Introduction

As consumer demand for an on-demand economy grows, businesses are faced with a challenge in how they support a new and ever-changing set of requirements. Cloud has reset expectations as businesses look for the best way to leverage the benefits of cloud-based infrastructure to deliver better business results and customer experiences. Originally, many companies turned over part — or all — of their IT to public cloud platforms in hopes of becoming more agile and lowering overall costs. However, there are trade-offs associated with a public cloud. That's why many companies are now deploying a mix of private, on-premises and public, off-premises clouds — also referred to as a hybrid cloud (or multicloud) strategy.

Cloud has reset IT expectations

Leading companies realize cloud is ***how*** you deploy IT, not where.

Businesses benefits of cloud:

- ✓ Deploy apps in minutes
- ✓ Pay for use / consumption on demand
- ✓ Provide rapid access to compute resources
- ✓ Simplify managment with automation
- ✓ Continuous infrastructure innovation
- ✓ Rapidly create and refine new ideas at low cost with minimal risk

71%

Enterprise

of organizations already use services from three or more clouds in enterprise solutions

91%

Public Cloud

of public cloud adopters will use some degree of internal private cloud[1]

80%

Private Cloud

of enterprises have moved workloads from the public cloud back to their data centers

Is on-demand consumption worth the investment?

IDC research indicates that by 2020, consumption-based procurement will account for 40% of enterprise IT infrastructure spending, eclipsing traditional procurement in the process.[2] But for business and IT leaders considering an update to their traditional models, the question remains: Is consumption-based IT worth the investment?

As more enterprises look at ways to reduce costs while maintaining the scalability required to stay competitive in today's fast-paced business environment, consumption-based infrastructure models have grown increasingly popular. These consumption-based models enable customers to quickly scale their IT infrastructure up or down to optimize costs while quickly adapting to dynamic business environments. Regardless of industry or company size, the shift to consumption-based IT is clear.

What makes consumption-based IT the better option?

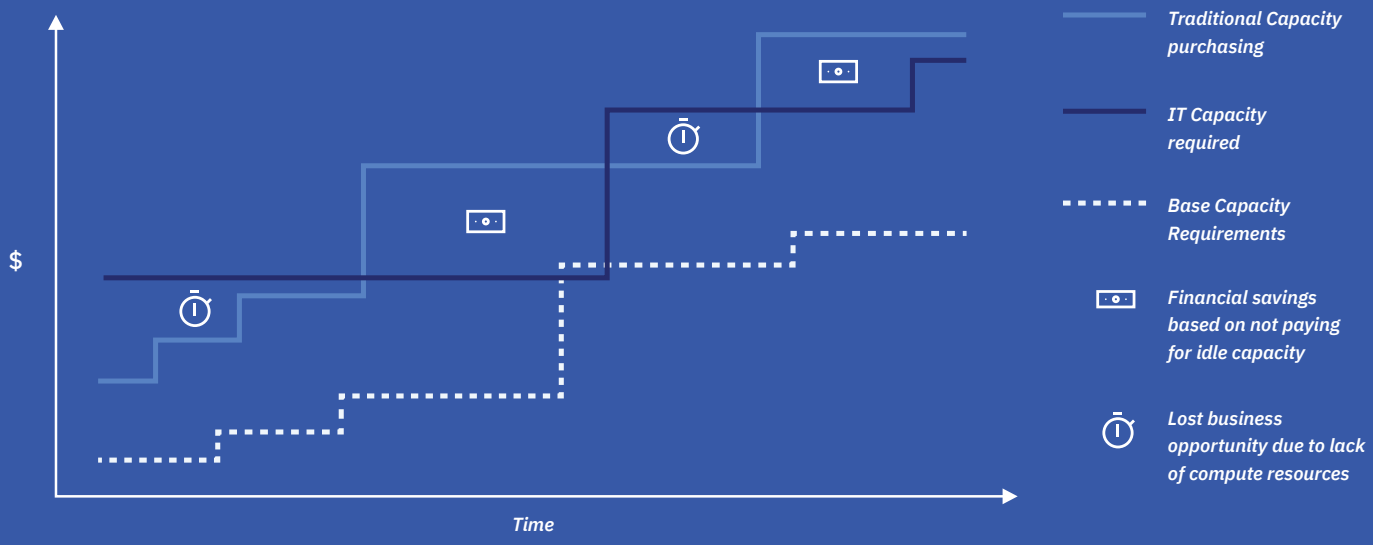
In a world where mixtures of on-premises, public cloud, and private cloud systems and applications make up IT infrastructure, traditional operating models can't deliver an ideal balance of agility, control and scalability.

To maintain a competitive advantage, you need an IT model that helps you adapt rapidly to the changing tech landscape. That's where consumption-based IT thrives because it:

- Balances the flexibility of cloud infrastructure with the control, security and reliability you'd expect from your on-premises data centers.
- Pays for IT resources and capacity on demand, reducing up-front CapEx and other costs associated with traditional procurement processes (i.e., energy, cooling, etc.).
- Enables rapid infrastructure expansion to accommodate the needs of new projects and workloads.

All of these benefits contribute to a greater alignment between the business and IT leaders. And when both sides of an organization are aligned, you're better prepared to deliver innovative products and services to your customers.

1 Source: IBM Market Intelligence survey of 671 customers. IBM Growing up hybrid Accelerating digital transformation (https://www.ibm.com/downloads/cas/28G9P51V)
2 Source: IDC FutureScape: Worldwide Datacenter 2018 Predictions, (US43152417), October 2017



IBM® Power Systems Private Cloud Solution with Dynamic Capacity

With Dynamic Capacity offerings, you can activate one or more resources on your server as your business peaks dictate. Activate inactive processor cores or memory units that are already installed on your server on a temporary and permanent basis. Dynamic Capacity offerings are available on select Power Systems enterprise and scale-out servers.

Some servers include both active and inactive resources:

- Active processor cores and memory units are resources that are available for use on your server.
- Inactive processor cores and memory units are included with your server but are not available for use until you activate them.

Dynamic Capacity offerings

Dynamic Capacity offerings are now simpler and easier to use, purchase, provision and enable in minutes via IBM Entitled Systems Support (ESS).[3]

Capacity Upgrade on Demand

Permanently activate inactive processor cores and memory units by purchasing an activation feature and entering the provided activation code. You can do this without restarting your server or interrupting business.

Trial Capacity on Demand

Evaluate the use of inactive processor cores, memory or both at no charge using Trial CoD. After you enroll, the trial period is available for 30 power-on days.

Elastic Capacity on Demand

Activate processor cores or memory units daily for as long as need by using your HMC to enable the resources temporarily. *

Utility Capacity on Demand

Utility CoD is used when you have unpredictable, short workload spikes. Automatically provide additional processor capacity on a temporary basis within the shared processor pool. Use is measured in processor minute increments and is reported at the Utility CoD website.

Shared Utility Capacity

Share resources across systems with no base monthly fees. Pay for only what you use with metering by the minute.

*3 IBM ESS is not enabled or available in all countries * Formerly referred to as On/Off CoD*

IBM Power Systems Private Cloud Solution with Shared Utility Capacity

Shared Utility Capacity lowers IT acquisition cost and delivers by-the-minute pay-per-use consumption models in an on-premise environment. The base capacity that a user has to purchase is as low as 1-core and 256 GB. Users can buy capacity credits for resource usage above the base capacity. They can also add multiple systems in the pool. When resource usage exceeds the aggregated base of the pool, Shared Utility Capacity delivers cloud-like economics in both enterprise and scale-out POWER9-based Power Systems.

Shared Utility Capacity allows for sharing of resources across systems:

- No base monthly fees- pay for only what you use with metering by the minute
- Share resources across systems
- IBM's unique comprehensive approach to cloud (on-prem to public cloud provider)

IBM Power Systems Private Cloud Solution with Elastic Capacity on Demand

With Elastic Capacity on Demand, there is no need to worry about over-provisioning capacity to support growth. Clients can temporarily activate and deactivate processor cores and memory units on IBM Power Systems to meet business demands.

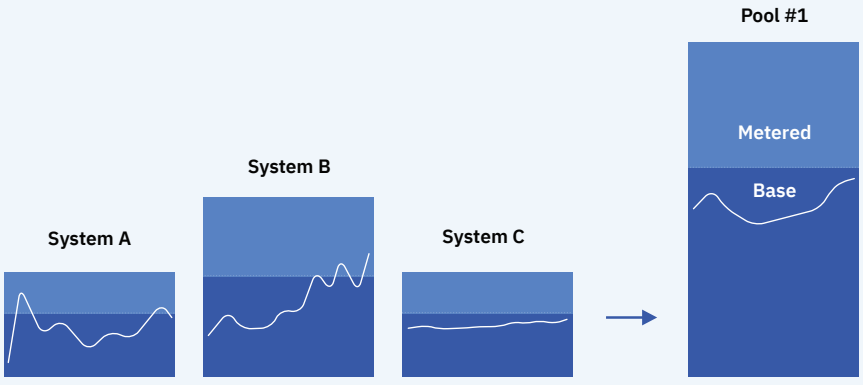
Elastic Capacity on Demand can help you achieve your business goals:

- Dynamically activate inactive processor cores or memory units without any machine down time simply by purchasing activation codes on the IBM Marketplace
- Change the number of resources and number of days in a running request without stopping or starting your current request or waiting until the current request expires
- Pay only for the days that the processor cores or memory units remain activated

Shared Utility Capacity

Resource usage monitored at the aggregate pool level by the minute.

All processor and memory resources are fully activated and available. Clients pay for metered capacity consumption by purchasing capacity credits, which are then debited real time as processor, memory and/or license entitlement resources above the pool's base are consumed, by the minute.



Device management

The **IBM Cloud Management Console (CMC)** for Power Systems provides a simplified, consolidated view of the Power Systems cloud landscape, no matter how many systems or datacenters comprise it. This includes inventory of systems and virtual components, consolidated performance data to optimize utilization and performance across all your data centers, and aggregated logging information to provide additional insights. The CMC is hosted in the IBM Cloud and can be accessed securely at any time. This enables system administrators to easily run reports and gain insight into their Power cloud deployments. CMC is a platform through which IBM can deliver apps or micro services in a DevOps model. It's also a convenient launcher for Power management software and solution for mobile devices, tablets and desktop browsers that enables cloud operators to enjoy convenient access to the applications.

Built-in PowerVM® virtualization capability

Every IBM POWER9™ server includes IBM PowerVM Enterprise technology built-in at no additional cost. With PowerVM on POWER9 servers, one machine has the power and flexibility to run multiple operating systems and workloads, streamline management, increase availability, lower operational costs and improve service levels — all with the ability to quickly deploy applications.

IBM PowerVM supports up to a thousand VMs on a single server — each with its own processor, memory and I/O resources. And processor resources can be assigned at a granularity of 1/100th of a core.

Multiple shared processor pools allow for the automatic, non-disruptive balancing of processing power between VMs assigned to shared pools. This ability increases throughput and gives you the power to cap processor core resources used by a group of VMs, potentially reducing processor-based software licensing costs.

In addition, PowerVM technology on the POWER9 servers provide IBM Active Memory Sharing (AMS). This technology intelligently and dynamically reallocates memory from one VM to another to improve use, flexibility and performance. Because AMS lets you pool physical memory among VMs on a server, it helps maximize memory utilization and ultimately drives down system costs.

To further enhance availability on the POWER9 servers, all systems include Live Partition Mobility (LPM). LPM allows you to move a running VM from one Power Systems server to another without application downtime.

This capability minimizes application interruption for planned system maintenance, provisioning and workload management. Use LPM to simplify operating environment migration to new servers — either temporarily or permanently. Unique to POWER9 servers is the ability to exploit on-chip capabilities that provide secure accelerated LPM, which encrypts data in motion and compresses VMs to deliver LPM operations that are up to 4X faster.

Dynamic cloud to deliver business continuity and agility

IBM Power Systems POWER9 servers are the ideal building blocks for hybrid multicloud environments. POWER9 servers can run more containers per core with better TCO (Total Cost of Ownership) with improved I/O data throughout over previous generations. With Shared Utility Capacity, resources can be shared across multiple systems to achieve cloud-like economics on-premise within the data center.

Finance your Dynamic Capacity solutions

IBM Global Financing can help match your payments with your usage with competitive financing for fixed and variable costs related to IBM Capacity on Demand offerings. By financing your Capacity on Demand costs and associated charges together with your base lease, spikes in demand need not become spikes in your budget.

Public cloud experience with on-premises IT security, reliability and performance

To remain relevant and deliver business growth in today's dynamic environment, businesses are moving away from traditional IT procurement; they're choosing to add flexibility and performance while optimizing costs through consumption-based IT initiatives. No more over-provisioning capacity for growth. Whether you are looking to optimize a single system or a system pool, Power Systems has the right solutions to provide access on-demand, when and where you need it within your on-premises IT environment.

For additional information, please visit:

https://www.ibm.com/it-infrastructure/power/capabilities/capacity-on-demand