IBM Power Systems Private Cloud Solution with Dynamic Capacity offers cloud-like agility and economics with leadership business continuity and security

Table of contents

1 Overview
2 Key requirements
2 Planned availability date
2 Description
6 Product number
8 Publications
9 Technical information
11 Terms and conditions
11 Prices

Overview

The IBM® Power® Systems Private Cloud Solution is an infrastructure offering that enables you to take advantage of cloud agility and economics while getting the same business continuity and flexibility that you already enjoy from Power Systems servers. The Power Systems Private Cloud Solution offers:

• Cost optimization with pay-for-use pricing
• Automated and consistent IT management with Red Hat® Ansible® for IBM Power Systems
• Increased flexibility with hybrid cloud utilizing IBM Cloud® Paks
• IBM Proactive Support for Power Systems services
• IBM Systems Lab Services Assessment and implementation assistance

The Power Systems Private Cloud Solution can support Elastic Capacity or Shared Utility capacity across a collection of IBM Power System E980 or IBM Power System E950 servers.

The Power Systems Private Cloud with Shared Utility Capacity expands IBM Power Enterprise Pools 2.0 beyond Power E980 systems to Power E950 systems and provides a complete range of flexibility to tailor initial system configurations with the right mix of purchased and pay-for-use consumption of processor, memory, and software.

Shared Utility Capacity, monitored and metered through an IBM Cloud Management Console (CMC), enables enhanced multisystem resource sharing and offers fully active, by-the-minute consumption of on-premises Power E980 or Power E950 compute resources within a Power Enterprise Pool.

Elastic Capacity, deployed through the IBM Entitled Systems Support (ESS) website, offers processor and memory capacity by the day.

Additionally, the Power Systems Private Cloud Solution offers support services through Proactive Support for Power Systems, which is designed to provide an integrated approach to proactive, coordinated support for multiproduct and multivendor IT environments. It maximizes IT infrastructure availability at an effective cost.
The Power Systems Private Cloud Solution also offers a Private Cloud Capacity Assessment and implementation service from IBM Systems Lab Services, which can be preselected at time of purchase or requested for qualifying Power servers.

**Feature exchange**

Not applicable

**Key requirements**

- One to thirty-two Power E980 systems with an IBM AIX(R), Linux(R), or IBM i operating system
- One to thirty-two Power E950 systems with an AIX or Linux operating system
- Power Systems firmware 940.1, or later
- Cloud Management Console 1.10
- HMC 940 service pack 1, or later
- Hardware and Software Maintenance required on all systems

**Planned availability date**

To allow reduced minimum configuration of 1 core/256 GB, Elastic Capacity and feature EP2X (Private Cloud Capacity Assessment) selection are available May 26, 2020.

The Power E980 and E950 Private Cloud Solution with Utility Capacity and CMC 1.10 are available on June 30, 2020. CMC 1.10 supports systems with as few as 1 Base Processor Activation and 256 GB Base memory activations.

**Description**

### Power Systems Private Cloud Solution

The Power Systems Private Cloud Solution offering provides greater flexibility and scalability within your data centers. The three core components are:

- Cost optimization with dynamic, pay-for-use pricing
- Automated, consistent enterprise IT management
- Increased flexibility with hybrid cloud

### Cost optimization with dynamic, pay-for-use pricing

IBM has been a leader in providing flexible capacity for decades, and with this latest offering, you can benefit from a dynamic, metered-by-the-minute consumption model across a pool of Power E980 or Power E950 systems. This capability can reduce the initial system acquisition price up to 50%, and through multisystem resource sharing, it can significantly reduce requirements to purchase processor and memory activations to handle peak resources on each individual system. The Cloud Management Console (CMC) offers real-time and historical usage monitoring and analysis that helps your IT teams to make more informed decisions, better respond to changing workload dynamics and plan for the future.

### Automated, consistent enterprise IT management

IBM is committed to build its cloud management system on OpenStack. This has enabled IBM to upwardly integrate to VMWare's vRealize product as well as IBM's Cloud Pak for Multicloud Management so that clients have simplified VM provisioning and orchestration across their infrastructures. Today, the need to automate
management with consistent processes and easily available skill sets across your IT landscape is more vital than ever to save time and increase reliability. To that end, IBM is fully enabling the industry-leading enterprise automation technology Ansible for the Power platform, including automation across AIX, IBM i, Linux, and private and public IBM cloud infrastructures. To learn more about Ansible for Power Systems, go to the Ansible website.

**Increased flexibility with hybrid cloud**

To run AIX, IBM i, or Linux in the hybrid cloud environment of your choice, you need the tools to modernize your IT environment. To help meet this need, IBM recently made Red Hat OpenShift 4.3 available on the Power platform.

OpenShift 4.3 combines the industry’s most comprehensive and trusted enterprise container and Kubernetes platform with single-step installation, automated upgrades, and lifecycle management for every part of your container stack. With IBM Cloud Paks and OpenShift 4.3, you will be able to leverage your existing investments on AIX or IBM i applications and drive agility by surrounding them with cloud native applications. To learn more about IBM Cloud Paks and OpenShift 4.3, go to the IBM Cloud Paks website.

**Power Enterprise Pools 2.0 for Power E980 and Power E950 servers**

Power Systems Private Cloud extends Shared Utility Capacity beyond the initial Power Enterprise Pools 2.0 offering on the Power E980 to Power E950 systems.

Power Enterprise Pools 2.0 enables a group of Power E980 or Power E950 systems to be defined as a pool of collective Base Capacity resources. Once a pool is started, a CMC activates all available processor and memory resources installed on the systems within the pool and then monitors the collective processor, memory, AIX and IBM i license entitlement resource utilization of the pool by the minute. Any individual resource consumption above the pool's Base (purchased) resources is charged as Metered Capacity by the minute.

Power Enterprise Pools 2.0 enablement feature EP20 and new Base Processor and Memory Activation features must be configured on any Power E950 system participating in the Power Enterprise Pool.

Using the CMC, Power Enterprise Pools 2.0 enables you to monitor your Base and Metered Capacity across the pool, providing summaries and sophisticated views of real-time and historical resource consumption by virtual machine (VM).

Clients pay for Metered Capacity consumption by purchasing Capacity Credits, which are then debited in real time as processor, memory, or license entitlement resources above the pool's Base are consumed by the minute.

The Power Enterprise Pools 2.0 process for enabling Utility Capacity is as follows:

- Clients purchase one or more Power E980 or Power E950 system with Base Processor and Memory Activations, as well as corresponding software license entitlements.
- Clients purchase an initial quantity of Capacity Credits from IBM or IBM Business Partner Sales Specialits or directly on the ESS website, where available, to pay for potential Metered Capacity consumption (minutes of consumption above a pool's collective Base Capacity for a given resource).
- A system administrator creates a Pool ID through the ESS website using the serial number of a Power E980 or Power E950 system with associated Capacity Credits.
- An administrator accesses the CMC, defines a Power Enterprise Pool using the Pool ID, and assigns either their Power E980 or Power E950 systems to it.
- All resources are subsequently activated on all Power E980 or Power E950 systems in the pool, and the CMC begins monitoring the pool.
- Metered resource minutes consumed above the pool's aggregate Base for that resource are debited against the pool's Capacity Credits by the CMC and updated in ESS daily.
The Power Enterprise Pools 2.0 application delivers features to:

- Create a pool
- Add Power E980 or Power E950 systems to a pool
- Set a monthly budget for Metered Capacity consumption
- Analyze total Metered minutes, Capacity Credits, core, memory, or operating system resource usage
- Monitor Base and Metered Capacity used within a pool over time
- Analyze trends within a pool and adjust time scale to review by minutes, hours, days, weeks, or months
- Drill down within a selected time period to see more detailed usage by VM
- Show Capacity Credits consumed and break down usage by resource within a pool
- Display Capacity Credit balance, budget status, Metered resource rate table, and Capacity Credit purchase history
- Tailor alerts and thresholds for a pool based on budget and resource consumption

Both core and memory usage are tracked and charged by the minute. Both are based on the average usage for one minute and not the peak usage during the minute.

- Core usage is tracked based on actual consumption by partitions.
- Memory usage is tracked based on the assignment of memory to partitions and is not tracked based on the operating system usage of the memory. Only memory assigned to active partitions is tracked and charged.

Core usage is tracked and charged by operating system. Power Enterprise Pools 2.0 has two different types of Base Processor Activation resources, and software license entitlement is monitored and metered independently of processor activations; therefore, there are four different types of core-related Metered Capacity charges:

- A core that may run any operating system supported on the Power platform
- A core that may run only Linux/VIOS
- AIX software (licensed per core)
- IBM i software (licensed per core)

There are no software charges for Linux or VIOS partitions. Linux license entitlement must be procured separately as required to support the appropriate cores or sockets activated and available for use by Power Enterprise Pools 2.0.

Metered Capacity resources on Power E980 systems consumed will be debited against one Capacity Credit at the following rates:

<table>
<thead>
<tr>
<th>Power E980 Metered resource</th>
<th>Usage ratio (Minutes: 1 Capacity Credit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Core Activation - any OS</td>
<td>20,000</td>
</tr>
<tr>
<td>1 Core Activation - Linux/VIOS only</td>
<td>40,000</td>
</tr>
<tr>
<td>AIX software</td>
<td>30,000</td>
</tr>
<tr>
<td>IBM i software</td>
<td>1,500</td>
</tr>
<tr>
<td>1 GB Memory Activation</td>
<td>1,500,000</td>
</tr>
</tbody>
</table>

Metered Capacity resources on Power E950 systems consumed will be debited against one Capacity Credit at the following rates:

<table>
<thead>
<tr>
<th>Power E950 Metered resource</th>
<th>Usage ratio (Minutes: 1 Capacity Credit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Core Activation - any OS</td>
<td>60,000</td>
</tr>
<tr>
<td>1 Core Activation - Linux/VIOS only</td>
<td>90,000</td>
</tr>
<tr>
<td>AIX software</td>
<td>50,000</td>
</tr>
<tr>
<td>1 GB Memory Activation</td>
<td>5,000,000</td>
</tr>
</tbody>
</table>
No other Power Systems or earlier-generation server may coexist in this new pool. Each pool may have either Power E980 or Power E950 systems in it, but not both in the same pool. Because all available resources in Power Enterprise Pools 2.0 are fully active and available for use by the minute, there is no requirement or support for using Elastic Capacity to activate resources by the day or need to reallocate any Mobile activation resources offered with the initial Power Enterprise Pools offering, so these options are not supported on a system configured for Power Enterprise Pools 2.0.

Requirements for Power Enterprise Pools 2.0:

- One to thirty-two Power E980 or Power E950 systems, each having at least 1 core activated through Base Processor Activation features and at least 256 GB memory activation features activated through Base Memory Activation features.
- Power E980 and Power E950 systems may not be mixed in the same Pool configuration.
- All VMs on Power E980 or Power E950 systems within a Power Enterprise Pool 2.0 must be configured as shared processor partitions. Dedicated processor partitions are not allowed.
- A maximum of 1,000 VMs and up to 32 systems in a pool managed by a single CMC, with up to 500 virtual machines supported per HMC managing a Power Enterprise Pool 2.0.
- Power Systems Firmware 940.1, or later.
- HMC 940 service pack 1, or later.
- All Power E980 or Power E950 servers in a Power Enterprise Pool 2.0 must be under warranty or current IBM Hardware Maintenance contract with the same service level.
- All cores activated by Base Processor Activations must be licensed for a supported operating system and registered for associated Software Subscription and Support.
- A connection to an IBM CMC (subscription included as part of Enterprise Cloud Edition above).
- Capacity Credits purchased through IBM, an IBM Business Partner, or the EES website, where available.
- An Attachment for Power Enterprise Pools 2.0 with Cloud Management (Z126-8404) either signed with purchase of Capacity Credits or accepted online as part of a Capacity Credit purchase transaction through ESS.

* For additional information, see the Key Requirements section.

IBM Power Private Cloud Solution with Flexible Utility Capacity enablement

IBM Power Private Cloud Solution with Flexible Utility Capacity is a multisystem IBM Power Systems server infrastructure offering designed to provide a highly resilient and flexible IT environment in support of large-scale servers and your most demanding business applications. This service can help configure and exploit the capabilities of Shared Utility Capacity and the features of the CMC.

IBM Systems Lab Services Private Cloud Assessment and implementation services

A Private Cloud Capacity Assessment and implementation service from IBM Systems Lab Services is offered as part of the Power to Cloud Rewards Program when the engagement is preselected though feature EP2X or requested for a system with Power Enterprise Pools enablement feature EP20 on a qualifying Power server.

In addition, systems ordered with feature EP2X are eligible, as part of the Private Cloud Capacity Assessment, to be configured with as few as 1 core and 256 GB of Static Activation and receive up to 60 days of Trial Capacity. This provides the
maximum range of compute resources to clients who wish to evaluate and project the benefits of leveraging Elastic or Utility Capacity on Power servers as part of their infrastructure.

**IBM Proactive Support**

IBM Proactive Support is designed to streamline and strengthen your organization's technical support strategy by providing high-quality, personalized remote technical support for both hardware and software. This integrated service offers trained specialists who monitor and maintain technology from IBM and strategic suppliers, helping you avoid the need to manage multiple suppliers and facilitating simpler, more cost-effective support. It includes usage of Electronic tools that collect system information so that support specialists can provide proactive advice to help you avoid problems.

IBM Proactive Support specialists also familiarize themselves with your unique IT environment to help speed the identification and resolution of issues. Providing a single point of contact, control, and escalation helps free your staff's time for more strategic initiatives. In addition, these support specialists will:

- Rapidly respond to critical threats and situations, using proprietary analysis tools
- Act as a remote extension of your IT staff
- Help improve your system availability, productivity, and recoverability

For more information, see Proactive Support Services Announcement 218-588, dated December 4, 2018.

**Product number**

The following are newly announced features on the specific models of the IBM Power Systems 9040 machine type:

**Planned Availability Date June 5, 2020**

**New Feature**

<table>
<thead>
<tr>
<th>Description</th>
<th>Machine type</th>
<th>Model number</th>
<th>Feature number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Enterprise Pools 2.0 Enablement</td>
<td>9040</td>
<td>MR9</td>
<td>EP20</td>
</tr>
</tbody>
</table>

The following are newly announced features on the specific models of the IBM Power Systems 9040 machine type:

**Planned Availability Date June 30, 2020**

**New Feature**

<table>
<thead>
<tr>
<th>Description</th>
<th>Machine type</th>
<th>Model number</th>
<th>Feature number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 core Base Processor Activation (Pools 2.0) for EPWR</td>
<td>9040</td>
<td>MR9</td>
<td>EPQ0</td>
</tr>
<tr>
<td>1 core Base Processor Activation (Pools 2.0) for EPW</td>
<td>9040</td>
<td>MR9</td>
<td>EPQ1</td>
</tr>
<tr>
<td>1 core Base Processor Activation (Pools 2.0) for EPWT</td>
<td>9040</td>
<td>MR9</td>
<td>EPQ2</td>
</tr>
<tr>
<td>1 core Base Linux Processor Activation (Pools 2.0) for EPW</td>
<td>9040</td>
<td>MR9</td>
<td>EPQ3</td>
</tr>
<tr>
<td>1 core Base Linux Processor Activation (Pools 2.0) for EPWS</td>
<td>9040</td>
<td>MR9</td>
<td>EPQ4</td>
</tr>
<tr>
<td>1 core Base Linux Processor Activation (Pools 2.0) for EPW</td>
<td>9040</td>
<td>MR9</td>
<td>EPQ5</td>
</tr>
</tbody>
</table>
Feature conversions

The existing components being replaced during a model or feature conversion become the property of IBM and must be returned.

Feature conversions are always implemented on a "quantity of one for quantity of one" basis. Multiple existing features may not be converted to a single new feature. Single existing features may not be converted to multiple new features.

The following conversions are available to customers:

**Feature conversions for 9040-MR9 global resource activation features:**

<table>
<thead>
<tr>
<th>From FC:</th>
<th>To FC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP2X - Lab Services Private Cloud Capacity Assessment</td>
<td>EP20 - Power Enterprise Pools 2.0 Enablement</td>
</tr>
</tbody>
</table>

**Feature conversions for 9040-MR9 memory features:**

<table>
<thead>
<tr>
<th>From FC:</th>
<th>To FC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMAP - 1GB Memory Activation</td>
<td>EPQK - 1GB Base Memory activation (Pools 2.0) from Static</td>
</tr>
<tr>
<td>EMAQ - Quantity of 100 1GB Memory Activations</td>
<td>EPQL - 100GB Base Memory activation (Pools 2.0) from Static</td>
</tr>
<tr>
<td>EMBE - 512 GB Linux Memory Activations for MR9</td>
<td>EPQM - 512GB Base Memory activation (Pools 2.0) convert from Linux only</td>
</tr>
</tbody>
</table>

**Feature conversions for 9040-MR9 processor features:**

<table>
<thead>
<tr>
<th>From FC:</th>
<th>To FC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0) for EPWT</td>
<td>9040 MR9 EPQ6</td>
</tr>
<tr>
<td>1 core Base Linux Processor Activation (Pools 2.0) for EPWY</td>
<td>9040 MR9 EPQ7</td>
</tr>
<tr>
<td>1 GB Base Memory Activation (Pools 2.0) for EPWY</td>
<td>9040 MR9 EPQ8</td>
</tr>
<tr>
<td>100 GB Base Memory Activation (Pools 2.0)</td>
<td>9040 MR9 EPQ9</td>
</tr>
<tr>
<td>256 GB Base Memory Activation (Pools 2.0)</td>
<td>9040 MR9 EPQA</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWR (from Static)</td>
<td>9040 MR9 EPQB</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWS (from Static)</td>
<td>9040 MR9 EPQC</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWT (from Static)</td>
<td>9040 MR9 EPQD</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWY (from Static)</td>
<td>9040 MR9 EPQE</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWR Linux (from Static)</td>
<td>9040 MR9 EPQF</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWS Linux (from Static)</td>
<td>9040 MR9 EPQG</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWT Linux (from Static)</td>
<td>9040 MR9 EPQH</td>
</tr>
<tr>
<td>1 core Base Proc Act (Pools 2.0) for #EPWY Linux (from Static)</td>
<td>9040 MR9 EPQJ</td>
</tr>
<tr>
<td>1GB Base Memory activation (Pools 2.0) from Static</td>
<td>9040 MR9 EPQK</td>
</tr>
<tr>
<td>100GB Base Memory activation (Pools 2.0) from Static</td>
<td>9040 MR9 EPQL</td>
</tr>
<tr>
<td>512GB Base Memory activation (Pools 2.0) convert from Linux only</td>
<td>9040 MR9 EPQM</td>
</tr>
<tr>
<td>256GB Base Memory Activation for POOLS 2.0 - Linux only</td>
<td>9040 MR9 EPQN</td>
</tr>
</tbody>
</table>
EPWV - 1-core Processor  
Activation for #EPWR  
(Static)  

EPWW - 1-core Processor  
Activation for #EPWS  
(Pools 2.0) for #EPWS (from Static)  

EPWX - 1W Processor  
activation for #EPWT  
(Pools 2.0) for #EPWT (from Static)  

EPN3 - 1-core Processor  
Activation for #EPWY  
(Pools 2.0) for #EPWY (from Static)  

ELBG - 1-core Linux  
Processor Activation for #EPWR/EPWK  
(Pools 2.0) for #EPWR Linux (from Static)  

ELBP - 1-core Linux  
Processor Activation for #EPWS/EPWL  
(Pools 2.0) for #EPWS Linux (from Static)  

ELBH - 1-core Linux  
Processor Activation for #EPWT/EPWM  
(Pools 2.0) for #EPWT Linux (from Static)  

ELBR - 1-core Linux  
Processor Activation for #EPWY/EPWZ  
(Pools 2.0) for #EPWY Linux (from Static)  

| Feature conversions for 9080-M9S global resource activation features: |
| From FC: | To FC: | Return parts |
| EP2X - Lab Services Private Cloud Capacity Assessment | EP20 - Power Enterprise Pools 2.0 Enablement | No |

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBMid).

BP Attachment for Announcement Letter 120-041

Publications

To access the IBM Publications Center Portal, go to the IBM Publications Center website.

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. A large number of publications are available online in various file formats, which can currently be downloaded.

National language support

Not applicable

Services

IBM Systems Lab Services

IBM Systems Lab Services offers a wide array of services available for your enterprise. It brings expertise on the latest technologies from the IBM development community and can help with your most difficult technical challenges.
IBM Systems Lab Services exists to help you successfully implement emerging technologies so as to accelerate your return on investment and improve your satisfaction with your IBM systems and solutions. Services examples include initial implementation, integration, migration, and skills transfer on IBM systems solution capabilities and recommended practices. IBM Systems Lab Services is one of the service organizations of IBM’s world-renowned IBM Systems Group development labs.

For details on available services, contact your IBM representative or go to the IBM Systems Lab Services website.

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an on-demand business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or go to the IBM Global Technology Services website.

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or go to the Resiliency Services website.

Details on education offerings related to specific products can be found on the IBM Skills Gateway website.

Technical information

Specified operating environment

Hardware requirements

This new Enterprise Pools 2.0 offering is available to use for the following IBM Power Systems servers:

- IBM Power High End system 9080-M9S
- IBM Power Mid Range system 9040-MR9
- IBM Power Systems 9080-M9S and 9040-MR9 cannot be mixed in the same Pool configuration

A Hardware Management Console and Cloud Management Console are required for creation and management of Enterprise Pools 2.0. See the Key requirements section for required levels.

Software requirements

If installing the AIX operating system LPAR with any I/O configuration (one of these):

- AIX Version 7.2 with the 7200-02 Technology Level and Service Pack 7200-02-02-1832, or later
- AIX Version 7.1 with the 7100-05 Technology Level and Service Pack 7100-05-02-1832, or later
- AIX Version 7.2 with the 7200-04 Technology Level, or later
- AIX Version 7.2 with the 7200-03 Technology Level, or later
- AIX Version 6.1 with the 6100-09 Technology Level and Service Pack 6100-09-12-1838, or later (AIX 6.1 service extension required)
• AIX Version 7.2 with the 7200-01 Technology Level and Service Pack 7200-01-05-1845, or later
• AIX Version 7.1 with the 7100-04 Technology Level and Service Pack 7100-04-07-1845, or later

If installing the AIX operating system Virtual I/O only LPAR (one of these):

• AIX Version 7.2 with the 7200-04 Technology Level, or later
• AIX Version 7.2 with the 7200-03 Technology Level, or later
• AIX Version 7.2 with the 7200-02 Technology Level and Service Pack 7200-02-01-1732, or later
• AIX Version 7.2 with the 7200-01 Technology Level and Service Pack 7200-01-01-1642, or later
• AIX Version 7.1 with the 7100-05 Technology Level and Service Pack 7100-05-01-1731, or later
• AIX Version 7.1 with the 7100-04 Technology Level and Service Pack 7100-04-02-1614, or later
• AIX Version 6.1 with the 6100-09 Technology Level and Service Pack 6100-09-07-1614, or later (AIX 6.1 service extension required) See the IBM Prerequisite website for compatibility information for hardware features and the corresponding AIX and IBM i Technology Levels.

See the IBM Prerequisites website for compatibility information for hardware features and the corresponding AIX and IBM i Technology Levels.

If installing the Linux operating system (one of these):

• Red Hat Enterprise Linux 7.5 for Power LE (p8compat), or later
• Red Hat Enterprise Linux for SAP with Red Hat Enterprise Linux 7 for Power LE version 7.5, or later
• Red Hat Enterprise Linux 8.0 for Power LE, or later
• Red Hat Enterprise Linux for SAP with Red Hat Enterprise Linux 8 for Power LE, or later
• SUSE Linux Enterprise Server for SAP with SUSE Linux Enterprise Server 11 Service Pack 4, or later
• SUSE Linux Enterprise Server 12 Service Pack 3, or later
• SUSE Linux Enterprise Server for SAP with SUSE Linux Enterprise Server 12 Service Pack 3, or later
• SUSE Linux Enterprise Server 15, or later

Note: The above list applies to the installation of the Linux operating system LPAR in nonproduction SAP HANA implementations. Reference the IBM Power System E950 (9040-MR9) for SAP HANA Production Use Statement of Direction for production support.

If installing VIOS:

• VIOS 2.2.5.50, or later
• VIOS 2.2.6.31, or later
• VIOS 3.1.0.10, or later
• VIOS 3.1.1.10, or later

Java™ is supported on POWER9™ servers. For best use of the performance capabilities and the most recent improvements of POWER9 technology, IBM recommends upgrading Java-based applications to Java 7, Java 8, or later, whenever possible. For those clients who want to run Java in AIX environments, see the AIX Download and service information website.

For Linux (including PowerLinux), see the Linux Download information website.
**Recommendation:** Clients are strongly encouraged to move to a more current supported version: Java 7, Java 7.1, Java 8, or later.

**Planning information**

**Cable orders**
No additional cables are required.

**Security, auditability, and control**

This product uses the security and auditability features of host hardware, host software, and application software.

The client is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

**IBM Systems Lab Services**

For details on available services, contact your IBM representative or go to the IBM Systems Lab Services website.

**Terms and conditions**

**MES discount applicable**
No

**Field-installable feature**
No

**Client setup**
Yes

**Machine code**
Same license terms and conditions as base machine

**Terms and Conditions**

Each Machine in the Enterprise Pool 2.0 must be covered by the same level of IBM (Hardware and Software) Warranty and or Maintenance support. All Base Processor Activations must be licensed for AIX, IBM i, or Linux and included associated Software Subscription and Support.

**Prices**

For additional information and current prices, contact your local IBM representative or IBM Business Partner.

The following are newly announced features on the specific models of the IBM Power Systems 9040 machine type:

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>Feature Purchase</th>
<th>Monthly MES/</th>
<th>Maint. Both/</th>
<th>RP</th>
<th>CSU MES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine type 9040</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Ent Pools 2.0 Enable</td>
<td>EP20</td>
<td>Both</td>
<td>Both</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1-core Base Act Pools 2 EPWS MR9 EPQ0 Both Yes No
1-core Base Act Pools 2 EPWT MR9 EPQ1 Both Yes No
1-core Base Act Pools 2 EPWY MR9 EPQ2 Both Yes No
1-core Base Act Lin EPWR 2.0 MR9 EPQ3 Both Yes No
1-core Base Act Lin EPWS 2.0 MR9 EPQ4 Both Yes No
1-core Base Act Lin EPWT 2.0 MR9 EPQ5 Both Yes No
1-core Base Act Lin EPWY 2.0 MR9 EPQ6 Both Yes No
1 GB Mem Act (Pools 2.0) MR9 EPQ7 Both Yes No
100 GB Mem Act (Pools 2.0) MR9 EPQ8 MES Yes No
256 GB Mem Act (Pools 2.0) MR9 EPQ9 MES Yes No
1 BaseAct EPWR from Stat 2.0 MR9 EPQA Both Yes No
1 BaseAct EPWS from Stat 2.0 MR9 EPQB MES Yes No
1 BaseAct EPWT from Stat 2.0 MR9 EPQC MES Yes No
1 BaseAct EPWY from Stat 2.0 MR9 EPQD MES Yes No
1 BaseAct EPWR from Stac Lin MR9 EPQE MES Yes No
1 BaseAct EPWS from Stac Lin MR9 EPQF MES Yes No
1 BaseAct EPWT from Stac Lin MR9 EPQG MES Yes No
1 BaseAct EPWY from Stac Lin MR9 EPQH MES Yes No
1GB Base Mem Act (2.0) Stac MR9 EPQJ MES Yes No
100GB Base Mem Act (2.0) Sta MR9 EPQK MES Yes No
512GB Base Mem Act (2.0) Lin MR9 EPQL MES Yes No
256GB Base Mem Act (2.0) Lin MR9 EPQN Both Yes No

**Feature Conversions**

**Feature conversions for 9040-MR9 global resource activation features:**

<table>
<thead>
<tr>
<th>From FC:</th>
<th>To FC:</th>
<th>returned price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP2X - Lab Services</td>
<td>EP20 - Power Enterprise</td>
<td>No</td>
</tr>
<tr>
<td>Private Cloud Capacity</td>
<td>Pools 2.0 Enablement</td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Feature conversions for 9040-MR9 memory features:**

<table>
<thead>
<tr>
<th>From FC:</th>
<th>To FC:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>EMAP - 1GB Memory Activation</td>
<td>EPQK - 1GB Base Memory activation (Pools 2.0) from Static</td>
<td>No</td>
</tr>
<tr>
<td>EMAQ - Quantity of 100 1GB Memory Activations</td>
<td>EPQJ - 100GB Base Memory activation (Pools 2.0) from Static</td>
<td></td>
</tr>
<tr>
<td>EMBE - 512 GB Linux Memory Activations for MR9</td>
<td>EPQH - 512GB Base Memory activation (Pools 2.0) convert from Linux only</td>
<td>No</td>
</tr>
</tbody>
</table>

**Feature conversions for 9040-MR9 processor features:**


<table>
<thead>
<tr>
<th>Parts</th>
<th>Purchase</th>
<th>returned price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPWV - 1-core Processor</td>
<td>Activation for #EPWR</td>
<td>Act (Pools 2.0) for #EPWR (from Static)</td>
</tr>
<tr>
<td>EPWX - 1W Processor</td>
<td>activation for #EPWT</td>
<td>Act (Pools 2.0) for #EPWT (from Static)</td>
</tr>
<tr>
<td>EPNW - 1-core Processor</td>
<td>Activation for #EPWS</td>
<td>Act (Pools 2.0) for #EPWS (from Static)</td>
</tr>
<tr>
<td>EPN3 - 1-core Processor</td>
<td>Activation for #EPWY</td>
<td>Act (Pools 2.0) for #EPWY (from Static)</td>
</tr>
<tr>
<td>ELBG - 1-core Linux</td>
<td>Processor Activation for #EPW/R/EPWK</td>
<td>Act (Pools 2.0) for #EPWR Linux (from Static)</td>
</tr>
<tr>
<td>ELBP - 1-core Linux</td>
<td>Processor Activation for #EPW/L/EPL</td>
<td>Act (Pools 2.0) for #EPWS Linux (from Static)</td>
</tr>
<tr>
<td>ELBH - 1-core Linux</td>
<td>Processor Activation for #EPW/T/EPMW</td>
<td>Act (Pools 2.0) for #EPWT Linux (from Static)</td>
</tr>
<tr>
<td>ELBR - 1-core Linux</td>
<td>Processor Activation for #EPW/W/EPMZ</td>
<td>Act (Pools 2.0) for #EPWY Linux (from Static)</td>
</tr>
</tbody>
</table>

**Feature conversions for 9080-M9S global resource activation feature:**

<table>
<thead>
<tr>
<th>Parts</th>
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<tbody>
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<td>EP2X - Lab Services</td>
<td>To FC:</td>
<td>No</td>
</tr>
<tr>
<td>Private Cloud Capacity</td>
<td>To FC:</td>
<td>No</td>
</tr>
</tbody>
</table>

RP MES = Return parts, miscellaneous equipment specifications
CSU = Customer setup

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