Power Enterprise Systems for the Cloud

The IBM Power Systems E850C, E870C and E880C cloud models

Highlights

- Enable DevOps to full production with OpenStack based cloud management
- Complimentary access to IBM® Cloud[1]
- Use open source automation to install and configure recipes
- Build flexible elastic private cloud capacity and consumption models
- Monitor cross-data center inventory and performance via the IBM Cloud
- Securely connect System of Record workloads and data to cloud native applications

Business climates are changing, and organizations must provide an infrastructure that can quickly adapt to those changes. Successful organizations work smarter and faster with greater agility and flexibility. Cloud fundamentally changes the way IT builds new apps, delivers services and consumes compute and software resources.

In its many forms (public, private or hybrid), cloud computing is quickly becoming both the delivery and consumption models for IT. However, getting the correct mix between traditional IT, private cloud and public cloud can be a challenge.

The new IBM Power Systems™ E850C, E870C and E880C, with OpenStack based cloud management and open source automation, enable clients to accelerate the transformation of their IT infrastructure for cloud while providing tremendous flexibility during the transition. These powerful, high performance systems provide clients increased security, high availability, rapid scalability, simplified maintenance and management. It also enables business growth and dramatically reduces costs. The Power® E850C, E870C and E880C systems management capabilities speed up and simplify cloud deployment by providing fast, automated virtual machine (VM) deployments, pre-built image templates and self-service capabilities with an intuitive, user-friendly interface.

Power Enterprise servers are designed to provide the highest levels of reliability, availability, flexibility and performance to bring you a world-class enterprise private and hybrid cloud infrastructure. Through enterprise-class security, efficient built-in virtualization that

drives industry-leading workload density, and dynamic resource allocation and management, the server consistently delivers improved levels of service across hundreds of virtual workloads on a single system.

The Power E850C, E870C and E880C servers include industry-leading PowerVM® virtualization, cloud management software, and services to assist with clients' move to the cloud, both private and hybrid. The additional capabilities include the following:

Private Cloud Management

IBM Cloud PowerVC Manager (OpenStack based cloud management). Managing a private cloud requires software tools to help create a virtualized pool of compute resources, provide a self-service portal for users, and policies for resource allocation, control, security and metering data for resource billing. Management tools for private clouds tend to be service driven, as opposed to resource driven, because cloud environments are typically highly virtualized and organized in terms of portable workloads.

The OpenStack-based IBM Cloud PowerVC Manager, integrated with the Power E850C, E870C and E880C servers, provides the self-service cloud portal for IBM Power Systems. This self-service portal allows users to quickly request cloud resources and reliably deploy virtual machines with approval policies to control the provisioning of cloud resources.

Cloud-based HMC Apps as a Service

The new HMC Apps as a Service provides clients the capability to aggregate Power Systems' performance and inventory data from across their enterprise, removing the burden of manual collection and aggregation of system information.

These IBM developed applications are hosted in a secure cloud and provide health state, geotagging and threshold alerts that can be accessed via a secure portal from clients' mobile devices. When a client purchases a new Power E850C, E870C or E880C, they are entitled to this new service offering for no additional charge.

The performance and inventory applications are initially scheduled to be offered as a technology preview in 2016 and to be followed by a full general availability offering with more applications in 2017.

Open source cloud automation and configuration tooling for AIX

IBM has expanded its commitment to keep key open source cloud management packages updated and to provide timely security fixes to enable clients to leverage open source skills. The clients of the Power E870C and E880C servers are well positioned to take advantage of key packages recently provided to enable cloud automation, including:

- Chef automation for configuration, deployment, and management. IBM collaborates with clients in this community to provide useful resources for using Chef with IBM AIX® systems.
- Yum package management now available with repository access from FTP and HTTPS protocols. RPM is also updated to allow automatic dependency discovery.
- Cloud-init and all dependencies are now available in the repository, as well as support for licensed AIX users.

Hybrid cloud support

Hybrid cloud is quickly becoming the de facto state of IT. Two-thirds of organizations that blend traditional and cloud infrastructures together already gain advantages from their hybrid cloud. A hybrid cloud model allows for the building and deploying of applications quickly with optimized use of resources and lower costs. The ability to centrally manage private, public or dedicated cloud resources with a single management tool while securely connecting traditional workloads with cloud-native apps allows clients to respond to their dynamically changing business priorities in a more agile and timely fashion.

To assist with a client's move to a hybrid cloud infrastructure, the Power E850C, E870C and E880C servers include the following:

Hybrid infrastructure management tools

IBM Power Systems OpenStack based PowerVC management upwardly integrates into a variety of third-party hybrid cloud orchestration products including IBM Cloud Orchestrator, VMware vRealize and others. Clients can simply manage both their Private Cloud VMs and their Public Cloud VMs from a single, integrated management tool.

Securely connect critical data to cloud native applications

IBM API Connect and WebSphere Connect provide secure connectivity to cloud-based applications giving clients the ability to rapidly develop new applications and services accelerating their time to value. IBM Power to Cloud services can help clients get started with these solutions and in designing new applications using IBM Bluemix, which enables clients' to rapidly build, deploy, and manage their cloud applications, while tapping a growing ecosystem of available services and runtime frameworks.

IBM Cloud

To help clients get started with their hybrid cloud infrastructure, each Power E870C and E880C servers include one year of access to an IBM POWER8® Linux Bare Metal system in the IBM Cloud (SoftLayer). Each Power E850C server includes six months of access to a POWER8 Linux Bare Metal system in the IBM Cloud (SoftLayer).

Flexible Capacity on Demand

With the purchase of a new Power E870C or E880C server, clients can convert previously purchased capacity (Mobile Processor activations and/or Elastic COD Processor Days) to SoftLayer capacity.

Power to Cloud Rewards

To assist clients with their move to the cloud, IBM provides a specific number of points for each purchase of a Power E850C or E870C or E880C server, which may be redeemed for on-site cloud deployment services. For those clients looking to create their own private cloud, expert services are available around cloud provisioning and automation with IBM Cloud PowerVC Manager with heavy focus on creating and supporting a DevOps cloud implementation.

For those clients looking for a hybrid cloud solution there are hybrid cloud workshop services available that provide instruction on how to produce "best-of-breed" applications using API Connect and IBM Bluemix® with Power Systems.

IBM Power Systems E870C and E880C at a glance				
System configurations				
Microprocessors	POWER8			
Level 2 (L2) cache	512 KB per core			
Level 3 (L3) cache	8 MB per core			
Level 4 (L4) cache	Up to 128 MB per socket			
RAM (memory)	256 GB to 32 TB			
Processor-to-memory bandwidth	230 GBps per socket, 920 GBps per node			
Media bays	1 DVD bay in system control unit			
PCIe Adapter slots	8 PCIe Gen3 x16 per node plus optional PCIe expansion drawers			
Standard features				
I/O ports	4 HMCs ports			
POWER Hypervisor™	PowerVM			
RAS features	Chipkill memory, redundant service processor and clock, Active Memory Mirroring for Hypervisor, Dynamic Processor Deallocation, Alternate Processor Recovery			
Operating systems	AIX, IBM and Linux*			
Power requirements	Up to 4150 watts per system node			
System dimensions	Dimension Width Depth Height	System Control Unit 434 mm (17.1 in) 813 mm (32.0in) 86 mm (3.4 in) 2 EIA	Processor node 445 mm (17.5 in) 902 mm (35.5 in) 219 mm (8.6 in) 5 EIA	PCIe Gen3 I/O Drawer 482 mm (19 in) 802 mm (31.6in) 173 mm 6.8 in) 4 EIA

IBM Power E850C at a glance	
System configurations	
Microprocessors	POWER8
Level 2 (L2) cache	512 KB per core
Level 3 (L3) cache	8 MB per core
Level 4 (L4) cache	Up to 128 MB per socket
RAM (memory)	128 GB to 4 TB
Processor-to-memory bandwidth	192 GB/sec per socket
Media bays	1 DVD bay in system control unit
PCIe Adapter slots	8 PCIe Gen3 x16, 3 PCIe Gen3 x8 plus optional PCIe expansion drawers
Integrated SAS Controllers	Two in storage backplane, supporting standard RAID 0,5,6,10, 5T2, 6T2 and 10T2 • Dual SAS Controller Backplane, with 7.2 GB write cache • Dual SAS Controller Backplane, without write cache • Split Disk Backplane (two single SAS controllers), without write cache
Integrated SAS bays for solid-state drives (SSD) or hard-disk drives	8 hot-swap SFF SAS drive bays (2.5") + 4 SSD bays (1.8")
POWER Hypervisor™	PowerVM
RAS features	Chipkill memory, Active Memory Mirroring for Hypervisor (optional), Dynamic Processor Deallocation, Alternate Processor Recovery
Operating systems	AIX and Linux*
Power requirements	Up to 4150 Watts per 4U server
System dimensions	Width: 448 mm (17.6 in.) Depth: 776 mm (30.6 in.) Height: 175 mm (6.9 in.), 4 EIA units

Why IBM?

Only IBM provides the combination of enterprise grade on-premises systems, global reach of leading public cloud infrastructure, hybrid cloud experience and services—all built around open source cloud management, open data services and open innovation.

For more information

To learn more about the IBM Power Systems E850C, E870C and E880C cloud models, contact your IBM representative or IBM Business Partner, or visit
http://www.ibm.biz/power-to-cloud

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit: **ibm.com**/financing

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* See Facts and Features for specific supported operating system levels

[1] With each IBM Power Systems Enterprise Server for the Cloud you are eligible for complimentary access to IBM Cloud Starter Pack which provides access to a POWER8 bare-metal server running Ubuntu Linux in SoftLayer's Dallas data center. Clients purchasing a Power E880C or E870C system are entitled to receive 12 months of access, and clients purchasing a Power E850C system are entitled to receive 6 months of access, at no additional charge. Additional months are available for purchase.

Please Recycle

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