs of Entitlement' and wider contracts.

For customers with large IBM software requirements, separate contracts such as ELAs, ESSO/SSSO can be negotiated. These can involve terms that supersede the standard IBM terms and conditions and/or terms such as the ability to swap existing entitlements for alternative products (substitution), or draw down on a list of additional products as and when the need requires (Cross Brand Allocation).

Customers should also note there may be instances where the IBM software in your environment has come from other sources (third party services, managed services, bundled software), which do not show in IBM's Passport Advantage.

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## IBM Licensing Metrics

IBM licensing is considered to be a specialized knowledge base in SAM and their rules and policies are not as well-known as those of some other software vendors. They deploy a number of unusual licensing metrics, ranging from number of users, through number of devices, to establishment counts and annual revenue. As these metrics can be confusing and wrought with potholes, which can result in significant financial impact, an IBM expert is imperative when reviewing your license position.

Although there are many licensing metrics, it is crucial to be aware of the main two – capacity and user-based.

The following sub-headings in this section are near verbatim from IBM.

### User Based Licensing

User based licensing, as the name suggests, is based on counting users. There are a number of different metrics that IBM defines for this type of licensing:

#### *Authorized User*

An Authorized User is a unique person (or sometimes a device) that is given access to the program. The program may be installed on any number of computers or servers and each Authorized User may have simultaneous access to any number of instances of the program at one time.

You must obtain separate, dedicated entitlements for each Authorized User that is given access to the program in any manner, directly or indirectly (for example: via a multiplexing program, device, or application server) through any means.

An entitlement for an Authorized User is unique to that user and may not be shared, nor may it be reassigned, other than for the permanent transfer of the Authorized User entitlement to another person.

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### *Concurrent User*

A Concurrent User is a person (or sometimes a device) that is accessing the program at any particular point in time. Regardless of whether the person is simultaneously accessing the program multiple times, the person counts only as a single Concurrent User. The program may be installed on any number of computers or servers, but you must obtain entitlements (Proof of Entitlement or PoE) for the maximum number of Concurrent Users simultaneously accessing the program.

You must also obtain an entitlement for each simultaneous Concurrent User accessing the program in any manner, directly or indirectly (for example: via a multiplexing program, device, or application server) through any means.

### *Floating User*

A Floating User is a person (or sometimes a device) that is accessing the program at any particular point in time. An Install is an installed copy of the program on a physical or virtual disk made available to be executed on a computer. The program may be installed on any number of computers or servers, but if the Floating User simultaneously accesses more than one installation of the program, they require a separate entitlement for each such Install.

You must obtain separate entitlements for each Floating User simultaneously accessing the program on each install in any manner, directly or indirectly (for example: via a multiplexing program, device, or application server) through any means.

### *User Value Unit (UVU)*

UVU Proof of Entitlement (PoE) is based on the number and type of Users for the given program. You must obtain sufficient entitlements for the number of UVUs required for your environment as defined by the specific software terms. The UVU entitlements are specific to the program and type of user and may not be exchanged, interchanged or aggregated with UVU entitlements of another type of user or program.

To understand the benefits of User Value Unit licensing and to determine how many User Value Units to obtain, you will need to refer to the program specific User Value Unit table.

### **Capacity Based Licensing**

Capacity based licensing is focused around the characteristics of the server that the software is running on. IBM has the following definitions:

#### *Install*

An Install, which is a unit of measure by which the program can be licensed, is an installed copy of the program on a physical or virtual disk, made available to be executed on a computer. You must obtain an entitlement for each install of the program.

#### *Process Value Unit (PVU)*

The Processor Value Unit (PVU) license metric is the most common license type for IBM server products. It is a unit of measure used to differentiate licensing of software on distributed processor technologies (defined within the PVU

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Table by Processor Vendor, Brand, Type and Model Number). IBM continues to define a processor, for the purpose of PVU-based licensing, to be each processor core on a chip. A dual-core processor chip, for example, has two processor cores.

You can deploy the program using either Full Capacity licensing or Virtualization Capacity (Sub-Capacity) licensing according to the Passport Advantage Agreement Terms:

- If using **Full Capacity** licensing, you must obtain PVU entitlements sufficient to cover all activated processor cores\* in the physical hardware environment made available to, or managed by, the program, except for those servers from which the program has been permanently removed.
- If using **Virtualization Capacity** licensing, you must obtain entitlements sufficient to cover all activated processor cores made available to, or managed by, the program, as defined according to the Virtualization Capacity License Counting Rules.

*\* An Activated processor core is a processor core that is available for use in a physical or virtual server, regardless of whether the capacity of the processor core can be or is limited through virtualization technologies, operating system commands, BIOS settings, or similar restrictions.*

### Server

A server is a unit of measure by which the program can be licensed. It is a physical computer that is comprised of processing units, memory and input/output capabilities and that executes requested procedures, commands or applications for one or more users or client devices. Where equipment such as racks or blade enclosures are being employed, each separable physical device (for example, a blade or a rack-mounted device) with the required components is considered itself a separate server. Regardless of the number of processor cores and/or partitions in the server or the number of copies of the program on the server, you must obtain Server entitlements for each server made available to the program.

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### *Virtual Server*

A Virtual Server is a unit of measure by which the program can be licensed. A server is a physical computer comprising of processing units, memory and input/output capabilities and that executes requested procedures, commands or applications for one or more users or client devices.

Where racks, blade enclosures or other similar equipment is being employed, each separable physical device (for example, a blade or a rack-mounted device) that has the required components is considered itself a separate server. A virtual server is either a virtual computer created by partitioning the resources available to a physical server, or an unpartitioned physical server. You must obtain Virtual Server entitlements for each virtual server made available to the program, regardless of the number of processor cores in the virtual server or the number of copies of the program on the virtual server.

### **Other Licensing Metrics**

There are a number of other licensing metrics that fall outside the above:

### *Client Device*

A Client Device is a single user computing device or special purpose sensor or telemetry device that requests the execution of, or receives for execution, a set of commands, procedures or applications from, or provides data to, another computer system that is typically referred to as a server or is otherwise managed by the server. Multiple Client Devices may share access to a common server.

A Client Device may have some processing capability or be programmable to allow a user to do work. Examples include, but are not limited to, actuators, appliances, automatic meter readers, cash registers, disk drives, desktop computers, kiosks, notebook computers, personal digital assistants, point-of-sale terminals, tape drives and technical workstations. You must obtain entitlements for every Client Device which runs, provides data to, uses services provided by, or otherwise accesses the program and for every other computer or server on which the program is installed.







### *Resource Value Unit (RVU)*

RVU Proofs of Entitlement are based on the number of units of a specific resource used or managed by the program. You must obtain sufficient entitlements for the number of RVUs required for your environment as defined by the specific software terms. RVU entitlements are specific to the program and the type of resource and may not be exchanged, interchanged or aggregated with RVU entitlements of another program or resource.

## Getting Audit Ready

Upon receiving an audit letter, there is often the assumption that because you have been using ILMT, you are covered for license compliance.

Unfortunately, without having an IBM licensing expert, SAM vendor or SAM product installed, non-compliance is often only discovered during the vendor audit. This regularly leads to unexpected costs and possible penalties – IBM has the right to request the purchase of what they believe are the right licenses and payment of retrospective maintenance.

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## Issues with ILMT

Utilizing the IBM License Metric Tool (ILMT) is a mandatory IBM requirement for all customers who take advantage of sub-capacity licensing on their software products – with very few exceptions. Even if you have invested the considerable effort required to get ILMT deployed, there are several questions to consider:

- Is ILMT fully deployed? How do you know?
- Have you checked the license information document against each product to see if there are any product specific terms and conditions?
- Have you checked the bundling is correct?
- Have you checked for, or know if, there any false positives?
- Are you checking the reports on a monthly basis and signing them off?

Failure to have ILMT deployed on servers where there is IBM software installed can lead to IBM withdrawing sub-capacity rights – this means you will be asked to pay to license the whole physical server for the software. In other words, instead of the ~\$20k purchase you have paid for two cores of WebSphere Application Server Network Deployment, you may now be required to pay a further ~\$140k to license the rest of a 16-core server.

Even if you have ILMT deployed fully you should not assume that it is correctly reporting your licensing position.

You firstly need to be confident the data in ILMT is right. For example, ILMT currently reports Tivoli Storage Manager and Spectrum Protect deployments separately, even though they are essentially the same product. This can lead to your usage being overstated. Following this there remains a significant task to ensure that manual classifications are made in ILMT to ensure that it is correctly reflecting:

- Production software as Non-Production software (the latter being typically 50% of the cost of the former)
- Software that comes bundled with other IBM software is correctly classified as such
- False positives are identified and excluded, such as IBM software on mapped drives
- Your IBM software is configured for Disaster Recovery in a way that the license incurs no cost

The benefits of a thorough investigation of all of the above has in some cases been found to reduce the need for IBM software licensing by 50%.

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## How Certero Can Help

Certero has extensive experience in proactively supporting customers that wish to understand and improve their IBM licensing position and reduce the risk of financial surprises and disruption in the event of an IBM software audit.

Our consultants work across the globe to support a wide range of customers in a diverse mix of industries, with IT ecosystems of varying size and complexity.

As Certero can directly provide both the specialist technology and the expertise to optimize IBM, we can offer customers a uniquely unified and agile delivery of either an IBM SAM solution or independent IBM SAM Service; supporting in-house teams with any level of capability required.

**Certero for IBM** is a class-leading Software Asset Management solution that offers automated license reconciliation for IBM software, enabling you to manage your investments better and achieve continuous license compliance alongside ILMT.

Let's look at how **Certero for IBM** helps you address the main challenges...

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## Entitlement

**Certero for IBM** supports a great number of license models, including VPC, PVU (Full-Capacity), PVU (Sub-Capacity), Install, Server, Virtual Server, Authorized User, Concurrent User, Floating User, UVU, RVU, Client Device and Establishment. If that is not enough, **Certero for IBM** will even allow you to define a custom metric.

Simply by using the IBM product part number for your entitlement, **Certero for IBM** will recognize the product and understand its upgrade, downgrade, virtual environment and general product usage rights. This intelligence is built into the solution for thousands of IBM products and will even form a view of which products can be part of bundles.

**Certero for IBM** is able to manage capacity-based licensing metrics in detail. It also enables you to store, provide evidence and report on data for other, non-capacity-based, metrics that have been collected manually. This enables you to get clarity of your entitlement on IBM software.

## Sub-Capacity Licensing

**Certero for IBM** can help you to understand your sub-capacity consumption, supporting informed business decision making on IBM software product usage and strategy across your infrastructure.

**Certero for IBM** will automatically reconcile your entitlement against ILMT inventoried deployment and measured usage data, to help you understand your sub capacity consumption. This will consider relevant product use rights to help ensure you have clarity on your Effective License Position (ELP).

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## Verifying ILMT to Eliminate Risks

As having ILMT installed is mandatory for many customers, ensuring that it is correctly installed, configured and returning accurate data is also critical for maintaining your license compliance. Take for example, a server with 24 cores. If for any reason ILMT was incorrectly configured and only deployed across 2 cores, then you could be in breach of the Sub-Capacity terms and conditions, and would therefore could need to pay IBM for the full capacity of the server...

Therefore [Certero for IBM](#) helps to spot and eliminate these errors by identifying:

- Where software may not be covered by ILMT
- ILMT that is out-of-date
- Where ILMT is installed but pointing at the wrong server
- Where ILMT is not reporting correctly

[Certero for IBM](#) will integrate with ILMT to provide improved reporting capability, without violating the terms and conditions set out by IBM. It will automatically reconcile your entitlement against inventoried deployment and measured usage, to help understand your sub capacity consumption. These reports will consider relevant product use rights to help ensure you have clarity on your [Effective License Position \(ELP\)](#). This can be used in conjunction with ILMT to provide a comparable report to support your verification and quality assurance processes.

## Reporting Clarity

[Certero for IBM](#)'s integrated reporting engine transforms raw data into meaningful Business Intelligence, with user-driven reports that make the information required available immediately and shared easily.

Customizable alerts assist in proactive management by informing administrators when a change has happened, which may impact upon their compliance position, or when a threshold is nearly reached. This enables managers to easily identify an action plan to optimize their license position and make the necessary changes to infrastructure and within ILMT.

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## Additional Benefits of Certero for IBM

With a unique automated approach, **Certero for IBM** provides organizations with a host of additional benefits that include, but are not limited to:

- Simplifies complex licensing and usage constraints, ensuring compliance, accurate information and minimizing cost
- The automated approach eliminates over-reliance on time consuming and error-strewn manual processes
- Provides the ability to maintain compliance by not allowing ILMT to be incorrectly configured
- Gap Analysis enables you to understand your license position

## Certero's Technology-Led SAM Services

Certero's in-house SAM consultancy team includes dedicated experts on all of the major software vendors, including specialists in IBM, Oracle and SAP.

This means that Certero are able to directly deliver both the specialist expertise and resource to support customers through our range of 'tactical' Effective License Position (ELP) and Optimization services and strategic 12-month+ SAM Managed Services.

Certero's unified technology + services approach is not just simpler for customers, it also means that we're able to leverage the maximum value of our uniquely automated technology within a services framework.

The result is a paradigm shift in the SAM process. Moving beyond the 'old world' of static reports, data exports and 3-4 immediately out-of-date ELP reports per year.

Certero's unique technical capability can instead offer a SAM Service based upon live data, continuous license compliance, 365 ELPs per year, unprecedented automation and unrestricted access to information.

So, instead of bouncing between being in and out of control with IBM licensing, customers can now invest in strategic control and continuous license compliance with IBM.

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## Summary

Managing your IBM software is not easy, but is necessary to prevent unbudgeted expenditure and disruption when facing an audit. Despite the difficult challenges, Certero has everything you could need to support you.

Although it can take years to become an IBM licensing expert and bringing in the skills on-demand through a SAM service is the safest option, there are many things you can do yourself to mitigate potential problems in the short term.

Firstly, you need to take the time to understand the IBM software environment, as well as reading and comprehending your individual product license terms and conditions. If you are using sub-capacity licensing (as most IBM software customers do), then you have to ensure that you are utilizing ILMT to monitor your IBM software and that ILMT is fully and correctly deployed and configured.

As ILMT brings many of its own additional challenges, it makes sense to also implement an independent and integrated SAM tool, such as [Certero for IBM](#) to ensure that ILMT is not inadvertently breaching your license agreements by being incorrectly deployed and configured. In addition, [Certero for IBM](#) will further enhance ILMT with its SAM capabilities and reporting.

Finally, you should look at introducing a mature SAM program to your organization. The disciplines and controls it brings will help you to improve your software management and proactively mitigate any potential risks in the event of a software audit. It will also help you reduce software over-spend by ensuring you only buy and use the software your organization actually needs.

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## Take the Ultimate Control

Wherever you are in the SAM journey, Certero can help you to achieve a mature and modern SAM program, by providing any of the essential technology, resources and expertise you require to get to where you want to be.

## About Certero

### The unified SAM and ITAM platform you can trust to deliver.

*"With Certero, it's just a better experience"*

Certero deliver [.as-a-service] IT Hardware, Software, SaaS and Cloud Asset Management solutions and services, to help enable organizations to digitally transform their IT. We do this by challenging the traditional, outdated delivery method of disappointing point solutions, and instead deliver true unification across all platforms, from mobile to mainframe to cloud, delivered as SaaS in days, not months or years. Combined with our self-service solutions we support organizations to drive digital transformation agendas through increased efficiency and automation. With businesses in the UK, USA and Australia, Certero is a customer first company with a passion for customer success, earning the trust of some of the leading global brands across the finance, manufacturing, health, retail and technology sectors. That's why Certero is viewed number one, year on year for customer service as well as having the highest scores for product capabilities, making Certero a safe, trusted partner to help with your digital transformation.

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