**IBM i in Power Private Cloud with Shared Utility Capacity (Power Enterprise Pools 2.0 or EP 2.0) FAQ**

Last updated:
June 11, 2025 in blue text
- clarification in transfer more IBM i entitlements than processor cores on the system

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**Question:** For servers in an EP 2.0 configuration, for the IBM i operating system, how do the software keys work? Will clients receive out-of-compliance messages when they go over their Base Capacity on a machine or go over their Base Pool Capacity?

**Answer:** On all machines in the EP 2.0, the client has the IBM i feature 5051 key quantity to match the purchased IBM i entitlement on the machine. In EP 2.0 configurations, for IBM i 7.4 and later, the IBM i out-of-compliance messages are suppressed if the following firmware and IBM i PTFs (which may be superseded) are installed:

- FW950.30 for Power9
- FW1010.10 for Power10
- IBM i 7.4 PTF # SI77344
- IBM i 7.3 PTF # SI79437
- IBM i 7.2 PTF # SI81158

Note: For IBM i 7.5, this message suppression is available in the base IBM i, no PTFs required.

Once those levels are applied, when a client's IBM i usage exceeds their processor key quantity on any machine in the pool, no IBM i out-of-compliance messages are issued.

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**Question:** Using the IBM i Entitlement Transfer offering, can a client transfer a quantity of IBM i processor entitlements that is more than ~~base~~ processor core activations to a machine which is in an Enterprise Pool 2.0 configuration?

**Answer:** Yes. A client is responsible for keeping active SWMA on all IBM i processor entitlements on a machine. Partial SWMA coverage is not allowed. The same is true of AIX.
Example scenarios of how this works for base capacity and capacity credits in the Power Enterprise Pool 2.0 scenario:
Machine 1: IBM i entitlement quantity = 12, base processor cores = 4.

Machine 2: IBM i entitlement quantity = 1, base processor cores = 1.

Machine 3: IBM i entitlement quantity = 1, base processor cores = 1.

"Metered" means the usage uses capacity credits.
Scenario 1 based on the three machines above: Suppose that, in aggregate, the client uses 14 processor entitlements of IBM i across the machines in the pool:
Base IBM i core count used = 14
Base processor core count used = 6
Metered IBM i core count = 0
Metered base processor core count = 8

Scenario 2 based on the three machines above: Suppose that, in aggregate, the client uses 16 processor entitlements of IBM i across the machines in the pool:
Base IBM i core count used = 14
Base processor core count used = 6
Metered IBM i core count = 2
Metered base processor core count = 10

**Question**: Re: Base activations: Can a system be configured with less IBM i or AIX licenses than the base cores of a such system and exploit credits for them? For example: can we configure a pool with a single S1022 with 8 cores, 5 base activations, 1 IBM i license and 1 AIX license?

**Answer:** Every base activation must be licensed for an OS: IBM i and/or AIX and/or Linux. (Acquire the OS on the system if you plan to run it on the system.) In the example of 5 base activations, 5 OS licenses must be acquired.

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**Question:** Is the CBU for i offering applicable in the Enterprise Pools 2.0 offering?

**Answer:** In an Enterprise Pools 2.0 environment, there is no need for CBU for i in terms of IBM i operating systems licenses because clients can already move the IBM i licenses within the pool as defined in the offering. However, the CBU for i designation can offer the following:

a) temporary keys (backup keys) for the License Program Products (LPPs) for i when the CBU is paired with a production machine. The qualification for temp keys for LPPs on a CBU for i within EP 2.0 is the same as any standard production-CBU for i pairing. (Refer to the form Request for designation of primary and backup machine pairing and to CBU for IBM i)

b) temporary transfer of the 5250 Enterprise Enablement entitlement, subject to the CBU Terms and Conditions. A minimum of one processor core of 5250 Enterprise Enablement is required on the CBU for i.

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**Question:** Can Power machines of different software tiers (P10, P20, P30) exist in the same EP 2.0 pool?

**Answer:** As announced on October 24, 2023, each IBM i software tier of license entitlement will be monitored and metered as a distinct Shared Utility Capacity software resource within a single Power Enterprise Pool. Prior to this support, only a single IBM i software tier of license entitlement could be deployed and monitored within each Power Enterprise Pool. With Cloud Management Console V1.20, clients can deploy a mix of 2-socket scale-out Power systems with processors requiring P10, P20 and/or P30 tiers of IBM i license entitlement within the same pool without having to acquire all Base Capacity IBM i license entitlements at the highest tier required for processors within the pool. IBM i license entitlement are monitored and metered by each software tier based upon the processor usage and tier of systems within a pool. Idle Base IBM i Capacity of one software tier may offset minutes of IBM i consumption exceeding Base IBM i entitlement of an equal or smaller software tier (e.g. idle P20 Base IBM i may offset usage exceeding P20 or P10 Base IBM i).

- Prior to this announcement, only a single IBM i software tier of license entitlement was monitored within each Power Enterprise Pool.

For reference, the Power10 processor-based servers are in the following categories for AIX and IBM i:

For AIX related licensing with Power10 servers:

- The S1022, S1024, and E1050 are in the Small category.
- The E1080 is in the Medium category.

For IBM i related licensing with Power10 servers:

- The S1022 is in the P10 software tier category.
- The S1024 12- and 24- core machines are in the P20 software tier category.

- The E1080 and the S1024 32- and 48-core machines are in the P30 software tier category.

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**Question:** How does SW licensing work for IBM i and the Licensed Program Products (LPPs) for i and IBM i optional features?

**Answer:**
Definitions:
(The following are pasted from the agreement "IBM License Supplement for IBM Power Systems - Shared Utility Capacity on Enterprise Pools 2.0" (Z126-8404))
**Base Capacity** – the permanently activated processor cores, memory capacity (gigabytes) and Program capacity of each Authorized Machine acquired and paid for in full by Client.
**Base Pool Capacity** – the aggregate Base Capacity of all Authorized Machines within an Enterprise Pool.
**Capacity Credits** – credits that are automatically decremented by the Cloud Management Console on a daily basis to pay for consumption of Metered Capacity. Capacity Credits are purchased from IBM, an IBM Business Partner or on the IBM Entitled Systems Support ("ESS") site.
**Eligible Program** – each IBM Program specified in Appendix 1, or a generally available IBM Program which replaces an IBM Program specified in Appendix 1.
**Metered Capacity** – the remaining processor cores, memory and Program capacity above Base Pool Capacity. Once the Enterprise Pool is started, all Metered Capacity is activated (in addition to Base Capacity). Metered Capacity usage is monitored by the minute and charged by the Cloud Management Console (CMC).

Summary of the categories of software:

**1. IBM i Operating system:**
First, the client acquires a quantity of permanent IBM i entitlement for Base Capacity.
Example scenarios including IBM i users:
- For processor cores, the client needs four processor entitlements of IBM i for Base Capacity.
- For IBM i user entitlement, buy the number of IBM i users needed on the four processor cores of Base Capacity. E.g., if 40 IBM i users are required for the Base four processor cores, buy 40 users. If Unlimited Users are required for the Base four processor cores, buy Unlimited on at least one system in the pool.

For Metered Capacity above Base Pool Capacity, the following are included with the IBM i Capacity Credit:
- the IBM i operating system processors and users (for machines where IBM i users are applicable).
- the IBM i operating system programs and features that are included with IBM i at no additional charge. Refer to Appendix 2.

**2. LPPs for i (other than PowerHA for i (refer to #3)) and IBM i optional features:** The licensing is the same whether the machine is in a Power Private Cloud Pool configuration or not: the standard software license terms for each LPP applies, and the client acquires one of the following on each machine in the EP 2.0 where the LPP is used:
- temporary keys for LPPs for a qualifying CBU for i machine (refer to CBU question directly above)
- permanent entitlement on the machine
- temporary entitlement on the machine (via IBM i Temporary Licensing 5733-ITL)

For a list of LPPs for IBM i and IBM i features which are included with IBM i, refer to Appendix 2.

Examples of the LPPs for i in this category and IBM i optional features which are not covered by the credits and that must be licensed per the standard software license terms:
- Db2 Mirror for i
- Backup, Recovery and Media Services for i
- Db2 Web Query for i

- etc.

**3. PowerHA SystemMirror for i:** Refer to Appendix 3.

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**Question:** For servers in the EP 2.0 pool, for IBM i workload which requires 5250 Enterprise Enablement (EE), does each server in the pool require 5250 EE?

**Answer:** 5250 EE is a hardware activation (also called a VET code). The 5250 EE activation enables interactive workload processing (also called on-line transaction processing or OLTP) for machines in the P20 (S1024/S924/S824) and P30 (E1080/E980/E880/E880C/E870/E870C) software tiers. Since 5250 EE is a hardware activation and not software, 5250 EE is not included with Metering and Capacity Credits. The client should acquire 5250 EE on each machine in the pool and acquire 5250 EE activations based on how many cores of IBM i interactive workload will run on a given machine. When an interactive workload will use four or more cores on a server, the client acquires full 5250 EE (i.e. the break-even point for full 5250 EE is four cores). Note: one exception to the 5250 EE requirement is when using CBU for i in the EP 2.0. Refer to the Question "Is the CBU for i offering applicable in the Enterprise Pools 2.0 offering?"

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**Question:** How is IBM i licensing handled in migration scenarios when either the donor, the target, or both are in an EP 2.0?

**Answer:** Here are scenarios for IBM i migrations in EP 2.0:

Scenario 1) If HW1 (donor) and HW2 (target) are in the same pool:
- HW1 (donor): parked target licenses show as Software Base Capacity ("SW Base") on donor until activation on target
- HW2 (target): parked licenses do not show as SW Base until activated (Upon activation, it's a switch to the target; no change in total SW Base)

Scenario 2) If HW1 (donor) and HW2 (target) are in different pools:
- HW1 (donor): parked licenses show as SW Base on donor until activation on target
- HW2 (target): parked licenses show as SW Base on target for 180 days (9080-HEX and 9080-M9S) or 60 days (P10 or P20 software tier, and S1024 (9105-42A) at P30 tier ) after the HW install date in IBM's records (expiration date will show in Entitled Systems Support (ESS))

Scenario 3) If HW1 (donor) is not in the pool and HW2 (target) is in the pool - same as scenario 2 for HW2 (target):
- HW1 (donor): nothing to do with pools, no impact
- HW2 (target): parked licenses show as SW Base on target for 180 days (9080-HEX and 9080-M9S) or 60 days (P10 or P20 software tier and S1024 (9105-42A) at P30 tier) after HW install date in IBM's records (expiration date will show in ESS)

Scenario 4) If HW1 (donor) is in the pool and HW2 (target) is not in the pool - same as scenario 2 for HW1 (donor):
- HW1 (donor): parked licenses show as SW Base until activation on target
- HW2 (target): nothing to do with pools, no impact

For additional information about Power Software's migration policy, refer to Side-by-side Software Migration Policy for IBM Power Software.

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**Question:** Re: IBM License Supplement for Power Systems - Shared Utility Capacity on Enterprise Pools 2.0 - Z126-8404. Should the customer sign this document? If yes, which IBM team should store the signed documents?

**Answer:** When a client creates a pool ID and starts the pool, the agreement will be presented to the client for electronic acceptance. If the client is in a country which accepts electronic license agreements/acceptance for contracts, then no need for hardcopy agreement. If the client is in a country which requires hardcopy agreements and signatures, then handle and store the hardcopy agreements like the IBM Customer Agreement (ICA) or Client Relationship Agreement (CRA) and so forth.

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**Question:** For the S922 and S1022 with IBM i, a maximum of four cores per partition are supported. Is this limitation still valid in an EP 2.0 environment?

**Answer:** Yes. The S922 and S1022 still have the four cores per partition limit for IBM i in EP 2.0.

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**Question:** Can a client combine IBM i Subscription Term and IBM i non-expiring in one Power Enterprise Pool (EP) 2.0?

**Answer:** Yes, as long as IBM i Subscription Term entitlement and IBM i non-expiring are NOT combined on one machine Serial Number, a client can have machines with both types of licensing in one pool. E.g., in one EP 2.0, one machine has 10 IBM i Subscription Term entitlements ending in two years, a second machine has 2 IBM i non-expiring entitlements, a third machine has 2 IBM i non-expiring entitlements. There are 14 IBM i entitlements of Base Capacity. If the IBM i Subscription Term is not renewed in two years, upon expiration of the two-year term, this EP 2.0 will have 4 IBM i entitlements of Base Capacity.

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**Question:** Can a Service Provider use the IBM i Service Provider Monthly Licensing Offering to license the IBM i operating system (5770-MS1) on a machine in the EP 2.0?

**Answer:** No. The IBM i Service Provider Monthly Licensing Offering is not supported in EP 2.0.

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**Question:** How is the quantity of IBM i Application Server entitlements (5770-SS1 feature 5053) treated in an EP 2.0 environment?

**Answer:** IBM i Application Server entitlements are counted as IBM i Base Capacity in EP 2.0. Refer to the ESS help article Power Enterprise Pools 2.0 - Software products which provide base resources to share within a pool.

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## Appendix 1

The IBM Programs specified below are Eligible Programs under terms of the EP 2.0 License Supplement.

| IBM Program Number | Description |
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|---|---|
| 5765-G62 | AIX V6.1 Standard Edition |
| 5765-AEZ | AIX V6.1 Enterprise Edition |
| 5765-G98 | AIX V7.1 Standard Edition |
| 5765-CD1 | AIX V7.1 Enterprise Edition |
| 5765-CD3 | AIX V7.2 Enterprise Edition |
| 5765-CBA | IBM Power Systems Enterprise Cloud Edition with AIX V7 |
| 5765-ECB | IBM Power Systems Enterprise Cloud Edition |
| 5770-SS1 | IBM i V7.2 and later |
| 5765-PSE | PowerSC Standard |
| 5765-PVE | PowerVM Enterprise |
| 5765-VE3 | PowerVM Enterprise Edition V3 |
| 5770-HAS | PowerHA SystemMirror for i<br>Refer to Appendix 3 |
| 5765-H23 | PowerHA SystemMirror for AIX V6 Standard<br>Refer to Appendix 3 |
| 5765-H24 | PowerHA SystemMirror for AIX V6 Enterprise<br>Refer to Appendix 3 |
| 5765-H39 | PowerHA SystemMirror for AIX V7 Standard<br>Refer to Appendix 3 |
| 5765-SLE | PowerVP Standard Edition |
| 5765-VCS | PowerVC Standard Edition V1.4 |
| 5765-VCD | Cloud PowerVC Manager V1.4 |

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## Appendix 2

The programs and IBM i features that are included with the IBM i operating system license, both IBM i non-expiring licenses and IBM i Subscription licenses, at no additional charge.

NOTE: Refer to IBM i Portfolio Simplification for information regarding the required PTFs to remove license checking, and thereby remove the need for software license keys, for the IBM i features and LPPs which formerly required keys.

The following IBM i (5770-SS1) feature is ordered separately and NOT included with the IBM i non-expiring or Subscription Term license orders:

- Db2 Data Mirroring, Option 48 (provided with Db2 Mirror, 5770-DBM)

All other 5770-SS1 features are included with the IBM i operating system.

The following LPPs are included with IBM i operating system license:

- Rational Application Management Toolset (5770-AMT)
- Administration Runtime Expert (also called Application Runtime Expert) (5733-ARE)
- AFP Font Collection (5733-B45)

- Advanced DBCS Printer Support (5761-AP1)
- Communications Utilities (5761-CM1)
- CICS® Transaction Server (5770-DFH)
- HTTP Server (5770-DG1)
- Facsimile Support for i (5798-FAX)
- AFP DBCS Fonts (5769-FN1)
- AFP Fonts (5769-FNT)
- InfoPrint Server (5722-IP1)
- Advanced Job Scheduler (5770-JS1)
- Developer Kit for Java (5770-JV1)
- Managed System Services (5770-MG1)
- Network Authentication Enablement (5770-NAE)
- Performance Tools (5770-PT1)
- Query for i (5770-QU1)
- System Manager (5770-SM1)
- Db2 Query Manager & SQL Dev Kit (5770-ST1)
- TCP/IP Connectivity Utilities (5770-TC1)
- Transform Services (5770-TS1)
- Universal Manageability Enablement (5770-UME)
- XML Toolkit (5733-XT2)
- IBM i Access Family (5770-XW1)

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## Appendix 3

**PowerHA SystemMirror for AIX and IBM i in EP 2.0**

October 24, 2023 Announcement: Power Private Cloud Solution with Shared Utility Capacity and the latest release of IBM Cloud Management Console offer increased flexibility and improved price-performance with more granular monitoring and enhanced metering of Shared Utility Capacity software, including PowerHA SystemMirror

License entitlements for PowerHA SystemMirror for AIX V7 Standard Edition, PowerHA SystemMirror for AIX V7 Enterprise Edition and PowerHA SystemMirror for IBM i V7.5 and V7.4 Enterprise Edition may now be enabled as new Shared Utility Capacity software elements in a Power Enterprise Pool, each individually monitored as Base and Metered Capacity elements, discrete from their associated operating system resources.

To initiate and enable the monitoring of shared Base and Metered Capacity features of PowerHA SystemMirror, clients must use the CMC Enterprise Pools 2.0 app to tag each Virtual Machine (VM) running PowerHA with the appropriate pre-defined CMC tag based upon the PowerHA Edition being run in the VM. All core usage of only these tagged VMs will be accrued for Base and Metered Capacity calculations of PowerHA software resource usage, enabling clients to optimize their overall cost for deploying PowerHA across a Power Enterprise Pools and avoid over-provisioning of PowerHA license entitlements.

The pre-defined CMC tags to be added to all VMs running PowerHA SystemMirror for AIX to be eligible as Base and Metered Capacity resource within a pool are :

- PowerHA Standard Edition
- PowerHA Enterprise Edition

The pre-defined CMC tag to be added to all VMs running PowerHA SystemMirror for IBM i to be eligible as Base and Metered Capacity resource is :

- PowerHA IBM i

New Metered Capacity rates are being introduced for debiting PowerHA from pre-paid Power Capacity Credits:

- PowerHA SystemMirror for IBM i – Small and Medium Tier
- PowerHA SystemMirror for AIX Standard Edition – Small and Medium Tier
- PowerHA SystemMirror for AIX Enterprise Edition – Small and Medium Tier

Two new software Product IDs are being created to enable monthly billing (where supported) of any applicable charges for minutes of Metered Capacity consumption for PowerHA SystemMirror for AIX and PowerHA SystemMirror for IBM i:

- 5765-HAM will be used to charge minutes, hours, days and 1,000 days of PowerHA SystemMirror for AIX license entitlement consumed as Metered Capacity above a pool's Base Capacity of this resource.
- 5770-HIM will be used to charge minutes, hours, days and 1,000 days of of PowerHA SystemMirror for IBM i license entitlement consumed as Metered Capacity above a pool's Base Capacity entitlement of this resource.