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

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and later, the IBM i out-of-compliance messages are suppressed if the following firmware and IBM i PTFs (which may be superseded) are installed: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.

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 a 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 S922 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. In the example of 5 base activations, 5 OS licenses must be acquired.

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 ftp://public.dhe.ibm.com/systems/support/i/db2fori/systems_power_hardware_cbu_ps_cbu.pdf)
   b) temporary transfer of the 5250 Enterprise Enablement entitlement, subject to the <u>CBU terms and conditions</u>. A minimum of one processor core of 5250 Enterprise Enablement is required on the CBU for i.

Question: Can the S922/S1022 and S924/S1024 be in the same EP 2.0 pool?

Answer: For any EP 2.0 pool new contract executed starting July 2022, the following terms apply:

To qualify for use as an Enterprise Pool 2.0, each Authorized Machine in the pool must have the same tier of software license entitlement. All systems with a specific operating system installed must have license entitlements at the softer tier required for the largest system executing that operating system in the pool. For Power10:

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.

For IBM i, it is not possible to acquire higher tier IBM i entitlement on a lower tier machine. E.g., it is not possible to acquire P20 IBM i entitlement on a P10 tier S1022. Therefore, when licensing IBM i on servers in the EP 2.0, all machines in the EP 2.0 must be at the same software tier.

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 Appdenix 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 PEP 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.

Question: For servers in the PEP 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 PEP 2.0. Refer to the Question "Is the CBU for i offering applicable in the Enterprise Pools 2.0 offering?"

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.

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.

Appendix 1

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

IBM Program Number	Description
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 Refer to Appendix 3
5765-H23	PowerHA SystemMirror for AIX V6 Standard Refer to Appendix 3
5765-H24	PowerHA SystemMirror for AIX V6 Enterprise Refer to Appendix 3
5765-H39	PowerHA SystemMirror for AIX V7 Standard Refer to Appendix 3
5765-SLE	PowerVP Standard Edition
5765-VCS	PowerVC Standard Edition V1.4
5765-VCD	Cloud PowerVC Manager V1.4

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) features are included with IBM i Subscription Term:

- All are included except for Db2 Data Mirroring, Option 48 (provided with Db2 Mirror, 5770-DBM)

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)

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.