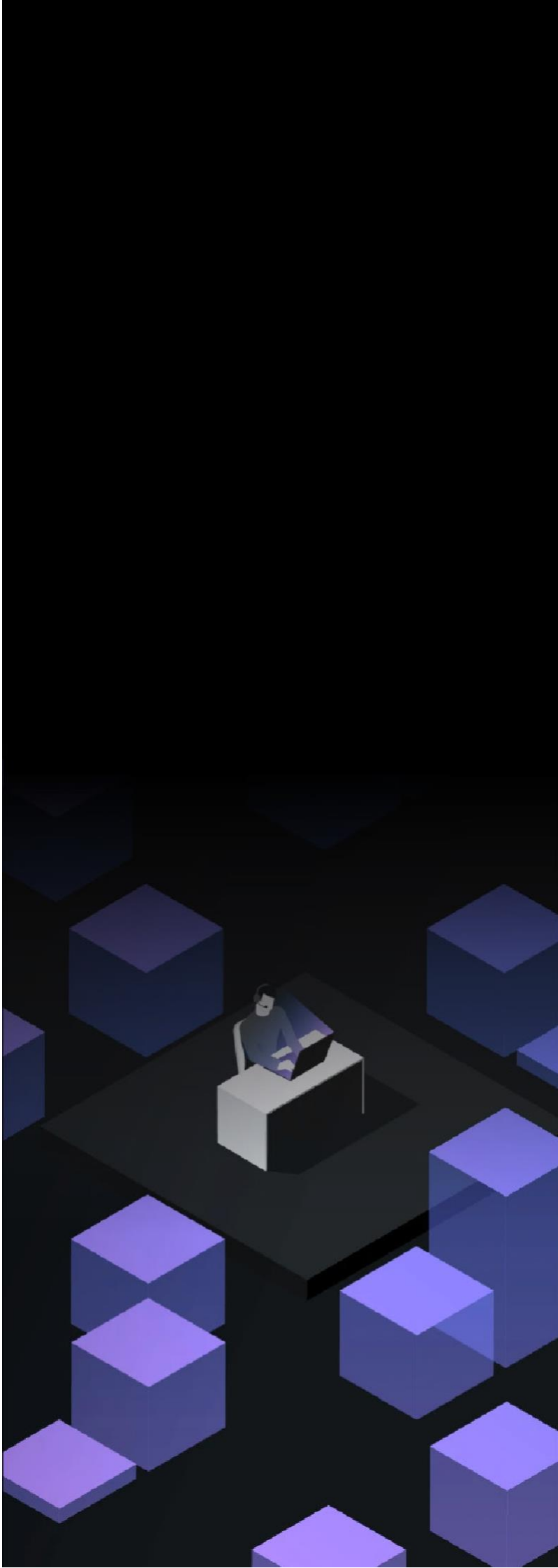
Backup and Disaster Recovery

Licensing IPLA and ICA-based IBM Programs

Licensing Guide



Effective: January 2022

Last update: May 1 2024

IBM

Version History

Version	Updates
January 2022	– Initial version
February 2023	– Updating document links
May 2024	– Testing information updated per ICA

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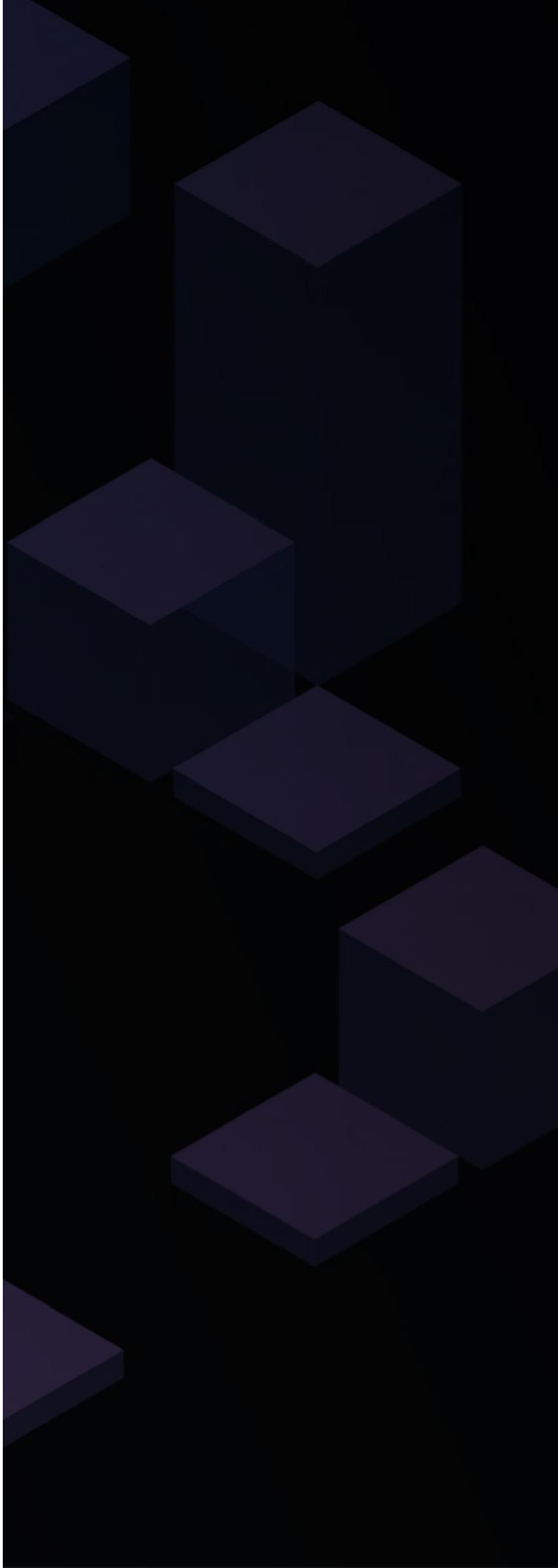


Overview

This document explains how IBM approaches licensing for Backup and Disaster Recovery. IBM's licensing policies are intended to enable clients to continue to be operational if an emergency occurs and servers stop working, without requiring additional entitlements.

There are some common challenges related to managing your Backup and Disaster Recovery solutions, and it is important to understand the various licensing options available. Misunderstanding these can lead to unintended licensing issues. This guide should address your questions and help you make informed decisions about your own present and future licensing needs for Backup and Disaster Recovery.

This guide is intended as a general licensing knowledge resource. While it may explore scenarios and discuss the licensing implications of specific configurations, it is not intended to provide advice for individual customer circumstances.
Always consult your IBM representative should you have any questions or concerns about Backup and Disaster Recovery in your IBM estate.

Key Terms

The following terms are used throughout this document and are fundamental to understanding its contents. This is not an exhaustive list, and some concepts may be discussed in other licensing guides or rely on assumed knowledge.

IBM Customer Agreement ("ICA")

An agreement setting out licensing terms for certain IBM offerings. In particular, the mainframe software that is measured on a Monthly License Charge ("MLC") basis is licensed under the ICA.

International Program License Agreement ("IPLA")

An agreement setting out the base terms for all IBM programs licensed under PA, PAE and certain mainframe programs. It is available here.

License Information ("LI") document

A document which sets out detailed licensing information about an IBM program. Each document relates to a specific release (version). LI documents are defined in the IPLA, Part 1 (General Terms), clause 1 and in the IPAA, sections 3 and 3.2.

Processor Value Unit ("PVU")

A unit of measure by which IBM programs can be licensed, based on the processing capacity made available to the program. The number of activated processor cores are counted and then converted to PVUs by reference to a "PVU per core" rating which depends upon the characteristics of the processor and machine.

Proof of Entitlement ("PoE")

A document produced by IBM which sets out the IBM programs (or offerings) for which a client has purchased licenses. A PoE will detail the offerings licensed, the license metric and the quantity of licenses purchased. If S&S is purchased, the period of cover will be included.

Virtual Processor Core (VPC)

A unit of measure by which IBM programs can be licensed, based on the processing capacity made available to the program. Virtual CPUs (vCPUs), or physical cores, are counted and in some cases adjusted for hyperthreading or SMT. These counted vCPUs or physical cores are then converted to VPCs.

Introduction

Generally, our clients configure their hardware and software so that operations are not interrupted by an event which causes their primary IT to fail. This is frequently referred to as backup use, disaster recovery or a backup and recovery service.

The International Customer Agreement (“ICA”) and the International Program License Agreement (“IPLA”) allow clients to create copies of IBM programs and temporarily use these copies on another machine when the primary machine is not available. IBM Backup use policies, published here and referenced by both the ICA and IPLA, provide
more detail about specific circumstances which might impact whether a license is required for specific backup configurations. These policies are the subject of this licensing guide.

The general terms in the ICA, IPLA and software policies may be overridden by specific contract terms or license terms within offering-specific agreements such as License Information documents.

The License Agreements

Note that these are general terms that might be overridden by specific contract terms or specific license terms for a program (that is, the product and version specific LI document)

The table below explains which types of software the ICA and IPLA cover, and their key difference in terms of backup use:

	ICA	IPLA
Type of software	Applies only to mainframe software products licensed by a Monthly License Charge (MLC) (see Mainframe licensing guide on the Guides page for more information).	Applies to all software licensed by IBM except MLC mainframe software. Includes Power and Storage software.
‘Backup use’ specifics	Allows a second installation to be made on another Designated Machine for backup purposes if it is not performing productive work.	Both IPLA v14 and v15 permit a backup copy to be made, however the fact that some backup configurations do require licenses is not discussed.

Both IPLA v14 and v15 (released October 2021) permit clients to make a backup copy of the licensed program (see IPLA v14 clause 3(b) and IPLA v15 clause 1(c)(3)). However, not all backup configurations are permitted without additional licenses being required; the IPLA is silent on this.

The ICA permits clients to run a copy of the program on a second machine temporarily if the Designated Machine for the program is inoperable (see ICA clause 4.1.1(a)). As with the IPLA definition, the
ICA does not discuss the possibility of a backup configuration requiring a license.

The Backup use policy (one exists for software licensed under the ICA and another exists for software licensed under the IPLA) provides additional detail about the key factors that clients should consider when determining whether a license is required for their backup configuration. Applying these rules will ensure that each installation is appropriately licensed.

Note that IBM does **not** typically consider a scheduled hardware outage to be a backup or disaster recovery situation. This includes preventive maintenance or installation of upgrades. There are a limited number of scheduled hardware outage situations where the Temporary Additional Use Policy will allow you to run parallel copies for a limited period at no additional charge. This policy is discussed later in this guide.

The license agreements and software policies are of general application. Specific licensing documentation for an IBM offering (such as a License Information Document), or terms in a contract between IBM and a client (such as an Enterprise License Agreement), may take precedence over these general terms. We suggest that you check for relevant terms applicable to an individual program according to the following order of precedence (in descending order):

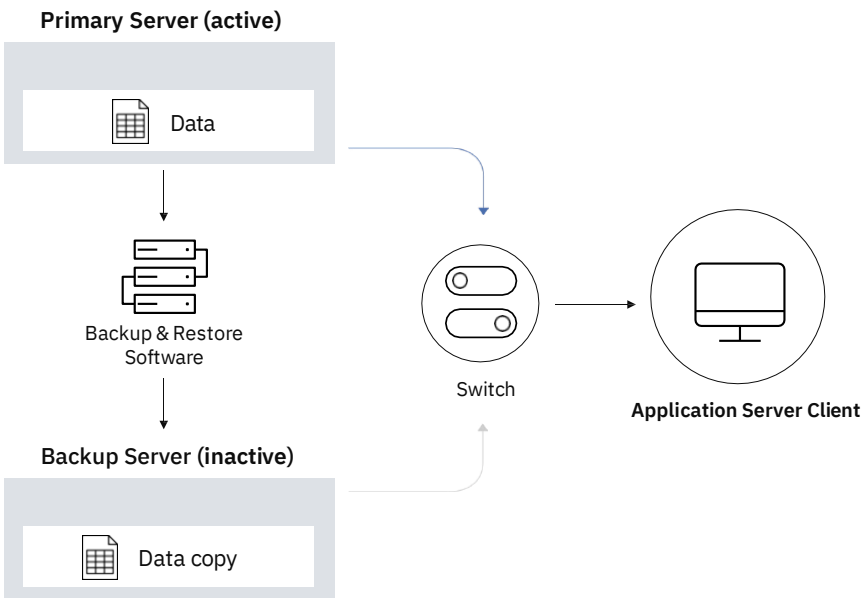
1. Specific contractual terms signed with IBM, such as ELAs, ESSO, SSSO.
2. Offering-specific terms, such as License Information documents, Licensed Program Specifications, or other Transaction Documents
3. IBM software policies
4. Base IBM license agreements, such as IPLA, ICA, IPAA and IPAEA.

In case of doubt, contact your IBM representative.

Backup: Cold, Warm And Hot Standby

Backup refers to having multiple copies of programs or data in place so that if problems are encountered with the primary copy the backup copies can take on the production role, preventing any disruption to the service. This is otherwise known as ‘standby’ copies.

The following diagram illustrates a typical simple backup configuration:



IBM defines three types of standby situations for programs running or resident on backup machines. These use the temperature scale of cold, warm and hot to describe the standby machines or servers.

All programs running as backup installations must be under your control, even if running at another company's location (for example, managed services, outsourcers or cloud).

The definitions of cold, warm and hot are as follows:

- **Cold** - Only the primary program is running. The backup program is switched off and must be switched on before it can take over duties from the primary program. No extra entitlements required.
- **Warm** - A copy of the program may reside for backup on a machine and is started, but is "idling", and is not doing work of any kind. No extra entitlements required. A warm standby installation must not have access to live production data.
- **Hot** - Both the primary and the standby copies are running at the same time (that is, the backup program has been launched). Both primary and backup copies of the software have access to the data at the same time. For example, data may be written to both primary and standby at the same time, so the standby copy is effectively 'shadowing' the primary copy and is ready to jump in at immediate notice. This must be fully licensed.

The above are generic definitions. Individual License Information documents may contain licensing rules for hot, warm and cold standby that differ from these and override them. In addition, full descriptions are available at the software policies page.

The below table summarizes the key considerations for each situation:

Standby Status	Primary Copy	Backup Copy	Is the Backup Copy "doing work"? (see definition below)	Program has access to live production data?		License Required for Backup Copy?
				Primary Copy	Backup Copy	
Cold	Running	Not running	No	Yes	No	No
Warm	Running	Running	No	Yes	No	No
		Running	No	Yes	Yes	Yes
Hot	Running	Running	Yes	Yes	Yes	Yes

Doing Work refers to a situation when a backup server is accessed by the user or processes data.

"Doing Work" includes: production, development, program maintenance, and testing. It could include other activities such as mirroring transactions, updating files and synchronizing programs, data or other resources. It could also include any activity or configuration that would allow an active hot-switch or other synchronized switch over between programs, data bases, or other resources to occur.

In the case of a program or system configuration that is designed to support a high availability environment by using techniques such as duplexing, mirroring of files or transactions, maintaining a "heartbeat" or active linking with another machine, the program is deemed to be doing work in both the "warm" and "hot" situations and both primary and backup copies must be licensed.

For illustrations of typical examples of hot, warm and cold backup configurations, see the Scenarios section below.

Backup Testing

To prepare for an emergency where backup installations or data may need to be relied upon to provide continuity of service or restore the primary server to its prior healthy state, you may run periodic tests to determine whether the backup facility will adequately restore your systems to their prior state.

The term 'Backup Testing' differs from 'Disaster Recovery Testing' in that normal use of the program licenses is likely to continue on the primary machine while the test is undertaken. The backup installations and data do not take on the primary role. These tests should not include any production workload, development, program maintenance or testing. They are solely to ensure your backups and recovery actions are adequate.

No additional licenses are required for these tests as long as they are reasonable in both number and duration. The ICA and IPLA backup policies indicate that between one and three tests per year, each lasting two to three days, is to be considered reasonable.

In certain cases (for example, online systems running 24x7 that are critical to the customer's business operation) more frequent tests may be required. These tests should be shorter in duration with the total hours across all tests not exceeding the above guidelines.

It is important that no production workload is performed by the tests. This includes development activities, program maintenance or other testing not related to backup and disaster recovery.

If you require an extended period for Backup Testing, you should discuss the reason for this with IBM and seek guidance as to whether any additional licenses, even if temporary, are required.

Disaster Recovery Testing

You may wish to periodically test your recovery setup so that you are confident that, in a real disaster event, your recovery setup will work as planned. Disaster Recovery Testing typically involves the simulation of a disaster event to check whether systems and processes maintain service without disruption. This will involve taking the primary IBM programs offline and the backup installations and data temporarily taking on the primary role. In performing the primary role, these backup installations will perform production workloads during the duration of the test.

IBM will permit 1-3 tests per year, each test lasting approximately 2 to 3 days without requiring licenses for the extra copies of the software running during these tests. Note that there is nothing in the IBM software itself that records when a disaster event takes place, or how long it lasts. You are expected to retain records of this and be able to demonstrate to IBM and/or its auditor that you have complied with this policy if asked.

ICA (applies to Mainframe MLC programs)

Clause 5.1.1(c) of the ICA permits you to install a second copy of the ICA program on a second machine for backup purposes. This second installation does not require an additional license if it is not "performing productive work". Examples of productive work include:

- Production
- Development
- Test
- Program Maintenance
- Mirroring

The list above is not exhaustive; the intent is that the second installation should not be functioning in any way other than to be ready to take over in case the primary Designated Machine fails for whatever reason. This is like the cold and warm standby descriptions used in the IPLA backup policy (discussed above).

The intent of this clause is to enable the Customer to continue to be operational if an emergency occurs.

For more information about licensing mainframe software, see the licensing guide.

In the Event of a Disaster

When an emergency occurs and the primary machine on which the IBM Program normally runs is inoperable, you may run the Program on another machine as permitted in the Proof of Entitlement (“PoE”).

This alternate operation of the program may continue for a reasonable length of time while the primary machine is inoperable. If your disaster recovery machine is running for longer than three weeks
and would require more licenses than the primary machine for the IBM program (for example, it has a higher PVU requirement than the primary machine), you should discuss this with IBM. The individual situation and the recovery plan must be reviewed to determine if any additional licenses are required.

Unless the IBM program is registered to a specific machine (for example, if it is licensed under ICA terms), and providing your disaster recovery machine does not require additional licenses, the use of the backup installation in place of the primary installation may continue indefinitely. You may even decide to transfer your licenses to the backup machine and have that run as your primary machine. However, in no case may programs running in backup mode be used simultaneously on the primary machine.

Licensing Verification

As part of a licensing verification activity, such as an audit, IBM will review your rationale for categorizing any installations of IBM programs as not requiring
a license. This means that you must have adequate evidence to support your categorization, and permit IBM or its designated auditor to collect such information, to validate the assertion that no license is required. Failure to license backup and disaster recovery devices when needed is a common cause of compliance issues.

Scenarios

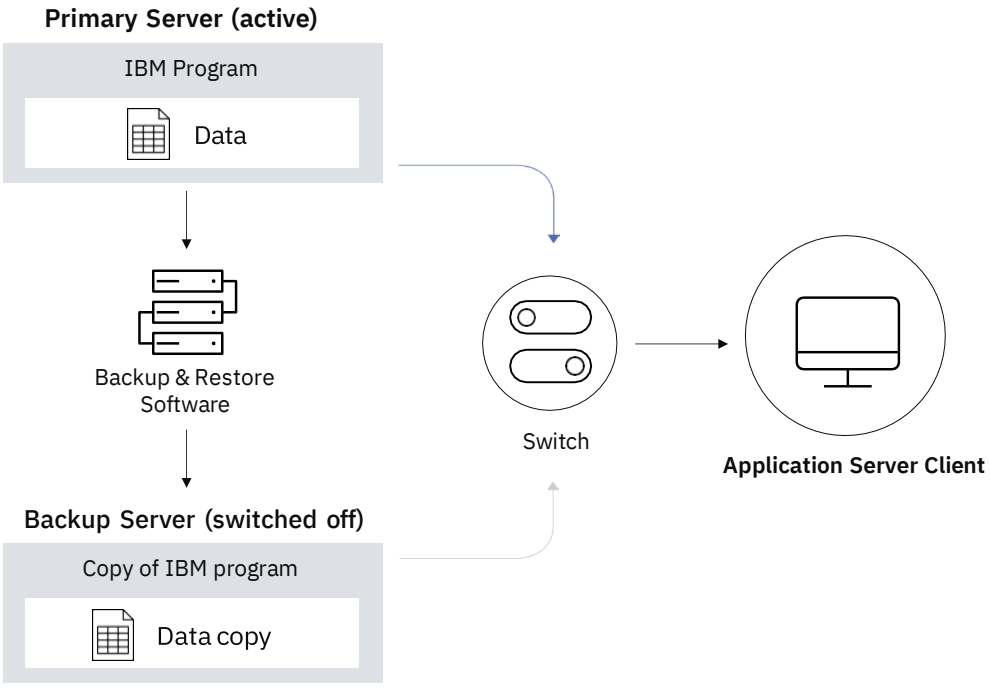
Cold Standby

An IBM program is running on Primary Server. The same program is installed on a Backup Server but is not running (that is, either the server is switched off or the program itself has not been started).

The programs, data and other settings from the Primary Server are periodically transferred to the Backup Server through the use of specialized software. This transfer can occur manually or according to a predefined schedule.

In the event that the Primary Server fails, the IBM program on the Backup Server is started and the switch configured to divert the user to the Backup Server.

No additional license is required for the copy of the IBM program on the Backup Server while it is operating as a Backup installation, or while it is temporarily acting as the Primary installation (as long as the original Primary installation is not running concurrently with the Backup copy).

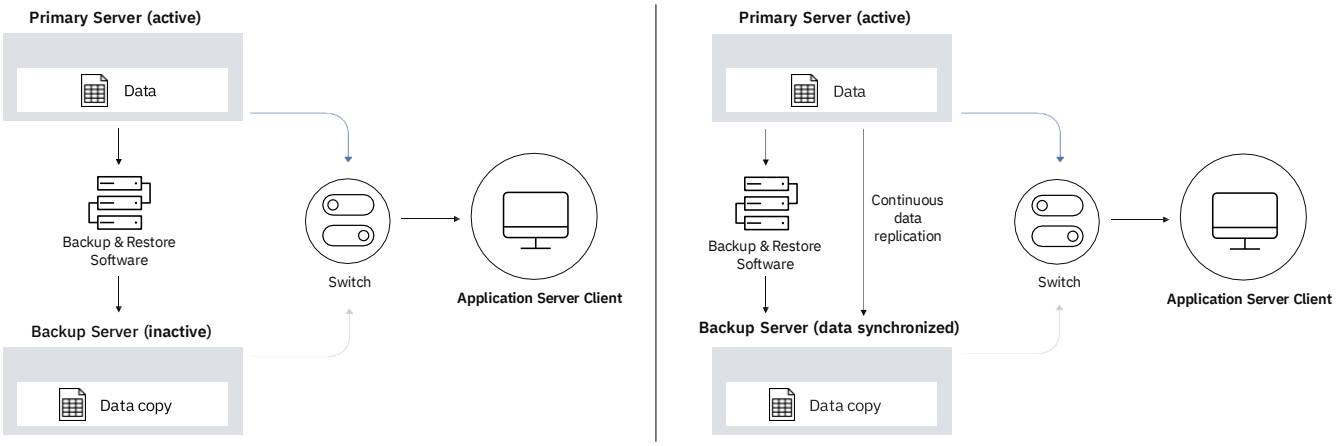


Warm Standby

An IBM program is running on the Primary Server. The same program is installed on a Backup Server. The copy on the Backup Server is started or “running”.

The diagrams [below] illustrate how the definition of ‘doing work’ might affect whether the installation on the Backup Server requires a license.

Note: IBM DB2 is the program name used for illustrative purposes only. For specific backup and DR rules regarding DB2 please see the relevant License Information document for your version.



In the first example, data is synchronized via backup and restore software. The only difference from this configuration to the Cold Standby configuration discussed above is that the IBM backup program is running. However, as this is a warm standby configuration where the backup copy is **not** doing work, no license is required for the backup program.

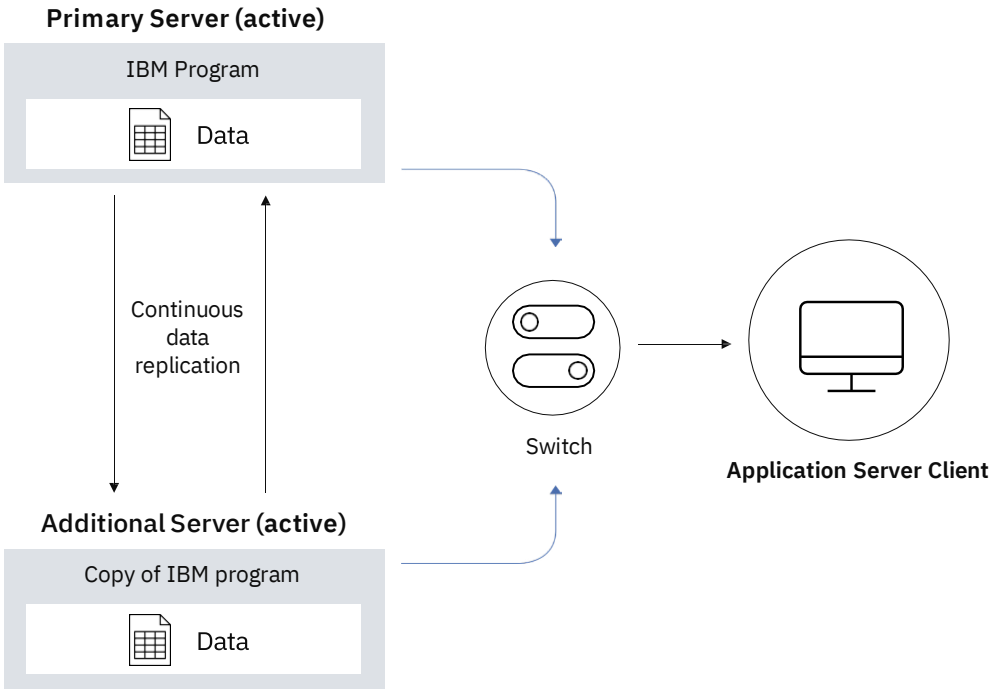
In the second example, backup and restore software is still being used to transfer the majority of the configuration of the Primary Server across to the Backup Server, however the data used by the IBM program is mirrored (or synchronized) on a real-time basis via continuous data replication. Clients often use such configurations to minimize the amount of downtime in the event of a disaster because the Backup Copy has a complete set of production data at its immediate disposal.

However, the continuous mirroring of data means that the backup copy **is** doing work and a license to the IBM program must be applied to this warm standby installation. The definition of “doing work” includes *synchronization of programs, data or other resources*.

A license would also be required if there was any form of active link between the DB2 installations on the Primary and Backup Servers unless permission to do so is specifically granted in the License Information document for that program.

Hot Standby

An IBM program is running on both a Primary Server and an Additional Server, both actively running the program and doing work – it may also be actively serving the needs of users of the program or processing data.



In this scenario, both copies of the IBM program must be licensed. Hot standby configurations always require a license unless stated otherwise in the License Information document for the IBM program.

Container Deployments

If your IBM program is deployed in a containerized environment on a Kubernetes-orchestrated container platform, all Pods in “Running” or “Ready” status are considered licensable.

In addition, **IBM License Service must be installed on all clusters, including those designated for backup or disaster recovery purposes**, to be eligible for Container Licensing. Failure to run IBM License Service requires the clusters to be licensed on a Full-Capacity basis.

FAQs

Which IBM programs does the Backup policy apply to?

The backup policy applies to all products measured by metrics based on the processing capacity of the machine (for example, MSU or Value Units on the Mainframe, or PVU, VPC, Install, Device, Virtual Server on distributed environments).

If the metric is independent from the computing power, the backup policy is probably not relevant. For example, the metric “Authorized User” or “Floating User” allows you to install as many production, test or backup servers as you require if all people who have access to the program are licensed.

What reporting requirements do I have for Backup servers?

According to the IPLA you are required to create, retain, and provide IBM and its auditors accurate written records, system tool outputs, and other system information sufficient to provide auditable verification that your use of all Programs complies with IBM’s licensing terms.

If a part of your IT environment is used for backup situations, it should be clearly documented which program instances are the “regular” ones and which are the backup instances, along with justification for whether the backup installations are considered hot, warm or cold in line with this policy.

How do I handle backup or disaster recovery servers in my Virtualization Capacity metering tool?

You will need to manually identify and exclude backup or disaster recovery installations that do not require a license. In IBM License Metric Tool this is performed in the ‘Software Classification’ screen. The metering tool does not automatically recognize which is the regular installation
and which is the backup or disaster recovery installation (nor its hot, warm or cold status).

Be sure only to exclude, and **not** suppress, the backup installations from the metering tool reports. Also, annotate the reason why any installations have been excluded (for example, “[Server A] is a warm backup (not doing work) server to [Server B]”).

Detailed instructions for ILMT are located here: https://www.ibm.com/docs/en/license-metric-tool?topic=classification-excluding-suppressing-software-instances

How do I handle backup servers in Container Licensing?

IBM License Service is the only authorized metering tool that enables you to take advantage of IBM’s Container Licensing policy. IBM License Service uses Kubernetes Annotations to identify IBM Programs, the relationship between containers and product bundles such as Cloud Paks.

You can use Kubernetes Annotations to annotate the backup or disaster recovery installations so that IBM License Service treats them appropriately when calculating license requirements.

For more information about Kubernetes Annotations please see the following page: https://kubernetes.io/docs/concepts/overview/working-with-objects/annotations/

What is the policy for software whose primary function is to perform backups?

Software whose sole purpose is to provide backups for disaster recovery such as the Spectrum Protect family of programs is treated differently. The Spectrum Protect Managing Server maintains a list of all the servers (“nodes”) that are backed up. All nodes require entitlements to the backup program, regardless of their own status in terms of backup and disaster recovery.

Further Reading

IBM Software Policies
IBM software licensing policies that apply to IPLA and ICA-based IBM programs.
https://www.ibm.com/terms/?cat=software-policies

International Customer Agreement (“ICA”)
The license agreement which covers mainframe programs licensed under Monthly License Charge (MLC)
www.ibm.com/terms?id=Z125-5379&cc=us

IBM DB2 High Availability
Information regarding the licensing of IBM DB2 in High-Availability Configurations
https://www.cursor-distribution.de/en/component/jdownloads/send/437-download-files/5124-ibm-developerworks-licensing-db2-10-5-high-availability-2013-11

International Program License Agreement (“IPLA”)
The license agreement which covers the majority of IBM software (English version).
Version 14: www.ibm.com/terms?id=Z125-3301 Version 15: www.ibm.com/terms?id=i125-3301

ILMT Software Classification
Information regarding the software classification process in ILMT: excluding installations from license counts or suppressing installations from ILMT reports (for Sub-Capacity reporting)
https://www.ibm.com/docs/en/license-metric-tool?topic=classification-excluding-suppressing- software-instances

Kubernetes Annotations
Working with Kubernetes Annotations to ensure IBM License Service can identify IBM programs and correctly calculate the number of licenses required.
https://kubernetes.io/docs/concepts/overview/ working-with-objects/annotations/

Questions and Comments

If you have questions regarding the content of this licensing guide, or any aspect of IBM’s licensing terms and conditions, please contact us at www.ibm.com/about/software-licensing/contact.