IBM Power

Resetting expectations with on-demand consumption IT

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

Start your trial →

75%

of respondents state that private clouds are the most widely used platforms for storing analytics data.[1]

50%

of respondents who are considering or are already moving their workloads off public cloud cite security and compliance as the top reason for doing so.[2]

As consumers shift to an on-demand economy, businesses face a challenge in how they support a new and ever-changing set of requirements. 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-only approach. That's why many companies now deploy a mix of public and private clouds—also referred to as a hybrid cloud, or multicloud strategy.

Is on-demand consumption IT worth the investment?
Consumption-based procurement is often a priority in organizations, but for business and IT leaders considering an update to their traditional models, it's vital to assess their benefits.

As more enterprises strive to reduce costs while maintaining the scalability and agility required to stay competitive in today's fast-paced business landscape, on-demand consumption IT has grown increasingly popular. This model can enable clients to quickly scale their IT infrastructure up or down to optimize costs while adapting and rapidly responding to dynamic business opportunities and challenges. Regardless of industry or company size, the shift to consumption-based IT is clear.

Align your organization through flexibility
In a world where mixtures of on-prem, public cloud and private cloud environments and applications make up IT infrastructure, traditional operating models may not deliver an ideal balance of agility, control and scalability.

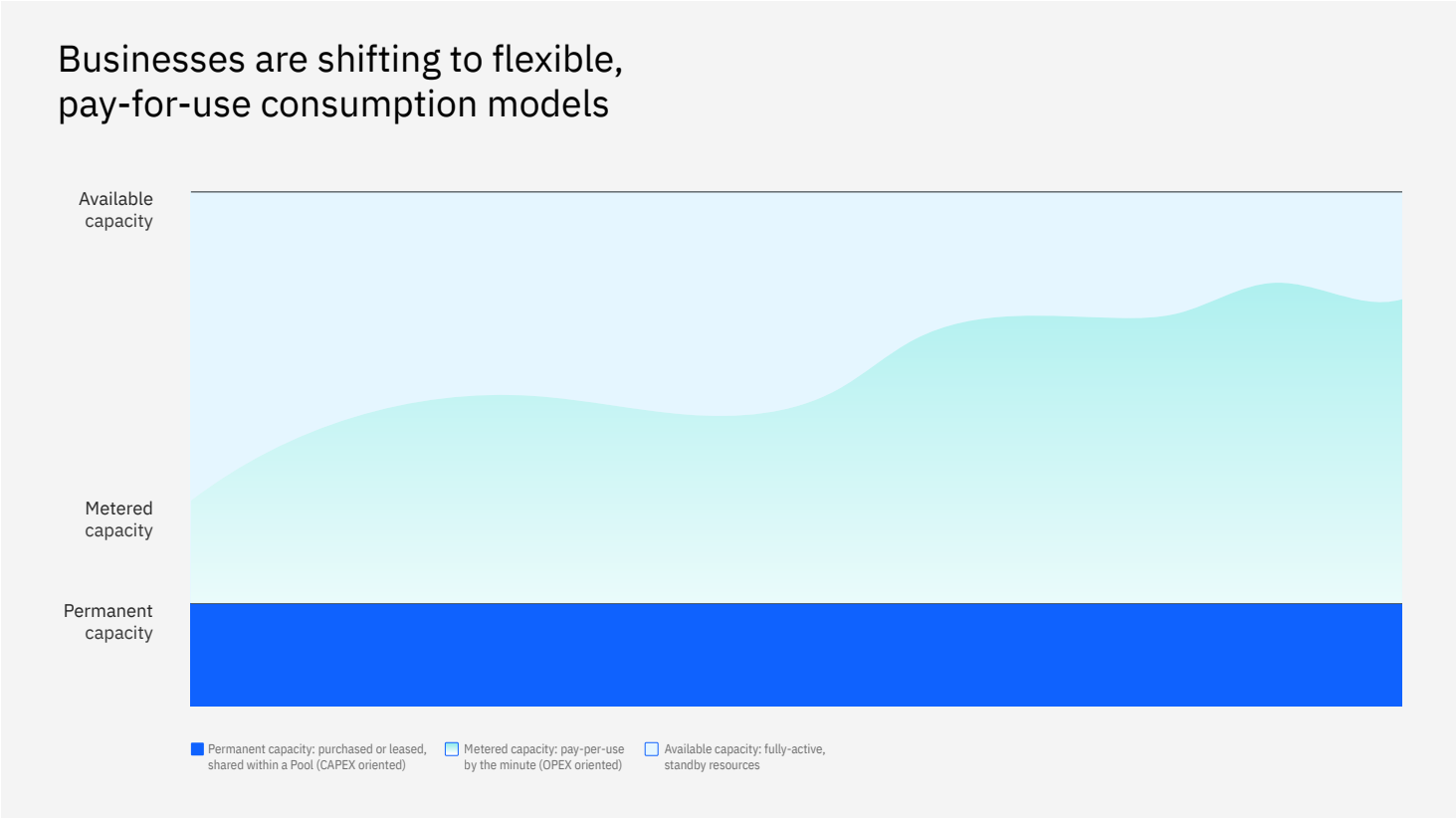

Figure 1. An example of Shared Utility Capacity—designed to optimize compute resource utilization and reduce the expense of handling peak and volatile demand across a collection of IBM® Power® servers, while maintaining service level.

To maintain a competitive advantage, you need an IT model that helps you rapidly adapt. Consumption-based IT empowers businesses to:

Balance the flexibility of cloud infrastructure with the control, security and reliability of on-prem data centers.

Enable rapid infrastructure expansion to accommodate new projects and workloads.

Pay for IT resources on demand, reducing capital expenditure and procurement costs. These benefits contribute to a greater alignment between business and IT leaders. When both sides of an organization are aligned, you're better prepared to deliver innovative products and services to your customers.

Flexible consumption offerings provide many of the attributes that clients like about public cloud in an on-premises, private cloud with better control and security.

IBM Power Dynamic-Capacity offerings

Dynamic-capacity offerings have been designed to be easier to use, purchase and provision, and can be enabled in minutes with the help of IBM® Entitled Systems Support (IBM 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 take this step without restarting your server or interrupting business.

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

Elastic capacity
Temporarily activate and deactivate processor cores and memory units on IBM® Power solutions to meet business demands and unexpected spikes in demand for as long as you need by using your hardware management console (HMC).*

You can activate resources without any machine downtime simply by purchasing activation codes. 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.

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 Capacity on Demand website.

Power private cloud with Shared Utility Capacity
Shared Utility Capacity delivers enhanced multisystem resource sharing and by-the-minute consumption of on-premises compute resources for clients deploying and managing a private cloud infrastructure.

With Shared Utility Capacity, you no longer need to worry about overprovisioning capacity to support growth because all resources are activated on all systems in a pool. Purchased Base Activations and operating system license entitlements are seamlessly shared between systems in a pool, and reserve capacity, normally inactive, is made available and may be consumed seamlessly on a pay-per-use basis. Resources are easily monitored by the IBM Cloud® Management Console Enterprise Pools application, which automatically tracks usage by the minute and provides a rich graphical summary and sophisticated drill-down views of real-time and historical resource consumption within a pool—by system, resource and by virtual machine (VM).

The IBM Cloud® Management Console for Power Systems provides a streamlined, consolidated view of your Power systems-based cloud landscape, no matter how many systems or data centers comprise it.

These capacities include:

- Aggregated logging information to provide additional insights
- Consolidated performance data to optimize utilization
- Inventory of systems and virtual components
- Performance across all your data centers

The console is hosted in a security-rich environment on IBM Cloud and can be accessed at any time, enabling system administrators to run reports and gain insight into their Power systems cloud deployments. This offering is a platform through which IBM can deliver applications or microservices in a DevOps model. It's also a convenient launcher for Power management software and a solution for mobile devices, tablets and desktop browsers that enables cloud operators to enjoy convenient access to applications.

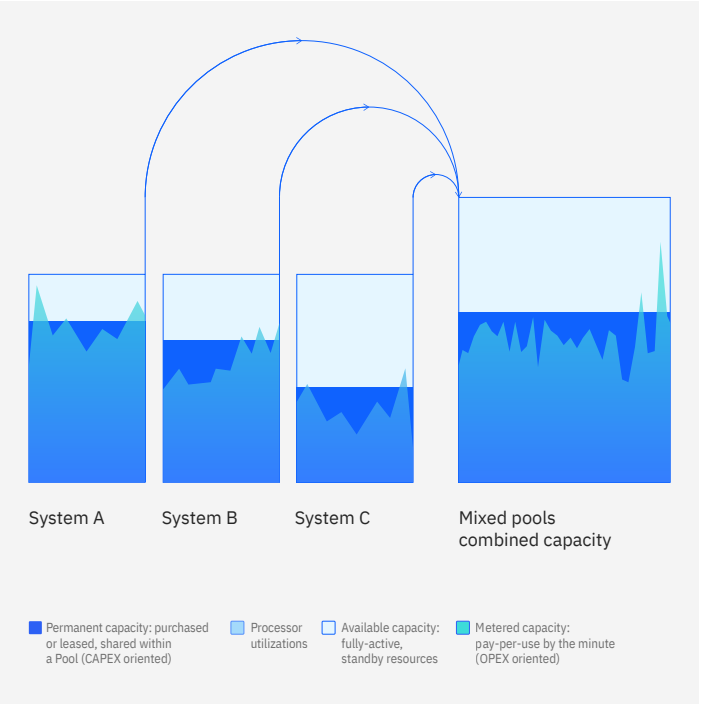

Figure 2. An example of shared systems achieving scalability through pooled resource sharing.

Built-in IBM PowerVM virtualization capability
Every IBM® Power10 processor-based server includes IBM PowerVM® Enterprise Edition technology built-in at no additional cost. With PowerVM solutions on Power10 processor-based servers, one machine has the power and flexibility to quickly deploy applications and:

- Improve service levels
- Increase availability
- Lower operational costs
- Run multiple operating systems and workloads
- Streamline management

IBM PowerVM software supports up to a thousand VMs on a single server—each with its own processor, memory and input/ output (I/O) resources. Processor resources can also 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 can give 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 Power10 processor-based servers provide Active Memory Sharing technology.

IBM PowerVM can support 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.

This technology intelligently and dynamically reallocates memory from one VM to another to improve use, flexibility and performance. Because Active Memory Sharing enables you to pool physical memory among VMs on a server, it helps maximize memory utilization and ultimately drives down system costs.

To further enhance availability on Power10 processor-based servers, all systems include Live Partition Mobility (LPM), which enables you to move a running VM from one Power server to another without application downtime. This capability can minimize application interruption for planned system maintenance, provisioning and workload management.

Use LPM to simplify operating environment migration to new servers—either temporarily or permanently. Specific to Power10 processor-based servers is the ability to exploit on-chip capabilities that provide secured accelerated LPM, which encrypts data in motion and compresses VMs to deliver LPM operations that are up to 4 times faster.

Dynamic cloud to deliver business continuity and agility
Power10 processor-based servers are the ideal building blocks for hybrid cloud environments. Power10 servers can run more containers per core with better total cost of ownership (TCO) 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 premises 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 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 prem, 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. Instead, they're choosing to add flexibility and performance while optimizing costs through consumption-based IT initiatives. There's no more overprovisioning capacity for growth. Whether you're looking to optimize a single system or a system pool, Power systems have the right solutions to provide on-demand access, when and where you need it within your on-prem IT environment.

Dive deeper and learn how to optimize IT costs with flexible consumption →

1. IDC Survey Spotlight: How Are Organizations Using Data Analytics Tools to Drive New Opportunities?, January 2023, US50044723
2. IBM Transformation Index: State of Cloud, Executive Summary Deck, The Harris Poll on behalf of IBM, June 2022.
3. IBM ESS is not enabled or available in all countries

* Formerly referred to as On/Off CoD

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